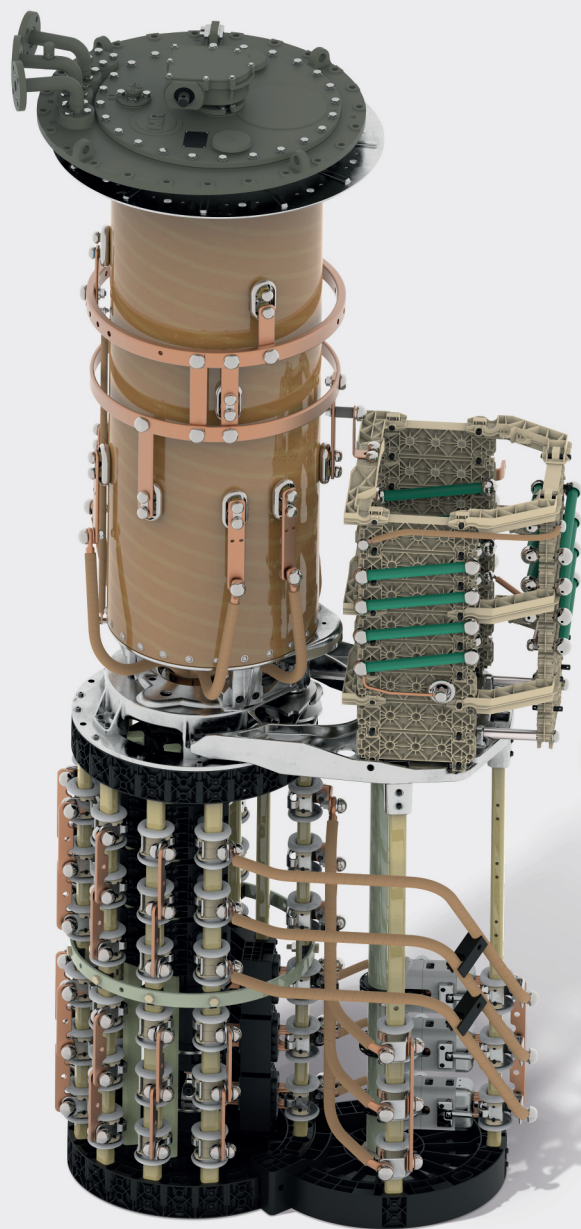


# Technical data

## VACUTAP® VR®. On-load tap-changer

I<sub>rm</sub> 700...3 200 A  
5224510/09 EN



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We reserve the right to change the technical data, design and scope of supply.  
Generally the information provided and agreements made when processing the individual quotations and orders are binding.  
The original operating instructions were written in German.

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# 1 Introduction

This technical file contains detailed information about the technical properties of the product. Basic information is given in the "Technical Data (TD 61) - General Section".

## 1.1 On-load tap-changer designations

Each type of on-load tap-changer is available in a number of models, offering a different number of phases, maximum rated through-current, highest voltage for equipment  $U_m$ , selector size and basic connection diagram. The designation of a particular on-load tap-changer model therefore depends on these features, hence ensuring an unmistakable and non-interchangeable on-load tap-changer designation.

### 1.1.1 Example of on-load tap-changer type designation

On-load tap-changer VACUTAP® VRM III 1300 Y-72,5 / RC-10 19 1 WR.

| Type designation | VACUTAP® VRM III 1300 Y-72,5 / RC-10 19 1 WR |                                                                                                                                                                                                                                     |
|------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VACUTAP® VRM     | On-load tap-changer type                     |                                                                                                                                                                                                                                     |
| III              | Number of phases                             |                                                                                                                                                                                                                                     |
| 1300             | Last digit:                                  | maximum rated through-current $I_m$ in A and number of equipped sectors for single-phase on-load tap-changers.<br>When using the on-load tap-changer with a neutral point, a 0 as the last digit corresponds to 3 equipped sectors. |
|                  | Penultimate digit:                           | 0 = without current splitting<br>2 = forced current splitting by two parallel winding branches required.                                                                                                                            |
| Y                | Use with neutral point                       |                                                                                                                                                                                                                                     |
| 72.5             | Highest voltage for equipment $U_m$ (in kV)  |                                                                                                                                                                                                                                     |
| RC               | Selector size                                |                                                                                                                                                                                                                                     |
| 10 19 1 WR       | Basic connection                             |                                                                                                                                                                                                                                     |

Table 1: Example of designation of on-load tap-changer

## 1.1.2 Number of positions and basic connection

The selector can be adapted to a large extent to the required number of positions and tap winding connection. The basic connections differ in terms of selector division, number of operating positions, number of mid-positions, change-over selector model and type of potential connection.

Example: 10 19 1 WR

| Designation of basic connection | 10 19 1 WR                                                                                                                                                                |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10                              | Contact circle pitch of selector                                                                                                                                          |
| 19                              | Maximum number of operating positions                                                                                                                                     |
| 1                               | Number of mid-positions                                                                                                                                                   |
| W                               | Change-over selector model:<br>W = reversing change-over selector<br>G = coarse tap connection                                                                            |
| R                               | Type of potential connection:<br>R = attached tie-in resistors<br>S = tie-in switches and tie-in resistors on board<br>P = tie-in switches with attached tie-in resistors |

Table 2: Example of designation of basic connection

## 1.2 On-load tap-changer models

You will find an overview of the on-load tap-changer models in the Type overview [▶ Section 4.1, Page 35] section.

## 1.3 Basic connections

Below you will find some examples of the on-load tap-changer's basic connections with designation of selector connection contacts in accordance with MR standard. You will find the connections that can actually be made in the section "Permitted voltage stresses" [▶ Section 2.4, Page 18].

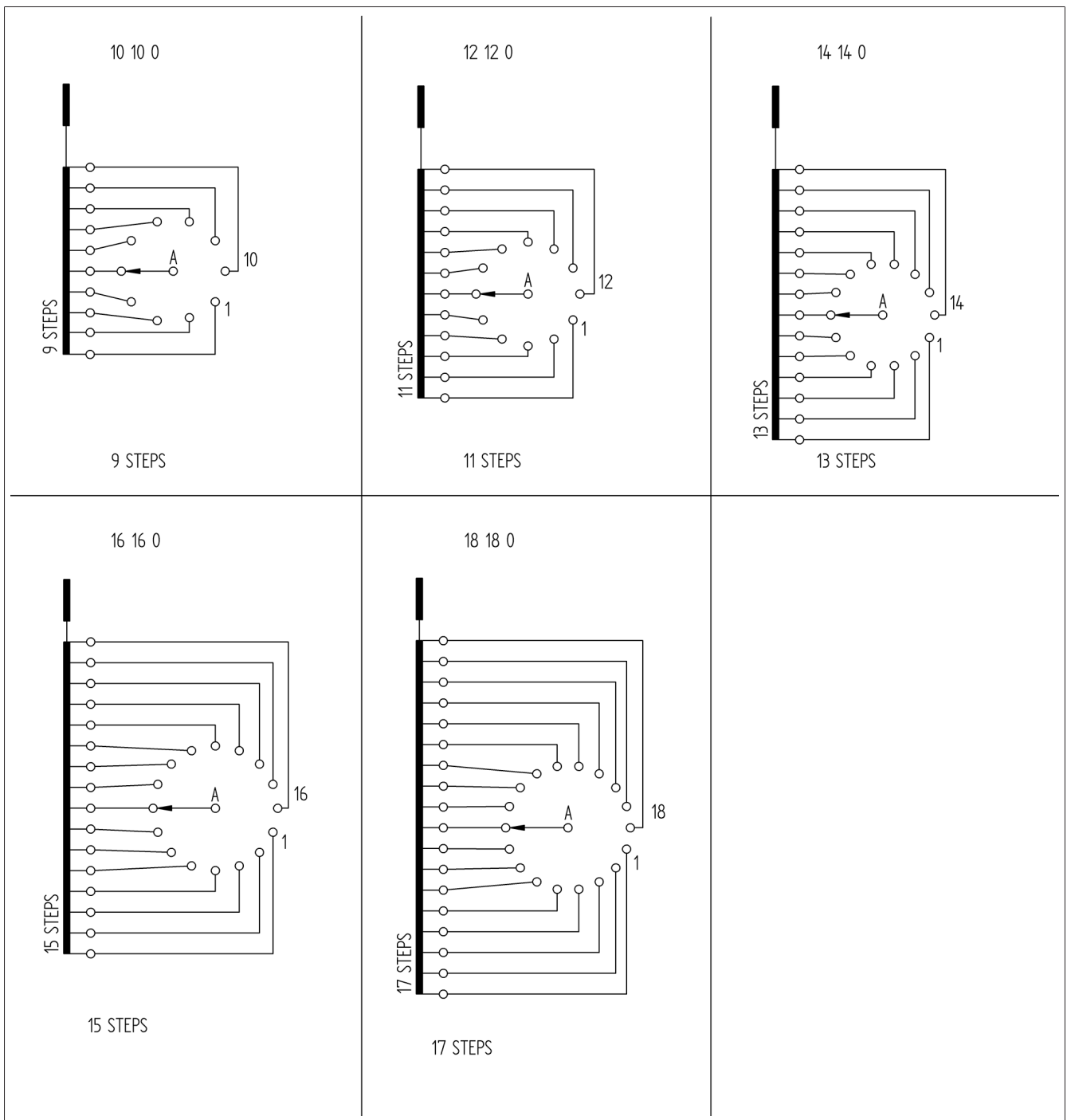


Figure 1: Basic connections without change-over selector

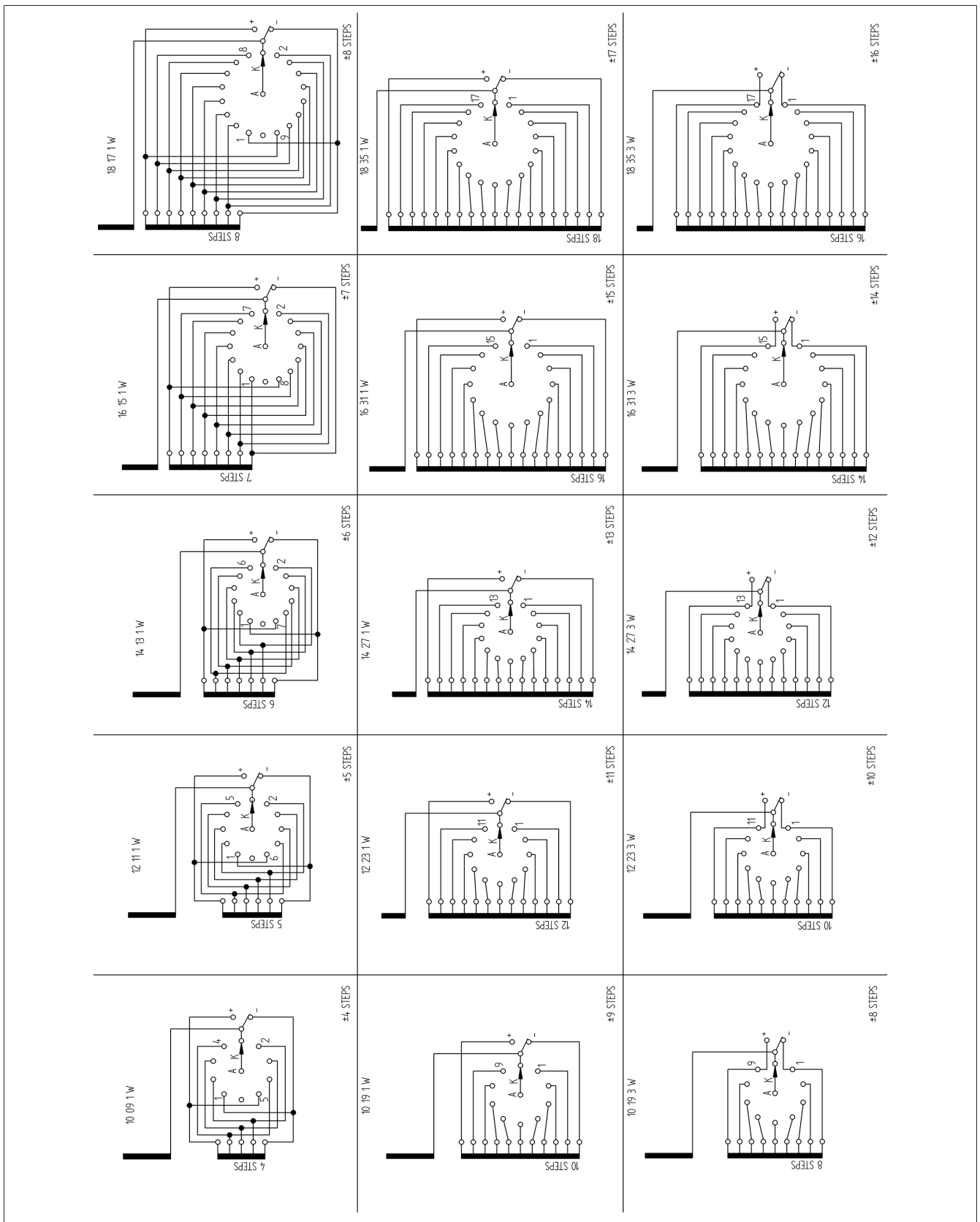


Figure 2: Basic connections for reversing change-over tap selector connection



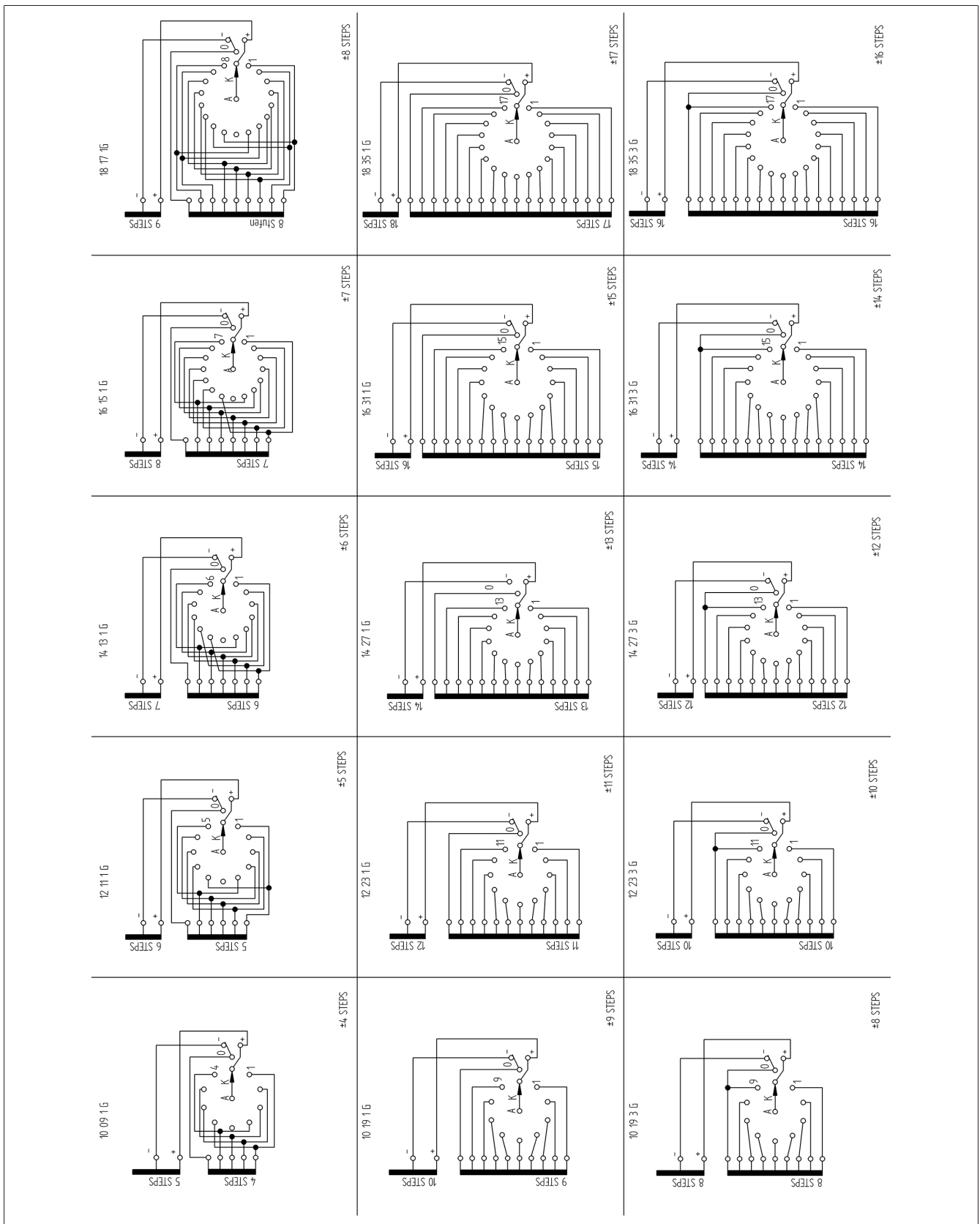


Figure 3: Basic connections for coarse tap selector connection

# 2 Technical data

## 2.1 On-load tap-changer properties

Electrical data for VACUTAP® VR®, I<sub>rm</sub> 700...1 300 A, M-selector

| On-load tap-changer                                             | VRS I 701<br>VRS II 702<br>VRS III 700 Y | VRS I 1001     | VRS I 1301     |
|-----------------------------------------------------------------|------------------------------------------|----------------|----------------|
| Maximum rated through-current I <sub>rm</sub> [A]               | 700                                      | 1 000          | 1 300          |
| Rated short-time current [kA]                                   | 10                                       | 12             | 16             |
| Rated duration of short-circuits [s]                            | 3                                        | 3              | 3              |
| Rated peak withstand current [kA]                               | 25                                       | 30             | 40             |
| Maximum rated step voltage U <sub>irm</sub> [V]                 | 4 500                                    | 4 500          | 4 500          |
| Step capacity P <sub>stm</sub> [kVA] <sup>1)</sup>              | 2 100<br>1 500                           | 2 100<br>1 500 | 2 100<br>1 500 |
| Rated frequency [Hz]                                            | 50...60                                  |                |                |
| <sup>1)</sup> see step capacity diagram ► Section 2.3, Page 14] |                                          |                |                |

Table 3: Electrical data for VACUTAP® VRS

| On-load tap-changer                                             | VRM I 701<br>VRM II 702<br>VRM III 700 Y | VRM I 1001 | VRM I 1301 |
|-----------------------------------------------------------------|------------------------------------------|------------|------------|
| Maximum rated through-current I <sub>rm</sub> [A]               | 700                                      | 1 000      | 1 300      |
| Rated short-time current [kA]                                   | 10                                       | 12         | 16         |
| Rated duration of short-circuits [s]                            | 3                                        | 3          | 3          |
| Rated peak withstand current [kA]                               | 25                                       | 30         | 40         |
| Maximum rated step voltage U <sub>irm</sub> [V]                 | 4 500                                    | 4 500      | 4 500      |
| Step capacity P <sub>stm</sub> [kVA] <sup>1)</sup>              | 3 000                                    | 3 000      | 3 000      |
| Rated frequency [Hz]                                            | 50...60                                  |            |            |
| <sup>1)</sup> see step capacity diagram ► Section 2.3, Page 14] |                                          |            |            |

Table 4: Electrical data for VACUTAP® VRM

Electrical data for VACUTAP® VR®, I<sub>rm</sub> 700...1 600 A, R-selector

| On-load tap-changer                               | VRS I 701<br>VRS II 702<br>VRS III 700 Y | VRS I 1001<br>VRS II 1002<br>VRS III 1000 Y | VRS I 1301<br>VRS II 1302<br>VRS III 1300 Y | VRS I 2622 <sup>1)</sup> |
|---------------------------------------------------|------------------------------------------|---------------------------------------------|---------------------------------------------|--------------------------|
| Maximum rated through-current I <sub>rm</sub> [A] | 700                                      | 1 000                                       | 1 300                                       | 2 600                    |
| Rated short-time current [kA]                     | 10                                       | 12                                          | 16                                          | 26                       |
| Rated duration of short-circuits [s]              | 3                                        | 3                                           | 3                                           | 3                        |
| Rated peak withstand current [kA]                 | 25                                       | 30                                          | 40                                          | 65                       |
| Maximum rated step voltage U <sub>irm</sub> [V]   | 4 500                                    | 4 500                                       | 4 500                                       | 4 500                    |

| On-load tap-changer                                                                                                         | VRS I 701<br>VRS II 702<br>VRS III 700 Y | VRS I 1001<br>VRS II 1002<br>VRS III 1000 Y | VRS I 1301<br>VRS II 1302<br>VRS III 1300 Y | VRS I 2622 <sup>1)</sup> |
|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------|---------------------------------------------|--------------------------|
| Step capacity $P_{stm}$ [kVA] <sup>2)</sup>                                                                                 | 2 100<br>1 500                           | 2 100<br>1 500                              | 2 100<br>1 500                              | 4 200<br>3 000           |
| Rated frequency [Hz]                                                                                                        | 50...60                                  |                                             |                                             |                          |
| <sup>1)</sup> Forced current splitting by two parallel winding branches required. Not for electrical arc furnace operation. |                                          |                                             |                                             |                          |
| <sup>2)</sup> see step capacity diagram [► Section 2.3, Page 14]                                                            |                                          |                                             |                                             |                          |

Table 5: Electrical data for VACUTAP® VRS

| On-load tap-changer                                                                                                         | VRM I 701<br>VRM II 702<br>VRM III 700 Y | VRM I 1001<br>VRM II 1002<br>VRM III 1000 Y | VRM I 1301<br>VRM II 1302<br>VRM III 1300 Y | VRM I 2622 <sup>1)</sup> |
|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------|---------------------------------------------|--------------------------|
| Maximum rated through-current $I_{rm}$ [A]                                                                                  | 700                                      | 1 000                                       | 1 300                                       | 2 600                    |
| Rated short-time current [kA]                                                                                               | 10                                       | 12                                          | 16                                          | 26                       |
| Rated duration of short-circuits [s]                                                                                        | 3                                        | 3                                           | 3                                           | 3                        |
| Rated peak withstand current [kA]                                                                                           | 25                                       | 30                                          | 40                                          | 65                       |
| Maximum rated step voltage $U_{irm}$ [V]                                                                                    | 4 500                                    | 4 500                                       | 4 500                                       | 4 500                    |
| Step capacity $P_{stm}$ [kVA] <sup>2)</sup>                                                                                 | 3 000                                    | 3 000                                       | 3 000                                       | 6 000                    |
| Rated frequency [Hz]                                                                                                        | 50...60                                  |                                             |                                             |                          |
| <sup>1)</sup> Forced current splitting by two parallel winding branches required. Not for electrical arc furnace operation. |                                          |                                             |                                             |                          |
| <sup>2)</sup> see step capacity diagram [► Section 2.3, Page 14]                                                            |                                          |                                             |                                             |                          |

Table 6: Electrical data for VACUTAP® VRM

| On-load tap-changer                                                                                                         | VRL I 1301<br>VRL II 1302<br>VRL III 1300 Y | VRL I 1601<br>VRL III 1600 Y | VRL I 2622 <sup>1)</sup> |
|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------|--------------------------|
| Maximum rated through-current $I_{rm}$ [A]                                                                                  | 1 300                                       | 1 600                        | 2 600                    |
| Rated short-time current [kA]                                                                                               | 16                                          | 16                           | 26                       |
| Rated duration of short-circuits [s]                                                                                        | 3                                           | 3                            | 3                        |
| Rated peak withstand current [kA]                                                                                           | 40                                          | 40                           | 65                       |
| Maximum rated step voltage $U_{irm}$ [V]                                                                                    | 4 500                                       | 4 600                        | 4 500                    |
| Step capacity $P_{stm}$ [kVA] <sup>2)</sup>                                                                                 | 5 850                                       | 6 000                        | 11 700                   |
| Rated frequency [Hz]                                                                                                        | 50...60                                     |                              |                          |
| <sup>1)</sup> Forced current splitting by two parallel winding branches required. Not for electrical arc furnace operation. |                                             |                              |                          |
| <sup>2)</sup> see step capacity diagram [► Section 2.3, Page 14]                                                            |                                             |                              |                          |

Table 7: Electrical data for VACUTAP® VRL



The VACUTAP® VRH and VRX on-load tap-changers are special models and are only available on request.

| On-load tap-changer                         | VRH I 651<br>VRH II 652<br>VRH III 650 Y | VRH I 1301<br>VRH II 1302<br>VRH III 1300 Y | VRH I 2622 <sup>1)</sup> | VRX I 652            | VRX I 1302           |
|---------------------------------------------|------------------------------------------|---------------------------------------------|--------------------------|----------------------|----------------------|
| Maximum rated through-current $I_{rm}$ [A]  | 650                                      | 1 300                                       | 2 600                    | 650                  | 1300                 |
| Rated short-time current [kA]               | 10                                       | 16                                          | 26                       | 10                   | 16                   |
| Rated duration of short-circuits [s]        | 3                                        | 3                                           | 3                        | 3                    | 3                    |
| Rated peak withstand current [kA]           | 25                                       | 40                                          | 65                       | 25                   | 40                   |
| Maximum rated step voltage $U_{irm}$ [V]    | 6 000                                    | 6 000                                       | 6 000                    | 12 000 <sup>2)</sup> | 12 000 <sup>2)</sup> |
| Step capacity $P_{stm}$ [kVA] <sup>3)</sup> | 3 000                                    | 6 000                                       | 12 000                   | 6 000                | 12 000               |
| Rated frequency [Hz]                        | 50...60                                  |                                             |                          |                      |                      |

<sup>1)</sup> Forced current splitting by two parallel winding branches required. Not for electrical arc furnace operation.  
<sup>2)</sup> Double the number of windings needed [► Section 2.4, Page 18]  
<sup>3)</sup> see step capacity diagram [► Section 2.3, Page 14]

Table 8: Electrical data for VACUTAP® VRH/VRX

#### Electrical data for VACUTAP® VR®, $I_{rm}$ 1 800...3 200 A, R-selector

| On-load tap-changer                         | VRL I 1801 | VRL I 2001 | VRL I 2401 | VRL I 2601 | VRL I 3001 | VRL I 3201 |
|---------------------------------------------|------------|------------|------------|------------|------------|------------|
| Maximum rated through-current $I_{rm}$ [A]  | 1 800      | 2 000      | 2 400      | 2 600      | 3 000      | 3 200      |
| Rated short-time current [kA]               | 20         | 24         | 24         | 26         | 30         | 32         |
| Rated duration of short-circuits [s]        | 3          | 3          | 3          | 3          | 3          | 3          |
| Rated peak withstand current [kA]           | 50         | 60         | 60         | 65         | 75         | 80         |
| Maximum rated step voltage $U_{irm}$ [V]    | 6 000      | 6 000      | 6 000      | 6 000      | 6 000      | 6 000      |
| Step capacity $P_{stm}$ [kVA] <sup>1)</sup> | 10 000     | 10 000     | 10 000     | 10 000     | 10 000     | 10 000     |
| Rated frequency [Hz]                        | 50...60    |            |            |            |            |            |

<sup>1)</sup> see step capacity diagram [► Section 2.3, Page 14]

Table 9: Electrical data for VACUTAP® VRL

#### Mechanical data for VACUTAP® VR®

|                               |                                                                                                                                             |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Number of operating positions | Without change-over selector: maximum 18<br>With change-over selector: maximum 35<br>With multiple coarse change-over selector: maximum 107 |
| Number of equipped sectors    | 1...3                                                                                                                                       |
| Selector sizes                | R selectors: RC, RD, RDE, RE, RF, RES, E<br>M selectors: B, C, D, DE                                                                        |
| Dimensions                    | See dimensional drawings [► Section 4.2, Page 49]                                                                                           |
| Weight                        |                                                                                                                                             |
| Displacement and oil volume   |                                                                                                                                             |

Table 10: Mechanical data for VACUTAP® VR®

## 2.2 Permissible ambient conditions

|                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Air temperature during operation                 | -25°C...+50°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Temperature of the insulating fluid in operation | -25°C...+105°C (up to +115°C when the transformer is in emergency operation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Transport temperature, storage temperature       | -40°C...+50°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Drying temperatures                              | See installation and commissioning instructions, "Mounting" chapter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Compressive strength                             | See technical data TD 61 – General section                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Insulating fluid                                 | <ul style="list-style-type: none"> <li>– Unused insulating oils derived from petroleum products<sup>1)</sup> in accordance with IEC60296 and ASTM D3487 (equivalent standards on request)</li> <li>– Unused insulating oils derived from other virgin hydrocarbons in accordance with IEC60296, or blends of these oils with petroleum products<sup>1)</sup> in accordance with IEC60296, ASTM D3487 or equivalent standards on request</li> <li>– Alternative insulating fluids, such as natural and synthetic esters or silicone oils, on request.</li> </ul> <p><sup>1)</sup> Gas-to-liquid oils (GTL oils) are understood in this context as petroleum products</p> |
| Installation height of the oil conservator       | See technical data TD 61 – General section                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Installation height above sea level              | See technical data TD 61 – General section                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

Table 11: Permissible ambient conditions

## 2.3 Step capacity diagrams

### 2.3.1 Step capacity diagrams for network application

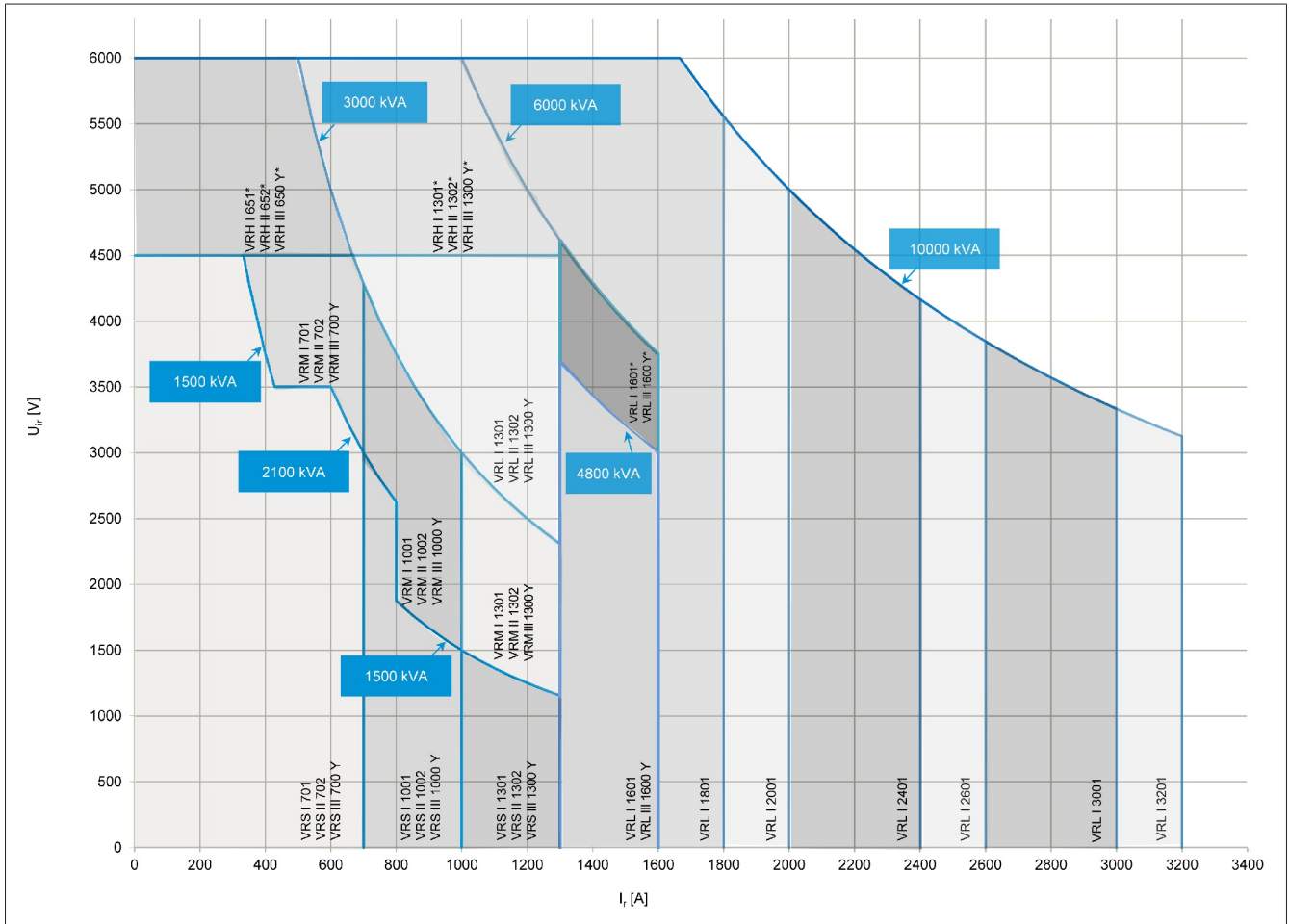


Figure 4: Step capacities (rated voltage  $U_{ir}$ , rated through-current  $I_r$ ), on-load tap-changer types marked with \* are only available on request.

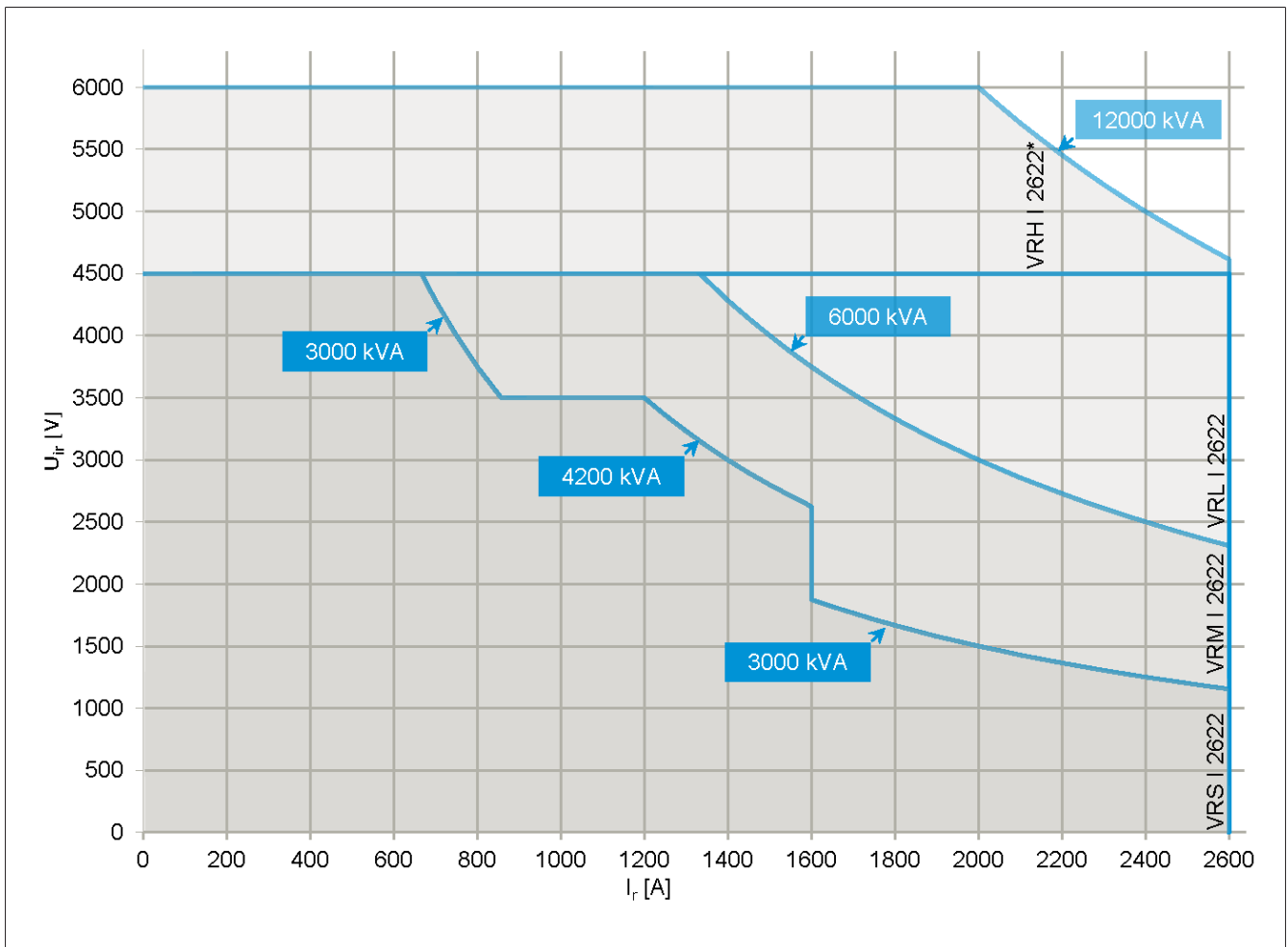


Figure 5: Step capacities (rated voltage  $U_{r,r}$ , rated through-current  $I_r$ ), on-load tap-changer types marked with \* are only available on request.

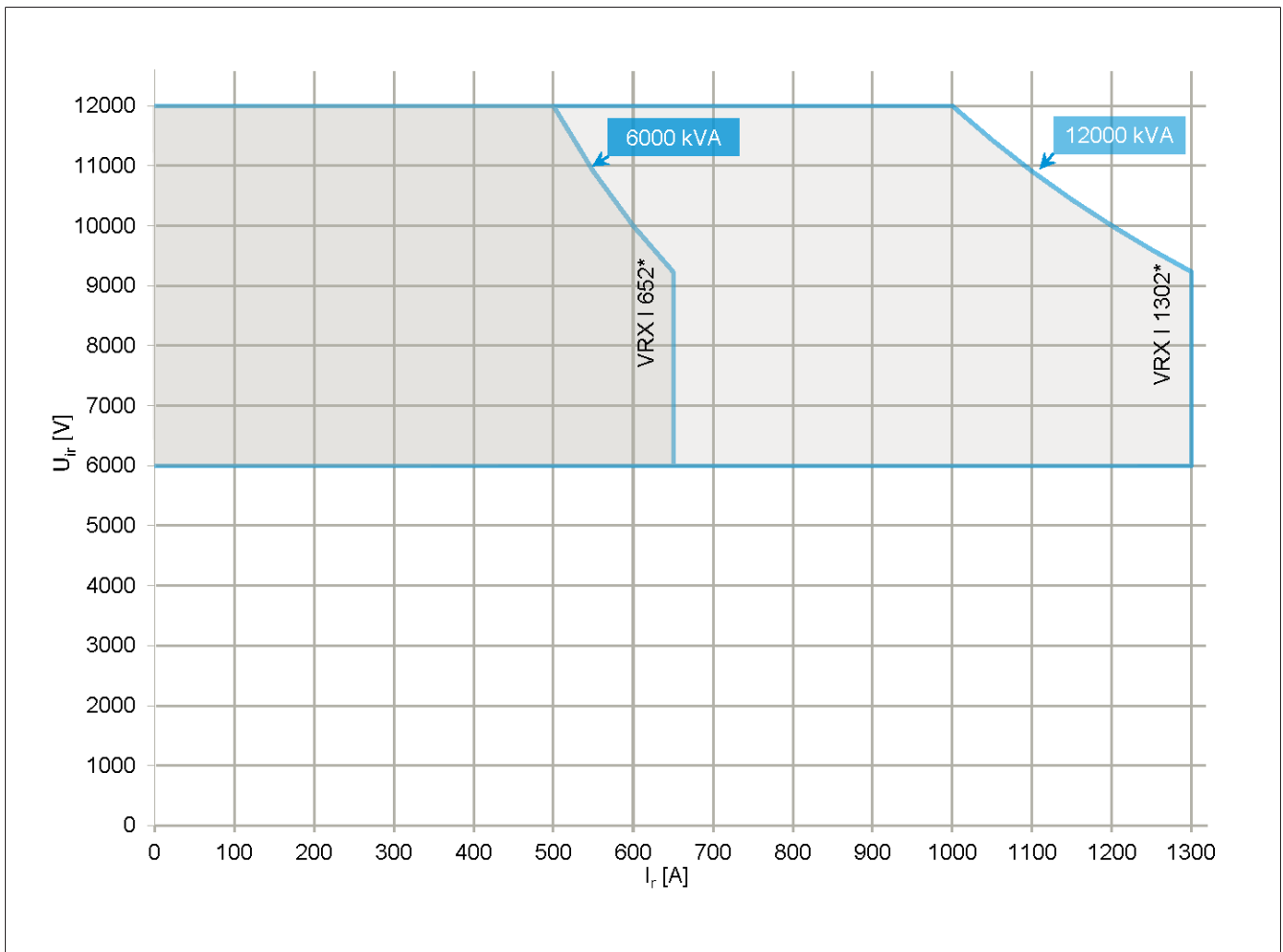


Figure 6: Step capacities (rated voltage  $U_{ir}$ , rated through-current  $I_r$ ), on-load tap-changer types marked with \* are only available on request.



### 2.3.2 Step capacity diagram for electrical arc furnace operation

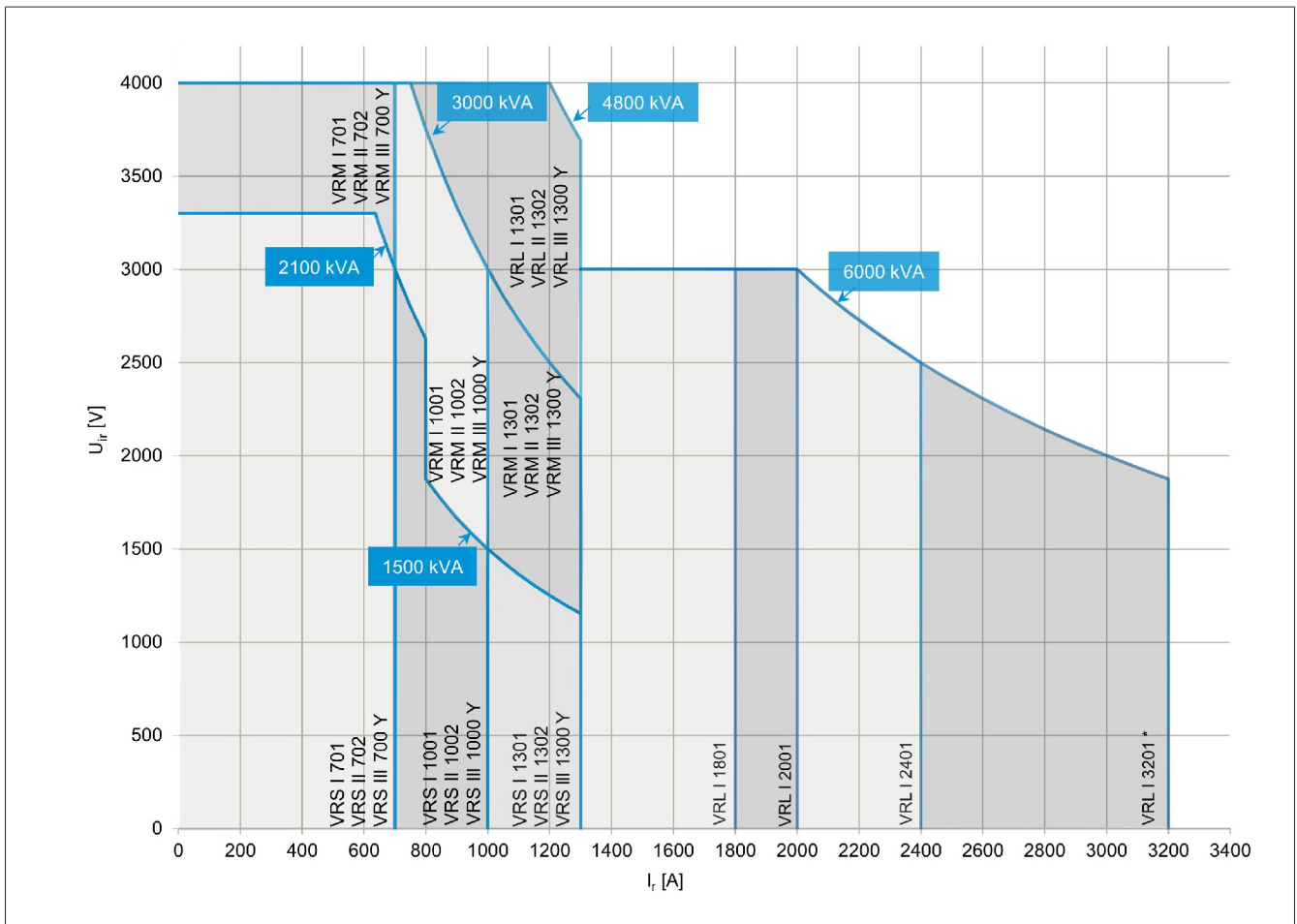


Figure 7: Step capacities (rated voltage  $U_{r,r}$ , rated through-current  $I_r$ ), on-load tap-changer types marked with \* are only available on request.

## 2.4 Permitted voltage stresses

This section describes the permitted voltage stresses on the on-load tap-changer.

When selecting the on-load tap-changer, you must check that the highest stresses do not exceed the related rated withstand voltages at the insulation distances.

### 2.4.1 Insulation distances (without multiple coarse change-over selector, without selector size RES)

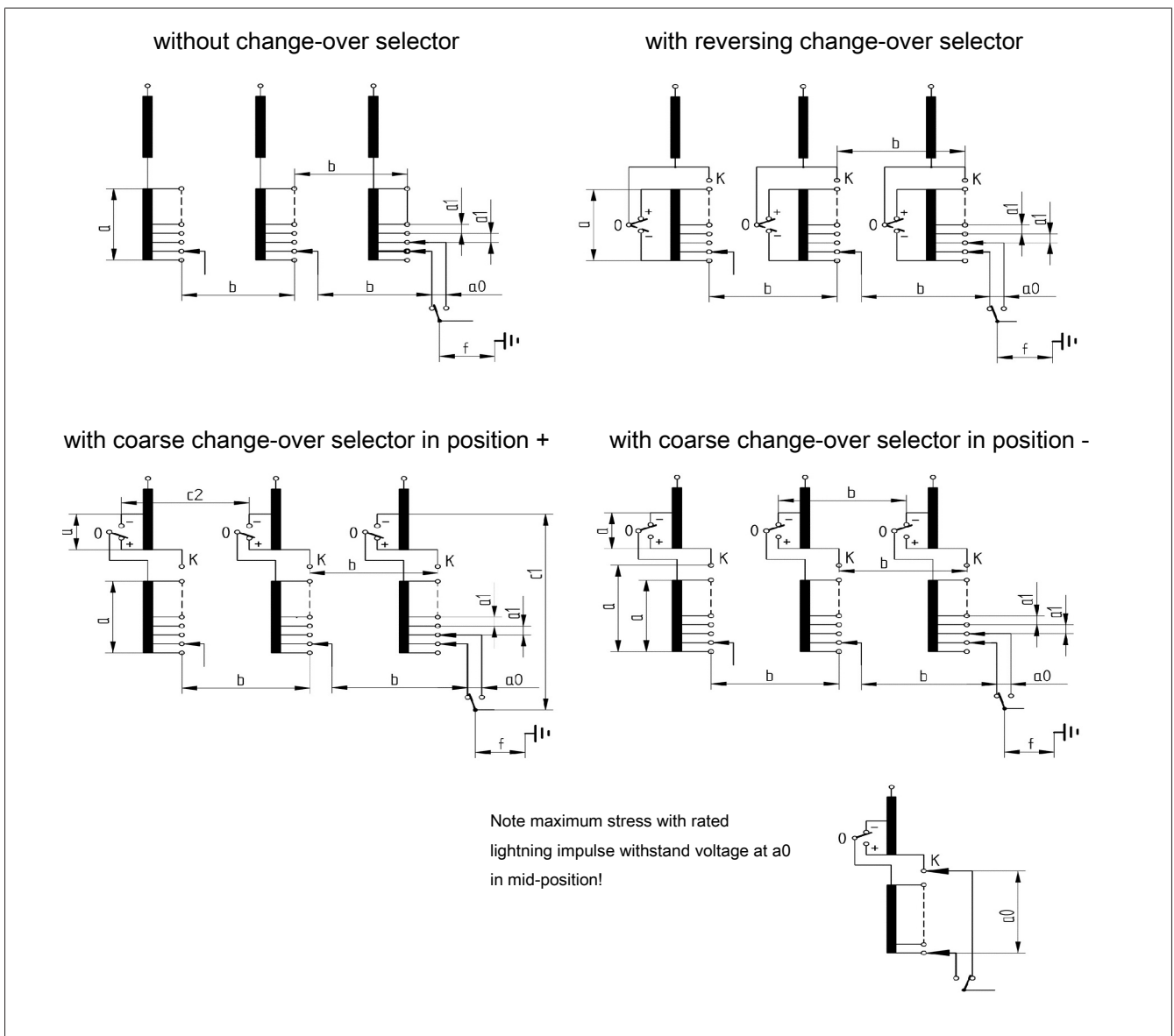


Figure 8: Insulation distances for selector sizes RC, RD, RDE, RE, RF and B, C, D, DE without multiple coarse change-over selector

|                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| a0                                                                                           | Between selected and preselected tap on the diverter switch                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| a1                                                                                           | Between tap selector contacts of the winding of one tap position (connected or not connected)                                                                                                                                                                                                                                                                                                                                                                                                  |
| a                                                                                            | Between beginning and end of a tap winding and, for a coarse winding model, also between beginning and end of a coarse winding.<br>Note for coarse tap selector connection in position (-) of the change-over selector:<br>Especially when stressed with impulse voltage, the permissible withstand voltage "a" between the end of a coarse winding connected with the K tap selector contact and the tap selector contact at the end of the tap winding of the same phase must be adhered to. |
| b                                                                                            | between the tap selector contacts of different phases and between change-over selector contacts of different phases, which are connected with the beginning/end of a tap winding or with a tap selector contact                                                                                                                                                                                                                                                                                |
| f                                                                                            | between diverter switch output terminal and ground                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Additionally for coarse tap selector connection in position (+) of the change-over selector: |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| c1                                                                                           | from one change-over selector contact (-) to take-off lead of the same phase                                                                                                                                                                                                                                                                                                                                                                                                                   |
| c2                                                                                           | between change-over selector contacts (-) of different phases                                                                                                                                                                                                                                                                                                                                                                                                                                  |

### Abbreviations for the rated insulation level:

|     |                                                       |
|-----|-------------------------------------------------------|
| LI  | Full wave lightning impulse (kV, 1.2/50 $\mu$ s)      |
| LIC | Chopped wave lightning impulse (kV, 1.2/50/3 $\mu$ s) |
| SI  | Switching impulse voltage (kV, 250/2500 $\mu$ s)      |
| AC  | Applied voltage (kV, 50 Hz, 1 min)                    |

### Rated insulation level on diverter switch

| Insulation distance f |       |       |       |     |
|-----------------------|-------|-------|-------|-----|
| $U_m$ <sup>1)</sup>   | LI    | LIC   | SI    | AC  |
| 72.5                  | 350   | 385   | -     | 140 |
| 123                   | 550   | 605   | 460   | 230 |
| 170                   | 750   | 825   | 620   | 325 |
| 245                   | 1 050 | 1 155 | 850   | 460 |
| 300 <sup>2)</sup>     | 1 050 | 1 155 | 850   | 460 |
| 362 <sup>2)</sup>     | 1 175 | 1 290 | 950   | 510 |
| 420 <sup>3)</sup>     | 1 425 | 1 570 | 1 175 | 630 |

Table 12: Rated insulation level on diverter switch

<sup>1)</sup> In accordance with IEC 60214-1: highest effective value for phase-to-phase voltage in a three-phase system for which an on-load tap-changer is designed with respect to its insulation.

<sup>2)</sup> Only single-phase on-load tap-changers and two-phase on-load tap-changers

<sup>3)</sup> Only single-phase on-load tap-changers

### Rated insulation level of inner insulation on the R selector (without selector size RES)

The admissible maximum operating voltage on the individual selector distances corresponds to half the value of the values listed below for applied voltage (AC).

| Insulation distance |     | Selector size     |     |     |       |       |     |
|---------------------|-----|-------------------|-----|-----|-------|-------|-----|
|                     |     | RC                | RD  | RDE | RE    | RF    | E   |
| a0                  | LI  | 150 <sup>2)</sup> |     |     |       |       |     |
|                     | LIC | 165 <sup>2)</sup> |     |     |       |       |     |
|                     | SI  | 100 <sup>2)</sup> |     |     |       |       |     |
|                     | AC  | 20                |     |     |       |       |     |
| a1                  | LI  | 150               |     |     |       |       |     |
|                     | LIC | 165               |     |     |       |       |     |
|                     | SI  | 100               |     |     |       |       |     |
|                     | AC  | 30                |     |     |       |       |     |
| a                   | LI  | 400               | 500 | 550 | 670   | 670   | 670 |
|                     | LIC | 440               | 550 | 605 | 735   | 735   | 735 |
|                     | SI  | 260               | 325 | 355 | 435   | 435   | 435 |
|                     | AC  | 100               | 145 | 165 | 220   | 220   | 180 |
| b1 <sup>1)</sup>    | LI  | 400               | 500 | 550 | 670   | 670   | 670 |
|                     | LIC | 440               | 550 | 605 | 735   | 735   | 735 |
|                     | SI  | 260               | 325 | 355 | 435   | 435   | 435 |
|                     | AC  | 120               | 160 | 180 | 220   | 280   | 180 |
| c1                  | LI  | 550               | 590 | 660 | 900   | 900   | 820 |
|                     | LIC | 605               | 645 | 725 | 990   | 990   | 900 |
|                     | SI  | 355               | 385 | 430 | 585   | 585   | 535 |
|                     | AC  | 180               | 210 | 250 | 320   | 320   | 250 |
| c2 <sup>1)</sup>    | LI  | 550               | 590 | 660 | 930   | 1 000 | 820 |
|                     | LIC | 605               | 645 | 725 | 1 020 | 1 100 | 900 |
|                     | SI  | 355               | 385 | 528 | 605   | 650   | 535 |
|                     | AC  | 195               | 230 | 280 | 340   | 370   | 280 |

Table 13: Rated insulation level of inner insulation on the R selector

<sup>1)</sup> not applicable to single-phase on-load tap-changer

<sup>2)</sup> varistor response voltage at 1.2/50  $\mu$ s lightning impulse: starting at 45 kV ( $U_{100\%}(t)_{\text{standardized}} \neq U_{75\%}(t)_{\text{standardized}}$ ), residual voltage at 3 kA peak withstand current: 56 kV

### Rated insulation level of inner insulation on the M selector (without multiple coarse change-over selector)

The admissible maximum operating voltage on the individual selector distances corresponds to half the value of the values listed below for applied voltage (AC).

| Insulation distance |     | Selector size     |     |     |     |
|---------------------|-----|-------------------|-----|-----|-----|
|                     |     | B                 | C   | D   | DE  |
| a0                  | LI  | 150 <sup>2)</sup> |     |     |     |
|                     | LIC | 165 <sup>2)</sup> |     |     |     |
|                     | SI  | 100 <sup>2)</sup> |     |     |     |
|                     | AC  | 20                |     |     |     |
| a1                  | LI  | 150               |     |     |     |
|                     | LIC | 165               |     |     |     |
|                     | SI  | 100               |     |     |     |
|                     | AC  | 30                |     |     |     |
| a                   | LI  | 265               | 350 | 490 | 550 |
|                     | LIC | 295               | 385 | 540 | 605 |
|                     | SI  | 175               | 230 | 320 | 360 |
|                     | AC  | 50                | 82  | 105 | 120 |
| b1 <sup>1)</sup>    | LI  | 265               | 350 | 490 | 550 |
|                     | LIC | 295               | 385 | 540 | 605 |
|                     | SI  | 175               | 230 | 320 | 360 |
|                     | AC  | 50                | 82  | 146 | 160 |
| c1                  | LI  | 485               | 545 | 590 | 660 |
|                     | LIC | 535               | 600 | 650 | 725 |
|                     | SI  | 315               | 355 | 385 | 430 |
|                     | AC  | 143               | 178 | 208 | 230 |
| c2 <sup>1)</sup>    | LI  | 495               | 550 | 590 | 660 |
|                     | LIC | 545               | 605 | 650 | 725 |
|                     | SI  | 325               | 360 | 385 | 430 |
|                     | AC  | 150               | 182 | 225 | 250 |

Table 14: Rated insulation level of inner insulation on the M selector

<sup>1)</sup> not applicable to single-phase on-load tap-changer

<sup>2)</sup> varistor response voltage at 1.2/50  $\mu$ s lightning impulse: starting at 45 kV ( $U_{100\%}(t)_{\text{standardized}} \neq U_{75\%}(t)_{\text{standardized}}$ ), residual voltage at 3 kA peak withstand current: 56 kV

## 2.4.2 Insulation distances for selector sizes B, C, D with multiple coarse change-over selector

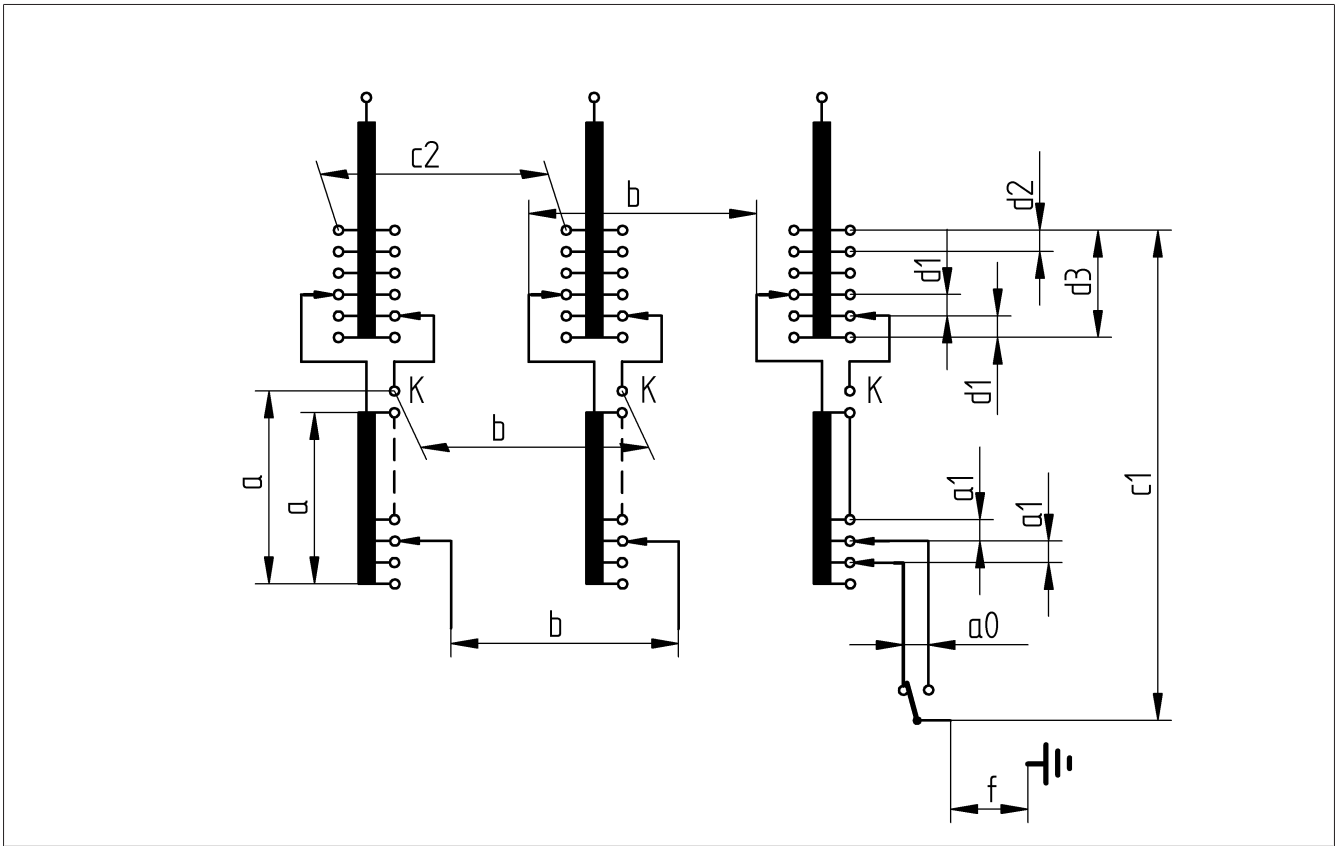


Figure 9: Insulation distances for selector sizes B, C, D with multiple coarse change-over selector

|    |                                                                                                                                                              |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| a0 | between selected and preselected tap on the diverter switch                                                                                                  |
| a1 | between tap selector contacts of the winding of one tap position (connected or not connected)                                                                |
| a  | between beginning and end of a tapped winding and between the connected K contact and any points of the tapped winding of the same phase                     |
| b  | between the tap selector contacts of different phases and between the connected K contact of one phase and any points of the tapped winding of another phase |
| c1 | between any coarse tapplings of one phase to the diverter switch output terminal of the same phase                                                           |
| c2 | between identically-named, unconnected coarse tapplings of different phases                                                                                  |
| d1 | between connected and adjacent coarse tap contacts in one phase                                                                                              |
| d2 | between unconnected, adjacent coarse tap contacts in one phase                                                                                               |
| d3 | between beginning and end of all coarse tap connections of one phase                                                                                         |
| f  | between diverter switch output terminal and ground                                                                                                           |

Insulation distance f see Rated insulation level on diverter switch [► Page 19].

### Rated insulation level of inner insulation on the M selector with multiple coarse change-over selector

The admissible maximum operating voltage on the individual selector distances corresponds to half the value of the values listed below for applied voltage (AC).

| Insulation distance |         | Selector size     |     |     |
|---------------------|---------|-------------------|-----|-----|
|                     |         | B                 | C   | D   |
| a0                  | LI      | 150 <sup>2)</sup> |     |     |
|                     | LIC     | 165 <sup>2)</sup> |     |     |
|                     | SI      | 100 <sup>2)</sup> |     |     |
|                     | AC      | 20                |     |     |
| a1                  | LI      | 150               |     |     |
|                     | LIC, SI | Values on request |     |     |
|                     | AC      | 30                |     |     |
| a                   | LI      | 265               | 350 | 450 |
|                     | LIC, SI | Values on request |     |     |
|                     | AC      | 50                | 82  | 105 |
| b <sup>1)</sup>     | LI      | 265               | 350 | 450 |
|                     | LIC, SI | Values on request |     |     |
|                     | AC      | 50                | 82  | 146 |
| c1                  | LI      | 455               | 525 | 590 |
|                     | LIC, SI | Values on request |     |     |
|                     | AC      | 127               | 165 | 210 |
| c2 <sup>1)</sup>    | LI      | 455               | 525 | 590 |
|                     | LIC, SI | Values on request |     |     |
|                     | AC      | 127               | 165 | 215 |
| d1                  | LI      | 265               | 350 | 450 |
|                     | LIC, SI | Values on request |     |     |
|                     | AC      | 50                | 82  | 105 |
| d2                  | LI      | 350               | 450 | 450 |
|                     | LIC, SI | Values on request |     |     |
|                     | AC      | 82                | 105 | 105 |
| d3                  | LI      | 350               | 450 | 490 |
|                     | LIC, SI | Values on request |     |     |
|                     | AC      | 82                | 105 | 120 |

Table 15: Rated insulation level of inner insulation on the M selector with multiple coarse change-over selector

<sup>1)</sup> not applicable to single-phase on-load tap-changer

<sup>2)</sup> varistor response voltage at 1.2/50  $\mu$ s lightning impulse: starting at 45 kV ( $U_{100\%}(t)_{\text{standardized}} \neq U_{75\%}(t)_{\text{standardized}}$ ), residual voltage at 3 kA peak withstand current: 70 kV

### 2.4.3 Insulation distances for selector size RES

#### Insulation distances reversing change-over selector

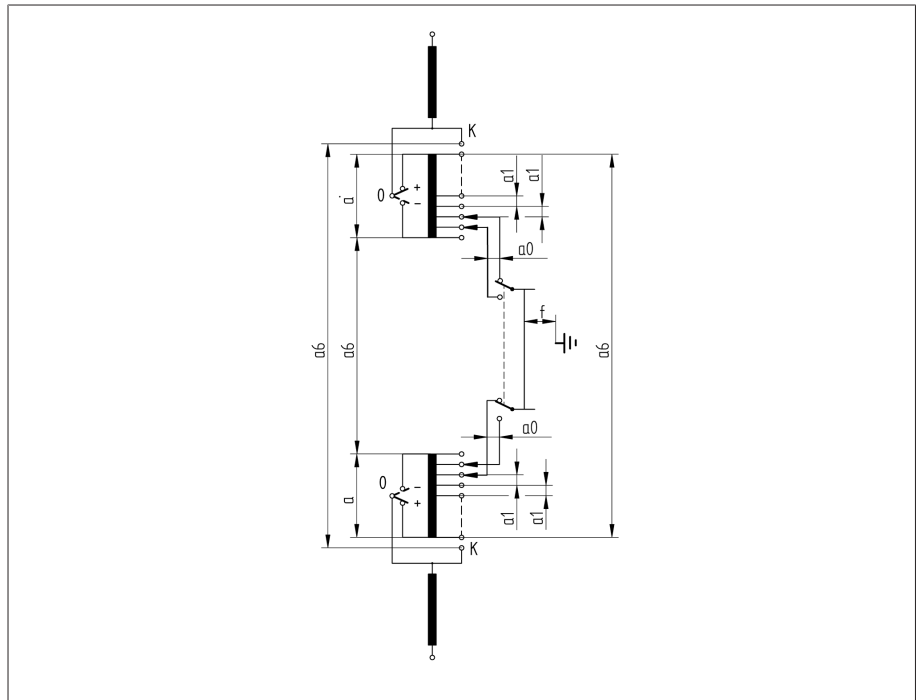


Figure 10: Insulation distances reversing change-over selector RES

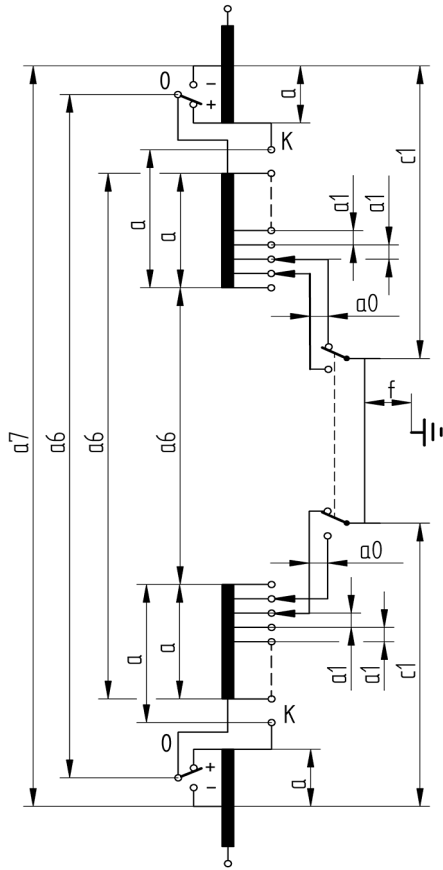
|    |                                                                                                                                                                                                                                |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| a0 | between selected and preselected tap on the diverter switch                                                                                                                                                                    |
| a1 | between tap selector contacts of the winding of one tap position (connected or not connected)                                                                                                                                  |
| a  | between start and end of a tapped winding                                                                                                                                                                                      |
| a6 | between the tap selector contacts of different tap windings and between change-over selector contacts of different tap windings, which are connected with the beginning/end of a tapped winding or with a tap selector contact |
| f  | between diverter switch output terminal and ground                                                                                                                                                                             |

Insulation distance f see Rated insulation level on diverter switch [► Page 19].

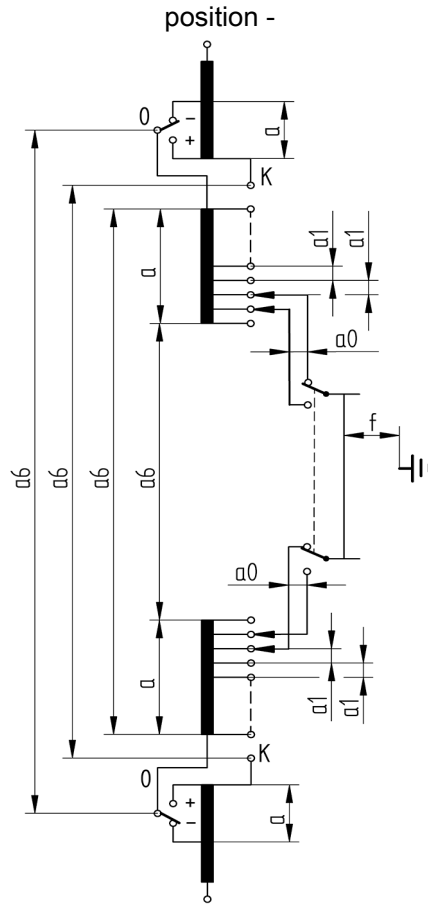


## Insulation distances coarse change-over selector

with coarse change-over selector in position +



with coarse change-over selector in position -



Note maximum stress with rated lightning impulse withstand voltage at  $a_0$  in mid-position!

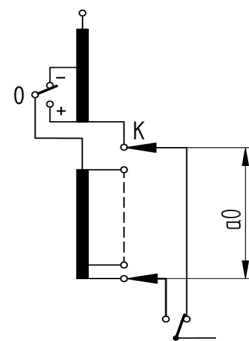


Figure 11: Insulation distances coarse change-over selector RES

|                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| a0                                                                                           | between selected and preselected tap on the diverter switch                                                                                                                                                                                                                                                                                                                                                                                                       |
| a1                                                                                           | between tap selector contacts of the winding of one tap position (connected or not connected)                                                                                                                                                                                                                                                                                                                                                                     |
| a                                                                                            | between beginning and end of a tapped winding and between beginning and end of a coarse winding<br>Note for coarse tap selector connection in position (-) of the change-over selector:<br>When stressed with impulse voltage, the permissible withstand voltage "a" between the end of a coarse winding connected with the K tap selector contact and the tap selector contact at the end of the associated tapped winding of the same phase must be adhered to. |
| a6                                                                                           | between the tap selector contacts of different tap windings and between change-over selector contacts of different coarse windings, which are connected with the beginning/end of a tapped winding or with a tap selector contact                                                                                                                                                                                                                                 |
| f                                                                                            | between diverter switch output terminal and ground                                                                                                                                                                                                                                                                                                                                                                                                                |
| Additionally for coarse tap selector connection in position (+) of the change-over selector: |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| c1                                                                                           | from one change-over selector contact (-) to take-off lead                                                                                                                                                                                                                                                                                                                                                                                                        |
| a7                                                                                           | between change-over selector contacts (-)                                                                                                                                                                                                                                                                                                                                                                                                                         |

Insulation distance f see Rated insulation level on diverter switch [► Page 19].

### Rated insulation level of inner insulation on the selector size RES

The admissible maximum operating voltage on the individual selector distances corresponds to half the value of the values listed below for applied voltage (AC).

| Insulation distance |     | Selector size     | Insulation distance |     | Selector size |
|---------------------|-----|-------------------|---------------------|-----|---------------|
|                     |     | RES               |                     |     | RES           |
| a0                  | LI  | 150 <sup>1)</sup> | a6                  | LI  | 1 000         |
|                     | LIC | 165 <sup>1)</sup> |                     | LIC | 1 100         |
|                     | SI  | 100 <sup>1)</sup> |                     | SI  | 650           |
|                     | AC  | 20                |                     | AC  | 400           |
| a1                  | LI  | 150               | a7                  | LI  | 1 200         |
|                     | LIC | 165               |                     | LIC | 1 320         |
|                     | SI  | 100               |                     | SI  | 780           |
|                     | AC  | 30                |                     | AC  | 500           |
| a                   | LI  | 670               | c1                  | LI  | 900           |
|                     | LIC | 735               |                     | LIC | 990           |
|                     | SI  | 435               |                     | SI  | 585           |
|                     | AC  | 220               |                     | AC  | 320           |

Table 16: Rated insulation level of inner insulation on the R selector

<sup>1)</sup> varistor response voltage at 1.2/50 µs lightning impulse: starting at 45 kV ( $U_{100\%}(t)_{\text{standardized}} \neq U_{75\%}(t)_{\text{standardized}}$ ), residual voltage at 3 kA peak withstand current: 56 kV

## 2.5 Realizable connections

### Realizable connections for VACUTAP® VR with R selector, selector sizes RC/RD/RDE/RE/RF

The connections listed below can also be realized for change-over selectors with reversing change-over selectors and 3 mid-positions (3W) and for change-over selectors with coarse tap connection and 3 mid-positions (3G).

| Without change-over selector |                 | With reversing change-over selector |                 | With coarse change-over selector |                 |
|------------------------------|-----------------|-------------------------------------|-----------------|----------------------------------|-----------------|
| Tap-change operation         | Selector size   | Tap-change operation                | Selector size   | Tap-change operation             | Selector size   |
| 10050                        | RC/RD/RDE/RE/RF | 10071W                              | RC/RD/RDE       | 10071G                           | RC/RD/RDE       |
| 10060                        | RC/RD/RDE/RE/RF | 10081W                              | RC/RD/RDE       | 10081G                           | RC/RD/RDE       |
| 10070                        | RC/RD/RDE/RE/RF | 10091W                              | RC/RD/RDE       | 10091G                           | RC/RD/RDE       |
| 10080                        | RC/RD/RDE/RE/RF | 12101W                              | RC/RD/RDE       | 12101G                           | RC/RD/RDE       |
| 10090                        | RC/RD/RDE/RE/RF | 14111W                              | RC/RD/RDE       | 14111G                           | RC/RD/RDE       |
| 10100                        | RC/RD/RDE/RE/RF | 14121W                              | RC/RD/RDE       | 14121G                           | RC/RD/RDE       |
| 12110                        | RC/RD/RDE/RE/RF | 16131W                              | RC/RD/RDE       | 16131G                           | RC/RD/RDE       |
| 12120                        | RC/RD/RDE/RE/RF | 16141W                              | RC/RD/RDE       | 16141G                           | RC/RD/RDE       |
| 14130                        | RC/RD/RDE/RE/RF | 18151W                              | RC/RD/RDE       | 18151G                           | RC/RD/RDE       |
| 14140                        | RC/RD/RDE/RE/RF | 18161W                              | RC/RD/RDE       | 18161G                           | RC/RD/RDE       |
| 16150                        | RC/RD/RDE/RE/RF | 10191W                              | RC/RD/RDE/RE/RF | 10191G                           | RC/RD/RDE/RE/RF |
| 16160                        | RC/RD/RDE/RE/RF | 12231W                              | RC/RD/RDE/RE/RF | 12231G                           | RC/RD/RDE/RE/RF |
| 18170                        | RC/RD/RDE/RE/RF | 14271W                              | RC/RD/RDE/RE/RF | 14271G                           | RC/RD/RDE/RE/RF |
| 18180                        | RC/RD/RDE/RE/RF | 16311W                              | RC/RD/RDE/RE/RF | 16311G                           | RC/RD/RDE/RE/RF |
|                              |                 | 18351W                              | RC/RD/RDE/RE/RF | 18351G                           | RC/RD/RDE/RE/RF |

Table 17: Realizable connections for VACUTAP® VR with R selector, selector sizes RC/RD/RDE/RE/RF

Selector according to connection 12111W(G) is realized as 14111W(G).

Selector according to connection 14131W(G) is realized as 16131W(G).

Selector according to connection 16151W(G) is realized as 18151W(G).

Selector according to connection 18171W(G) cannot be realized.

Selector size RES is available for design 3W/3G only and can be realized for connections 10193W(G)–18353W(G).

### Realizable connections for VACUTAP® VR with R selector, selector size E

| With reversing change-over selector |               | With coarse change-over selector |               |
|-------------------------------------|---------------|----------------------------------|---------------|
| Tap-change operation                | Selector size | Tap-change operation             | Selector size |
| 10071W                              | E             | 10071G                           | E             |
| 10081W                              | E             | 10081G                           | E             |

| With reversing change-over selector |   | With coarse change-over selector |   |
|-------------------------------------|---|----------------------------------|---|
| 10091W                              | E | 10091G                           | E |
| 12101W                              | E | 12101G                           | E |
| 12111W                              | E | 12111G                           | E |
| 14121W                              | E | 14121G                           | E |
| 14131W                              | E | 14131G                           | E |
| 16141W                              | E | 16141G                           | E |
| 18151W                              | E | 18151G                           | E |
| 18161W                              | E | 18161G                           | E |
| 10191W                              | E | 10191G                           | E |
| 12231W                              | E | 12231G                           | E |
| 14271W                              | E | 14271G                           | E |
| 16311W                              | E | 16311G                           | E |
| 18351W                              | E | 18351G                           | E |

Table 18: Realizable connections for VACUTAP® VR with R selector, selector size E

Selector according to connection 10091W is realized as 18091W.

Selector according to connection 12111W is realized as 18111W.

Selector according to connection 14131W is realized as 18131W.

#### Realizable connections for VACUTAP® VR with M selector, selector sizes B/C/D/DE

The connections listed below can also be realized for change-over selectors with reversing change-over selectors and 3 mid-positions (3W) and for change-over selectors with coarse tap connection and 3 mid-positions (3G).

| Without change-over selector |               | With reversing change-over selector |               | With coarse change-over selector |               |
|------------------------------|---------------|-------------------------------------|---------------|----------------------------------|---------------|
| Tap-change operation         | Selector size | Tap-change operation                | Selector size | Tap-change operation             | Selector size |
| 10050                        | B/C/D/DE      | 10071W                              | B/C/D/DE      | 10071G                           | B/C/D/DE      |
| 10060                        | B/C/D/DE      | 10081W                              | B/C/D/DE      | 10081G                           | B/C/D/DE      |
| 10070                        | B/C/D/DE      | 10091W                              | B/C/D/DE      | 10091G                           | B/C/D/DE      |
| 10080                        | B/C/D/DE      | 12101W                              | B/C/D/DE      | 12101G                           | B/C/D/DE      |
| 10090                        | B/C/D/DE      | 12111W                              | B/C           | 12111G                           | B/C           |
| 10100                        | B/C/D/DE      | 14111W                              | D/DE          | 14111G                           | D/DE          |
| 12110                        | B/C/D/DE      | 14121W                              | B/C           | 14121G                           | B/C           |
| 12120                        | B/C/D/DE      | 14131W                              | B/C           | 14131G                           | B/C           |
| 14130                        | B/C/D/DE      | 16121W                              | D/DE          | 16121G                           | D/DE          |
| 14140                        | B/C/D/DE      | 16131W                              | D/DE          | 16131G                           | D/DE          |
| 16150                        | B/C/D/DE      | 16141W                              | B/C/D/DE      | 16141G                           | B/C/D/DE      |
| 16160                        | B/C/D/DE      | 16151W                              | B/C           | 16151G                           | B/C           |
| 18170                        | B/C/D/DE      | 18151W                              | D/DE          | 18151G                           | D/DE          |

| Without change-over selector |               | With reversing change-over selector |               | With coarse change-over selector |               |
|------------------------------|---------------|-------------------------------------|---------------|----------------------------------|---------------|
| Tap-change operation         | Selector size | Tap-change operation                | Selector size | Tap-change operation             | Selector size |
| 18180                        | B/C/D/DE      | 18161W                              | B/C           | 18161G                           | B/C           |
|                              |               | 18171W                              | B/C           | 18171G                           | B/C           |
|                              |               | 10191W                              | B/C/D/DE      | 10191G                           | B/C/D/DE      |
|                              |               | 12231W                              | B/C/D/DE      | 12231G                           | B/C/D/DE      |
|                              |               | 14271W                              | B/C/D/DE      | 14271G                           | B/C/D/DE      |
|                              |               | 16311W                              | B/C/D/DE      | 16311G                           | B/C/D/DE      |
|                              |               | 18351W                              | B/C/D/DE      | 18351G                           | B/C/D/DE      |

Table 19: Realizable connections for VACUTAP® VR with M selector, selector sizes B/C/D/DE

## 2.6 Tapped winding potential connection

During its switching operation the tap winding is briefly electrically isolated from the main winding by the reversing change-over selector or coarse change-over selector. It then adopts a potential resulting from the voltages of the adjacent windings and coupling capacities for these windings or earthed parts.

This potential shift of the tap winding produces corresponding voltages between the deactivating change-over selector contacts because one contact is always connected to the tap winding and the other contact is always connected to the main winding. This voltage is known as the recovery voltage  $U_w$ .

When separating the change-over selector contacts, a capacitive current has to be interrupted. This current depends on the aforementioned coupling capacities of the tap winding. This current is known as the breaking current  $I_s$ .

The recovery voltage  $U_w$  and breaking current  $I_s$  may result in impermissible signs of discharge on the change-over selector. The permissible recovery voltage  $U_w$  and breaking current  $I_s$  ranges are listed below.

### 2.6.1 Recovery voltage and breaking current for R selector

The "Active Gas Inhibition System" (AGIS) reduces the amount of gas that arises during a change-over selector operation. For more information about recovery voltage and breaking current, see Technical Data TD 61 - General Part.

#### Recovery voltage $U_w$ and breaking current $I_s$ without tie-in resistor

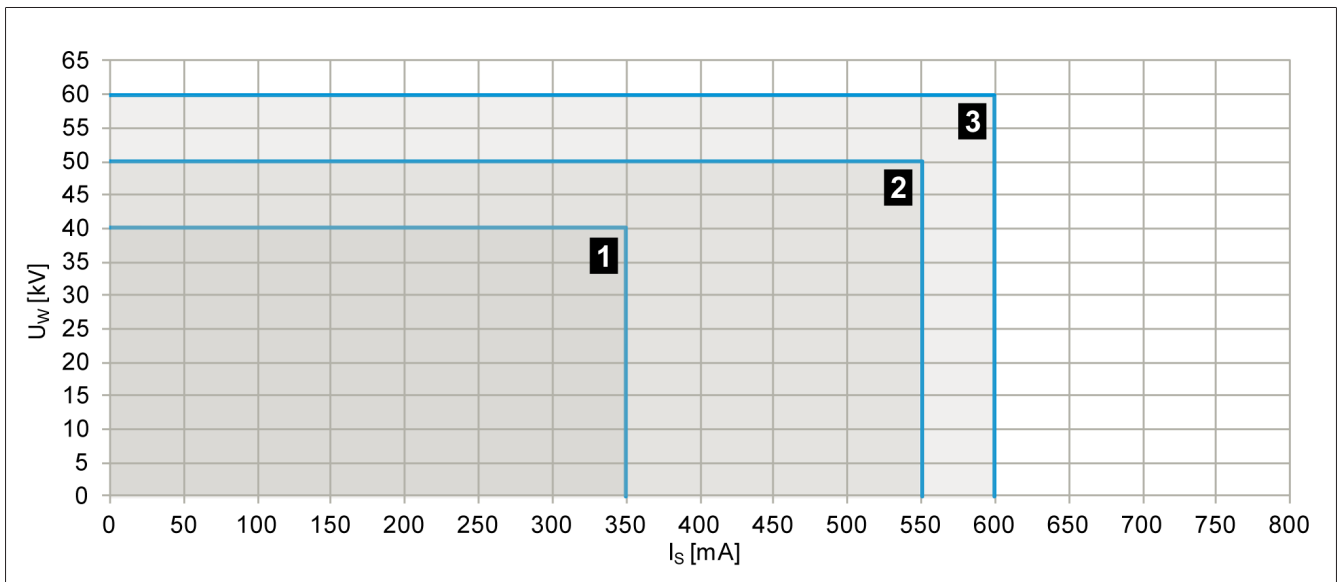


Figure 12: Guide values for  $U_w$  and  $I_s$  without tie-in resistor  $R_p$  for selector sizes RC, RD, RDE, RE, RF, RES

|   |                                                      |   |                                     |
|---|------------------------------------------------------|---|-------------------------------------|
| 1 | Selector size RC, RD, RDE without AGIS               | 2 | Selector size RC, RD, RDE with AGIS |
| 3 | Selector size RE, RF, RES (only available with AGIS) |   |                                     |

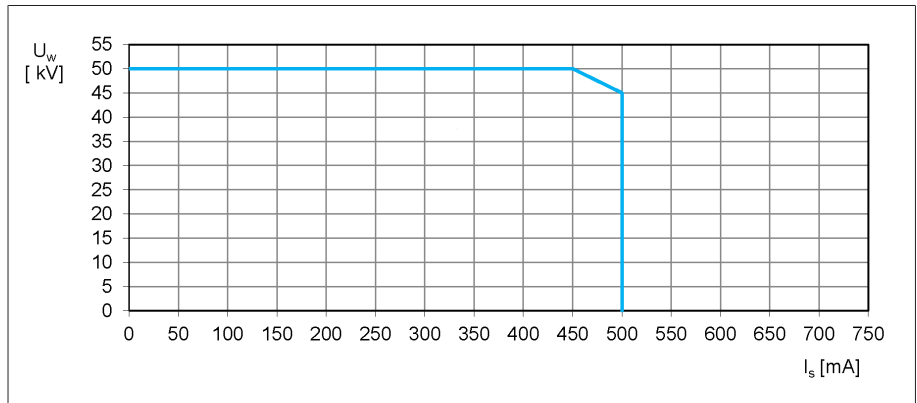


Figure 13: Guide values for  $U_w$  and  $I_s$  without tie-in resistor  $R_p$  for selector size E

### Recovery voltage $U_w$ and breaking current $I_s$ with tie-in resistor

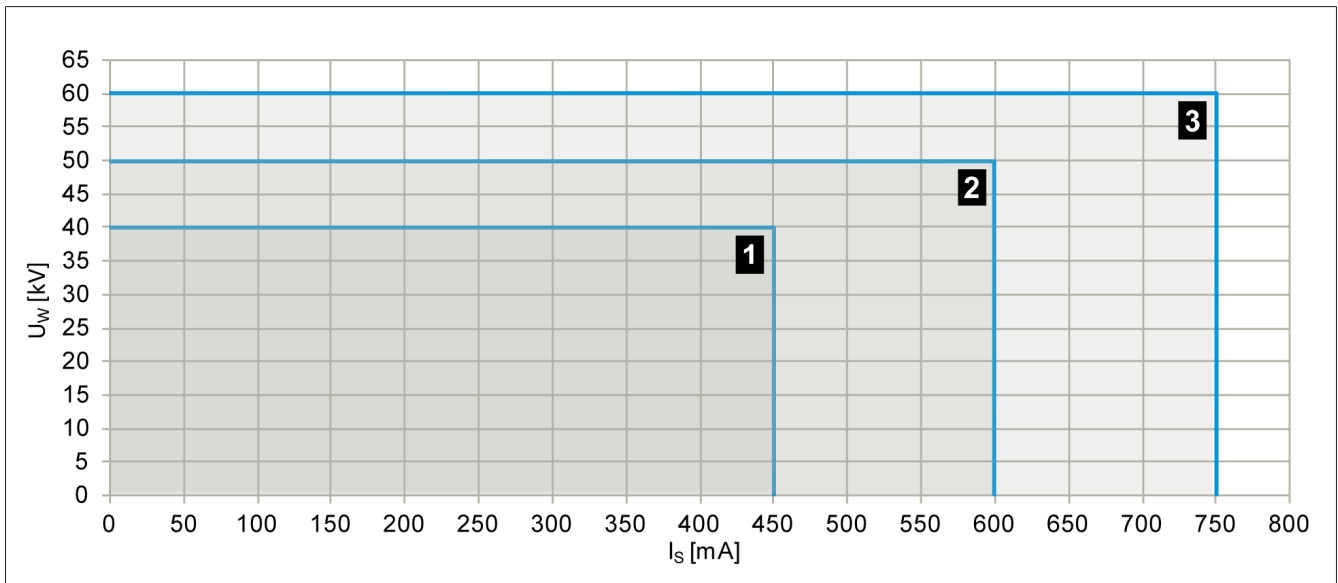


Figure 14: Guide values for  $U_w$  and  $I_s$  with tie-in resistor  $R_p$  for selector sizes RC, RD, RDE, RE, RF, RES

|   |                                                      |   |                                     |
|---|------------------------------------------------------|---|-------------------------------------|
| 1 | Selector size RC, RD, RDE without AGIS               | 2 | Selector size RC, RD, RDE with AGIS |
| 3 | Selector size RE, RF, RES (only available with AGIS) |   |                                     |

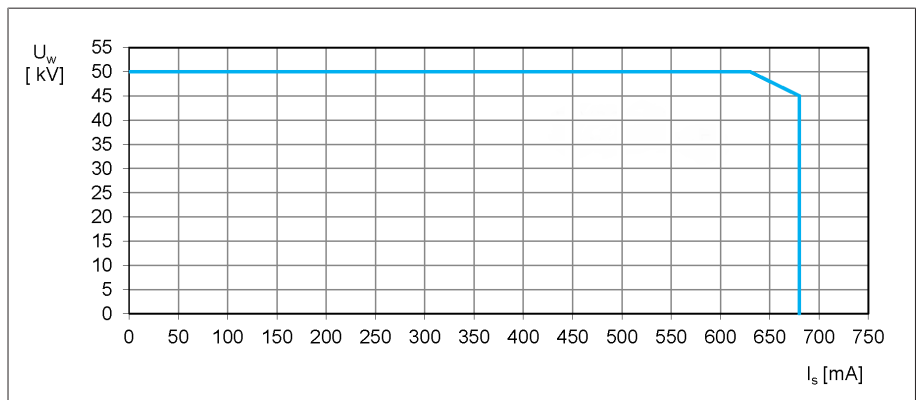


Figure 15: Guide values for  $U_w$  and  $I_s$  with tie-in resistor  $R_p$  for selector size E

## 2.6.2 Recovery voltage and breaking current for M selector

For more information about recovery voltage and breaking current, see Technical Data TD 61 - General Part.

### Recovery voltage $U_w$ and breaking current $I_s$ without tie-in resistor

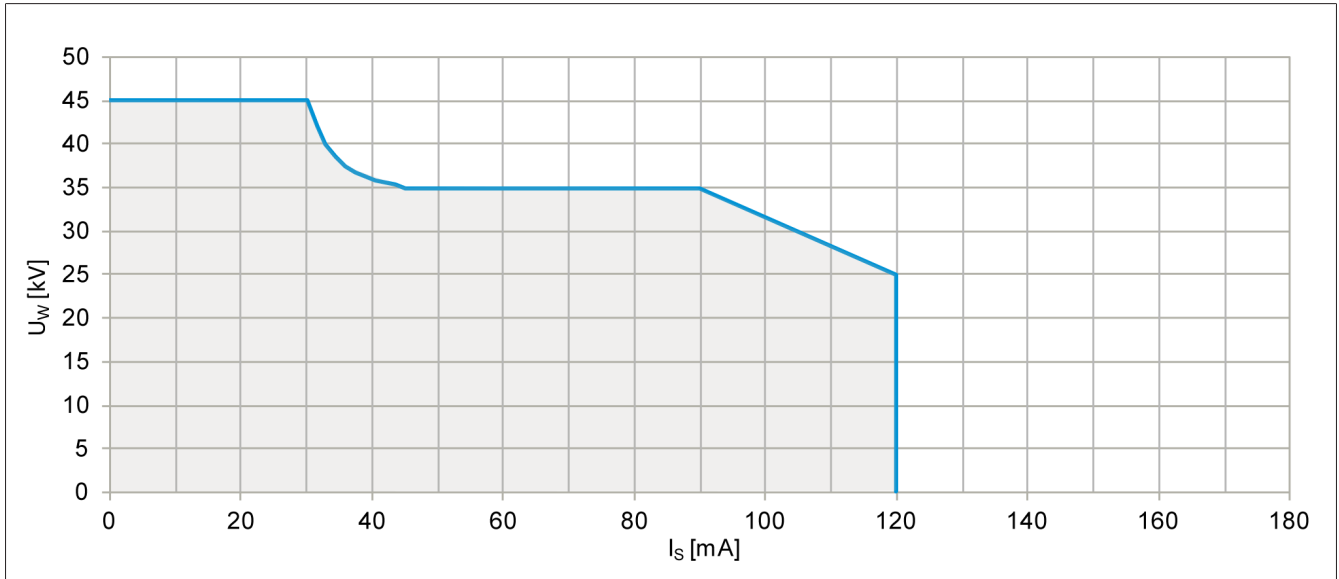


Figure 16: Guide values for  $U_w$  and  $I_s$  without tie-in resistor  $R_p$  for selector sizes B, C, D, DE

### Recovery voltage $U_w$ and breaking current $I_s$ with tie-in resistor

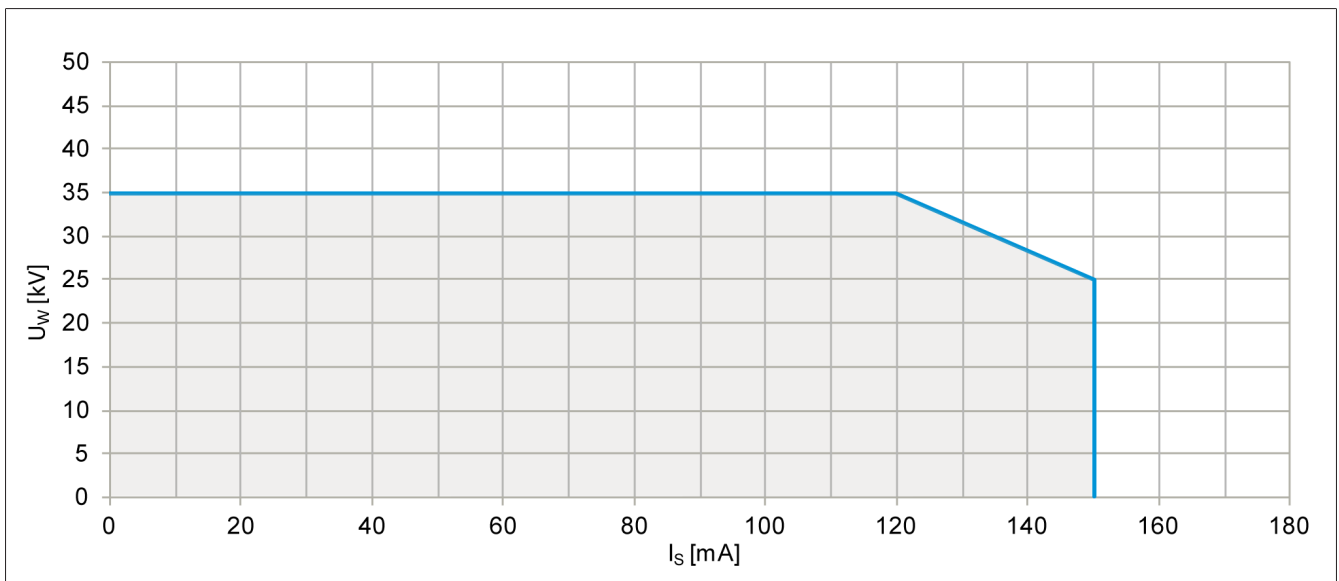


Figure 17: Guide values for  $U_w$  and  $I_s$  with tie-in resistor  $R_p$  for selector sizes B, C, D, DE



# 3 Special designs

## 3.1 On-load tap-changer combination for delta connection

Single-phase on-load tap-changers can be combined with two-phase on-load tap-changers to set the voltage of transformer windings in a delta connection. This two-column on-load tap-changer combination is known as "VR III K" ("K" for the German "Kombination").

The following on-load tap-changer combinations are available:

- VRS I 701/VRS II 702
- VRS I 1001/VRS II 1002
- VRS I 1301/VRS II 1302
- VRM I 701/VRM II 702
- VRM I 1001/VRM II 1002
- VRM I 1301/VRM II 1302
- VRL I 1301/VRL II 1302
- VRH I 651/VRH II 652
- VRH I 1301/VRH II 1302

You must provide the tap windings for this as shown below:

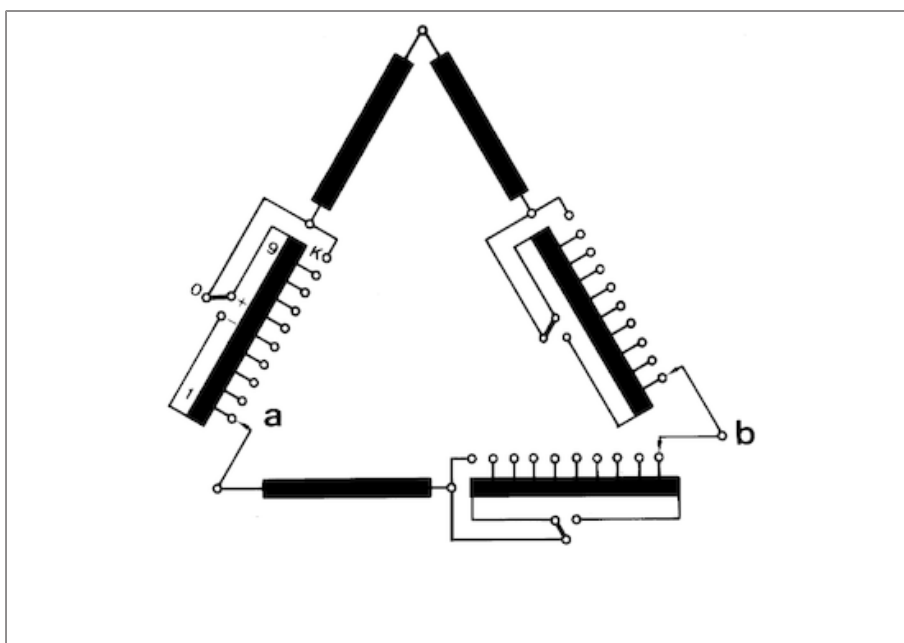


Figure 18: On-load tap-changer combination VR III K for delta connection VRS I 701/VRS II 702 (a = VRS I 701, b = VRS II 702)

## 3.2 On-load tap-changer with multiple coarse change-over selector

Extremely fine voltage setting requires a great number of operating positions which sometimes can only be achieved with a multiple coarse tapping arrangement.

For instance, 107 operating positions can be obtained by using a coarse 5-tap winding and a tapped winding with 18 taps.

The multiple coarse change-over selector is attached to both sides of the tap selector.

The on-load tap-changers are available for  $U_m = 72.5$  up to max. 300 kV and for 2...5 coarse tap connections (selector sizes B, C) or 2 and 3 coarse tap connections (selector size D).

## 3.3 On-load tap-changer for Y connection with open neutral point

If on-load tap-changers have an open neutral point, **only current transformers** may be connected to the open neutral point. Otherwise impermissible overvoltages arise at the neutral point.



Reactors must not be connected.

| Connection of three oil vessel outputs (= open neutral point)                                                                                                                                                            | VACUTAP® VRS/VRM/VRL III 700/1000/1300/1600 Y<br>VACUTAP® VRH III 650/1300 Y |                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----------------------------------------|
| Current transformer connection and neutral point formation outside on-load tap-changer                                                                                                                                   | A) Test voltages permitted between the oil vessel output contacts            |                                         |
|                                                                                                                                                                                                                          | – Rated lightning impulse withstand voltage                                  | < 140 kV (1.2/50 $\mu$ S) <sup>1)</sup> |
|                                                                                                                                                                                                                          | – Rated short-duration power frequency withstand voltage                     | 1 kV (50 Hz, 1 min)                     |
|                                                                                                                                                                                                                          | B) Permissible maximum operating voltage between oil vessel output contacts  | 1 kV (50...60 Hz)                       |
| <sup>1)</sup> varistor response voltage at 1.2/50 $\mu$ s lightning impulse: > 1.4 kV, residual voltage at 1000 A (8/20 $\mu$ s) peak withstand current: < 3 kV, maximum permissible energy load of the varistor < 100 J |                                                                              |                                         |

Table 20: Permissible test voltages and operating voltages for VACUTAP® VRS/VRM/VRL III 700/1000/1300/1600 Y and VACUTAP® VRH III 650/1300 Y

# 4 Drawings

## 4.1 Type overview

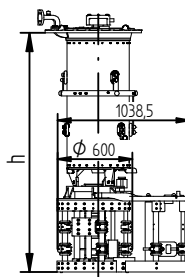
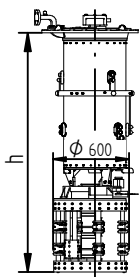
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|------------|------------|--------------------|
| DATE       | NAME       | DOCUMENT NO.       |
| 06.05.2021 | RAEDLINGER | SED 5097372 001 03 |
| 21.05.2021 | HAUER      | CHANGE NO.         |
| 21.05.2021 | WANNINGER  | 1106874            |
| SCALE      |            | 1:20               |

WITHOUT CHANGE-OVER SELECTOR 0

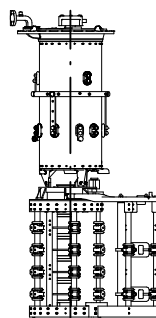
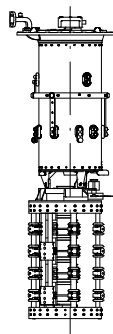
WITH CHANGE-OVER SELECTOR (REVERSING / COARSE CHANGE-OVER SELECTOR) W, G

VRS I 701  
 VRS I 1001  
 VRS I 1301



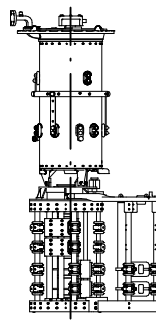
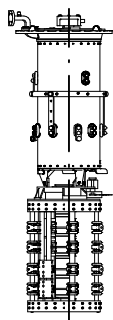
| Um [kV] | h [mm]        |          |
|---------|---------------|----------|
|         | SELECTOR SIZE |          |
|         | RC            | RD / RDE |
| 72,5    | 1837          | 1917     |
| 123     | 1967          | 2047     |
| 170     | 2097          | 2177     |
| 245     | 2197          | 2277     |
| 300     | 2349          | 2429     |
| 362     | 2452          | 2532     |
| 420     | 2571          | 2651     |

VRS II 702  
 VRS II 1002  
 VRS II 1302



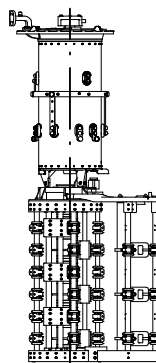
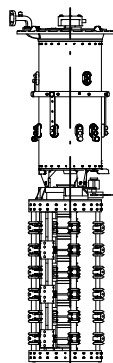
| Um [kV] | h [mm]        |          |
|---------|---------------|----------|
|         | SELECTOR SIZE |          |
|         | RC            | RD / RDE |
| 72,5    | 2177          | 2337     |
| 123     | 2307          | 2467     |
| 170     | 2437          | 2597     |
| 245     | 2537          | 2697     |
| 300     | 2689          | 2849     |
| 362     | 2792          | 2952     |

VRS I 2622



| Um [kV] | h [mm]        |          |
|---------|---------------|----------|
|         | SELECTOR SIZE |          |
|         | RC            | RD / RDE |
| 72,5    | 2137          | 2217     |
| 123     | 2267          | 2347     |
| 170     | 2397          | 2477     |
| 245     | 2497          | 2577     |
| 300     | 2649          | 2729     |
| 362     | 2752          | 2832     |
| 420     | 2871          | 2951     |

VRS III 700 Y  
 VRS III 1000 Y  
 VRS III 1300 Y



| Um [kV] | h [mm]        |          |
|---------|---------------|----------|
|         | SELECTOR SIZE |          |
|         | RC            | RD / RDE |
| 72,5    | 2517          | 2757     |
| 123     | 2647          | 2887     |
| 170     | 2777          | 3017     |
| 245     | 2877          | 3117     |

SELECTOR SIZE RC 72,5 kV DISPLAYED

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 TYPE OVERVIEW VRS - SELECTOR SIZE RC/RD/RDE

SERIAL NUMBER

MATERIAL NUMBER  
 100174272E

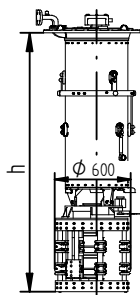
SHEET  
 1/1

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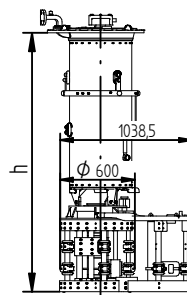
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| DATE       | NAME       | DOCUMENT NO.       |
| 07.05.2021 | RAEDLINGER | SED 5098990 001 02 |
| 21.05.2021 | HAUER      | CHANGE NO.         |
| 21.05.2021 | WANNINGER  | 1106874            |
| SCALE      |            | 1:20               |

VRM I 701  
 VRM I 1001  
 VRM I 1301  
 VRH I 651

WITHOUT CHANGE-OVER SELECTOR 0

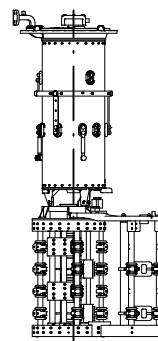
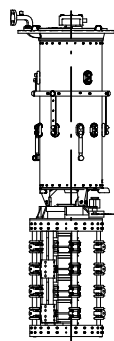


WITH CHANGE-OVER SELECTOR (REVERSING / COARSE CHANGE-OVER SELECTOR) W, G



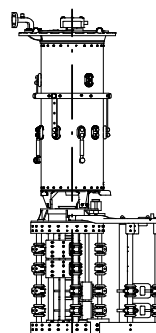
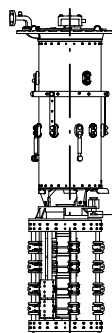
| Um [kV] | h [mm]        |          |
|---------|---------------|----------|
|         | SELECTOR SIZE |          |
|         | RC            | RD / RDE |
| 72,5    | 1988          | 2068     |
| 123     | 2118          | 2198     |
| 170     | 2248          | 2328     |
| 245     | 2348          | 2428     |
| 300     | 2500          | 2580     |
| 362     | 2603          | 2683     |
| 420     | 2722          | 2802     |

VRM II 702  
 VRM II 1002  
 VRM II 1302  
 VRH II 652



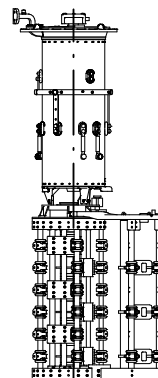
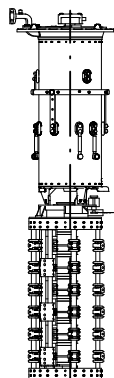
| Um [kV] | h [mm]        |          |
|---------|---------------|----------|
|         | SELECTOR SIZE |          |
|         | RC            | RD / RDE |
| 72,5    | 2328          | 2488     |
| 123     | 2458          | 2618     |
| 170     | 2588          | 2748     |
| 245     | 2688          | 2848     |
| 300     | 2840          | 3000     |
| 362     | 2943          | 3103     |

VRM I 2622



| Um [kV] | h [mm]        |          |
|---------|---------------|----------|
|         | SELECTOR SIZE |          |
|         | RC            | RD / RDE |
| 72,5    | 2288          | 2368     |
| 123     | 2418          | 2498     |
| 170     | 2548          | 2628     |
| 245     | 2648          | 2728     |
| 300     | 2800          | 2880     |
| 362     | 2903          | 2983     |
| 420     | 3022          | 3102     |

VRM III 700 Y  
 VRM III 1000 Y  
 VRM III 1300 Y  
 VRH III 650 Y



| Um [kV] | h [mm]        |          |
|---------|---------------|----------|
|         | SELECTOR SIZE |          |
|         | RC            | RD / RDE |
| 72,5    | 2668          | 2908     |
| 123     | 2798          | 3038     |
| 170     | 2928          | 3168     |
| 245     | 3028          | 3268     |

SELECTOR SIZE RC 72,5 kV DISPLAYED

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 TYPE OVERVIEW VRM/H650 - SELECTOR SIZE RC/RD/RDE

SERIAL NUMBER

MATERIAL NUMBER  
 100174492E

SHEET  
 1/1

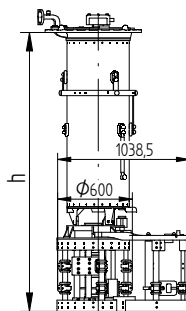
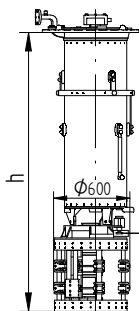
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| 26.07.2022 | BUTERUS | SED 5099116 001 03 |
| 27.07.2022 | WREDE   | CHANGE NO.         |
| 27.07.2022 | KLEYN   | 1116192            |
| SCALE      |         | 120                |

WITHOUT CHANGE-OVER SELECTOR 0

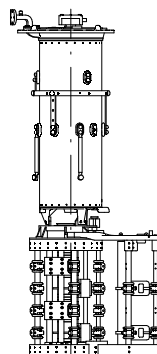
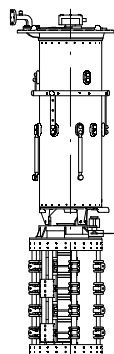
WITH CHANGE-OVER SELECTOR (REVERSING / COARSE CHANGE-OVER SELECTOR) W, G

VRL I 1301  
VRH I 1301



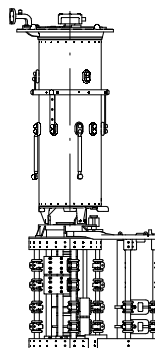
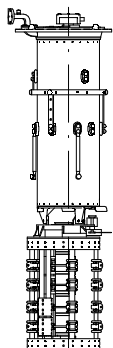
| Um [kV] | h [mm]        |          |
|---------|---------------|----------|
|         | SELECTOR SIZE |          |
|         | RC            | RD / RDE |
| 72,5    | 2140          | 2220     |
| 123     | 2270          | 2350     |
| 170     | 2400          | 2480     |
| 245     | 2500          | 2580     |
| 300     | 2652          | 2732     |
| 362     | 2755          | 2835     |
| 420     | 2874          | 2954     |

VRL II 1302  
VRH II 1302



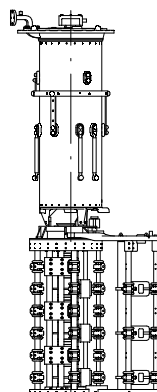
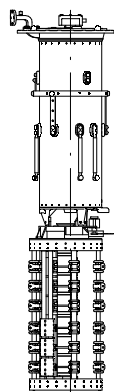
| Um [kV] | h [mm]        |          |
|---------|---------------|----------|
|         | SELECTOR SIZE |          |
|         | RC            | RD / RDE |
| 72,5    | 2480          | 2640     |
| 123     | 2610          | 2770     |
| 170     | 2740          | 2900     |
| 245     | 2840          | 3000     |
| 300     | 2992          | 3152     |
| 362     | 3095          | 3255     |

VRL I 2622  
VRH I 2622  
VRL I 1601



| Um [kV] | h [mm]        |          |
|---------|---------------|----------|
|         | SELECTOR SIZE |          |
|         | RC            | RD / RDE |
| 72,5    | 2440          | 2520     |
| 123     | 2570          | 2650     |
| 170     | 2700          | 2780     |
| 245     | 2800          | 2880     |
| 300     | 2952          | 3032     |
| 362     | 3055          | 3135     |
| 420     | 3174          | 3254     |

VRL III 1300 Y  
VRH III 1300 Y



| Um [kV] | h [mm]        |          |
|---------|---------------|----------|
|         | SELECTOR SIZE |          |
|         | RC            | RD / RDE |
| 72,5    | 2820          | 3060     |
| 123     | 2950          | 3190     |
| 170     | 3080          | 3320     |
| 245     | 3180          | 3420     |

SELECTOR SIZE RC 72,5 kV DISPLAYED

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 TYPE OVERVIEW VRL/H1300/1601 - SELECTOR SIZE RC/RD/RDE  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER  
100174533E

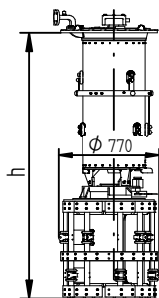
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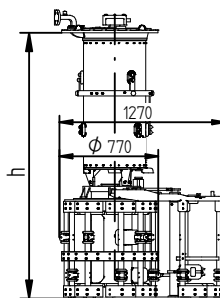
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| 10.05.2021 | RAEDLINGER | SED 5115917 001 01 |
| 21.05.2021 | HAUER      | CHANGE NO.         |
| 21.05.2021 | WANNINGER  | 1106874            |
| SCALE      |            | 1:20               |

VRS I 701  
VRS I 1001  
VRS I 1301

WITHOUT CHANGE-OVER SELECTOR 0

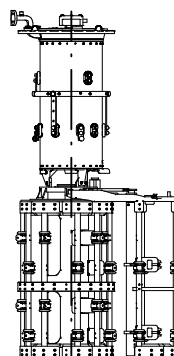
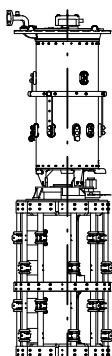


WITH CHANGE-OVER SELECTOR (REVERSING / COARSE CHANGE-OVER SELECTOR) W, G



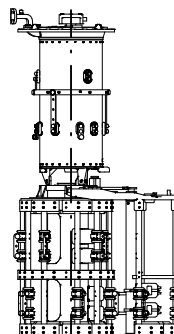
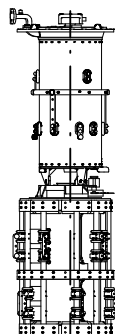
| Um [kV] | h [mm]        |    |
|---------|---------------|----|
|         | SELECTOR SIZE |    |
|         | RE            | RF |
| 72,5    | 2038          | -  |
| 123     | 2168          | -  |
| 170     | 2298          | -  |
| 245     | 2398          | -  |
| 300     | 2550          | -  |
| 362     | 2653          | -  |
| 420     | 2772          | -  |

VRS II 702  
VRS II 1002  
VRS II 1302



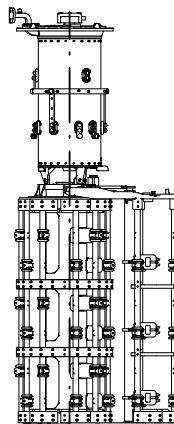
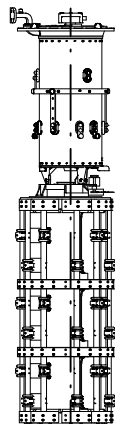
| Um [kV] | h [mm]        |      |
|---------|---------------|------|
|         | SELECTOR SIZE |      |
|         | RE            | RF   |
| 72,5    | 2498          | 2578 |
| 123     | 2628          | 2708 |
| 170     | 2758          | 2838 |
| 245     | 2858          | 2938 |
| 300     | 3010          | 3090 |
| 362     | 3113          | 3193 |

VRS I 2622



| Um [kV] | h [mm]        |    |
|---------|---------------|----|
|         | SELECTOR SIZE |    |
|         | RE            | RF |
| 72,5    | 2337          | -  |
| 123     | 2467          | -  |
| 170     | 2597          | -  |
| 245     | 2697          | -  |
| 300     | 2849          | -  |
| 362     | 2952          | -  |
| 420     | 3071          | -  |

VRS III 700 Y  
VRS III 1000 Y  
VRS III 1300 Y



| Um [kV] | h [mm]        |      |
|---------|---------------|------|
|         | SELECTOR SIZE |      |
|         | RE            | RF   |
| 72,5    | 3018          | 3178 |
| 123     | 3148          | 3308 |
| 170     | 3278          | 3438 |
| 245     | 3378          | 3538 |

RE 72,5 kV DISPLAYED

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
TYPE OVERVIEW VRS - RE/RF

SERIAL NUMBER

MATERIAL NUMBER  
100175911E

SHEET  
1/1

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|            |            |                    |
|------------|------------|--------------------|
| DATE       | NAME       | DOCUMENT NO.       |
| 10.05.2021 | RAEDLINGER | SED 5117864-001 02 |
| 21.05.2021 | HAUER      | CHANGE NO.         |
| 21.05.2021 | WANNINGER  | 1106874            |
| SCALE      |            | 1:20               |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
TYPE OVERVIEW VRM/X/H650 - RE/RF/RES

SERIAL NUMBER

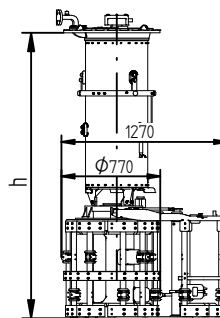
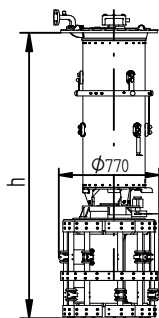
MATERIAL NUMBER  
100176221E

SHEET  
1/1

WITHOUT CHANGE-OVER  
SELECTOR 0

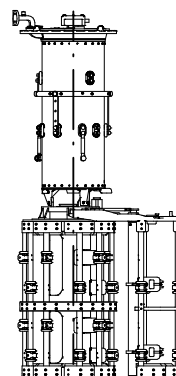
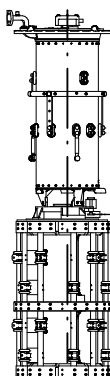
WITH CHANGE-OVER SELECTOR (REVERSING /  
COARSE CHANGE-OVER SELECTOR) W, G

VRM I 701  
VRM I 1001  
VRM I 1301  
VRH I 651



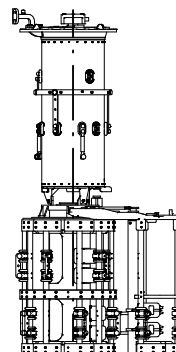
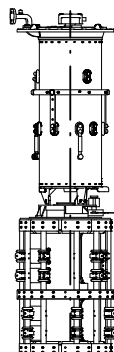
| Um<br>[kV] | h [mm]        |    |
|------------|---------------|----|
|            | SELECTOR SIZE |    |
|            | RE            | RF |
| 72,5       | 2190          | -  |
| 123        | 2320          | -  |
| 170        | 2450          | -  |
| 245        | 2550          | -  |
| 300        | 2702          | -  |
| 362        | 2805          | -  |
| 420        | 2924          | -  |

VRM II 702  
VRM II 1002  
VRM II 1302  
VRH II 652



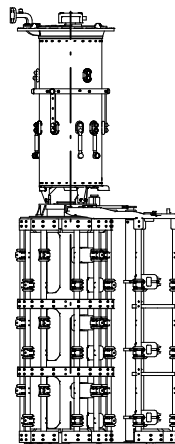
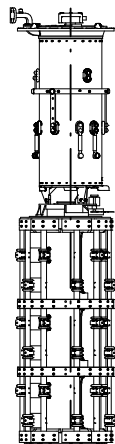
| Um<br>[kV] | h [mm]        |      |
|------------|---------------|------|
|            | SELECTOR SIZE |      |
|            | RE            | RF   |
| 72,5       | 2650          | 2730 |
| 123        | 2780          | 2860 |
| 170        | 2910          | 2990 |
| 245        | 3010          | 3090 |
| 300        | 3162          | 3242 |
| 362        | 3265          | 3345 |

VRM I 2622



| Um<br>[kV] | h [mm]        |    |
|------------|---------------|----|
|            | SELECTOR SIZE |    |
|            | RE            | RF |
| 72,5       | 2488          | -  |
| 123        | 2618          | -  |
| 170        | 2748          | -  |
| 245        | 2848          | -  |
| 300        | 3000          | -  |
| 362        | 3103          | -  |
| 420        | 3222          | -  |

VRM III 700 Y  
VRM III 1000 Y  
VRM III 1300 Y  
VRH III 650 Y  
VRX I 652



| Um<br>[kV] | h [mm]        |      |      |
|------------|---------------|------|------|
|            | SELECTOR SIZE |      |      |
|            | RE            | RF   | RES  |
| 72,5       | 3170          | 3330 | 3168 |
| 123        | 3300          | 3460 | 3298 |
| 170        | 3430          | 3590 | 3428 |
| 245        | 3530          | 3690 | 3528 |
| 300        | -             | -    | 3680 |
| 362        | -             | -    | 3783 |
| 420        | -             | -    | 3902 |

RE 72,5 kV DISPLAYED



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|            |            |                   |
|------------|------------|-------------------|
| DATE       | NAME       | DOCUMENT NO.      |
| 02.08.2022 | BUTERUS    | SED 519135 001 04 |
| 02.08.2022 | WREDE      | SCALE             |
| 02.08.2022 | KLEYN      | 120               |
| CHKO.      | CHANGE NO. | 116192            |
| STAND      |            |                   |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



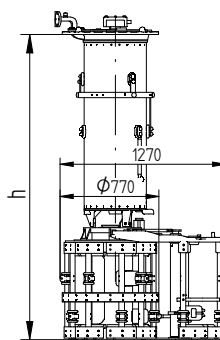
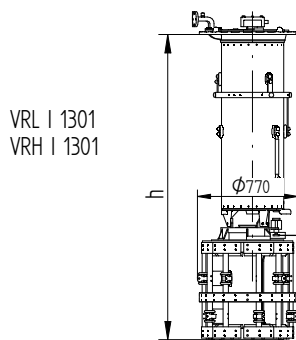
ON-LOAD TAP-CHANGER VACUTAP® VR®  
TYPE OVERVIEW VRL/VRH/VRX 1300/1601 - RE/RF/RES  
DIMENSION DRAWING

SERIAL NUMBER

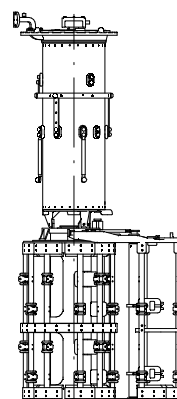
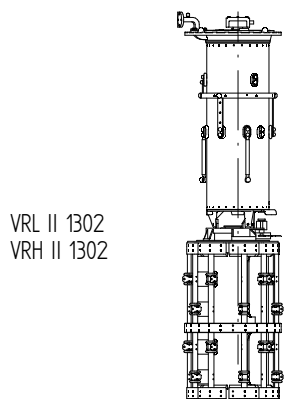
|                 |       |
|-----------------|-------|
| -               |       |
| MATERIAL NUMBER | SHEET |
| 100176263E      | 1/1   |

WITHOUT CHANGE-OVER  
SELECTOR 0

WITH CHANGE-OVER SELECTOR  
(REVERSING / COARSE CHANGE-OVER SELECTOR) W, G

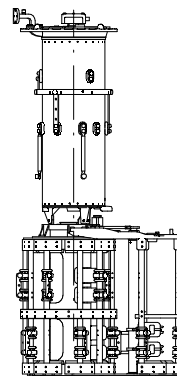
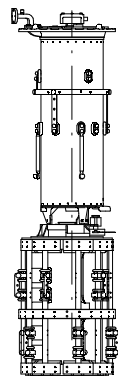


| Um [kV] | h [mm]        |    |
|---------|---------------|----|
|         | SELECTOR SIZE |    |
|         | RE            | RF |
| 72,5    | 2341          | -  |
| 123     | 2471          | -  |
| 170     | 2601          | -  |
| 245     | 2701          | -  |
| 300     | 2853          | -  |
| 362     | 2956          | -  |
| 420     | 3075          | -  |



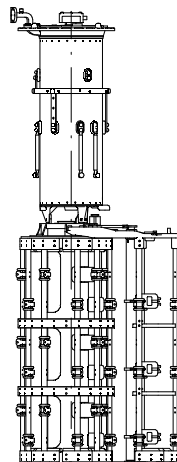
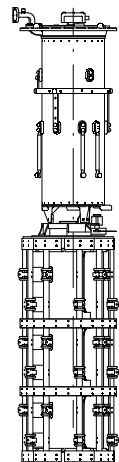
| Um [kV] | h [mm]        |      |
|---------|---------------|------|
|         | SELECTOR SIZE |      |
|         | RE            | RF   |
| 72,5    | 2801          | 2883 |
| 123     | 2931          | 3013 |
| 170     | 3061          | 3143 |
| 245     | 3161          | 3243 |
| 300     | 3313          | 3395 |
| 362     | 3416          | 3498 |

VRL I 2622  
VRH I 2622  
VRL I 1601



| Um [kV] | h [mm]        |    |
|---------|---------------|----|
|         | SELECTOR SIZE |    |
|         | RE            | RF |
| 72,5    | 2640          | -  |
| 123     | 2770          | -  |
| 170     | 2900          | -  |
| 245     | 3000          | -  |
| 300     | 3152          | -  |
| 362     | 3255          | -  |
| 420     | 3374          | -  |

VRL III 1300 Y  
VRH III 1300 Y  
VRX I 1302



| Um [kV] | h [mm]        |      |      |
|---------|---------------|------|------|
|         | SELECTOR SIZE |      |      |
|         | RE            | RF   | RES  |
| 72,5    | 3321          | 3481 | 3320 |
| 123     | 3451          | 3611 | 3450 |
| 170     | 3581          | 3741 | 3580 |
| 245     | 3681          | 3841 | 3680 |
| 300     | -             | -    | 3832 |
| 362     | -             | -    | 3935 |
| 420     | -             | -    | 4054 |

SELECTOR SIZE RE 72,5 kV REPRESENTED

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|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 19.04.2018 | RAEDLINGER   | SED 5125019 001 02 |
| 25.04.2018 | HAUER        | CHANGE NO.         |
| 25.04.2018 | PRODASTSCHUK | 1087395            |
| DFTR.      | SCALE        | 1:20               |
| CHKD.      |              |                    |
| STAND.     |              |                    |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 TYPE OVERVIEW VRS - B/C/D/DE

SERIAL NUMBER

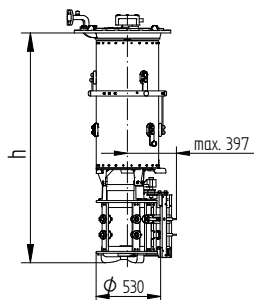
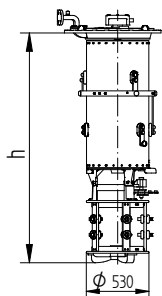
MATERIAL NUMBER  
100176971E

SHEET  
1/1

WITHOUT CHANGE-OVER  
SELECTOR 0

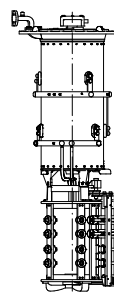
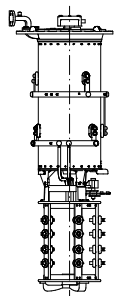
WITH CHANGE-OVER SELECTOR  
(REVERSING / COARSE CHANGE-OVER SELECTOR) W, G

VRS I 701



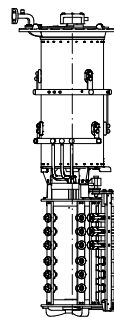
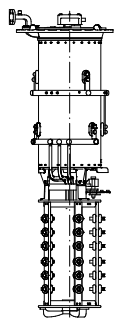
| Um [kV] | h [mm]        |      |      |
|---------|---------------|------|------|
|         | SELECTOR SIZE |      |      |
|         | B             | C    | D/DE |
| 72,5    | 1686          | 1761 | 1956 |
| 123     | 1816          | 1891 | 2086 |
| 170     | 1946          | 2021 | 2216 |
| 245     | 2046          | 2121 | 2316 |
| 300     | 2198          | 2273 | 2468 |
| 362     | 2301          | 2376 | 2571 |
| 420     | 2420          | 2495 | 2690 |

VRS I 1001



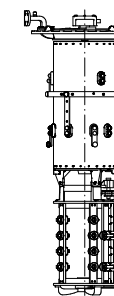
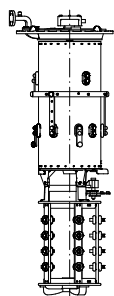
| Um [kV] | h [mm]        |      |      |
|---------|---------------|------|------|
|         | SELECTOR SIZE |      |      |
|         | B             | C    | D/DE |
| 72,5    | 1896          | 1971 | 2166 |
| 123     | 2026          | 2101 | 2296 |
| 170     | 2156          | 2231 | 2426 |
| 245     | 2256          | 2331 | 2526 |
| 300     | 2408          | 2483 | 2678 |
| 362     | 2511          | 2586 | 2781 |
| 420     | 2630          | 2705 | 2900 |

VRS I 1301



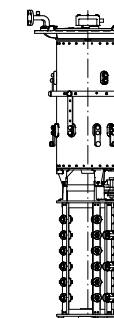
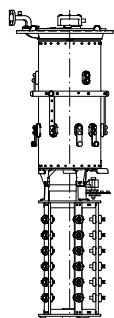
| Um [kV] | h [mm]        |      |      |
|---------|---------------|------|------|
|         | SELECTOR SIZE |      |      |
|         | B             | C    | D/DE |
| 72,5    | 2106          | 2181 | 2376 |
| 123     | 2236          | 2311 | 2506 |
| 170     | 2366          | 2441 | 2636 |
| 245     | 2466          | 2541 | 2736 |
| 300     | 2618          | 2693 | 2888 |
| 362     | 2721          | 2796 | 2991 |
| 420     | 2840          | 2915 | 3110 |

VRS II 702



| Um [kV] | h [mm]        |      |      |
|---------|---------------|------|------|
|         | SELECTOR SIZE |      |      |
|         | B             | C    | D/DE |
| 72,5    | 1876          | 2001 | 2326 |
| 123     | 2006          | 2131 | 2456 |
| 170     | 2136          | 2261 | 2586 |
| 245     | 2236          | 2361 | 2686 |
| 300     | 2388          | 2513 | 2838 |
| 362     | 2491          | 2616 | 2941 |

VRS III 700 Y



| Um [kV] | h [mm]        |      |      |
|---------|---------------|------|------|
|         | SELECTOR SIZE |      |      |
|         | B             | C    | D/DE |
| 72,5    | 2066          | 2241 | 2696 |
| 123     | 2196          | 2371 | 2826 |
| 170     | 2326          | 2501 | 2956 |
| 245     | 2426          | 2601 | 3056 |

SELECTOR SIZE C - 72,5 kV REPRESENTED

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|                   |              |                    |
|-------------------|--------------|--------------------|
| DATE              | NAME         | DOCUMENT NO.       |
| DFTR. 19.04.2018  | RAEDLINGER   | SED 5125480 001 02 |
| CHKD. 25.04.2018  | HAUER        | SCALE              |
| STAND. 25.04.2018 | PRODASTSCHUK | 120                |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 TYPE OVERVIEW VRM - B/C/D/DE

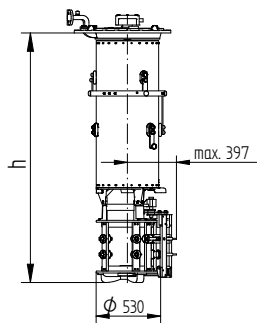
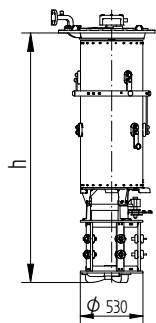
SERIAL NUMBER

-  
 MATERIAL NUMBER 100176981E SHEET 1/1

WITHOUT CHANGE-OVER  
 SELECTOR 0

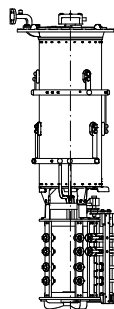
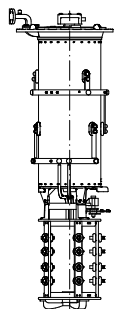
WITH CHANGE-OVER SELECTOR  
 (REVERSING / COARSE CHANGE-OVER SELECTOR) W, G

VRM I 701



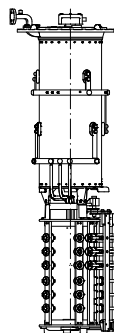
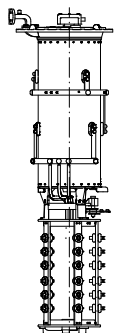
| Um<br>[kV] | h [mm]        |      |      |
|------------|---------------|------|------|
|            | SELECTOR SIZE |      |      |
|            | B             | C    | D/DE |
| 72,5       | 1838          | 1913 | 2108 |
| 123        | 1968          | 2043 | 2238 |
| 170        | 2098          | 2173 | 2368 |
| 245        | 2198          | 2273 | 2468 |
| 300        | 2350          | 2425 | 2620 |
| 362        | 2453          | 2528 | 2723 |
| 420        | 2572          | 2647 | 2842 |

VRM I 1001



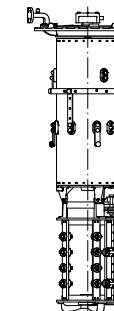
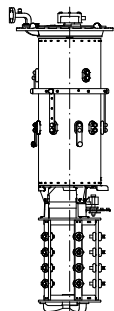
| Um<br>[kV] | h [mm]        |      |      |
|------------|---------------|------|------|
|            | SELECTOR SIZE |      |      |
|            | B             | C    | D/DE |
| 72,5       | 2048          | 2123 | 2318 |
| 123        | 2178          | 2253 | 2448 |
| 170        | 2308          | 2383 | 2578 |
| 245        | 2408          | 2483 | 2678 |
| 300        | 2560          | 2635 | 2830 |
| 362        | 2663          | 2738 | 2933 |
| 420        | 2782          | 2857 | 3052 |

VRM I 1301



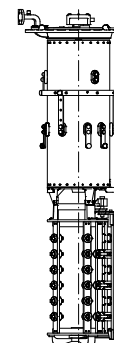
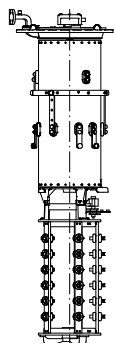
| Um<br>[kV] | h [mm]        |      |      |
|------------|---------------|------|------|
|            | SELECTOR SIZE |      |      |
|            | B             | C    | D/DE |
| 72,5       | 2258          | 2333 | 2528 |
| 123        | 2388          | 2463 | 2658 |
| 170        | 2518          | 2593 | 2788 |
| 245        | 2618          | 2693 | 2888 |
| 300        | 2770          | 2845 | 3040 |
| 362        | 2873          | 2948 | 3143 |
| 420        | 2992          | 3067 | 3262 |

VRM II 702



| Um<br>[kV] | h [mm]        |      |      |
|------------|---------------|------|------|
|            | SELECTOR SIZE |      |      |
|            | B             | C    | D/DE |
| 72,5       | 2028          | 2153 | 2478 |
| 123        | 2158          | 2283 | 2608 |
| 170        | 2288          | 2413 | 2738 |
| 245        | 2388          | 2513 | 2838 |
| 300        | 2540          | 2665 | 2990 |
| 362        | 2643          | 2768 | 3093 |

VRM III 700 Y



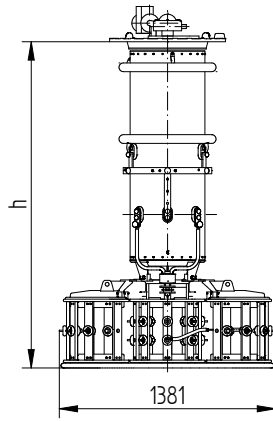
| Um<br>[kV] | h [mm]        |      |      |
|------------|---------------|------|------|
|            | SELECTOR SIZE |      |      |
|            | B             | C    | D/DE |
| 72,5       | 2218          | 2393 | 2848 |
| 123        | 2348          | 2523 | 2978 |
| 170        | 2478          | 2653 | 3108 |
| 245        | 2578          | 2753 | 3208 |

SELECTOR SIZE C - 72,5 kV REPRESENTED

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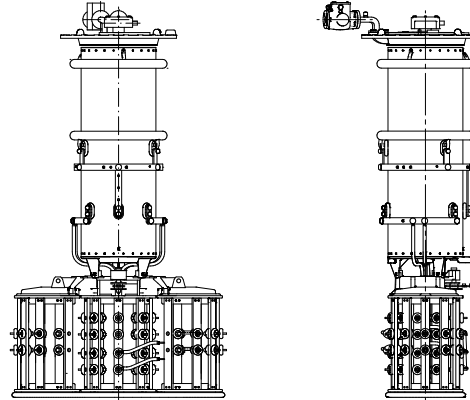
|                   |         |                    |
|-------------------|---------|--------------------|
| DATE              | NAME    | DOCUMENT NO.       |
| DFTR. 13.07.2017  | BUTERUS | SED 5552801.001 00 |
| CHKD. 13.07.2017  | WREDE   | SCALE              |
| STAND. 14.07.2017 | KLEYN   | 1082427            |

VRS I 701



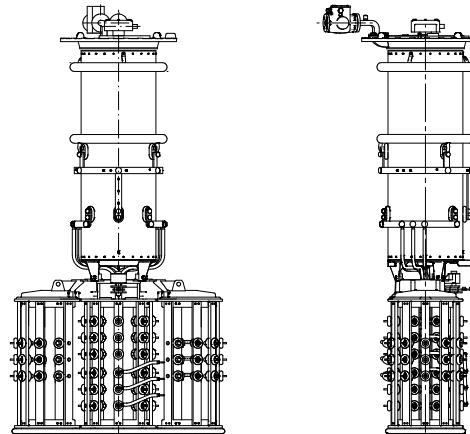
| Um [kV] | h [mm]        |      |      |
|---------|---------------|------|------|
|         | SELECTOR SIZE |      |      |
|         | B             | C    | D    |
| 72,5    | 1648          | 1723 | 1918 |
| 123     | 1778          | 1853 | 2048 |
| 170     | 1908          | 1983 | 2178 |
| 245     | 2008          | 2083 | 2278 |
| 300     | 2160          | 2235 | 2430 |

VRS I 1001



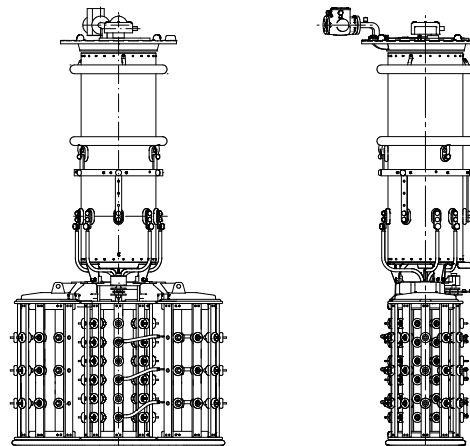
| Um [kV] | h [mm]        |      |      |
|---------|---------------|------|------|
|         | SELECTOR SIZE |      |      |
|         | B             | C    | D    |
| 72,5    | 1858          | 1933 | 2128 |
| 123     | 1988          | 2063 | 2258 |
| 170     | 2118          | 2193 | 2388 |
| 245     | 2218          | 2293 | 2488 |
| 300     | 2370          | 2445 | 2640 |

VRS I 1301



| Um [kV] | h [mm]        |      |      |
|---------|---------------|------|------|
|         | SELECTOR SIZE |      |      |
|         | B             | C    | D    |
| 72,5    | 2068          | 2143 | 2338 |
| 123     | 2198          | 2273 | 2468 |
| 170     | 2328          | 2403 | 2598 |
| 245     | 2428          | 2503 | 2698 |
| 300     | 2580          | 2655 | 2850 |

VRS III 700 Y



| Um [kV] | h [mm]        |      |      |
|---------|---------------|------|------|
|         | SELECTOR SIZE |      |      |
|         | B             | C    | D    |
| 72,5    | 2028          | 2203 | 2658 |
| 123     | 2158          | 2333 | 2788 |
| 170     | 2288          | 2463 | 2918 |
| 245     | 2388          | 2563 | 3018 |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 TYPE OVERVIEW VRS-B/C/D WITH MULTIPLE COARSE CHANGE-OVER SEL  
 DIMENSION DRAWING

SERIAL NUMBER

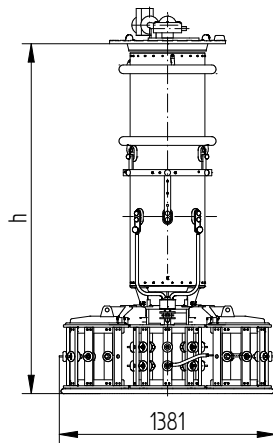
MATERIAL NUMBER  
 100208830E

SHEET  
 1/1

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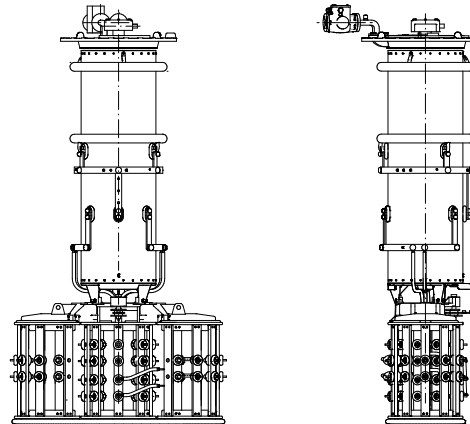
|                   |              |                    |
|-------------------|--------------|--------------------|
| DATE              | NAME         | DOCUMENT NO.       |
| DFTR. 19.04.2018  | RAEDLINGER   | SED 6015835 001 00 |
| CHKD. 25.04.2018  | HAUER        | CHANGE NO.         |
| STAND. 25.04.2018 | PRODASTSCHUK | 1087395            |

VRM I 701



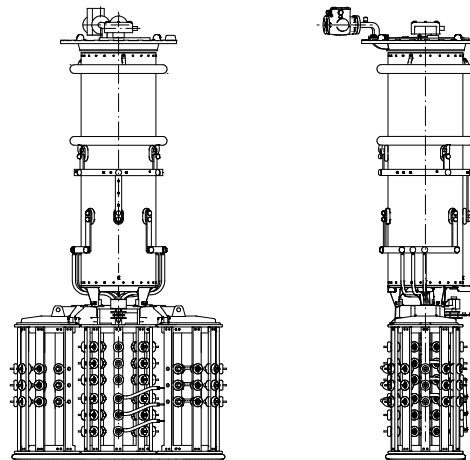
| Um [kV] | h [mm]        |      |      |
|---------|---------------|------|------|
|         | SELECTOR SIZE |      |      |
|         | B             | C    | D    |
| 72,5    | 1800          | 1875 | 2070 |
| 123     | 1930          | 2005 | 2200 |
| 170     | 2060          | 2135 | 2330 |
| 245     | 2160          | 2235 | 2430 |
| 300     | 2312          | 2387 | 2582 |

VRM I 1001



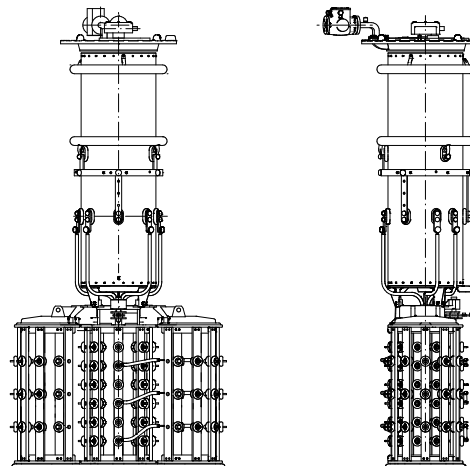
| Um [kV] | h [mm]        |      |      |
|---------|---------------|------|------|
|         | SELECTOR SIZE |      |      |
|         | B             | C    | D    |
| 72,5    | 2010          | 2085 | 2280 |
| 123     | 2140          | 2215 | 2410 |
| 170     | 2270          | 2345 | 2540 |
| 245     | 2370          | 2445 | 2640 |
| 300     | 2522          | 2597 | 2792 |

VRM I 1301



| Um [kV] | h [mm]        |      |      |
|---------|---------------|------|------|
|         | SELECTOR SIZE |      |      |
|         | B             | C    | D    |
| 72,5    | 2220          | 2295 | 2490 |
| 123     | 2350          | 2425 | 2620 |
| 170     | 2480          | 2555 | 2750 |
| 245     | 2580          | 2655 | 2850 |
| 300     | 2732          | 2807 | 3002 |

VRM III 700 Y



| Um [kV] | h [mm]        |      |      |
|---------|---------------|------|------|
|         | SELECTOR SIZE |      |      |
|         | B             | C    | D    |
| 72,5    | 2180          | 2355 | 2810 |
| 123     | 2310          | 2485 | 2940 |
| 170     | 2440          | 2615 | 3070 |
| 245     | 2540          | 2715 | 3170 |

SELECTOR SIZE C - 245 kV REPRESENTED

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VRM - B/C/D WITH MULTIPLE COARSE CHANGE-OVER SELECTOR  
 TYPE OVERVIEW

SERIAL NUMBER

MATERIAL NUMBER  
 101170700E

SHEET  
 1/1

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|                    |         |                    |
|--------------------|---------|--------------------|
| DATE               | NAME    | DOCUMENT NO.       |
| DFTR. 26.07.2022   | BUTERUS | SED 8915332 001 00 |
| CHKD. 27.07.2022   | WREDE   | CHANGE NO.         |
| STAND   27.07.2022 | KLEYN   | 1116192            |
|                    |         | SCALE              |
|                    |         | 120                |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



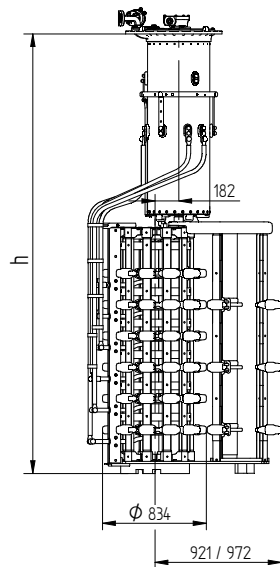
ON-LOAD TAP-CHANGER VACUTAP® VR®  
 TYPE OVERVIEW VRL III 1600 E  
 DIMENSION DRAWING

SERIAL NUMBER

|                 |       |
|-----------------|-------|
| MATERIAL NUMBER | SHEET |
| 101715770E      | 1/1   |

VRL III 1600 E

WITH CHANGE-OVER SELECTOR (REVERSING /  
 COARSE CHANGE-OVER SELECTOR) W, G



72,5 kV DISPLAYED

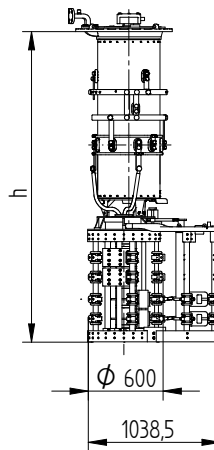
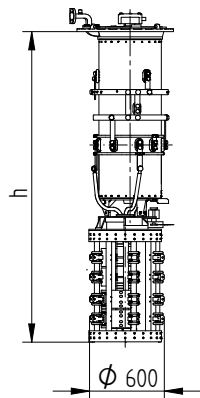
| Um [kV] | h [mm] |
|---------|--------|
| 72,5    | 3372   |
| 123     | 3502   |
| 170     | 3632   |
| 245     | 3732   |

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WITHOUT CHANGE-OVER SELECTOR 0

WITH CHANGE-OVER SELECTOR  
 (REVERSING / COARSE CHANGE-OVER SELECTOR) W, G

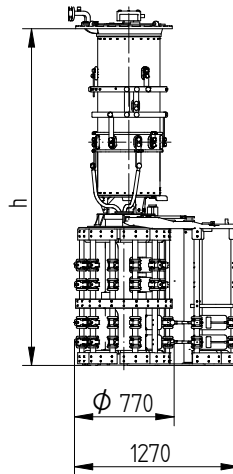
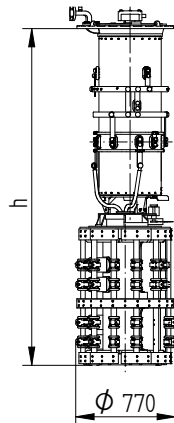
VRL I 1801  
 VRL I 2001  
 VRL I 2401



| Um [kV] | h [mm]        |          |
|---------|---------------|----------|
|         | SELECTOR SIZE |          |
|         | RC            | RD / RDE |
| 72,5    | 2381          | 2461     |
| 123     | 2511          | 2591     |
| 170     | 2641          | 2721     |
| 245     | 2741          | 2821     |
| 300     | 2893          | 2973     |
| 362     | 2996          | 3076     |
| 420     | 3115          | 3195     |

SELECTOR SIZE RC 72,5kV DISPLAYED

VRL I 1801  
 VRL I 2001  
 VRL I 2401



| Um [kV] | h [mm]        |
|---------|---------------|
|         | SELECTOR SIZE |
|         | RE            |
| 72,5    | 2582          |
| 123     | 2712          |
| 170     | 2842          |
| 245     | 2942          |
| 300     | 3094          |
| 362     | 3197          |
| 420     | 3316          |

SELECTOR SIZE RE 72,5kV DISPLAYED

|        |            |       |                    |
|--------|------------|-------|--------------------|
| DFTR.  | DATE       | NAME  | DOCUMENT NO.       |
| CHKD.  | 08.11.2021 | WREDE | SED 8367967 001 01 |
| STAND. |            |       | CHANGE NO. 111654  |
|        |            |       | SCALE 1:20         |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL I 1801/2001/2401 - SELECTOR SIZE RC/RD/RDE/RE  
 TYPE OVERVIEW

SERIAL NUMBER

MATERIAL NUMBER 101624790E  
 SHEET 1/1

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|            |         |                    |
|------------|---------|--------------------|
| DATE       | NAME    | DOCUMENT NO.       |
| 05.11.2021 | BUTERUS | SED 8367952 001 00 |
| 08.11.2021 | WREDE   | CHANGE NO.         |
| 09.11.2021 | KLEYN   | 1109989            |
| DFTR.      | SCALE   | 120                |
| CHKD.      |         |                    |
| STAND      |         |                    |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL I 2601/3001/3201 - SELECTOR SIZE RC/RD/RDE/RE  
 TYPE OVERVIEW

SERIAL NUMBER

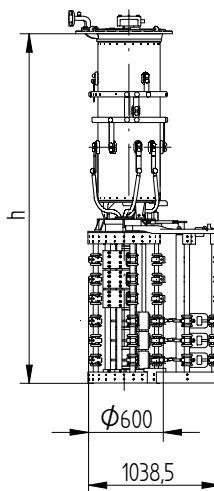
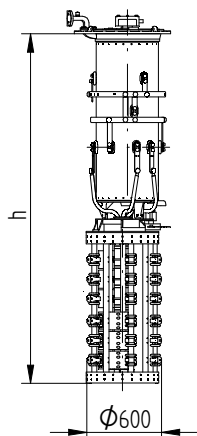
MATERIAL NUMBER  
 101624760E

SHEET  
 1/1

WITHOUT CHANGE-OVER SELECTOR 0

WITH CHANGE-OVER SELECTOR  
 (REVERSING / COARSE CHANGE-OVER SELECTOR) W, G

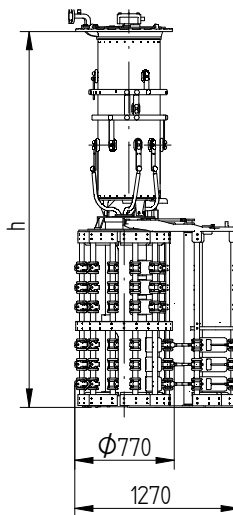
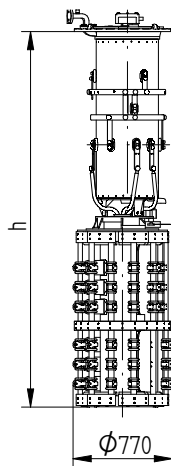
VRL I 2601  
 VRL I 3001  
 VRL I 3201



SELECTOR SIZE RC 72,5kV DISPLAYED

| Um [kV] | h [mm]        |          |
|---------|---------------|----------|
|         | SELECTOR SIZE |          |
|         | RC            | RD / RDE |
| 72,5    | 2681          | 2761     |
| 123     | 2811          | 2891     |
| 170     | 2941          | 3021     |
| 245     | 3041          | 3121     |
| 300     | 3193          | 3273     |
| 362     | 3296          | 3376     |
| 420     | 3415          | 3495     |

VRL I 2601  
 VRL I 3001  
 VRL I 3201



SELECTOR SIZE RE 72,5kV DISPLAYED

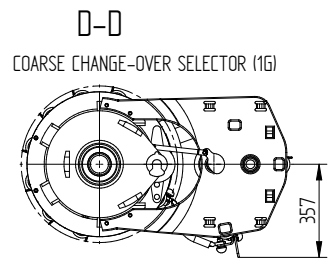
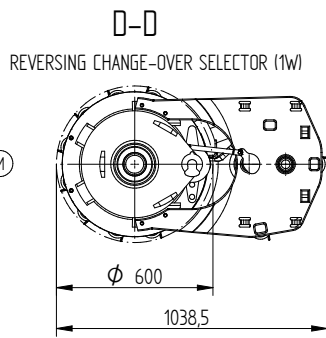
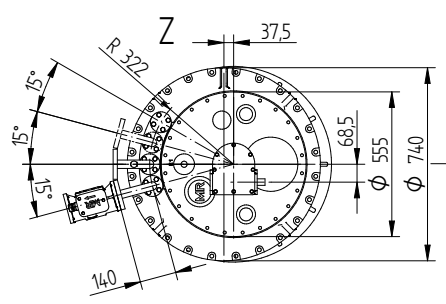
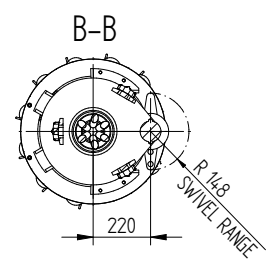
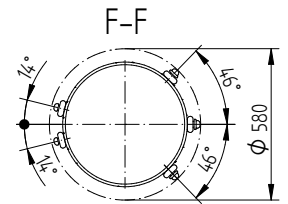
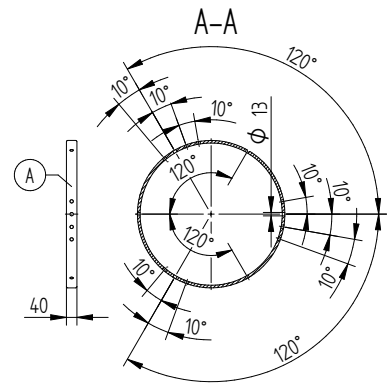
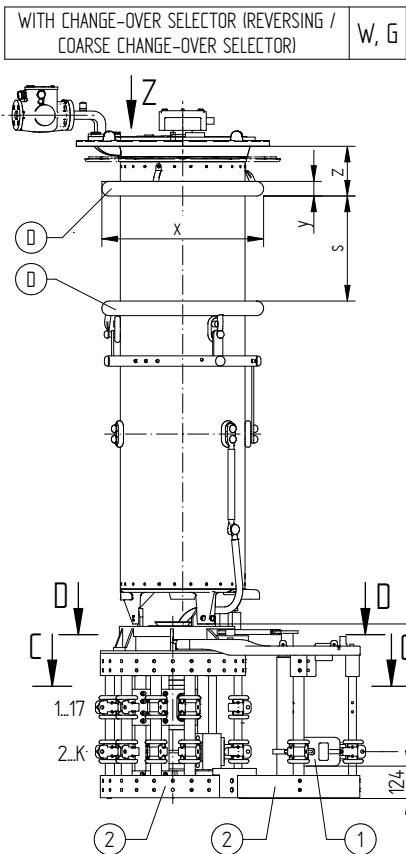
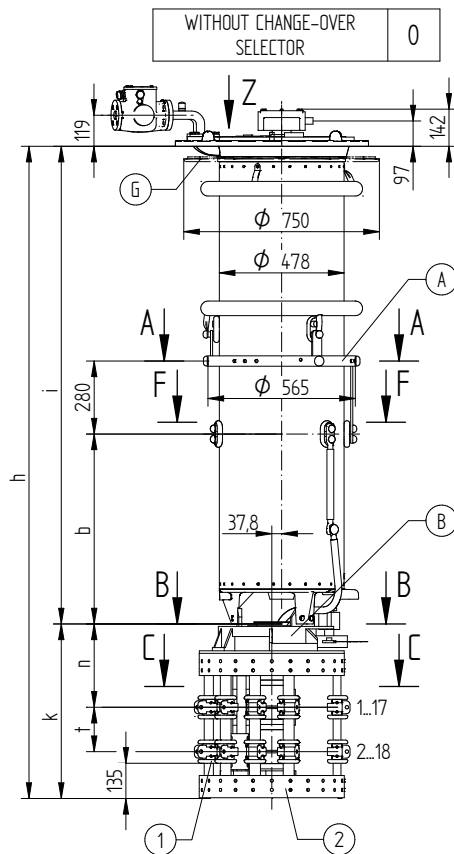
| Um [kV] | h [mm]        |
|---------|---------------|
|         | SELECTOR SIZE |
|         | RE            |
| 72,5    | 2882          |
| 123     | 3012          |
| 170     | 3142          |
| 245     | 3242          |
| 300     | 3394          |
| 362     | 3497          |
| 420     | 3616          |



## 4.2 Dimensional drawings

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|                   |              |                    |
|-------------------|--------------|--------------------|
| DATE              | NAME         | DOCUMENT NO.       |
| DFTR. 18.01.2018  | RAEDLINGER   | SED 5142887 001 01 |
| CHKD. 23.01.2018  | MENZELS      | CHANGE NO.         |
| STANDJ 23.01.2018 | PRODASTSCHUK | 1085481            |
|                   |              | SCALE              |
|                   |              | 1:10               |



FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 kV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
- (1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT
- (2) - SELECTOR BASE IS MADE OF INSULATING MATERIAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 10009030
- D-D: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 10010019

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H | 651/701/1001/1301 - 72.5...420 kV - RC/RD/RDE  
 DIMENSION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| MATERIAL NUMBER | SHEET |
| 100178561E      | 1 / 2 |

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## VACUTAP® VRS

| SELECTOR SIZE      |     | RC   |      |       |       |       |       |       | RD / RDE |      |       |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|-------|----------|------|-------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5     | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h   | 1837 | 1967 | 2097  | 2197  | 2349  | 2452  | 2571  | 1917     | 2047 | 2177  | 2277  | 2429  | 2532  | 2651  |
|                    | i   | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1902  | 1168     | 1298 | 1428  | 1528  | 1680  | 1783  | 1902  |
|                    | b   | 425  |      |       |       |       |       |       | 425      |      |       |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | 692   | -        | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | 228   | -        | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -        | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -        | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k   | 669  |      |       |       |       |       |       | 749      |      |       |       |       |       |       |
|                    | n   | 319  |      |       |       |       |       |       | 359      |      |       |       |       |       |       |
|                    | t   | 170  |      |       |       |       |       |       | 210      |      |       |       |       |       |       |
| q                  | 489 |      |      |       |       |       |       | 569   |          |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |     | 160  | 180  | 200   | 220   | 240   | 260   | 280   | 160      | 180  | 200   | 220   | 240   | 260   | 280   |
| DISPLACEMENT [dm³] |     | 249  | 269  | 299   | 319   | 349   | 389   | 409   | 250      | 270  | 300   | 320   | 350   | 390   | 410   |
| MAX. WEIGHT [kg]   |     | 358  | 364  | 377   | 380   | 386   | 393   | 398   | 363      | 369  | 382   | 385   | 391   | 398   | 403   |

## VACUTAP® VRM / VRH 651

| SELECTOR SIZE      |     | RC   |      |       |       |       |       |       | RD / RDE |      |       |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|-------|----------|------|-------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5     | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h   | 1988 | 2118 | 2248  | 2348  | 2500  | 2603  | 2722  | 2068     | 2198 | 2328  | 2428  | 2580  | 2683  | 2802  |
|                    | i   | 1319 | 1449 | 1579  | 1679  | 1831  | 1934  | 2053  | 1319     | 1449 | 1579  | 1679  | 1831  | 1934  | 2053  |
|                    | b   | 576  |      |       |       |       |       |       | 576      |      |       |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | 692   | -        | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | 228   | -        | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -        | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -        | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k   | 669  |      |       |       |       |       |       | 749      |      |       |       |       |       |       |
|                    | n   | 319  |      |       |       |       |       |       | 359      |      |       |       |       |       |       |
|                    | t   | 170  |      |       |       |       |       |       | 210      |      |       |       |       |       |       |
| q                  | 489 |      |      |       |       |       |       | 569   |          |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |     | 180  | 200  | 230   | 245   | 270   | 285   | 305   | 180      | 200  | 230   | 245   | 270   | 285   | 305   |
| DISPLACEMENT [dm³] |     | 269  | 299  | 329   | 349   | 379   | 419   | 439   | 270      | 300  | 330   | 350   | 380   | 420   | 440   |
| MAX. WEIGHT [kg]   |     | 367  | 373  | 386   | 390   | 395   | 402   | 407   | 372      | 378  | 391   | 395   | 400   | 407   | 412   |

## VACUTAP® VRL / VRH 1301

| SELECTOR SIZE      |     | RC   |      |       |       |       |       |       | RD / RDE |      |       |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|-------|----------|------|-------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5     | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h   | 2140 | 2270 | 2400  | 2500  | 2652  | 2755  | 2874  | 2220     | 2350 | 2480  | 2580  | 2732  | 2835  | 2954  |
|                    | i   | 1471 | 1601 | 1731  | 1831  | 1983  | 2086  | 2205  | 1471     | 1601 | 1731  | 1831  | 1983  | 2086  | 2205  |
|                    | b   | 728  |      |       |       |       |       |       | 728      |      |       |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | 692   | -        | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | 228   | -        | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -        | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -        | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k   | 669  |      |       |       |       |       |       | 749      |      |       |       |       |       |       |
|                    | n   | 319  |      |       |       |       |       |       | 359      |      |       |       |       |       |       |
|                    | t   | 170  |      |       |       |       |       |       | 210      |      |       |       |       |       |       |
| q                  | 489 |      |      |       |       |       |       | 569   |          |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |     | 210  | 230  | 250   | 270   | 290   | 310   | 330   | 210      | 230  | 250   | 270   | 290   | 310   | 330   |
| DISPLACEMENT [dm³] |     | 299  | 329  | 359   | 379   | 409   | 449   | 469   | 300      | 330  | 360   | 380   | 410   | 450   | 470   |
| MAX. WEIGHT [kg]   |     | 377  | 383  | 395   | 399   | 405   | 412   | 416   | 382      | 388  | 400   | 404   | 410   | 417   | 421   |

|            |              |                    |       |
|------------|--------------|--------------------|-------|
| DATE       | NAME         | DOCUMENT NO.       | SCALE |
| 18.01.2018 | RAEDLINGER   | SED 5142887 001 01 | 1:10  |
| 23.01.2018 | MENZELS      | CHANGE NO.         |       |
| 23.01.2018 | PRODASTSEHIK | 1085481            |       |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H | 651/701/1001/1301 - 72,5...420 kV - RC/RD/RDE  
 DIMENSION DRAWING

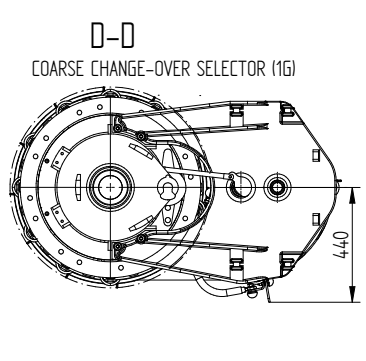
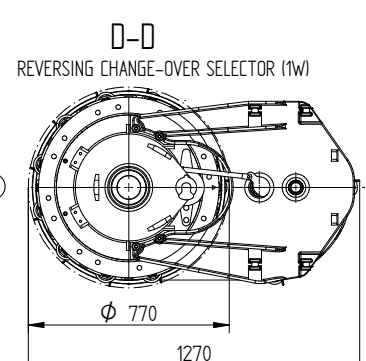
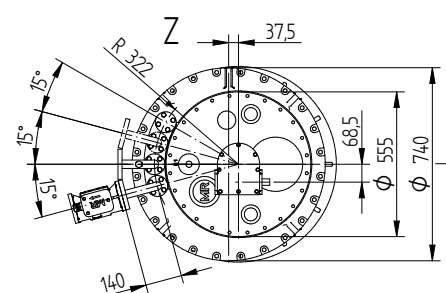
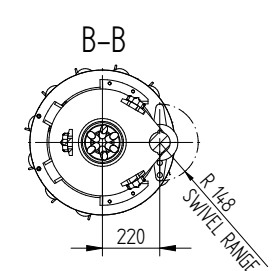
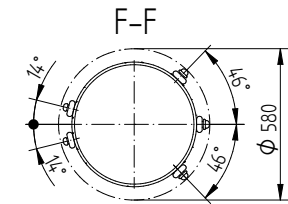
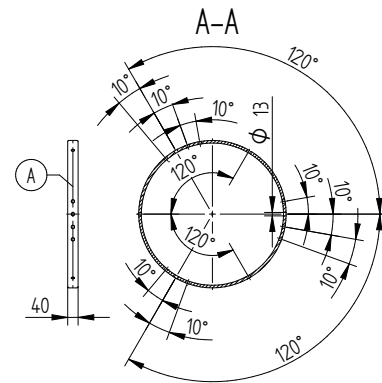
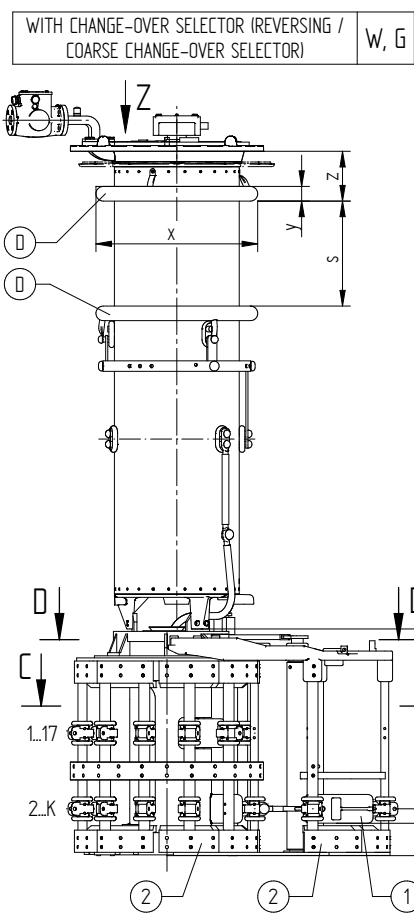
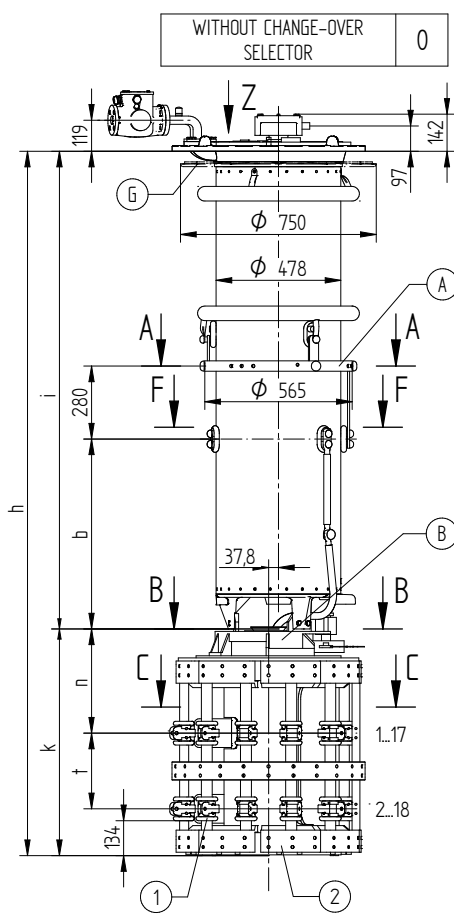
SERIAL NUMBER

MATERIAL NUMBER  
100178561E

SHEET  
2/2

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|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 24.10.2016 | BUTERUS      | SED 5143008 001 00 |
| 26.10.2016 | WREDE        | CHANGE NO.         |
| 26.10.2016 | PRODASTSCHUK | 1077332            |
| DFTR.      | SCALE        | -                  |
| CHKD.      |              |                    |
| STAND.     |              |                    |



FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 KV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
- (1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT
- (2) - SELECTOR BASE IS MADE OF INSULATING MATERIAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 10016570
- D-D: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 10017264

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H | 651/701/1001/1301 - 72,5...420 kV - RE  
 DIMENSION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| -               |       |
| MATERIAL NUMBER | SHEET |
| 100178570E      | 1/2   |

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## VACUTAP® VRS

| SELECTOR SIZE      |     | RE   |      |       |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h   | 2038 | 2168 | 2298  | 2398  | 2550  | 2653  | 2772  |
|                    | i   | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1902  |
|                    | b   | 425  |      |       |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅100  | ∅100  |
|                    | k   | 870  |      |       |       |       |       |       |
|                    | n   | 400  |      |       |       |       |       |       |
|                    | t   | 290  |      |       |       |       |       |       |
| q                  | 690 |      |      |       |       |       |       |       |
| OIL CONTENT [dm³]  |     | 160  | 180  | 200   | 220   | 240   | 260   | 280   |
| DISPLACEMENT [dm³] |     | 280  | 300  | 330   | 350   | 380   | 420   | 440   |
| MAX. WEIGHT [kg]   |     | 419  | 425  | 438   | 441   | 447   | 454   | 459   |

## VACUTAP® VRM / VRH 651

| SELECTOR SIZE      |     | RE   |      |       |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h   | 2190 | 2320 | 2450  | 2550  | 2702  | 2805  | 2924  |
|                    | i   | 1320 | 1450 | 1580  | 1680  | 1832  | 1935  | 2054  |
|                    | b   | 576  |      |       |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅100  | ∅100  |
|                    | k   | 870  |      |       |       |       |       |       |
|                    | n   | 400  |      |       |       |       |       |       |
|                    | t   | 290  |      |       |       |       |       |       |
| q                  | 690 |      |      |       |       |       |       |       |
| OIL CONTENT [dm³]  |     | 180  | 200  | 230   | 245   | 270   | 285   | 305   |
| DISPLACEMENT [dm³] |     | 300  | 330  | 360   | 380   | 410   | 450   | 470   |
| MAX. WEIGHT [kg]   |     | 428  | 434  | 447   | 451   | 456   | 463   | 468   |

## VACUTAP® VRL / VRH 1301

| SELECTOR SIZE      |     | RE   |      |       |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h   | 2341 | 2471 | 2601  | 2701  | 2853  | 2956  | 3075  |
|                    | i   | 1471 | 1601 | 1731  | 1831  | 1983  | 2086  | 2205  |
|                    | b   | 728  |      |       |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅100  | ∅100  |
|                    | k   | 870  |      |       |       |       |       |       |
|                    | n   | 400  |      |       |       |       |       |       |
|                    | t   | 290  |      |       |       |       |       |       |
| q                  | 690 |      |      |       |       |       |       |       |
| OIL CONTENT [dm³]  |     | 210  | 230  | 250   | 270   | 290   | 310   | 330   |
| DISPLACEMENT [dm³] |     | 330  | 360  | 390   | 410   | 440   | 480   | 500   |
| MAX. WEIGHT [kg]   |     | 438  | 444  | 456   | 460   | 466   | 473   | 477   |

| DATE              | NAME         | DOCUMENT NO.       |
|-------------------|--------------|--------------------|
| DFTR. 24.10.2016  | BUTERUS      | SED 5143008 001 00 |
| CHKD. 26.10.2016  | WREDE        | CHANGE NO. -       |
| STAND. 26.10.2016 | PRODASTSCHUK | 1077332            |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
VR S/M/L/H | 651/701/1001/1301 - 72,5...420 kV - RE  
DIMENSION DRAWING

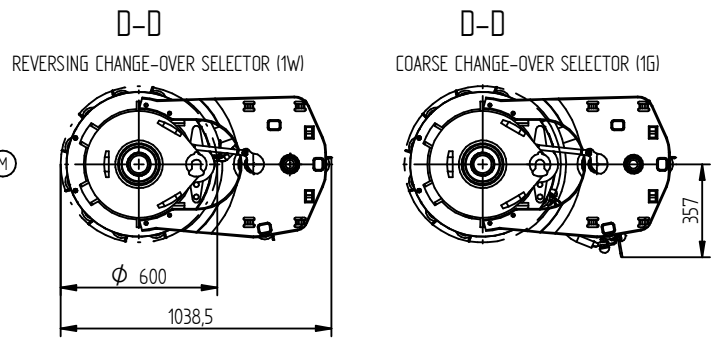
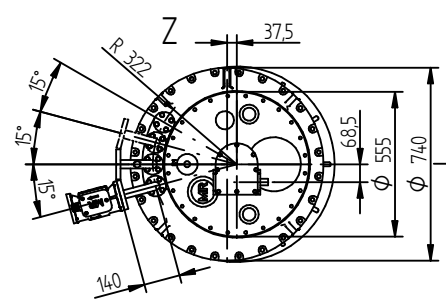
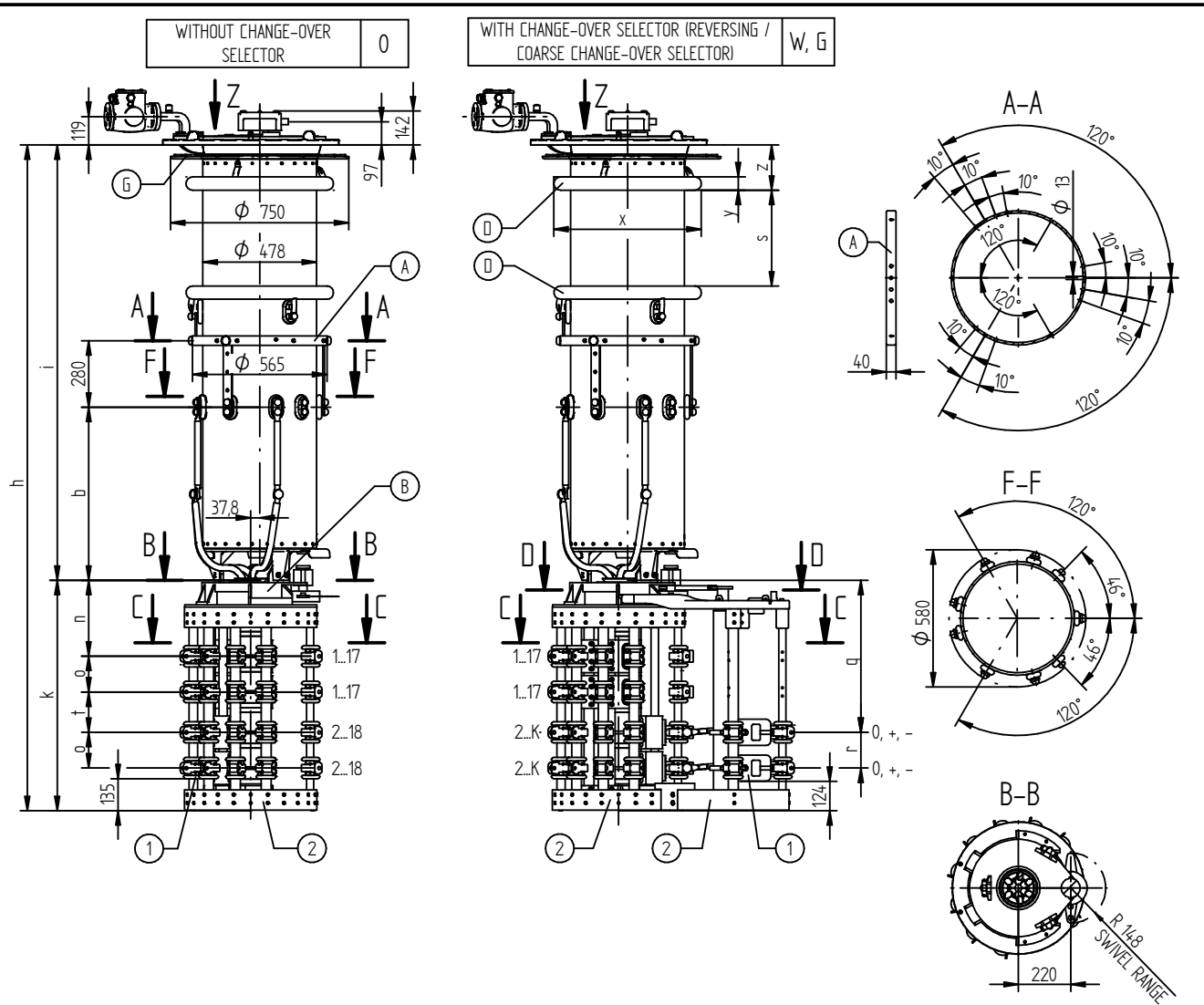
SERIAL NUMBER

MATERIAL NUMBER  
100178570E

SHEET  
2/2

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|            |            |                    |
|------------|------------|--------------------|
| DATE       | NAME       | DOCUMENT NO.       |
| 07.05.2021 | RAEDLINGER | SED 5144508_001_02 |
| 21.05.2021 | HAUER      | CHANGE NO.         |
| 21.05.2021 | WANNINGER  | 1106874            |
| SCALE      |            | 1:10               |



FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
  - (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
  - (B) - IS CONNECTED TO POTENTIAL OF (A)
  - (D) - SHIELDING RINGS FOR UM OF 170 KV OR GREATER
  - (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
  - (1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT
  - (2) - SELECTOR BASE IS MADE OF INSULATING MATERIAL
- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
  - C-C: REFER TO 10009030
  - D-D: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 10010019

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRS/M/L/H | 2622-72,5...420-RC/RD/RDE-WITH FORCED CURRENT SPLITTING  
 DIMENSION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| MATERIAL NUMBER | SHEET |
| 100178622E      | 1/2   |

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|       |            |              |                    |
|-------|------------|--------------|--------------------|
| DATE  | 07.05.2021 | DOCUMENT NO. | SED 5144508_001_02 |
| DFTR. | RAEDLINGER | NAME         | HAUJER             |
| CHKD. | 21.05.2021 | SCALE        | 1:10               |
| STAND | 21.05.2021 | CHANGE NO.   | 1106874            |
|       |            |              | WANNINGER          |

### VACUTAP® VRS

| SELECTOR SIZE      |     | RC   |      |       |       |       |       |       | RD / RDE |      |       |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|-------|----------|------|-------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5     | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h   | 2137 | 2267 | 2397  | 2497  | 2649  | 2752  | 2871  | 2217     | 2347 | 2477  | 2577  | 2729  | 2832  | 2951  |
|                    | i   | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1902  | 1168     | 1298 | 1428  | 1528  | 1680  | 1783  | 1902  |
|                    | b   | 425  |      |       |       |       |       |       | 425      |      |       |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | 692   | -        | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | 228   | -        | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -        | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -        | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k   | 969  |      |       |       |       |       |       | 1049     |      |       |       |       |       |       |
|                    | n   | 319  |      |       |       |       |       |       | 359      |      |       |       |       |       |       |
|                    | o   | 150  |      |       |       |       |       |       | 150      |      |       |       |       |       |       |
|                    | t   | 170  |      |       |       |       |       |       | 210      |      |       |       |       |       |       |
|                    | r   | 150  |      |       |       |       |       |       | 150      |      |       |       |       |       |       |
| q                  | 639 |      |      |       |       |       |       | 719   |          |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |     | 155  | 175  | 195   | 215   | 235   | 255   | 275   | 155      | 175  | 195   | 215   | 235   | 255   | 275   |
| DISPLACEMENT [dm³] |     | 263  | 283  | 313   | 333   | 363   | 403   | 423   | 265      | 285  | 315   | 335   | 365   | 405   | 425   |
| MAX. WEIGHT [kg]   |     | 450  | 456  | 469   | 472   | 478   | 485   | 490   | 455      | 461  | 474   | 477   | 483   | 490   | 495   |

### VACUTAP® VRM

| SELECTOR SIZE      |     | RC   |      |       |       |       |       |       | RD / RDE |      |       |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|-------|----------|------|-------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5     | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h   | 2288 | 2418 | 2548  | 2648  | 2800  | 2903  | 3022  | 2368     | 2498 | 2628  | 2728  | 2880  | 2983  | 3102  |
|                    | i   | 1319 | 1449 | 1579  | 1679  | 1831  | 1934  | 2053  | 1319     | 1449 | 1579  | 1679  | 1831  | 1934  | 2053  |
|                    | b   | 576  |      |       |       |       |       |       | 576      |      |       |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | 692   | -        | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | 228   | -        | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -        | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -        | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k   | 969  |      |       |       |       |       |       | 1049     |      |       |       |       |       |       |
|                    | n   | 319  |      |       |       |       |       |       | 359      |      |       |       |       |       |       |
|                    | o   | 150  |      |       |       |       |       |       | 150      |      |       |       |       |       |       |
|                    | t   | 170  |      |       |       |       |       |       | 210      |      |       |       |       |       |       |
|                    | r   | 150  |      |       |       |       |       |       | 150      |      |       |       |       |       |       |
| q                  | 639 |      |      |       |       |       |       | 719   |          |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |     | 175  | 195  | 225   | 240   | 265   | 280   | 300   | 175      | 195  | 225   | 240   | 265   | 280   | 300   |
| DISPLACEMENT [dm³] |     | 283  | 313  | 343   | 363   | 393   | 433   | 453   | 285      | 315  | 345   | 365   | 395   | 435   | 455   |
| MAX. WEIGHT [kg]   |     | 466  | 472  | 484   | 488   | 494   | 500   | 505   | 471      | 477  | 489   | 493   | 499   | 505   | 510   |

### VACUTAP® VRL / VRH

| SELECTOR SIZE      |     | RC   |      |       |       |       |       |       | RD / RDE |      |       |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|-------|----------|------|-------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5     | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h   | 2440 | 2570 | 2700  | 2800  | 2952  | 3055  | 3174  | 2520     | 2650 | 2780  | 2880  | 3032  | 3135  | 3254  |
|                    | i   | 1471 | 1601 | 1731  | 1831  | 1983  | 2086  | 2205  | 1471     | 1601 | 1731  | 1831  | 1983  | 2086  | 2205  |
|                    | b   | 728  |      |       |       |       |       |       | 728      |      |       |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | 692   | -        | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | 228   | -        | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -        | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -        | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k   | 969  |      |       |       |       |       |       | 1049     |      |       |       |       |       |       |
|                    | n   | 319  |      |       |       |       |       |       | 359      |      |       |       |       |       |       |
|                    | o   | 150  |      |       |       |       |       |       | 150      |      |       |       |       |       |       |
|                    | t   | 170  |      |       |       |       |       |       | 210      |      |       |       |       |       |       |
|                    | r   | 150  |      |       |       |       |       |       | 150      |      |       |       |       |       |       |
| q                  | 639 |      |      |       |       |       |       | 719   |          |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |     | 205  | 225  | 245   | 265   | 285   | 305   | 325   | 205      | 225  | 245   | 265   | 285   | 305   | 325   |
| DISPLACEMENT [dm³] |     | 313  | 343  | 373   | 393   | 423   | 463   | 483   | 315      | 345  | 375   | 395   | 425   | 465   | 485   |
| MAX. WEIGHT [kg]   |     | 479  | 485  | 497   | 501   | 507   | 514   | 519   | 484      | 490  | 502   | 506   | 512   | 519   | 524   |

DIMENSION IN mm EXCEPT AS NOTED



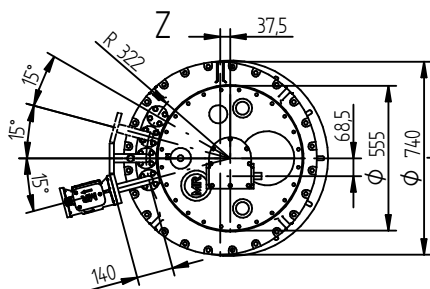
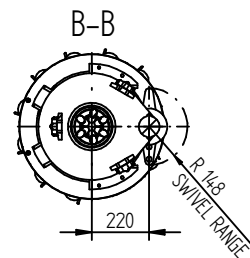
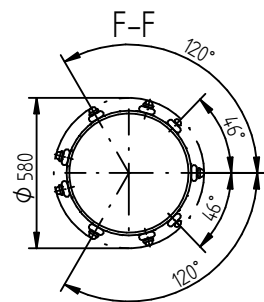
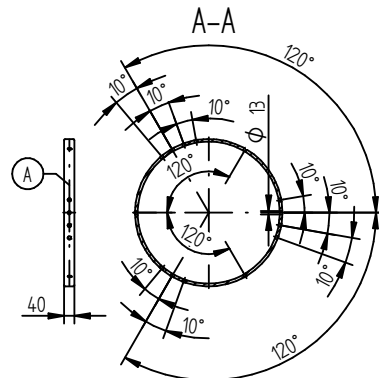
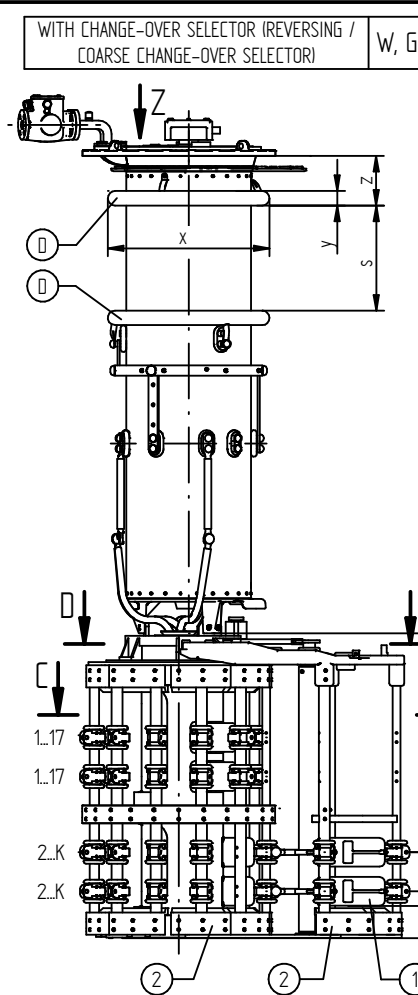
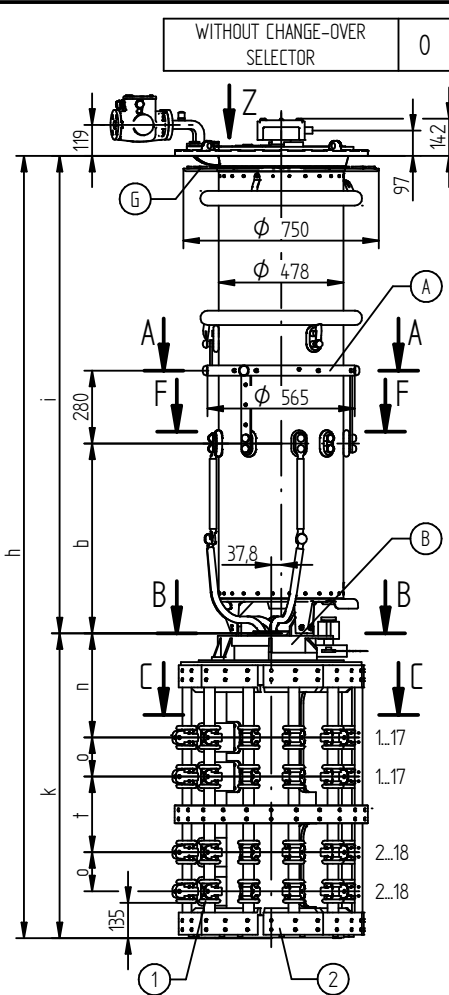
ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRS/M/L/H | 2622-72,5...420-RC/RD/RDE-WITH FORCED CURRENT SPLITTING  
 DIMENSION DRAWING

SERIAL NUMBER

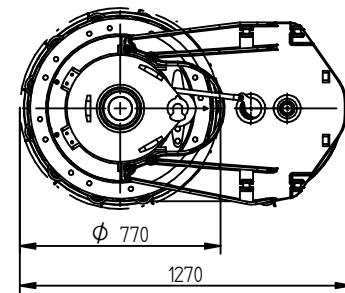
MATERIAL NUMBER 100178622E SHEET 2/2

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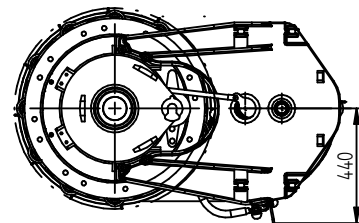
|            |            |                    |
|------------|------------|--------------------|
| DATE       | NAME       | DOCUMENT NO.       |
| 10.05.2021 | RAEDLINGER | SED 5144510 001 02 |
| 21.05.2021 | HAUER      | CHANGE NO.         |
| 21.05.2021 | WANNINGER  | 1106874            |
| SCALE      |            | 1:10               |



D-D REVERSING CHANGE-OVER SELECTOR (1W)



D-D COARSE CHANGE-OVER SELECTOR (1G)



FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 KV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
- (1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT
- (2) - SELECTOR BASE IS MADE OF INSULATING MATERIAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

- C-C: REFER TO 10016570

- D-D: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 10017264

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRS/M/L/H | 2622-72,5...420 kV-RE-WITH FORCED CURRENT SPLITTING  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER  
 100178631E

SHEET  
 1/2



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### VACUTAP® VRS

| SELECTOR SIZE      |   | RE   |      |       |       |       |       |       |
|--------------------|---|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h | 2337 | 2467 | 2597  | 2697  | 2849  | 2952  | 3071  |
|                    | i | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1902  |
|                    | b | 425  |      |       |       |       |       |       |
|                    | s | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅100  | ∅100  |
|                    | k | 1169 |      |       |       |       |       |       |
|                    | n | 399  |      |       |       |       |       |       |
|                    | o | 150  |      |       |       |       |       |       |
|                    | t | 290  |      |       |       |       |       |       |
|                    | r | 150  |      |       |       |       |       |       |
|                    | q | 839  |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |   | 155  | 175  | 195   | 215   | 235   | 255   | 275   |
| DISPLACEMENT [dm³] |   | 298  | 318  | 348   | 368   | 398   | 438   | 458   |
| MAX. WEIGHT [kg]   |   | 512  | 518  | 531   | 534   | 540   | 547   | 552   |

### VACUTAP® VRM

| SELECTOR SIZE      |   | RE   |      |       |       |       |       |       |
|--------------------|---|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h | 2488 | 2618 | 2748  | 2848  | 3000  | 3103  | 3222  |
|                    | i | 1319 | 1449 | 1579  | 1679  | 1831  | 1934  | 2053  |
|                    | b | 576  |      |       |       |       |       |       |
|                    | s | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅100  | ∅100  |
|                    | k | 1169 |      |       |       |       |       |       |
|                    | n | 399  |      |       |       |       |       |       |
|                    | o | 150  |      |       |       |       |       |       |
|                    | t | 290  |      |       |       |       |       |       |
|                    | r | 150  |      |       |       |       |       |       |
|                    | q | 839  |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |   | 175  | 195  | 225   | 240   | 265   | 280   | 300   |
| DISPLACEMENT [dm³] |   | 318  | 348  | 378   | 398   | 428   | 468   | 488   |
| MAX. WEIGHT [kg]   |   | 528  | 534  | 546   | 550   | 556   | 562   | 567   |

### VACUTAP® VRL / VRH

| SELECTOR SIZE      |   | RE   |      |       |       |       |       |       |
|--------------------|---|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h | 2640 | 2770 | 2900  | 3000  | 3152  | 3255  | 3374  |
|                    | i | 1471 | 1601 | 1731  | 1831  | 1983  | 2086  | 2205  |
|                    | b | 728  |      |       |       |       |       |       |
|                    | s | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅100  | ∅100  |
|                    | k | 1169 |      |       |       |       |       |       |
|                    | n | 399  |      |       |       |       |       |       |
|                    | o | 150  |      |       |       |       |       |       |
|                    | t | 290  |      |       |       |       |       |       |
|                    | r | 150  |      |       |       |       |       |       |
|                    | q | 839  |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |   | 205  | 225  | 245   | 265   | 285   | 305   | 325   |
| DISPLACEMENT [dm³] |   | 348  | 378  | 408   | 428   | 458   | 498   | 518   |
| MAX. WEIGHT [kg]   |   | 541  | 547  | 559   | 563   | 569   | 576   | 581   |

|            |            |                    |
|------------|------------|--------------------|
| DATE       | NAME       | DOCUMENT NO.       |
| 10.05.2021 | RAEDLINGER | SED 5144510 001 02 |
| 21.05.2021 | HAUER      | SCALE              |
| 21.05.2021 | WANNINGER  | CHANGE NO. 1106874 |
|            |            | 1:10               |

DIMENSION IN mm EXCEPT AS NOTED



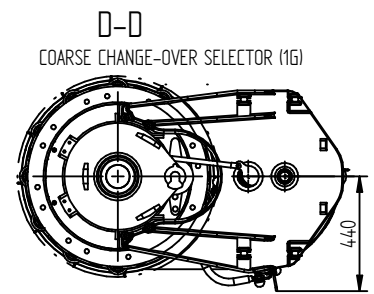
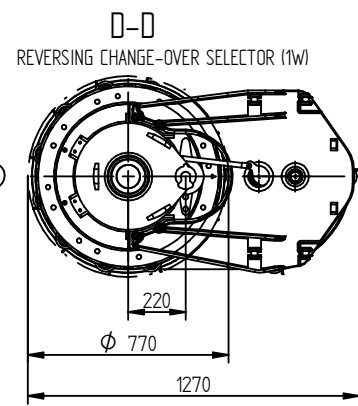
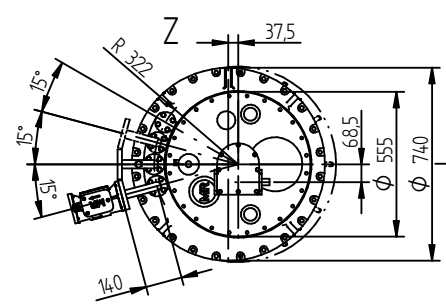
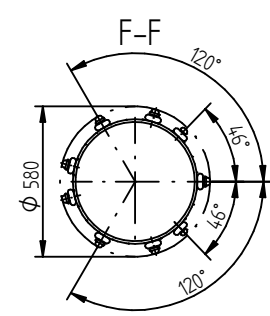
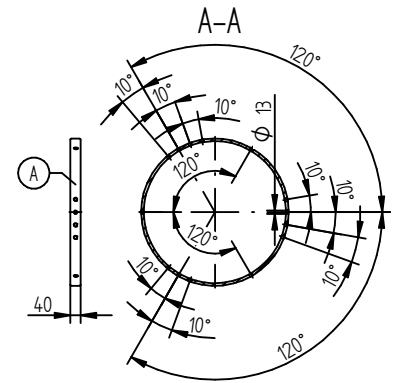
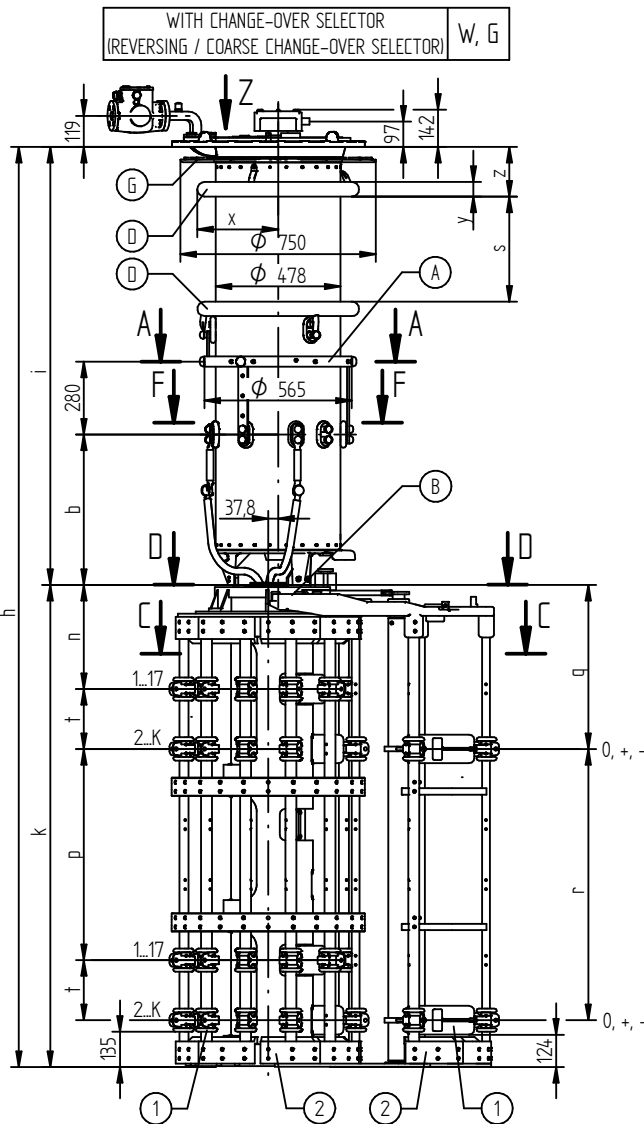
ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRS/M/L/H | 2622-72,5...420 kV-RE-WITH FORCED CURRENT SPLITTING  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER 100178631E SHEET 2/2

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|            |            |                     |
|------------|------------|---------------------|
| DATE       | NAME       | DOCUMENT NO.        |
| 07.05.2021 | RAEDLINGER | SED 5'152467 001 03 |
| 21.05.2021 | HAUER      | SCALE               |
| 21.05.2021 | WANNINGER  | CHANGE NO. 1106874  |
| STAND      |            | 1:10                |



FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 KV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
- (1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT
- (2) - SELECTOR BASE IS MADE OF INSULATING MATERIAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 10016570
- D-D: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 10017264

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRX I 652/1302 - 72,5...420 kV - RES  
 DIMENSION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| MATERIAL NUMBER | SHEET |
| 100178673E      | 1/2   |

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## VACUTAP® VRX | 652

| SELECTOR SIZE      |   | RES  |      |       |       |       |       |       |
|--------------------|---|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h | 3168 | 3298 | 3428  | 3528  | 3680  | 3783  | 3902  |
|                    | i | 1319 | 1449 | 1579  | 1679  | 1831  | 1934  | 2053  |
|                    | b | 576  |      |       |       |       |       |       |
|                    | s | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k | 1849 |      |       |       |       |       |       |
|                    | n | 399  |      |       |       |       |       |       |
|                    | t | 230  |      |       |       |       |       |       |
|                    | p | 810  |      |       |       |       |       |       |
|                    | r | 1040 |      |       |       |       |       |       |
|                    | q | 629  |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |   | 175  | 195  | 225   | 240   | 265   | 280   | 300   |
| DISPLACEMENT [dm³] |   | 460  | 490  | 520   | 540   | 570   | 610   | 630   |
| MAX. WEIGHT [kg]   |   | 609  | 615  | 627   | 631   | 637   | 643   | 648   |

## VACUTAP® VRX | 1302

| SELECTOR SIZE      |   | RES  |      |       |       |       |       |       |
|--------------------|---|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h | 3320 | 3450 | 3580  | 3680  | 3832  | 3935  | 4054  |
|                    | i | 1471 | 1601 | 1731  | 1831  | 1983  | 2086  | 2205  |
|                    | b | 728  |      |       |       |       |       |       |
|                    | s | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k | 1849 |      |       |       |       |       |       |
|                    | n | 399  |      |       |       |       |       |       |
|                    | t | 230  |      |       |       |       |       |       |
|                    | p | 810  |      |       |       |       |       |       |
|                    | r | 1040 |      |       |       |       |       |       |
|                    | q | 629  |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |   | 205  | 225  | 245   | 265   | 285   | 305   | 325   |
| DISPLACEMENT [dm³] |   | 490  | 520  | 550   | 570   | 600   | 640   | 660   |
| MAX. WEIGHT [kg]   |   | 622  | 628  | 640   | 644   | 650   | 657   | 662   |

|            |            |                    |
|------------|------------|--------------------|
| DATE       | NAME       | DOCUMENT NO.       |
| 07.05.2021 | RAEDLINGER | SED 5152467 001 03 |
| 21.05.2021 | HAUER      | CHANGE NO.         |
| 21.05.2021 | WANNINGER  | 1106874            |
| SCALE      | 1:10       |                    |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
VRX | 652/1302 - 72,5...420 kV - RES  
DIMENSION DRAWING

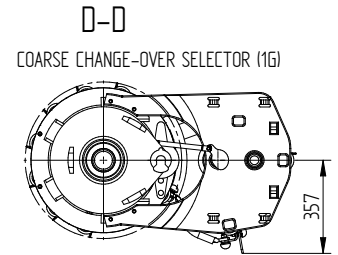
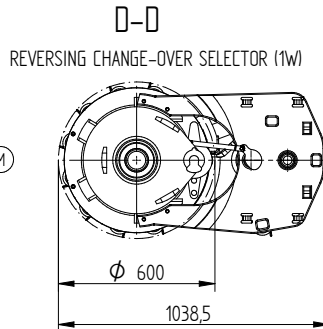
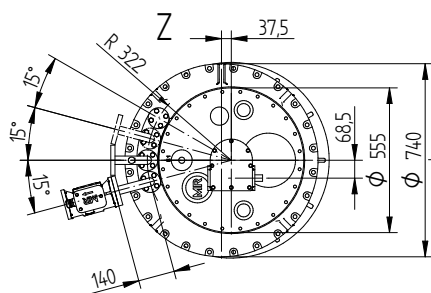
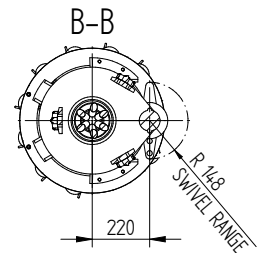
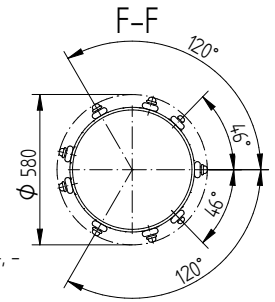
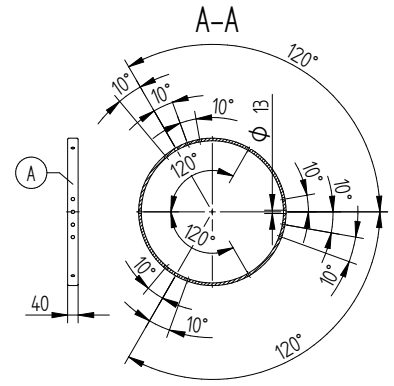
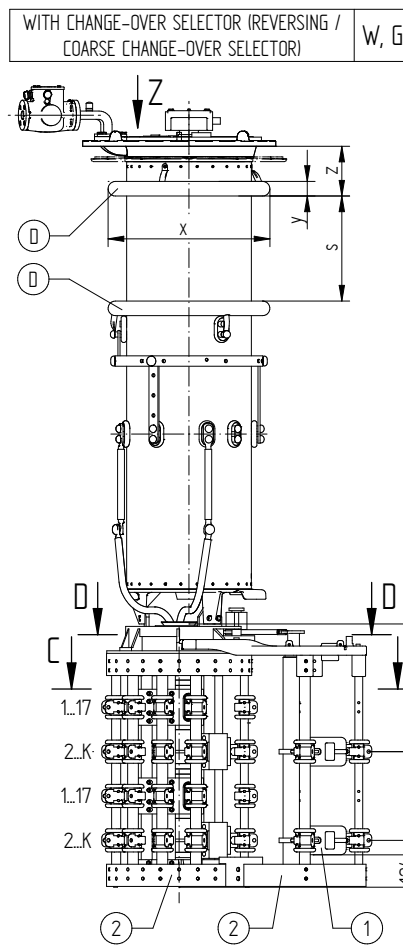
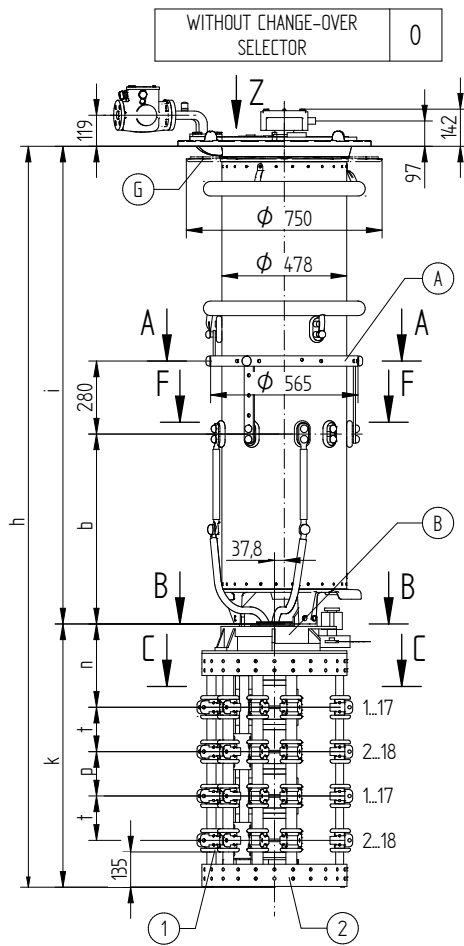
SERIAL NUMBER

MATERIAL NUMBER  
100178673E

SHEET  
2/2

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|-------------------|--------------|--------------------|
| DATE              | NAME         | DOCUMENT NO.       |
| DFTR. 18.01.2018  | RAEDLINGER   | SED 5144363 001 01 |
| CHKD. 23.01.2018  | MENZELS      | CHANGE NO.         |
| STANDJ 23.01.2018 | PRODASTSCHUK | 1085481            |
|                   |              | SCALE 1:10         |



FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 kV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
- (1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT
- (2) - SELECTOR BASE IS MADE OF INSULATING MATERIAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 10009030
- D-D: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 10010019

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H II 652/702/1002/1302 - 72.5...362 kV - RC/RD/RDE  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER 100178591E  
 SHEET 1/2

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|------------|--------------|--------------------|
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| 18.01.2018 | RAEDLINGER   | SED 5144363 001 01 |
| 23.01.2018 | MENZELS      | CHANGE NO.         |
| 23.01.2018 | PRODASTSCHUK | 1085481            |
| DFTR.      | SCALE        | 1:10               |

## VACUTAP® VRS

| SELECTOR SIZE      | RC   |      |      |       |       |       | RD / RDE |      |      |       |       |       |       |
|--------------------|------|------|------|-------|-------|-------|----------|------|------|-------|-------|-------|-------|
| Um [kV]            | 72,5 | 123  | 170  | 245   | 300   | 362   | 72,5     | 123  | 170  | 245   | 300   | 362   |       |
| DIMENSIONS<br>[mm] | h    | 2177 | 2307 | 2437  | 2537  | 2689  | 2792     | 2337 | 2467 | 2597  | 2697  | 2849  | 2952  |
|                    | i    | 1168 | 1298 | 1428  | 1528  | 1680  | 1783     | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  |
|                    | b    | 425  |      |       |       |       |          | 425  |      |       |       |       |       |
|                    | s    | -    | -    | 302   | 402   | 554   | 573      | -    | -    | 302   | 402   | 554   | 573   |
|                    | z    | -    | -    | 191   | 191   | 191   | 228      | -    | -    | 191   | 191   | 191   | 228   |
|                    | x    | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695    | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 |
|                    | y    | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100    | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 |
|                    | k    | 1009 |      |       |       |       |          | 1169 |      |       |       |       |       |
|                    | n    | 319  |      |       |       |       |          | 359  |      |       |       |       |       |
|                    | t    | 170  |      |       |       |       |          | 210  |      |       |       |       |       |
|                    | p    | 170  |      |       |       |       |          | 210  |      |       |       |       |       |
|                    | r    | 340  |      |       |       |       |          | 420  |      |       |       |       |       |
|                    | q    | 489  |      |       |       |       |          | 569  |      |       |       |       |       |
| OIL VOLUME [dm³]   | 155  | 175  | 195  | 215   | 235   | 255   | 155      | 175  | 195  | 215   | 235   | 255   |       |
| DISPLACEMENT [dm³] | 263  | 283  | 313  | 333   | 363   | 403   | 266      | 286  | 316  | 336   | 366   | 406   |       |
| MAX. WEIGHT [kg]   | 434  | 440  | 453  | 456   | 462   | 469   | 442      | 448  | 461  | 464   | 470   | 477   |       |

## VACUTAP® VRM / VRH 652

| SELECTOR SIZE      | RC   |      |      |       |       |       | RD / RDE |      |      |       |       |       |       |
|--------------------|------|------|------|-------|-------|-------|----------|------|------|-------|-------|-------|-------|
| Um [kV]            | 72,5 | 123  | 170  | 245   | 300   | 362   | 72,5     | 123  | 170  | 245   | 300   | 362   |       |
| DIMENSIONS<br>[mm] | h    | 2328 | 2458 | 2588  | 2688  | 2840  | 2943     | 2488 | 2618 | 2748  | 2848  | 3000  | 3103  |
|                    | i    | 1319 | 1449 | 1579  | 1679  | 1831  | 1934     | 1319 | 1449 | 1579  | 1679  | 1831  | 1934  |
|                    | b    | 576  |      |       |       |       |          | 576  |      |       |       |       |       |
|                    | s    | -    | -    | 302   | 402   | 554   | 573      | -    | -    | 302   | 402   | 554   | 573   |
|                    | z    | -    | -    | 191   | 191   | 191   | 228      | -    | -    | 191   | 191   | 191   | 228   |
|                    | x    | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695    | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 |
|                    | y    | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100    | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 |
|                    | k    | 1009 |      |       |       |       |          | 1169 |      |       |       |       |       |
|                    | n    | 319  |      |       |       |       |          | 359  |      |       |       |       |       |
|                    | t    | 170  |      |       |       |       |          | 210  |      |       |       |       |       |
|                    | p    | 170  |      |       |       |       |          | 210  |      |       |       |       |       |
|                    | r    | 340  |      |       |       |       |          | 420  |      |       |       |       |       |
|                    | q    | 489  |      |       |       |       |          | 569  |      |       |       |       |       |
| OIL VOLUME [dm³]   | 175  | 195  | 225  | 240   | 265   | 280   | 175      | 195  | 225  | 240   | 265   | 280   |       |
| DISPLACEMENT [dm³] | 283  | 313  | 343  | 363   | 393   | 433   | 286      | 316  | 346  | 366   | 396   | 436   |       |
| MAX. WEIGHT [kg]   | 450  | 456  | 468  | 472   | 478   | 484   | 458      | 464  | 476  | 480   | 486   | 492   |       |

## VACUTAP® VRL / VRH 1302

| SELECTOR SIZE      | RC   |      |      |       |       |       | RD / RDE |      |      |       |       |       |       |
|--------------------|------|------|------|-------|-------|-------|----------|------|------|-------|-------|-------|-------|
| Um [kV]            | 72,5 | 123  | 170  | 245   | 300   | 362   | 72,5     | 123  | 170  | 245   | 300   | 362   |       |
| DIMENSIONS<br>[mm] | h    | 2480 | 2610 | 2740  | 2840  | 2992  | 3095     | 2640 | 2770 | 2900  | 3000  | 3152  | 3255  |
|                    | i    | 1471 | 1601 | 1731  | 1831  | 1983  | 2086     | 1471 | 1601 | 1731  | 1831  | 1983  | 2086  |
|                    | b    | 728  |      |       |       |       |          | 728  |      |       |       |       |       |
|                    | s    | -    | -    | 302   | 402   | 554   | 573      | -    | -    | 302   | 402   | 554   | 573   |
|                    | z    | -    | -    | 191   | 191   | 191   | 228      | -    | -    | 191   | 191   | 191   | 228   |
|                    | x    | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695    | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 |
|                    | y    | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100    | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 |
|                    | k    | 1009 |      |       |       |       |          | 1169 |      |       |       |       |       |
|                    | n    | 319  |      |       |       |       |          | 359  |      |       |       |       |       |
|                    | t    | 170  |      |       |       |       |          | 210  |      |       |       |       |       |
|                    | p    | 170  |      |       |       |       |          | 210  |      |       |       |       |       |
|                    | r    | 340  |      |       |       |       |          | 420  |      |       |       |       |       |
|                    | q    | 489  |      |       |       |       |          | 569  |      |       |       |       |       |
| OIL VOLUME [dm³]   | 205  | 225  | 245  | 265   | 285   | 305   | 205      | 225  | 245  | 265   | 285   | 305   |       |
| DISPLACEMENT [dm³] | 313  | 343  | 373  | 393   | 423   | 463   | 316      | 346  | 376  | 396   | 426   | 466   |       |
| MAX. WEIGHT [kg]   | 463  | 469  | 481  | 485   | 491   | 498   | 471      | 477  | 489  | 493   | 499   | 506   |       |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H II 652/702/1002/1302 - 72,5...362 kV - RC/RD/RDE  
 DIMENSION DRAWING

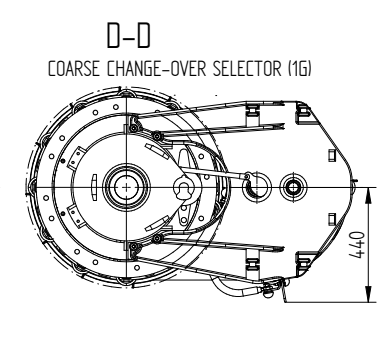
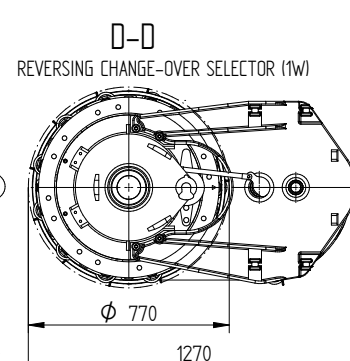
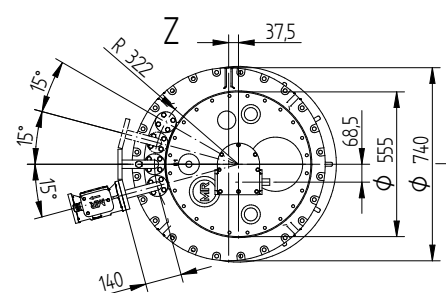
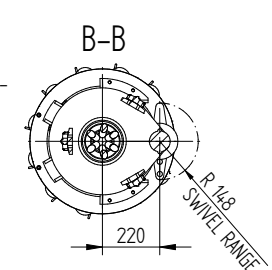
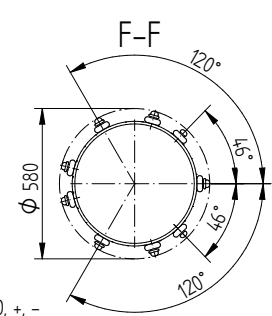
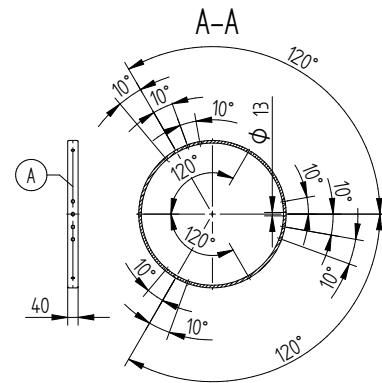
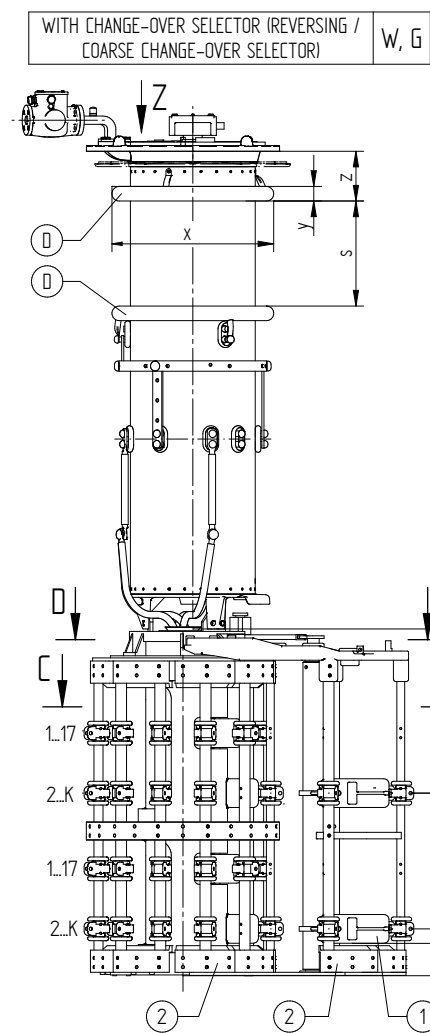
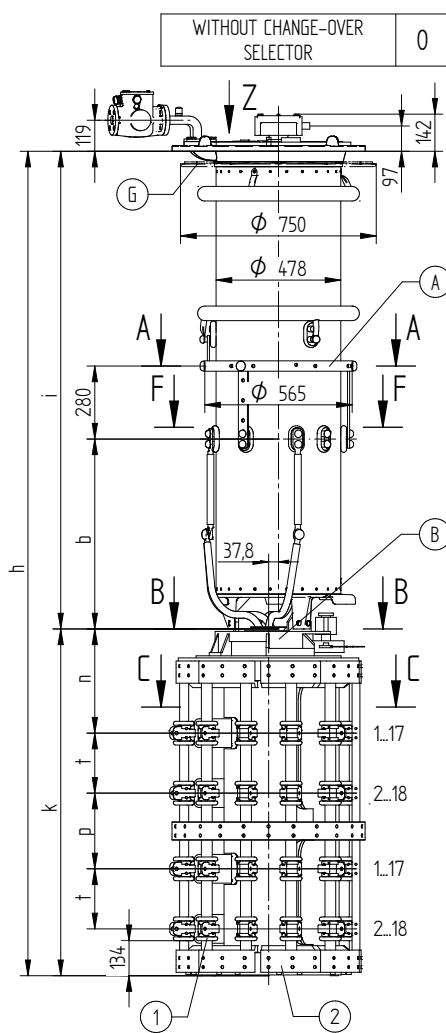
SERIAL NUMBER

MATERIAL NUMBER  
100178591E

SHEET  
2/2

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|        |            |              |                    |
|--------|------------|--------------|--------------------|
| DATE   | 24.10.2016 | DOCUMENT NO. | SED 5144498 001 00 |
| DFTR.  | 26.10.2016 | NAME         | BUTERUS            |
| CHKD.  | 26.10.2016 | WREDE        | WREDE              |
| STAND. | 26.10.2016 | PRODASTSCHUK | 1077332            |
|        |            | SCALE        | -                  |



FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 KV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
- (1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT
- (2) - SELECTOR BASE IS MADE OF INSULATING MATERIAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 10016570
- D-D: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 10017264

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H II 652/702/1002/1302 - 72,5...362 kV - RE/RF  
 DIMENSION DRAWING

|                 |            |
|-----------------|------------|
| SERIAL NUMBER   | -          |
| MATERIAL NUMBER | 100178600E |
| SHEET           | 1/2        |

## VACUTAP® VRS

| SELECTOR SIZE      |     | RE   |      |       |       |       |       | RF   |      |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 72,5 | 123  | 170   | 245   | 300   | 362   |
| DIMENSIONS<br>[mm] | h   | 2498 | 2628 | 2758  | 2858  | 3010  | 3113  | 2578 | 2708 | 2838  | 2938  | 3090  | 3193  |
|                    | i   | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  |
|                    | b   | 425  |      |       |       |       |       | 425  |      |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | -    | -    | 302   | 402   | 554   | 573   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | -    | -    | 191   | 191   | 191   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 |
|                    | k   | 1330 |      |       |       |       |       | 1410 |      |       |       |       |       |
|                    | n   | 400  |      |       |       |       |       | 400  |      |       |       |       |       |
|                    | t   | 230  |      |       |       |       |       | 230  |      |       |       |       |       |
|                    | p   | 290  |      |       |       |       |       | 370  |      |       |       |       |       |
|                    | r   | 520  |      |       |       |       |       | 600  |      |       |       |       |       |
| q                  | 630 |      |      |       |       |       | 630   |      |      |       |       |       |       |
| OIL CONTENT [dm³]  |     | 155  | 175  | 195   | 215   | 235   | 255   | 155  | 175  | 195   | 215   | 235   | 255   |
| DISPLACEMENT [dm³] |     | 302  | 322  | 352   | 372   | 402   | 442   | 305  | 325  | 355   | 375   | 405   | 445   |
| MAX. WEIGHT [kg]   |     | 512  | 518  | 531   | 534   | 540   | 547   | 519  | 525  | 538   | 541   | 547   | 554   |

## VACUTAP® VRM / VRH 652

| SELECTOR SIZE      |     | RE   |      |       |       |       |       | RF   |      |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 72,5 | 123  | 170   | 245   | 300   | 362   |
| DIMENSIONS<br>[mm] | h   | 2650 | 2780 | 2910  | 3010  | 3162  | 3265  | 2730 | 2860 | 2990  | 3090  | 3242  | 3345  |
|                    | i   | 1320 | 1450 | 1580  | 1680  | 1832  | 1935  | 1320 | 1450 | 1580  | 1680  | 1832  | 1935  |
|                    | b   | 576  |      |       |       |       |       | 576  |      |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | -    | -    | 302   | 402   | 554   | 573   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | -    | -    | 191   | 191   | 191   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 |
|                    | k   | 1330 |      |       |       |       |       | 1410 |      |       |       |       |       |
|                    | n   | 400  |      |       |       |       |       | 400  |      |       |       |       |       |
|                    | t   | 230  |      |       |       |       |       | 230  |      |       |       |       |       |
|                    | p   | 290  |      |       |       |       |       | 370  |      |       |       |       |       |
|                    | r   | 520  |      |       |       |       |       | 600  |      |       |       |       |       |
| q                  | 630 |      |      |       |       |       | 630   |      |      |       |       |       |       |
| OIL CONTENT [dm³]  |     | 175  | 195  | 225   | 240   | 265   | 280   | 175  | 195  | 225   | 240   | 265   | 280   |
| DISPLACEMENT [dm³] |     | 322  | 352  | 382   | 402   | 432   | 472   | 325  | 355  | 385   | 405   | 435   | 475   |
| MAX. WEIGHT [kg]   |     | 528  | 534  | 546   | 550   | 556   | 562   | 535  | 541  | 553   | 557   | 563   | 569   |

## VACUTAP® VRL / VRH 1302

| SELECTOR SIZE      |     | RE   |      |       |       |       |       | RF   |      |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 72,5 | 123  | 170   | 245   | 300   | 362   |
| DIMENSIONS<br>[mm] | h   | 2801 | 2931 | 3061  | 3161  | 3313  | 3416  | 2881 | 3011 | 3141  | 3241  | 3393  | 3496  |
|                    | i   | 1471 | 1601 | 1731  | 1831  | 1983  | 2086  | 1471 | 1601 | 1731  | 1831  | 1983  | 2086  |
|                    | b   | 728  |      |       |       |       |       | 728  |      |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | -    | -    | 302   | 402   | 554   | 573   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | -    | -    | 191   | 191   | 191   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 |
|                    | k   | 1330 |      |       |       |       |       | 1410 |      |       |       |       |       |
|                    | n   | 400  |      |       |       |       |       | 400  |      |       |       |       |       |
|                    | t   | 230  |      |       |       |       |       | 230  |      |       |       |       |       |
|                    | p   | 290  |      |       |       |       |       | 370  |      |       |       |       |       |
|                    | r   | 520  |      |       |       |       |       | 600  |      |       |       |       |       |
| q                  | 630 |      |      |       |       |       | 630   |      |      |       |       |       |       |
| OIL CONTENT [dm³]  |     | 205  | 225  | 245   | 265   | 285   | 305   | 205  | 225  | 245   | 265   | 285   | 305   |
| DISPLACEMENT [dm³] |     | 352  | 382  | 412   | 432   | 462   | 502   | 355  | 385  | 415   | 435   | 465   | 505   |
| MAX. WEIGHT [kg]   |     | 541  | 547  | 559   | 563   | 569   | 576   | 548  | 554  | 566   | 570   | 576   | 583   |

|       |            |       |              |              |                    |
|-------|------------|-------|--------------|--------------|--------------------|
| DATE  | 24.10.2016 | NAME  | BUTERUS      | DOCUMENT NO. | SED 5144498 001 00 |
| DFTR. | 26.10.2016 | WREDE | PRODASTSCHUK | CHANGE NO.   | 1077332            |
| CHKD. | 26.10.2016 | SCALE | -            |              |                    |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
VR S/M/L/H II 652/702/1002/1302 - 72,5...362 kV - RE/RF  
DIMENSION DRAWING

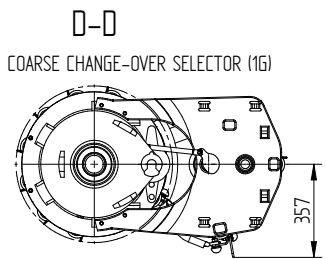
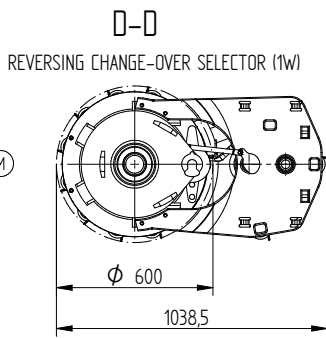
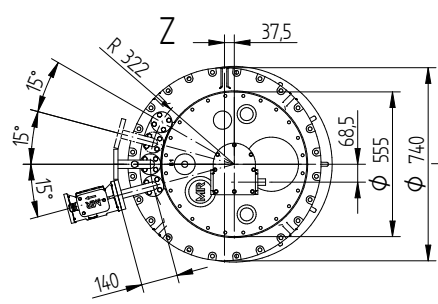
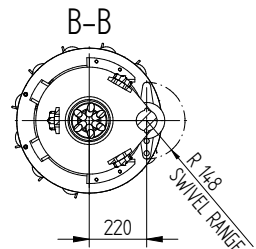
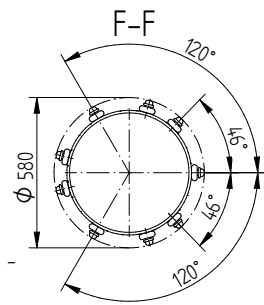
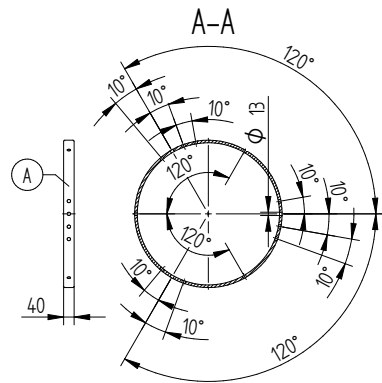
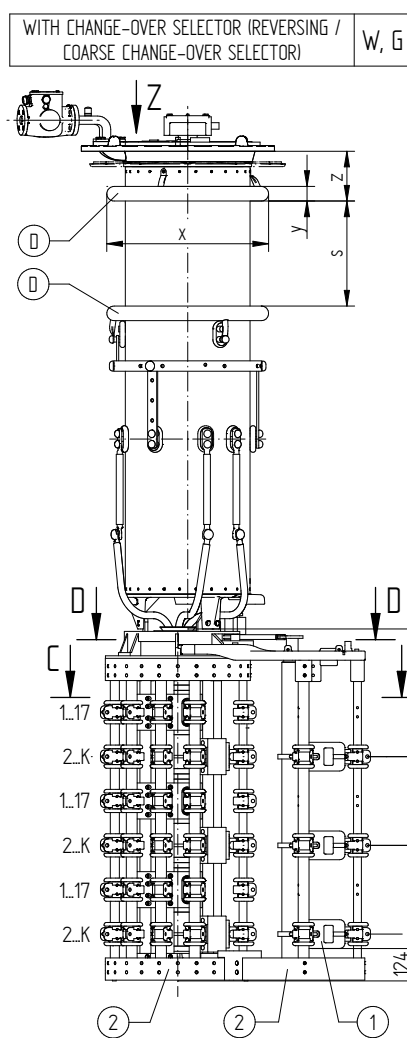
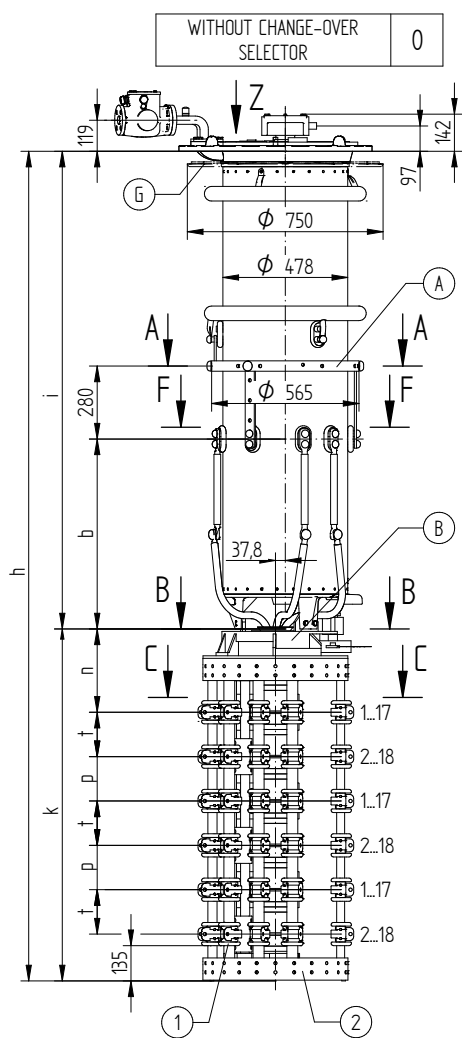
SERIAL NUMBER

MATERIAL NUMBER  
100178600E

SHEET  
2/2

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|-------------------|--------------|--------------------|
| DATE              | NAME         | DOCUMENT NO.       |
| DFTR. 18.01.2018  | RAEDLINGER   | SED 5144516 001 02 |
| CHKD. 23.01.2018  | MENZELS      | SCALE              |
| STANDJ 23.01.2018 | PRODASTSCHUK | 1:10               |
|                   |              | CHANGE NO.         |
|                   |              | 1085481            |



FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 KV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
- (1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT
- (2) - SELECTOR BASE IS MADE OF INSULATING MATERIAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 10009030
- D-D: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 10010019

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H III 650/700/1000/1300 - 72.5...245 kV - RC/RD/RDE  
 DIMENSION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| MATERIAL NUMBER | SHEET |
| 100178641E      | 1/2   |



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|                   |              |                    |
|-------------------|--------------|--------------------|
| DATE              | NAME         | DOCUMENT NO.       |
| DFTR. 18.01.2018  | RAEDLINGER   | SED 5144516 001 02 |
| CHKD. 23.01.2018  | MENZELS      | SCALE 1:10         |
| STANDJ 23.01.2018 | PRODASTSCHUK | CHANGE NO. 1085481 |

## VACUTAP® VRS

| SELECTOR SIZE      | RC   |      |      |       | RD / RDE |      |      |       |       |
|--------------------|------|------|------|-------|----------|------|------|-------|-------|
| Um [kV]            | 72,5 | 123  | 170  | 245   | 72,5     | 123  | 170  | 245   |       |
| DIMENSIONS [mm]    | h    | 2517 | 2647 | 2777  | 2877     | 2757 | 2887 | 3017  | 3117  |
|                    | i    | 1168 | 1298 | 1428  | 1528     | 1168 | 1298 | 1428  | 1528  |
|                    | b    | 425  |      |       |          | 425  |      |       |       |
|                    | s    | -    | -    | 302   | 402      | -    | -    | 302   | 402   |
|                    | z    | -    | -    | 191   | 191      | -    | -    | 191   | 191   |
|                    | x    | -    | -    | ∅ 620 | ∅ 620    | -    | -    | ∅ 620 | ∅ 620 |
|                    | y    | -    | -    | ∅ 56  | ∅ 56     | -    | -    | ∅ 56  | ∅ 56  |
|                    | k    | 1349 |      |       |          | 1589 |      |       |       |
|                    | n    | 319  |      |       |          | 359  |      |       |       |
|                    | t    | 170  |      |       |          | 210  |      |       |       |
|                    | p    | 170  |      |       |          | 210  |      |       |       |
|                    | r    | 340  |      |       |          | 420  |      |       |       |
| q                  | 489  |      |      |       | 569      |      |      |       |       |
| OIL VOLUME [dm³]   | 150  | 170  | 190  | 210   | 150      | 170  | 190  | 210   |       |
| DISPLACEMENT [dm³] | 278  | 298  | 328  | 348   | 284      | 304  | 334  | 354   |       |
| MAX. WEIGHT [kg]   | 502  | 508  | 520  | 524   | 514      | 520  | 532  | 536   |       |

## VACUTAP® VRM / VRH 650

| SELECTOR SIZE      | RC   |      |      |       | RD / RDE |      |      |       |       |
|--------------------|------|------|------|-------|----------|------|------|-------|-------|
| Um [kV]            | 72,5 | 123  | 170  | 245   | 72,5     | 123  | 170  | 245   |       |
| DIMENSIONS [mm]    | h    | 2668 | 2798 | 2928  | 3028     | 2908 | 3038 | 3168  | 3268  |
|                    | i    | 1319 | 1449 | 1579  | 1679     | 1319 | 1449 | 1579  | 1679  |
|                    | b    | 576  |      |       |          | 576  |      |       |       |
|                    | s    | -    | -    | 302   | 402      | -    | -    | 302   | 402   |
|                    | z    | -    | -    | 191   | 191      | -    | -    | 191   | 191   |
|                    | x    | -    | -    | ∅ 620 | ∅ 620    | -    | -    | ∅ 620 | ∅ 620 |
|                    | y    | -    | -    | ∅ 56  | ∅ 56     | -    | -    | ∅ 56  | ∅ 56  |
|                    | k    | 1349 |      |       |          | 1589 |      |       |       |
|                    | n    | 319  |      |       |          | 359  |      |       |       |
|                    | t    | 170  |      |       |          | 210  |      |       |       |
|                    | p    | 170  |      |       |          | 210  |      |       |       |
|                    | r    | 340  |      |       |          | 420  |      |       |       |
| q                  | 489  |      |      |       | 569      |      |      |       |       |
| OIL VOLUME [dm³]   | 170  | 190  | 220  | 235   | 170      | 190  | 220  | 235   |       |
| DISPLACEMENT [dm³] | 298  | 328  | 358  | 378   | 304      | 334  | 364  | 384   |       |
| MAX. WEIGHT [kg]   | 522  | 529  | 541  | 545   | 534      | 541  | 553  | 557   |       |

## VACUTAP® VRL / VRH 1300

| SELECTOR SIZE      | RC   |      |      |       | RD / RDE |      |      |       |       |
|--------------------|------|------|------|-------|----------|------|------|-------|-------|
| Um [kV]            | 72,5 | 123  | 170  | 245   | 72,5     | 123  | 170  | 245   |       |
| DIMENSIONS [mm]    | h    | 2820 | 2950 | 3080  | 3180     | 3060 | 3190 | 3320  | 3420  |
|                    | i    | 1471 | 1601 | 1731  | 1831     | 1471 | 1601 | 1731  | 1831  |
|                    | b    | 728  |      |       |          | 728  |      |       |       |
|                    | s    | -    | -    | 302   | 402      | -    | -    | 302   | 402   |
|                    | z    | -    | -    | 191   | 191      | -    | -    | 191   | 191   |
|                    | x    | -    | -    | ∅ 620 | ∅ 620    | -    | -    | ∅ 620 | ∅ 620 |
|                    | y    | -    | -    | ∅ 56  | ∅ 56     | -    | -    | ∅ 56  | ∅ 56  |
|                    | k    | 1349 |      |       |          | 1589 |      |       |       |
|                    | n    | 319  |      |       |          | 359  |      |       |       |
|                    | t    | 170  |      |       |          | 210  |      |       |       |
|                    | p    | 170  |      |       |          | 210  |      |       |       |
|                    | r    | 340  |      |       |          | 420  |      |       |       |
| q                  | 489  |      |      |       | 569      |      |      |       |       |
| OIL VOLUME [dm³]   | 200  | 220  | 240  | 260   | 200      | 220  | 240  | 260   |       |
| DISPLACEMENT [dm³] | 328  | 358  | 388  | 408   | 334      | 364  | 394  | 414   |       |
| MAX. WEIGHT [kg]   | 540  | 546  | 559  | 562   | 552      | 558  | 571  | 574   |       |

DIMENSION IN mm EXCEPT AS NOTED



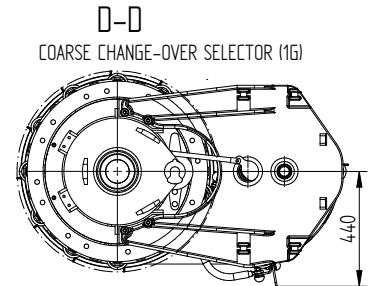
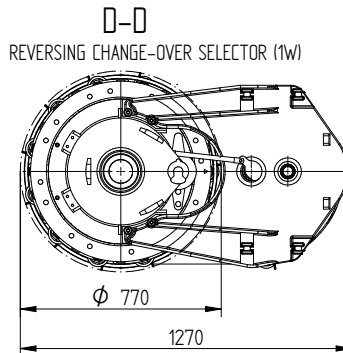
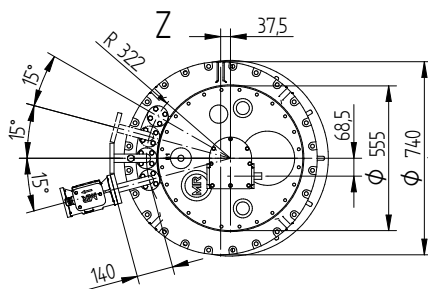
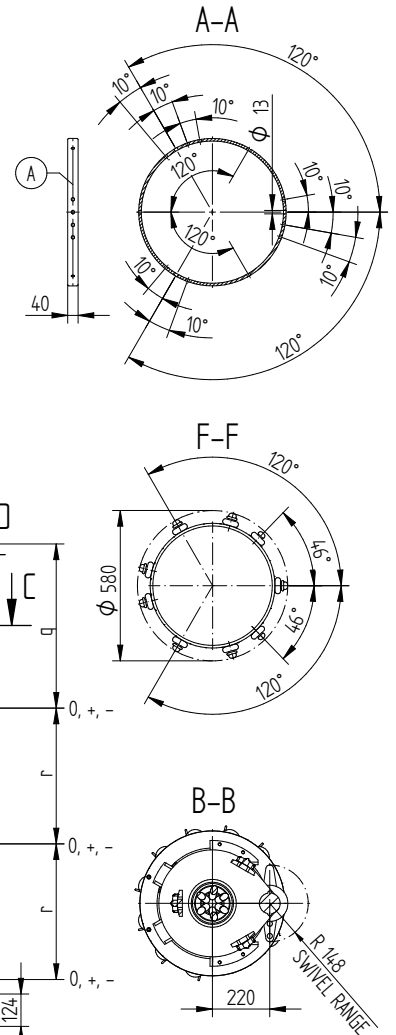
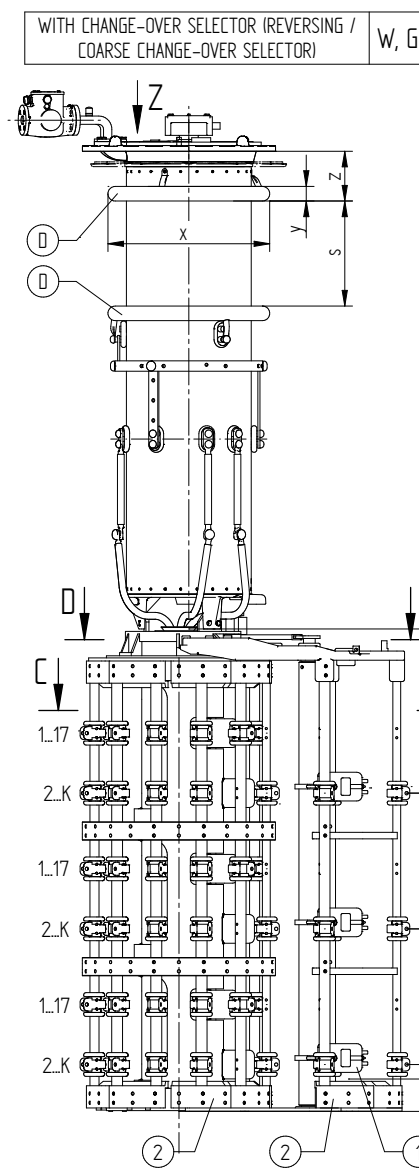
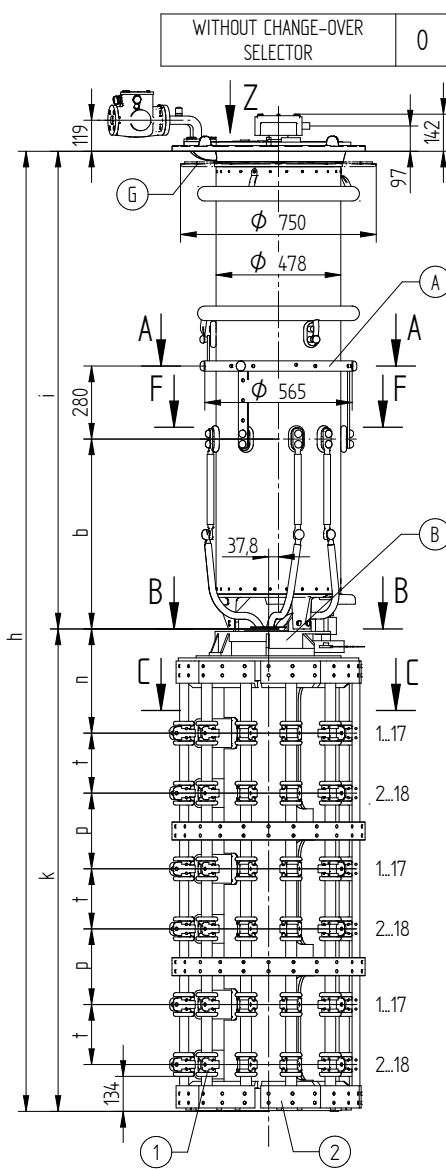
ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H III 650/700/1000/1300 - 72,5...245 kV - RC/RD/RDE  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER 100178641E  
 SHEET 2/2

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|                   |              |                     |
|-------------------|--------------|---------------------|
| DATE              | NAME         | DOCUMENT NO.        |
| DFTR. 25.10.2016  | BUTERUS      | SED 5'152434-001 00 |
| CHKD. 26.10.2016  | WREDE        | SCALE               |
| STAND. 26.10.2016 | PRODASTSCHUK | 1077332             |



FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 kV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
- (1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT
- (2) - SELECTOR BASE IS MADE OF INSULATING MATERIAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

- C-C: REFER TO 10016570

- D-D: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 10017264

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H III 650/700/1000/1300 - 72,5...245 kV - RE/RF  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER  
 100178650E

SHEET  
 1/2

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## VACUTAP® VRS

| SELECTOR SIZE      |     | RE   |      |       |       | RF   |      |       |       |
|--------------------|-----|------|------|-------|-------|------|------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 72,5 | 123  | 170   | 245   |
| DIMENSIONS<br>[mm] | h   | 3018 | 3148 | 3278  | 3378  | 3178 | 3308 | 3438  | 3538  |
|                    | i   | 1168 | 1298 | 1428  | 1528  | 1168 | 1298 | 1428  | 1528  |
|                    | b   | 425  |      |       |       | 425  |      |       |       |
|                    | s   | -    | -    | 302   | 402   | -    | -    | 302   | 402   |
|                    | z   | -    | -    | 191   | 191   | -    | -    | 191   | 191   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  |
|                    | k   | 1850 |      |       |       | 2010 |      |       |       |
|                    | n   | 400  |      |       |       | 400  |      |       |       |
|                    | t   | 230  |      |       |       | 230  |      |       |       |
|                    | p   | 290  |      |       |       | 370  |      |       |       |
|                    | r   | 520  |      |       |       | 600  |      |       |       |
| q                  | 630 |      |      |       | 630   |      |      |       |       |
| OIL CONTENT [dm³]  |     | 150  | 170  | 190   | 210   | 150  | 170  | 190   | 210   |
| DISPLACEMENT [dm³] |     | 331  | 351  | 381   | 401   | 336  | 356  | 386   | 406   |
| MAX. WEIGHT [kg]   |     | 611  | 617  | 629   | 633   | 624  | 630  | 642   | 646   |

## VACUTAP® VRM / VRH 650

| SELECTOR SIZE      |     | RE   |      |       |       | RF   |      |       |       |
|--------------------|-----|------|------|-------|-------|------|------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 72,5 | 123  | 170   | 245   |
| DIMENSIONS<br>[mm] | h   | 3170 | 3300 | 3430  | 3530  | 3330 | 3460 | 3590  | 3690  |
|                    | i   | 1320 | 1450 | 1580  | 1680  | 1320 | 1450 | 1580  | 1680  |
|                    | b   | 576  |      |       |       | 576  |      |       |       |
|                    | s   | -    | -    | 302   | 402   | -    | -    | 302   | 402   |
|                    | z   | -    | -    | 191   | 191   | -    | -    | 191   | 191   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  |
|                    | k   | 1850 |      |       |       | 2010 |      |       |       |
|                    | n   | 400  |      |       |       | 400  |      |       |       |
|                    | t   | 230  |      |       |       | 230  |      |       |       |
|                    | p   | 290  |      |       |       | 370  |      |       |       |
|                    | r   | 520  |      |       |       | 600  |      |       |       |
| q                  | 630 |      |      |       | 630   |      |      |       |       |
| OIL CONTENT [dm³]  |     | 170  | 190  | 220   | 235   | 170  | 190  | 220   | 235   |
| DISPLACEMENT [dm³] |     | 351  | 381  | 411   | 431   | 356  | 386  | 416   | 436   |
| MAX. WEIGHT [kg]   |     | 631  | 638  | 650   | 654   | 644  | 651  | 663   | 667   |

## VACUTAP® VRL / VRH 1300

| SELECTOR SIZE      |     | RE   |      |       |       | RF   |      |       |       |
|--------------------|-----|------|------|-------|-------|------|------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 72,5 | 123  | 170   | 245   |
| DIMENSIONS<br>[mm] | h   | 3321 | 3451 | 3581  | 3681  | 3481 | 3611 | 3741  | 3841  |
|                    | i   | 1471 | 1601 | 1731  | 1831  | 1471 | 1601 | 1731  | 1831  |
|                    | b   | 728  |      |       |       | 728  |      |       |       |
|                    | s   | -    | -    | 302   | 402   | -    | -    | 302   | 402   |
|                    | z   | -    | -    | 191   | 191   | -    | -    | 191   | 191   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  |
|                    | k   | 1850 |      |       |       | 2010 |      |       |       |
|                    | n   | 400  |      |       |       | 400  |      |       |       |
|                    | t   | 230  |      |       |       | 230  |      |       |       |
|                    | p   | 290  |      |       |       | 370  |      |       |       |
|                    | r   | 520  |      |       |       | 600  |      |       |       |
| q                  | 630 |      |      |       | 630   |      |      |       |       |
| OIL CONTENT [dm³]  |     | 200  | 220  | 240   | 260   | 200  | 220  | 240   | 260   |
| DISPLACEMENT [dm³] |     | 381  | 411  | 441   | 461   | 386  | 416  | 446   | 466   |
| MAX. WEIGHT [kg]   |     | 649  | 655  | 668   | 671   | 662  | 668  | 681   | 684   |

|                   |              |                    |
|-------------------|--------------|--------------------|
| DATE              | NAME         | DOCUMENT NO.       |
| DFTR. 25.10.2016  | BUTERUS      | SED 5152434-001 00 |
| CHKD. 26.10.2016  | WREDE        | CHANGE NO.         |
| STAND. 26.10.2016 | PRODASTSCHUK | 1077332            |
|                   |              | SCALE              |
|                   |              | -                  |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H III 650/700/1000/1300 - 72,5...245 kV - RE/RF  
 DIMENSION DRAWING

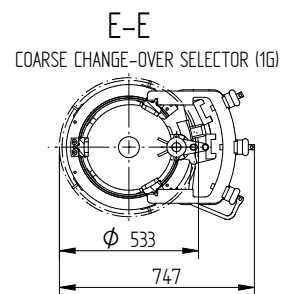
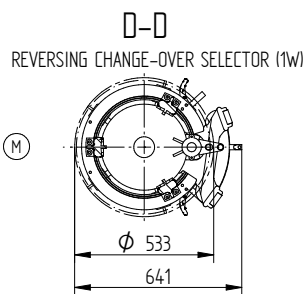
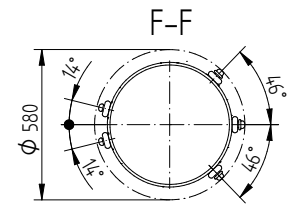
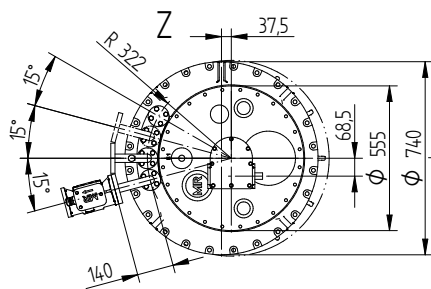
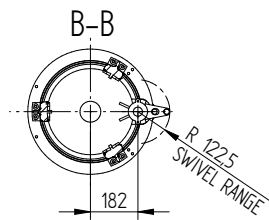
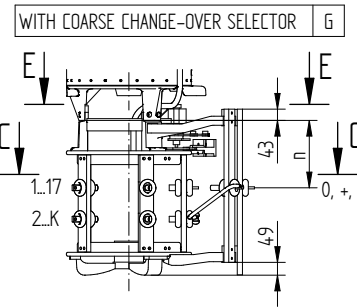
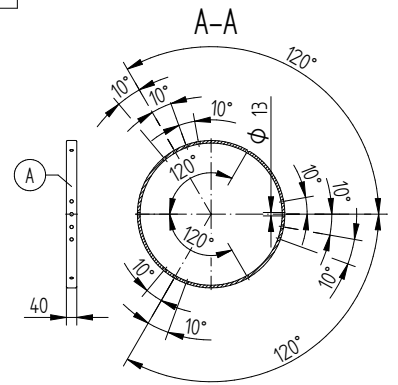
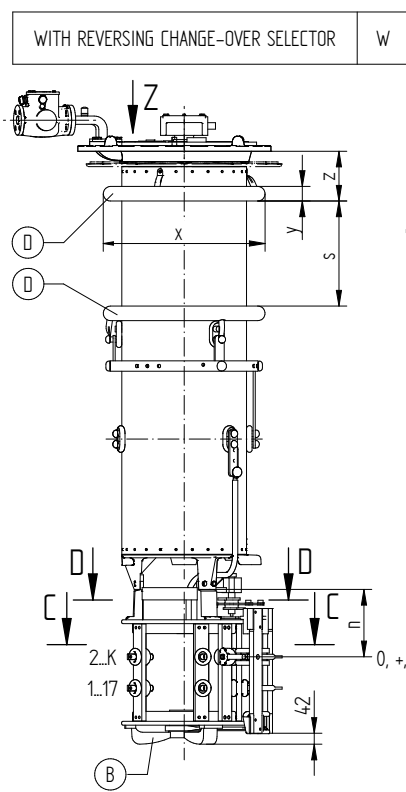
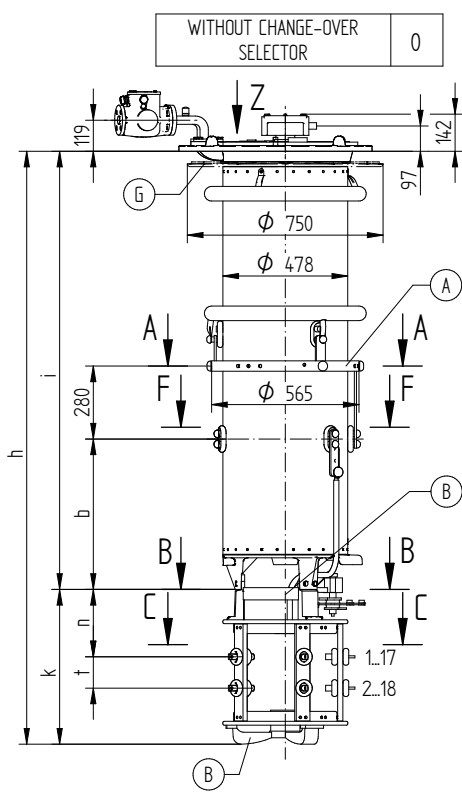
SERIAL NUMBER

MATERIAL NUMBER  
100178650E

SHEET  
2/2

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|-------------------|--------------|--------------------|
| DATE              | NAME         | DOCUMENT NO.       |
| DFTR. 16.05.2018  | RAEDLINGER   | SED 5143085 001 01 |
| CHKD. 16.05.2018  | HAUER        | SCALE              |
| STAND. 16.05.2018 | PRODASTSCHUK | 1087395            |
|                   |              | 1:10               |



FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 kV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

- C-C: REFER TO 10018046

- D-D AND E-E: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 723590

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VRS/M | 701 - 72,5...420 kV - B/C/D/DE  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER  
 100178581E

SHEET  
 1/2

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## VACUTAP® VRS

| SELECTOR SIZE      |     | B    |      |       |       |       |       |       | C    |      |       |       |       |       |       | D/DE |      |       |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h   | 1686 | 1816 | 1946  | 2046  | 2198  | 2301  | 2420  | 1761 | 1891 | 2021  | 2121  | 2273  | 2376  | 2495  | 1956 | 2086 | 2216  | 2316  | 2468  | 2571  | 2690  |
|                    | i   | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1902  | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1902  | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1902  |
|                    | b   | 425  |      |       |       |       |       |       | 425  |      |       |       |       |       |       | 425  |      |       |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | 692   | -    | -    | 302   | 402   | 554   | 573   | 692   | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | 228   | -    | -    | 191   | 191   | 191   | 228   | 228   | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k   | 518  |      |       |       |       |       |       | 593  |      |       |       |       |       |       | 788  |      |       |       |       |       |       |
|                    | n   | 233  |      |       |       |       |       |       | 258  |      |       |       |       |       |       | 323  |      |       |       |       |       |       |
| t                  | 95  |      |      |       |       |       |       | 120   |      |      |       |       |       |       | 185   |      |      |       |       |       |       |       |
| OIL CONTENT [dm³]  | 160 | 180  | 200  | 220   | 240   | 260   | 280   | 160   | 180  | 200  | 220   | 240   | 260   | 280   | 160   | 180  | 200  | 220   | 240   | 260   | 280   |       |
| DISPLACEMENT [dm³] | 258 | 278  | 308  | 328   | 358   | 398   | 418   | 258   | 278  | 308  | 328   | 358   | 398   | 418   | 260   | 280  | 310  | 330   | 360   | 400   | 420   |       |
| MAX. WEIGHT [kg]   | 312 | 318  | 331  | 334   | 340   | 347   | 352   | 322   | 328  | 341  | 344   | 350   | 357   | 362   | 333   | 339  | 352  | 355   | 361   | 368   | 373   |       |

## VACUTAP® VRM

| SELECTOR SIZE      |     | B    |      |       |       |       |       |       | C    |      |       |       |       |       |       | D/DE |      |       |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h   | 1838 | 1968 | 2098  | 2198  | 2350  | 2453  | 2572  | 1913 | 2043 | 2173  | 2273  | 2425  | 2528  | 2647  | 2108 | 2238 | 2368  | 2468  | 2620  | 2723  | 2842  |
|                    | i   | 1320 | 1450 | 1580  | 1680  | 1832  | 1935  | 2054  | 1320 | 1450 | 1580  | 1680  | 1832  | 1935  | 2054  | 1320 | 1450 | 1580  | 1680  | 1832  | 1935  | 2054  |
|                    | b   | 576  |      |       |       |       |       |       | 576  |      |       |       |       |       |       | 576  |      |       |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | 692   | -    | -    | 302   | 402   | 554   | 573   | 692   | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | 228   | -    | -    | 191   | 191   | 191   | 228   | 228   | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k   | 518  |      |       |       |       |       |       | 593  |      |       |       |       |       |       | 788  |      |       |       |       |       |       |
|                    | n   | 233  |      |       |       |       |       |       | 258  |      |       |       |       |       |       | 323  |      |       |       |       |       |       |
| t                  | 95  |      |      |       |       |       |       | 120   |      |      |       |       |       |       | 185   |      |      |       |       |       |       |       |
| OIL CONTENT [dm³]  | 180 | 200  | 230  | 245   | 270   | 285   | 305   | 180   | 200  | 230  | 245   | 270   | 285   | 305   | 180   | 200  | 230  | 245   | 270   | 285   | 305   |       |
| DISPLACEMENT [dm³] | 278 | 308  | 338  | 358   | 388   | 428   | 448   | 278   | 308  | 338  | 358   | 388   | 428   | 448   | 280   | 310  | 340  | 360   | 390   | 430   | 450   |       |
| MAX. WEIGHT [kg]   | 321 | 327  | 340  | 344   | 349   | 356   | 361   | 331   | 337  | 350  | 354   | 359   | 366   | 371   | 342   | 348  | 361  | 365   | 370   | 377   | 382   |       |

|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 16.05.2018 | RAEDLINGER   | SED 5143085 001 01 |
| 16.05.2018 | HAUER        | CHANGE NO.         |
| 16.05.2018 | PRODASTSCHUK | 1087395            |
| DFTR.      | SCALE        | 1:10               |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



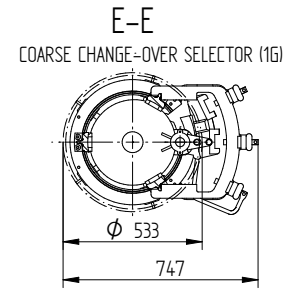
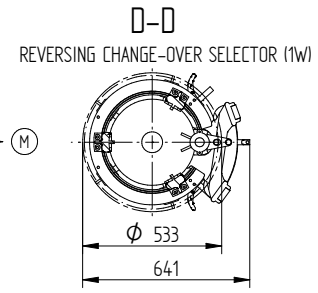
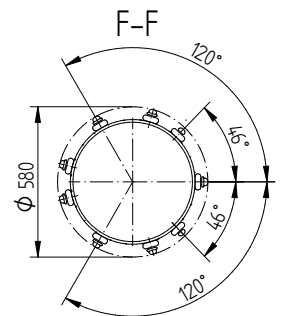
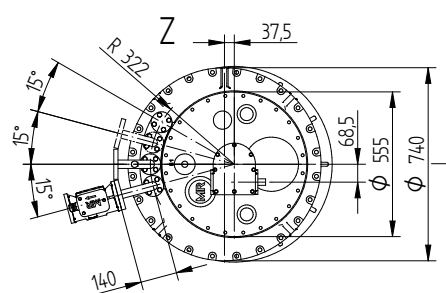
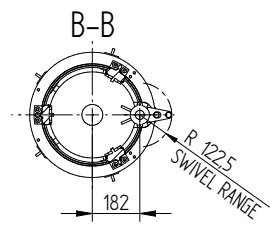
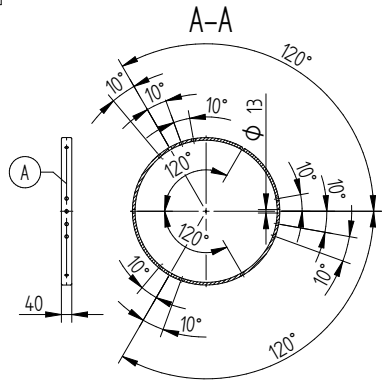
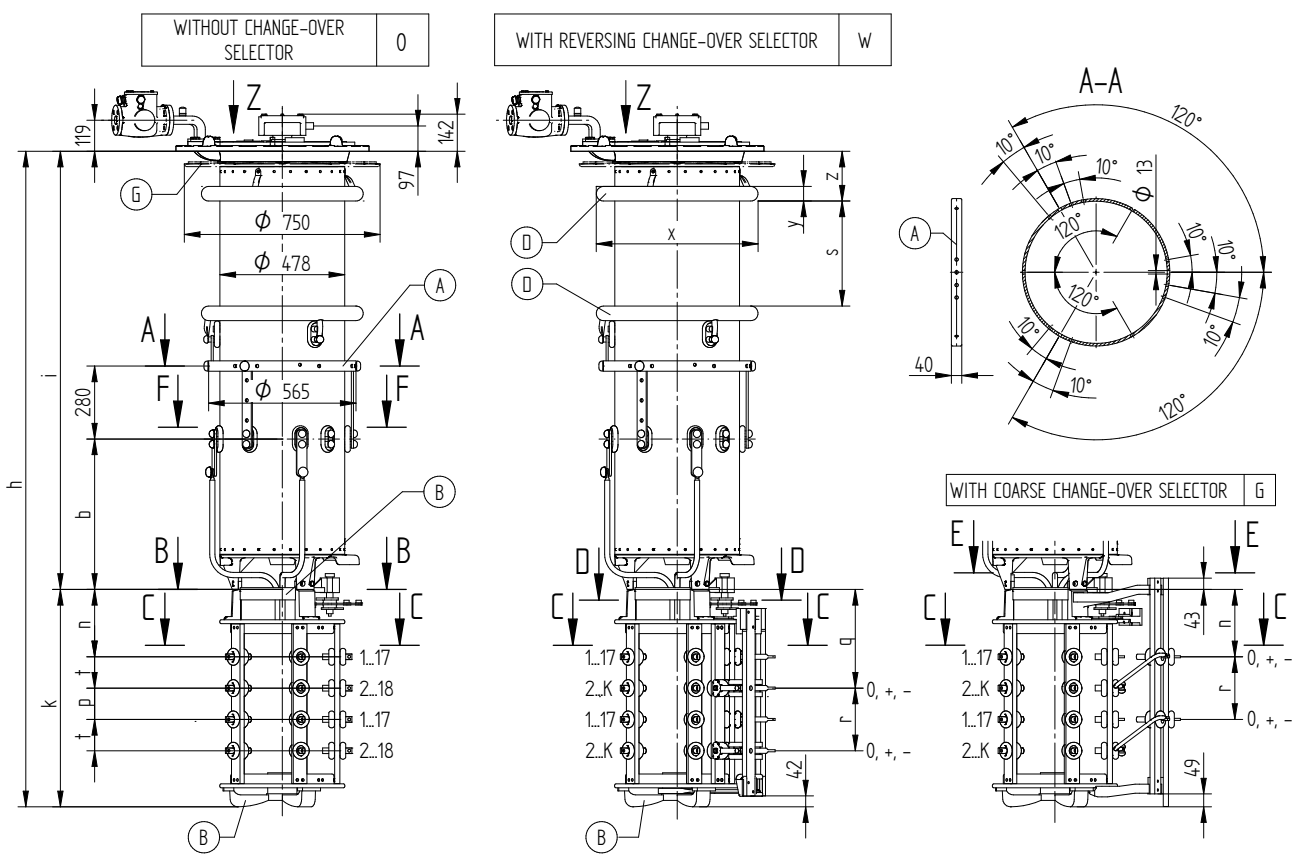
ON-LOAD TAP-CHANGER VACUTAP® VR  
VRS/M | 701 - 72,5...420 kV - B/C/D/DE  
DIMENSION DRAWING

SERIAL NUMBER

|                 |       |
|-----------------|-------|
| MATERIAL NUMBER | SHEET |
| 100178581E      | 2/2   |

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|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 20.10.2016 | BUTERUS      | SED 5144502 001 00 |
| 26.10.2016 | WREDE        | CHANGE NO.         |
| 26.10.2016 | PRODASTSCHUK | 1077332            |
| DFTR.      | SCALE        | -                  |
| CHKD.      |              |                    |
| STAND.     |              |                    |



FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 kV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 898013
- D-D AND E-E: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 723590

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M II 702 - 72,5...362 kV - B/C/D/E  
 DIMENSION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| -               |       |
| MATERIAL NUMBER | SHEET |
| 100178610E      | 1 / 2 |

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## VACUTAP® VRS

| SELECTOR SIZE      |     | B    |      |       |       |       |       | C    |      |       |       |       |       | D/DE |      |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 72,5 | 123  | 170   | 245   | 300   | 362   | 72,5 | 123  | 170   | 245   | 300   | 362   |
| DIMENSIONS<br>[mm] | h   | 1876 | 2006 | 2136  | 2236  | 2388  | 2491  | 2001 | 2131 | 2261  | 2361  | 2513  | 2616  | 2326 | 2456 | 2586  | 2686  | 2838  | 2941  |
|                    | i   | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  |
|                    | b   | 425  |      |       |       |       |       | 425  |      |       |       |       |       | 425  |      |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | -    | -    | 302   | 402   | 554   | 573   | -    | -    | 302   | 402   | 554   | 573   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | -    | -    | 191   | 191   | 191   | 228   | -    | -    | 191   | 191   | 191   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 |
|                    | k   | 708  |      |       |       |       |       | 833  |      |       |       |       |       | 1158 |      |       |       |       |       |
|                    | n   | 233  |      |       |       |       |       | 258  |      |       |       |       |       | 323  |      |       |       |       |       |
|                    | t   | 95   |      |       |       |       |       | 120  |      |       |       |       |       | 185  |      |       |       |       |       |
|                    | p   | 95   |      |       |       |       |       | 120  |      |       |       |       |       | 185  |      |       |       |       |       |
|                    | r   | 190  |      |       |       |       |       | 240  |      |       |       |       |       | 370  |      |       |       |       |       |
|                    | q   | 328  |      |       |       |       |       | 378  |      |       |       |       |       | 508  |      |       |       |       |       |
| OIL CONTENT [dm³]  | 155 | 175  | 195  | 215   | 235   | 255   | 155   | 175  | 195  | 215   | 235   | 255   | 155   | 175  | 195  | 215   | 235   | 255   |       |
| DISPLACEMENT [dm³] | 261 | 281  | 311  | 331   | 361   | 401   | 261   | 281  | 311  | 331   | 361   | 401   | 264   | 284  | 314  | 334   | 364   | 404   |       |
| MAX. WEIGHT [kg]   | 373 | 379  | 392  | 395   | 401   | 408   | 384   | 390  | 403  | 406   | 412   | 419   | 395   | 401  | 414  | 417   | 423   | 430   |       |

## VACUTAP® VRM

| SELECTOR SIZE      |     | B    |      |       |       |       |       | C    |      |       |       |       |       | D/DE |      |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 72,5 | 123  | 170   | 245   | 300   | 362   | 72,5 | 123  | 170   | 245   | 300   | 362   |
| DIMENSIONS<br>[mm] | h   | 2028 | 2158 | 2288  | 2388  | 2540  | 2643  | 2153 | 2283 | 2413  | 2513  | 2665  | 2768  | 2478 | 2608 | 2738  | 2838  | 2990  | 3093  |
|                    | i   | 1320 | 1450 | 1580  | 1680  | 1832  | 1935  | 1320 | 1450 | 1580  | 1680  | 1832  | 1935  | 1320 | 1450 | 1580  | 1680  | 1832  | 1935  |
|                    | b   | 576  |      |       |       |       |       | 576  |      |       |       |       |       | 576  |      |       |       |       |       |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | -    | -    | 302   | 402   | 554   | 573   | -    | -    | 302   | 402   | 554   | 573   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | -    | -    | 191   | 191   | 191   | 228   | -    | -    | 191   | 191   | 191   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 |
|                    | k   | 708  |      |       |       |       |       | 833  |      |       |       |       |       | 1158 |      |       |       |       |       |
|                    | n   | 233  |      |       |       |       |       | 258  |      |       |       |       |       | 323  |      |       |       |       |       |
|                    | t   | 95   |      |       |       |       |       | 120  |      |       |       |       |       | 185  |      |       |       |       |       |
|                    | p   | 95   |      |       |       |       |       | 120  |      |       |       |       |       | 185  |      |       |       |       |       |
|                    | r   | 190  |      |       |       |       |       | 240  |      |       |       |       |       | 370  |      |       |       |       |       |
|                    | q   | 328  |      |       |       |       |       | 378  |      |       |       |       |       | 508  |      |       |       |       |       |
| OIL CONTENT [dm³]  | 175 | 195  | 225  | 240   | 265   | 280   | 175   | 195  | 225  | 240   | 265   | 280   | 175   | 195  | 225  | 240   | 265   | 280   |       |
| DISPLACEMENT [dm³] | 281 | 311  | 341  | 361   | 391   | 431   | 281   | 311  | 341  | 361   | 391   | 431   | 284   | 314  | 344  | 364   | 394   | 434   |       |
| MAX. WEIGHT [kg]   | 389 | 395  | 407  | 411   | 417   | 423   | 400   | 406  | 418  | 422   | 428   | 434   | 411   | 417  | 429  | 433   | 439   | 445   |       |

|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 20.10.2016 | BUTERUS      | SED 5144502 001 00 |
| 26.10.2016 | WREDE        | CHANGE NO.         |
| 26.10.2016 | PRODASTSCHUK | 1077332            |
| DFTR.      | SCALE        | -                  |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
VR S/M II 702 - 72,5...362 kV - B/C/D/DE  
DIMENSION DRAWING

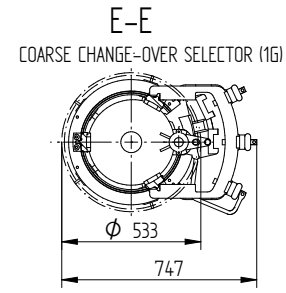
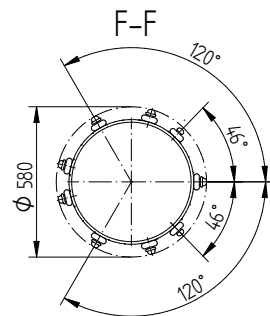
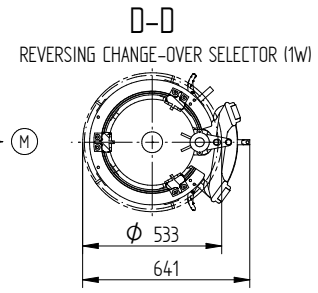
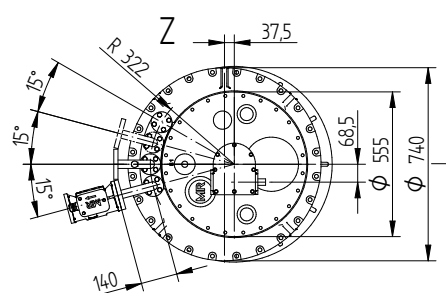
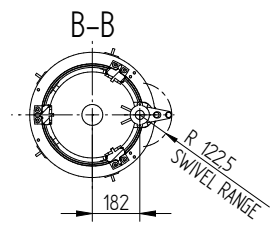
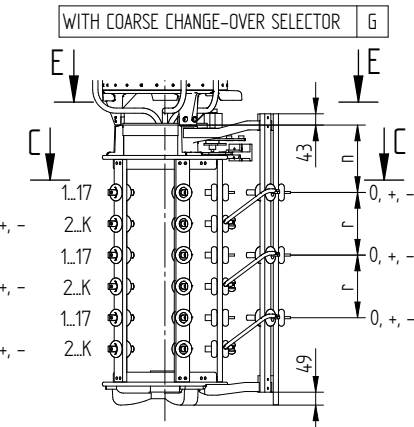
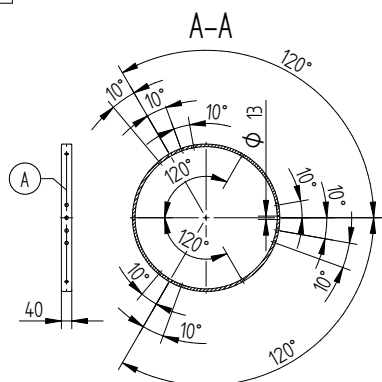
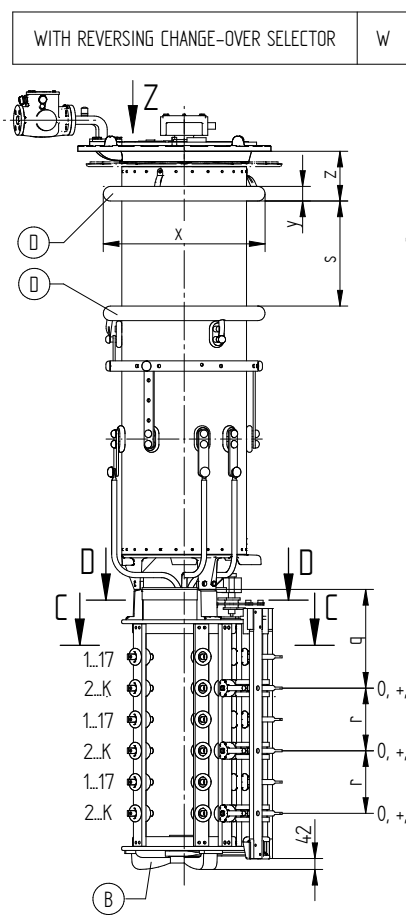
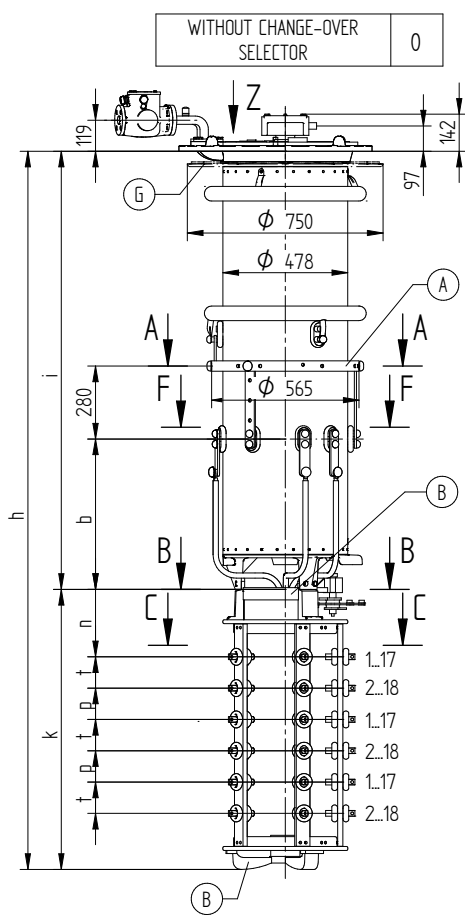
SERIAL NUMBER

MATERIAL NUMBER  
100178610E

SHEET  
2/2

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|        |            |              |                    |
|--------|------------|--------------|--------------------|
| DATE   | 08.12.2016 | DOCUMENT NO. | SED 5152449 001 01 |
| DFTR.  | 09.12.2016 | NAME         | BUTERUS            |
| CHKD.  | 09.12.2016 | CHANGE NO.   | 1077332            |
| STAND. | 09.12.2016 | SCALE        | -                  |
|        |            |              | WREDE              |
|        |            |              | KLEYN              |



FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 kV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 898013
- D-D AND E-E: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 723590

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M III 700 - 72,5...245 kV - B/C/D/DE  
 DIMENSION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| -               |       |
| MATERIAL NUMBER | SHEET |
| 100178660E      | 1/2   |



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## VACUTAP® VRS

| SELECTOR SIZE      | B    |      |      |       | C     |      |      |       | D/DE  |      |      |       |       |
|--------------------|------|------|------|-------|-------|------|------|-------|-------|------|------|-------|-------|
| Um [kV]            | 72,5 | 123  | 170  | 245   | 72,5  | 123  | 170  | 245   | 72,5  | 123  | 170  | 245   |       |
| DIMENSIONS<br>[mm] | h    | 2066 | 2196 | 2326  | 2426  | 2241 | 2371 | 2501  | 2601  | 2696 | 2833 | 2956  | 3056  |
|                    | i    | 1168 | 1298 | 1428  | 1528  | 1168 | 1298 | 1428  | 1528  | 1168 | 1298 | 1428  | 1528  |
|                    | b    | 425  |      |       |       | 425  |      |       |       | 425  |      |       |       |
|                    | s    | -    | -    | 302   | 402   | -    | -    | 302   | 402   | -    | -    | 302   | 402   |
|                    | z    | -    | -    | 191   | 191   | -    | -    | 191   | 191   | -    | -    | 191   | 191   |
|                    | x    | -    | -    | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 |
|                    | y    | -    | -    | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  |
|                    | k    | 898  |      |       |       | 1073 |      |       |       | 1528 |      |       |       |
|                    | n    | 233  |      |       |       | 258  |      |       |       | 323  |      |       |       |
|                    | t    | 95   |      |       |       | 120  |      |       |       | 185  |      |       |       |
|                    | p    | 95   |      |       |       | 120  |      |       |       | 185  |      |       |       |
|                    | r    | 190  |      |       |       | 240  |      |       |       | 370  |      |       |       |
|                    | q    | 328  |      |       |       | 378  |      |       |       | 508  |      |       |       |
| OIL CONTENT [dm³]  | 150  | 170  | 190  | 210   | 150   | 170  | 190  | 210   | 150   | 170  | 190  | 210   |       |
| DISPLACEMENT [dm³] | 264  | 284  | 314  | 334   | 264   | 284  | 314  | 334   | 272   | 292  | 322  | 342   |       |
| MAX. WEIGHT [kg]   | 437  | 443  | 455  | 459   | 447   | 453  | 465  | 469   | 464   | 470  | 482  | 486   |       |

## VACUTAP® VRM

| SELECTOR SIZE      | B    |      |      |       | C     |      |      |       | D/DE  |      |      |       |       |
|--------------------|------|------|------|-------|-------|------|------|-------|-------|------|------|-------|-------|
| Um [kV]            | 72,5 | 123  | 170  | 245   | 72,5  | 123  | 170  | 245   | 72,5  | 123  | 170  | 245   |       |
| DIMENSIONS<br>[mm] | h    | 2218 | 2348 | 2478  | 2578  | 2393 | 2523 | 2653  | 2753  | 2848 | 2978 | 3108  | 3208  |
|                    | i    | 1320 | 1450 | 1580  | 1680  | 1320 | 1450 | 1580  | 1680  | 1320 | 1450 | 1580  | 1680  |
|                    | b    | 576  |      |       |       | 576  |      |       |       | 576  |      |       |       |
|                    | s    | -    | -    | 302   | 402   | -    | -    | 302   | 402   | -    | -    | 302   | 402   |
|                    | z    | -    | -    | 191   | 191   | -    | -    | 191   | 191   | -    | -    | 191   | 191   |
|                    | x    | -    | -    | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 |
|                    | y    | -    | -    | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  |
|                    | k    | 898  |      |       |       | 1073 |      |       |       | 1528 |      |       |       |
|                    | n    | 233  |      |       |       | 258  |      |       |       | 323  |      |       |       |
|                    | t    | 95   |      |       |       | 120  |      |       |       | 185  |      |       |       |
|                    | p    | 95   |      |       |       | 120  |      |       |       | 185  |      |       |       |
|                    | r    | 190  |      |       |       | 240  |      |       |       | 370  |      |       |       |
|                    | q    | 328  |      |       |       | 378  |      |       |       | 508  |      |       |       |
| OIL CONTENT [dm³]  | 170  | 190  | 220  | 235   | 170   | 190  | 220  | 235   | 170   | 190  | 220  | 235   |       |
| DISPLACEMENT [dm³] | 284  | 314  | 344  | 364   | 284   | 314  | 344  | 364   | 292   | 322  | 352  | 372   |       |
| MAX. WEIGHT [kg]   | 457  | 464  | 476  | 480   | 467   | 474  | 486  | 490   | 484   | 491  | 503  | 507   |       |

|        |            |       |         |              |                    |
|--------|------------|-------|---------|--------------|--------------------|
| DATE   | 08.12.2016 | NAME  | BUTERUS | DOCUMENT NO. | SED 5152449 001 01 |
| DFTR.  | 09.12.2016 | WREDE | KLEYN   | CHANGE NO.   | 1077332            |
| CHKD.  | 09.12.2016 |       |         | SCALE        | -                  |
| STAND. |            |       |         |              |                    |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
VR S/M III 700 - 72,5...245 kV - B/C/D/DE  
DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER  
100178660E

SHEET  
2/2

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|            |              |                    |
|------------|--------------|--------------------|
| Datum      | Name         | Dokumentnummer     |
| 16.05.2018 | RAEDLINGER   | SED 6017860 001 01 |
| Gez. bepr. | HAUER        | Maßstab            |
| 16.05.2018 | PRODASTSCHUK | 1:10               |
| Norm.      |              | Änderungsnummer    |
| 16.05.2018 |              | 1087395            |

Maßangaben  
in mm, soweit  
nicht anders  
angegeben

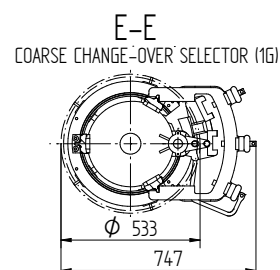
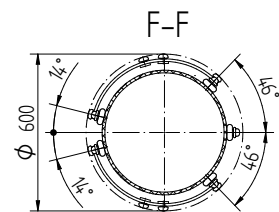
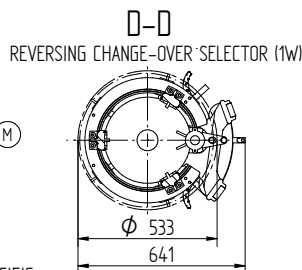
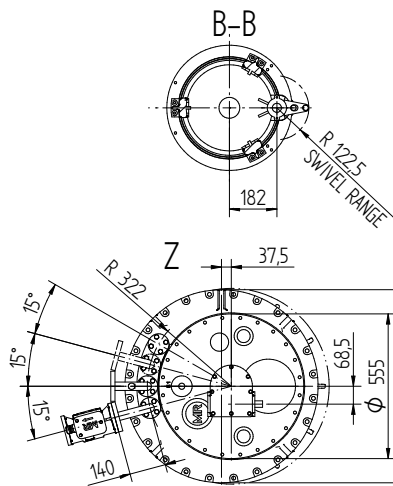
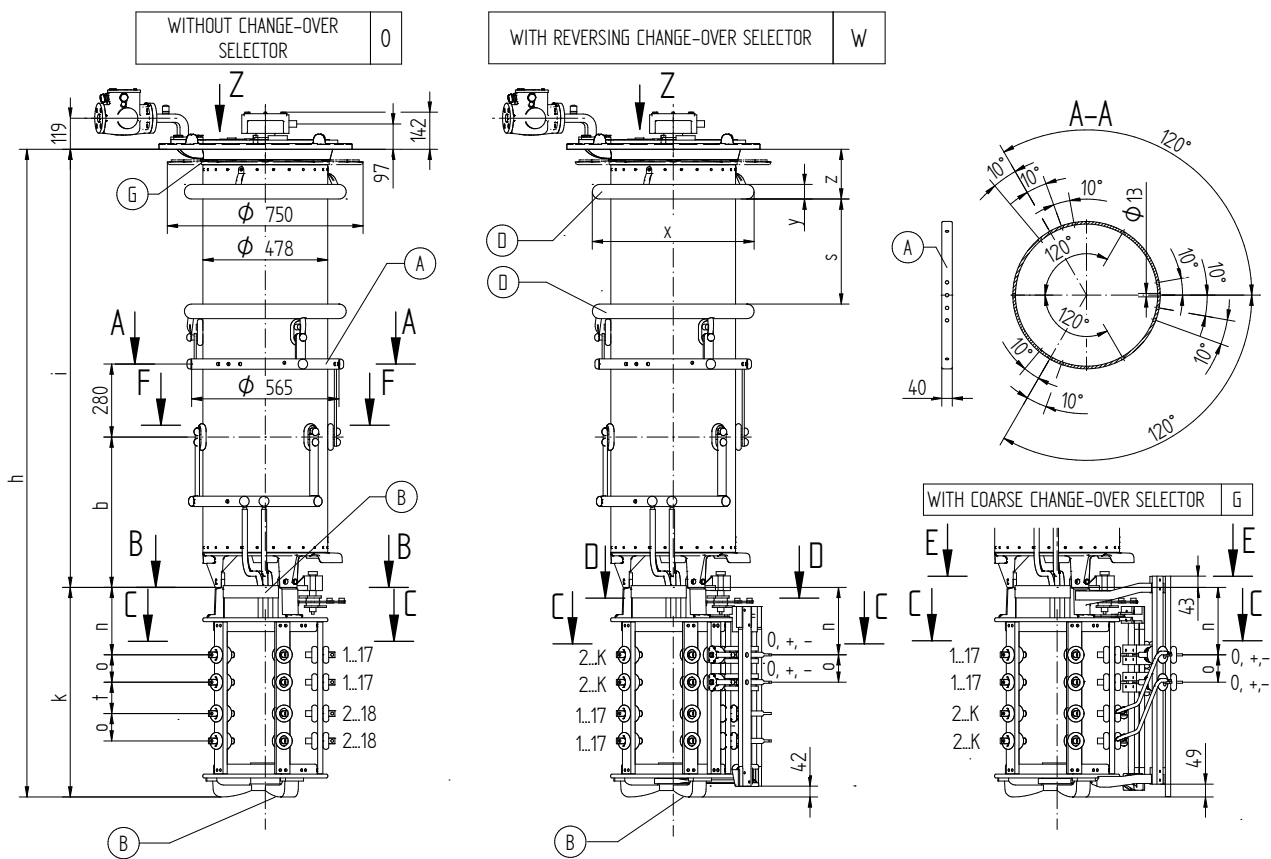


ON-LOAD TAP-CHANGER VACUTAP® VR  
VRS/VRM I 1001 - 72,5...420 kV - B/C/D/DE  
DIMENSION DRAWING

Serialnummer

Materialnummer  
101169840E

Blatt  
1/2



FOR THE TYPE OF THE OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 kV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 10018046
- D-D AND E-E: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 723590
- CONNECTING OF PARALLEL SELECTOR PLANES REFER TO 10117014

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## VACUTAP® VRS

| SELECTOR SIZE      |    | B    |      |       |       |       |       |       | C    |      |       |       |       |       |       | D/DE |      |       |       |       |       |       |
|--------------------|----|------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |    | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h  | 1896 | 2026 | 2156  | 2256  | 2408  | 2511  | 2630  | 1971 | 2101 | 2231  | 2331  | 2483  | 2586  | 2705  | 2166 | 2296 | 2426  | 2526  | 2678  | 2781  | 2900  |
|                    | i  | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1902  | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1902  | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1902  |
|                    | b  | 425  |      |       |       |       |       |       | 425  |      |       |       |       |       |       | 425  |      |       |       |       |       |       |
|                    | s  | -    | -    | 302   | 402   | 554   | 573   | 692   | -    | -    | 302   | 402   | 554   | 573   | 692   | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z  | -    | -    | 191   | 191   | 191   | 228   | 228   | -    | -    | 191   | 191   | 191   | 228   | 228   | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x  | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y  | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k  | 728  |      |       |       |       |       |       | 803  |      |       |       |       |       |       | 998  |      |       |       |       |       |       |
|                    | n  | 233  |      |       |       |       |       |       | 258  |      |       |       |       |       |       | 323  |      |       |       |       |       |       |
|                    | o  | 105  |      |       |       |       |       |       | 105  |      |       |       |       |       |       | 105  |      |       |       |       |       |       |
| t                  | 95 |      |      |       |       |       |       | 120   |      |      |       |       |       |       | 185   |      |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |    | 160  | 180  | 200   | 220   | 240   | 260   | 280   | 160  | 180  | 200   | 220   | 240   | 260   | 280   | 160  | 180  | 200   | 220   | 240   | 260   | 280   |
| DISPLACEMENT [dm³] |    | 261  | 281  | 311   | 331   | 361   | 401   | 421   | 261  | 281  | 311   | 331   | 361   | 401   | 421   | 264  | 284  | 314   | 334   | 364   | 404   | 424   |
| MAX. WEIGHT [kg]   |    | 322  | 328  | 341   | 344   | 350   | 357   | 362   | 332  | 338  | 351   | 354   | 360   | 367   | 372   | 348  | 354  | 367   | 370   | 376   | 383   | 388   |

## VACUTAP® VRM

| SELECTOR SIZE      |    | B    |      |       |       |       |       |       | C    |      |       |       |       |       |       | D/DE |      |       |       |       |       |       |
|--------------------|----|------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |    | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h  | 2048 | 2178 | 2308  | 2408  | 2560  | 2663  | 2782  | 2123 | 2253 | 2383  | 2483  | 2635  | 2738  | 2857  | 2318 | 2448 | 2578  | 2678  | 2830  | 2933  | 3052  |
|                    | i  | 1320 | 1450 | 1580  | 1680  | 1832  | 1935  | 2054  | 1320 | 1450 | 1580  | 1680  | 1832  | 1935  | 2054  | 1320 | 1450 | 1580  | 1680  | 1832  | 1935  | 2054  |
|                    | b  | 576  |      |       |       |       |       |       | 576  |      |       |       |       |       |       | 576  |      |       |       |       |       |       |
|                    | s  | -    | -    | 302   | 402   | 554   | 573   | 692   | -    | -    | 302   | 402   | 554   | 573   | 692   | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z  | -    | -    | 191   | 191   | 191   | 228   | 228   | -    | -    | 191   | 191   | 191   | 228   | 228   | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x  | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y  | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k  | 728  |      |       |       |       |       |       | 803  |      |       |       |       |       |       | 998  |      |       |       |       |       |       |
|                    | n  | 233  |      |       |       |       |       |       | 258  |      |       |       |       |       |       | 323  |      |       |       |       |       |       |
|                    | o  | 105  |      |       |       |       |       |       | 105  |      |       |       |       |       |       | 105  |      |       |       |       |       |       |
| t                  | 95 |      |      |       |       |       |       | 120   |      |      |       |       |       |       | 185   |      |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |    | 180  | 200  | 230   | 245   | 270   | 285   | 305   | 180  | 200  | 230   | 245   | 270   | 285   | 305   | 180  | 200  | 230   | 245   | 270   | 285   | 305   |
| DISPLACEMENT [dm³] |    | 281  | 311  | 341   | 361   | 391   | 431   | 451   | 281  | 311  | 341   | 361   | 391   | 431   | 451   | 284  | 314  | 344   | 364   | 394   | 434   | 454   |
| MAX. WEIGHT [kg]   |    | 331  | 337  | 350   | 354   | 359   | 366   | 371   | 341  | 347  | 360   | 364   | 369   | 376   | 381   | 357  | 363  | 376   | 380   | 385   | 392   | 397   |

|       |            |              |                    |         |
|-------|------------|--------------|--------------------|---------|
| Datum | Name       |              | Dokumentnummer     |         |
|       | 16.05.2018 | RAEDLINGER   | SED 6017860 001 01 |         |
|       | 16.05.2018 | HAUER        | Änderungsnummer    | Maßstab |
| Norm. | 16.05.2018 | PRODAJTSCHUK | 1087395            | 1:10    |

Maßangaben  
in mm, soweit  
nicht anders  
angegeben



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VRS/VRM I 1001 - 72,5...420 kV - B/C/D/DE  
 DIMENSION DRAWING

|                |       |
|----------------|-------|
| Serialnummer   |       |
| Materialnummer | Blatt |
| 101169840E     | 2/2   |

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|            |              |                    |
|------------|--------------|--------------------|
| Datum      | Name         | Dokumentnummer     |
| 16.05.2018 | RAEDLINGER   | SED 6018611 001 01 |
| Gez. bepr. | HAUER        | Änderungsnummer    |
| 16.05.2018 | PRODASTSCHUK | 1087395            |
| Norm.      |              | 110                |

Maßangaben  
in mm, soweit  
nicht anders  
angegeben

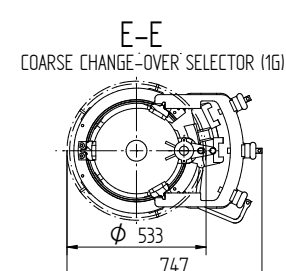
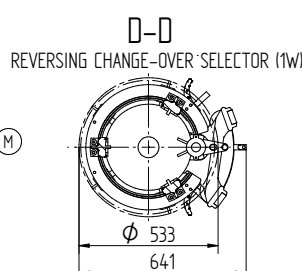
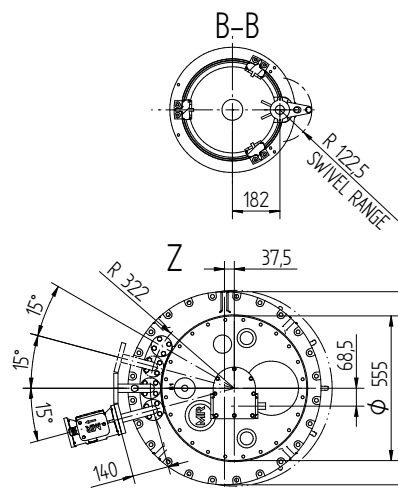
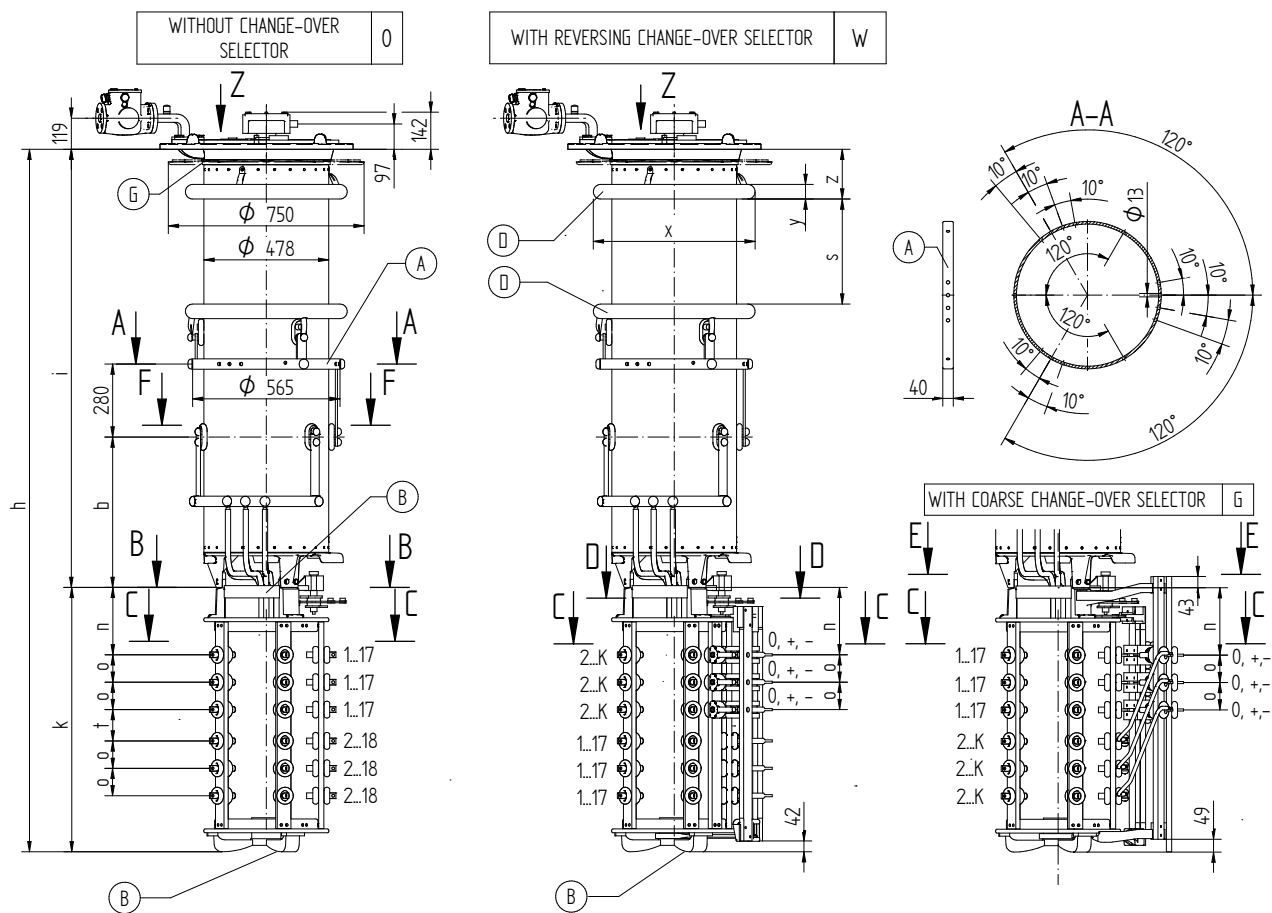


ON-LOAD TAP-CHANGER VACUTAP® VR  
VRS/VRM I 1301 - 72,5...420 kV - B/C/D/DE  
DIMENSION DRAWING

Serialnummer

Materialnummer  
101169860E

Blatt  
1/2



FOR THE TYPE OF THE OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 kV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 10018046
- D-D AND E-E: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 723590
- CONNECTING OF PARALLEL SELECTOR PLANES REFER TO 10117014

### VACUTAP® VRS

| SELECTOR SIZE      |    | B    |      |       |       |       |       |       | C    |      |       |       |       |       |       | D/DE |      |       |       |       |       |       |
|--------------------|----|------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |    | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h  | 2106 | 2236 | 2366  | 2466  | 2618  | 2721  | 2840  | 2181 | 2311 | 2441  | 2541  | 2693  | 2796  | 2915  | 2376 | 2506 | 2636  | 2736  | 2888  | 2991  | 3110  |
|                    | i  | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1902  | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1902  | 1168 | 1298 | 1428  | 1528  | 1680  | 1783  | 1902  |
|                    | b  | 425  |      |       |       |       |       |       | 425  |      |       |       |       |       |       | 425  |      |       |       |       |       |       |
|                    | s  | -    | -    | 302   | 402   | 554   | 573   | 692   | -    | -    | 302   | 402   | 554   | 573   | 692   | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z  | -    | -    | 191   | 191   | 191   | 228   | 228   | -    | -    | 191   | 191   | 191   | 228   | 228   | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x  | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y  | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k  | 938  |      |       |       |       |       |       | 1013 |      |       |       |       |       |       | 1208 |      |       |       |       |       |       |
|                    | n  | 233  |      |       |       |       |       |       | 258  |      |       |       |       |       |       | 323  |      |       |       |       |       |       |
|                    | o  | 105  |      |       |       |       |       |       | 105  |      |       |       |       |       |       | 105  |      |       |       |       |       |       |
| t                  | 95 |      |      |       |       |       |       | 120   |      |      |       |       |       |       | 185   |      |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |    | 160  | 180  | 200   | 220   | 240   | 260   | 280   | 160  | 180  | 200   | 220   | 240   | 260   | 280   | 160  | 180  | 200   | 220   | 240   | 260   | 280   |
| DISPLACEMENT [dm³] |    | 265  | 285  | 315   | 335   | 365   | 405   | 425   | 265  | 285  | 315   | 335   | 365   | 405   | 425   | 269  | 289  | 319   | 339   | 369   | 409   | 429   |
| MAX. WEIGHT [kg]   |    | 337  | 343  | 356   | 359   | 365   | 372   | 377   | 347  | 353  | 366   | 369   | 375   | 382   | 387   | 363  | 369  | 382   | 385   | 391   | 398   | 403   |

### VACUTAP® VRM

| SELECTOR SIZE      |    | B    |      |       |       |       |       |       | C    |      |       |       |       |       |       | D/DE |      |       |       |       |       |       |
|--------------------|----|------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |    | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h  | 2258 | 2388 | 2518  | 2618  | 2770  | 2873  | 2992  | 2333 | 2463 | 2593  | 2693  | 2845  | 2948  | 3067  | 2528 | 2658 | 2788  | 2888  | 3040  | 3143  | 3262  |
|                    | i  | 1320 | 1450 | 1580  | 1680  | 1832  | 1935  | 2054  | 1320 | 1450 | 1580  | 1680  | 1832  | 1935  | 2054  | 1320 | 1450 | 1580  | 1680  | 1832  | 1935  | 2054  |
|                    | b  | 576  |      |       |       |       |       |       | 576  |      |       |       |       |       |       | 576  |      |       |       |       |       |       |
|                    | s  | -    | -    | 302   | 402   | 554   | 573   | 692   | -    | -    | 302   | 402   | 554   | 573   | 692   | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z  | -    | -    | 191   | 191   | 191   | 228   | 228   | -    | -    | 191   | 191   | 191   | 228   | 228   | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x  | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y  | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k  | 938  |      |       |       |       |       |       | 1013 |      |       |       |       |       |       | 1208 |      |       |       |       |       |       |
|                    | n  | 233  |      |       |       |       |       |       | 258  |      |       |       |       |       |       | 323  |      |       |       |       |       |       |
|                    | o  | 105  |      |       |       |       |       |       | 105  |      |       |       |       |       |       | 105  |      |       |       |       |       |       |
| t                  | 95 |      |      |       |       |       |       | 120   |      |      |       |       |       |       | 185   |      |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |    | 180  | 200  | 230   | 245   | 270   | 285   | 305   | 180  | 200  | 230   | 245   | 270   | 285   | 305   | 180  | 200  | 230   | 245   | 270   | 285   | 305   |
| DISPLACEMENT [dm³] |    | 285  | 315  | 345   | 365   | 395   | 435   | 455   | 285  | 315  | 345   | 365   | 395   | 435   | 455   | 289  | 319  | 349   | 369   | 399   | 439   | 459   |
| MAX. WEIGHT [kg]   |    | 346  | 352  | 365   | 369   | 374   | 381   | 386   | 356  | 362  | 375   | 379   | 384   | 391   | 396   | 372  | 378  | 391   | 395   | 400   | 407   | 412   |

|       |            |              |                    |         |
|-------|------------|--------------|--------------------|---------|
| Datum | Name       |              | Dokumentnummer     |         |
|       | 16.05.2018 | RAEDLINGER   | SED 6018611 001 01 |         |
|       | 16.05.2018 | HAUER        | Änderungsnummer    | Maßstab |
| Norm. | 16.05.2018 | PRODASTSCHUK | 1087395            | 1:10    |

Maßangaben  
in mm, soweit  
nicht anders  
angegeben



ON-LOAD TAP-CHANGER VACUTAP® VR  
VRS/VRM I 1301 - 72,5...420 kV - B/C/D/DE  
DIMENSION DRAWING

Serialnummer

|                |       |
|----------------|-------|
| Materialnummer | Blatt |
| 101169860E     | 2/2   |



## VACUTAP® VRS I 701

| SELECTOR SIZE      |       | B    |      |       |       |       | C    |      |       |       |       | D    |      |       |       |       |
|--------------------|-------|------|------|-------|-------|-------|------|------|-------|-------|-------|------|------|-------|-------|-------|
| Um [kV]            |       | 72,5 | 123  | 170   | 245   | 300   | 72,5 | 123  | 170   | 245   | 300   | 72,5 | 123  | 170   | 245   | 300   |
| DIMENSIONS<br>[mm] | h     | 1648 | 1778 | 1908  | 2008  | 2160  | 1723 | 1853 | 1983  | 2083  | 2235  | 1918 | 2048 | 2178  | 2278  | 2430  |
|                    | i     | 1168 | 1298 | 1428  | 1528  | 1680  | 1168 | 1298 | 1428  | 1528  | 1680  | 1168 | 1298 | 1428  | 1528  | 1680  |
|                    | b     | 425  |      |       |       |       | 425  |      |       |       |       | 425  |      |       |       |       |
|                    | s     | -    | -    | 302   | 402   | 554   | -    | -    | 302   | 402   | 554   | -    | -    | 302   | 402   | 554   |
|                    | Z     | -    | -    | 191   | 191   | 191   | -    | -    | 191   | 191   | 191   | -    | -    | 191   | 191   | 191   |
|                    | x     | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 |
|                    | y     | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  |
|                    | k     | 480  |      |       |       |       | 555  |      |       |       |       | 750  |      |       |       |       |
|                    | n     | 233  |      |       |       |       | 258  |      |       |       |       | 323  |      |       |       |       |
|                    | t     | 95   |      |       |       |       | 120  |      |       |       |       | 185  |      |       |       |       |
| q                  | 279,5 |      |      |       |       | 317   |      |      |       |       | 414,5 |      |      |       |       |       |
| OIL VOLUME [dm³]   |       | 160  | 180  | 200   | 220   | 240   | 160  | 180  | 200   | 220   | 240   | 160  | 180  | 200   | 220   | 240   |
| DISPLACEMENT [dm³] |       | 254  | 274  | 304   | 324   | 354   | 255  | 275  | 305   | 325   | 355   | 257  | 277  | 307   | 327   | 357   |
| MAX. WEIGHT [kg]   |       | 402  | 408  | 421   | 424   | 430   | 412  | 418  | 431   | 434   | 440   | 422  | 428  | 441   | 444   | 450   |

## VACUTAP® VRM I 701

| SELECTOR SIZE      |       | B    |      |       |       |       | C    |      |       |       |       | D    |      |       |       |       |
|--------------------|-------|------|------|-------|-------|-------|------|------|-------|-------|-------|------|------|-------|-------|-------|
| Um [kV]            |       | 72,5 | 123  | 170   | 245   | 300   | 72,5 | 123  | 170   | 245   | 300   | 72,5 | 123  | 170   | 245   | 300   |
| DIMENSIONS<br>[mm] | h     | 1800 | 1930 | 2060  | 2160  | 2312  | 1875 | 2005 | 2135  | 2235  | 2387  | 2070 | 2200 | 2330  | 2430  | 2582  |
|                    | i     | 1320 | 1450 | 1580  | 1680  | 1832  | 1320 | 1450 | 1580  | 1680  | 1832  | 1320 | 1450 | 1580  | 1680  | 1832  |
|                    | b     | 576  |      |       |       |       | 576  |      |       |       |       | 576  |      |       |       |       |
|                    | s     | -    | -    | 302   | 402   | 554   | -    | -    | 302   | 402   | 554   | -    | -    | 302   | 402   | 554   |
|                    | Z     | -    | -    | 191   | 191   | 191   | -    | -    | 191   | 191   | 191   | -    | -    | 191   | 191   | 191   |
|                    | x     | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 |
|                    | y     | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  |
|                    | k     | 480  |      |       |       |       | 555  |      |       |       |       | 750  |      |       |       |       |
|                    | n     | 233  |      |       |       |       | 258  |      |       |       |       | 323  |      |       |       |       |
|                    | t     | 95   |      |       |       |       | 120  |      |       |       |       | 185  |      |       |       |       |
| q                  | 279,5 |      |      |       |       | 317   |      |      |       |       | 414,5 |      |      |       |       |       |
| OIL VOLUME [dm³]   |       | 180  | 200  | 230   | 245   | 270   | 180  | 200  | 230   | 245   | 270   | 180  | 200  | 230   | 245   | 270   |
| DISPLACEMENT [dm³] |       | 284  | 304  | 334   | 354   | 384   | 285  | 305  | 335   | 355   | 385   | 287  | 307  | 337   | 357   | 387   |
| MAX. WEIGHT [kg]   |       | 411  | 417  | 430   | 433   | 439   | 421  | 427  | 440   | 443   | 449   | 431  | 437  | 450   | 453   | 459   |

|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 19.04.2018 | RAEDLINGER   | SED 5550262.001.02 |
| 25.04.2018 | HAUER        | CHANGE NO.         |
| 25.04.2018 | PRODASTSCHUK | 1087395            |
| DFTR.      | SCALE        | 1:10               |
| CHKD.      |              |                    |
| STAND.     |              |                    |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VRS/VRM I 701 -72,5...300kV- B/C/D WITH MULTIPLE COARSE COS  
 DIMENSION DRAWING

SERIAL NUMBER

|                 |       |
|-----------------|-------|
| MATERIAL NUMBER | SHEET |
| 100208541E      | 2/2   |





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## VACUTAP® VRS I 1001

| SELECTOR SIZE      |   | B     |      |       |       |       | C    |      |       |       |       | D     |      |       |       |       |
|--------------------|---|-------|------|-------|-------|-------|------|------|-------|-------|-------|-------|------|-------|-------|-------|
| Um [kV]            |   | 72,5  | 123  | 170   | 245   | 300   | 72,5 | 123  | 170   | 245   | 300   | 72,5  | 123  | 170   | 245   | 300   |
| DIMENSIONS<br>[mm] | h | 1858  | 1988 | 2118  | 2218  | 2370  | 1933 | 2063 | 2193  | 2293  | 2445  | 2128  | 2258 | 2388  | 2488  | 2640  |
|                    | i | 1168  | 1298 | 1428  | 1528  | 1680  | 1168 | 1298 | 1428  | 1528  | 1680  | 1168  | 1298 | 1428  | 1528  | 1680  |
|                    | b | 425   |      |       |       |       | 425  |      |       |       |       | 425   |      |       |       |       |
|                    | s | -     | -    | 302   | 402   | 554   | -    | -    | 302   | 402   | 554   | -     | -    | 302   | 402   | 554   |
|                    | z | -     | -    | 191   | 191   | 191   | -    | -    | 191   | 191   | 191   | -     | -    | 191   | 191   | 191   |
|                    | x | -     | -    | ∅ 620 | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | -     | -    | ∅ 620 | ∅ 620 | ∅ 620 |
|                    | y | -     | -    | ∅ 56  | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | -     | -    | ∅ 56  | ∅ 56  | ∅ 56  |
|                    | k | 690   |      |       |       |       | 765  |      |       |       |       | 960   |      |       |       |       |
|                    | n | 233   |      |       |       |       | 258  |      |       |       |       | 323   |      |       |       |       |
|                    | o | 105   |      |       |       |       | 105  |      |       |       |       | 105   |      |       |       |       |
|                    | t | 95    |      |       |       |       | 120  |      |       |       |       | 185   |      |       |       |       |
|                    | r | 105   |      |       |       |       | 105  |      |       |       |       | 105   |      |       |       |       |
|                    | q | 319,5 |      |       |       |       | 357  |      |       |       |       | 454,5 |      |       |       |       |
| OIL VOLUME [dm³]   |   | 160   | 180  | 200   | 220   | 240   | 160  | 180  | 200   | 220   | 240   | 160   | 180  | 200   | 220   | 240   |
| DISPLACEMENT [dm³] |   | 265   | 285  | 315   | 335   | 365   | 267  | 287  | 317   | 337   | 367   | 270   | 290  | 320   | 340   | 370   |
| MAX. WEIGHT [kg]   |   | 436   | 442  | 455   | 458   | 464   | 446  | 452  | 465   | 468   | 474   | 456   | 462  | 475   | 478   | 484   |

## VACUTAP® VRM I 1001

| SELECTOR SIZE      |   | B     |      |       |       |       | C    |      |       |       |       | D     |      |       |       |       |
|--------------------|---|-------|------|-------|-------|-------|------|------|-------|-------|-------|-------|------|-------|-------|-------|
| Um [kV]            |   | 72,5  | 123  | 170   | 245   | 300   | 72,5 | 123  | 170   | 245   | 300   | 72,5  | 123  | 170   | 245   | 300   |
| DIMENSIONS<br>[mm] | h | 2010  | 2140 | 2270  | 2370  | 2522  | 2085 | 2215 | 2345  | 2445  | 2597  | 2280  | 2410 | 2540  | 2640  | 2792  |
|                    | i | 1320  | 1450 | 1580  | 1680  | 1832  | 1320 | 1450 | 1580  | 1680  | 1832  | 1320  | 1450 | 1580  | 1680  | 1832  |
|                    | b | 576   |      |       |       |       | 576  |      |       |       |       | 576   |      |       |       |       |
|                    | s | -     | -    | 302   | 402   | 554   | -    | -    | 302   | 402   | 554   | -     | -    | 302   | 402   | 554   |
|                    | z | -     | -    | 191   | 191   | 191   | -    | -    | 191   | 191   | 191   | -     | -    | 191   | 191   | 191   |
|                    | x | -     | -    | ∅ 620 | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | -     | -    | ∅ 620 | ∅ 620 | ∅ 620 |
|                    | y | -     | -    | ∅ 56  | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | -     | -    | ∅ 56  | ∅ 56  | ∅ 56  |
|                    | k | 690   |      |       |       |       | 765  |      |       |       |       | 960   |      |       |       |       |
|                    | n | 233   |      |       |       |       | 258  |      |       |       |       | 323   |      |       |       |       |
|                    | o | 105   |      |       |       |       | 105  |      |       |       |       | 105   |      |       |       |       |
|                    | t | 95    |      |       |       |       | 120  |      |       |       |       | 185   |      |       |       |       |
|                    | r | 105   |      |       |       |       | 105  |      |       |       |       | 105   |      |       |       |       |
|                    | q | 319,5 |      |       |       |       | 357  |      |       |       |       | 454,5 |      |       |       |       |
| OIL VOLUME [dm³]   |   | 180   | 200  | 230   | 245   | 270   | 180  | 200  | 230   | 245   | 270   | 180   | 200  | 230   | 245   | 270   |
| DISPLACEMENT [dm³] |   | 295   | 315  | 345   | 365   | 395   | 297  | 317  | 347   | 367   | 397   | 300   | 320  | 350   | 370   | 400   |
| MAX. WEIGHT [kg]   |   | 447   | 453  | 466   | 469   | 475   | 457  | 463  | 476   | 479   | 485   | 467   | 473  | 486   | 489   | 495   |

|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 19.04.2018 | RAEDLINGER   | SED 5550268 001 02 |
| 25.04.2018 | HAUER        | CHANGE NO.         |
| 25.04.2018 | PRODASTSCHUK | 1087395            |
| DFTR.      | SCALE        | 1:10               |
| CHKD.      |              |                    |
| STAND.     |              |                    |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED

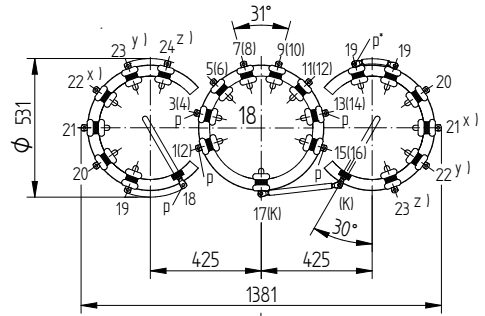
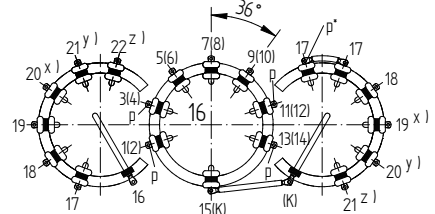
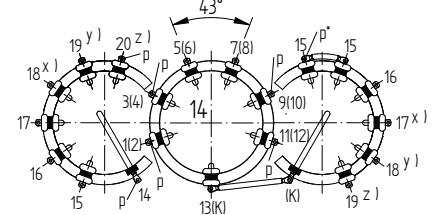
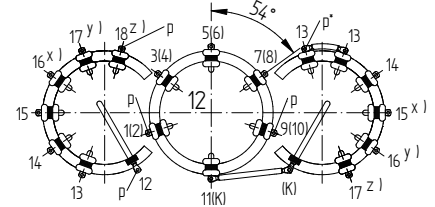
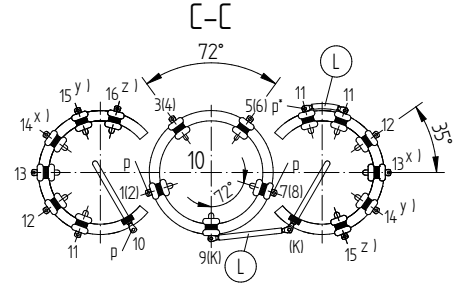
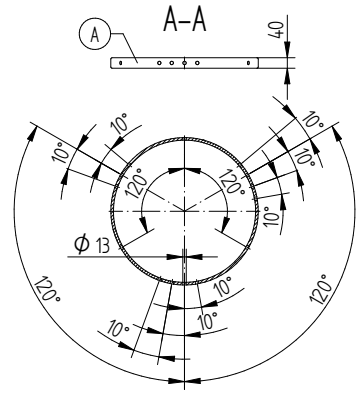
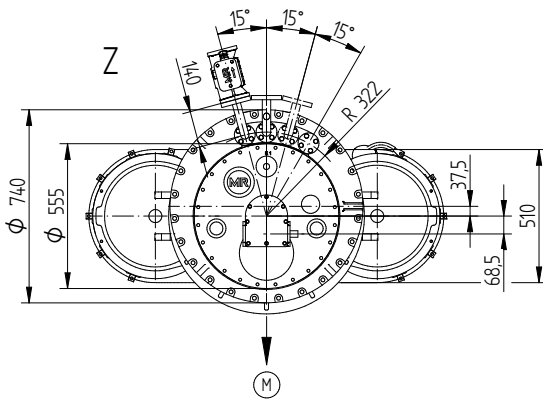
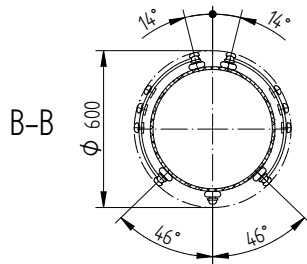
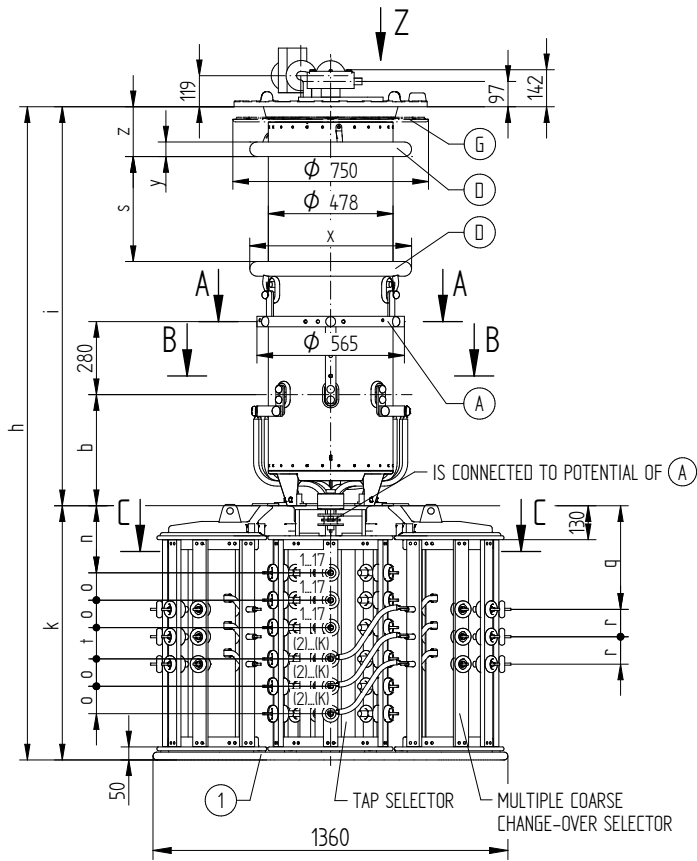


ON-LOAD TAP-CHANGER VACUTAP® VR  
 VRS/VRM I 1001 -72,5...300kV-B/C/D WITH MULTIPLE COARSE COS  
 DIMENSION DRAWING

SERIAL NUMBER

|                 |       |
|-----------------|-------|
| MATERIAL NUMBER | SHEET |
| 100208551E      | 2/2   |

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FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (D) - SHIELDING RINGS FOR UM OF 170 KV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL

(1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- CONNECTING OF PARALLEL SELECTOR PLANES REFER TO 10117014

ARRANGEMENT OF SELECTOR CONTACTS, 2-5 COARSE TAP CONNECTIONS

- x) FOR 3 COARSE TAP CONNECTIONS
- x) AND y) FOR 4 COARSE TAP CONNECTIONS
- x), y) AND z) FOR 5 COARSE TAP CONNECTIONS

- p = CONNECTION MIN. 3 MM PAPER INSULATED
- p\* = CONNECTION ALREADY 3 MM PAPER INSULATED BY MR

|              |                    |
|--------------|--------------------|
| DOCUMENT NO. | SED 5550283 001 02 |
| NAME         | RAEDLINGER HAUER   |
| DATE         | 19.04.2018         |
| CHFKD.       | 25.04.2018         |
| SCALE        | 1:10               |
| STAND.       | 25.04.2018         |
| CHANGE NO.   | 1087395            |
| PRODASTSCHUK |                    |

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VRS/VRM I 1301 - 72,5...300kV-B/C/D WITH MULTIPLE COARSE COS  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER 100208561E  
 SHEET 1/2

## VACUTAP® VRS I 1301

| SELECTOR SIZE      |   | B     |      |       |       |       | C    |      |       |       |       | D     |      |       |       |       |
|--------------------|---|-------|------|-------|-------|-------|------|------|-------|-------|-------|-------|------|-------|-------|-------|
| Um [kV]            |   | 72,5  | 123  | 170   | 245   | 300   | 72,5 | 123  | 170   | 245   | 300   | 72,5  | 123  | 170   | 245   | 300   |
| DIMENSIONS<br>[mm] | h | 2068  | 2198 | 2328  | 2428  | 2580  | 2143 | 2273 | 2403  | 2503  | 2655  | 2338  | 2468 | 2598  | 2698  | 2850  |
|                    | i | 1168  | 1298 | 1428  | 1528  | 1680  | 1168 | 1298 | 1428  | 1528  | 1680  | 1168  | 1298 | 1428  | 1528  | 1680  |
|                    | b | 425   |      |       |       |       | 425  |      |       |       |       | 425   |      |       |       |       |
|                    | s | -     | -    | 302   | 402   | 554   | -    | -    | 302   | 402   | 554   | -     | -    | 302   | 402   | 554   |
|                    | z | -     | -    | 191   | 191   | 191   | -    | -    | 191   | 191   | 191   | -     | -    | 191   | 191   | 191   |
|                    | x | -     | -    | ∅ 620 | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | -     | -    | ∅ 620 | ∅ 620 | ∅ 620 |
|                    | y | -     | -    | ∅ 56  | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | -     | -    | ∅ 56  | ∅ 56  | ∅ 56  |
|                    | k | 900   |      |       |       |       | 975  |      |       |       |       | 1170  |      |       |       |       |
|                    | n | 233   |      |       |       |       | 258  |      |       |       |       | 323   |      |       |       |       |
|                    | o | 105   |      |       |       |       | 105  |      |       |       |       | 105   |      |       |       |       |
|                    | t | 95    |      |       |       |       | 120  |      |       |       |       | 185   |      |       |       |       |
|                    | r | 105   |      |       |       |       | 105  |      |       |       |       | 105   |      |       |       |       |
|                    | q | 359,5 |      |       |       |       | 397  |      |       |       |       | 494,5 |      |       |       |       |
| OIL VOLUME [dm³]   |   | 160   | 180  | 200   | 220   | 240   | 160  | 180  | 200   | 220   | 240   | 160   | 180  | 200   | 220   | 240   |
| DISPLACEMENT [dm³] |   | 277   | 297  | 327   | 347   | 377   | 279  | 299  | 329   | 349   | 379   | 282   | 302  | 332   | 352   | 382   |
| MAX. WEIGHT [kg]   |   | 486   | 492  | 505   | 508   | 514   | 496  | 502  | 515   | 518   | 524   | 506   | 512  | 525   | 528   | 534   |

## VACUTAP® VRM I 1301

| SELECTOR SIZE      |   | B     |      |       |       |       | C    |      |       |       |       | D     |      |       |       |       |
|--------------------|---|-------|------|-------|-------|-------|------|------|-------|-------|-------|-------|------|-------|-------|-------|
| Um [kV]            |   | 72,5  | 123  | 170   | 245   | 300   | 72,5 | 123  | 170   | 245   | 300   | 72,5  | 123  | 170   | 245   | 300   |
| DIMENSIONS<br>[mm] | h | 2220  | 2350 | 2480  | 2580  | 2732  | 2295 | 2425 | 2555  | 2655  | 2807  | 2490  | 2620 | 2750  | 2850  | 3002  |
|                    | i | 1320  | 1450 | 1580  | 1680  | 1832  | 1320 | 1450 | 1580  | 1680  | 1832  | 1320  | 1450 | 1580  | 1680  | 1832  |
|                    | b | 576   |      |       |       |       | 576  |      |       |       |       | 576   |      |       |       |       |
|                    | s | -     | -    | 302   | 402   | 554   | -    | -    | 302   | 402   | 554   | -     | -    | 302   | 402   | 554   |
|                    | z | -     | -    | 191   | 191   | 191   | -    | -    | 191   | 191   | 191   | -     | -    | 191   | 191   | 191   |
|                    | x | -     | -    | ∅ 620 | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | -     | -    | ∅ 620 | ∅ 620 | ∅ 620 |
|                    | y | -     | -    | ∅ 56  | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | -     | -    | ∅ 56  | ∅ 56  | ∅ 56  |
|                    | k | 900   |      |       |       |       | 975  |      |       |       |       | 1170  |      |       |       |       |
|                    | n | 233   |      |       |       |       | 258  |      |       |       |       | 323   |      |       |       |       |
|                    | o | 105   |      |       |       |       | 105  |      |       |       |       | 105   |      |       |       |       |
|                    | t | 95    |      |       |       |       | 120  |      |       |       |       | 185   |      |       |       |       |
|                    | r | 105   |      |       |       |       | 105  |      |       |       |       | 105   |      |       |       |       |
|                    | q | 359,5 |      |       |       |       | 397  |      |       |       |       | 494,5 |      |       |       |       |
| OIL VOLUME [dm³]   |   | 180   | 200  | 230   | 245   | 270   | 180  | 200  | 230   | 245   | 270   | 180   | 200  | 230   | 245   | 270   |
| DISPLACEMENT [dm³] |   | 307   | 327  | 357   | 377   | 407   | 309  | 329  | 359   | 379   | 409   | 312   | 332  | 362   | 382   | 412   |
| MAX. WEIGHT [kg]   |   | 497   | 503  | 516   | 519   | 525   | 507  | 513  | 526   | 529   | 535   | 517   | 523  | 536   | 539   | 545   |

|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 19.04.2018 | RAEDLINGER   | SED 5550283_001 02 |
| 25.04.2018 | HAUER        | CHANGE NO.         |
| 25.04.2018 | PRODASTSCHUK | 1087395            |
| DFTR.      | SCALE        | 1:10               |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED

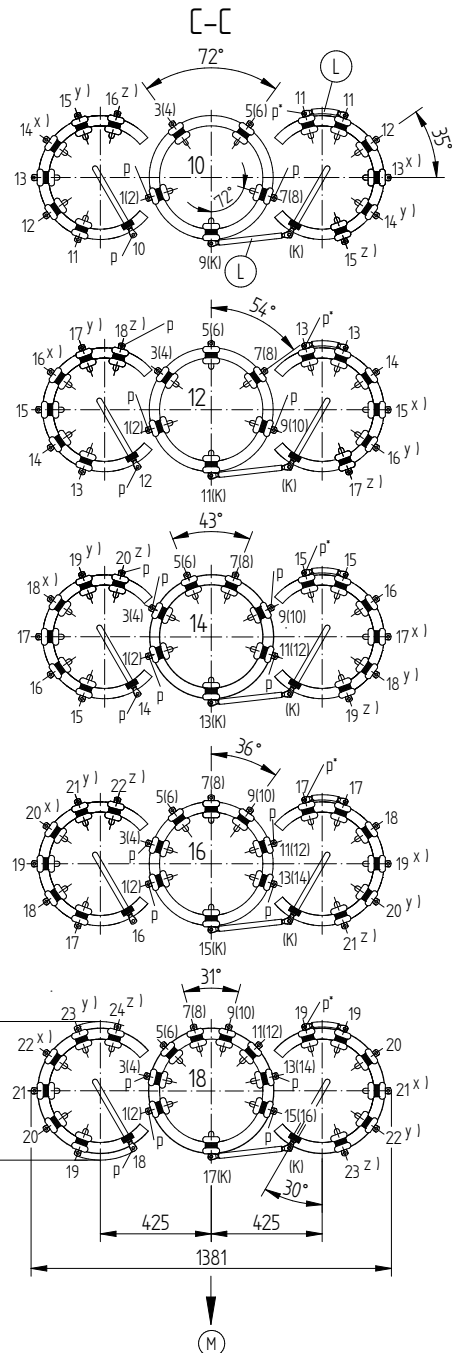
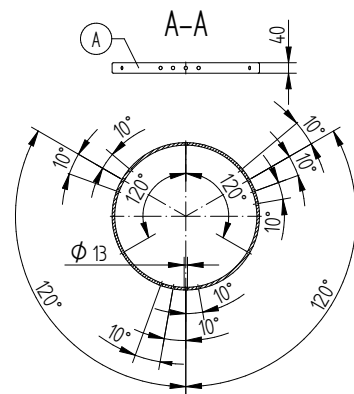
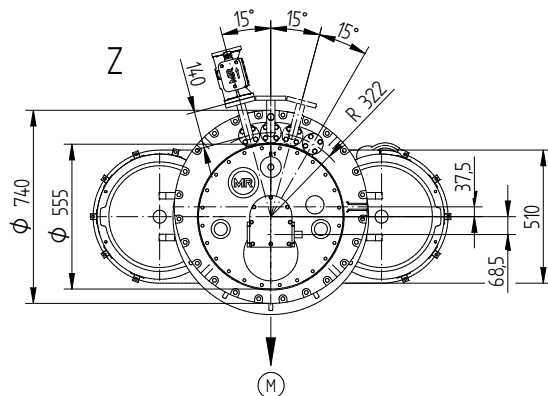
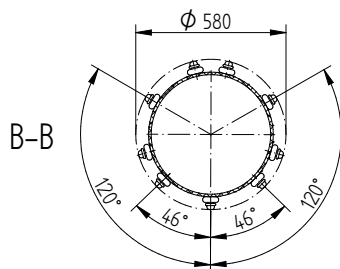
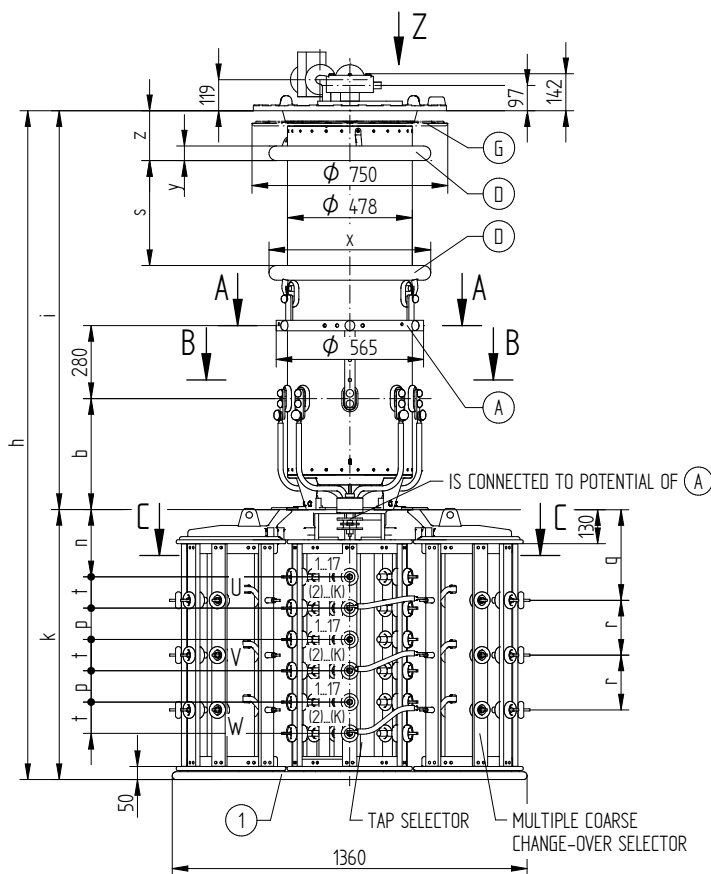


ON-LOAD TAP-CHANGER VACUTAP® VR  
VRS/VRM I 1301 -72,5...300kV-B/C/D WITH MULTIPLE COARSE COS  
DIMENSION DRAWING

SERIAL NUMBER

|                 |       |
|-----------------|-------|
| MATERIAL NUMBER | SHEET |
| 100208561E      | 2/2   |

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FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (D) - SHIELDING RINGS FOR UM OF 170 KV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL

(1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

ARRANGEMENT OF SELECTOR CONTACTS, 2-5 COARSE TAP CONNECTIONS

- x) FOR 3 COARSE TAP CONNECTIONS
- x) AND y) FOR 4 COARSE TAP CONNECTIONS
- x), y) AND z) FOR 5 COARSE TAP CONNECTIONS

p = CONNECTION MIN. 3 MM PAPER INSULATED  
 p\* = CONNECTION ALREADY 3 MM PAPER INSULATED BY MR

|              |                    |
|--------------|--------------------|
| DOCUMENT NO. | SED 5550295 001 02 |
| NAME         | RAEDLINGER HAUER   |
| DATE         | 19.04.2018         |
| DFTR.        | 25.04.2018         |
| CHKD.        | 25.04.2018         |
| SCALE        | 1:10               |
| CHANGE NO.   | 1087395            |
| PRODASTSCHUK |                    |
| STAND.       | 25.04.2018         |

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VRS/VRMIII 700 Y-72,5...245kV- B/C/D WITH MULT.COARSE COS  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER 100208571E  
 SHEET 1/2

## VACUTAP® VRS III 700 Y

| SELECTOR SIZE      |     | B     |      |       |       | C    |      |       |       | D    |      |       |       |
|--------------------|-----|-------|------|-------|-------|------|------|-------|-------|------|------|-------|-------|
| Um [kV]            |     | 72,5  | 123  | 170   | 245   | 72,5 | 123  | 170   | 245   | 72,5 | 123  | 170   | 245   |
| DIMENSIONS<br>[mm] | h   | 2028  | 2158 | 2288  | 2388  | 2203 | 2333 | 2463  | 2563  | 2658 | 2788 | 2918  | 3018  |
|                    | i   | 1168  | 1298 | 1428  | 1528  | 1168 | 1298 | 1428  | 1528  | 1168 | 1298 | 1428  | 1528  |
|                    | b   | 425   |      |       |       | 425  |      |       |       | 425  |      |       |       |
|                    | s   | -     | -    | 302   | 402   | -    | -    | 302   | 402   | -    | -    | 302   | 402   |
|                    | z   | -     | -    | 191   | 191   | -    | -    | 191   | 191   | -    | -    | 191   | 191   |
|                    | x   | -     | -    | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 |
|                    | y   | -     | -    | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  |
|                    | k   | 860   |      |       |       | 1035 |      |       |       | 1490 |      |       |       |
|                    | n   | 233   |      |       |       | 258  |      |       |       | 323  |      |       |       |
|                    | p   | 95    |      |       |       | 120  |      |       |       | 185  |      |       |       |
|                    | t   | 95    |      |       |       | 120  |      |       |       | 185  |      |       |       |
|                    | r   | 166,5 |      |       |       | 210  |      |       |       | 327  |      |       |       |
| q                  | 303 |       |      |       | 347   |      |      |       | 457,5 |      |      |       |       |
| OIL CONTENT [dm³]  |     | 150   | 170  | 190   | 210   | 150  | 170  | 190   | 210   | 150  | 170  | 190   | 210   |
| DISPLACEMENT [dm³] |     | 275   | 295  | 325   | 345   | 281  | 301  | 331   | 351   | 290  | 310  | 340   | 360   |
| MAX. WEIGHT [kg]   |     | 532   | 538  | 550   | 554   | 542  | 548  | 560   | 564   | 552  | 558  | 570   | 574   |

## VACUTAP® VRM III 700 Y

| SELECTOR SIZE      |     | B     |      |       |       | C    |      |       |       | D    |      |       |       |
|--------------------|-----|-------|------|-------|-------|------|------|-------|-------|------|------|-------|-------|
| Um [kV]            |     | 72,5  | 123  | 170   | 245   | 72,5 | 123  | 170   | 245   | 72,5 | 123  | 170   | 245   |
| DIMENSIONS<br>[mm] | h   | 2180  | 2310 | 2440  | 2540  | 2355 | 2485 | 2615  | 2715  | 2810 | 2940 | 3070  | 3170  |
|                    | i   | 1320  | 1450 | 1580  | 1680  | 1320 | 1450 | 1580  | 1680  | 1320 | 1450 | 1580  | 1680  |
|                    | b   | 576   |      |       |       | 576  |      |       |       | 576  |      |       |       |
|                    | s   | -     | -    | 302   | 402   | -    | -    | 302   | 402   | -    | -    | 302   | 402   |
|                    | z   | -     | -    | 191   | 191   | -    | -    | 191   | 191   | -    | -    | 191   | 191   |
|                    | x   | -     | -    | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 | -    | -    | ∅ 620 | ∅ 620 |
|                    | y   | -     | -    | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  | -    | -    | ∅ 56  | ∅ 56  |
|                    | k   | 860   |      |       |       | 1035 |      |       |       | 1490 |      |       |       |
|                    | n   | 233   |      |       |       | 258  |      |       |       | 323  |      |       |       |
|                    | p   | 95    |      |       |       | 120  |      |       |       | 185  |      |       |       |
|                    | t   | 95    |      |       |       | 120  |      |       |       | 185  |      |       |       |
|                    | r   | 166,5 |      |       |       | 210  |      |       |       | 327  |      |       |       |
| q                  | 303 |       |      |       | 347   |      |      |       | 457,5 |      |      |       |       |
| OIL VOLUME [dm³]   |     | 170   | 190  | 210   | 235   | 170  | 190  | 210   | 235   | 170  | 190  | 210   | 235   |
| DISPLACEMENT [dm³] |     | 305   | 325  | 355   | 375   | 311  | 331  | 361   | 381   | 320  | 340  | 370   | 390   |
| MAX. WEIGHT [kg]   |     | 552   | 558  | 570   | 574   | 562  | 568  | 580   | 584   | 572  | 578  | 590   | 594   |

|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 19.04.2018 | RAEDLINGER   | SED 5550295 001 02 |
| 25.04.2018 | HAUER        | CHANGE NO.         |
| 25.04.2018 | PRODASTSCHUK | 1087395            |
| DFTR.      | SCALE        | 1:10               |
| CHKD.      |              |                    |
| STAND.     |              |                    |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



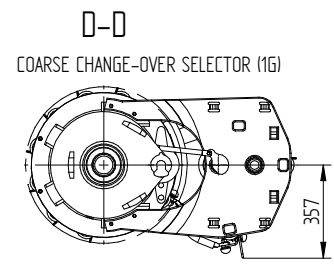
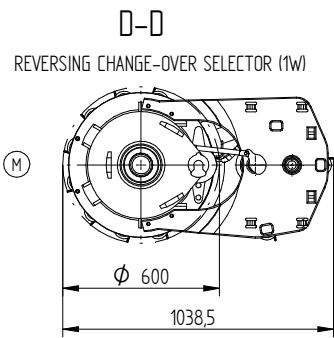
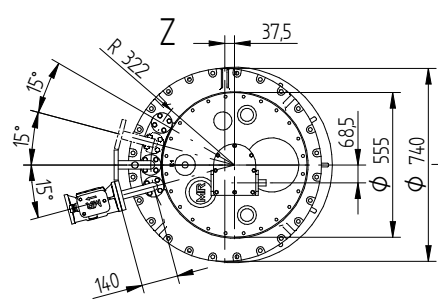
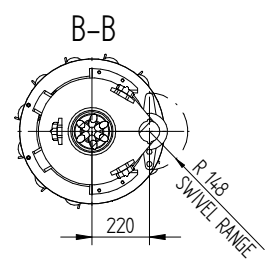
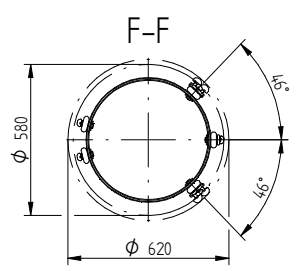
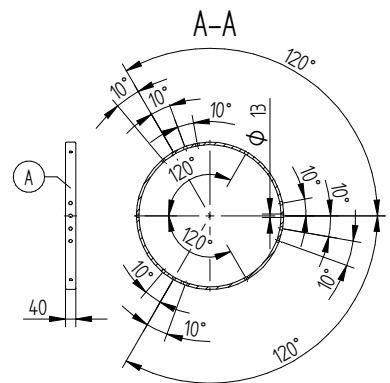
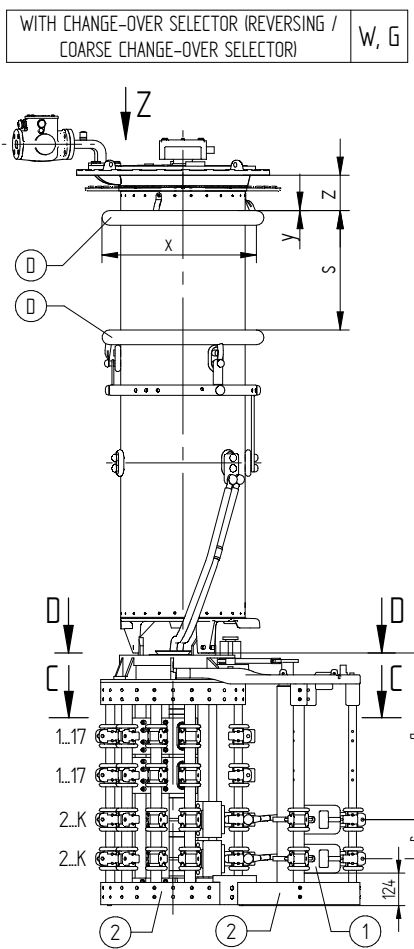
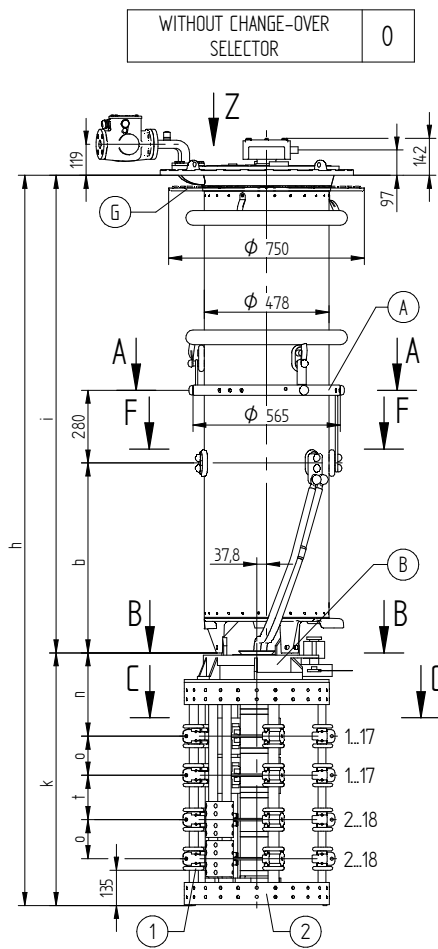
ON-LOAD TAP-CHANGER VACUTAP® VR  
VRS/VRMIII 700 Y-72,5...245kV- B/C/D WITH MULT.COARSE COS  
DIMENSION DRAWING

SERIAL NUMBER

|                 |       |
|-----------------|-------|
| MATERIAL NUMBER | SHEET |
| 100208571E      | 2/2   |

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|            |         |                    |
|------------|---------|--------------------|
| DATE       | NAME    | DOCUMENT NO.       |
| 26.07.2022 | BUTERUS | SED 8942283 001 00 |
| 27.07.2022 | WREDE   | CHANGE NO.         |
| 27.07.2022 | KLEYN   | 1116192            |
| DFTR.      | SCALE   | 1:10               |
| CHKD.      |         |                    |
| STAND.     |         |                    |



FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 KV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
- (1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT
- (2) - SELECTOR BASE IS MADE OF INSULATING MATERIAL
- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 10009030
- D-D: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 10010019

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL I 1601 - 725 ... 420 kV - RC, RD/RDE  
 DIMENSION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| MATERIAL NUMBER | SHEET |
| 101714710E      | 1/2   |

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|                    |         |                    |
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| DATE               | NAME    | DOCUMENT NO.       |
| DFTR. 26.07.2022   | BUTERUS | SED 8942283 001 00 |
| CHKD. 27.07.2022   | WREDE   | CHANGE NO.         |
| STAND   27.07.2022 | KLEYN   | 1116192            |
|                    |         | SCALE              |
|                    |         | 1:10               |

| SELECTOR SIZE                   |   | RC   |      |       |       |       |       |       | RD / RDE |      |       |       |       |       |       |
|---------------------------------|---|------|------|-------|-------|-------|-------|-------|----------|------|-------|-------|-------|-------|-------|
| Um [kV]                         |   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   | 72,5     | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS [mm]                 | h | 2440 | 2570 | 2700  | 2800  | 2952  | 3055  | 3174  | 2520     | 2650 | 2780  | 2880  | 3032  | 3135  | 3254  |
|                                 | i | 1471 | 1601 | 1731  | 1831  | 1983  | 2086  | 2205  | 1471     | 1601 | 1731  | 1831  | 1983  | 2086  | 2205  |
|                                 | b | 728  |      |       |       |       |       |       | 728      |      |       |       |       |       |       |
|                                 | s | -    | -    | 302   | 402   | 554   | 573   | 692   | -        | -    | 302   | 402   | 554   | 573   | 692   |
|                                 | z | -    | -    | 191   | 191   | 191   | 228   | 228   | -        | -    | 191   | 191   | 191   | 228   | 228   |
|                                 | x | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 | -        | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                                 | y | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 | -        | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                                 | k | 969  |      |       |       |       |       |       | 1049     |      |       |       |       |       |       |
|                                 | n | 319  |      |       |       |       |       |       | 359      |      |       |       |       |       |       |
|                                 | o | 150  |      |       |       |       |       |       | 150      |      |       |       |       |       |       |
|                                 | t | 170  |      |       |       |       |       |       | 210      |      |       |       |       |       |       |
|                                 | r | 150  |      |       |       |       |       |       | 150      |      |       |       |       |       |       |
|                                 | q | 639  |      |       |       |       |       |       | 719      |      |       |       |       |       |       |
| OIL VOLUME [dm <sup>3</sup> ]   |   | 205  | 225  | 245   | 265   | 285   | 305   | 325   | 205      | 225  | 245   | 265   | 285   | 305   | 325   |
| DISPLACEMENT [dm <sup>3</sup> ] |   | 313  | 343  | 373   | 393   | 423   | 463   | 483   | 315      | 345  | 375   | 395   | 425   | 465   | 485   |
| MAX. WEIGHT [kg]                |   | 479  | 485  | 497   | 501   | 507   | 514   | 519   | 484      | 490  | 502   | 506   | 512   | 519   | 524   |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL I 1601 - 72,5 ... 420 kV - RC, RD/RDE  
 DIMENSION DRAWING

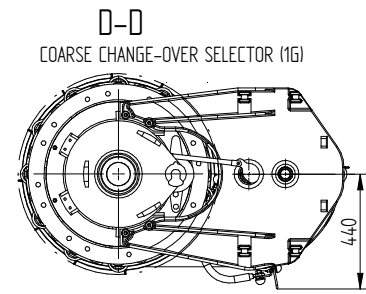
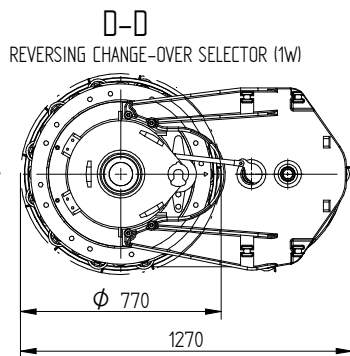
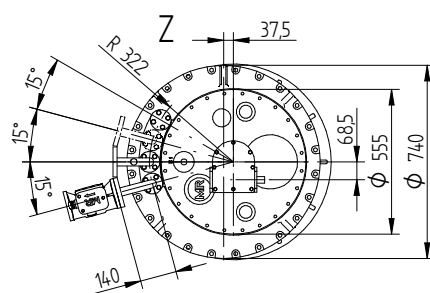
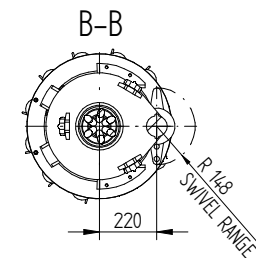
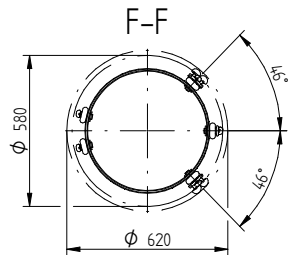
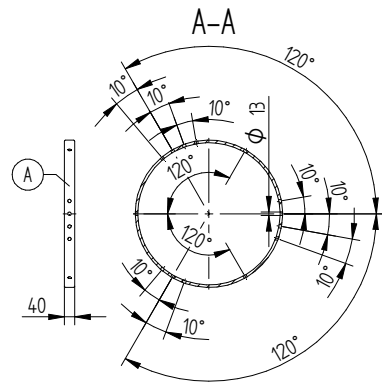
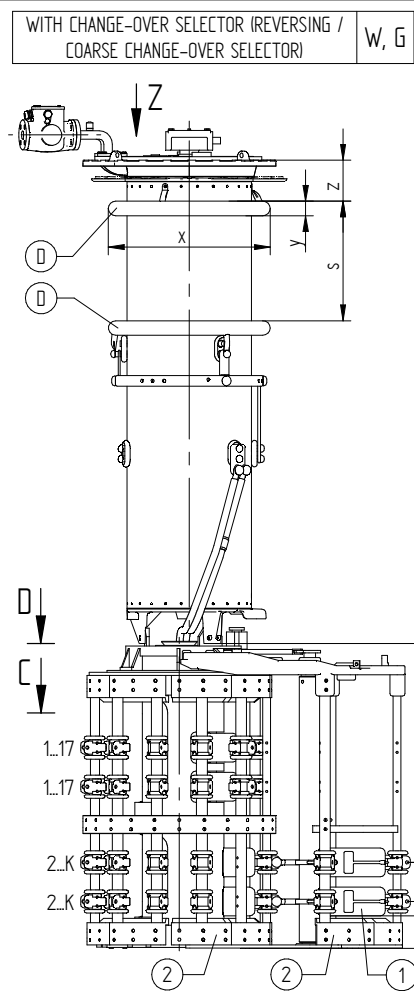
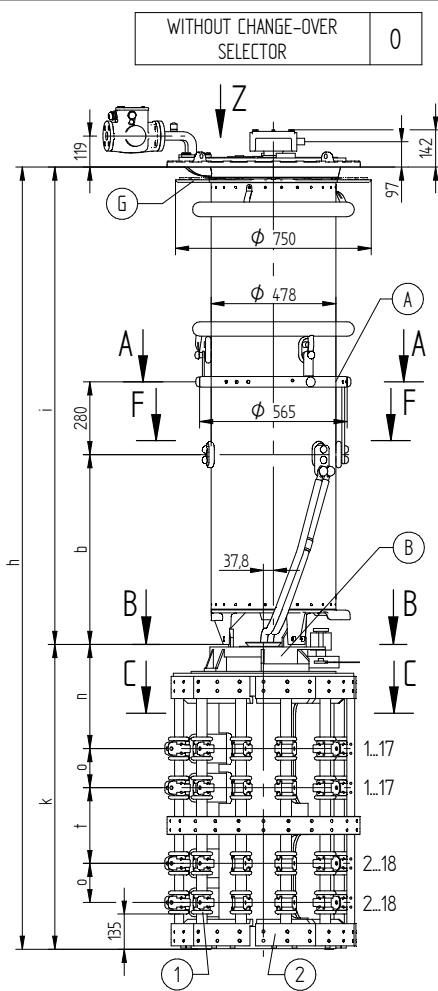
SERIAL NUMBER

MATERIAL NUMBER  
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2/2

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| 26.07.2022 | BUTERUS | SED 8943792.001.00 |
| 27.07.2022 | WREDE   | CHANGE NO.         |
| 27.07.2022 | KLEYN   | 1116192            |
| DFTR.      | SCALE   | 1:10               |
| CHKD.      |         |                    |
| STAND.     |         |                    |



FOR THE TYPE OF OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
  - (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
  - (B) - IS CONNECTED TO POTENTIAL OF (A)
  - (D) - SHIELDING RINGS FOR UM OF 170 kV OR GREATER
  - (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
  - (1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT
  - (2) - SELECTOR BASE IS MADE OF INSULATING MATERIAL
- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 10016570
- D-D: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 10017264

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL I 1601 - 72,5 ... 420 kV - RE  
 DIMENSION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| MATERIAL NUMBER | SHEET |
| 101714720E      | 1/2   |



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| DATE               | NAME    | DOCUMENT NO.       |
| DFTR. 26.07.2022   | BUTERUS | SED 8943792.001.00 |
| CHKD. 27.07.2022   | WREDE   | CHANGE NO.         |
| STAND   27.07.2022 | KLEYN   | 1116192            |
|                    |         | SCALE              |
|                    |         | 1:10               |

| SELECTOR SIZE      |   | RE   |      |       |       |       |       |       |
|--------------------|---|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS [mm]    | h | 2640 | 2770 | 2900  | 3000  | 3152  | 3255  | 3374  |
|                    | i | 1471 | 1601 | 1731  | 1831  | 1983  | 2086  | 2205  |
|                    | b | 728  |      |       |       |       |       |       |
|                    | s | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k | 1169 |      |       |       |       |       |       |
|                    | n | 399  |      |       |       |       |       |       |
|                    | o | 150  |      |       |       |       |       |       |
|                    | t | 290  |      |       |       |       |       |       |
|                    | r | 150  |      |       |       |       |       |       |
|                    | q | 839  |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |   | 205  | 225  | 245   | 265   | 285   | 305   | 325   |
| DISPLACEMENT [dm³] |   | 348  | 378  | 408   | 428   | 458   | 498   | 518   |
| MAX. WEIGHT [kg]   |   | 541  | 547  | 559   | 563   | 569   | 576   | 581   |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL I 1601 - 72,5 ... 420 kV - RE  
 DIMENSION DRAWING

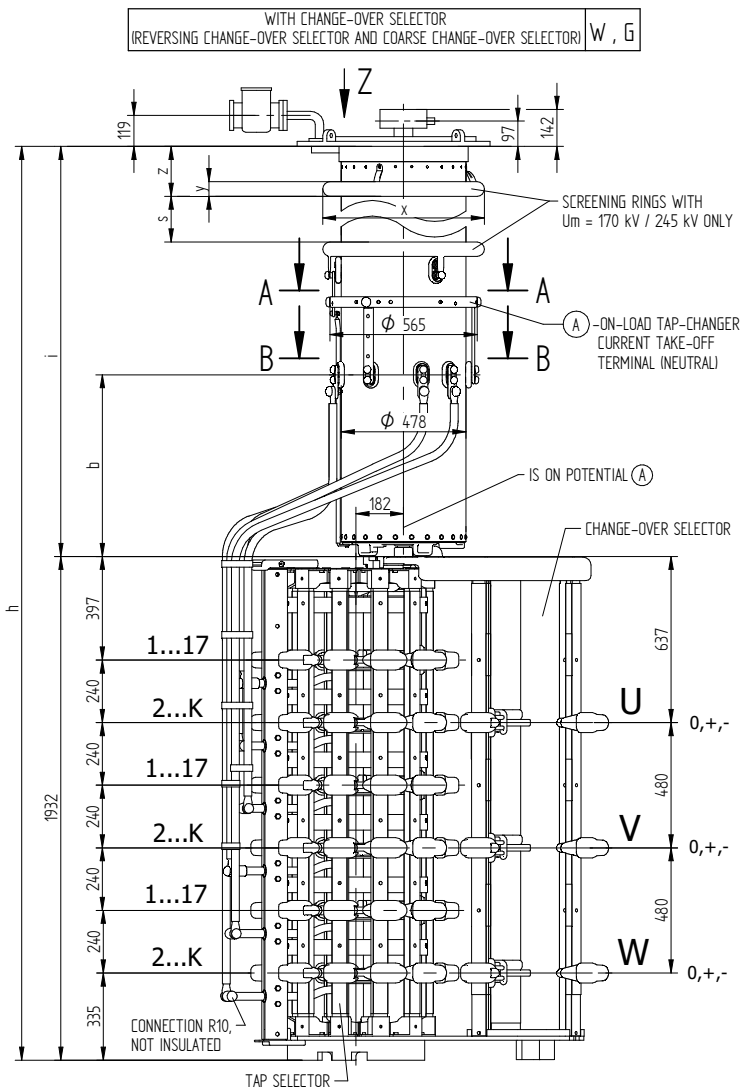
SERIAL NUMBER

MATERIAL NUMBER  
 101714720E

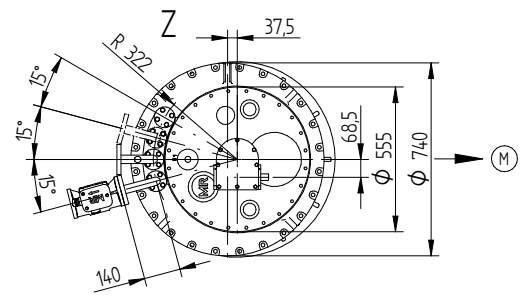
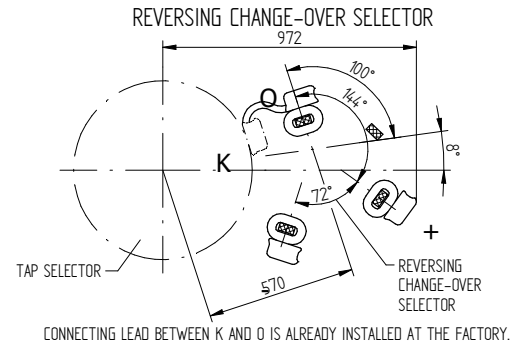
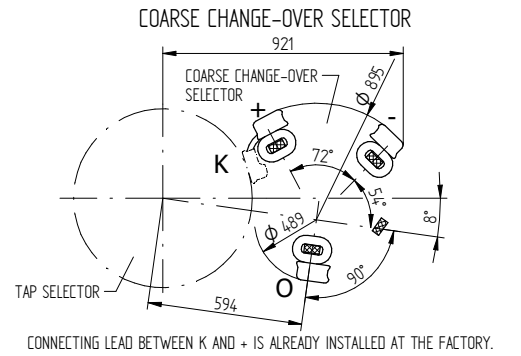
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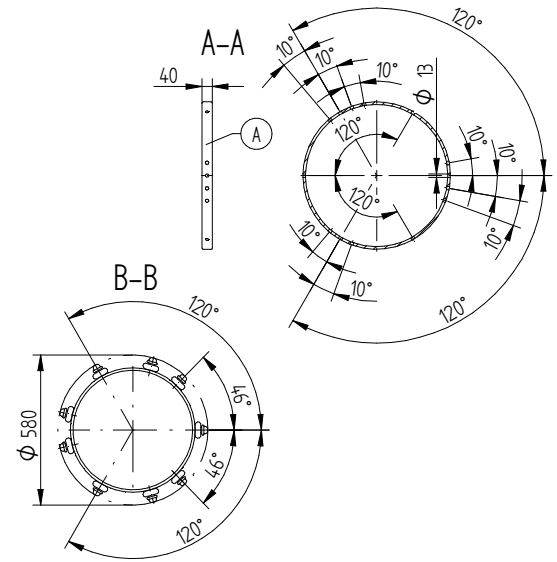
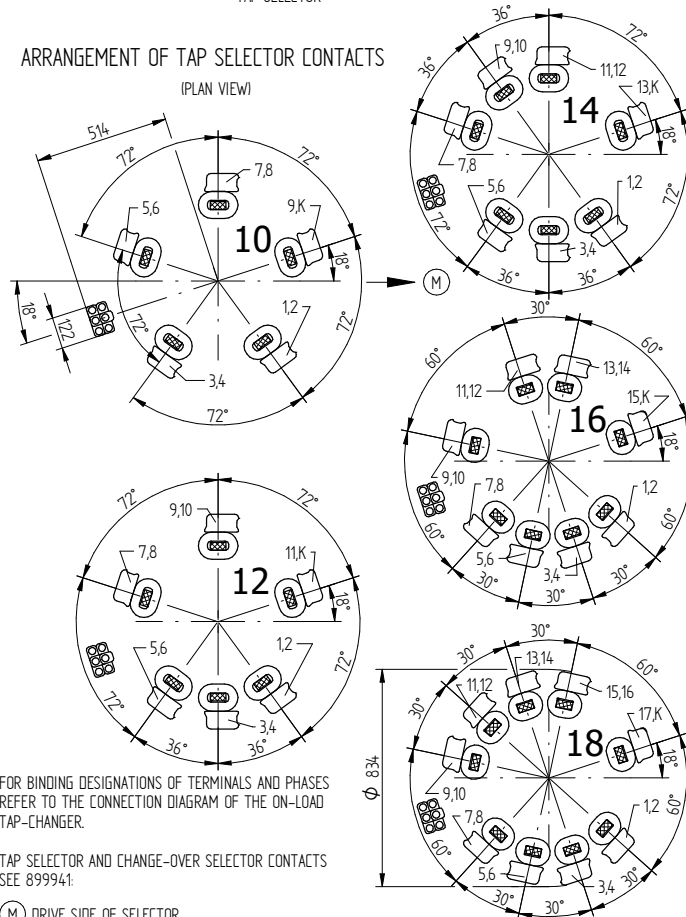
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| DATE       | NAME    | DOCUMENT NO.       |
| 26.07.2022 | BUTERUS | SED 8941115 001 00 |
| 27.07.2022 | WREDE   | CHANGE NO.         |
| 27.07.2022 | KLEYN   | 1116192            |
|            |         | SCALE              |
|            |         | 1:10               |



ARRANGEMENT OF CHANGE-OVER SELECTOR CONTACTS (PLAN VIEW)



ARRANGEMENT OF TAP SELECTOR CONTACTS (PLAN VIEW)



TAP SELECTOR AND CHANGE-OVER SELECTOR CONTACTS SEE 899941  
 (M) DRIVE SIDE OF SELECTOR

| SELECTOR SIZE                   |   | E    |      |       |       |
|---------------------------------|---|------|------|-------|-------|
| Um [kV]                         |   | 72,5 | 123  | 170   | 245   |
| DIMENSIONS [MM]                 | h | 3372 | 3502 | 3632  | 3732  |
|                                 | i | 1440 | 1570 | 1700  | 1800  |
|                                 | b | 697  |      |       |       |
|                                 | s | -    | -    | 302   | 402   |
|                                 | z | -    | -    | 191   | 191   |
|                                 | x | -    | -    | φ 620 | φ 620 |
|                                 | y | -    | -    | φ 56  | φ 56  |
| OIL VOLUME [CM <sup>3</sup> ]   |   | 210  | 230  | 250   | 270   |
| DISPLACEMENT [CM <sup>3</sup> ] |   | 400  | 420  | 440   | 460   |
| MAX. WEIGHT [KG]                |   | 807  |      |       |       |

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL III 1600 - 72,5 ... 245 kV - E  
 DIMENSION DRAWING

SERIAL NUMBER

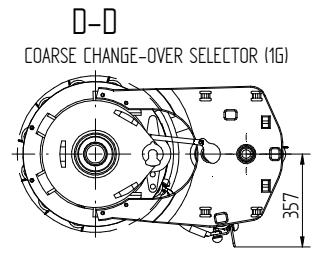
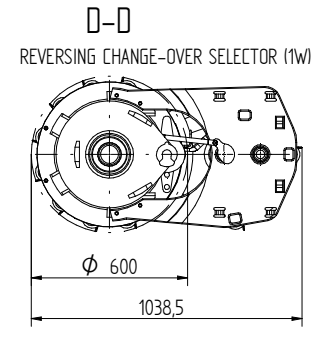
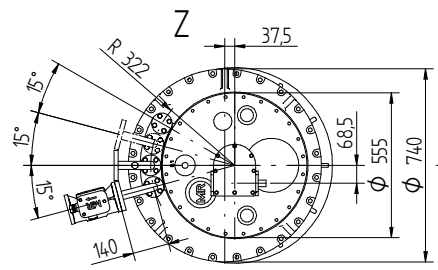
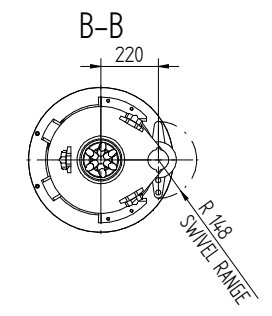
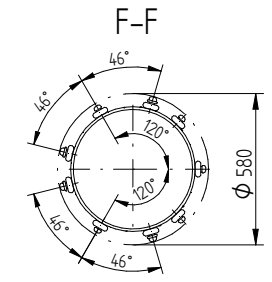
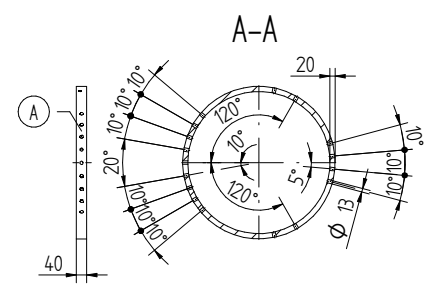
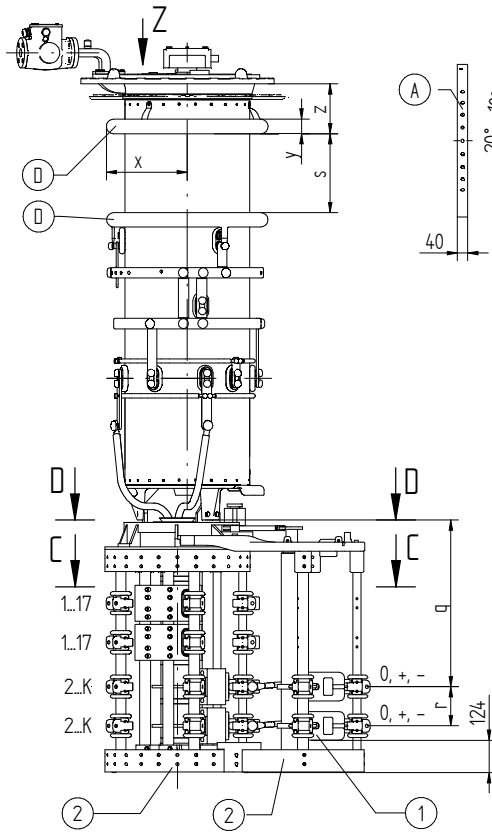
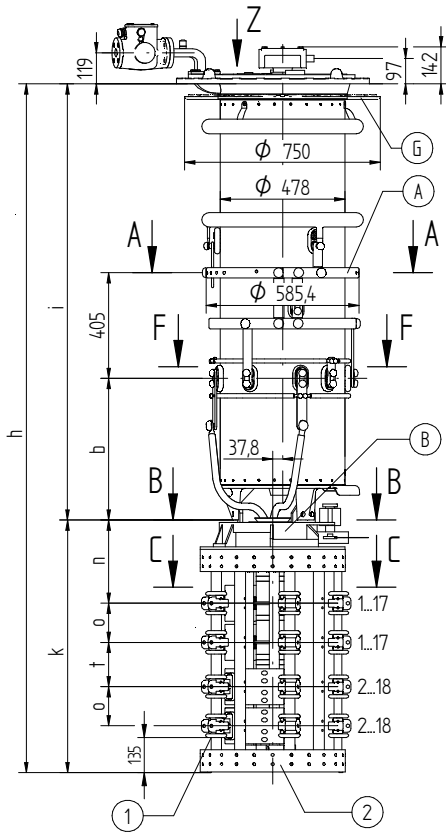
MATERIAL NUMBER 101714700E  
 SHEET 1/1



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WITHOUT CHANGE-OVER  
 SELECTOR 0

WITH CHANGE-OVER SELECTOR (REVERSING /  
 COARSE CHANGE-OVER SELECTOR) W, G



FOR THE TYPE OF THE OLTC-HEAD REFER TO THE ORDER-SPECIFIC  
 DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 KV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
- (1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT
- (2) - SELECTOR BASE IS MADE OF INSULATING MATERIAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 10009030
- D-D: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 10010019
- CONNECTING OF PARALLEL SELECTOR PLANES REFER TO 10009916

|       |            |              |                    |
|-------|------------|--------------|--------------------|
| DATE  | 05.11.2021 | DOCUMENT NO. | SED 8367958 001 01 |
| DFT   | 08.11.2021 | NAME         | BUTERUS            |
| CHKD  | 09.11.2021 | WREDE        | KLEYN              |
| STAND |            | CHANGE NO.   | 1109989            |
|       |            | SCALE        | 1:10               |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL I 1801/2001/2401 - 72,5...420 - RC/RD/RDE  
 DIMENSION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| MATERIAL NUMBER | SHEET |
| 101624770E      | 1/2   |

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## VACUTAP® VRL | 1801 / 2001

| SELECTOR SIZE      |     | RC   |      |       |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h   | 2381 | 2511 | 2641  | 2741  | 2893  | 2996  | 3115  |
|                    | b   | 543  | 543  | 543   | 543   | 543   | 543   | 543   |
|                    | i   | 1412 | 1542 | 1672  | 1772  | 1924  | 2027  | 2146  |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k   | 969  |      |       |       |       |       |       |
|                    | n   | 319  |      |       |       |       |       |       |
|                    | o   | 150  |      |       |       |       |       |       |
|                    | t   | 170  |      |       |       |       |       |       |
|                    | r   | 150  |      |       |       |       |       |       |
| q                  | 639 |      |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |     | 185  | 210  | 230   | 250   | 275   | 300   | 320   |
| DISPLACEMENT [dm³] |     | 300  | 330  | 360   | 380   | 415   | 450   | 470   |
| MAX. WEIGHT [kg]   |     | 537  | 545  | 557   | 560   | 568   | 575   | 579   |

## VACUTAP® VRL | 1801 / 2001

| SELECTOR SIZE      |     | RD / RDE |      |       |       |       |       |       |
|--------------------|-----|----------|------|-------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5     | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h   | 2461     | 2591 | 2721  | 2821  | 2973  | 3076  | 3195  |
|                    | b   | 543      | 543  | 543   | 543   | 543   | 543   | 543   |
|                    | i   | 1412     | 1542 | 1672  | 1772  | 1924  | 2027  | 2146  |
|                    | s   | -        | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z   | -        | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x   | -        | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y   | -        | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k   | 1049     |      |       |       |       |       |       |
|                    | n   | 359      |      |       |       |       |       |       |
|                    | o   | 150      |      |       |       |       |       |       |
|                    | t   | 210      |      |       |       |       |       |       |
|                    | r   | 150      |      |       |       |       |       |       |
| q                  | 719 |          |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |     | 185      | 210  | 230   | 250   | 275   | 300   | 320   |
| DISPLACEMENT [dm³] |     | 302      | 332  | 362   | 382   | 417   | 452   | 472   |
| MAX. WEIGHT [kg]   |     | 542      | 550  | 562   | 565   | 573   | 580   | 584   |

|            |         |                    |
|------------|---------|--------------------|
| DATE       | NAME    | DOCUMENT NO.       |
| 05.11.2021 | BUTERUS | SED 8367958 001 01 |
| 08.11.2021 | WREDE   | CHANGE NO.         |
| 09.11.2021 | KLEYN   | 1109989            |
| DFTR.      | SCALE   | 1:10               |
| CHKD.      |         |                    |
| STAND.     |         |                    |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL | 1801/2001/2401 - 72,5...420 - RC/RD/RDE  
 DIMENSION DRAWING

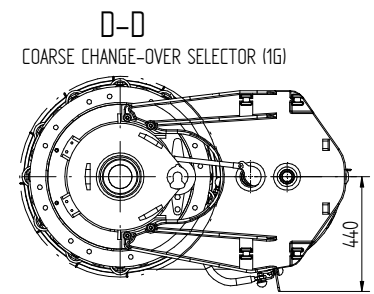
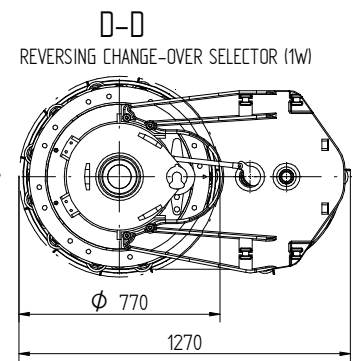
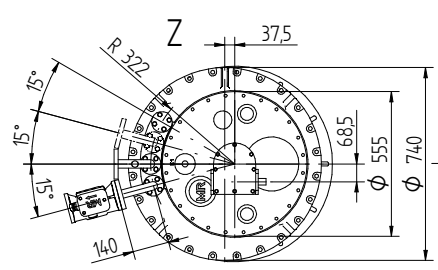
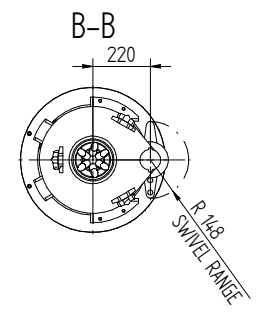
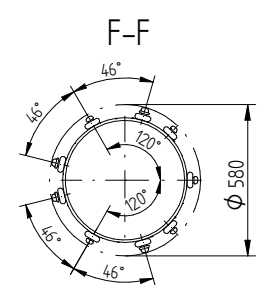
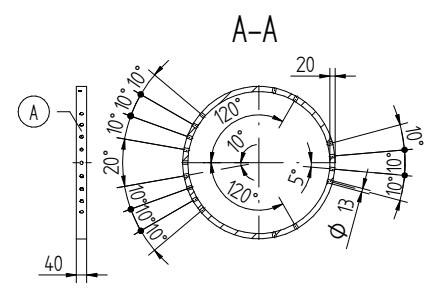
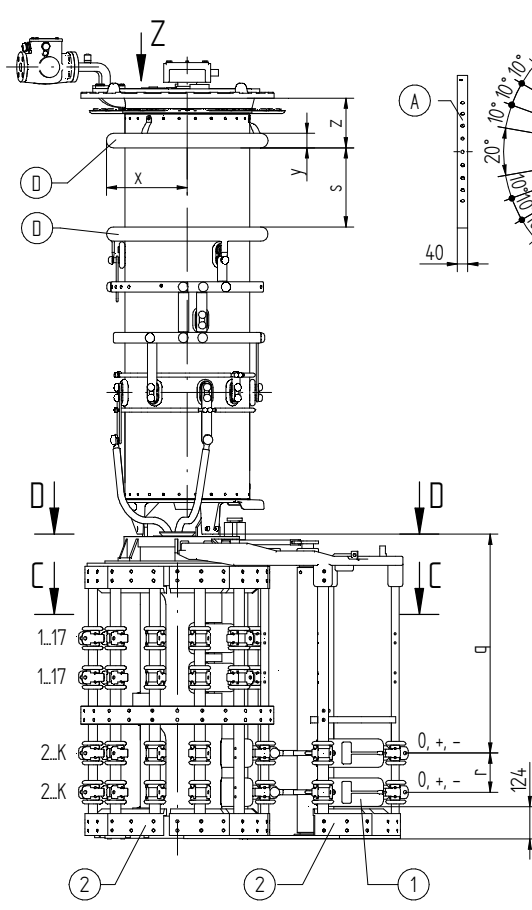
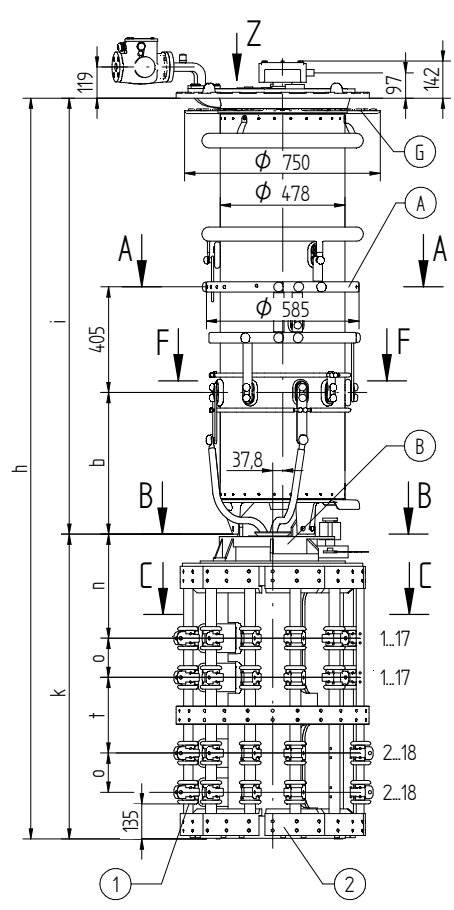
SERIAL NUMBER

|                 |       |
|-----------------|-------|
| MATERIAL NUMBER | SHEET |
| 101624770E      | 2/2   |

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WITHOUT CHANGE-OVER SELECTOR 0

WITH CHANGE-OVER SELECTOR (REVERSING / COARSE CHANGE-OVER SELECTOR) W, G



FOR THE TYPE OF THE OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 kV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
- (1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT
- (2) - SELECTOR BASE IS MADE OF INSULATING MATERIAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 10016570
- D-D: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 10017264
- CONNECTING OF PARALLEL SELECTOR PLANES REFER TO 10009916

|              |                    |
|--------------|--------------------|
| DOCUMENT NO. | SED 8367960 001 00 |
| NAME         | BUTERUS            |
| DATE         | 05.11.2021         |
| SCALE        | 1:10               |
| CHANGE NO.   | 1109989            |
| WREDE        | KLEYN              |
| DFTR.        | 08.11.2021         |
| CHKO.        | 09.11.2021         |
| STAND.       |                    |

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL I 1801/2001/2401 - 72,5...420 - RE  
 DIMENSION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| MATERIAL NUMBER | SHEET |
| 101624780E      | 1/2   |

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## VACUTAP® VRL | 1801 / 2001

| SELECTOR SIZE      |   | RE   |      |       |       |       |       |       |
|--------------------|---|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h | 2582 | 2712 | 2842  | 2942  | 3094  | 3197  | 3316  |
|                    | b | 543  | 543  | 543   | 543   | 543   | 543   | 543   |
|                    | i | 1412 | 1542 | 1672  | 1772  | 1924  | 2027  | 2146  |
|                    | s | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k | 1170 |      |       |       |       |       |       |
|                    | n | 400  |      |       |       |       |       |       |
|                    | o | 150  |      |       |       |       |       |       |
|                    | t | 290  |      |       |       |       |       |       |
|                    | r | 150  |      |       |       |       |       |       |
|                    | q | 840  |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |   | 185  | 210  | 230   | 250   | 275   | 300   | 320   |
| DISPLACEMENT [dm³] |   | 337  | 367  | 397   | 417   | 452   | 487   | 507   |
| MAX. WEIGHT [kg]   |   | 630  | 638  | 625   | 653   | 661   | 668   | 672   |

|            |         |                    |
|------------|---------|--------------------|
| DATE       | NAME    | DOCUMENT NO.       |
| 05.11.2021 | BUTERUS | SED 8367960 001 00 |
| 08.11.2021 | WREDE   | CHANGE NO.         |
| 09.11.2021 | KLEYN   | 1109989            |
| DFTR.      | SCALE   | 1:10               |
| CHKD.      |         |                    |
| STAND      |         |                    |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL | 1801/2001/2401 - 72,5...420 - RE  
 DIMENSION DRAWING

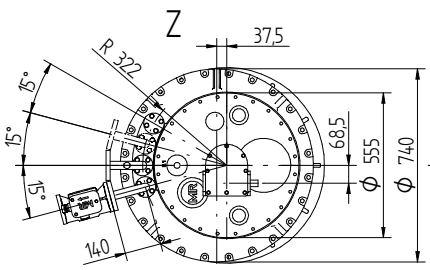
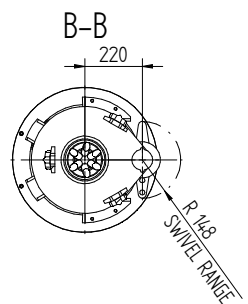
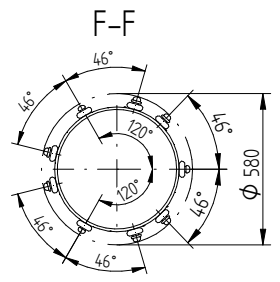
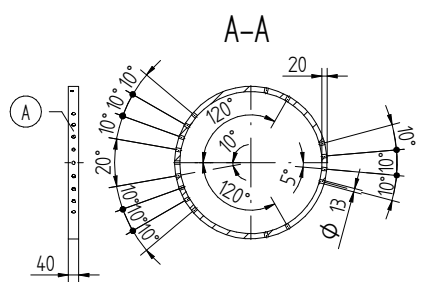
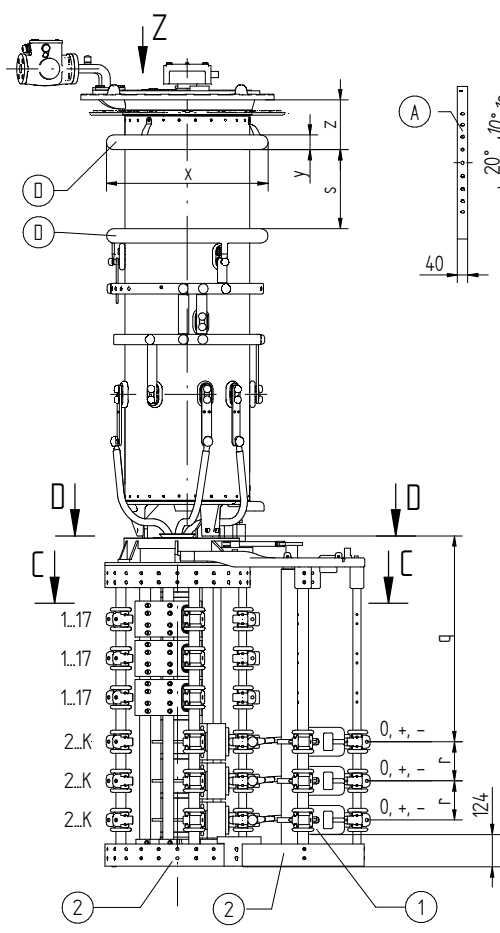
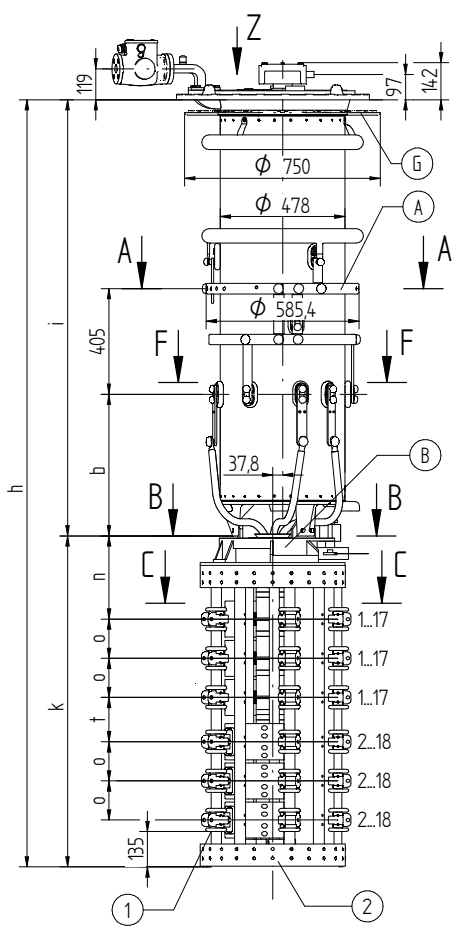
SERIAL NUMBER

|                 |       |
|-----------------|-------|
| MATERIAL NUMBER | SHEET |
| 101624780E      | 2/2   |

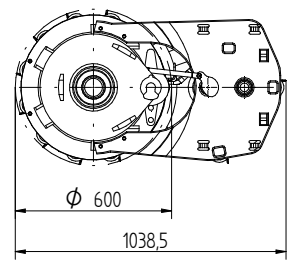
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WITHOUT CHANGE-OVER SELECTOR 0

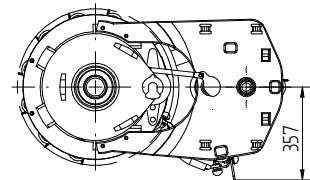
WITH CHANGE-OVER SELECTOR (REVERSING / COARSE CHANGE-OVER SELECTOR) W, G



D-D REVERSING CHANGE-OVER SELECTOR (1W)



D-D COARSE CHANGE-OVER SELECTOR (1G)



FOR THE TYPE OF THE OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 KV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
- (1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT
- (2) - SELECTOR BASE IS MADE OF INSULATING MATERIAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 10009030
- D-D: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 10010019
- CONNECTING OF PARALLEL SELECTOR PLANES REFER TO 10009916

|                   |           |                    |
|-------------------|-----------|--------------------|
| DATE              | NAME      | DOCUMENT NO.       |
| 29.11.2021        | BUTERUS   | SED 8367934_001 01 |
| CHKO. 02.12.2021  | WREDE     | CHANGE NO.         |
| STAND. 02.12.2021 | WANNINGER | 111654             |
|                   |           | SCALE 1:10         |

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL I 2601/3001/3201 - 72,5...420 - RC/RD/RDE  
 DIMENSION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| MATERIAL NUMBER | SHEET |
| 101624740E      | 1/2   |



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## VACUTAP® VRL | 2601 / 3001 / 3201

| SELECTOR SIZE      |     | RC   |      |       |       |       |       |       |
|--------------------|-----|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h   | 2681 | 2811 | 2941  | 3041  | 3193  | 3296  | 3415  |
|                    | b   | 543  | 543  | 543   | 543   | 543   | 543   | 543   |
|                    | i   | 1412 | 1542 | 1672  | 1772  | 1924  | 2027  | 2146  |
|                    | s   | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z   | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x   | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y   | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k   | 1269 |      |       |       |       |       |       |
|                    | n   | 319  |      |       |       |       |       |       |
|                    | o   | 150  |      |       |       |       |       |       |
|                    | t   | 170  |      |       |       |       |       |       |
| r                  | 150 |      |      |       |       |       |       |       |
| q                  | 789 |      |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |     | 185  | 210  | 230   | 250   | 265   | 300   | 320   |
| DISPLACEMENT [dm³] |     | 312  | 342  | 372   | 392   | 517   | 462   | 482   |
| MAX. WEIGHT [kg]   |     | 582  | 590  | 602   | 605   | 613   | 620   | 624   |

## VACUTAP® VRL | 2601 / 3001 / 3201

| SELECTOR SIZE      |     | RD / RDE |      |       |       |       |       |       |
|--------------------|-----|----------|------|-------|-------|-------|-------|-------|
| Um [kV]            |     | 72,5     | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h   | 2761     | 2891 | 3021  | 3121  | 3273  | 3376  | 3495  |
|                    | b   | 543      | 543  | 543   | 543   | 543   | 543   | 543   |
|                    | i   | 1412     | 1542 | 1672  | 1772  | 1924  | 2027  | 2146  |
|                    | s   | -        | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z   | -        | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x   | -        | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y   | -        | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k   | 1349     |      |       |       |       |       |       |
|                    | n   | 359      |      |       |       |       |       |       |
|                    | o   | 150      |      |       |       |       |       |       |
|                    | t   | 210      |      |       |       |       |       |       |
| r                  | 150 |          |      |       |       |       |       |       |
| q                  | 869 |          |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |     | 185      | 210  | 230   | 250   | 275   | 300   | 320   |
| DISPLACEMENT [dm³] |     | 313      | 343  | 373   | 393   | 428   | 463   | 483   |
| MAX. WEIGHT [kg]   |     | 588      | 596  | 608   | 611   | 619   | 626   | 630   |

|            |           |                    |
|------------|-----------|--------------------|
| DATE       | NAME      | DOCUMENT NO.       |
| 29.11.2021 | BUTERUS   | SED 8367934_001 01 |
| 02.12.2021 | WREDE     | CHANGE NO.         |
| 02.12.2021 | WANNINGER | 111654             |
| DFTR.      | SCALE     | 1:10               |
| CHKD.      |           |                    |
| STAND.     |           |                    |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



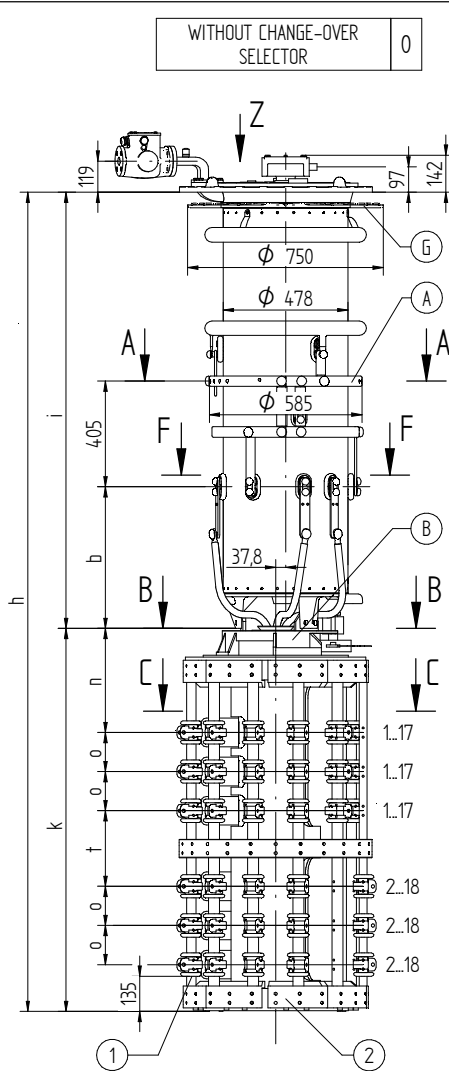
ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL | 2601/3001/3201 - 72,5...420 - RC/RD/RDE  
 DIMENSION DRAWING

SERIAL NUMBER

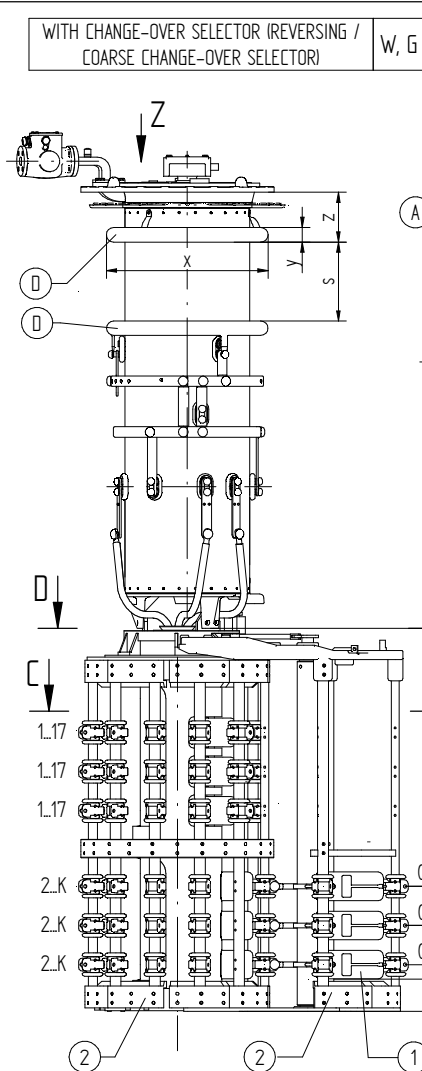
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| MATERIAL NUMBER | SHEET |
| 101624740E      | 2/2   |

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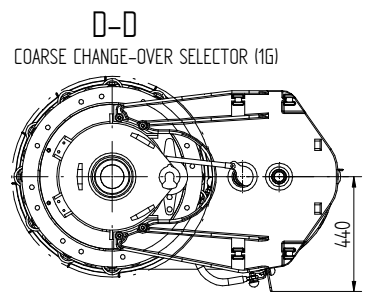
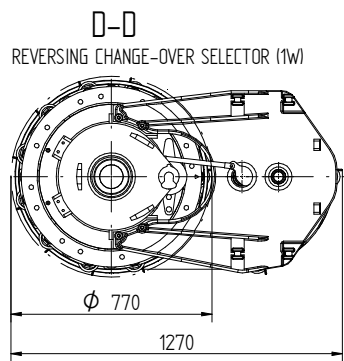
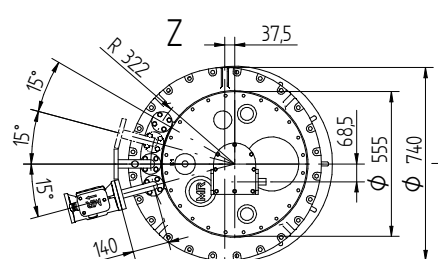
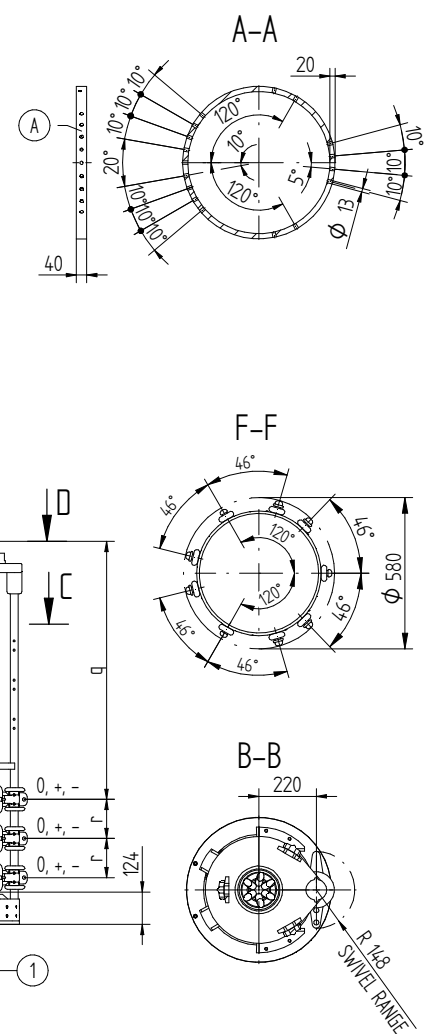
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| 02.12.2021 | WREDE     | CHANGE NO.         |
| 02.12.2021 | WANNINGER | 111654             |
| DFTR.      | SCALE     | 1:10               |
| CHKD.      |           |                    |
| STAND.     |           |                    |



WITHOUT CHANGE-OVER SELECTOR 0



WITH CHANGE-OVER SELECTOR (REVERSING / COARSE CHANGE-OVER SELECTOR) W, G



FOR THE TYPE OF THE OLTC-HEAD REFER TO THE ORDER-SPECIFIC DRAWING OF THE OLTC-HEAD AND DRIVE SHAFTS

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (D) - SHIELDING RINGS FOR UM OF 170 kV OR GREATER
- (G) - SUPPORTING FLANGE FOR THE BELL-TYPE TANK INSTALLATION IS OPTIONAL
- (1) - BOTTOM-MOST LIVE PARTS; THESE ARE CONNECTED TO THE POTENTIAL OF THE ASSOCIATED AND/OR WIRED CONNECTION CONTACT
- (2) - SELECTOR BASE IS MADE OF INSULATING MATERIAL

- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
- C-C: REFER TO 10016570
- D-D: TYPE WITH CONNECTING LEAD 3W/3G REFER TO 10017264
- CONNECTING OF PARALLEL SELECTOR PLANES REFER TO 10009916

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL I 2601/3001/3201 - 72,5...420 - RE  
 DIMENSION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| MATERIAL NUMBER | SHEET |
| 101624750E      | 1/2   |

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## VACUTAP® VRL | 2601 / 3001 / 3201

| SELECTOR SIZE      |   | RE   |      |       |       |       |       |       |
|--------------------|---|------|------|-------|-------|-------|-------|-------|
| Um [kV]            |   | 72,5 | 123  | 170   | 245   | 300   | 362   | 420   |
| DIMENSIONS<br>[mm] | h | 2882 | 3012 | 3142  | 3242  | 3394  | 3497  | 3616  |
|                    | b | 543  | 543  | 543   | 543   | 543   | 543   | 543   |
|                    | i | 1412 | 1542 | 1672  | 1772  | 1924  | 2027  | 2146  |
|                    | s | -    | -    | 302   | 402   | 554   | 573   | 692   |
|                    | z | -    | -    | 191   | 191   | 191   | 228   | 228   |
|                    | x | -    | -    | ∅ 620 | ∅ 620 | ∅ 620 | ∅ 695 | ∅ 695 |
|                    | y | -    | -    | ∅ 56  | ∅ 56  | ∅ 56  | ∅ 100 | ∅ 100 |
|                    | k | 1470 |      |       |       |       |       |       |
|                    | n | 400  |      |       |       |       |       |       |
|                    | o | 150  |      |       |       |       |       |       |
|                    | t | 290  |      |       |       |       |       |       |
|                    | r | 150  |      |       |       |       |       |       |
|                    | q | 990  |      |       |       |       |       |       |
| OIL VOLUME [dm³]   |   | 185  | 210  | 230   | 250   | 275   | 300   | 320   |
| DISPLACEMENT [dm³] |   | 351  | 381  | 411   | 431   | 466   | 501   | 521   |
| MAX. WEIGHT [kg]   |   | 696  | 704  | 716   | 719   | 727   | 734   | 738   |

|            |           |                    |
|------------|-----------|--------------------|
| DATE       | NAME      | DOCUMENT NO.       |
| 29.11.2021 | BUTERUS   | SED 8367950 001 01 |
| 02.12.2021 | WREDE     | CHANGE NO.         |
| 02.12.2021 | WANNINGER | 111654             |
| DFTR.      |           | SCALE              |
| CHKO.      |           | 1:10               |
| STAND      |           |                    |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL | 2601/3001/3201 - 72,5...420 - RE  
 DIMENSION DRAWING

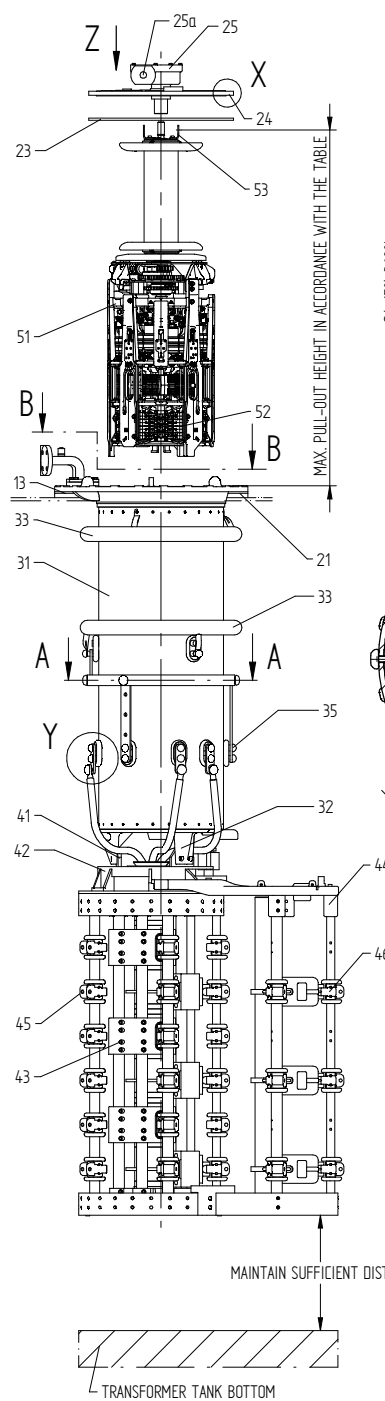
SERIAL NUMBER

|                 |       |
|-----------------|-------|
| MATERIAL NUMBER | SHEET |
| 101624750E      | 2/2   |

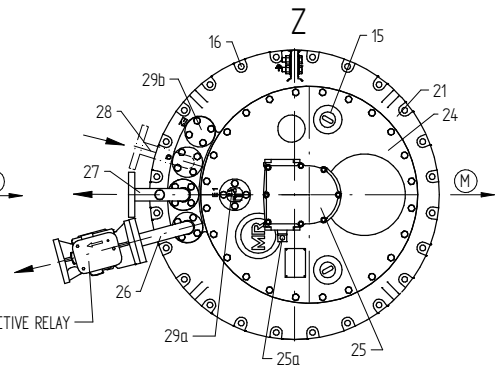
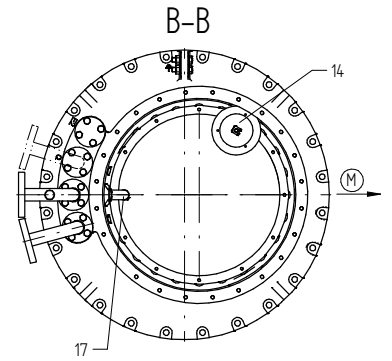
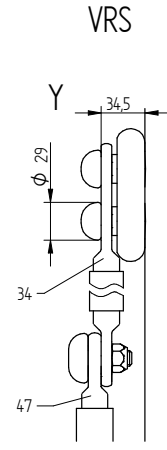
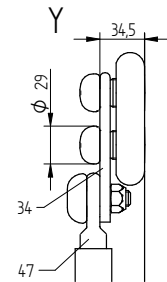
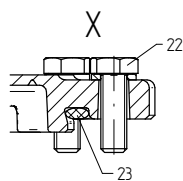
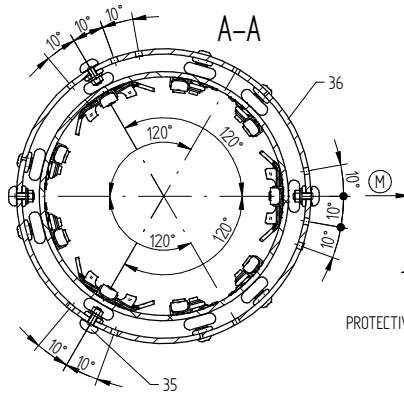
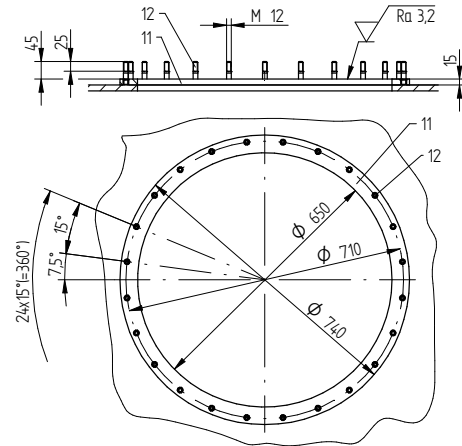
## 4.3 Installation drawings

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|            |         |                    |
|------------|---------|--------------------|
| DATE       | NAME    | DOCUMENT NO.       |
| 26.07.2022 | BUTERUS | SED 5127328 001 02 |
| 27.07.2022 | WREDE   | CHANGE NO.         |
| 27.07.2022 | KLEYN   | 1116192            |
| DFTR.      | SCALE   |                    |
| CHKO.      |         |                    |
| STAND.     |         |                    |



| Um [kV] | MAX. PULL-OUT HEIGHT [mm] |             |                          |
|---------|---------------------------|-------------|--------------------------|
|         | SELECTOR SIZE             |             |                          |
|         | VRS                       | VR M/X/H650 | VR L/H1300<br>VRL I 1601 |
| 72,5    | 1200                      | 1350        | 1500                     |
| 123     | 1330                      | 1480        | 1630                     |
| 170     | 1460                      | 1610        | 1760                     |
| 245     | 1560                      | 1710        | 1860                     |
| 300     | 1712                      | 1862        | 2012                     |
| 362     | 1815                      | 1965        | 2115                     |
| 420     | 1934                      | 2084        | 2234                     |



- 11 MOUNTING FLANGE ON TRANSFORMER COVER
- 12 M12 FIXING SCREW
- 13 ON-LOAD TAP-CHANGER HEAD GASKET
- 14 POSITION INDICATOR, REMOVE BEFORE REMOVING THE DIVERTER SWITCH INSERT
- 15 INSPECTION WINDOW
- 16 Ø15 HOLES
- 17 SUCTION PIPE

- 21 ON-LOAD TAP-CHANGER HEAD
- 22 COVER SCREW
- 23 COVER GASKET
- 24 ON-LOAD TAP-CHANGER HEAD COVER
- 25 CENTRAL GEAR UNIT WITH 25a DRIVE SHAFT
- 26 PIPE CONNECTION R FOR PROTECTIVE RELAY
- 27 PIPE CONNECTION S WITH VENT SCREW (OPTIONAL)
- 28 PIPE CONNECTION Q (OPTIONAL)
- 29a AIR-VENT VALVE OF THE ON-LOAD TAP-CHANGER HEAD COVER
- 29b VENTING OPTION FOR THE TRANSFORMER OIL CHAMBER

- 31 DIVERTER SWITCH OIL COMPARTMENT
- 32 OIL COMPARTMENT BASE
- 33 SHIELDING RINGS FOR UM OF 170 kV OR GREATER
- 34 OIL COMPARTMENT CONNECTION TERMINAL
- 35 CONNECTION CONTACT FOR ON-LOAD TAP-CHANGER TAKE-OFF LEAD
- 36 TAKE-OFF RING FOR ON-LOAD TAP-CHANGER TAKE-OFF LEAD

- 41 SELECTOR SUSPENSION
  - 42 SELECTOR GEAR
  - 43 FINE TAP SELECTOR
  - 44 CHANGE-OVER SELECTOR
  - 45 SELECTOR CONNECTION CONTACTS (SEE ASSOCIATED DIMENSIONAL DRAWING)
  - 46 CHANGE-OVER SELECTOR CONNECTION CONTACTS (SEE ASSOCIATED DIMENSIONAL DRAWING)
  - 47 SELECTOR CONNECTING LEAD
- } RC VARIANT DISPLAYED

- 51 DIVERTER SWITCH INSERT
- 52 TRANSITION RESISTANCES
- 53 EYEBOLT

(M) SELECTOR DRIVE SIDE

VR M/L/H/X

ON-LOAD TAP-CHANGER VACUTAP® VR®  
 INSTALLATION DRAWING VR S/M/L/H/X - RC/RD/RDE/RE/RF/RES  
 DIMENSION DRAWING



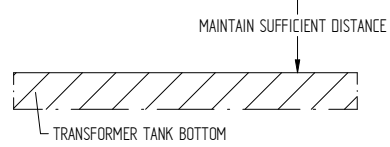
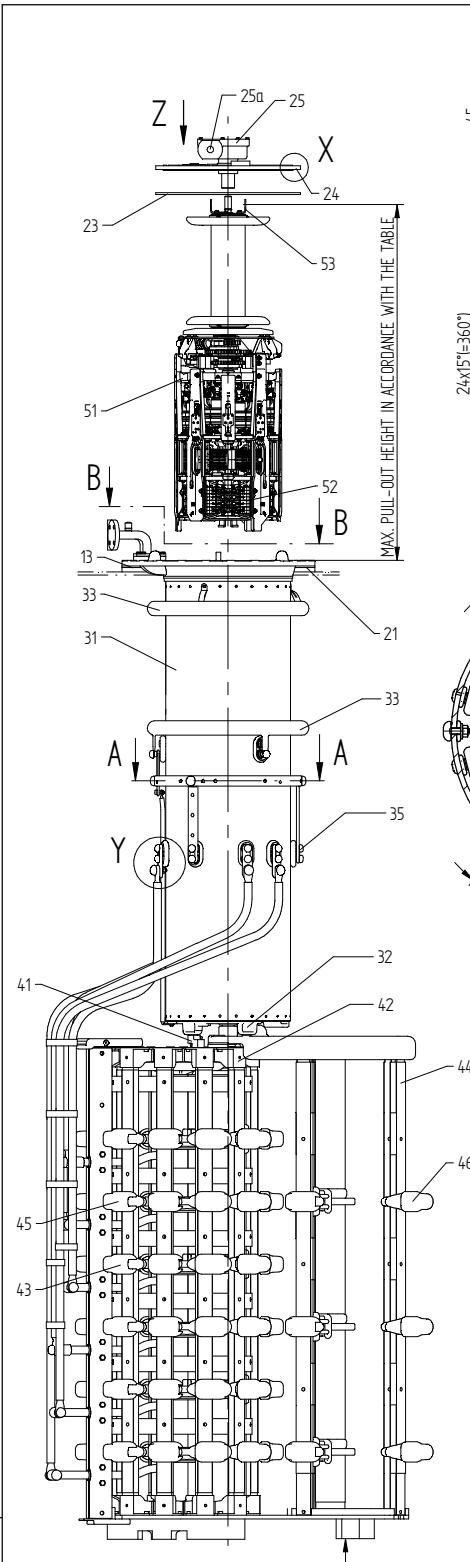
DIMENSION IN mm EXCEPT AS NOTED

SERIAL NUMBER

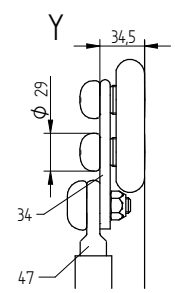
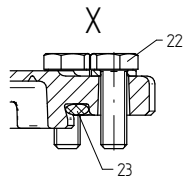
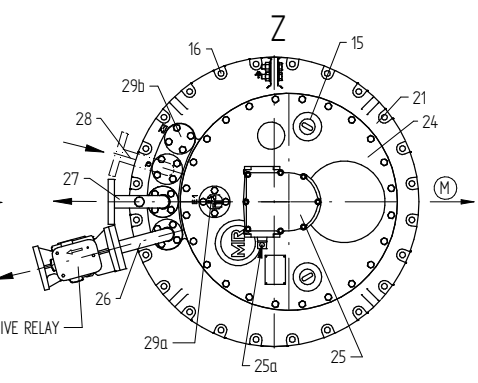
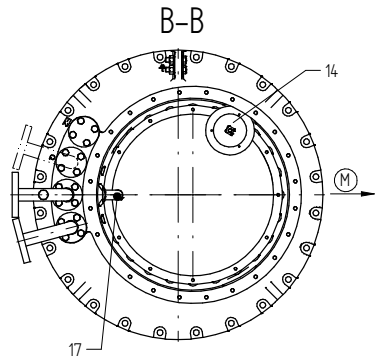
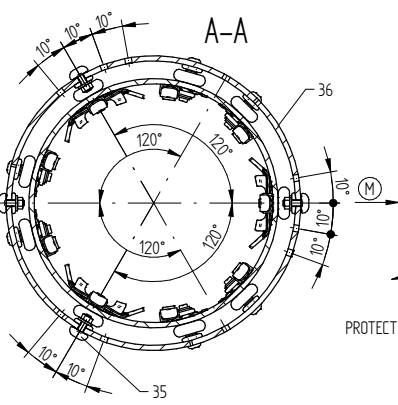
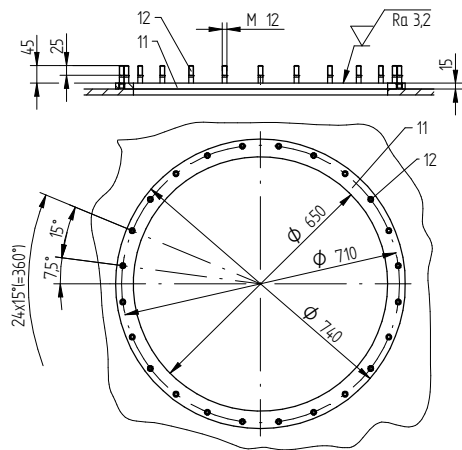
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|------------|--------------------|
| DATE       | DOCUMENT NO.       |
| 26.07.2022 | SED 8914339 001 00 |
| 27.07.2022 | SCALE              |
| 27.07.2022 | CHANGE NO.         |
|            | 1116192            |
| NAME       |                    |
| BUTERUS    |                    |
| WREDE      |                    |
| KLEYN      |                    |



| Um [kV] | MAX. PULL-OUT HEIGHT [mm] |
|---------|---------------------------|
|         | SELECTOR SIZE E           |
| 72,5    | 1500                      |
| 123     | 1630                      |
| 170     | 1760                      |
| 245     | 1860                      |



- 11 MOUNTING FLANGE ON TRANSFORMER COVER
  - 12 M12 FIXING SCREW
  - 13 ON-LOAD TAP-CHANGER HEAD GASKET
  - 14 POSITION INDICATOR, REMOVE BEFORE REMOVING THE DIVERTER SWITCH INSERT
  - 15 INSPECTION WINDOW
  - 16 Ø15 HOLES
  - 17 SUCTION PIPE
  
  - 21 ON-LOAD TAP-CHANGER HEAD
  - 22 COVER SCREW
  - 23 COVER GASKET
  - 24 ON-LOAD TAP-CHANGER HEAD COVER
  - 25 CENTRAL GEAR UNIT WITH 25a DRIVE SHAFT
  - 26 PIPE CONNECTION R FOR PROTECTIVE RELAY
  - 27 PIPE CONNECTION S WITH VENT SCREW (OPTIONAL)
  - 28 PIPE CONNECTION Q (OPTIONAL)
  - 29a AIR-VENT VALVE OF THE ON-LOAD TAP-CHANGER HEAD COVER
  - 29b VENTING OPTION FOR THE TRANSFORMER OIL CHAMBER
  
  - 31 DIVERTER SWITCH OIL COMPARTMENT
  - 32 OIL COMPARTMENT BASE
  - 33 SHIELDING RINGS FOR UM OF 170 kV OR GREATER
  - 34 OIL COMPARTMENT CONNECTION TERMINAL
  - 35 CONNECTION CONTACT FOR ON-LOAD TAP-CHANGER TAKE-OFF LEAD
  - 36 TAKE-OFF RING FOR ON-LOAD TAP-CHANGER TAKE-OFF LEAD
  
  - 41 SELECTOR SUSPENSION
  - 42 SELECTOR GEAR
  - 43 FINE TAP SELECTOR
  - 44 CHANGE-OVER SELECTOR
  - 45 SELECTOR CONNECTION CONTACTS (SEE ASSOCIATED DIMENSIONAL DRAWING)
  - 46 CHANGE-OVER SELECTOR CONNECTION CONTACTS (SEE ASSOCIATED DIMENSIONAL DRAWING)
  - 47 SELECTOR CONNECTING LEAD
- } RC VARIANT DISPLAYED
- 
- 51 DIVERTER SWITCH INSERT
  - 52 TRANSITION RESISTANCES
  - 53 EYEBOLT
- SELECTOR DRIVE SIDE

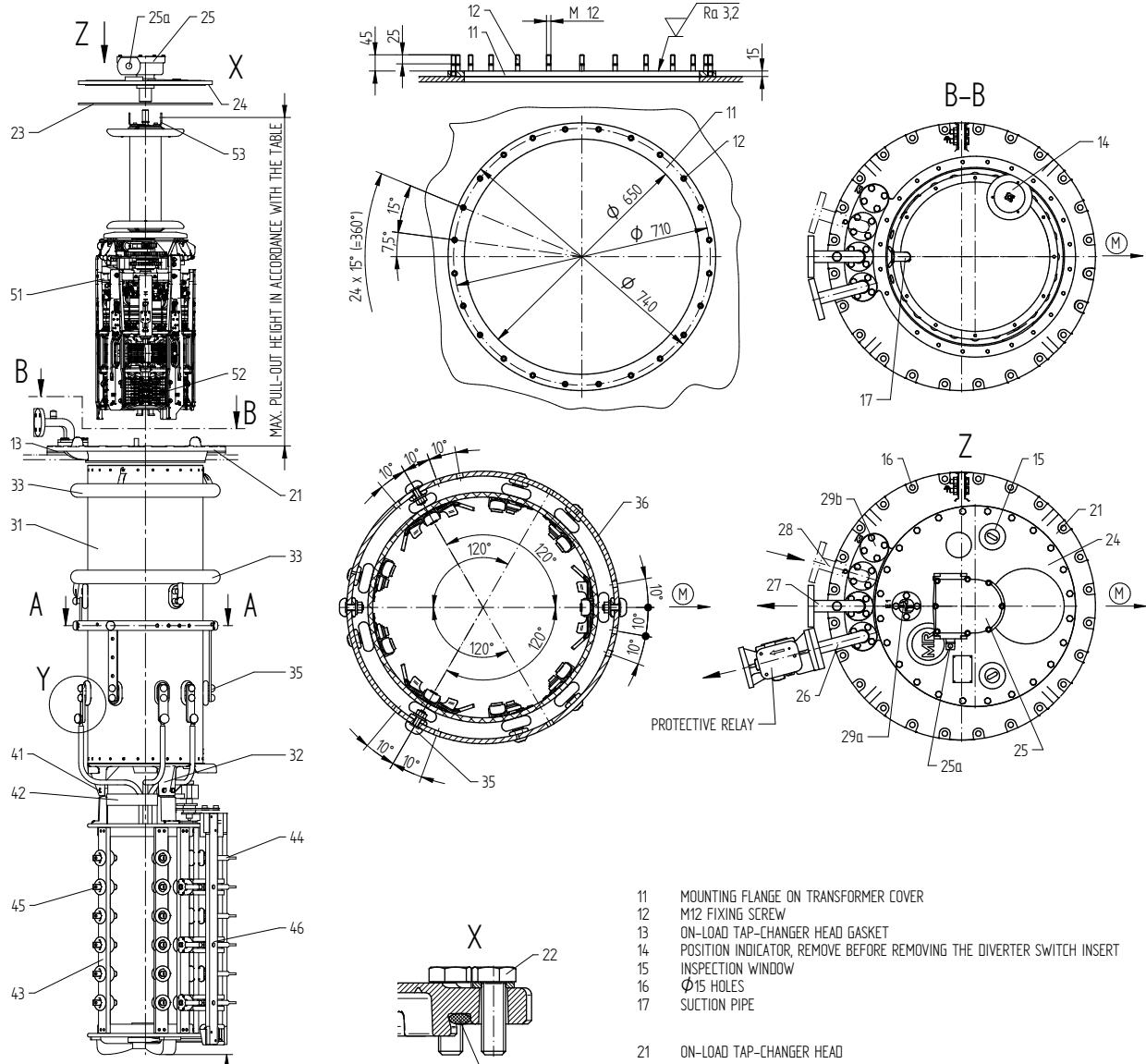
DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 INSTALLATION DRAWING VRL III 1600 - E  
 DIMENSION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| -               |       |
| MATERIAL NUMBER | SHEET |
| 101714730E      | 1/1   |

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MAINTAIN SUFFICIENT DISTANCE  
 TRANSFORMER TANK BOTTOM

| Um [kV] | MAX. PULL-OUT HEIGHT [mm] |      |
|---------|---------------------------|------|
|         | VRS                       | VRM  |
| 72,5    | 1200                      | 1350 |
| 123     | 1330                      | 1480 |
| 170     | 1460                      | 1610 |
| 245     | 1560                      | 1710 |
| 300     | 1712                      | 1862 |
| 362     | 1815                      | 1965 |
| 420     | 1934                      | 2084 |

- 11 MOUNTING FLANGE ON TRANSFORMER COVER
- 12 M12 FIXING SCREW
- 13 ON-LOAD TAP-CHANGER HEAD GASKET
- 14 POSITION INDICATOR, REMOVE BEFORE REMOVING THE DIVERTER SWITCH INSERT
- 15 INSPECTION WINDOW
- 16 Φ15 HOLES
- 17 SUCTION PIPE
  
- 21 ON-LOAD TAP-CHANGER HEAD
- 22 COVER SCREW
- 23 COVER GASKET
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- 28 PIPE CONNECTION Q (OPTIONAL)
- 29a AIR-VENT VALVE OF THE ON-LOAD TAP-CHANGER HEAD COVER
- 29b VENTING OPTION FOR THE TRANSFORMER OIL CHAMBER

- 31 DIVERTER SWITCH OIL COMPARTMENT
- 32 OIL COMPARTMENT BASE
- 33 SHIELDING RINGS FOR UM OF 170 kV OR GREATER
- 34 OIL COMPARTMENT CONNECTION TERMINAL
- 35 CONNECTION CONTACT FOR ON-LOAD TAP-CHANGER TAKE-OFF LEAD
- 36 TAKE-OFF RING FOR ON-LOAD TAP-CHANGER TAKE-OFF LEAD
  
- 41 SELECTOR SUSPENSION
- 42 SELECTOR GEAR
- 43 FINE TAP SELECTOR
- 44 CHANGE-OVER SELECTOR
- 45 SELECTOR CONNECTION CONTACTS (SEE ASSOCIATED DIMENSIONAL DRAWING)
- 46 CHANGE-OVER SELECTOR CONNECTION CONTACTS (SEE ASSOCIATED DIMENSIONAL DRAWING)
- 47 SELECTOR CONNECTING LEAD

- 51 DIVERTER SWITCH INSERT
  - 52 TRANSITION RESISTANCES
  - 53 EYEBOLT
- (M) → SELECTOR DRIVE SIDE

| DATE       | NAME         | DOCUMENT NO.       |
|------------|--------------|--------------------|
| 06.03.2017 | BUTERUS      | SED 5128712 001 01 |
| 06.03.2017 | WREDE        | CHANGE NO.         |
| 06.03.2017 | PRODASTSCHUK | 1080566            |

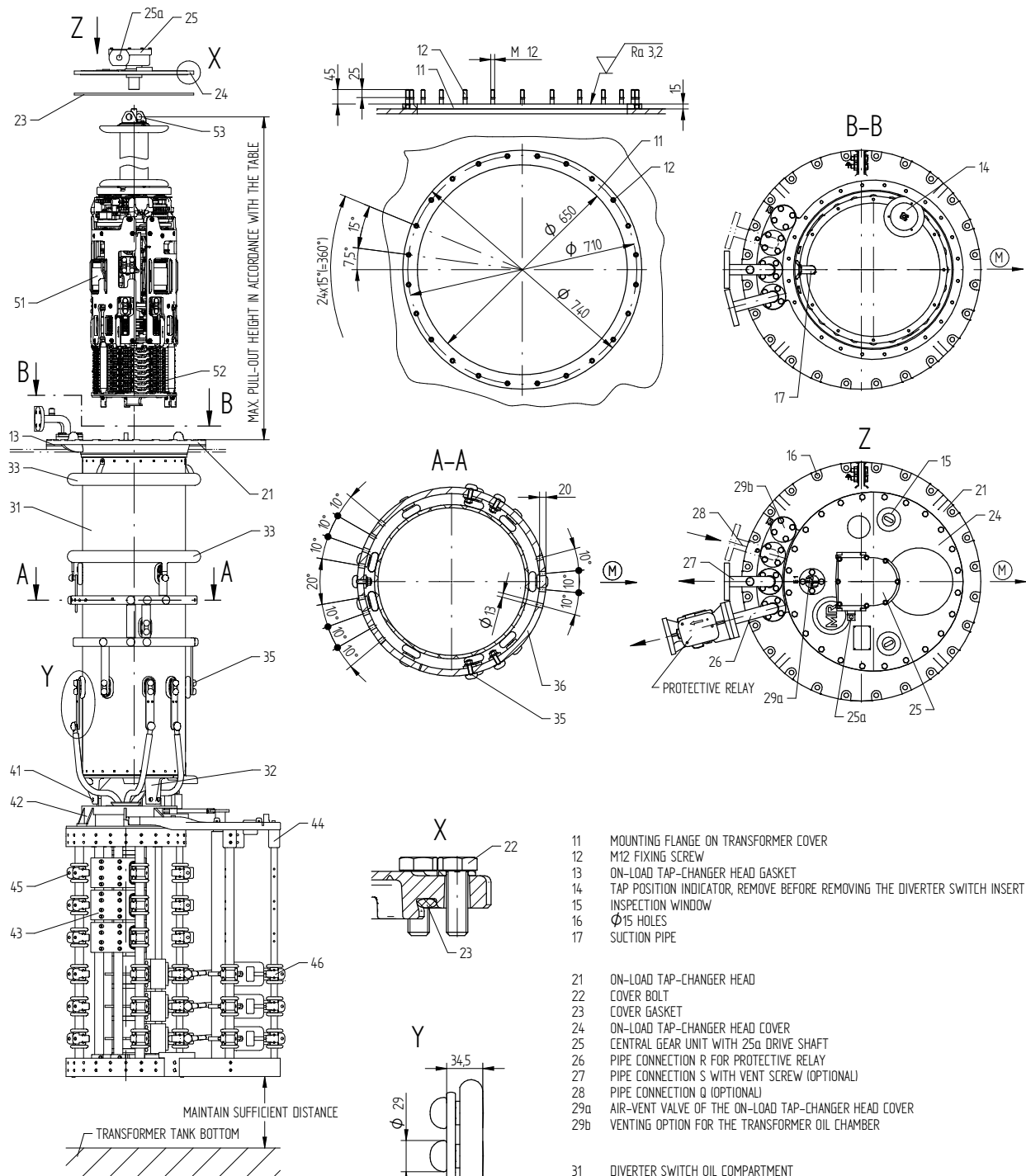
DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 INSTALLATION DRAWING VR S/M – B/C/D/DE  
 DIMENSION DRAWING

| SERIAL NUMBER   |       |
|-----------------|-------|
| -               |       |
| MATERIAL NUMBER | SHEET |
| 100177380E      | 1/1   |

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- 11 MOUNTING FLANGE ON TRANSFORMER COVER
- 12 M12 FIXING SCREW
- 13 ON-LOAD TAP-CHANGER HEAD GASKET
- 14 TAP POSITION INDICATOR, REMOVE BEFORE REMOVING THE DIVERTER SWITCH INSERT
- 15 INSPECTION WINDOW
- 16 Ø15 HOLES
- 17 SUCTION PIPE
  
- 21 ON-LOAD TAP-CHANGER HEAD
- 22 COVER BOLT
- 23 COVER GASKET
- 24 ON-LOAD TAP-CHANGER HEAD COVER
- 25 CENTRAL GEAR UNIT WITH 25a DRIVE SHAFT
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- 28 PIPE CONNECTION Q (OPTIONAL)
- 29a AIR-VENT VALVE OF THE ON-LOAD TAP-CHANGER HEAD COVER
- 29b VENTING OPTION FOR THE TRANSFORMER OIL CHAMBER
  
- 31 DIVERTER SWITCH OIL COMPARTMENT
- 32 OIL COMPARTMENT BASE
- 33 SHIELDING RINGS FOR UM OF 170 kV OR GREATER
- 34 OIL COMPARTMENT CONNECTION TERMINAL
- 35 CONNECTION CONTACT FOR ON-LOAD TAP-CHANGER TAKE-OFF LEAD
- 36 TAKE-OFF RING FOR ON-LOAD TAP-CHANGER TAKE-OFF LEAD
  
- 41 SELECTOR SUSPENSION
- 42 SELECTOR GEAR
- 43 TAP SELECTOR
- 44 CHANGE-OVER SELECTOR
- 45 SELECTOR CONNECTION CONTACTS (SEE ASSOCIATED DIMENSION DRAWING)
- 46 CHANGE-OVER SELECTOR CONNECTION CONTACTS (SEE ASSOCIATED DIMENSION DRAWING)
- 47 SELECTOR CONNECTING LEAD
  
- 51 DIVERTER SWITCH INSERT
- 52 TRANSITION RESISTORS
- 53 EYEBOLT

(M) → SELECTOR DRIVE SIDE

|        |            |      |           |              |                    |
|--------|------------|------|-----------|--------------|--------------------|
| DATE   | 08.12.2021 | NAME | BUTERUS   | DOCUMENT NO. | SED 8367971 001 02 |
| DFTR.  | 08.12.2021 | NAME | SCHMIDT   | CHANGE NO.   | 111654             |
| CHKD.  | 08.12.2021 | NAME | WANNINGER | SCALE        | 1:10               |
| STAND. | 08.12.2021 |      |           |              |                    |

| Um [kV] | MAX. PULL-OUT HEIGHT [mm] |
|---------|---------------------------|
| 72,5    | 1350                      |
| 123     | 1480                      |
| 170     | 1610                      |
| 245     | 1710                      |
| 300     | 1860                      |
| 362     | 1970                      |
| 420     | 2090                      |

DIMENSION IN mm EXCEPT AS NOTED

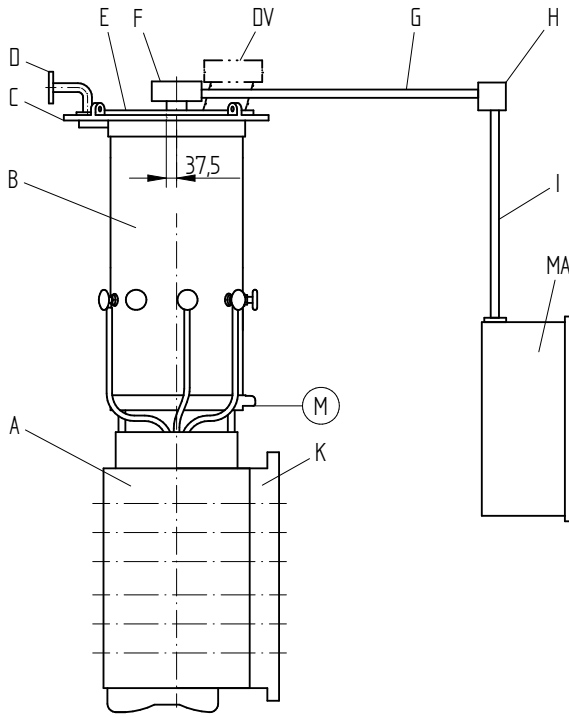


ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL I 1801 ... 3201 - RC/RD/RDE/RE  
 INSTALLATION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| MATERIAL NUMBER | SHEET |
| 101624730E      | 1/1   |

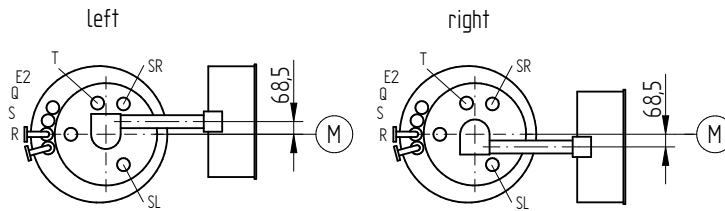


## 4.4 On-load tap-changer head

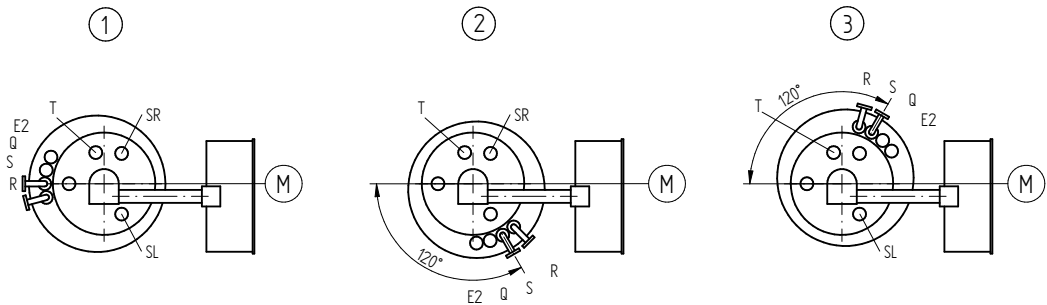


- A = selector
  - K = change-over selector
  - B = diverter switch oil compartment
  - C = on-load tap-changer head
  - D = pipe connections (R, S, Q, E2)
  - DV = pressure relief device
  - E = on-load tap-changer head cover
  - F = upper gear unit
  - G = drive shaft, horizontal
  - H = bevel gear
  - I = drive shaft, vertical
  - MA = motor-drive unit
  - (M) = drive side of selector
  - SR = inspection window on the right
  - SL = inspection window on the left
  - T = temperature sensor
- } represented version type M

### Position of drive shaft of gear unit



### Head variants



### Swivel ranges

A considerable number of variants of the on-load tap-changer head are available for adapting the horizontal part of the drive shaft to the transformer tank.

The mounting position of the selector A and diverter switch oil compartment B is determined by the drive side of selector (M).

The on-load tap-changer head C together with its pipe connections D may be turned through 120 degrees clockwise or anti-clockwise. This results in the variants 1, 2 and 3.

The upper gear unit F can be turned continuously on its own axis. Table 720027: Lists the limitation of the swivel range for the particular head variant. The angle specifications refer to the center of rotation of the gear unit. Pay particular attention to the offset of the drive shaft.

|          |            |              |                    |
|----------|------------|--------------|--------------------|
| DATE     | 11.07.2018 | DOCUMENT NO. | SED 1063796 001 05 |
| DATE     | 16.07.2018 | NAME         | BUTERUS            |
| DATE     | 16.07.2018 | NAME         | WILHELM            |
| DATE     | 16.07.2018 | NAME         | PRODASTSCHUK       |
| CHG. NO. | 1086956    | SCALE        | 1                  |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



**ON-LOAD TAP-CHANGER**  
**OILTAP® MS, M, RM, R AND VACUTAP® VR®, VM®, VMS®**  
**VARIANTS OF THE ON-LOAD TAP-CHANGER HEAD**

SERIAL NUMBER

MATERIAL NUMBER  
7200264E

SHEET  
1/1

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|        |            |      |              |                    |
|--------|------------|------|--------------|--------------------|
| DFTR.  | 11.07.2018 | DATE | NAME         | DOCUMENT NO.       |
| CHKD.  | 16.07.2018 |      | BUTERUS      | SED 1661250 001 03 |
| STAND. | 16.07.2018 |      | WILHELM      | SCALE              |
|        |            |      | PRODASTSCHUK | CHANGE NO. 1086956 |
|        |            |      |              | SCALE 1:2,5        |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED

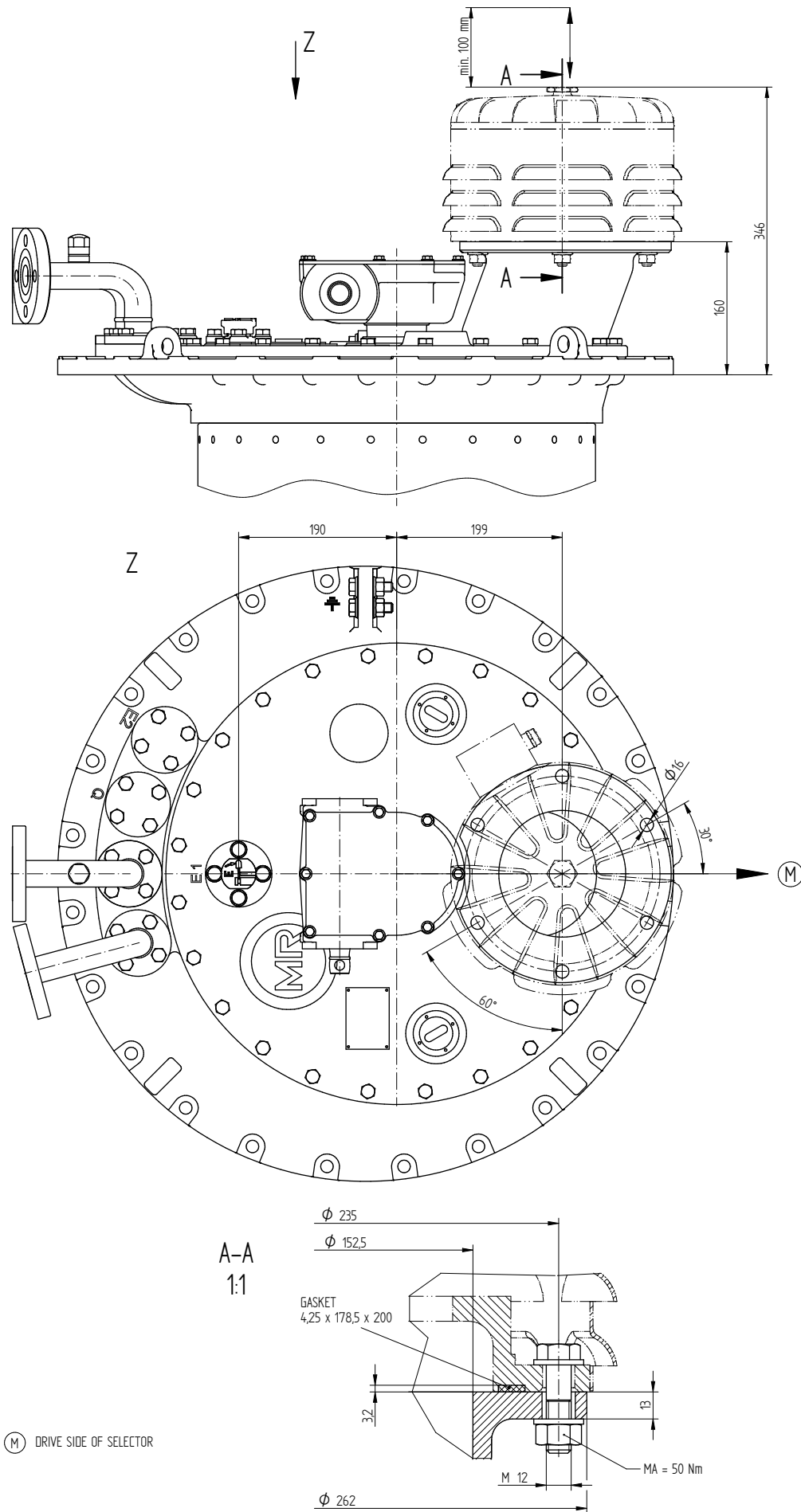


ON-LOAD TAP-CHANGER  
 OILTAP® M, MS, R, RM AND VACUTAP® VR®, VM®, VMS®  
 WITH MOUNTING FLANGE FOR PRESSURE RELIEF DEVICE

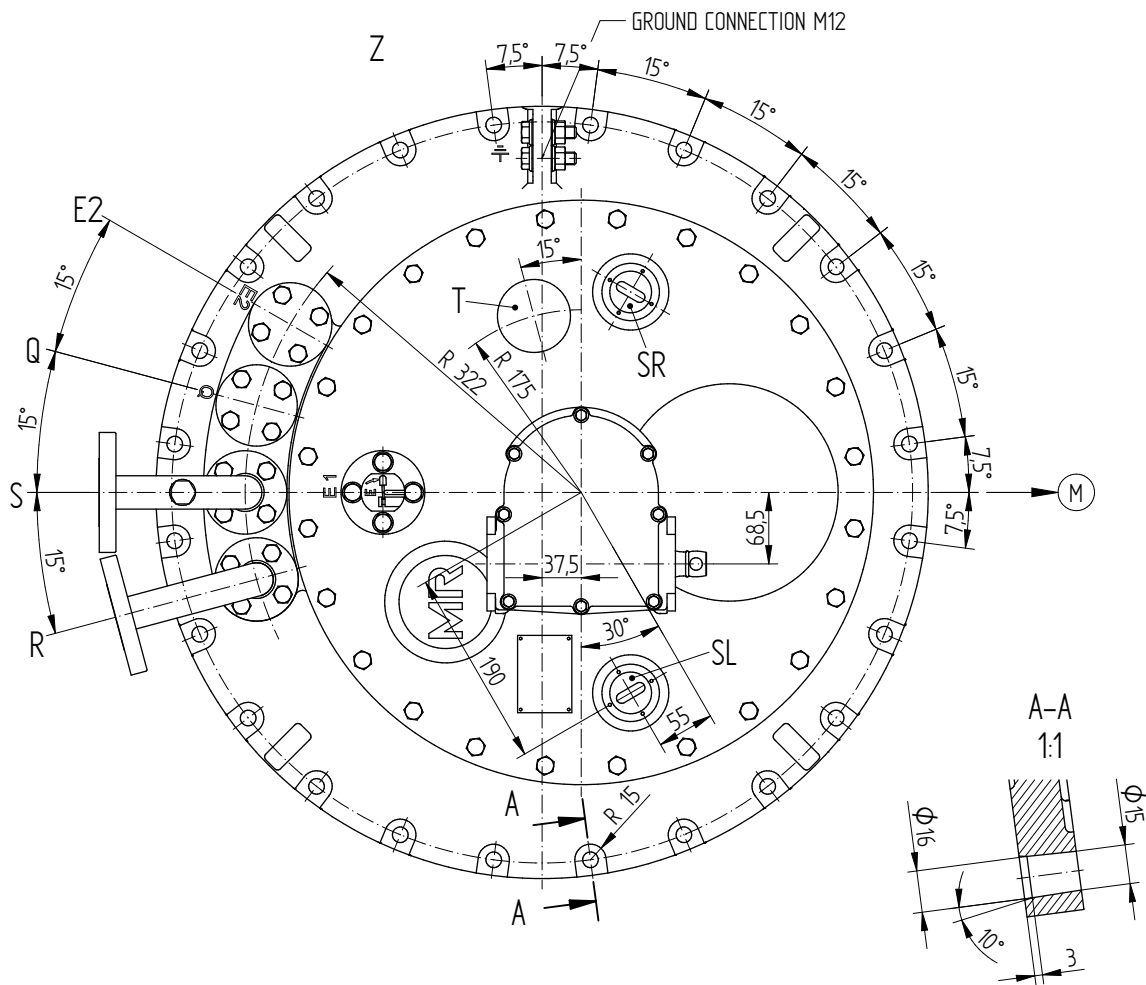
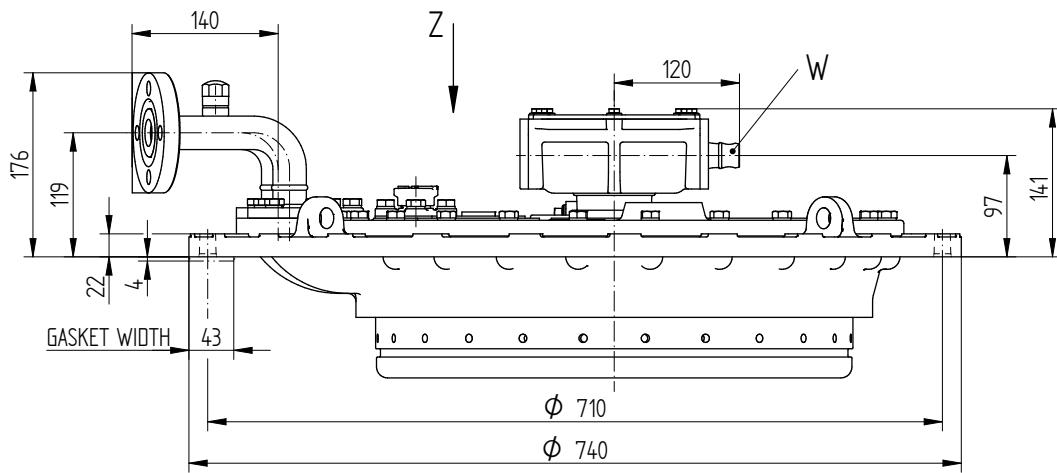
SERIAL NUMBER

MATERIAL NUMBER  
 8951689E

SHEET  
 1/1



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E1 = BLEEDING FACILITY FOR ON-LOAD TAP-CHANGER HEAD

E2 = BLEEDING FACILITY FOR SPACE UNDER THE HEAD OUTSIDE

THE TAP-CHANGER OIL COMPARTMENT (SAME PIPE CONNECTION AS R, S, Q OR BLEEDER SCREW CAN BE USED)

Q = CONNECTION FOR OIL RETURN PIPE OR TAP-CHANGE SUPERVISORY CONTROL

S = CONNECTION FOR SUCTION PIPE

R = CONNECTION FOR PROTECTIVE RELAY (EXCHANGEABLE WITH CONNECTION Q)

T = THERMOMETER BAG / TEMPERATURE SENSOR (OPTIONALLY)

SR = INSPECTION WINDOW, RIGHT

SL = INSPECTION WINDOW, LEFT

W = DRIVE SHAFT

(M) DRIVE SIDE OF SELECTOR

CONNECTIONS SWIVELING  
 DIMENSIONS AND SELECTION 899496: / 899497.

|                    |            |              |                |
|--------------------|------------|--------------|----------------|
| DOCUMENT NO.       | DATE       | NAME         | DOCUMENT NO.   |
| SED 1661272 001 04 | 11.07.2018 | BUTERUS      | 1661272 001 04 |
| SCALE              | CHKD.      | WILHELM      | SCALE          |
| 1:2,5              | 16.07.2018 | PRODASTSCHUK | 1:2,5          |
| CHANGE NO.         | STAND.     |              |                |
| 1086956            | 16.07.2018 |              |                |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



ON-LOAD TAP-CHANGER  
 OILTAP® M, MS, R, RM AND VACUTAP® VR®, VM®, VMS®  
 ON-LOAD TAP-CHANGER HEAD, CENTRIC DRIVE

SERIAL NUMBER

MATERIAL NUMBER  
 893899FE

SHEET  
 1/1

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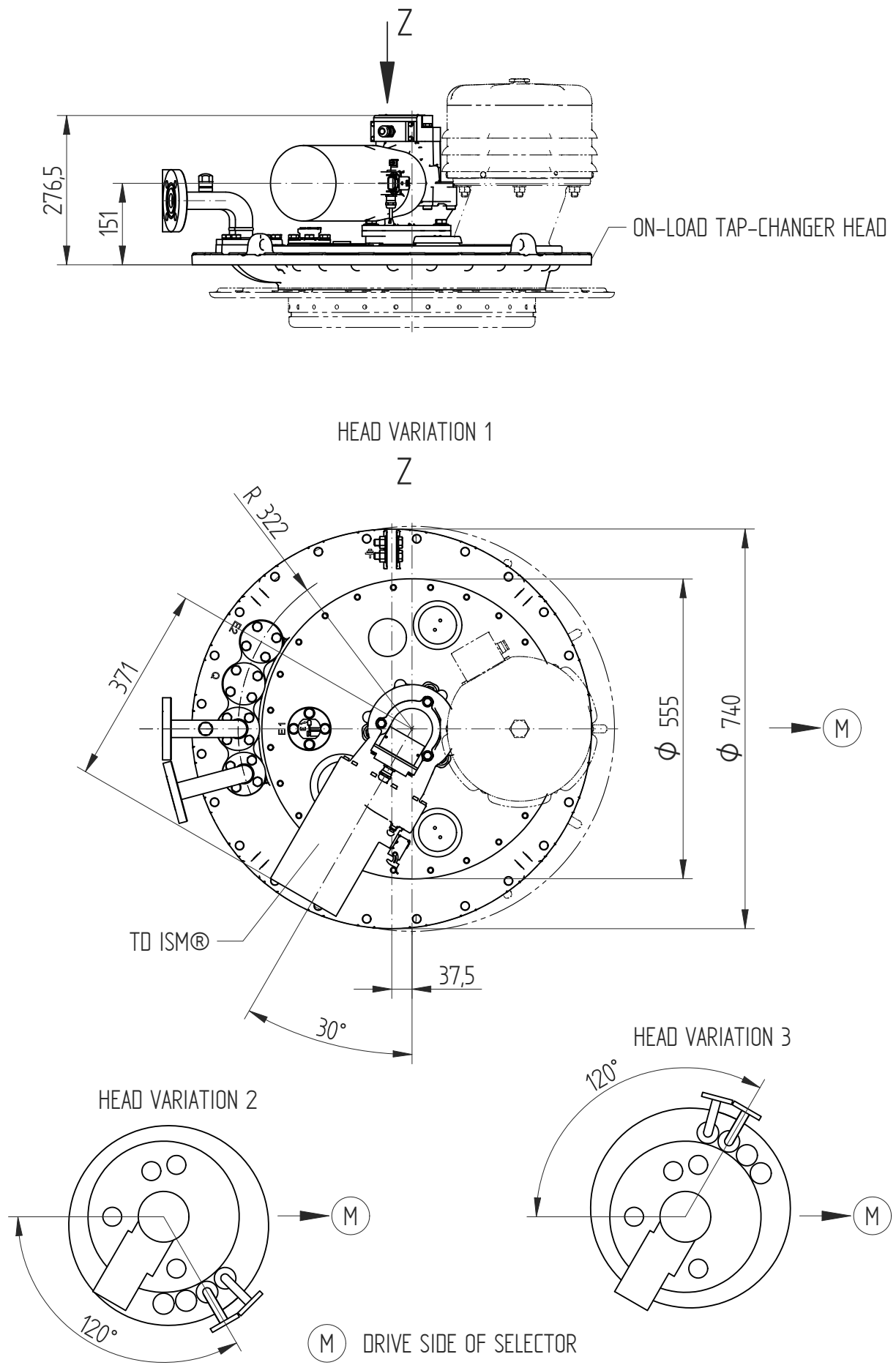
|                   |              |                    |
|-------------------|--------------|--------------------|
| DATE              | NAME         | DOCUMENT NO.       |
| 15.09.2016        | RAEDLINGER   | SED 4430490 000 03 |
| CHKD. 15.09.2016  | NERRETER     | CHANGE NO.         |
| STAND. 15.09.2016 | PRODASTSCHUK | 1077279            |
|                   |              | SCALE              |
|                   |              | 1:5                |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



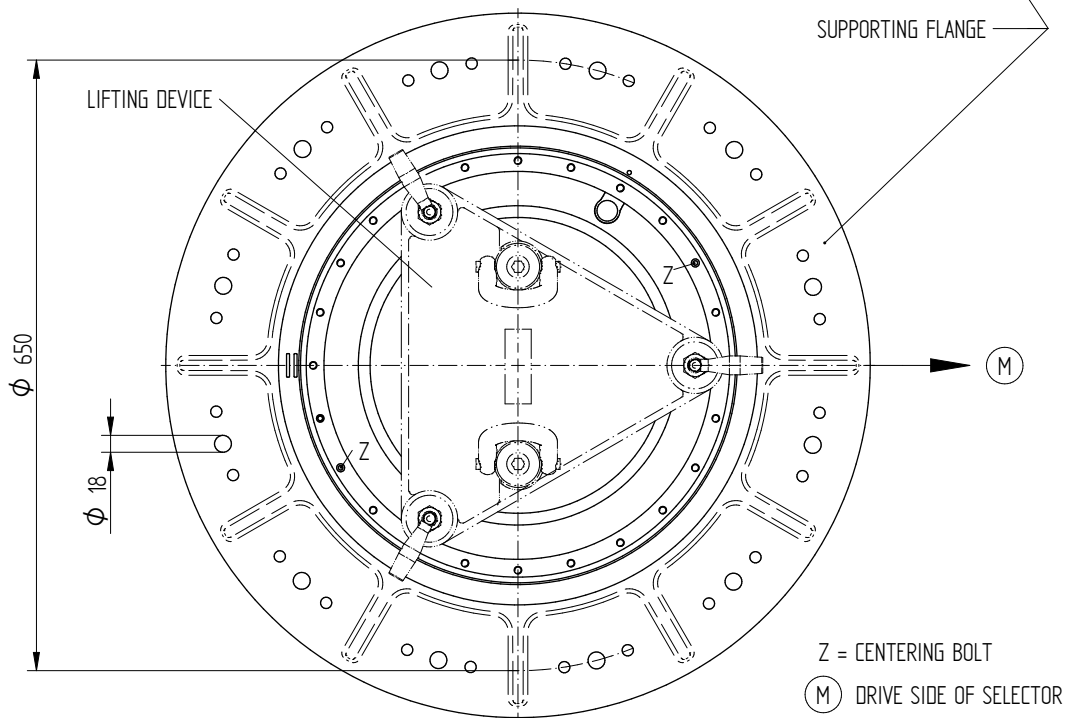
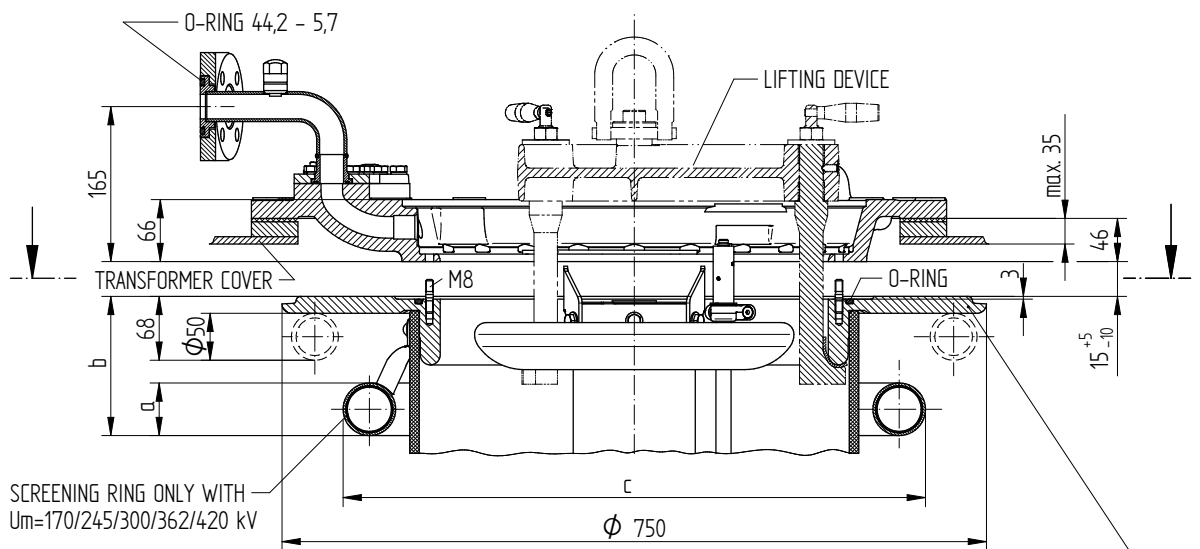
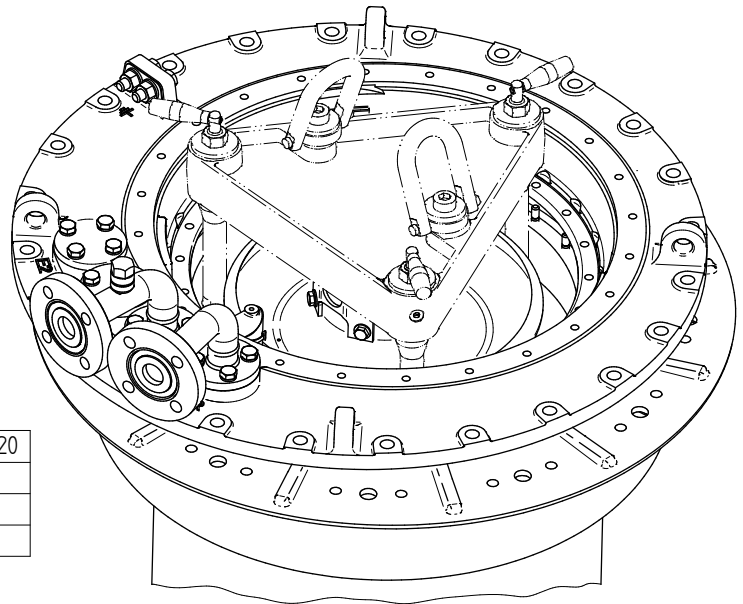
MOTOR-DRIVE UNIT TAPMOTION® TO  
 MOTOR-DRIVE UNIT TO ISM® FOR OLTC VM® AND VR  
 DIMENSION DRAWING

|                 |       |
|-----------------|-------|
| SERIAL NUMBER   |       |
| MATERIAL NUMBER | SHEET |
| 100110232E      | 1/1   |



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| Um [kV]        | 170 / 245 / 300 | 362 / 420 |      |
|----------------|-----------------|-----------|------|
| DIMENSION [mm] | a               | ø56       | ø100 |
|                | b               | 148       | 185  |
|                | c               | ø620      | ø695 |



| DATE              | NAME       | DOCUMENT NO.       |
|-------------------|------------|--------------------|
| DFTR. 15.03.2019  | RAEDLINGER | SED 1324074-001 03 |
| CHKD. 22.03.2019  | NERRETER   | CHANGE NO.         |
| STAND. 25.03.2019 | KLEYN      | 1093087            |

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 SPECIAL DESIGN BELL-TYPE TANK INSTALLATION

SERIAL NUMBER

|                 |       |
|-----------------|-------|
| MATERIAL NUMBER | SHEET |
| 7207812E        | 1/1   |

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|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 11.07.2018 | BUTERUS      | SED 1664686 001 04 |
| 16.07.2018 | WILHELM      | CHANGE NO. SCALE   |
| 16.07.2018 | PRODASTSCHUK | 1086956 I          |

| SKETCH                    | HEAD VERSION COMPONENTS USED        | LIMITATION OF THE SWIVEL RANGE |
|---------------------------|-------------------------------------|--------------------------------|
|                           | DRIVE SHAFT RIGHT<br>HEAD VERSION 1 |                                |
|                           | PIPE CONNECTION R                   | -168° to -140°                 |
|                           | PIPE CONNECTION S                   | 177°                           |
|                           | PIPE CONNECTION Q                   | 162°                           |
|                           | PIPE CONNECTION E2                  | 147° to 174°                   |
|                           | PRESSURE RELIEF DEVICE DV           | -150° to -35°                  |
|                           | TEMPERATURE SENSOR T                | 96° to 175°                    |
| INSPECTION WINDOW SL / SR | -64° SL -8° 56° SR 112°             |                                |
|                           | DRIVE SHAFT RIGHT<br>HEAD VERSION 2 |                                |
|                           | PIPE CONNECTION R                   | -48° to -21°                   |
|                           | PIPE CONNECTION S                   | -63° to -36°                   |
|                           | PIPE CONNECTION Q                   | -78° to -51°                   |
|                           | PIPE CONNECTION E2                  | -93° to -66°                   |
|                           | PRESSURE RELIEF DEVICE DV           | -150° to -35°                  |
|                           | TEMPERATURE SENSOR T                | 96° to 175°                    |
| INSPECTION WINDOW SR      | 56° SR 112°                         |                                |
|                           | DRIVE SHAFT RIGHT<br>HEAD VERSION 3 |                                |
|                           | PIPE CONNECTION R                   | 72° to 99°                     |
|                           | PIPE CONNECTION S                   | 57° to 84°                     |
|                           | PIPE CONNECTION Q                   | 42° to 69°                     |
|                           | PIPE CONNECTION E2                  | 27° to 54°                     |
|                           | PRESSURE RELIEF DEVICE DV           | -150° to -35°                  |
|                           | TEMPERATURE SENSOR T                | 96° to 175°                    |
| INSPECTION WINDOW SL      | -64° SL -8°                         |                                |
|                           | DRIVE SHAFT LEFT<br>HEAD VERSION 1  |                                |
|                           | PIPE CONNECTION R                   | -162° to 171°                  |
|                           | PIPE CONNECTION S                   | 156°                           |
|                           | PIPE CONNECTION Q                   | 141° to 168°                   |
|                           | PIPE CONNECTION E2                  | 126° to 153°                   |
|                           | PRESSURE RELIEF DEVICE DV           | 35° to 150°                    |
|                           | TEMPERATURE SENSOR T                | 34° to 114°                    |
| INSPECTION WINDOW SL / SR | -112° SL -56° 8° SR 64°             |                                |
|                           | DRIVE SHAFT LEFT<br>HEAD VERSION 2  |                                |
|                           | PIPE CONNECTION R                   | -69° to -42°                   |
|                           | PIPE CONNECTION S                   | -84° to -57°                   |
|                           | PIPE CONNECTION Q                   | -99° to -72°                   |
|                           | PIPE CONNECTION E2                  | -114° to -87°                  |
|                           | PRESSURE RELIEF DEVICE DV           | 35° to 150°                    |
|                           | TEMPERATURE SENSOR T                | 34° to 114°                    |
| INSPECTION WINDOW SR      | 8° SR 64°                           |                                |
|                           | DRIVE SHAFT LEFT<br>HEAD VERSION 3  |                                |
|                           | PIPE CONNECTION R                   | 50° to 78°                     |
|                           | PIPE CONNECTION S                   | 35° to 62°                     |
|                           | PIPE CONNECTION Q                   | 21° to 48°                     |
|                           | PIPE CONNECTION E2                  | 6° to 33°                      |
|                           | PRESSURE RELIEF DEVICE DV           | 35° to 150°                    |
|                           | TEMPERATURE SENSOR T                | 34° to 114°                    |
| INSPECTION WINDOW SL      | -112° SL -56°                       |                                |

- LIMITATION OF THE SWIVEL RANGE THROUGH PIPE CONNECTIONS R AND S
- LIMITATION OF THE SWIVEL RANGE THROUGH OPTIONAL EXISTING PIPE CONNECTIONS Q, E2 AND PRESSURE RELIEF DEVICE DV
- SWIVEL RANGE POSSIBLE, BUT THE TEMPERATURE SENSOR T AND THE INSPECTION WINDOW SL / SR ARE NOT VISIBLE

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



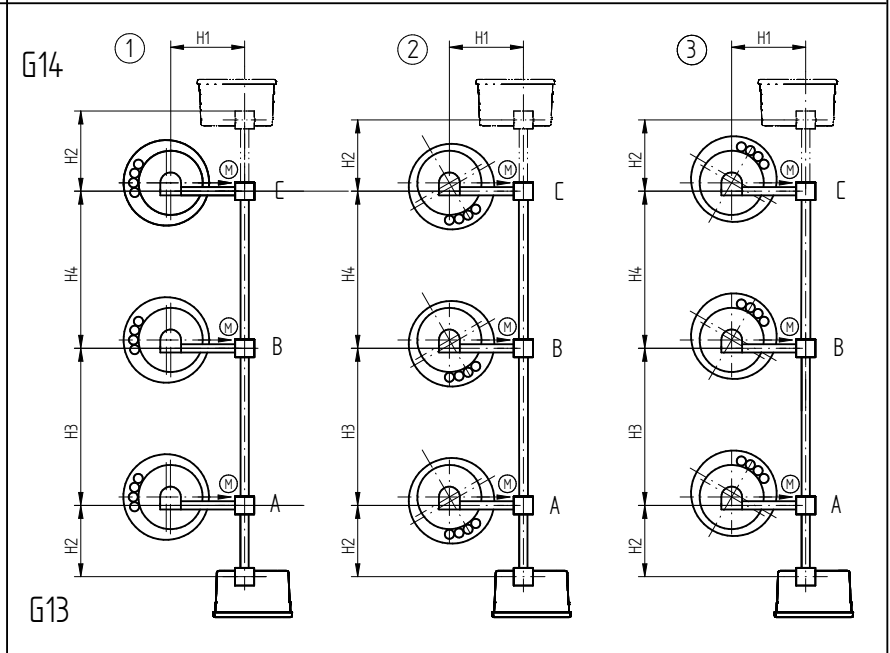
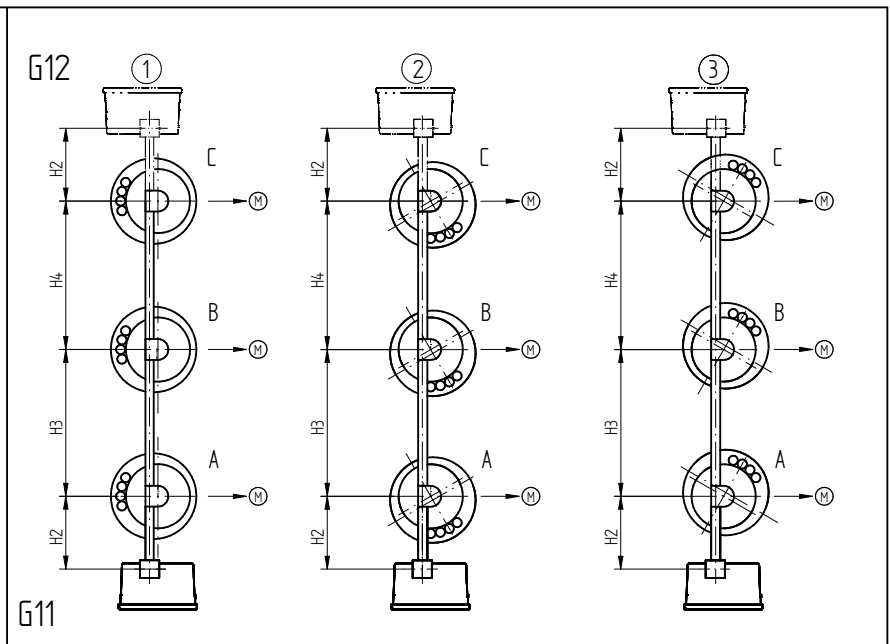
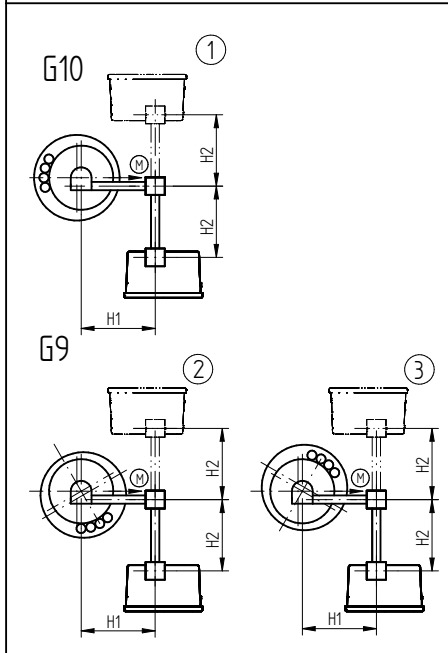
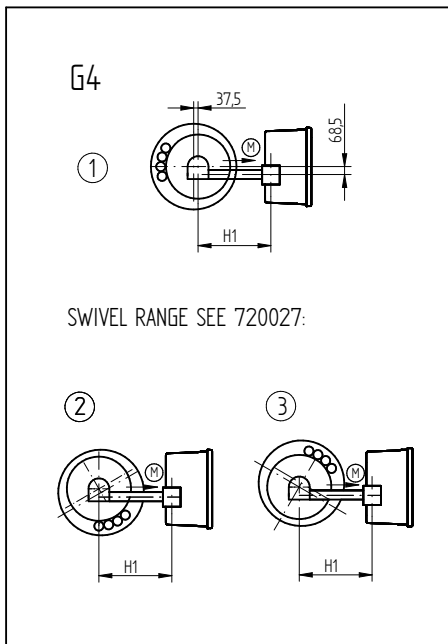
ON-LOAD TAP-CHANGER  
OILTAP® MS, M, RM, R AND VACUTAP® VR®, VM®, VMS®  
SWIVEL RANGE OF THE GEAR UNIT

SERIAL NUMBER

|                 |       |
|-----------------|-------|
| MATERIAL NUMBER | SHEET |
| 7200276E        | 1/1   |

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| DATE       | NAME         | DOCUMENT NO.       |
| 13.07.2018 | BUTERUS      | SED 1706827 001 05 |
| 16.07.2018 | WILHELM      | CHANGE NO.         |
| 16.07.2018 | PRODASTSCHUK | 1086956            |
| CHKO.      | SCALE        | 1                  |



| ARRANGEMENT                                                                                                                                                                                                                                                                                           | G4               | G9, G10 | G11, G12 | G13, G14 |      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------|----------|----------|------|
| STANDARD DESIGN                                                                                                                                                                                                                                                                                       | ■                |         | ■        |          |      |
| SPECIAL DESIGN                                                                                                                                                                                                                                                                                        |                  | ■       |          | ■        |      |
| MINIMUM DIMENSIONS <sup>1)</sup> (DETERMINED FOR MECHANICAL REASONS; NECESSARY INSULATION SPACINGS NOT CONSIDERED!)                                                                                                                                                                                   | H1               | 535     | 545      | -        | 545  |
|                                                                                                                                                                                                                                                                                                       | H2               | -       | 323      | 515      | 323  |
|                                                                                                                                                                                                                                                                                                       | H3 <sup>2)</sup> | -       | -        | 840      | 840  |
|                                                                                                                                                                                                                                                                                                       | H4 <sup>2)</sup> | -       | -        | 840      | 840  |
| NOTE: 1) FOR OLTCs WITH THE CHANGE-OVER SELECTOR ATTACHED Laterally, THE DIMENSIONS OF THE CHANGE-OVER SELECTOR AFTER INSTALLED IN POSITION HAVE TO BE TAKEN INTO ACCOUNT (SEE THE CORRESPONDING OLTC-DIMENSION DRAWING)<br>2) IN GENERAL DETERMINED BY THE INSULATION SPACING BETWEEN POLES A, B, C. |                  |         |          |          |      |
| INTERMEDIATE BEARING FOR                                                                                                                                                                                                                                                                              | H1 >             | 2254    | 2309     | -        | 2309 |
|                                                                                                                                                                                                                                                                                                       | H2 >             | -       | 2259     | 2254     | 2259 |
|                                                                                                                                                                                                                                                                                                       | H3 >             | -       | -        | 2249     | 2259 |
|                                                                                                                                                                                                                                                                                                       | H4 >             | -       | -        | 2249     | 2259 |

① ② ③ - HEAD VERSION  
 → (M) - DRIVE SIDE OF SELECTOR

DIMENSION IN mm EXCEPT AS NOTED



OLTC OILTAP® M, MS, RM, R / VACUTAP® VR®, VM®, VMS®  
 HORIZONTAL DRIVE SHAFT, CENTRIC DRIVE (LIMIT DIMENSIONS)  
 SELECTOR SIZE B/C/D/RC/RD/RDE

SERIAL NUMBER

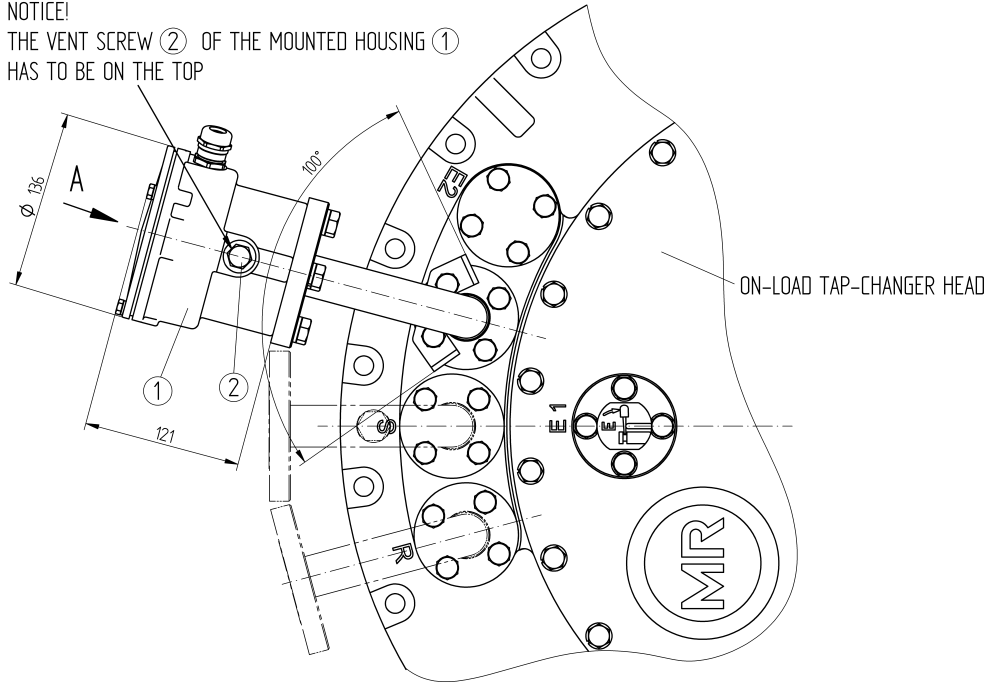
MATERIAL NUMBER 893896DE  
 SHEET 1/1



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## PIPE CONNECTION WITH TAP-CHANGE SUPERVISORY CONTROL BUSHING WITHOUT OIL FILTER UNIT

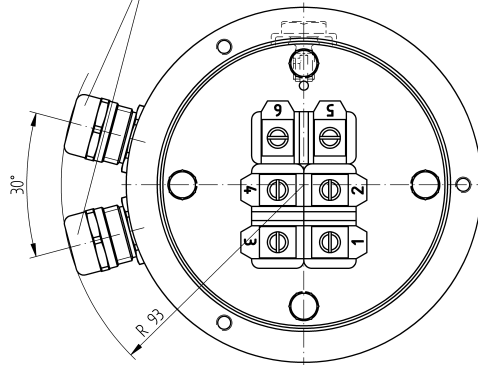
NOTICE!  
 THE VENT SCREW ② OF THE MOUNTED HOUSING ① HAS TO BE ON THE TOP



A ↻ 1:1

REPRESENTED WITHOUT COVER

M20x1.5  
 CLAMPING RANGE FOR CONNECTION CABLE:  
 EXTERNAL DIAMETER: 7 - 13 mm



CONNECTION TERMINALS FOR TAP-CHANGE  
 SUPERVISORY CONTROL

WIRING SEE CONNECTION DIAGRAM OF THE  
 MOTOR-DRIVE UNIT

FUNCTION DIAGRAM FOR TAP-CHANGE SUPERVISORY  
 CONTROL SEE MOTOR-DRIVE CONNECTION DIAGRAM

RATED CONTINUOUS CURRENT: 2A  
 RATED VOLTAGE DC/AC (50HZ): 24V ... 250V  
 DIELECTRIC STRENGTH: 1150V / 50HZ / 1 MIN.

DIELECTRIC TEST OF ALL VOLTAGE CARRYING  
 TERMINALS TO GROUND:  
 2000V AC , 50HZ , TEST-DURATION 1 MIN.

|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 03.11.2016 | RAEDLINGER   | SED 2425358 001 02 |
| CHKD.      | NERRETER     | CHANGE NO.         |
| 04.11.2016 | PRODASTSCHUK | 1078202            |
| STAND.     |              | SCALE              |
|            |              | 1:2                |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



**ON-LOAD TAP-CHANGER VACUTAP® VM, VR**  
**PIPE CONNECTION WITH TAP-CHANGE SUPERVISORY CONTROL**

SERIAL NUMBER

MATERIAL NUMBER  
 7661612E

SHEET  
 1/1

## 4.5 Selector

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|                   |              |                    |
|-------------------|--------------|--------------------|
| DATE              | NAME         | DOCUMENT NO.       |
| DFTR. 06.10.2016  | LIPINSKI     | SED 4322131 001 01 |
| CHKD. 19.10.2016  | HILTNER      | CHANGE NO. SCALE   |
| STAND. 20.10.2016 | PRODASTSCHUK | 1077666 1:2        |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED

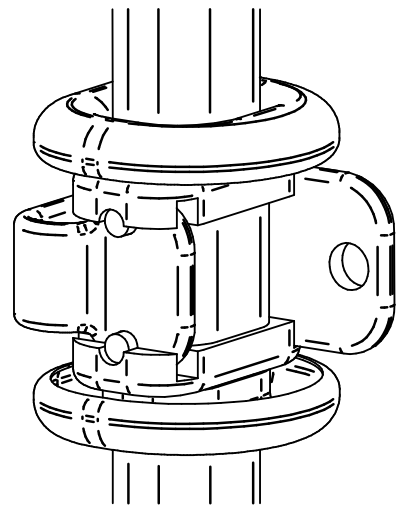
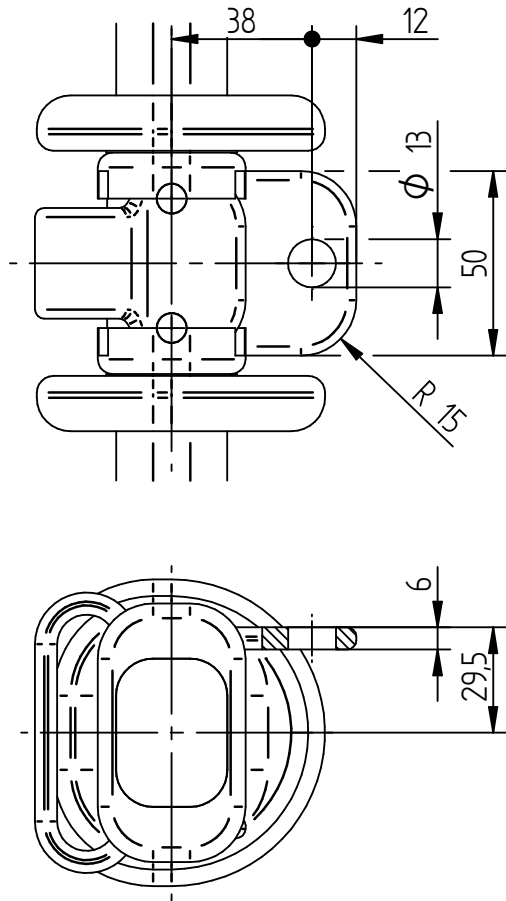


SELECTOR SIZE RC/RD/RDE/RE/RF  
 SELECTOR CONNECTION CONTACT  
 DIMENSION DRAWING

SERIAL NUMBER

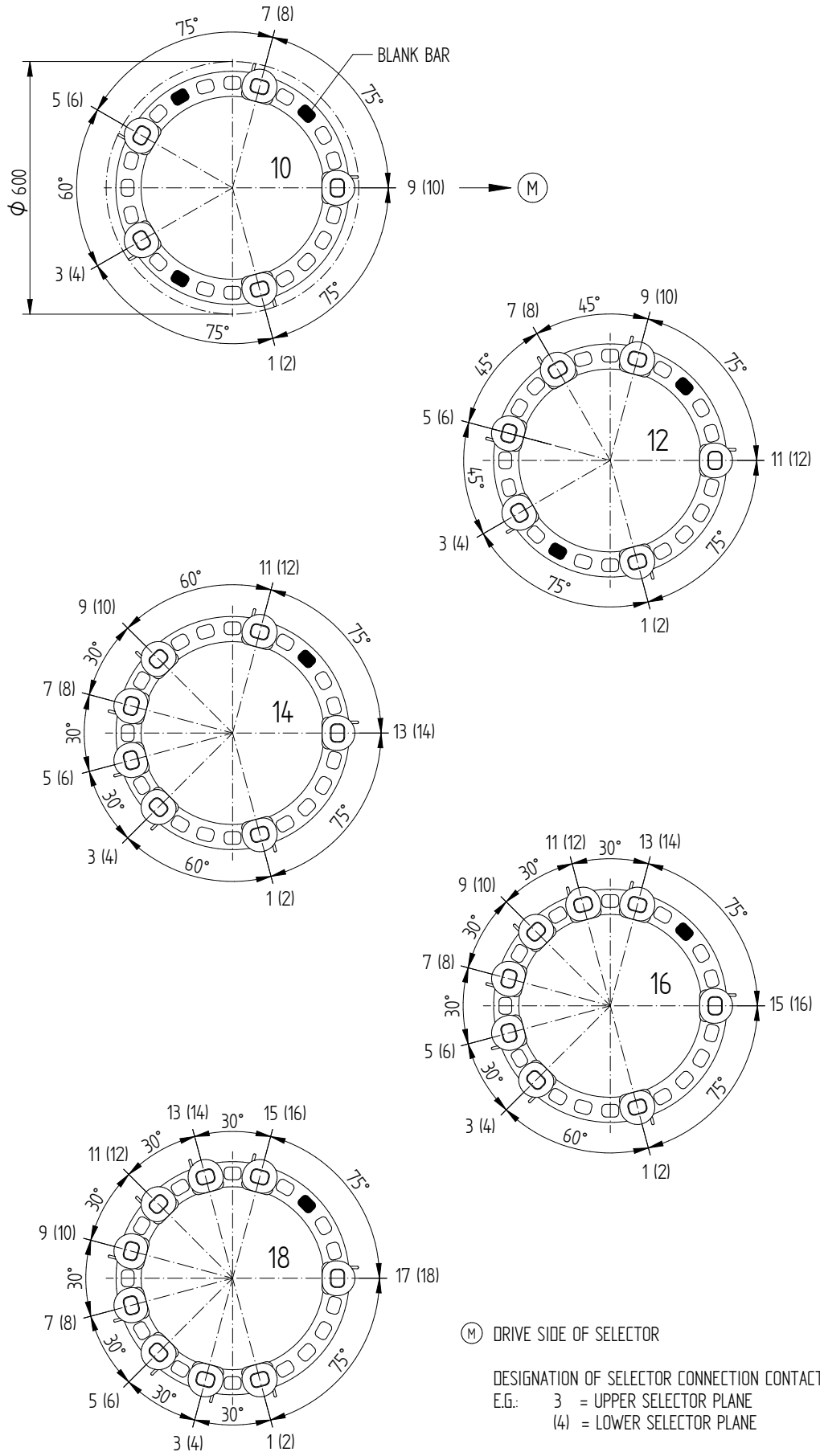
MATERIAL NUMBER  
 100099170E

SHEET  
 1/1



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## CONTACT ARRANGEMENT - WITHOUT CHANGE-OVER SELECTOR



THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

| DATE              | NAME         | DOCUMENT NO.       |
|-------------------|--------------|--------------------|
| DFTR. 18.10.2016  | CTETPRAKTIK2 | SED 4245760 001 01 |
| CHKD. 19.10.2016  | HILTNER      | CHANGE NO.         |
| STAND. 20.10.2016 | PRODASTSCHUK | 1077666            |
|                   |              | SCALE 1:5          |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



SELECTOR SIZE RC/RD/RDE  
 CONTACT ARRANGEMENT  
 DIMENSION DRAWING

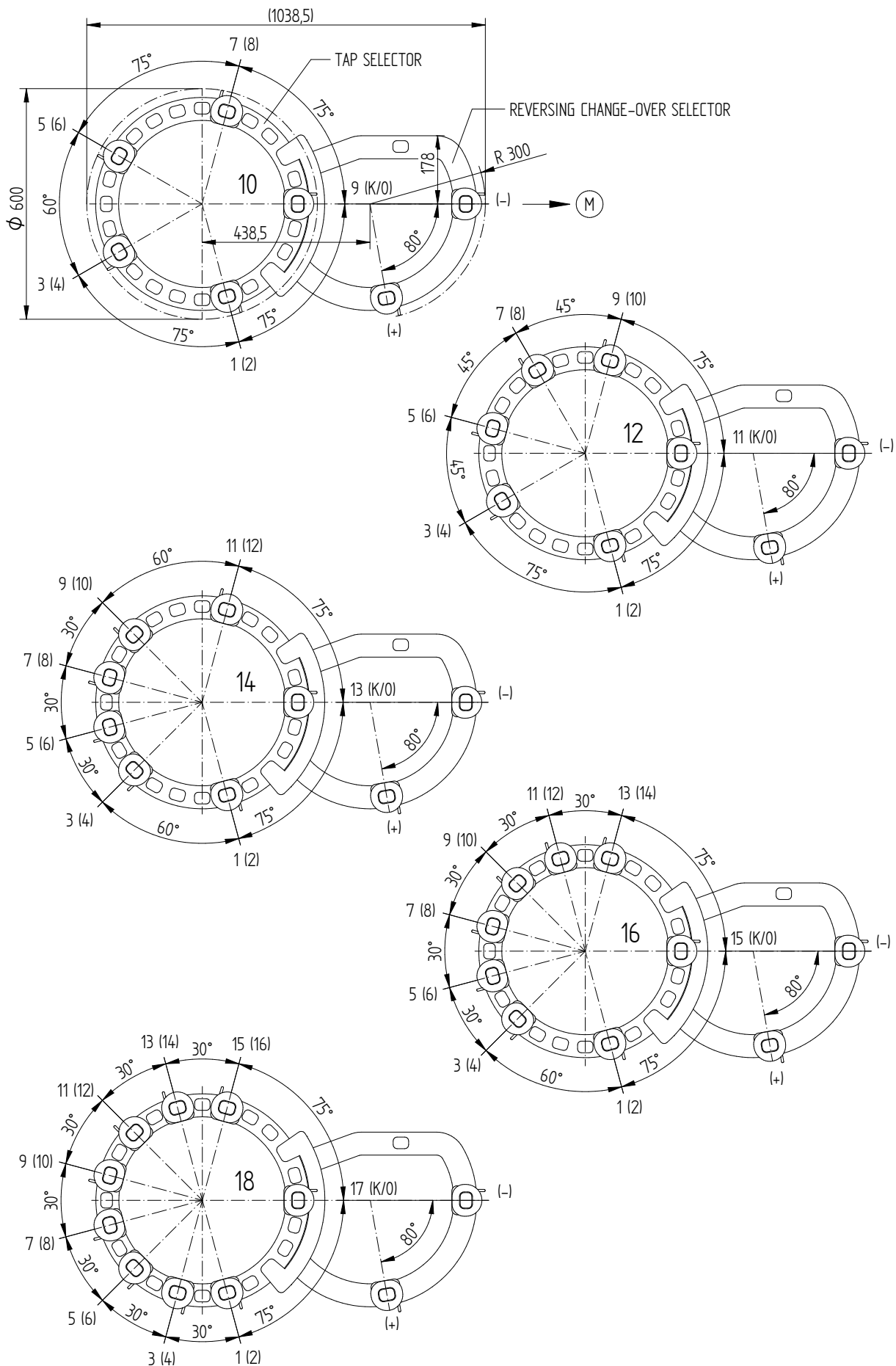
SERIAL NUMBER

MATERIAL NUMBER  
100090300E

SHEET  
1/3

# CONTACT ARRANGEMENT - REVERSING CHANGE-OVER SELECTOR

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|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 18.10.2016 | CTETPRAKTIK2 | SED 4245760 001 01 |
| 19.10.2016 | HILTNER      | CHANGE NO.         |
| 20.10.2016 | PRODASTSCHUK | 1077666            |
| DFTR.      | SCALE        | 15                 |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED

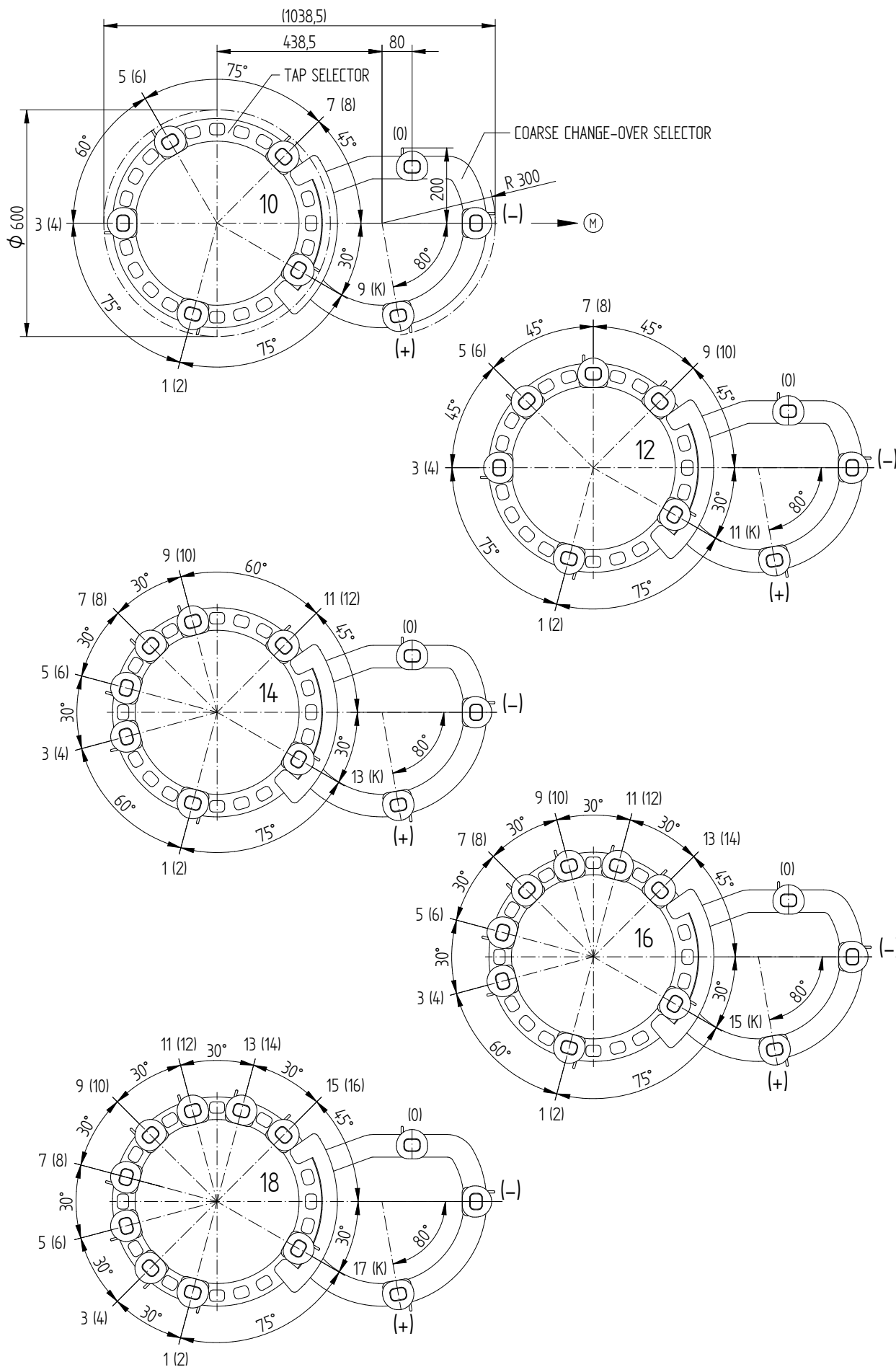


SELECTOR SIZE RC/RD/RDE  
CONTACT ARRANGEMENT  
DIMENSION DRAWING

SERIAL NUMBER

|                 |       |
|-----------------|-------|
| MATERIAL NUMBER | SHEET |
| 100090300E      | 2/3   |

# CONTACT ARRANGEMENT - COARSE CHANGE-OVER SELECTOR



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|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 18.10.2016 | CTETPRAKTIK2 | SED 4245760 001 01 |
| 19.10.2016 | HILTNER      | CHANGE NO.         |
| 20.10.2016 | PRODASTSCHUK | 1077666            |
| DFTR.      | SCALE        | 15                 |
| CHKD.      | CHANGE NO.   |                    |
| STAND.     | 1077666      |                    |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



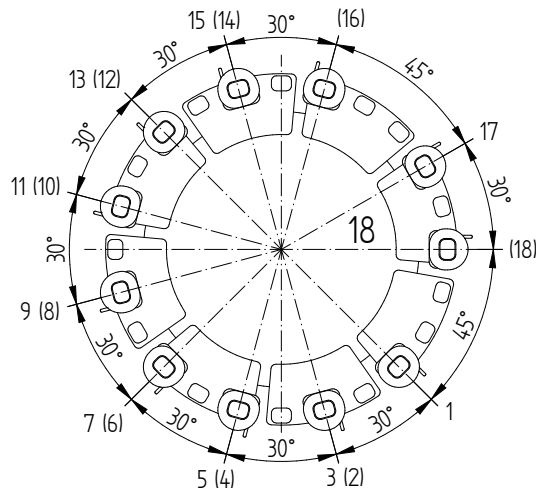
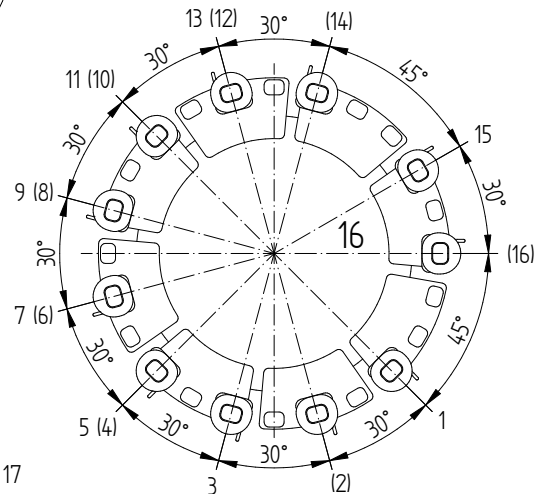
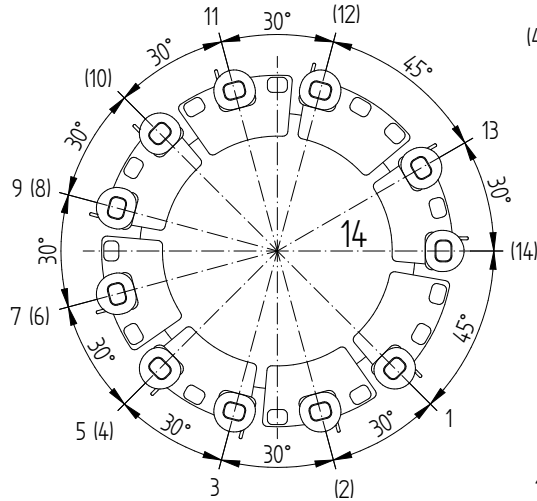
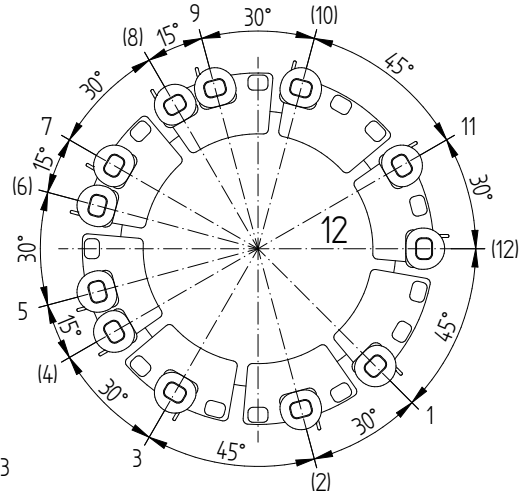
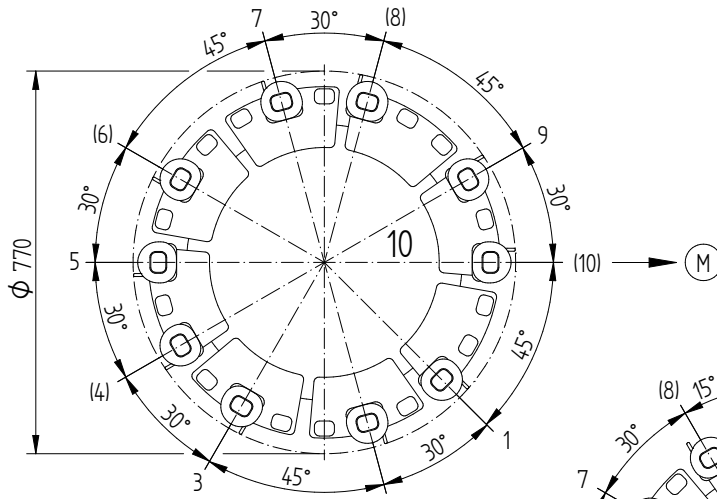
SELECTOR SIZE RC/RD/RDE  
 CONTACT ARRANGEMENT  
 DIMENSION DRAWING

SERIAL NUMBER

|                 |       |
|-----------------|-------|
| MATERIAL NUMBER | SHEET |
| 100090300E      | 3/3   |

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## CONTACT ARRANGEMENT - WITHOUT CHANGE-OVER SELECTOR



(M) DRIVE SIDE OF SELECTOR

DESIGNATION OF SELECTOR CONNECTION CONTACT  
 E.G.: 3 = UPPER SELECTOR PLANE  
 (4) = LOWER SELECTOR PLANE

THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 18.10.2016 | CTETPRAKTIK2 | SED 5026318 001 01 |
| 19.10.2016 | HILTNER      | CHANGE NO.         |
| 20.10.2016 | PRODASTSCHUK | 1077666            |
|            |              | SCALE              |
|            |              | 15                 |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



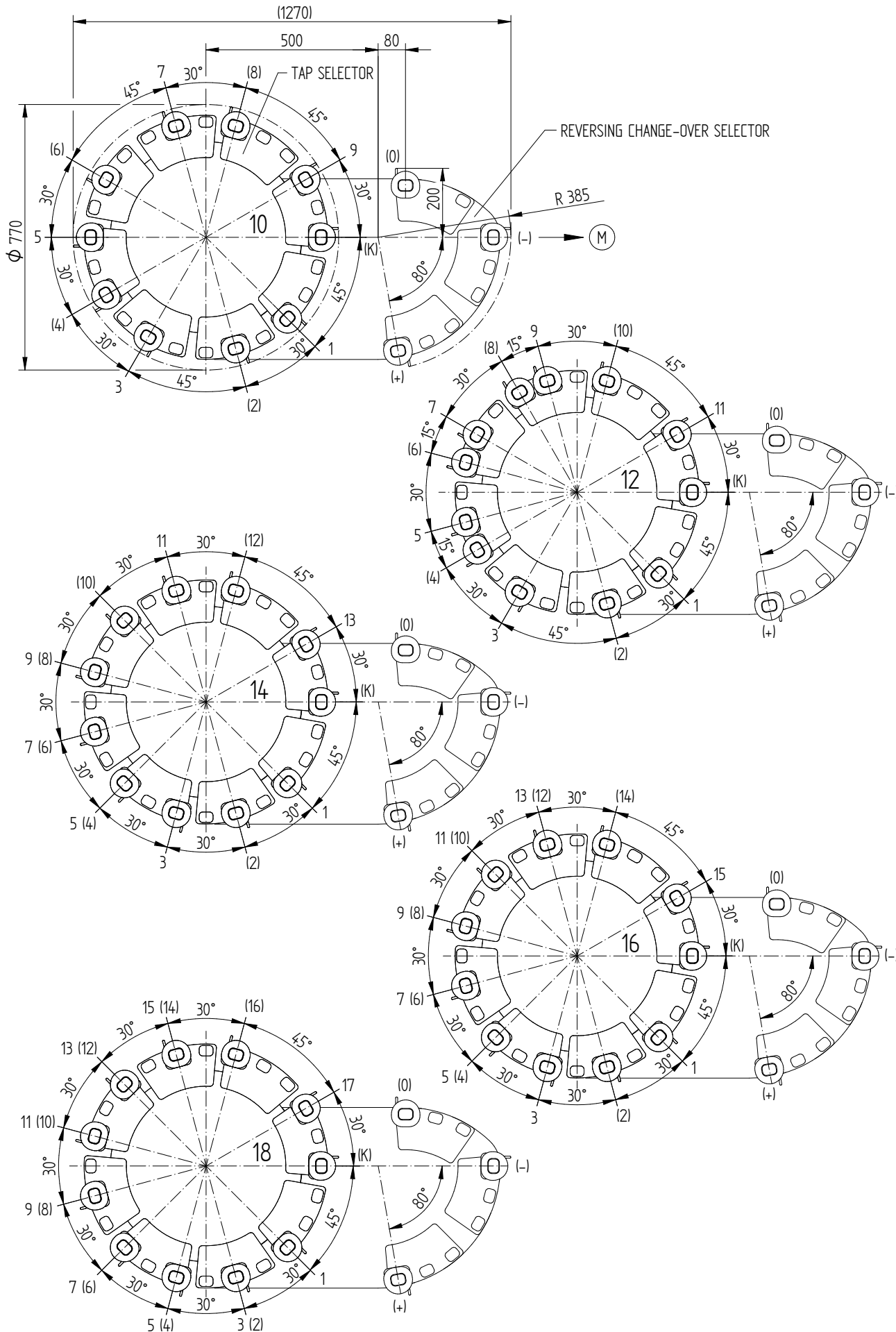
SELECTOR SIZE RE/RF  
 CONTACT ARRANGEMENT  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER  
 100165700E

SHEET  
 1/3

# CONTACT ARRANGEMENT - REVERSING CHANGE-OVER SELECTOR



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|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 18.10.2016 | CTETPRAKTIK2 | SED 5026318 001 01 |
| 19.10.2016 | HILTNER      | CHANGE NO.         |
| 20.10.2016 | PRODASTSCHUK | 1077666            |
|            |              | SCALE              |
|            |              | 15                 |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



SELECTOR SIZE RE/RF  
 CONTACT ARRANGEMENT  
 DIMENSION DRAWING

SERIAL NUMBER

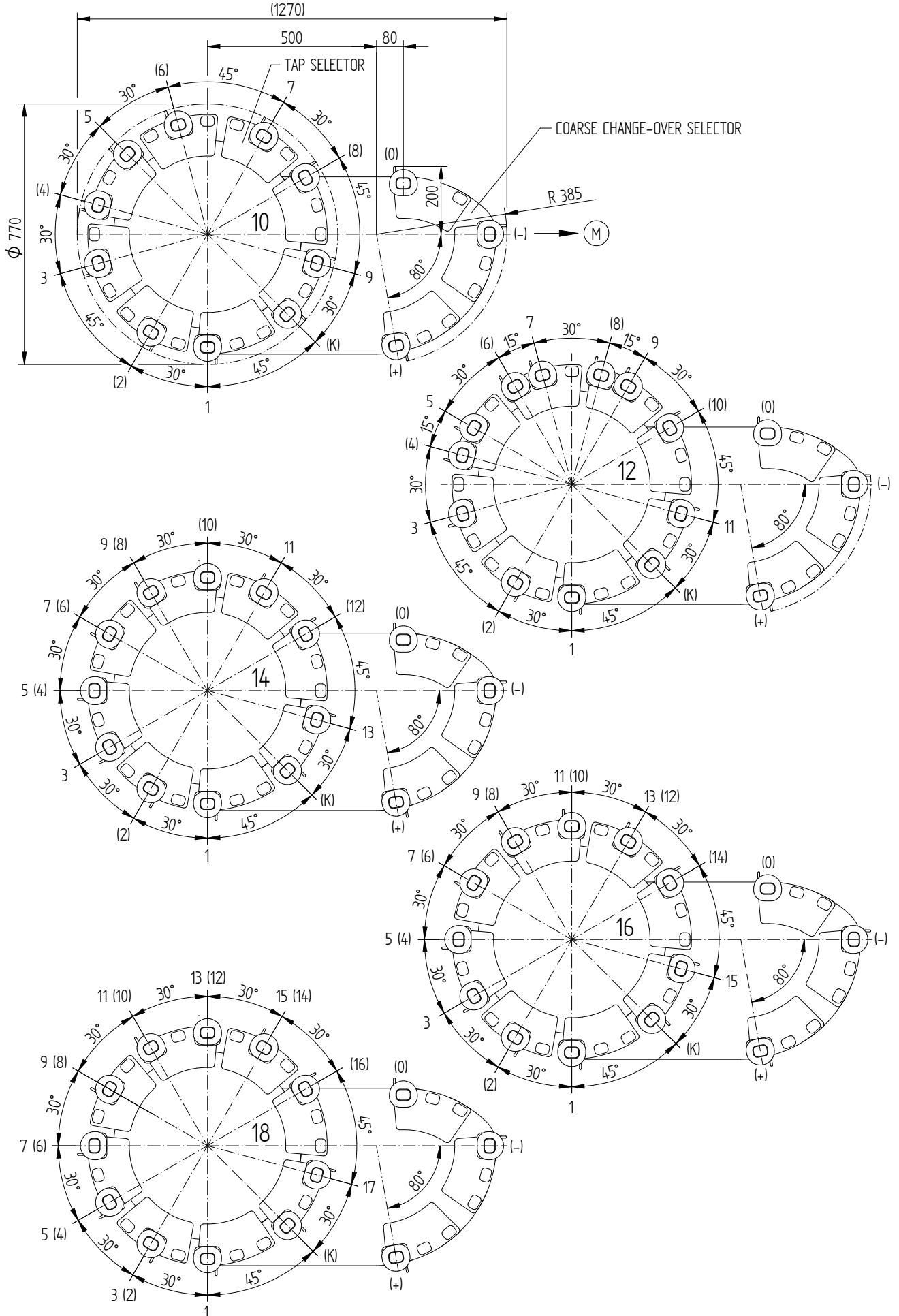
MATERIAL NUMBER  
100165700E

SHEET  
2/3



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### CONTACT ARRANGEMENT - COARSE CHANGE-OVER SELECTOR



|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 18.10.2016 | CTETPRAKTIK2 | SED 5026318 001 01 |
| 19.10.2016 | HILTNER      | CHANGE NO.         |
| 20.10.2016 | PRODASTSCHUK | 1077666            |
|            |              | SCALE              |
|            |              | 15                 |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



SELECTOR SIZE RE/RF  
 CONTACT ARRANGEMENT  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER  
 100165700E

SHEET  
 3/3

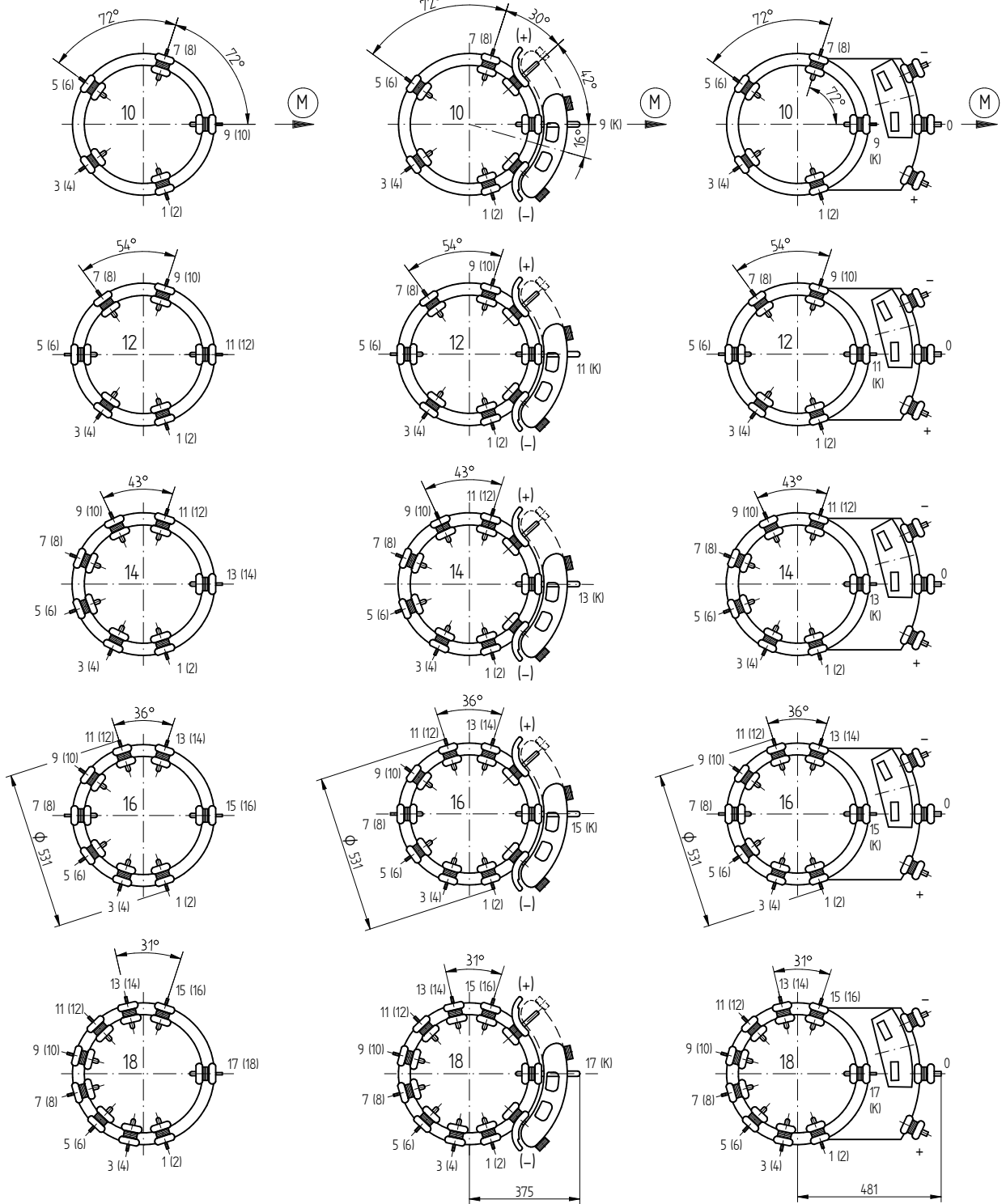
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SELECTOR WITHOUT CHANGE-OVER SELECTOR:

SELECTOR WITH REVERSING CHANGE-OVER SELECTOR:

REPRESENTATION APPLIES TO 3-PHASES Y-DESIGN AND 2-PHASES IN 1-PHASE SELECTORS THE UPPER AND LOWER SELECTOR PLANE ARE INTERCHANGED

SELECTOR WITH COARSE CHANGE-OVER SELECTOR:



(M) - DRIVE SIDE OF SELECTOR

THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE SELECTOR CONNECTION CONTACTS

DESIGNATION OF SELECTOR CONNECTION CONTACTS  
 E.G.: 3 UPPER CONTACT PLANE  
 (4) LOWER CONTACT PLANE

|        |            |              |                    |
|--------|------------|--------------|--------------------|
| DATE   | 18.10.2016 | DOCUMENT NO. | SED 5165932 001 00 |
| DFTR.  | 19.10.2016 | NAME         | CTETPRAKTIK2       |
| CHKD.  | 19.10.2016 | SCALE        | 1:10               |
| STAND. | 19.10.2016 | CHANGE NO.   | 1077668            |
|        |            | PRODASTSCHUK |                    |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED

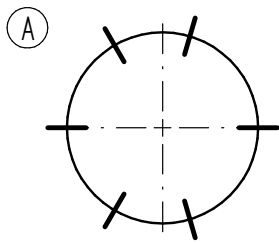
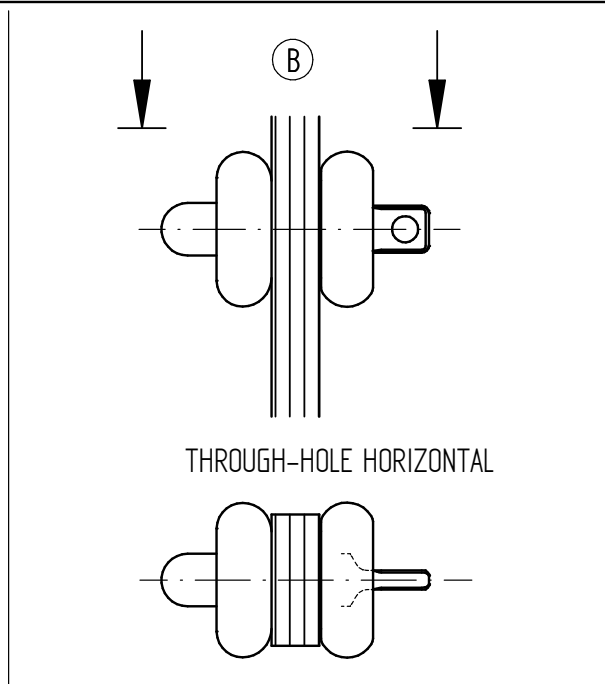
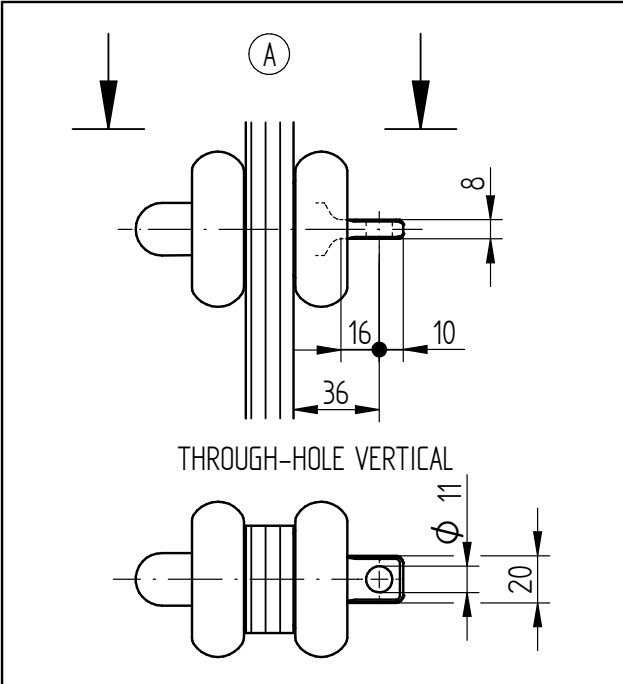


ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M - ARRANGEMENT OF CONTACTS - SELECTOR SIZE B/C/D/DE  
 DIMENSION DRAWING

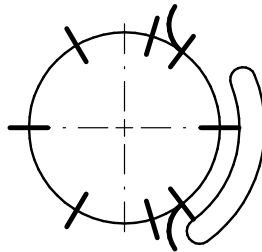
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| SERIAL NUMBER   |       |
| -               |       |
| MATERIAL NUMBER | SHEET |
| 100180460E      | 1/1   |

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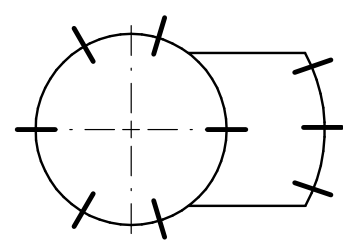
|       |            |              |                    |
|-------|------------|--------------|--------------------|
| DATE  | 08.02.2021 | DOCUMENT NO. | SED 7921643 000 00 |
| JFTR  | 08.02.2021 | NAME         | MENZELS            |
| EHKD  | 08.02.2021 | CHANGE NO.   | 1106396            |
| STAND | 08.02.2021 | SCALE        | 1:2                |
|       |            |              | KLEYN              |



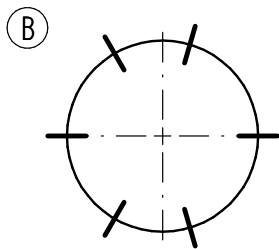
VRS/ VRM III 700 - 0  
 VRS/ VRM I 701 - 0  
 VRS/ VRM II 702 - 0



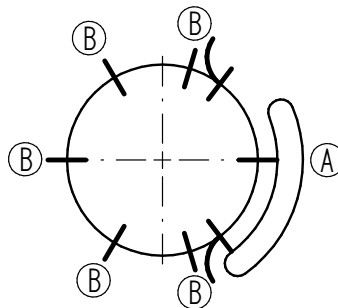
VRS/ VRM III 700 - W  
 VRS/ VRM I 701 - W  
 VRS/ VRM II 702 - W



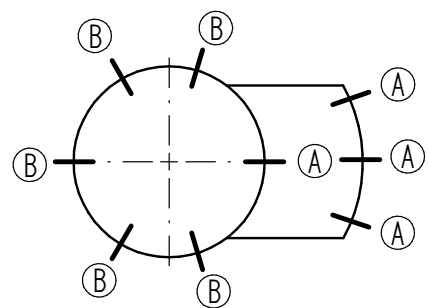
VRS/ VRM III 700 - G  
 VRS/ VRM I 701 - G  
 VRS/ VRM II 702 - G



VRS/ VRM I 1001 - 0  
 VRS/ VRM I 1301 - 0



VRS/ VRM I 1001 - W  
 VRS/ VRM I 1301 - W



VRS/ VRM I 1001 - G  
 VRS/ VRM I 1301 - G

(A) + (B)

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



DE-ENERGIZED TAP-CHANGER VACUTAP® VR®  
 VRS/ VRM - B/ C/ D/ DE  
 INSTALLATION POSITION OF THE TAP SELECTOR CONTACT TERMINALS

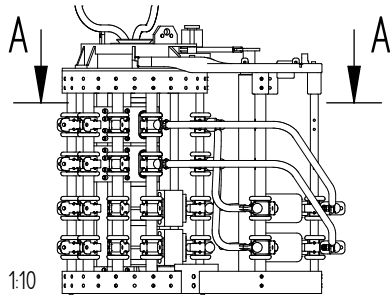
SERIAL NUMBER

MATERIAL NUMBER  
101357420E

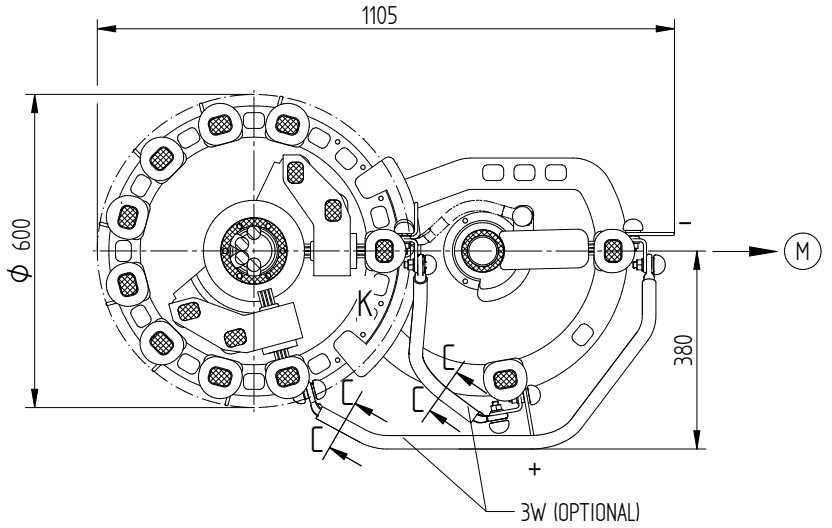
SHEET  
1 / 1

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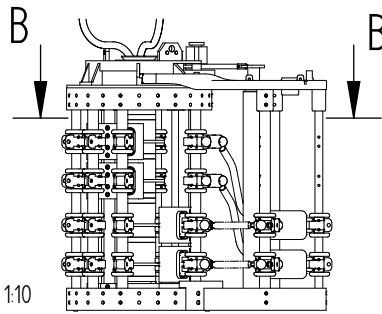
### REVERSING CHANGE-OVER SELECTOR



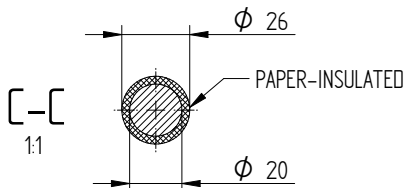
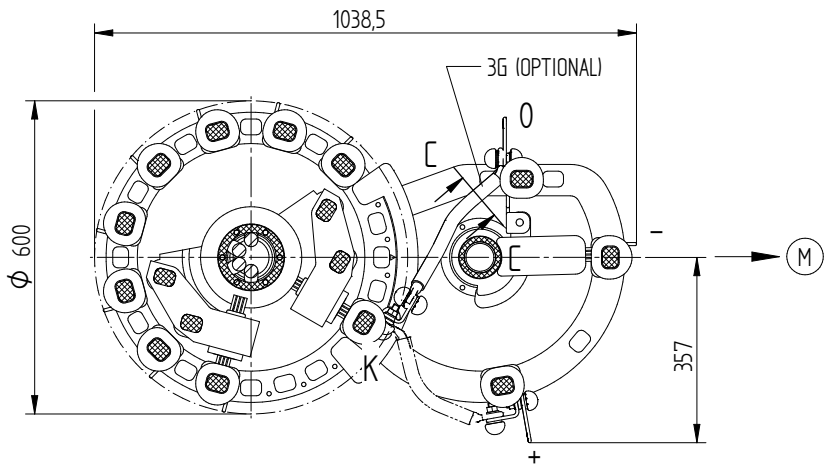
A-A



### COARSE CHANGE-OVER SELECTOR



B-B



(M) DRIVE SIDE OF SELECTOR

THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

|            |              |                    |
|------------|--------------|--------------------|
| DATE       | NAME         | DOCUMENT NO.       |
| 18.10.2016 | CTETPRAKTIK2 | SED 4335433 001 02 |
| 19.10.2016 | HILFNER      | CHANGE NO.         |
| 20.10.2016 | PRODASTSCHUK | 1077666            |
| DFTR.      | SCALE        | 15                 |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



SELECTOR SIZE RC/RD/RDE  
 CONNECTING LEAD 3W/3G  
 DIMENSION DRAWING

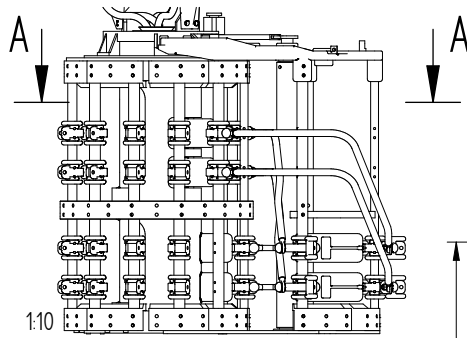
SERIAL NUMBER

MATERIAL NUMBER  
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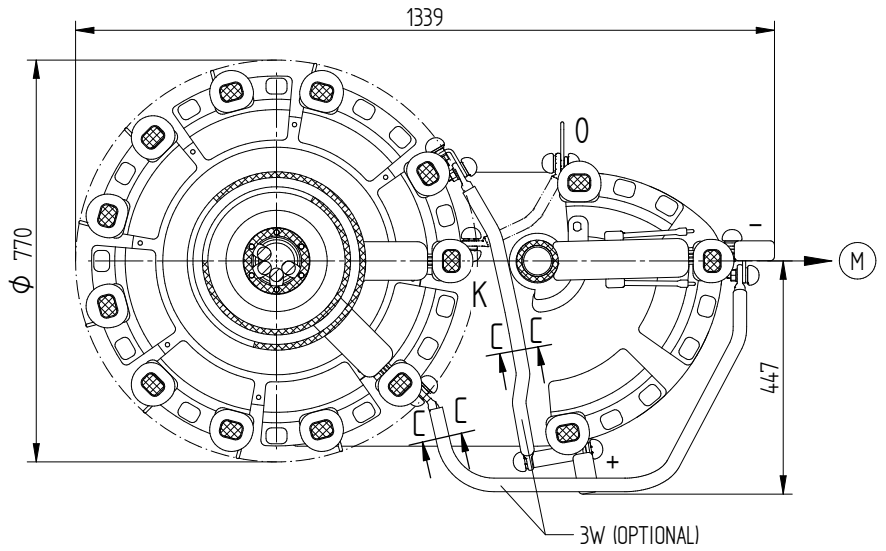
SHEET  
 1/1

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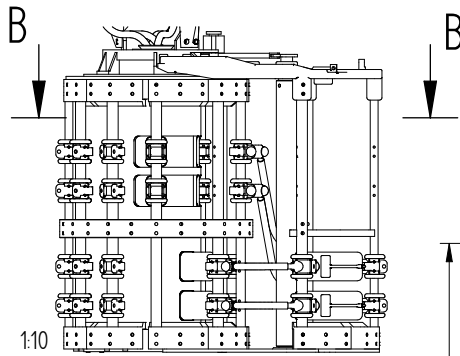
### REVERSING CHANGE-OVER SELECTOR



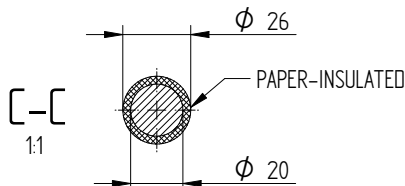
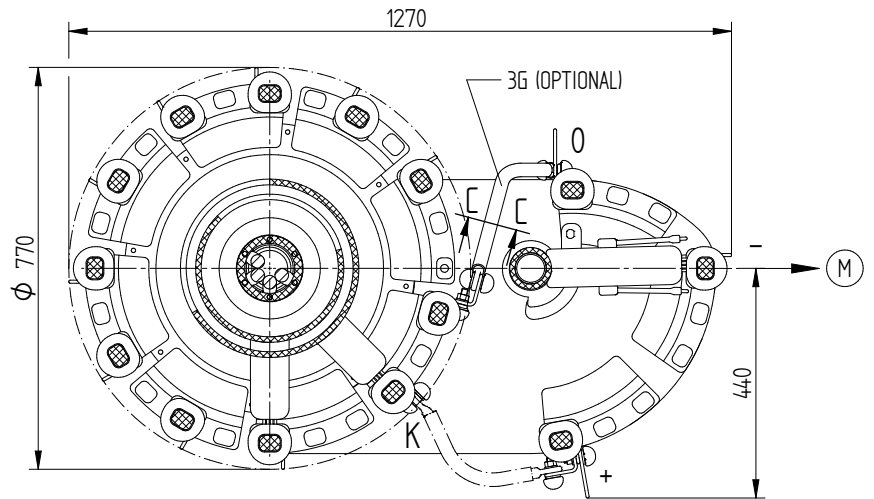
A-A



### COARSE CHANGE-OVER SELECTOR



B-B



(M) DRIVE SIDE OF SELECTOR

THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

|        |              |              |                    |
|--------|--------------|--------------|--------------------|
| DATE   | 19.10.2016   | DOCUMENT NO. | SED 5089626 001 02 |
| DFTR.  | CTETPRAKTIK2 | NAME         | HILTNER            |
| CHKD.  | 20.10.2016   | CHANGE NO.   | 1077337            |
| STAND. | 20.10.2016   | SCALE        | 15                 |
|        |              | PRODASTSCHUK |                    |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



SELECTOR SIZE RE/RF  
 CONNECTING LEAD 3W/3G  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER  
 100172640E

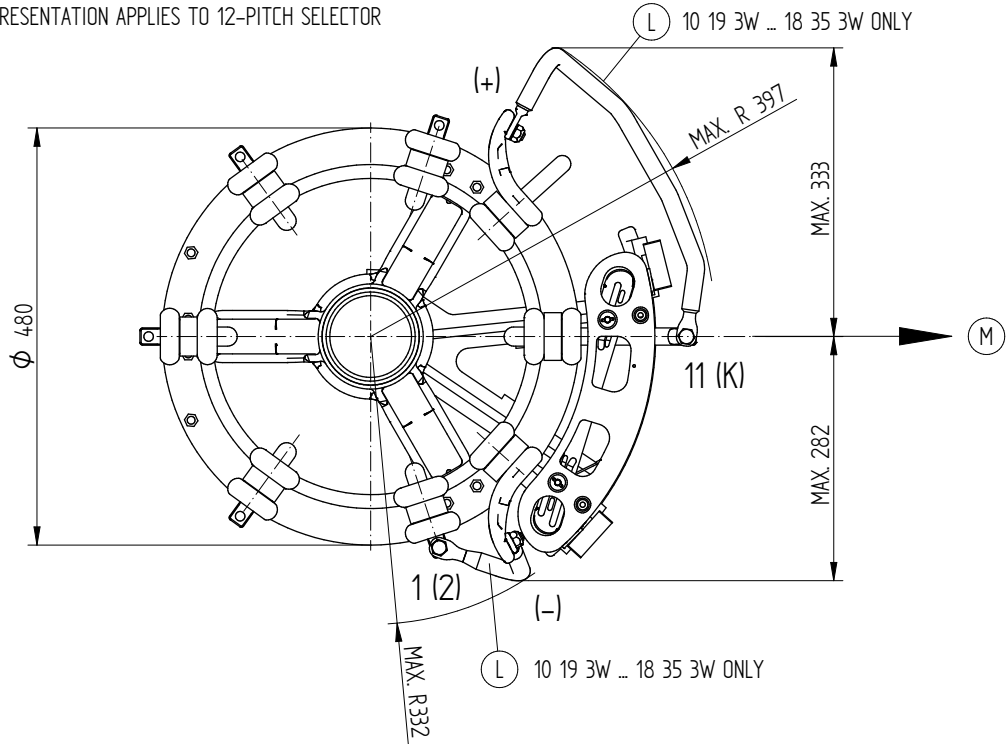
SHEET  
 1/1

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|                   |              |                    |
|-------------------|--------------|--------------------|
| DATE              | NAME         | DOCUMENT NO.       |
| DFTR. 13.07.2018  | BUTERUS      | SED 1474939 000 06 |
| CHKD. 16.07.2018  | WILHELM      | CHANGE NO.         |
| STAND. 16.07.2018 | PRODASTSCHUK | 1086956            |
|                   |              | SCALE 1:3          |

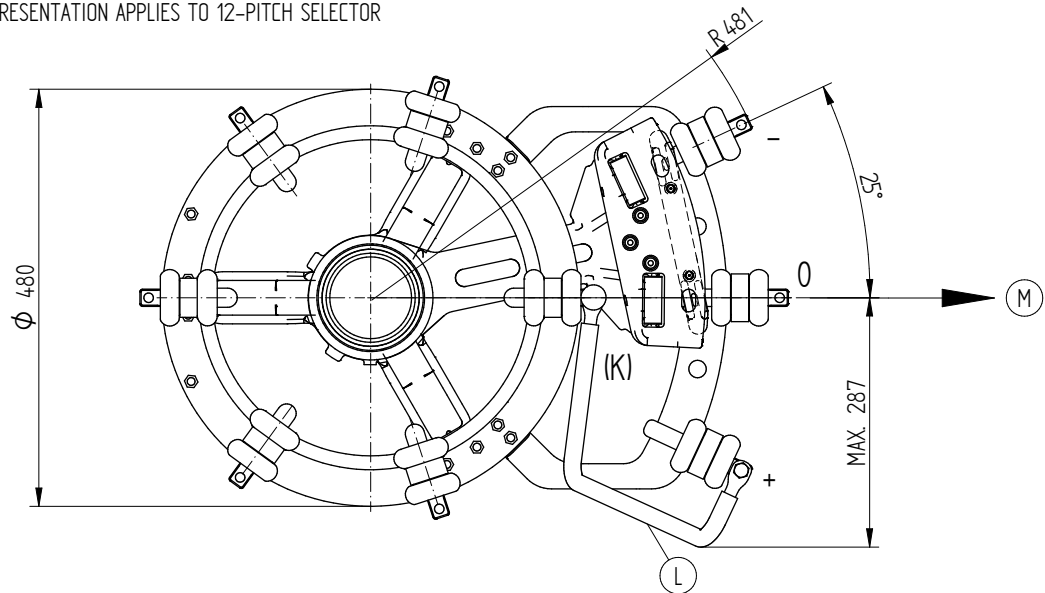
### REVERSING CHANGE-OVER SELECTOR

E - F (TYPE M / VM / VMS-C ) AND D - D (TYPE VRC / VRE / VRC I HD / VRE I HD / VRS / VRM)  
 REPRESENTATION APPLIES TO 12-PITCH SELECTOR



### COARSE CHANGE-OVER SELECTOR

G - H (TYPE M / VM / VMS-C ) AND E - E (TYPE VRC / VRE / VRC I HD / VRE I HD / VRS / VRM)  
 REPRESENTATION APPLIES TO 12-PITCH SELECTOR

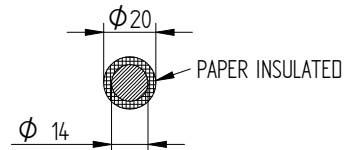
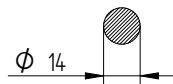


(L) SELECTOR SIZE B, C, D

(L) SELECTOR SIZE DE

(M) DRIVE SIDE OF SELECTOR

(L) CONNECTING LEADS



THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



OLT C OILTAP® M / VACUTAP® VM®, VMS®-C, VRC, VRE, VRS, VRM  
 CONNECTING LEAD 3W AND 1G / 3G  
 M-SELECTOR SIZE B/C/D/DE

SERIAL NUMBER

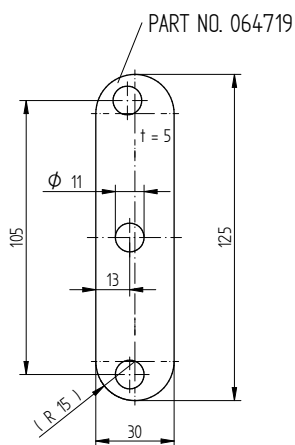
MATERIAL NUMBER  
7235904E

SHEET  
1/1

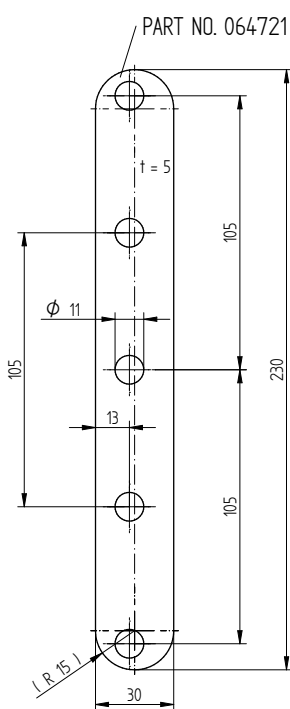
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### ARRANGEMENT OF CONTACT B

VRS I 1001  
VRM I 1001

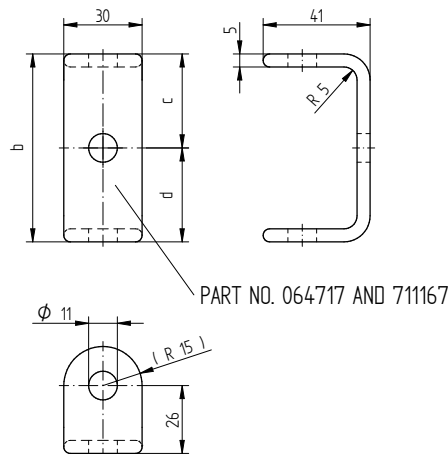


VRS I 1301  
VRM I 1301



### ARRANGEMENT OF CONTACT A

VRS I 1001 / 1301  
VRM I 1001 / 1301

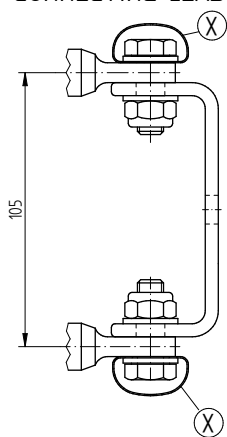


| ARRANGEMENT OF CONTACT (see 890477:.) | PART NO. | DIMENSION b | DIMENSION c | DIMENSION d |
|---------------------------------------|----------|-------------|-------------|-------------|
| A WITHOUT CONNECTING LEAD             | 064717   | 97          | 48,5        | 48,5        |
| A WITH CONNECTING LEAD                | 711167   | 91          | 48,5        | 42,5        |

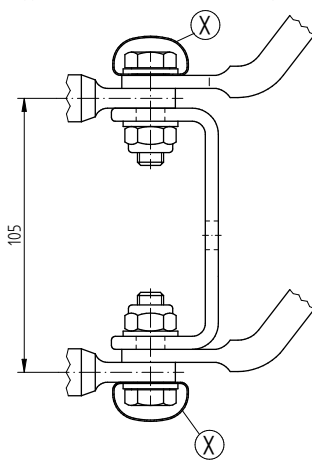
### INSTALLATION OF PARALLEL BRIDGES FOR ARRANGEMENT OF CONTACT A WITHOUT AND WITH CONNECTING LEAD FOR 3W CONNECTION

VRS I 1001  
VRM I 1001

WITHOUT  
CONNECTING LEAD

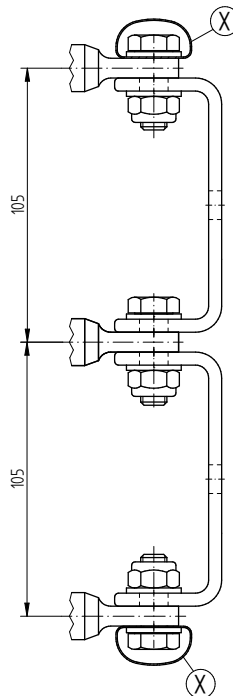


WITH CONNECTING LEAD

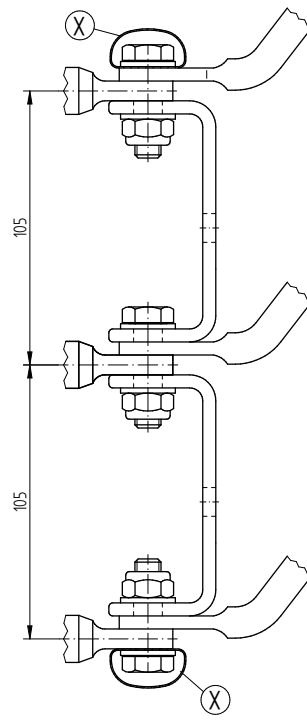


VRS I 1301  
VRM I 1301

WITHOUT  
CONNECTING LEAD



WITH CONNECTING LEAD



(X) ONLY FOR SELECTOR SIZE D AND DE

PLEASE NOTE: PARALLEL BRIDGES ARE NOT INCLUDED IN THE STANDARD DELIVERY.

| DATE       | NAME         | DOCUMENT NO.        |
|------------|--------------|---------------------|
| 19.04.2018 | RAEDLINGER   | SED 6014:108 001 00 |
| 25.04.2018 | HAUER        | CHANGE NO.          |
| 25.04.2018 | PRODASTSCHUK | 1087395             |
|            |              | SCALE 1:1           |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



Laststufenschalter VACUTAP® VR  
 VRS/VRM I 1001/1301 – SELECTOR SIZE B/C/D/DE  
 BRIDGES FOR PARALLEL CONNECTION OF SELECTOR CONN. CONTACT

SERIAL NUMBER

MATERIAL NUMBER  
 101170140E

SHEET  
 1/1

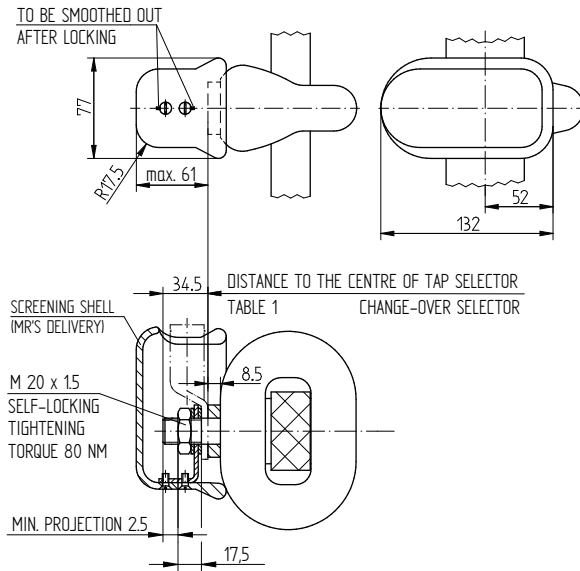
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## SELECTOR SIZE E

THE SELECTION OF STRAIGHT CABLE SHOE OR ANGLE-SHAPED BY 90° MUST BE MADE BY THE TRANSFORMER MANUFACTURER FOR EACH CONNECTION CONTACT. (FOR MODEL WITH CHANGE-OVER SELECTOR: CONTACT "n MINUS 1" ALLOWS STRAIGHT CABLE SHOE ONLY, CONTACT "K" IS NOT FOR CUSTOMER'S USE.)

### VARIANT 1

TAP SELECTOR AND CHANGE-OVER SELECTOR  
CONNECTION CONTACT WITH STRAIGHT CABLE SHOE



### VARIANT 2

TAP SELECTOR AND CHANGE-OVER SELECTOR  
CONNECTION CONTACT WITH 90° ANGLE CABLE SHOE

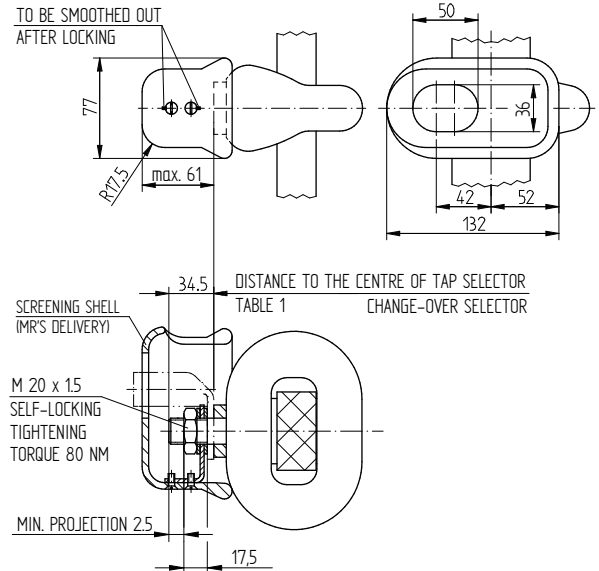
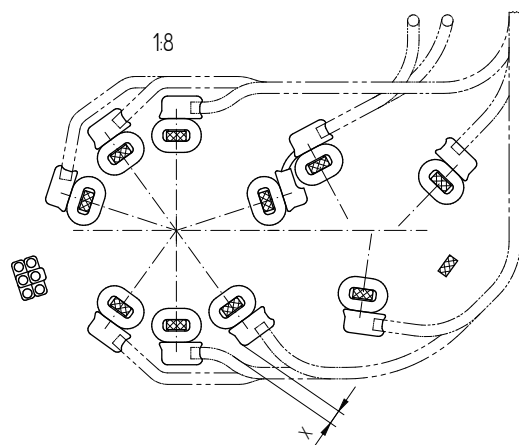


TABLE 1: DISTANCE TO THE CENTRE OF  
TAP SELECTOR / CHANGE-OVER SELECTOR  
(CONNECTING POINTS)

| DESIGNATION OF CONNECTION CONTACTS                   |     |
|------------------------------------------------------|-----|
| TAP SELECTOR CONNECTION CONTACTS                     | 352 |
| CHANGE-OVER SELECTOR CONNECTION CONTACT "0"          | 176 |
| CHANGE-OVER SELECTOR CONNECTION CONTACTS "+" AND "-" | 383 |

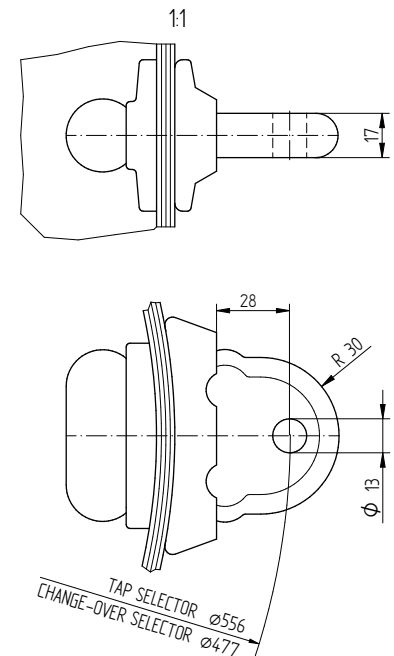
THE ABOVE VARIANTS ARE APPLICABLE TO ONE SELECTOR CONNECTING LEAD FOR EACH CONNECTION CONTACT.  
TWO SELECTOR CONNECTING LEADS FOR EACH CONNECTION CONTACTS AVAILABLE ON DEMAND.



X MIN. BETWEEN SCREENING SHELL AND ADJACENT LEAD = 25 mm.  
(RATED LIGHTNING IMPULSE WITHSTAND VOLTAGE 300 kV 12/50 AND LEAD  $\phi 18/\phi 28$ )

## SELECTOR SIZE C / D

TAP SELECTOR CONNECTION CONTACT AND  
CHANGE-OVER SELECTOR CONNECTION CONTACT



| DATE       | NAME          | DOCUMENT NO.       |
|------------|---------------|--------------------|
| 15.05.2017 | RAEDLINGER    | SED 1055276 001 02 |
| 09.06.2017 | SCHAFFBERGERT | CHANGE NO.         |
| 12.06.2017 | PRODASTSCHUK  | 1081739            |
|            |               | SCALE 1:2          |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
VRD/VRF/VRG - C/D/E TAP SELECTOR CONNECTION CONTACTS  
AND CHANGE-OVER SELECTOR CONNECTION CONTACTS

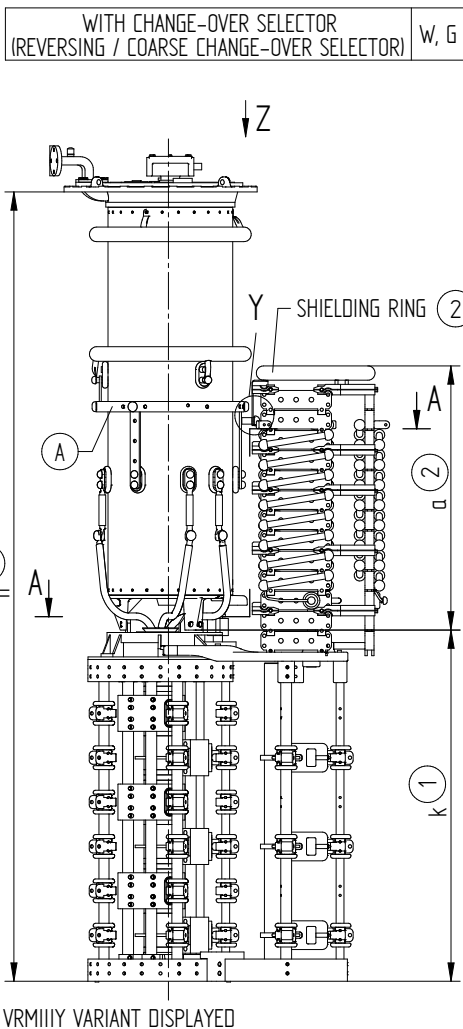
SERIAL NUMBER

MATERIAL NUMBER 8999413E SHEET 1/1

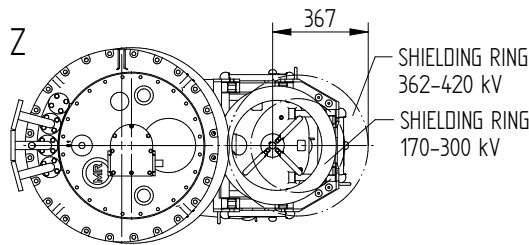


## 4.6 Potential connection unit

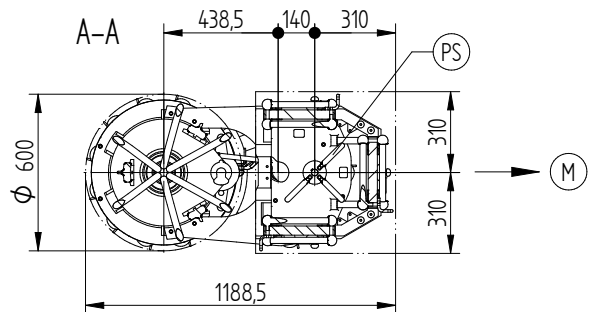
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| PRODUKT RANGE POTENTIAL CONNECTION UNIT WITH TIE-IN SWITCH WP/GP |                 |                   |              |                                          |                       |
|------------------------------------------------------------------|-----------------|-------------------|--------------|------------------------------------------|-----------------------|
| ON-LOAD TAP-CHANGER VACUTAP®                                     | NUMBER PHASES   | CIRCUIT RESISTORS | Um [kV]      | POTENTIAL NUMBER OF RESISTORS PER PHASES | MAX DIMENSIONS a [mm] |
| VRS                                                              | I               | SERIES            | 72,5 ... 420 | 3 ... 22                                 | 740                   |
|                                                                  |                 | PARALLEL          | 72,5 ... 362 | 2x3 ... 2x17                             | 894                   |
|                                                                  |                 |                   | 420          | 2x3 ... 2x14                             | 817                   |
|                                                                  | 3-FOLD PARALLEL | 72,5 ... 362      | 3x3 ... 3x12 | 894                                      |                       |
|                                                                  |                 | 420               | 3x3 ... 3x10 | 817                                      |                       |
|                                                                  | II              | SERIES            | 72,5 ... 362 | 3 ... 14                                 | 894                   |
| PARALLEL                                                         |                 |                   | 2x3 ... 2x7  |                                          |                       |
| III                                                              | SERIES          | 72,5 ... 245      | 3 ... 12     | 859                                      |                       |
|                                                                  | PARALLEL        |                   | 2x3 ... 2x5  |                                          |                       |
| VRM VRH 650                                                      | I               | SERIES            | 72,5 ... 420 | 3 ... 22                                 | 894                   |
|                                                                  |                 | PARALLEL          | 72,5 ... 362 | 2x3 ... 2x22                             | 1048                  |
|                                                                  |                 |                   | 420          | 2x3 ... 2x20                             | 971                   |
|                                                                  | 3-FOLD PARALLEL | 72,5 ... 362      | 3x3 ... 3x16 | 1048                                     |                       |
|                                                                  |                 | 420               | 3x3 ... 3x14 | 971                                      |                       |
|                                                                  | II              | SERIES            | 72,5 ... 362 | 3 ... 20                                 | 1048                  |
|                                                                  |                 | PARALLEL          |              | 2x3 ... 2x10                             |                       |
|                                                                  | III             | SERIES            | 72,5 ... 245 | 3 ... 16                                 | 1013                  |
|                                                                  |                 | PARALLEL          |              | 2x3 ... 2x7                              |                       |
| VRL VRH 1300 VRH 2622                                            | I               | SERIES            | 72,5 ... 420 | 3 ... 22                                 | 740                   |
|                                                                  |                 | PARALLEL          | 72,5 ... 362 | 2x3 ... 2x22                             | 1048                  |
|                                                                  |                 |                   | 420          | 2x3 ... 2x20                             | 971                   |
|                                                                  | 3-FOLD PARALLEL | 72,5 ... 300      | 3x3 ... 3x18 | 975                                      |                       |
|                                                                  |                 | 362 ... 420       | 3x3 ... 3x16 | 1048                                     |                       |
|                                                                  | II              | SERIES            | 72,5 ... 362 | 3 ... 22                                 | 1048                  |
|                                                                  |                 | PARALLEL          |              | 2x3 ... 2x10                             |                       |
|                                                                  | III             | SERIES            | 72,5 ... 245 | 3 ... 18                                 | 975                   |
|                                                                  |                 | PARALLEL          |              | 2x3 ... 2x8                              |                       |



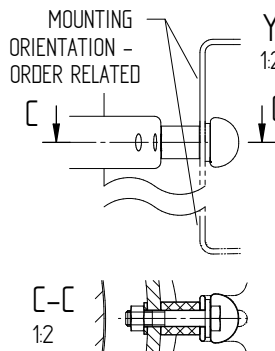
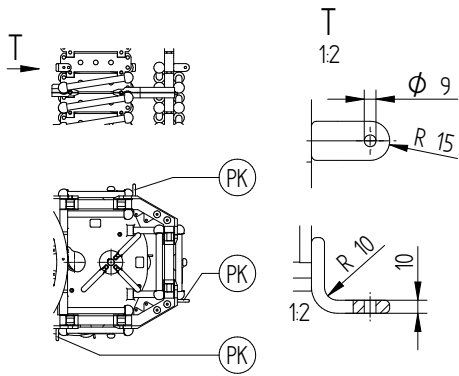
NUMBER AND POSITION OF CONNECTION CONTACT (2)



SCREW CONNECTION BETWEEN POTENTIAL CONNECTION UNIT AND TAKE-OFF RING (2)

THE SCREW CONNECTION (IF AVAILABLE) IS MADE BY THE TRANSFORMER MANUFACTURER.

- (M) - DRIVE SIDE OF SELECTOR
  - (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
  - (B) - IS CONNECTED TO POTENTIAL OF (A)
  - (PK) - CONNECTION CONTACT
  - (PS) - TIE-IN SWITCH
  - (1) - REFER TO DIMENSION DRAWING
  - (2) - IS ORDER RELATED, REFER TO ORDER RELATED DIMENSION DRAWING
- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES



| DATE       | NAME         | DOCUMENT NO.       |
|------------|--------------|--------------------|
| 20.10.2016 | CTETPRAKTIK2 | SED 5159743 001 00 |
| 20.10.2016 | HILTNER      | CHANGE NO.         |
| 20.10.2016 | PRODASTSCHUK | 1077565            |
| DFTR.      | SCALE        | 1:1                |
| CHKD.      |              |                    |
| STAND.     |              |                    |

DIMENSION IN mm EXCEPT AS NOTED

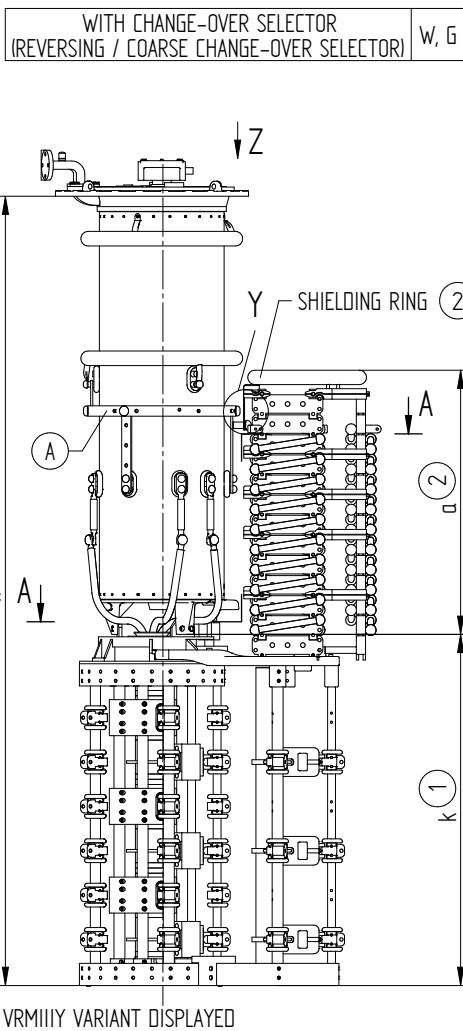


ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H - POTENTIAL CONNECTION UNIT WP/GP - RC/RD/RDE  
 DIMENSION DRAWING

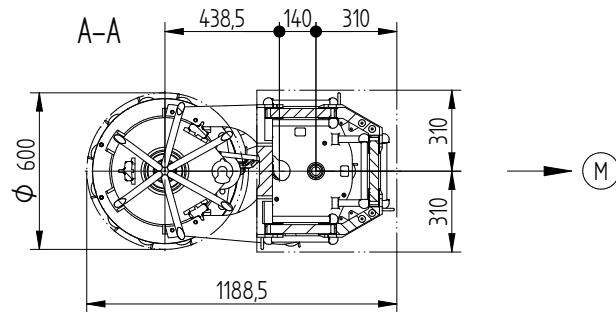
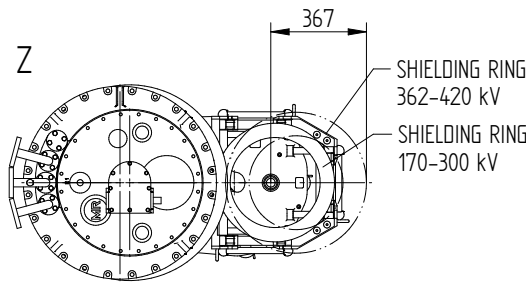
SERIAL NUMBER

MATERIAL NUMBER 100180040E SHEET 1/1

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| PRODUKT RANGE POTENTIAL CONNECTION UNIT WITHOUT TIE-IN SWITCH WR/GR |               |                   |              |                                          |                       |
|---------------------------------------------------------------------|---------------|-------------------|--------------|------------------------------------------|-----------------------|
| ON-LOAD TAP-CHANGER VACUTAP®                                        | NUMBER PHASES | CIRCUIT RESISTORS | Um [kV]      | POTENTIAL NUMBER OF RESISTORS PER PHASES | MAX DIMENSIONS a [mm] |
| VRS                                                                 | I             | SERIES            | 72,5 ... 420 | 3 ... 22                                 | 663                   |
|                                                                     |               | PARALLEL          | 72,5 ... 362 | 2x3 ... 2x22                             | 894                   |
|                                                                     |               |                   | 420          | 2x3 ... 2x19                             | 817                   |
|                                                                     | II            | 3-FOLD PARALLEL   | 72,5 ... 362 | 3x3 ... 3x16                             | 894                   |
|                                                                     |               | PARALLEL          | 420          | 3x3 ... 3x14                             | 817                   |
|                                                                     |               |                   | SERIES       | 72,5 ... 362                             | 3 ... 20              |
| III                                                                 | SERIES        | 72,5 ... 245      | 3 ... 16     | 859                                      |                       |
|                                                                     | PARALLEL      | 72,5 ... 245      | 2x3 ... 2x7  |                                          |                       |
| VRM VRH 650                                                         | I             | SERIES            | 72,5 ... 420 | 3 ... 22                                 | 663                   |
|                                                                     |               | PARALLEL          | 72,5 ... 362 | 2x3 ... 2x22                             | 894                   |
|                                                                     |               |                   | 420          | 3x3 ... 3x20                             | 1048                  |
|                                                                     | II            | SERIES            | 72,5 ... 362 | 3 ... 22                                 | 1048                  |
|                                                                     |               | PARALLEL          | 72,5 ... 362 | 2x3 ... 2x13                             |                       |
|                                                                     | III           | SERIES            | 72,5 ... 245 | 3 ... 20                                 | 1013                  |
| PARALLEL                                                            |               | 72,5 ... 245      | 2x3 ... 2x9  |                                          |                       |
| VRL VRH 1300 VRH 2622                                               | I             | SERIES            | 72,5 ... 420 | 3 ... 22                                 | 663                   |
|                                                                     |               | PARALLEL          | 72,5 ... 300 | 2x3 ... 2x22                             | 971                   |
|                                                                     |               |                   | 362 ... 420  | 3x3 ... 3x22                             | 975                   |
|                                                                     | II            | SERIES            | 72,5 ... 362 | 3 ... 22                                 | 1048                  |
|                                                                     |               | PARALLEL          | 72,5 ... 362 | 2x3 ... 2x13                             |                       |
|                                                                     | III           | SERIES            | 72,5 ... 245 | 3 ... 22                                 | 975                   |
| PARALLEL                                                            |               | 72,5 ... 245      | 2x3 ... 2x10 |                                          |                       |

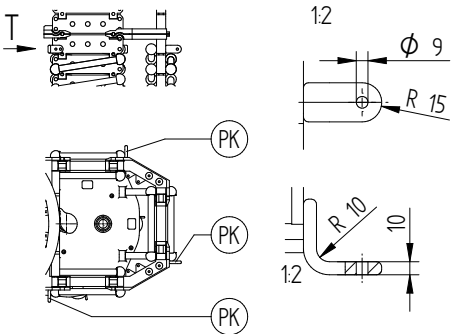


NUMBER AND POSITION OF CONNECTION CONTACT (2)

SCREW CONNECTION BETWEEN POTENTIAL CONNECTION UNIT AND TAKE-OFF RING (2)

THE SCREW CONNECTION (IF AVAILABLE) IS MADE BY THE TRANSFORMER MANUFACTURER.

- (M) - DRIVE SIDE OF SELECTOR
  - (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
  - (B) - IS CONNECTED TO POTENTIAL OF (A)
  - (PK) - CONNECTION CONTACT
  - (1) - REFER TO DIMENSION DRAWING
  - (2) - IS ORDER RELATED, REFER TO ORDER RELATED DIMENSION DRAWING
- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES



| DATE       | NAME         | DOCUMENT NO.       |
|------------|--------------|--------------------|
| 18.10.2016 | CTETPRAKTIK2 | SED 5'59886 001 00 |
| 20.10.2016 | HILTNER      | CHANGE NO.         |
| 20.10.2016 | PRODASTSCHUK | 1077565            |
|            |              | SCALE 1:10         |

DIMENSION IN mm EXCEPT AS NOTED



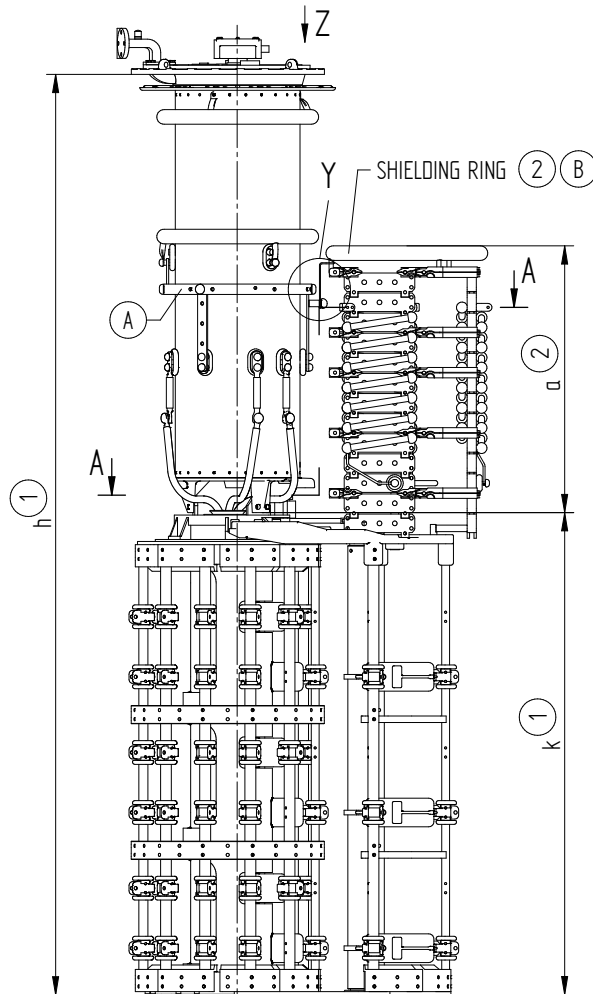
ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H - POTENTIAL CONNECTION UNIT WR/GR - RC/RD/RDE  
 DIMENSION DRAWING

SERIAL NUMBER

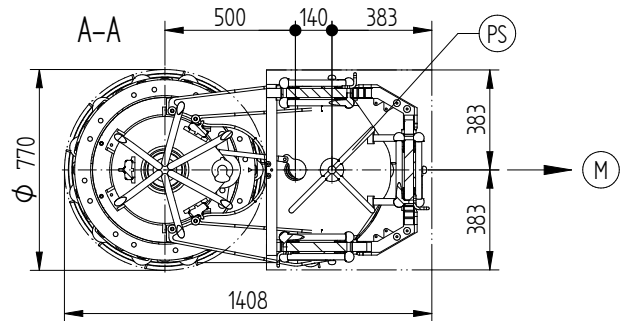
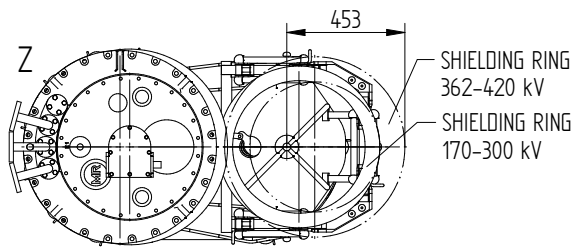
|                 |       |
|-----------------|-------|
| MATERIAL NUMBER | SHEET |
| 100180080E      | 1/1   |

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WITH CHANGE-OVER SELECTOR  
 (REVERSING / COARSE CHANGE-OVER SELECTOR) W, G



VRMIIII VARIANT DISPLAYED

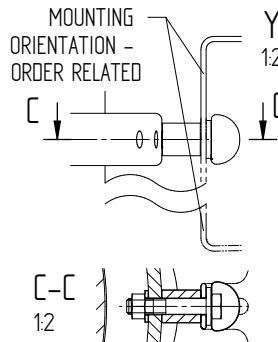
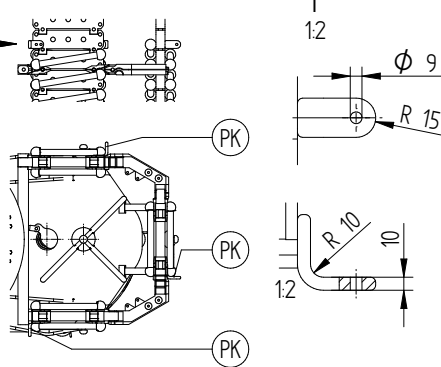


NUMBER AND POSITION OF CONNECTION CONTACT (2)

SCREW CONNECTION BETWEEN  
 POTENTIAL CONNECTION UNIT AND  
 TAKE-OFF RING (2)

THE SCREW CONNECTION (IF AVAILABLE) IS  
 MADE BY THE TRANSFORMER MANUFACTURER.

- (M) - DRIVE SIDE OF SELECTOR
  - (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
  - (B) - IS CONNECTED TO POTENTIAL OF (A)
  - (PK) - CONNECTION CONTACT
  - (PS) - TIE-IN SWITCH
  - (1) - REFER TO DIMENSION DRAWING
  - (2) - IS ORDER RELATED, REFER TO ORDER RELATED DIMENSION DRAWING
- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES



|                   |              |                    |
|-------------------|--------------|--------------------|
| DATE              | NAME         | DOCUMENT NO.       |
| DFTR. 18.10.2016  | CTETPRAKTIK2 | SED 5160053 001 00 |
| CHKD. 20.10.2016  | HILTNER      | CHANGE NO.         |
| STAND. 20.10.2016 | PRODASTSCHUK | 1077565            |
|                   |              | SCALE 1:1          |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H/X - POTENTIAL CONNECTION UNIT WP/GP - RE/RF/RES  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER 100180110E SHEET 1/2

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|                   |              |                    |
|-------------------|--------------|--------------------|
| DATE              | NAME         | DOCUMENT NO.       |
| DFTR. 18.10.2016  | CTETPRAKTIK2 | SED 5160053 001 00 |
| CHKD. 20.10.2016  | HILTNER      | SCALE              |
| STAND. 20.10.2016 | PRODASTSCHUK | 1:1                |
|                   |              | CHANGE NO. 1077565 |

| PRODUCT RANGE POTENTIAL CONNECTION UNIT WITH TIE-IN SWITCH WP/GP |               |                 |                   |              |                                          |                        |                                              |      |     |
|------------------------------------------------------------------|---------------|-----------------|-------------------|--------------|------------------------------------------|------------------------|----------------------------------------------|------|-----|
| ON-LOAD TAP-CHANGER VACUTAP®                                     | NUMBER PHASES | SELECTOR DESIGN | CIRCUIT RESISTORS | Um [kV]      | POTENTIAL NUMBER OF RESISTORS PER PHASES | MAX. DIMENSIONS a [mm] | SEPARATE TRANSPORT POTENTIAL CONNECTION UNIT |      |     |
| VRS                                                              | I             | RE, RF          | SERIES            | 72,5 ... 420 | 3 ... 22                                 | 832                    | NO                                           |      |     |
|                                                                  |               |                 | PARALLEL          | 72,5 ... 362 | 2x3 ... 2x14                             | 909                    |                                              |      |     |
|                                                                  |               |                 |                   | 420          | 2x3 ... 2x10                             | 832                    |                                              |      |     |
|                                                                  |               |                 | 3-FOLD PARALLEL   | 72,5 ... 362 | 3x3 ... 3x10                             | 909                    |                                              |      |     |
|                                                                  | 420           |                 |                   | 3x3 ... 3x8  | 832                                      |                        |                                              |      |     |
|                                                                  | II            |                 | SERIES            | 72,5 ... 362 | 3 ... 12                                 | 909                    |                                              |      |     |
|                                                                  |               |                 | PARALLEL          |              | 2x3 ... 2x5                              |                        |                                              |      |     |
|                                                                  | III           |                 | RE                | SERIES       | 72,5 ... 123                             | 3 ... 10               |                                              | 869  | YES |
|                                                                  |               | 170 ... 245     |                   |              | 3 ... 8                                  | 667                    |                                              |      |     |
|                                                                  |               | 72,5 ... 245    |                   |              | 3 ... 8                                  | 667                    | NO                                           |      |     |
|                                                                  |               |                 |                   |              | 9 ... 10                                 | 869                    | YES                                          |      |     |
|                                                                  |               | RF              | PARALLEL          |              | 72,5 ... 123                             | 2x3 ... 2x4            | 744                                          | NO   |     |
|                                                                  |               |                 |                   |              | 170 ... 245                              | 2x3                    | 667                                          |      |     |
|                                                                  |               |                 |                   |              |                                          | 2x4                    | 869                                          |      | YES |
|                                                                  |               |                 |                   |              | 72,5 ... 245                             | 2x3                    | 667                                          |      | NO  |
|                                                                  | 2x4           | 869             |                   | YES          |                                          |                        |                                              |      |     |
| VRM VRH 650                                                      | I             | RE, RF          |                   | SERIES       | 72,5 ... 420                             | 3 ... 22               | 832                                          | NO   |     |
|                                                                  |               |                 |                   | PARALLEL     | 72,5 ... 362                             | 2x3 ... 2x20           | 1063                                         |      |     |
|                                                                  |               |                 |                   |              | 420                                      | 2x3 ... 2x16           | 986                                          |      |     |
|                                                                  |               |                 | 3-FOLD PARALLEL   | 72,5 ... 362 | 3x3 ... 3x14                             | 1063                   |                                              |      |     |
|                                                                  | 420           |                 |                   | 3x3 ... 3x12 | 986                                      |                        |                                              |      |     |
|                                                                  | II            |                 | SERIES            | 72,5 ... 362 | 3 ... 18                                 | 1063                   |                                              |      |     |
|                                                                  |               |                 | PARALLEL          |              | 2x3 ... 2x9                              |                        |                                              |      |     |
|                                                                  | III           |                 | RE                | SERIES       | 72,5 ... 245                             | 3 ... 12               | 821                                          |      | YES |
|                                                                  |               | 13 ... 14       |                   |              |                                          | 1023                   | NO                                           |      |     |
|                                                                  |               | RF              | 3 ... 4           |              |                                          | 496                    | NO                                           |      |     |
|                                                                  |               |                 | 5 ... 14          |              |                                          | 1023                   | YES                                          |      |     |
|                                                                  |               | RE              | PARALLEL          |              |                                          | 2x3 ... 2x5            | 821                                          | NO   |     |
| 2x6                                                              |               |                 |                   |              |                                          | 1023                   | YES                                          |      |     |
| 2x3 ... 2x6                                                      |               |                 |                   |              |                                          |                        |                                              |      |     |
| VRL VRH 1300 VRH 2622                                            | I             | RE, RF          | SERIES            | 72,5 ... 420 | 3 ... 22                                 | 832                    | NO                                           |      |     |
|                                                                  |               |                 | PARALLEL          |              | 2x3 ... 2x22                             | 1140                   |                                              |      |     |
|                                                                  |               |                 |                   |              | 72,5 ... 362                             | 3x3 ... 3x18           |                                              | 1217 |     |
|                                                                  |               |                 | 3-FOLD PARALLEL   |              | 420                                      | 3x3 ... 3x16           |                                              | 1140 |     |
|                                                                  | II            |                 |                   | SERIES       | 72,5 ... 362                             | 3 ... 22               |                                              | 1217 |     |
|                                                                  |               |                 | PARALLEL          |              | 2x3 ... 2x11                             |                        |                                              |      |     |
|                                                                  | III           |                 | RE                | SERIES       | 72,5 ... 245                             | 3 ... 8                |                                              | 667  | YES |
|                                                                  |               |                 |                   |              |                                          | 9 ... 18               |                                              | 1177 | NO  |
|                                                                  |               | RF              | 3 ... 4           |              |                                          | 496                    | NO                                           |      |     |
|                                                                  |               |                 | 5 ... 18          |              |                                          | 1177                   | YES                                          |      |     |
|                                                                  |               | RE              | PARALLEL          |              |                                          | 2x3                    | 667                                          | NO   |     |
|                                                                  |               |                 |                   |              |                                          | 2x4 ... 2x8            | 1177                                         | YES  |     |
| 2x3 ... 2x8                                                      |               |                 |                   |              |                                          |                        |                                              |      |     |
| VRX                                                              | I             | RES             | SERIES            | 72,5 ... 300 | 3 ... 12                                 | 821                    | NO                                           |      |     |
|                                                                  |               |                 |                   |              | 13 ... 14                                | 1023                   | YES                                          |      |     |
|                                                                  |               |                 |                   | 362          | 3 ... 8                                  | 832                    | NO                                           |      |     |
|                                                                  |               |                 |                   |              | 9 ... 14                                 | 1063                   | YES                                          |      |     |
|                                                                  |               | PARALLEL        | 72,5 ... 300      | 2x3 ... 2x5  | 821                                      | NO                     |                                              |      |     |
|                                                                  |               |                 |                   | 2x6          | 1023                                     | YES                    |                                              |      |     |
|                                                                  |               |                 | 362               | 2x3          | 832                                      | NO                     |                                              |      |     |
|                                                                  |               |                 |                   | 2x4 ... 2x6  | 1063                                     | YES                    |                                              |      |     |

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H/X - POTENTIAL CONNECTION UNIT WP/GP - RE/RF/RES  
 DIMENSION DRAWING

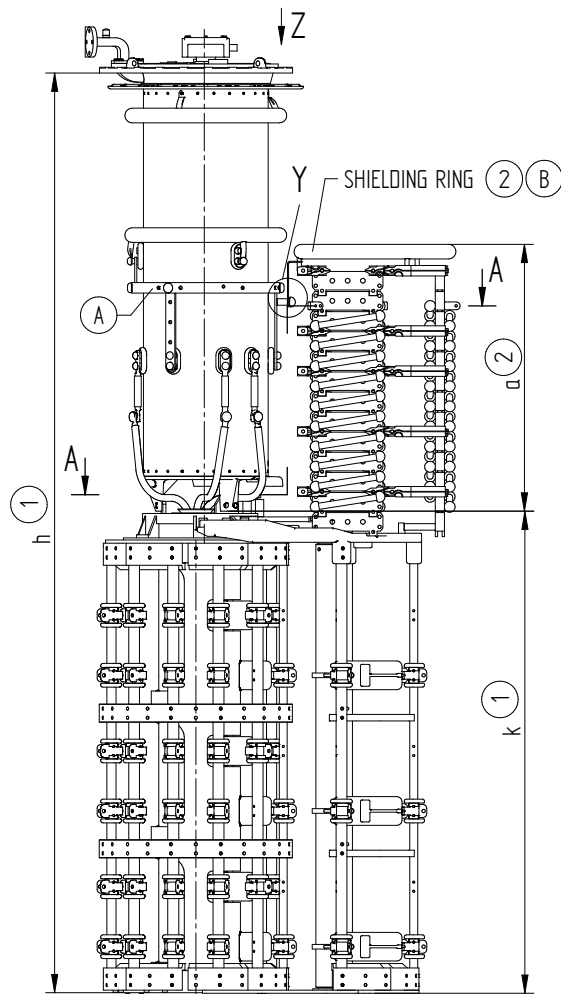
SERIAL NUMBER

MATERIAL NUMBER 100180110E

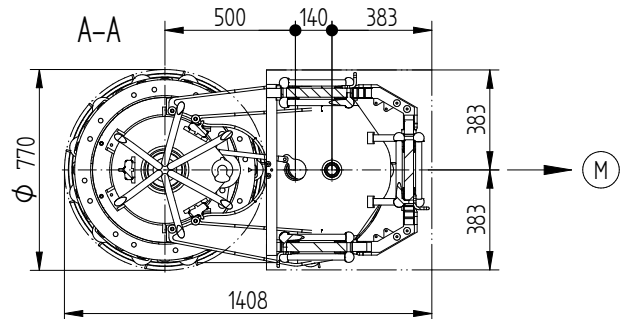
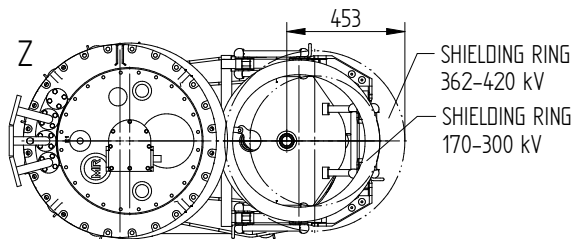
SHEET 2/2

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WITH CHANGE-OVER SELECTOR  
 (REVERSING / COARSE CHANGE-OVER SELECTOR) W, G



VRMIIII VARIANT DISPLAYED

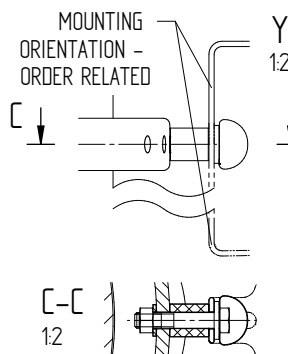
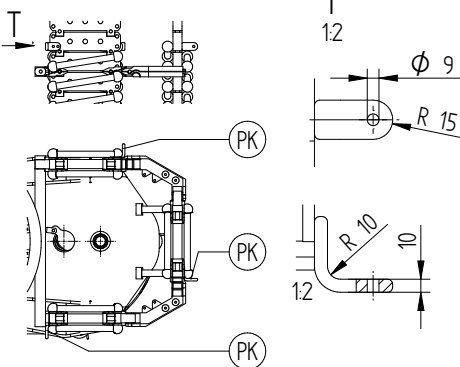


NUMBER AND POSITION OF CONNECTION CONTACT (2)

SCREW CONNECTION BETWEEN  
 POTENTIAL CONNECTION UNIT AND  
 TAKE-OFF RING (2)

THE SCREW CONNECTION (IF AVAILABLE) IS  
 MADE BY THE TRANSFORMER MANUFACTURER.

- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (PK) - CONNECTION CONTACT
- (1) - REFER TO DIMENSION DRAWING
- (2) - IS ORDER RELATED, REFER TO ORDER RELATED DIMENSION DRAWING
- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES



|                   |              |                    |
|-------------------|--------------|--------------------|
| DATE              | NAME         | DOCUMENT NO.       |
| DFTR. 18.10.2016  | CTETPRAKTIK2 | SED 5160136 001 00 |
| CHKD. 20.10.2016  | HILTNER      | CHANGE NO.         |
| STAND. 20.10.2016 | PRODASTSCHUK | 1077565            |
|                   |              | SCALE 1:10         |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H - POTENTIAL CONNECTION UNIT WR/GR - RE/RF  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER 100180130E SHEET 1/2

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|        |            |              |                    |
|--------|------------|--------------|--------------------|
| DFTR.  | DATE       | NAME         | DOCUMENT NO.       |
| CHKD.  | 18.10.2016 | CTETPRAKTIK2 | SED 5160136 001 00 |
| STAND. | 20.10.2016 | HILTNER      | SCALE              |
|        | 20.10.2016 | PRODASTSCHUK | 1:10               |
|        |            |              | CHANGE NO.         |
|        |            |              | 1077565            |

| PRODUCT RANGE POTENTIAL CONNECTION UNIT WITHOUT TIE-IN SWITCH WR/GR |               |                 |                   |                       |                                          |                        |                                              |                 |              |              |    |      |
|---------------------------------------------------------------------|---------------|-----------------|-------------------|-----------------------|------------------------------------------|------------------------|----------------------------------------------|-----------------|--------------|--------------|----|------|
| ON-LOAD TAP-CHANGER VACUTAP®                                        | NUMBER PHASES | SELECTOR DESIGN | CIRCUIT RESISTORS | Um [kV]               | POTENTIAL NUMBER OF RESISTORS PER PHASES | MAX. DIMENSIONS α [mm] | SEPARATE TRANSPORT POTENTIAL CONNECTION UNIT |                 |              |              |    |      |
| VRS                                                                 | I             | RE, RF          | SERIES            | 72,5 ... 420          | 3 ... 22                                 | 678                    | NO                                           |                 |              |              |    |      |
|                                                                     |               |                 | PARALLEL          |                       | 72,5 ... 362                             | 2x3 ... 2x20           |                                              | 909             |              |              |    |      |
|                                                                     |               |                 | 3-FOLD PARALLEL   | 420                   | 2x3 ... 2x18                             | 832                    |                                              |                 |              |              |    |      |
|                                                                     |               |                 |                   | 72,5 ... 362          | 3x3 ... 3x16                             | 909                    |                                              |                 |              |              |    |      |
|                                                                     |               |                 | PARALLEL          | 420                   | 3x3 ... 3x14                             | 832                    |                                              |                 |              |              |    |      |
|                                                                     |               |                 |                   | II                    | RE, RF                                   | SERIES                 |                                              | 72,5 ... 362    | 3 ... 20     | 909          |    |      |
|                                                                     | PARALLEL      | 2x3 ... 2x10    |                   |                       |                                          |                        |                                              |                 |              |              |    |      |
|                                                                     | III           | RE              | SERIES            | 72,5 ... 123          | 3 ... 16                                 | 744                    |                                              | YES             |              |              |    |      |
|                                                                     |               |                 |                   | 170 ... 245           | 3 ... 14                                 | 667                    |                                              |                 |              |              |    |      |
|                                                                     |               |                 |                   | 72,5 ... 245          | 15 ... 16                                | 869                    |                                              |                 |              |              |    |      |
|                                                                     |               |                 |                   |                       | 3 ... 14                                 | 667                    |                                              |                 | NO           |              |    |      |
|                                                                     |               |                 |                   | RF                    | 15 ... 16                                | 869                    |                                              |                 | YES          |              |    |      |
|                                                                     |               |                 |                   |                       | RE                                       | PARALLEL               | 72,5 ... 123                                 |                 | 2x3 ... 2x7  | 744          | NO |      |
|                                                                     |               | 170 ... 245     | 2x3 ... 2x6       | 667                   |                                          |                        |                                              |                 |              |              |    |      |
|                                                                     |               |                 | 2x7               | 869                   |                                          |                        |                                              |                 |              |              |    |      |
|                                                                     |               | 72,5 ... 245    | 2x3 ... 2x6       | 667                   |                                          |                        | NO                                           |                 |              |              |    |      |
|                                                                     |               |                 | 2x7               | 869                   |                                          |                        | YES                                          |                 |              |              |    |      |
|                                                                     |               | VRM VRH 650     | I                 | RE, RF                |                                          |                        | SERIES                                       | 72,5 ... 420    | 3 ... 22     | 678          |    | NO   |
| PARALLEL                                                            |               |                 |                   |                       | 72,5 ... 362                             | 2x3 ... 2x22           | 968                                          |                 |              |              |    |      |
| 3-FOLD PARALLEL                                                     | 420           |                 |                   |                       | 3x3 ... 3x20                             | 1063                   |                                              |                 |              |              |    |      |
|                                                                     | 72,5 ... 362  |                 |                   |                       | 3x3 ... 3x18                             | 986                    |                                              |                 |              |              |    |      |
| II                                                                  | RE, RF        |                 |                   |                       | SERIES                                   | 72,5 ... 362           | 3 ... 22                                     | 1063            |              |              |    |      |
|                                                                     |               |                 |                   |                       | PARALLEL                                 |                        | 2x3 ... 2x13                                 |                 |              |              |    |      |
| III                                                                 | RE            |                 | SERIES            | 72,5 ... 245          | 3 ... 18                                 | 821                    | YES                                          |                 |              |              |    |      |
|                                                                     |               |                 |                   |                       | 19 ... 20                                | 1023                   |                                              |                 |              |              |    |      |
|                                                                     |               |                 |                   |                       | 3 ... 10                                 | 496                    |                                              | NO              |              |              |    |      |
|                                                                     |               |                 |                   |                       | 11 ... 20                                | 1023                   |                                              | YES             |              |              |    |      |
|                                                                     |               |                 |                   |                       | 2x3 ... 2x8                              | 821                    |                                              | NO              |              |              |    |      |
|                                                                     |               |                 |                   |                       | 2x9                                      | 1023                   |                                              | YES             |              |              |    |      |
|                                                                     | RF            |                 | PARALLEL          | 2x3 ... 2x4           | 496                                      | NO                     |                                              |                 |              |              |    |      |
|                                                                     |               |                 |                   | 2x5 ... 2x9           | 1023                                     | YES                    |                                              |                 |              |              |    |      |
|                                                                     |               |                 |                   | VRL VRH 1300 VRH 2622 | I                                        | RE, RF                 | 72,5 ... 420                                 | SERIES          | 3 ... 22     | 678          | NO |      |
|                                                                     |               |                 |                   |                       |                                          |                        |                                              | PARALLEL        | 72,5 ... 362 | 2x3 ... 2x22 |    | 968  |
|                                                                     |               |                 |                   |                       |                                          |                        |                                              | 3-FOLD PARALLEL | 3x3 ... 3x22 | 1140         |    |      |
|                                                                     |               |                 |                   |                       |                                          |                        |                                              |                 | 72,5 ... 362 | 3 ... 22     |    | 1063 |
| II                                                                  | RE, RF        | SERIES          | 72,5 ... 362      |                       |                                          |                        |                                              | 2x3 ... 2x16    | 1217         |              |    |      |
|                                                                     |               | PARALLEL        |                   |                       |                                          |                        |                                              | 3 ... 14        | 667          |              |    |      |
| III                                                                 | RE            | SERIES          | 72,5 ... 245      | 15 ... 22             | 975                                      | YES                    |                                              |                 |              |              |    |      |
|                                                                     |               |                 |                   | 3 ... 10              | 496                                      |                        | NO                                           |                 |              |              |    |      |
|                                                                     |               |                 |                   | 11 ... 22             | 975                                      |                        | YES                                          |                 |              |              |    |      |
|                                                                     |               |                 |                   | 2x3 ... 2x6           | 667                                      |                        | NO                                           |                 |              |              |    |      |
|                                                                     |               |                 |                   | 2x7 ... 2x11          | 1177                                     |                        | YES                                          |                 |              |              |    |      |
|                                                                     |               |                 |                   | 2x3 ... 2x4           | 496                                      |                        | NO                                           |                 |              |              |    |      |
|                                                                     | RF            | PARALLEL        | 2x5 ... 2x11      | 1177                  | YES                                      |                        |                                              |                 |              |              |    |      |

DIMENSION IN mm EXCEPT AS NOTED



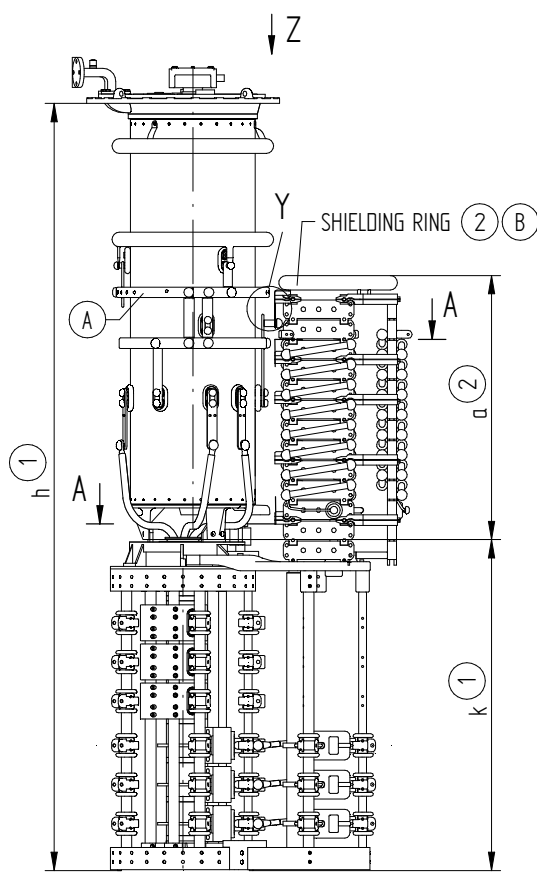
ON-LOAD TAP-CHANGER VACUTAP® VR  
 VR S/M/L/H - POTENTIAL CONNECTION UNIT WR/GR - RE/RF  
 DIMENSION DRAWING

SERIAL NUMBER

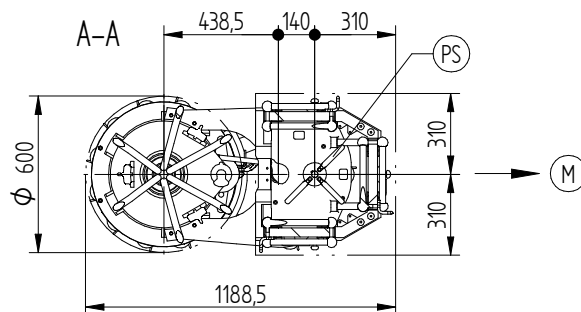
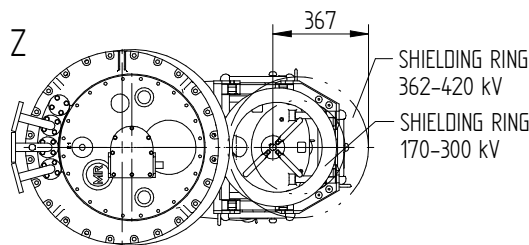
MATERIAL NUMBER 100180130E SHEET 2/2

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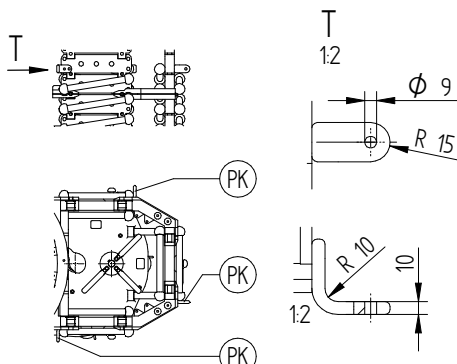
WITH CHANGE-OVER SELECTOR (REVERSING / COARSE CHANGE-OVER SELECTOR) W, G



VRL I 2601 VARIANT DISPLAYED

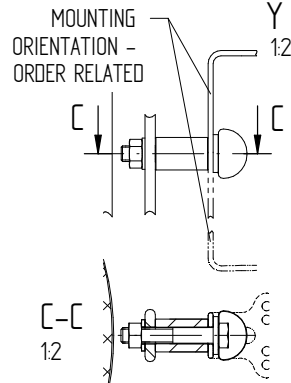


NUMBER AND POSITION OF CONNECTION CONTACT (2)



SCREW CONNECTION BETWEEN POTENTIAL CONNECTION UNIT AND CONNECTOR (2)

THE SCREW CONNECTION (IF AVAILABLE) IS MADE BY THE TRANSFORMER MANUFACTURER.



- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (PK) - CONNECTION CONTACT
- (PS) - TIE-IN SWITCH
- (1) - REFER TO DIMENSION DRAWING
- (2) - IS ORDER RELATED, REFER TO ORDER RELATED DIMENSION DRAWING
- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

| PRODUKT RANGE POTENTIAL CONNECTION UNIT WITH TIE-IN SWITCH WP/GP                 |               |                   |              |                                          |                       |
|----------------------------------------------------------------------------------|---------------|-------------------|--------------|------------------------------------------|-----------------------|
| ON-LOAD TAP-CHANGER VACUTAP®                                                     | NUMBER PHASES | CIRCUIT RESISTORS | Um [kV]      | POTENTIAL NUMBER OF RESISTORS PER PHASES | MAX DIMENSIONS a [mm] |
| VRL I 1801<br>VRL I 2001<br>VRL I 2401<br>VRL I 2601<br>VRL I 3001<br>VRL I 3201 | 1             | SERIES            | 72,5 ... 420 | 3 ... 22                                 | 894                   |
|                                                                                  |               | PARALLEL          | 72,5 ... 362 | 2x3 ... 2x22                             | 1048                  |
|                                                                                  |               |                   | 420          | 2x3 ... 2x20                             | 971                   |
|                                                                                  |               | 3-FOLD PARALLEL   | 72,5 ... 362 | 3x3 ... 3x16                             | 1048                  |
|                                                                                  |               |                   | 420          | 3x3 ... 3x14                             | 971                   |

|            |            |                    |
|------------|------------|--------------------|
| DATE       | NAME       | DOCUMENT NO.       |
| 13.12.2021 | RAEDLINGER | SED 84954/8 001 00 |
| 13.12.2021 | MENZELS    | SCALE              |
| 14.12.2021 | WANNINGER  | 1:10               |
| CHKO.      | CHANGE NO. | 1103709            |
| STAND.     |            |                    |

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL I 1801 ... 3201 - POTENTIAL CONNECTION UNIT WP/GP - RC/RD/RDE  
 DIMENSION DRAWING

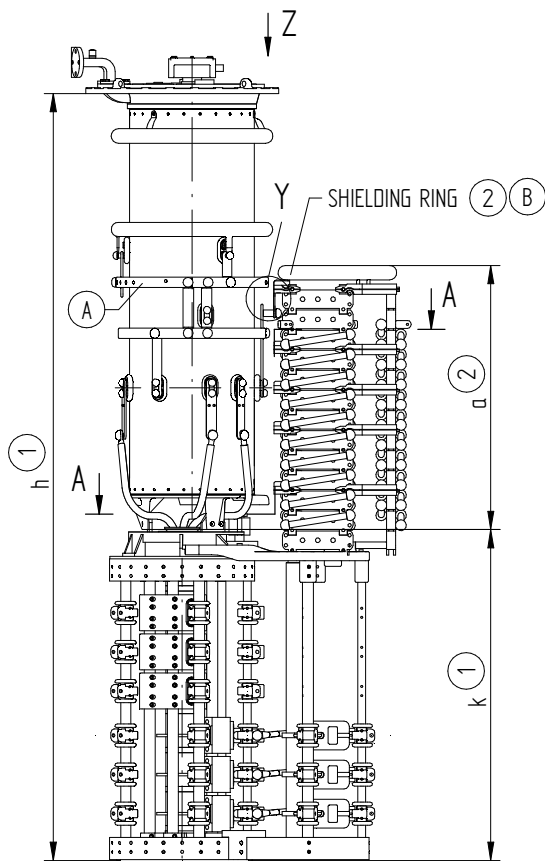
SERIAL NUMBER

MATERIAL NUMBER 101667670E SHEET 1/1



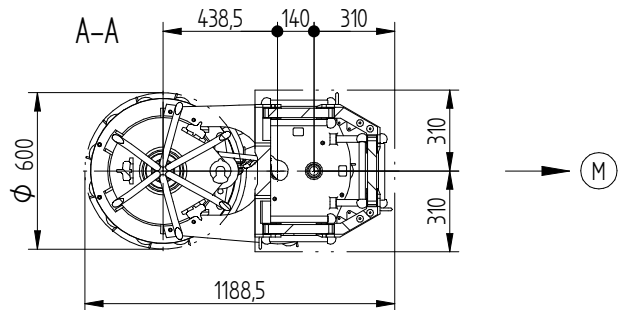
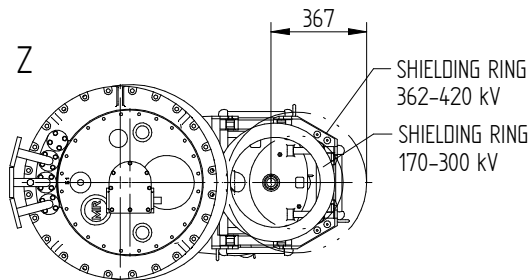
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WITH CHANGE-OVER SELECTOR (REVERSING / COARSE CHANGE-OVER SELECTOR) W, G

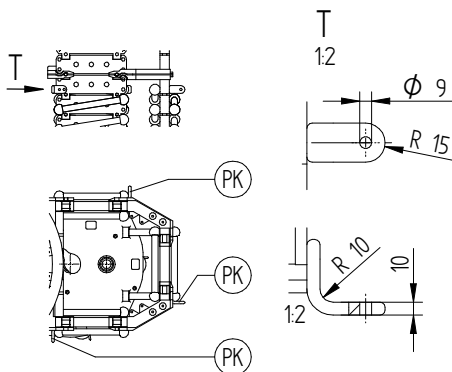


VRL I 2601 VARIANT DISPLAYED

| ON-LOAD TAP-CHANGER VACUTAP®           | NUMBER PHASES | CIRCUIT RESISTORS | Um [kV]      | POTENTIAL NUMBER OF RESISTORS PER PHASES | MAX DIMENSIONS a [mm] |
|----------------------------------------|---------------|-------------------|--------------|------------------------------------------|-----------------------|
| VRL I 1801<br>VRL I 2001<br>VRL I 2401 | I             | SERIES            | 72,5 ... 420 | 3 ... 22                                 | 663                   |
|                                        |               | PARALLEL          |              | 2x3 ... 2x22                             | 894                   |
| VRL I 2601<br>VRL I 3001<br>VRL I 3201 | I             | 3-FOLD            | 72,5 ... 362 | 3x3 ... 3x20                             | 1048                  |
|                                        |               | PARALLEL          |              | 420                                      | 3x3 ... 3x18          |



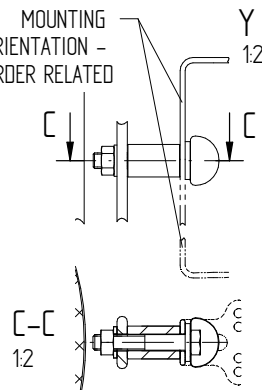
NUMBER AND POSITION OF CONNECTION CONTACT (2)



SCREW CONNECTION BETWEEN POTENTIAL CONNECTION UNIT AND CONNECTOR (2)

THE SCREW CONNECTION (IF AVAILABLE) IS MADE BY THE TRANSFORMER MANUFACTURER.

MOUNTING ORIENTATION - ORDER RELATED



- (M) - DRIVE SIDE OF SELECTOR
  - (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
  - (B) - IS CONNECTED TO POTENTIAL OF (A)
  - (PK) - CONNECTION CONTACT
  - (1) - REFER TO DIMENSION DRAWING
  - (2) - IS ORDER RELATED, REFER TO ORDER RELATED DIMENSION DRAWING
- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

|            |            |                    |
|------------|------------|--------------------|
| DATE       | NAME       | DOCUMENT NO.       |
| 13.12.2021 | RAEDLINGER | SED 8483828 001 00 |
| 13.12.2021 | MENZELS    | SCALE              |
| 14.12.2021 | WANNINGER  | 1:10               |
|            |            | CHANGE NO.         |
|            |            | 1103709            |

DIMENSION IN mm EXCEPT AS NOTED



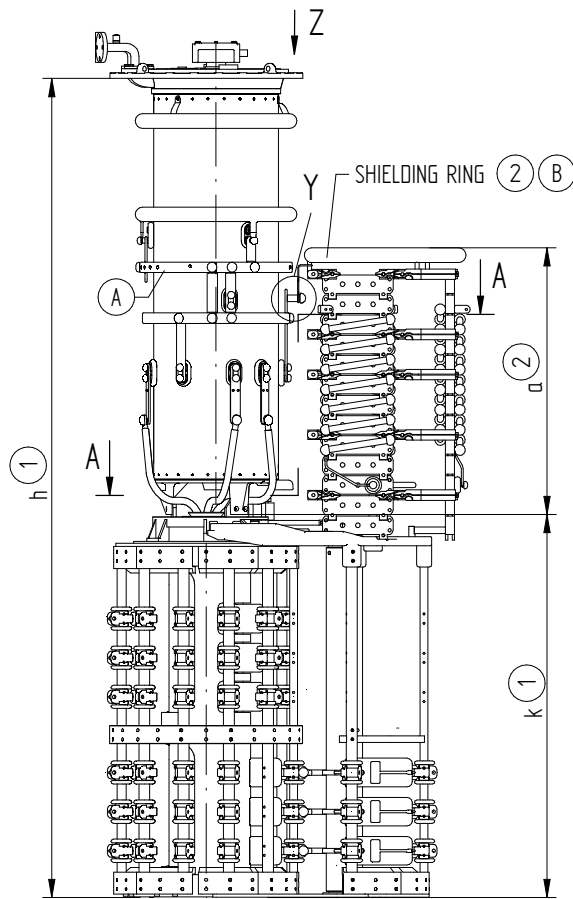
ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL I 1801 ... 3201 - POTENTIAL CONNECTION UNIT WR/GR - RC/RD/RDE  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER 101667660E SHEET 1/1

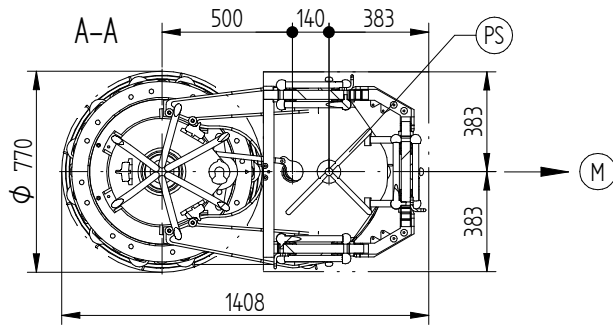
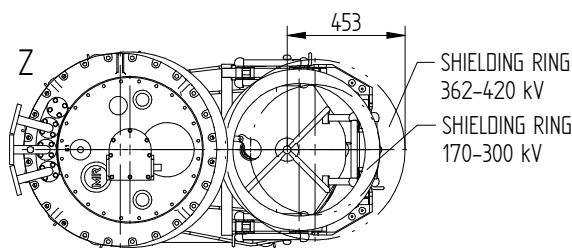
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WITH CHANGE-OVER SELECTOR  
(REVERSING / COARSE CHANGE-OVER SELECTOR) W, G

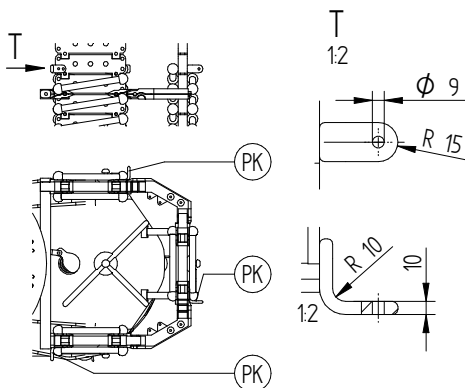


VRL I 2601 VARIANT DISPLAYED

| PRODUCT RANGE POTENTIAL CONNECTION UNIT WITH TIE-IN SWITCH WP/GP                 |               |                   |             |                                          |                        |
|----------------------------------------------------------------------------------|---------------|-------------------|-------------|------------------------------------------|------------------------|
| ON-LOAD TAP-CHANGER VACUTAP®                                                     | NUMBER PHASES | CIRCUIT RESISTORS | Um [kV]     | POTENTIAL NUMBER OF RESISTORS PER PHASES | MAX. DIMENSIONS a [mm] |
| VRL I 1801<br>VRL I 2001<br>VRL I 2401<br>VRL I 2601<br>VRL I 3001<br>VRL I 3201 | 1             | SERIES            | 725 ... 420 | 3 ... 22                                 | 832                    |
|                                                                                  |               | PARALLEL          | 725 ... 362 | 2x3 ... 2x20                             | 1063                   |
|                                                                                  |               |                   | 420         | 2x3 ... 2x16                             | 986                    |
|                                                                                  |               | 3-FOLD PARALLEL   | 725 ... 362 | 3x3 ... 3x14                             | 1063                   |
| 420                                                                              | 3x3 ... 3x12  |                   | 986         |                                          |                        |

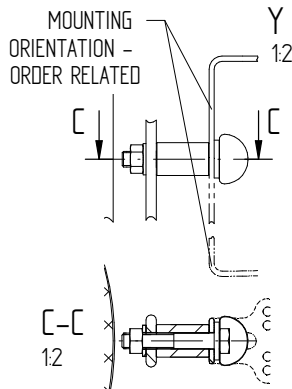


NUMBER AND POSITION OF CONNECTION CONTACT (2)



SCREW CONNECTION BETWEEN POTENTIAL CONNECTION UNIT AND CONNECTOR (2)

THE SCREW CONNECTION (IF AVAILABLE) IS MADE BY THE TRANSFORMER MANUFACTURER.



- (M) - DRIVE SIDE OF SELECTOR
  - (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
  - (B) - IS CONNECTED TO POTENTIAL OF (A)
  - (PK) - CONNECTION CONTACT
  - (PS) - TIE-IN SWITCH
  - (1) - REFER TO DIMENSION DRAWING
  - (2) - IS ORDER RELATED, REFER TO ORDER RELATED DIMENSION DRAWING
- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

|            |            |                    |
|------------|------------|--------------------|
| DATE       | NAME       | DOCUMENT NO.       |
| 13.12.2021 | RAEDLINGER | SED 8495707 001 00 |
| 13.12.2021 | MENZELS    | CHANGE NO.         |
| 14.12.2021 | WANNINGER  | 1103709            |
| DFTR.      | SCALE      | 1:10               |
| CHKO.      |            |                    |
| STAND.     |            |                    |

DIMENSION IN mm EXCEPT AS NOTED



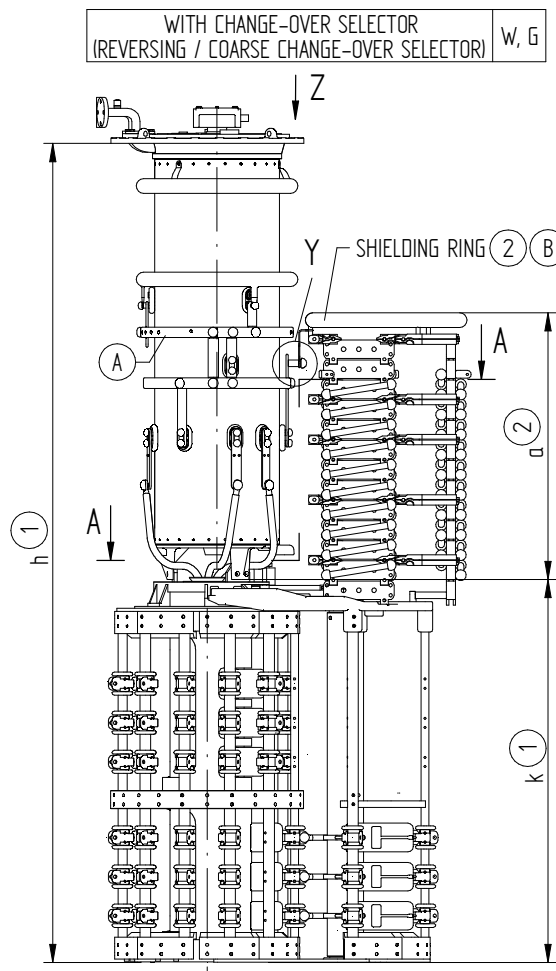
ON-LOAD TAP-CHANGER VACUTAP® VR®  
VRL I 1801 ... 3201 - POTENTIAL CONNECTION UNIT WP/GP - RE  
DIMENSION DRAWING

SERIAL NUMBER

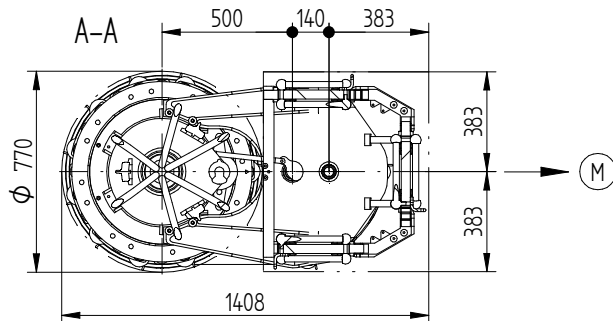
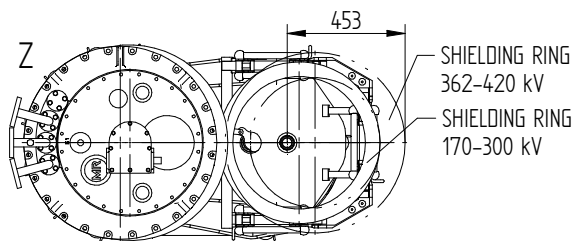
MATERIAL NUMBER 101667680E SHEET 1/1

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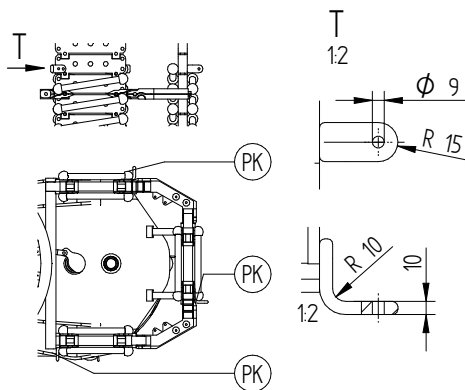
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| DATE       | NAME       | DOCUMENT NO.       |
| 13.12.2021 | RAEDLINGER | SED 8496246 001 00 |
| 13.12.2021 | MENZELS    | CHANGE NO.         |
| 14.12.2021 | WANNINGER  | 1103709            |
| DFTR.      | SCALE      | 1:10               |
| CHKO.      |            |                    |
| STAND.     |            |                    |



VRL I 2601 VARIANT DISPLAYED

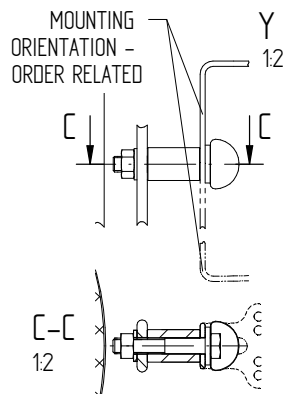


NUMBER AND POSITION OF CONNECTION CONTACT (2)



SCREW CONNECTION BETWEEN POTENTIAL CONNECTION UNIT AND CONNECTOR (2)

THE SCREW CONNECTION (IF AVAILABLE) IS MADE BY THE TRANSFORMER MANUFACTURER.



- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (B) - IS CONNECTED TO POTENTIAL OF (A)
- (PK) - CONNECTION CONTACT
- (1) - REFER TO DIMENSION DRAWING
- (2) - IS ORDER RELATED, REFER TO ORDER RELATED DIMENSION DRAWING
- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

| PRODUCT RANGE POTENTIAL CONNECTION UNIT WITHOUT TIE-IN SWITCH WR/GR |               |                   |              |                                          |                        |  |
|---------------------------------------------------------------------|---------------|-------------------|--------------|------------------------------------------|------------------------|--|
| ON-LOAD TAP-CHANGER VACUTAP®                                        | NUMBER PHASES | CIRCUIT RESISTORS | Um [kV]      | POTENTIAL NUMBER OF RESISTORS PER PHASES | MAX. DIMENSIONS a [mm] |  |
| VRL I 1801                                                          | I             | SERIES            | 72,5 ... 420 | 3 ... 22                                 | 678                    |  |
| VRL I 2001                                                          |               |                   |              | 2x3 ... 2x22                             | 968                    |  |
| VRL I 2401                                                          |               | 3-FOLD PARALLEL   | 72,5 ... 362 | 3x3 ... 3x20                             | 1063                   |  |
| VRL I 2601                                                          |               |                   |              | 3x3 ... 3x18                             | 986                    |  |
| VRL I 3001                                                          |               |                   |              |                                          |                        |  |
| VRL I 3201                                                          |               |                   |              |                                          |                        |  |

DIMENSION IN mm EXCEPT AS NOTED



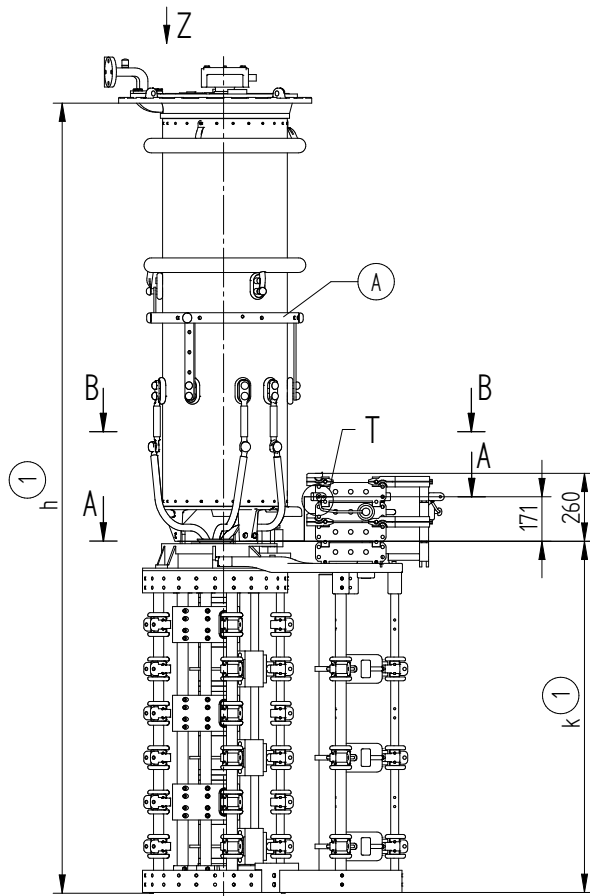
ON-LOAD TAP-CHANGER VACUTAP® VR®  
 VRL I 1801 ... 3201 - POTENTIAL CONNECTION UNIT WR/GR - RE  
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER 101667690E SHEET 1/1

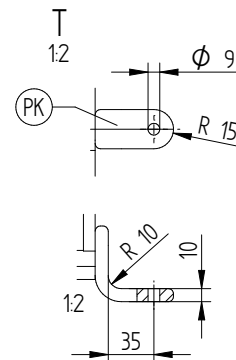
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WITH CHANGE-OVER SELECTOR  
(REVERSING / COARSE CHANGE-OVER SELECTOR) W, G

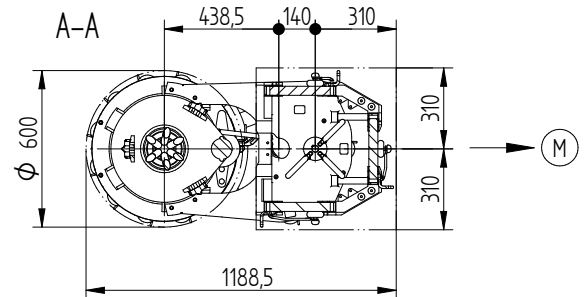
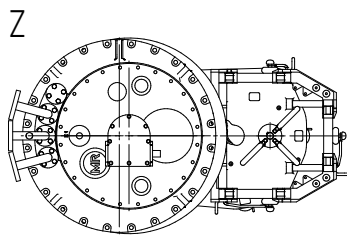


- (M) - DRIVE SIDE OF SELECTOR
  - (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
  - (PK) - CONNECTION CONTACT
  - (PS) - TIE-IN SWITCH
  - (1) - REFER TO DIMENSION DRAWING
- THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

POSITION OF CONNECTION CONTACT - ORDER RELATED

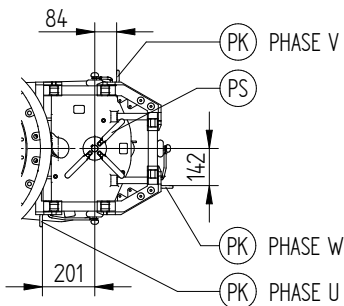


VRMIIVY VARIANT DISPLAYED

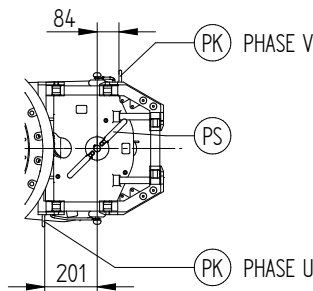


B-B

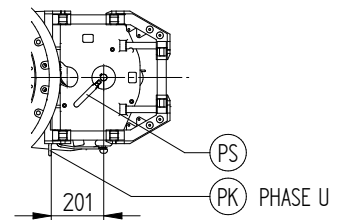
3-PHASE DESIGN



2-PHASE DESIGN



1-PHASE DESIGN



|        |            |              |                    |
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| DFTR.  | 19.10.2016 | NAME         | CTETPRAKTIK2       |
| CHKD.  | 20.10.2016 | HILFNER      | 1077548            |
| STAND. |            | PRODASTSCHUK | 1:10               |

DIMENSION  
IN mm  
EXCEPT AS  
NOTED



SELECTOR SIZE RC/RD/RDE  
TIE-IN SWITCH WS/GS  
DIMENSION DRAWING

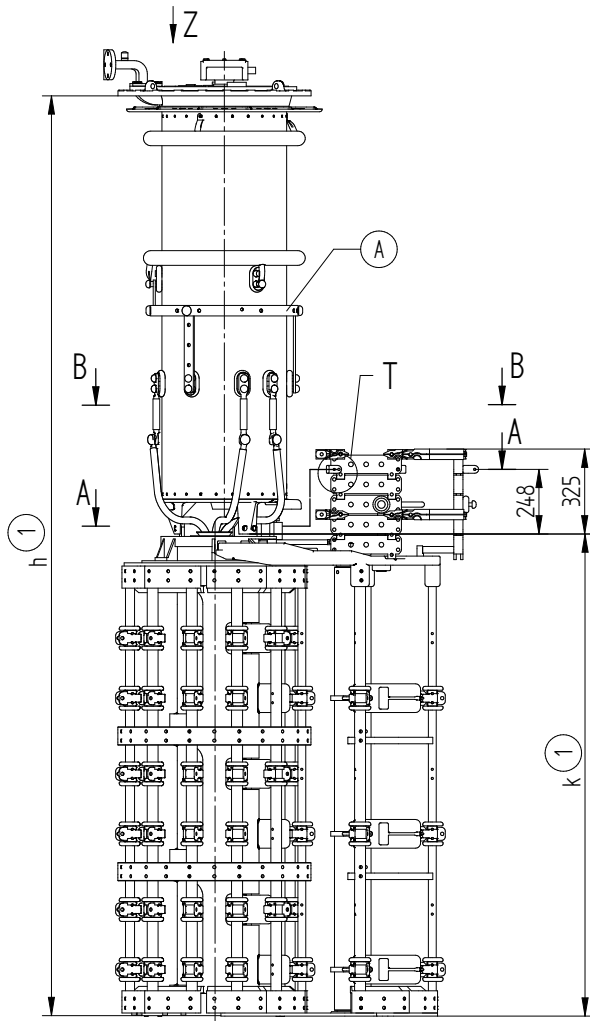
SERIAL NUMBER

MATERIAL NUMBER  
100177251E

SHEET  
1/1

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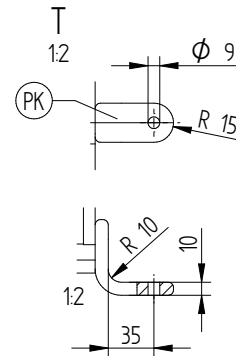
WITH CHANGE-OVER SELECTOR  
(REVERSING / COARSE CHANGE-OVER SELECTOR) W, G



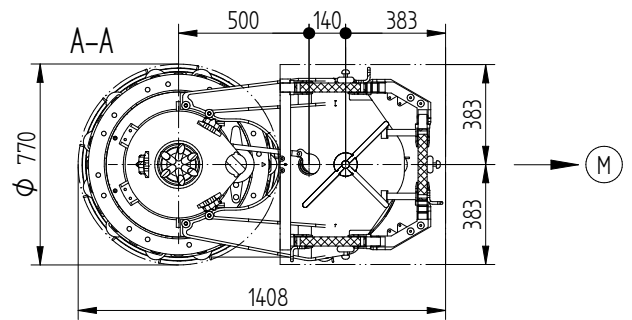
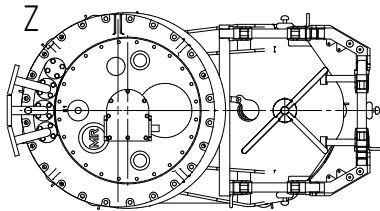
- (M) - DRIVE SIDE OF SELECTOR
- (A) - ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL
- (PK) - CONNECTION CONTACT
- (PS) - TIE-IN SWITCH
- (1) - REFER TO DIMENSION DRAWING

-THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

POSITION OF CONNECTION CONTACT - ORDER RELATED



VRMIIII VARIANT DISPLAYED

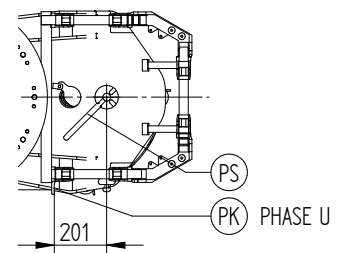
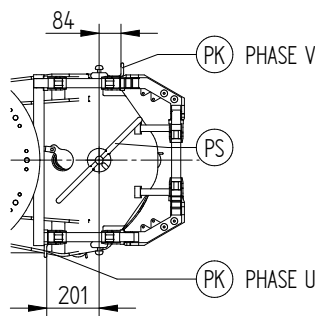
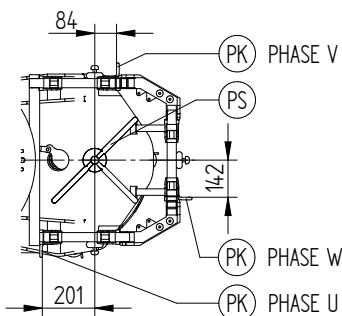


B-B

3-PHASE DESIGN

2-PHASE DESIGN

1-PHASE DESIGN



DIMENSION IN mm EXCEPT AS NOTED



SELECTOR SIZE RE/RF/RES  
TIE-IN SWITCH WS/GS  
DIMENSION DRAWING

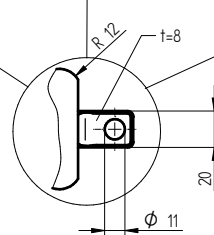
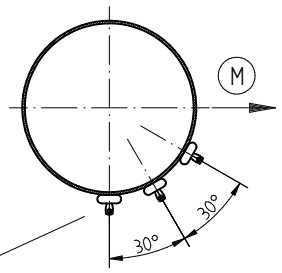
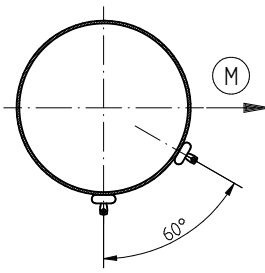
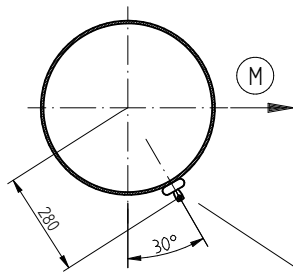
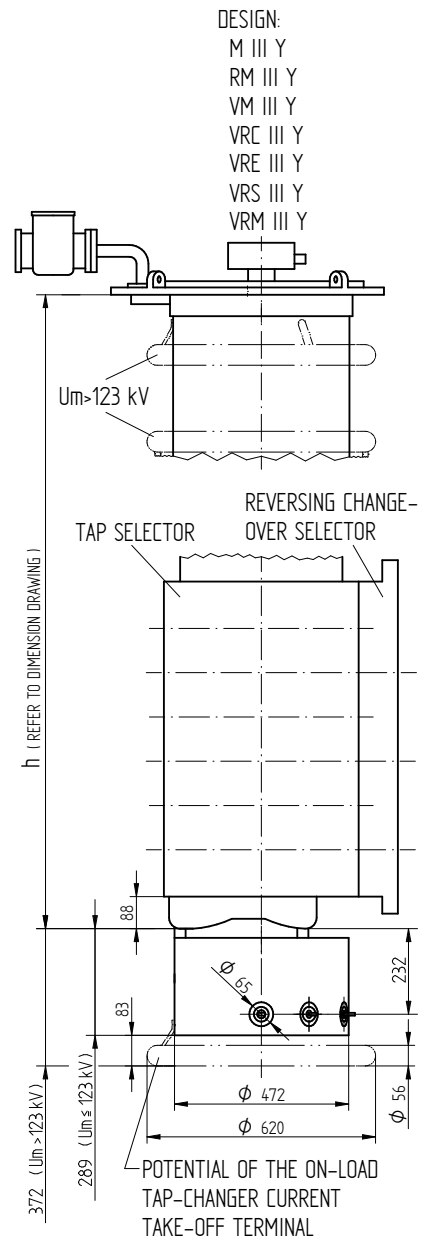
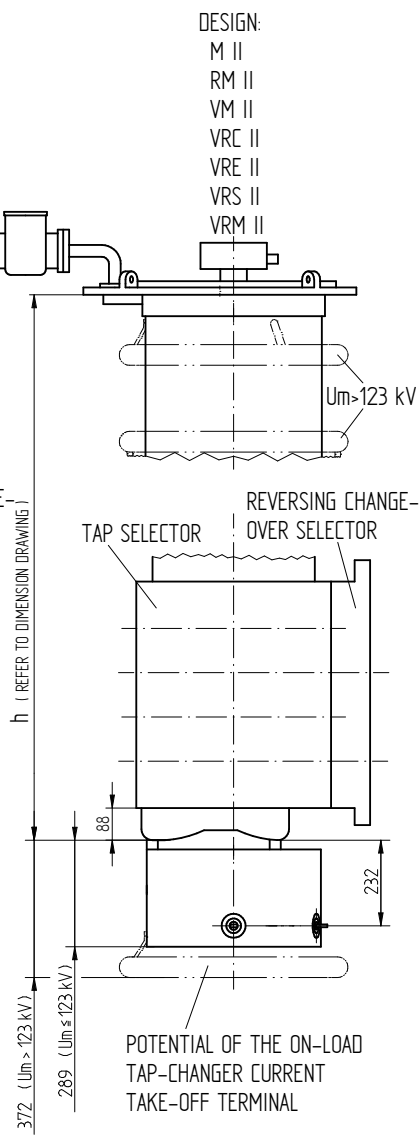
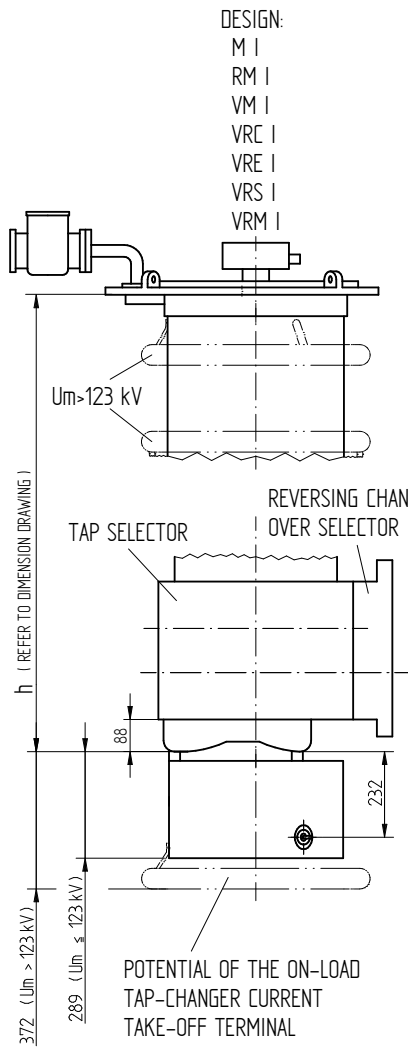
SERIAL NUMBER

MATERIAL NUMBER 100175331E SHEET 1/1

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| DATE         | 18.10.2016         |
| CHKD.        | 19.10.2016         |
| STAND.       | 20.10.2016         |
| CHANGE NO.   | 1077548            |
| SCALE        | 1:10               |
| PRODASTSCHUK |                    |

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| CHKD.  | 20.10.2016 | CHANGE NO.   | HILTNER 1077668    |
| STAND. |            | SCALE        | 1:10               |
|        |            | PRODASTSCHUK |                    |



CONNECTION FOR EXTERNAL TIE-IN RESISTOR

(M) DRIVE SIDE OF SELECTOR

CONNECTING FROM TIE-IN SWITCH TO ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL IS CARRIED OUT BY MR THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

NOT APPLICABLE TO VM I 301, VM II 302 AND VM III 300 Y

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



ON-LOAD TAP-CHANGER OILTAP®M, RM / VACUTAP® VM, VR  
 M/RM/VM/VRC/VRE/VRS/VRM - REVERSING CHANGE-OVER SEL. - SIZE B/C/D/DE  
 POTENTIAL CONNECTION UNIT WITH TIE-IN SWITCH WITHOUT TIE-IN RESISTORS

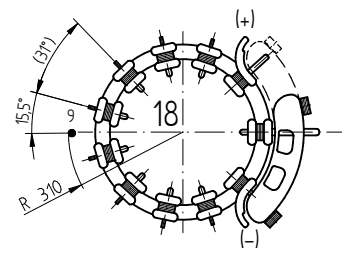
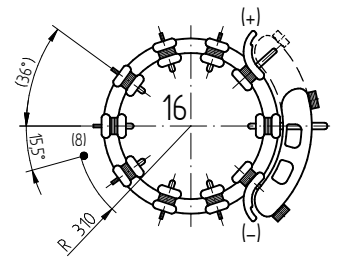
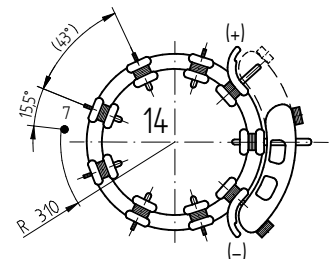
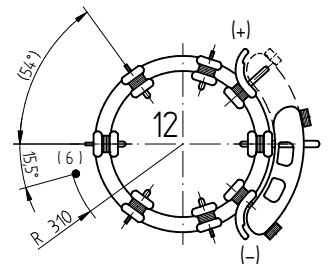
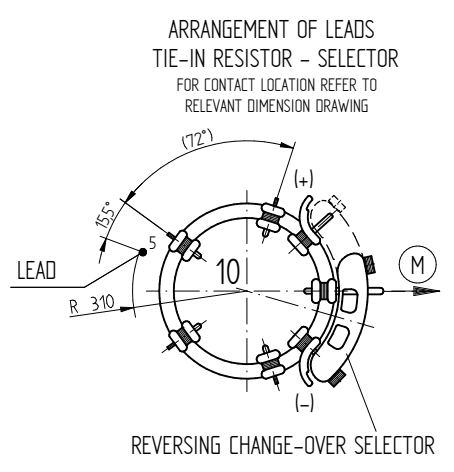
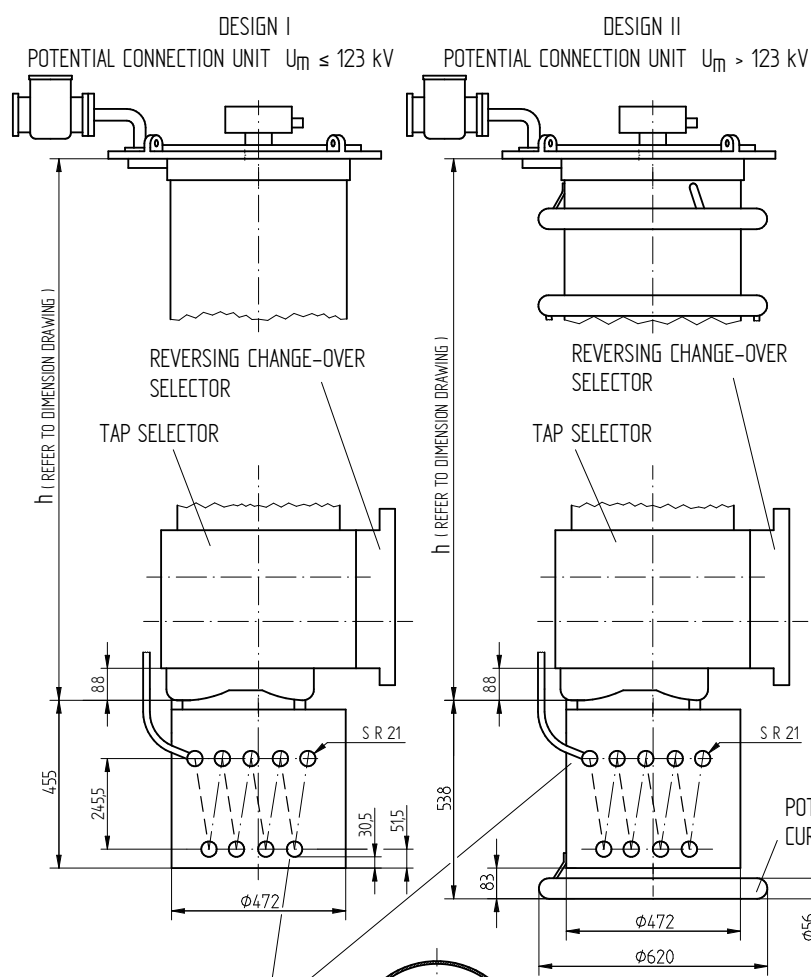
SERIAL NUMBER

MATERIAL NUMBER  
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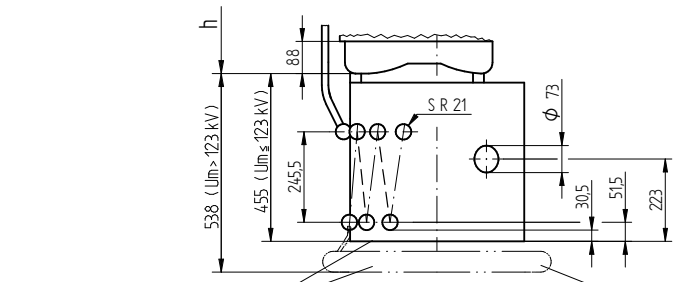
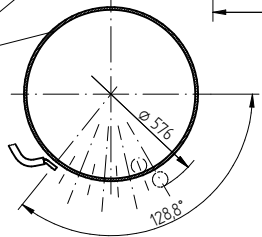
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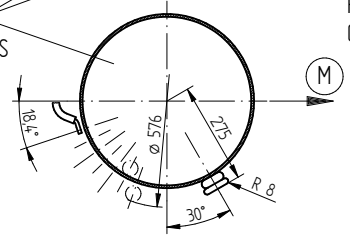
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| CHKD.  | 20.10.2016 | CHANGE NO.   | HILTNER            |
| STAND. | 1077668    | SCALE        | 1:10               |
|        |            |              | PRODASTSCHUK       |



WITHOUT TIE-IN SWITCH  
 FOR MAX. 8 RESISTOR ELEMENTS  
 (AS SHOWN)



WITH TIE-IN SWITCH  
 FOR MAX. 6 RESISTOR ELEMENTS  
 (AS SHOWN)



POTENTIAL OF THE MIDDLE OF THE TAP WINDING

POTENTIAL OF THE ON-LOAD TAP-CHANGER  
 CURRENT TAKE-OFF TERMINAL

(M) DRIVE SIDE OF SELECTOR

THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES  
 CONNECTIONS FROM THE TIE-IN RESISTOR TO THE SELECTOR AND TO THE ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL ARE CARRIED OUT BY MR

NOT APPLICABLE TO VM I 301

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED

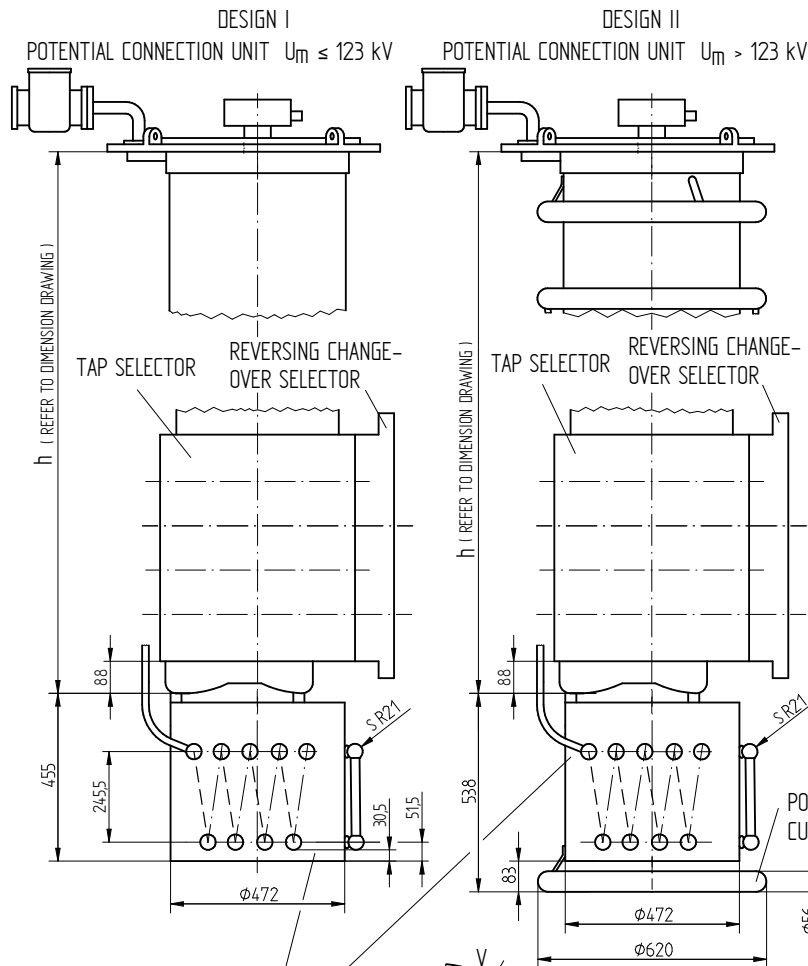


ON-LOAD TAP-CHANGER OILTAP®M, RM / VACUTAP® VM, VR  
 M/RM/VM/VRC/VRE/VRS/VRM I - REVERS. CHANGE-OVER SEL. - SIZE B/C/D/DE  
 TIE-IN RESISTORS WITH/WITHOUT TIE-IN SWITCH

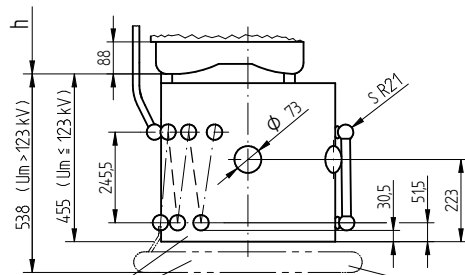
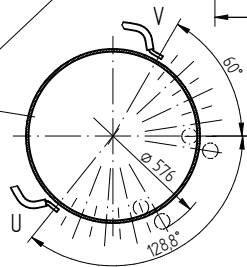
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| SERIAL NUMBER   |       |
| MATERIAL NUMBER | SHEET |
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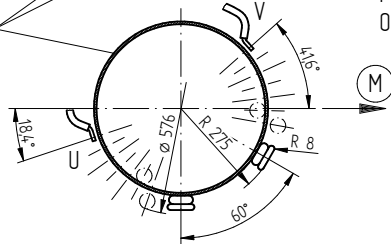
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|        |            | SCALE        | 1:10               |
|        |            |              | 1077668            |
|        |            |              | PRODASTSCHUK       |



WITHOUT TIE-IN SWITCH  
 FOR MAX. 8 RESISTOR  
 ELEMENTS PER PHASE  
 ( AS SHOWN )



WITH TIE-IN SWITCH  
 FOR MAX. 6 RESISTOR  
 ELEMENTS PER PHASE  
 ( AS SHOWN )

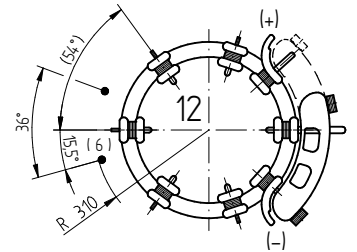
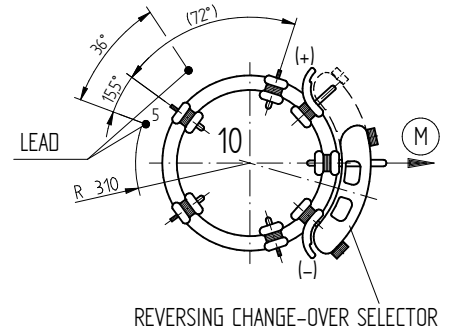


(M) DRIVE SIDE OF SELECTOR

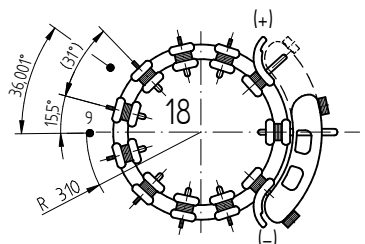
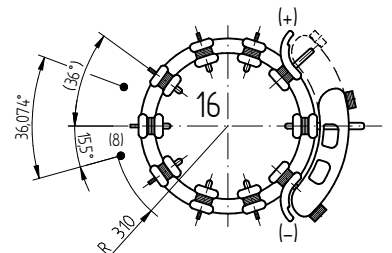
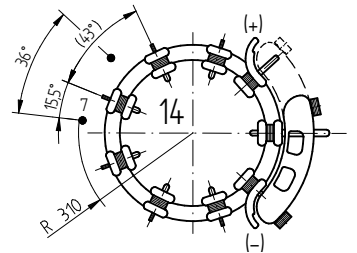
THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES  
 CONNECTIONS FROM THE TIE-IN RESISTOR TO THE SELECTOR AND TO THE ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL ARE CARRIED OUT BY MR

NOT APPLICABLE TO VM II 302

ARRANGEMENT OF LEADS  
 TIE-IN RESISTOR - PHASE  
 FOR CONTACT LOCATION REFER TO  
 RELEVANT DIMENSION DRAWING



POTENTIAL OF THE ON-LOAD TAP-CHANGER  
 CURRENT TAKE-OFF TERMINAL



DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



ON-LOAD TAP-CHANGER OILTAP®M, RM / VACUTAP® VM, VR  
 M/RM/VM/VRC/VRE/VRS/VRM II- REVERS. CHANGE-OVER SEL- SIZE B/C/D/DE  
 TIE-IN RESISTORS WITH/WITHOUT TIE-IN SWITCH

SERIAL NUMBER

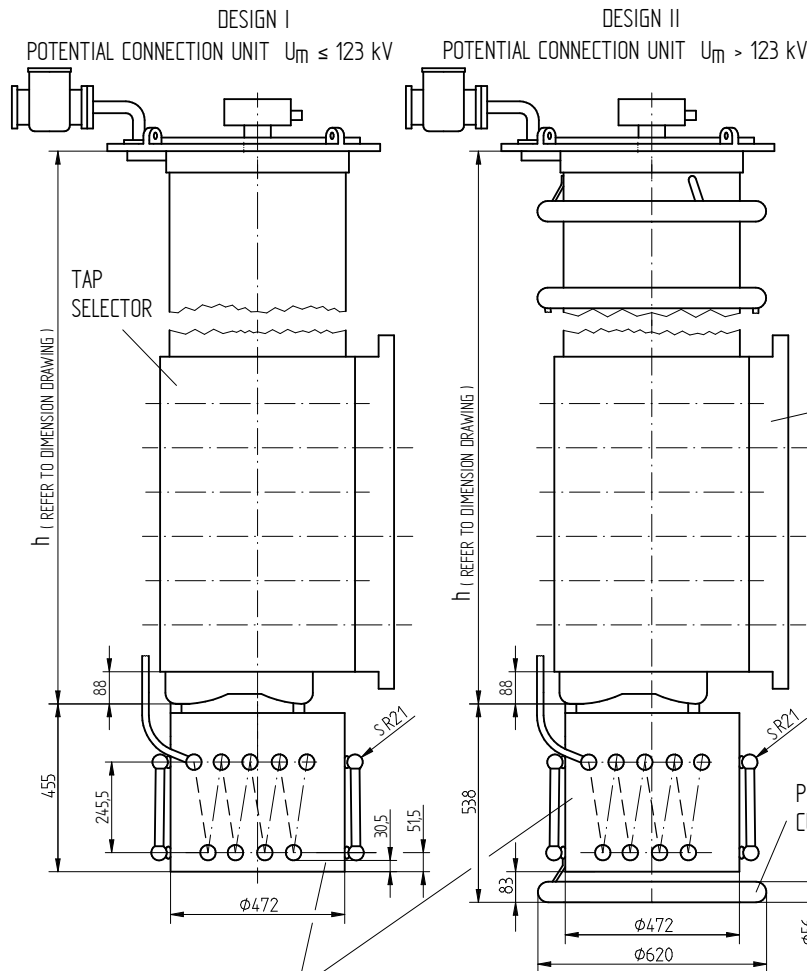
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SHEET  
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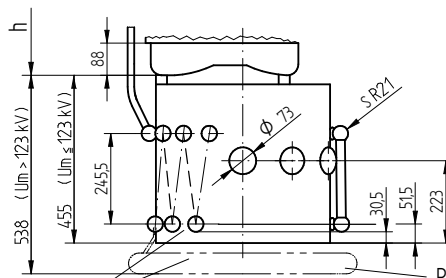
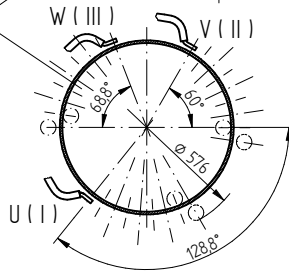


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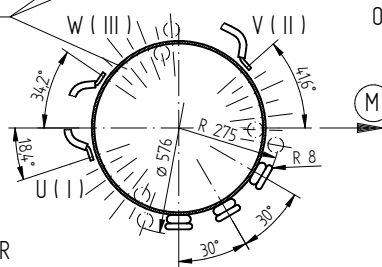
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| CHKO. 16.07.2018  | CHANGE NO.         | WILHELM      |       |
| STAND. 16.07.2018 | 1086956            | PRODASTSCHUK |       |



WITHOUT TIE-IN SWITCH  
 FOR MAX. 8 RESISTOR  
 ELEMENTS PER PHASE  
 (AS SHOWN)



WITH TIE-IN SWITCH  
 FOR MAX. 6 RESISTOR  
 ELEMENTS PER PHASE  
 (AS SHOWN)

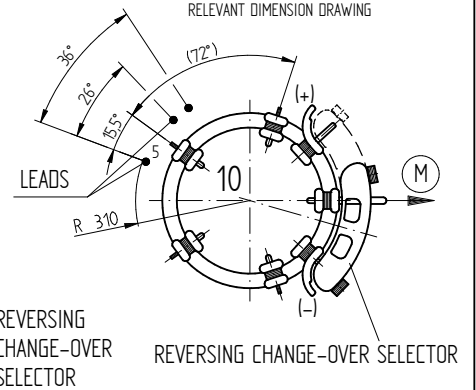


(M) DRIVE SIDE OF SELECTOR

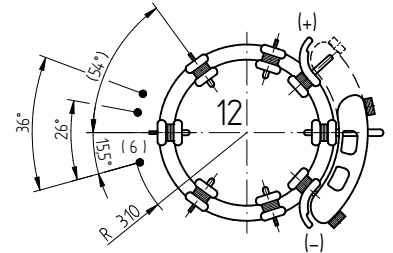
THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES  
 CONNECTIONS FROM THE TIE-IN RESISTOR TO THE SELECTOR AND TO THE ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL ARE CARRIED OUT BY MR

NOT APPLICABLE TO VMS III 400 Y - B

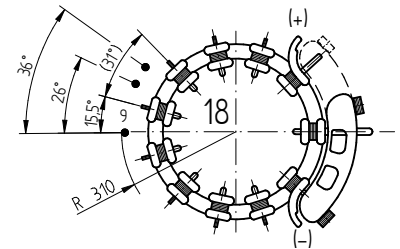
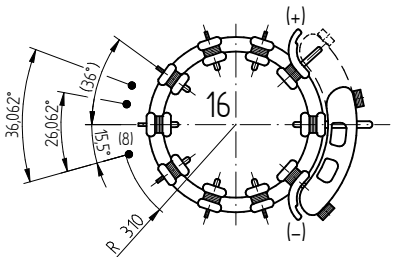
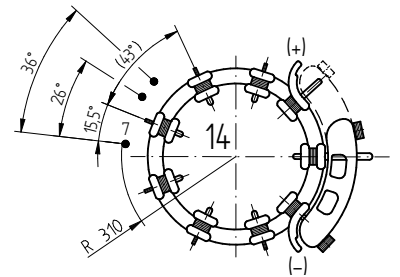
ARRANGEMENT OF LEADS  
 TIE-IN RESISTOR - PHASE  
 FOR CONTACT LOCATION REFER TO  
 RELEVANT DIMENSION DRAWING



REVERSING  
 CHANGE-OVER  
 SELECTOR



POTENTIAL OF THE ON-LOAD TAP-CHANGER  
 CURRENT TAKE-OFF TERMINAL



POTENTIAL OF THE MIDDLE  
 OF THE TAP WINDING

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



OLTC OILTAP® M, RM / VACUTAP® VM®, VMS®-C, VR®  
 M/RM/VM/VMS/VRC/VRE/VRS/VRM III Y - REV. COS - M-SEL. SIZE B/C/D/DE  
 TIE-IN RESISTORS WITH / WITHOUT TIE-IN SWITCH

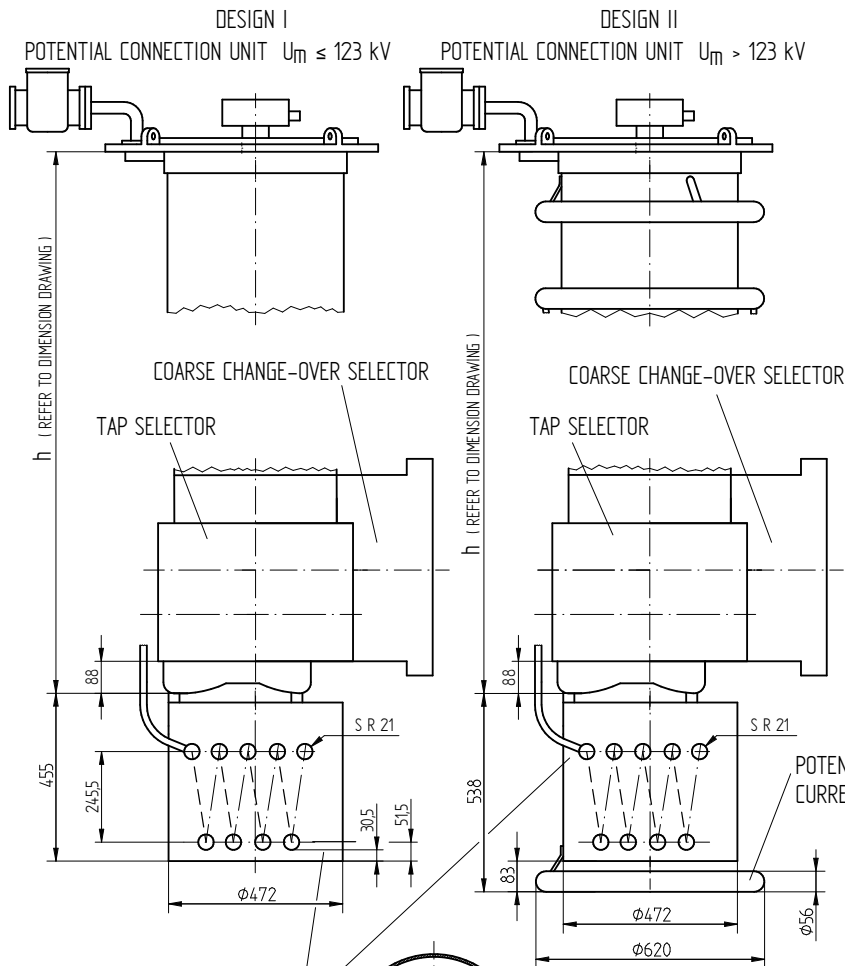
SERIAL NUMBER

MATERIAL NUMBER  
 8986926E

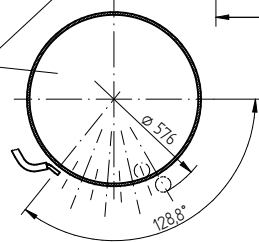
SHEET  
 1/1

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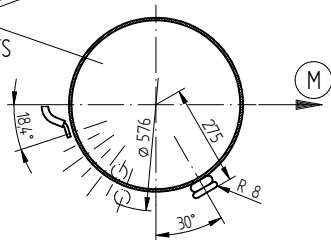
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|--------|------------|--------------|--------------------|
| DATE   | 18.10.2016 | DOCUMENT NO. | SED 3378775 000 03 |
| DFTR.  | 19.10.2016 | NAME         | CTETPRAKTIK2       |
| CHKD.  | 20.10.2016 | CHANGE NO.   | HILTNER            |
| STAND. |            | SCALE        | 1:10               |
|        |            | PRODASTSCHUK | 1077668            |



WITHOUT TIE-IN SWITCH  
FOR MAX. 8 RESISTOR ELEMENTS  
( AS SHOWN )



WITH TIE-IN SWITCH  
FOR MAX. 6 RESISTOR ELEMENTS  
( AS SHOWN )

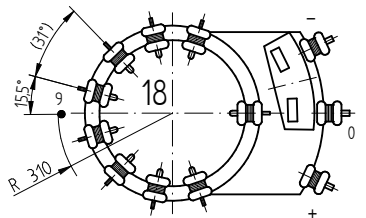
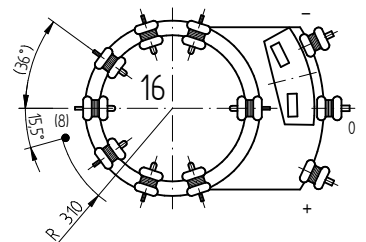
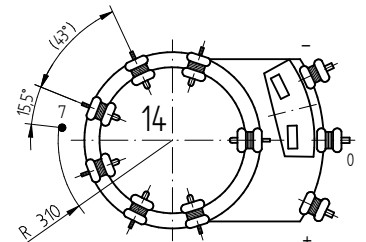
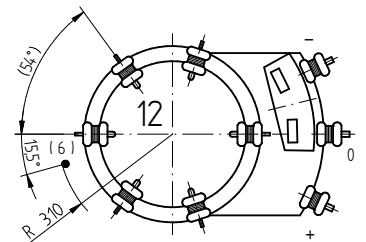
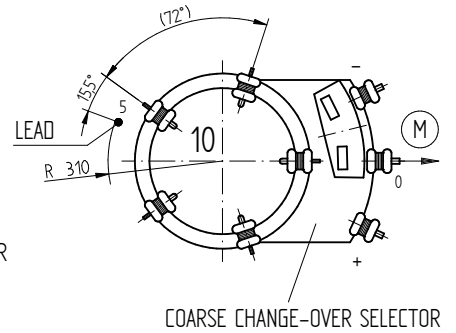


(M) DRIVE SIDE OF SELECTOR

THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES  
CONNECTIONS FROM THE TIE-IN RESISTOR TO THE SELECTOR AND TO THE ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL ARE CARRIED OUT BY MR

NOT APPLICABLE TO VM I 301

ARRANGEMENT OF LEADS  
TIE-IN RESISTOR - SELECTOR  
FOR CONTACT LOCATION REFER TO  
RELEVANT DIMENSION DRAWING



DIMENSION  
IN mm  
EXCEPT AS  
NOTED



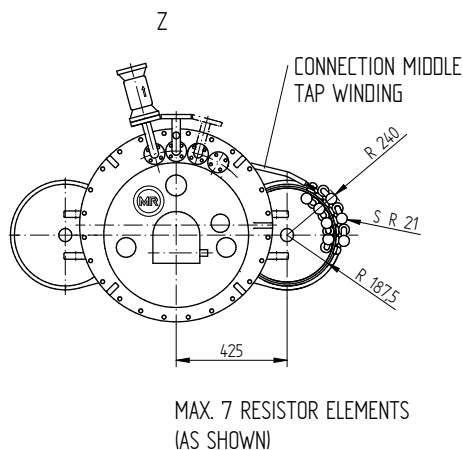
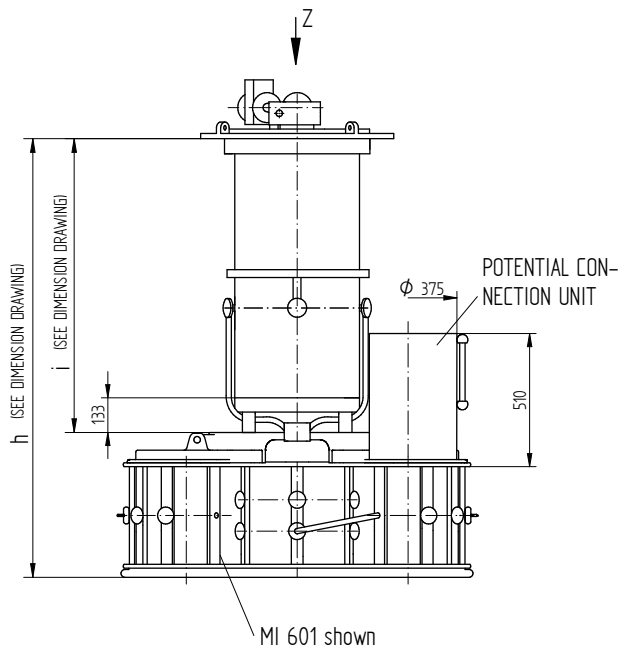
ON-LOAD TAP-CHANGER OILTAP®M, RM / VACUTAP® VM, VR  
M/RM/VM/VRC/VRE/VRS/VRM I-COARSE CHANGE-OVER SELEC.-SIZE B/C/D/DE  
TIE-IN RESISTORS WITH/WITHOUT TIE-IN SWITCH

SERIAL NUMBER

MATERIAL NUMBER  
7882662E

SHEET  
1/1

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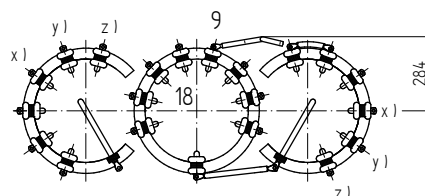
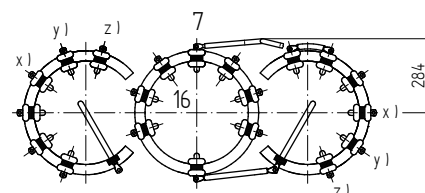
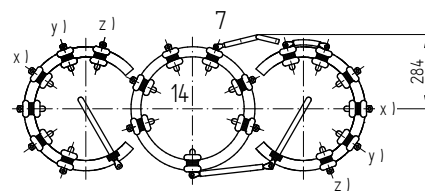
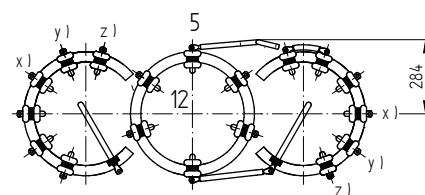
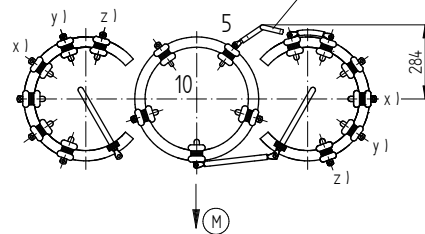
MAX. 7 RESISTOR ELEMENTS  
(AS SHOWN)

ARRANGEMENT OF SELECTOR CONTACTS,  
 2-5 COARSE TAP CONNECTIONS

(PLAN VIEW)

- x ) FOR 3 COARSE TAP CONNECTIONS
- x ) AND y ) FOR 4 COARSE TAP CONNECTIONS
- x ), y ) AND z ) FOR 5 COARSE TAP CONNECTIONS

CONNECTION MIDDLE TAP WINDING



FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

(M) DRIVE SIDE OF SELECTOR

|              |                |
|--------------|----------------|
| DOCUMENT NO. | 1062821 000 07 |
| NAME         | RAEDLINGER     |
| DATE         | 19.04.2018     |
| SCALE        | 1:10           |
| CHANGE NO.   | 1087395        |
| NAME         | HAUER          |
| DATE         | 25.04.2018     |
| NAME         | PRODASTSCHUK   |
| DATE         | 25.04.2018     |

DIMENSION  
 IN mm  
 EXCEPT AS  
 NOTED



ON-LOAD TAP-CHANGER OILTAP® M I AND VACUTAP® VM I, VRC I, VRS I, VRM I  
 WITH MULTIPLE COARSE CHANGE-OVER SELECTOR  
 MOUNTING OF TIE-IN RESISTORS - SELECTOR SIZE B/C/D

SERIAL NUMBER

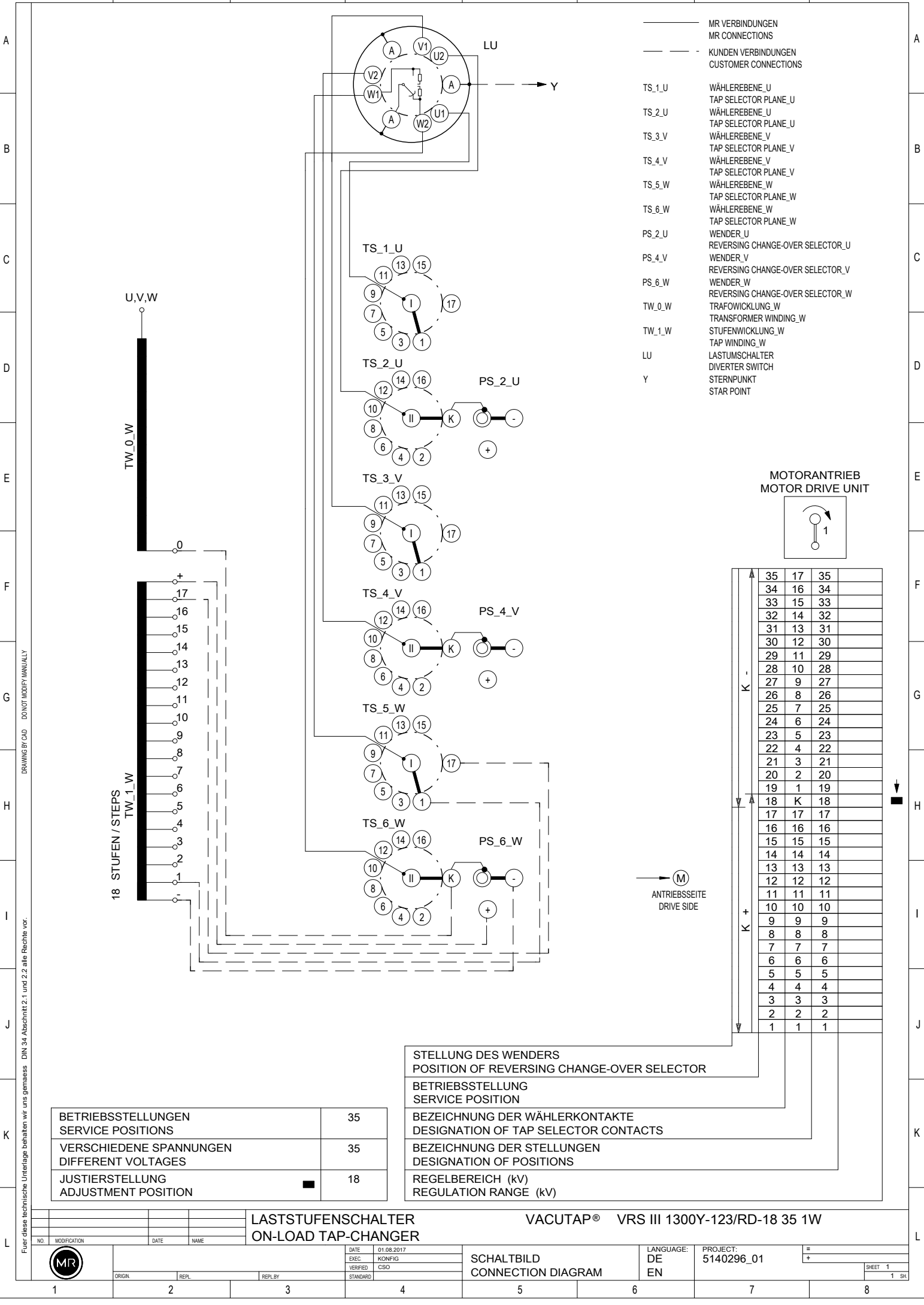
MATERIAL NUMBER  
 7197337E

SHEET  
 1/1

## 4.7 Connection diagrams (examples)

The connection diagrams contained herein are just examples.

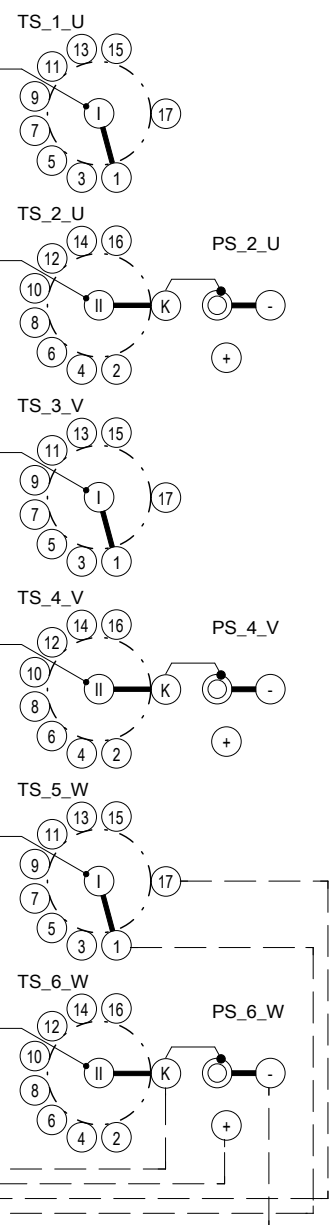
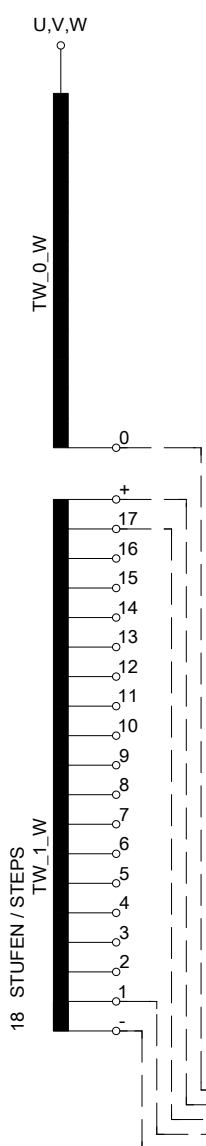
The order-specific connection diagram is enclosed with the delivery.



- MR VERBINDUNGEN  
MR CONNECTIONS
- - - KUNDEN VERBINDUNGEN  
CUSTOMER CONNECTIONS
- TS\_1\_U WÄHLEREBENE\_U  
TAP SELECTOR PLANE\_U
- TS\_2\_U WÄHLEREBENE\_U  
TAP SELECTOR PLANE\_U
- TS\_3\_V WÄHLEREBENE\_V  
TAP SELECTOR PLANE\_V
- TS\_4\_V WÄHLEREBENE\_V  
TAP SELECTOR PLANE\_V
- TS\_5\_W WÄHLEREBENE\_W  
TAP SELECTOR PLANE\_W
- TS\_6\_W WÄHLEREBENE\_W  
TAP SELECTOR PLANE\_W
- PS\_2\_U WENDER\_U  
REVERSING CHANGE-OVER SELECTOR\_U
- PS\_4\_V WENDER\_V  
REVERSING CHANGE-OVER SELECTOR\_V
- PS\_6\_W WENDER\_W  
REVERSING CHANGE-OVER SELECTOR\_W
- TW\_0\_W TRAFOWICKLUNG\_W  
TRANSFORMER WINDING\_W
- TW\_1\_W STUFENWICKLUNG\_W  
TAP WINDING\_W
- LU LASTUMSCHALTER  
DIVERTER SWITCH
- Y STERNPUNKT  
STAR POINT



|    |    |    |
|----|----|----|
| 35 | 17 | 35 |
| 34 | 16 | 34 |
| 33 | 15 | 33 |
| 32 | 14 | 32 |
| 31 | 13 | 31 |
| 30 | 12 | 30 |
| 29 | 11 | 29 |
| 28 | 10 | 28 |
| 27 | 9  | 27 |
| 26 | 8  | 26 |
| 25 | 7  | 25 |
| 24 | 6  | 24 |
| 23 | 5  | 23 |
| 22 | 4  | 22 |
| 21 | 3  | 21 |
| 20 | 2  | 20 |
| 19 | 1  | 19 |
| 18 | K  | 18 |
| 17 | 17 | 17 |
| 16 | 16 | 16 |
| 15 | 15 | 15 |
| 14 | 14 | 14 |
| 13 | 13 | 13 |
| 12 | 12 | 12 |
| 11 | 11 | 11 |
| 10 | 10 | 10 |
| 9  | 9  | 9  |
| 8  | 8  | 8  |
| 7  | 7  | 7  |
| 6  | 6  | 6  |
| 5  | 5  | 5  |
| 4  | 4  | 4  |
| 3  | 3  | 3  |
| 2  | 2  | 2  |
| 1  | 1  | 1  |



➔ (M)  
ANTRIEBSSEITE  
DRIVE SIDE

|                                                                        |
|------------------------------------------------------------------------|
| STELLUNG DES WENDERS<br>POSITION OF REVERSING CHANGE-OVER SELECTOR     |
| BETRIEBSSTELLUNG<br>SERVICE POSITION                                   |
| BEZEICHNUNG DER WÄHLERKONTAKTE<br>DESIGNATION OF TAP SELECTOR CONTACTS |
| BEZEICHNUNG DER STELLUNGEN<br>DESIGNATION OF POSITIONS                 |
| REGELBEREICH (kV)<br>REGULATION RANGE (kV)                             |

|                                               |    |
|-----------------------------------------------|----|
| BETRIEBSSTELLUNGEN<br>SERVICE POSITIONS       | 35 |
| VERSCHIEDENE SPANNUNGEN<br>DIFFERENT VOLTAGES | 35 |
| JUSTIERSTELLUNG<br>ADJUSTMENT POSITION        | 18 |

LASTSTUFENSCHALTER VACUTAP® VRS III 1300Y-123/RD-18 35 1W  
ON-LOAD TAP-CHANGER

|     |              |      |      |
|-----|--------------|------|------|
| NO. | MODIFICATION | DATE | NAME |
|     |              |      |      |



|        |       |         |
|--------|-------|---------|
| ORIGIN | REPL. | REPL BY |
|        |       |         |

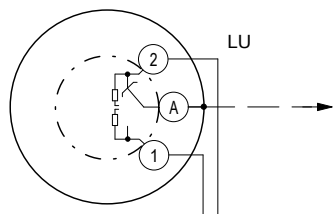
|          |            |
|----------|------------|
| DATE     | 01.08.2017 |
| ERIC     | KONFIG     |
| VERIFIED | CSO        |
| STANDARD |            |

SCHALTBILD  
CONNECTION DIAGRAM

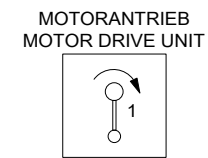
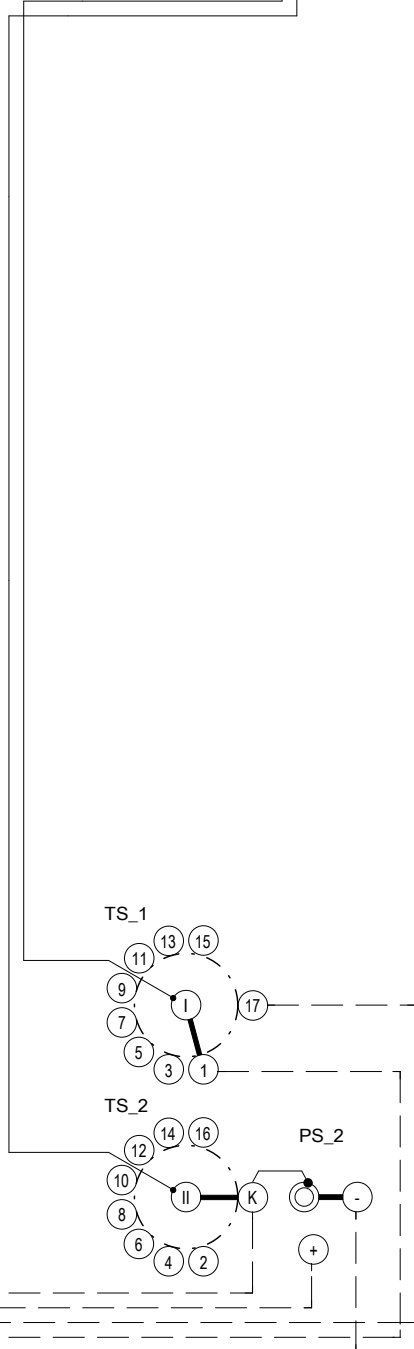
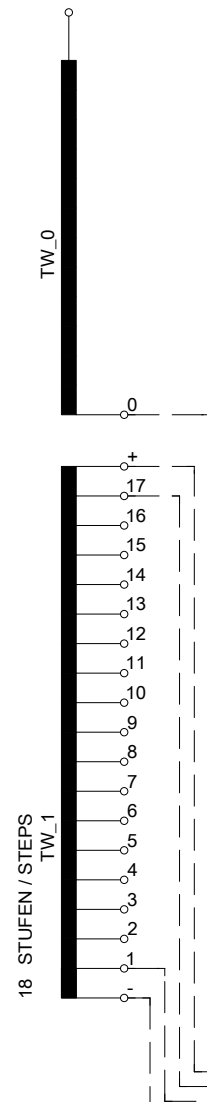
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| LANGUAGE: | DE         |
| EN        |            |
| PROJECT:  | 5140296_01 |

FÜR DIESE TECHNISCHE UNTERLAGE BEHALTEN WIR UNS GEMÄSS DIN 34 ABSCHNITT 2.1 UND 2.2 ALLE RECHTE VOR.  
 DRAWING BY CAD DO NOT MODIFY MANUALLY





- MR VERBINDUNGEN  
MR CONNECTIONS
- - - KUNDEN VERBINDUNGEN  
CUSTOMER CONNECTIONS
- TS\_1 WÄHLEREBENE  
TAP SELECTOR PLANE
- TS\_2 WÄHLEREBENE  
TAP SELECTOR PLANE
- PS\_2 WENDER  
REVERSING CHANGE-OVER SELECTOR
- TW\_0 TRAFOWICKLUNG  
TRANSFORMER WINDING
- TW\_1 STUFENWICKLUNG  
TAP WINDING
- LU LASTUMSCHALTER  
DIVERTER SWITCH



|    |    |    |
|----|----|----|
| 35 | 17 | 35 |
| 34 | 16 | 34 |
| 33 | 15 | 33 |
| 32 | 14 | 32 |
| 31 | 13 | 31 |
| 30 | 12 | 30 |
| 29 | 11 | 29 |
| 28 | 10 | 28 |
| 27 | 9  | 27 |
| 26 | 8  | 26 |
| 25 | 7  | 25 |
| 24 | 6  | 24 |
| 23 | 5  | 23 |
| 22 | 4  | 22 |
| 21 | 3  | 21 |
| 20 | 2  | 20 |
| 19 | 1  | 19 |
| 18 | K  | 18 |
| 17 | 17 | 17 |
| 16 | 16 | 16 |
| 15 | 15 | 15 |
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| 13 | 13 | 13 |
| 12 | 12 | 12 |
| 11 | 11 | 11 |
| 10 | 10 | 10 |
| 9  | 9  | 9  |
| 8  | 8  | 8  |
| 7  | 7  | 7  |
| 6  | 6  | 6  |
| 5  | 5  | 5  |
| 4  | 4  | 4  |
| 3  | 3  | 3  |
| 2  | 2  | 2  |
| 1  | 1  | 1  |

Ⓜ ANTRIEBSSEITE  
DRIVE SIDE

STELLUNG DES WENDERS  
POSITION OF REVERSING CHANGE-OVER SELECTOR

BETRIEBSSTELLUNG  
SERVICE POSITION

BEZEICHNUNG DER WÄHLERKONTAKTE  
DESIGNATION OF TAP SELECTOR CONTACTS

BEZEICHNUNG DER STELLUNGEN  
DESIGNATION OF POSITIONS

REGELBEREICH (kV)  
REGULATION RANGE (kV)

|                                               |    |
|-----------------------------------------------|----|
| BETRIEBSSTELLUNGEN<br>SERVICE POSITIONS       | 35 |
| VERSCHIEDENE SPANNUNGEN<br>DIFFERENT VOLTAGES | 35 |
| JUSTIERSTELLUNG<br>ADJUSTMENT POSITION        | 18 |

LASTSTUFENSCHALTER ON-LOAD TAP-CHANGER VACUTAP® VRS I 1301-123/RD-18 35 1W

|     |              |      |      |
|-----|--------------|------|------|
| NO. | MODIFICATION | DATE | NAME |
|     |              |      |      |

|          |            |
|----------|------------|
| DATE     | 01.08.2017 |
| ERIC     | KONFIG     |
| VERIFIED | CSO        |
| STANDARD |            |

SCHALTBILD  
CONNECTION DIAGRAM

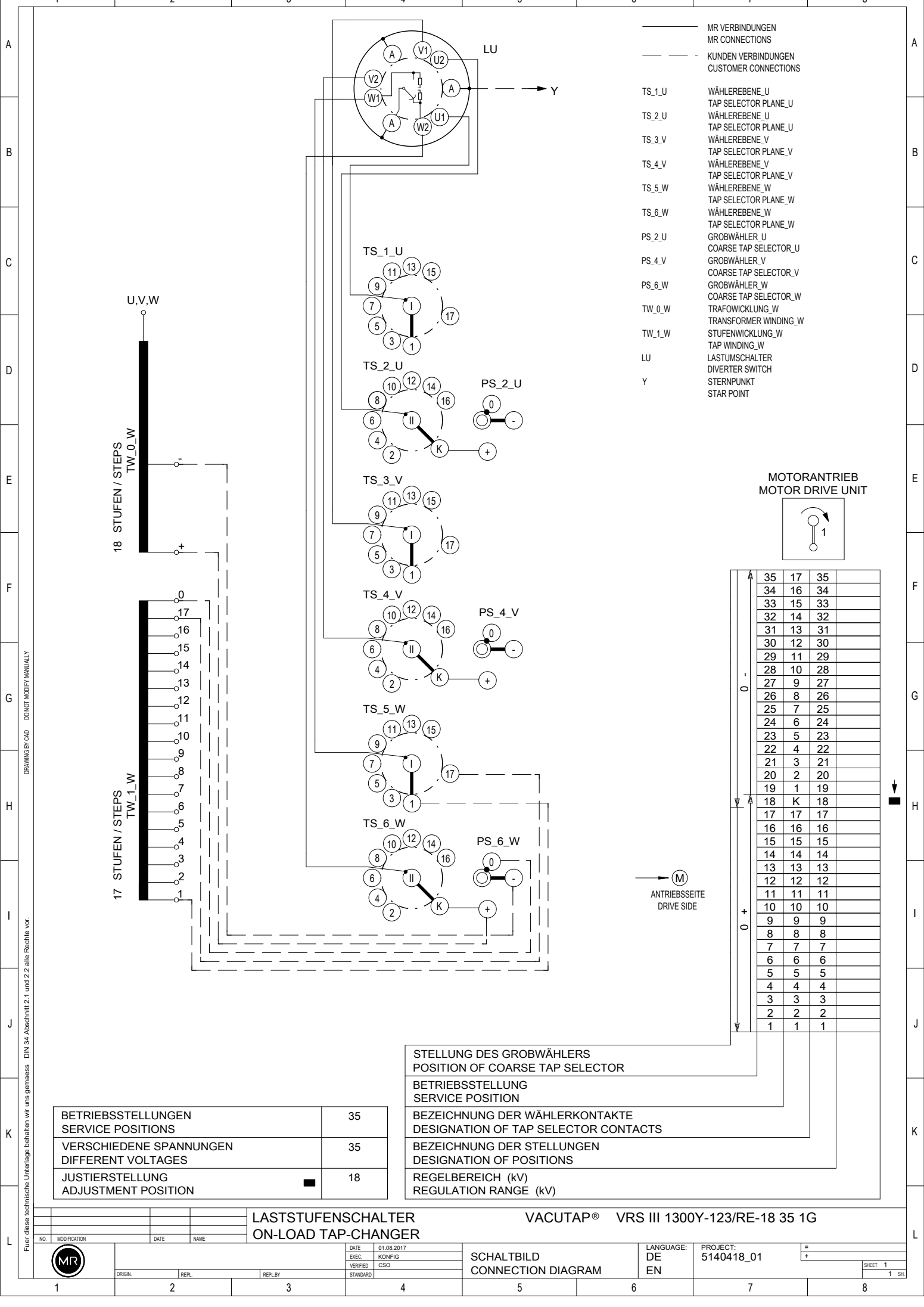
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|-----------|------------|
| LANGUAGE: | DE         |
| EN        |            |
| PROJECT:  | 5140300_01 |

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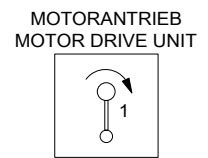
Für diese technische Unterlage behalten wir uns gemäss DIN 34 Abschnitt 2.1 und 2.2 alle Rechte vor. DRAWING BY CAD - DO NOT MODIFY MANUALLY



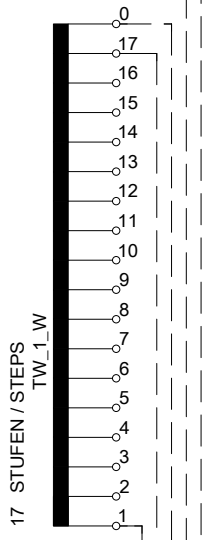
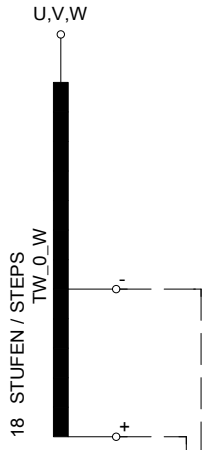




- MR VERBINDUNGEN  
MR CONNECTIONS
- - - KUNDEN VERBINDUNGEN  
CUSTOMER CONNECTIONS
- TS\_1\_U WÄHLEREBENE\_U  
TAP SELECTOR PLANE\_U
- TS\_2\_U WÄHLEREBENE\_U  
TAP SELECTOR PLANE\_U
- TS\_3\_V WÄHLEREBENE\_V  
TAP SELECTOR PLANE\_V
- TS\_4\_V WÄHLEREBENE\_V  
TAP SELECTOR PLANE\_V
- TS\_5\_W WÄHLEREBENE\_W  
TAP SELECTOR PLANE\_W
- TS\_6\_W WÄHLEREBENE\_W  
TAP SELECTOR PLANE\_W
- PS\_2\_U GROBWÄHLER\_U  
COARSE TAP SELECTOR\_U
- PS\_4\_V GROBWÄHLER\_V  
COARSE TAP SELECTOR\_V
- PS\_6\_W GROBWÄHLER\_W  
COARSE TAP SELECTOR\_W
- TW\_0\_W TRAFOWICKLUNG\_W  
TRANSFORMER WINDING\_W
- TW\_1\_W STUFENWICKLUNG\_W  
TAP WINDING\_W
- LU LASTUMSCHALTER  
DIVERTER SWITCH
- Y STERNPUNKT  
STAR POINT



|    |    |    |
|----|----|----|
| 35 | 17 | 35 |
| 34 | 16 | 34 |
| 33 | 15 | 33 |
| 32 | 14 | 32 |
| 31 | 13 | 31 |
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| 29 | 11 | 29 |
| 28 | 10 | 28 |
| 27 | 9  | 27 |
| 26 | 8  | 26 |
| 25 | 7  | 25 |
| 24 | 6  | 24 |
| 23 | 5  | 23 |
| 22 | 4  | 22 |
| 21 | 3  | 21 |
| 20 | 2  | 20 |
| 19 | 1  | 19 |
| 18 | K  | 18 |
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| 16 | 16 | 16 |
| 15 | 15 | 15 |
| 14 | 14 | 14 |
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| 8  | 8  | 8  |
| 7  | 7  | 7  |
| 6  | 6  | 6  |
| 5  | 5  | 5  |
| 4  | 4  | 4  |
| 3  | 3  | 3  |
| 2  | 2  | 2  |
| 1  | 1  | 1  |



DRAWING BY CAD - DONOT MODIFY MANUALLY

|                                               |    |
|-----------------------------------------------|----|
| BETRIEBSSTELLUNGEN<br>SERVICE POSITIONS       | 35 |
| VERSCHIEDENE SPANNUNGEN<br>DIFFERENT VOLTAGES | 35 |
| JUSTIERSTELLUNG<br>ADJUSTMENT POSITION        | 18 |

|                                                                        |
|------------------------------------------------------------------------|
| STELLUNG DES GROBWÄHLERS<br>POSITION OF COARSE TAP SELECTOR            |
| BETRIEBSSTELLUNG<br>SERVICE POSITION                                   |
| BEZEICHNUNG DER WÄHLERKONTAKTE<br>DESIGNATION OF TAP SELECTOR CONTACTS |
| BEZEICHNUNG DER STELLUNGEN<br>DESIGNATION OF POSITIONS                 |
| REGELBEREICH (kV)<br>REGULATION RANGE (kV)                             |

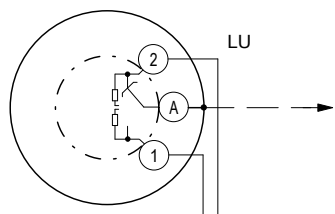
LASTSTUFENSCHALTER VACUTAP® VRS III 1300Y-123/RE-18 35 1G  
ON-LOAD TAP-CHANGER

|     |              |      |      |
|-----|--------------|------|------|
| NO. | MODIFICATION | DATE | NAME |
|     |              |      |      |

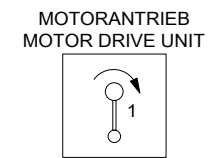
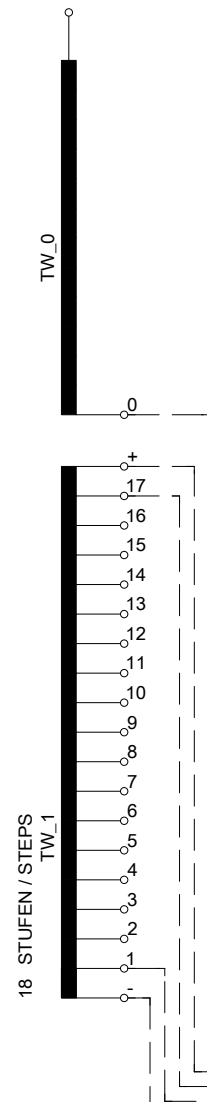
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|----------|------------|
| DATE     | 01.08.2017 |
| ERIC     | KONFIG     |
| VERIFIED | CSO        |
| STANDARD |            |

SCHALTBILD  
CONNECTION DIAGRAM

|           |            |
|-----------|------------|
| LANGUAGE: | DE         |
| EN        |            |
| PROJECT:  | 5140418_01 |



- MR VERBINDUNGEN  
MR CONNECTIONS
- - - KUNDEN VERBINDUNGEN  
CUSTOMER CONNECTIONS
- TS\_1 WÄHLEREBENE  
TAP SELECTOR PLANE
- TS\_2 WÄHLEREBENE  
TAP SELECTOR PLANE
- PS\_2 WENDER  
REVERSING CHANGE-OVER SELECTOR
- TW\_0 TRAFOWICKLUNG  
TRANSFORMER WINDING
- TW\_1 STUFENWICKLUNG  
TAP WINDING
- LU LASTUMSCHALTER  
DIVERTER SWITCH



|    |    |    |
|----|----|----|
| 35 | 17 | 35 |
| 34 | 16 | 34 |
| 33 | 15 | 33 |
| 32 | 14 | 32 |
| 31 | 13 | 31 |
| 30 | 12 | 30 |
| 29 | 11 | 29 |
| 28 | 10 | 28 |
| 27 | 9  | 27 |
| 26 | 8  | 26 |
| 25 | 7  | 25 |
| 24 | 6  | 24 |
| 23 | 5  | 23 |
| 22 | 4  | 22 |
| 21 | 3  | 21 |
| 20 | 2  | 20 |
| 19 | 1  | 19 |
| 18 | K  | 18 |
| 17 | 17 | 17 |
| 16 | 16 | 16 |
| 15 | 15 | 15 |
| 14 | 14 | 14 |
| 13 | 13 | 13 |
| 12 | 12 | 12 |
| 11 | 11 | 11 |
| 10 | 10 | 10 |
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| 8  | 8  | 8  |
| 7  | 7  | 7  |
| 6  | 6  | 6  |
| 5  | 5  | 5  |
| 4  | 4  | 4  |
| 3  | 3  | 3  |
| 2  | 2  | 2  |
| 1  | 1  | 1  |

➔ (M) ANTRIEBSSEITE  
DRIVE SIDE

STELLUNG DES WENDERS  
POSITION OF REVERSING CHANGE-OVER SELECTOR

BETRIEBSSTELLUNG  
SERVICE POSITION

BEZEICHNUNG DER WÄHLERKONTAKTE  
DESIGNATION OF TAP SELECTOR CONTACTS

BEZEICHNUNG DER STELLUNGEN  
DESIGNATION OF POSITIONS

REGELBEREICH (kV)  
REGULATION RANGE (kV)

|                                               |    |
|-----------------------------------------------|----|
| BETRIEBSSTELLUNGEN<br>SERVICE POSITIONS       | 35 |
| VERSCHIEDENE SPANNUNGEN<br>DIFFERENT VOLTAGES | 35 |
| JUSTIERSTELLUNG<br>ADJUSTMENT POSITION        | 18 |

**LASTSTUFENSCHALTER ON-LOAD TAP-CHANGER** VACUTAP® VRS I 1301-123/RE-18 35 1W

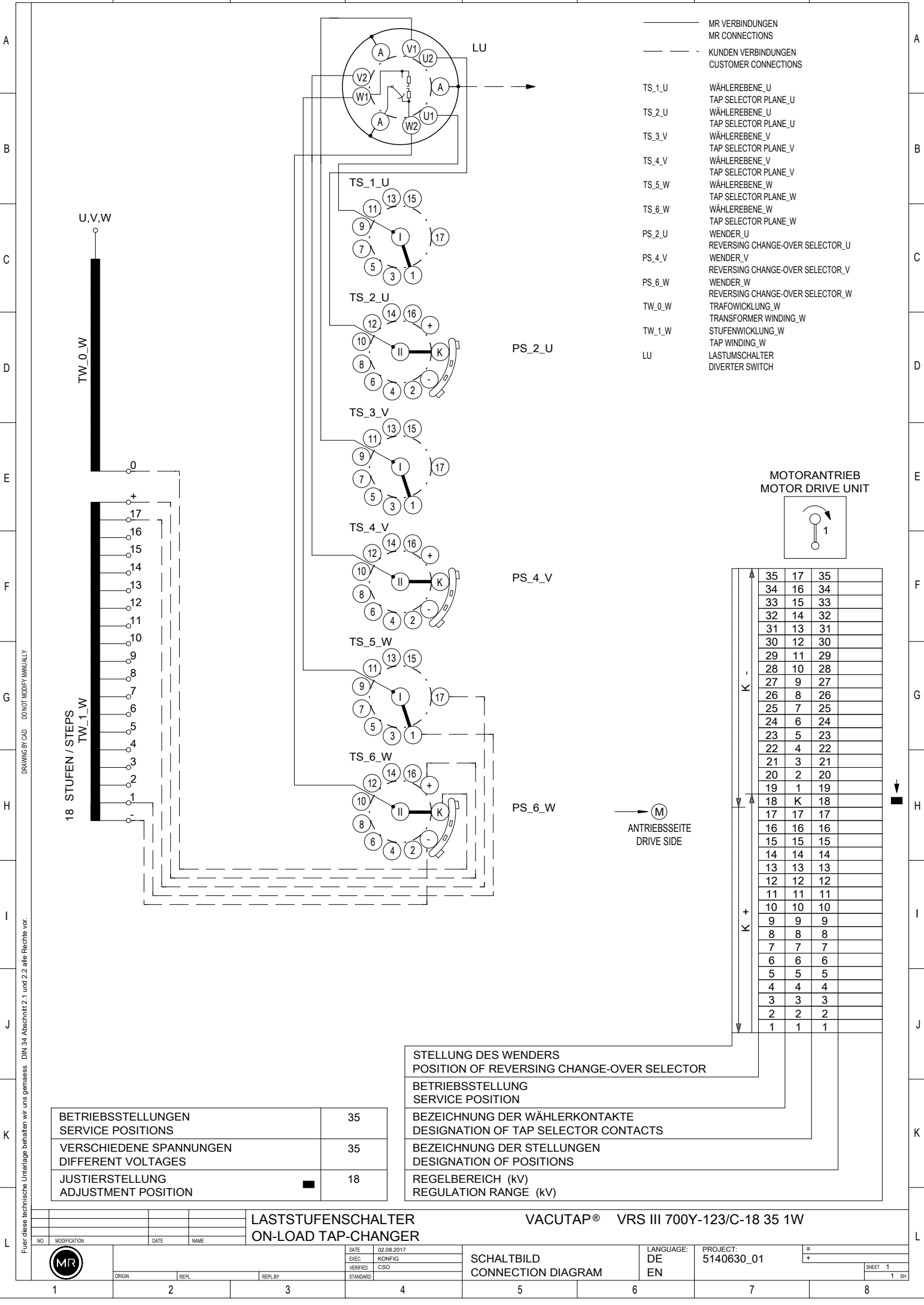
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| NO. | MODIFICATION | DATE | NAME |
|     |              |      |      |

|          |            |
|----------|------------|
| DATE     | 01.08.2017 |
| ERIC     | KONFIG     |
| VERIFIED | CSO        |
| STANDARD |            |

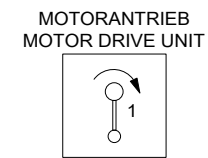
SCHALTBILD  
CONNECTION DIAGRAM

|           |            |
|-----------|------------|
| LANGUAGE: | DE         |
| EN        |            |
| PROJECT:  | 5140419_02 |

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- MR VERBINDUNGEN  
MR CONNECTIONS
- - - KUNDEN VERBINDUNGEN  
CUSTOMER CONNECTIONS
- TS\_1\_U WÄHLEREBENE\_U  
TAP SELECTOR PLANE\_U
- TS\_2\_U WÄHLEREBENE\_U  
TAP SELECTOR PLANE\_U
- TS\_3\_V WÄHLEREBENE\_V  
TAP SELECTOR PLANE\_V
- TS\_4\_V WÄHLEREBENE\_V  
TAP SELECTOR PLANE\_V
- TS\_5\_W WÄHLEREBENE\_W  
TAP SELECTOR PLANE\_W
- TS\_6\_W WÄHLEREBENE\_W  
TAP SELECTOR PLANE\_W
- PS\_2\_U WENDER\_U  
REVERSING CHANGE-OVER SELECTOR\_U
- PS\_4\_V WENDER\_V  
REVERSING CHANGE-OVER SELECTOR\_V
- PS\_6\_W WENDER\_W  
REVERSING CHANGE-OVER SELECTOR\_W
- TW\_0\_W TRAFOWICKLUNG\_W  
TRANSFORMER WINDING\_W
- TW\_1\_W STUFENWICKLUNG\_W  
TAP WINDING\_W
- LU LASTUMSCHALTER  
DIVERTER SWITCH



|    |    |    |
|----|----|----|
| 35 | 17 | 35 |
| 34 | 16 | 34 |
| 33 | 15 | 33 |
| 32 | 14 | 32 |
| 31 | 13 | 31 |
| 30 | 12 | 30 |
| 29 | 11 | 29 |
| 28 | 10 | 28 |
| 27 | 9  | 27 |
| 26 | 8  | 26 |
| 25 | 7  | 25 |
| 24 | 6  | 24 |
| 23 | 5  | 23 |
| 22 | 4  | 22 |
| 21 | 3  | 21 |
| 20 | 2  | 20 |
| 19 | 1  | 19 |
| 18 | K  | 18 |
| 17 | 17 | 17 |
| 16 | 16 | 16 |
| 15 | 15 | 15 |
| 14 | 14 | 14 |
| 13 | 13 | 13 |
| 12 | 12 | 12 |
| 11 | 11 | 11 |
| 10 | 10 | 10 |
| 9  | 9  | 9  |
| 8  | 8  | 8  |
| 7  | 7  | 7  |
| 6  | 6  | 6  |
| 5  | 5  | 5  |
| 4  | 4  | 4  |
| 3  | 3  | 3  |
| 2  | 2  | 2  |
| 1  | 1  | 1  |

(M) ANTRIEBSSEITE  
DRIVE SIDE

STELLUNG DES WENDERS  
POSITION OF REVERSING CHANGE-OVER SELECTOR

BETRIEBSSTELLUNG  
SERVICE POSITION

BEZEICHNUNG DER WÄHLERKONTAKTE  
DESIGNATION OF TAP SELECTOR CONTACTS

BEZEICHNUNG DER STELLUNGEN  
DESIGNATION OF POSITIONS

REGELBEREICH (kV)  
REGULATION RANGE (kV)

|                                               |    |
|-----------------------------------------------|----|
| BETRIEBSSTELLUNGEN<br>SERVICE POSITIONS       | 35 |
| VERSCHIEDENE SPANNUNGEN<br>DIFFERENT VOLTAGES | 35 |
| JUSTIERSTELLUNG<br>ADJUSTMENT POSITION        | 18 |

LASTSTUFENSCHALTER VACUTAP® VRS III 700Y-123/C-18 35 1W  
ON-LOAD TAP-CHANGER

|     |              |      |      |
|-----|--------------|------|------|
| NO. | MODIFICATION | DATE | NAME |
|     |              |      |      |



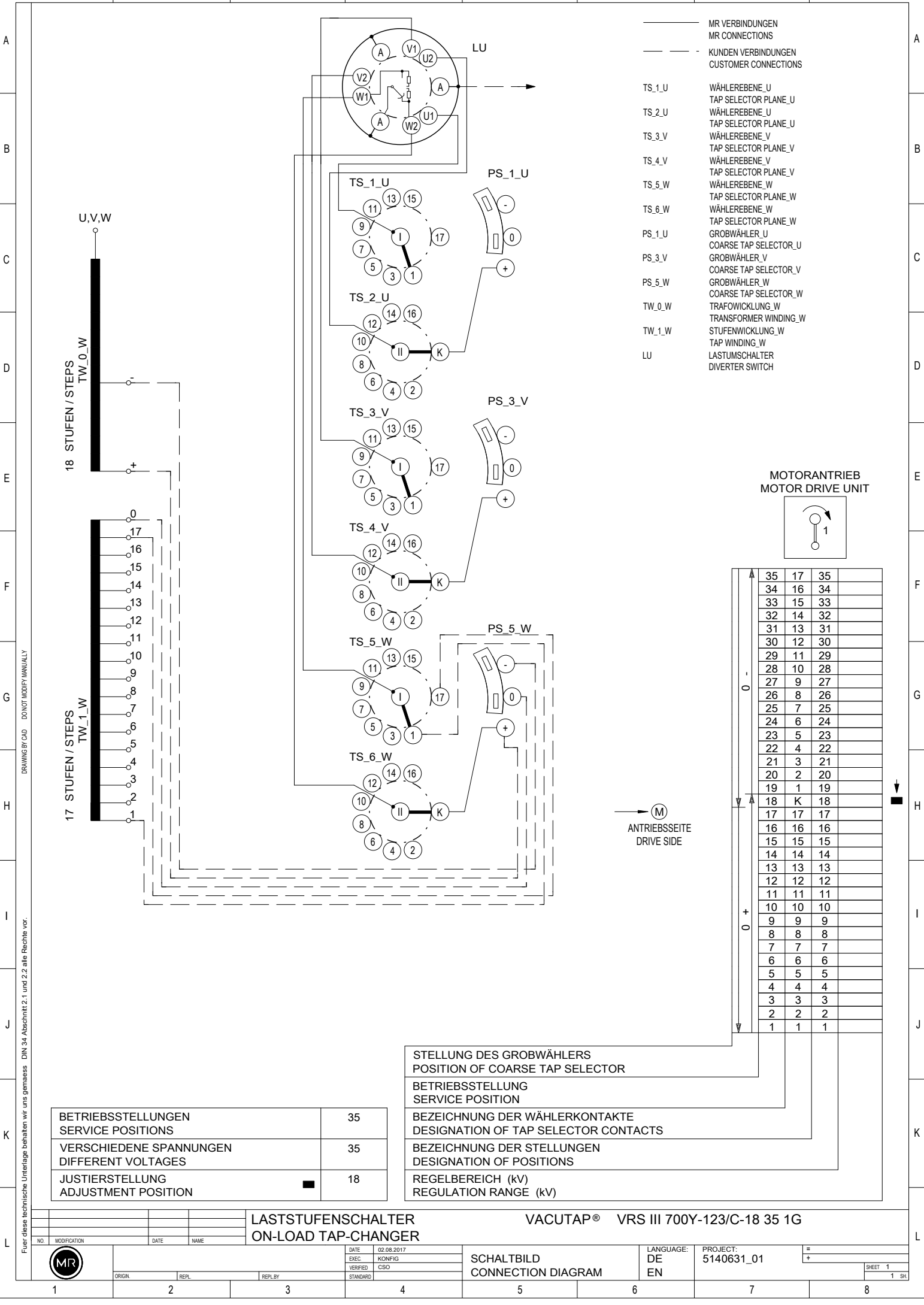
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|----------|------------|
| DATE     | 02.08.2017 |
| ERIC     | KONFIG     |
| VERIFIED | CSO        |
| STANDARD |            |

SCHALTBILD  
CONNECTION DIAGRAM

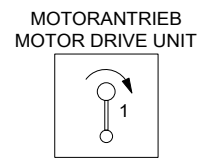
LANGUAGE:  
DE PROJECT: 5140630\_01  
EN

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- MR VERBINDUNGEN  
MR CONNECTIONS
- - - KUNDEN VERBINDUNGEN  
CUSTOMER CONNECTIONS
- TS\_1\_U WÄHLEREbene\_U  
TAP SELECTOR PLANE\_U
- TS\_2\_U WÄHLEREbene\_U  
TAP SELECTOR PLANE\_U
- TS\_3\_V WÄHLEREbene\_V  
TAP SELECTOR PLANE\_V
- TS\_4\_V WÄHLEREbene\_V  
TAP SELECTOR PLANE\_V
- TS\_5\_W WÄHLEREbene\_W  
TAP SELECTOR PLANE\_W
- TS\_6\_W WÄHLEREbene\_W  
TAP SELECTOR PLANE\_W
- PS\_1\_U GROBWÄHLER\_U  
COARSE TAP SELECTOR\_U
- PS\_3\_V GROBWÄHLER\_V  
COARSE TAP SELECTOR\_V
- PS\_5\_W GROBWÄHLER\_W  
COARSE TAP SELECTOR\_W
- TW\_0\_W TRAFOWICKLUNG\_W  
TRANSFORMER WINDING\_W
- TW\_1\_W STUFENWICKLUNG\_W  
TAP WINDING\_W
- LU LASTUMSCHALTER  
DIVERTER SWITCH



|    |    |    |
|----|----|----|
| 35 | 17 | 35 |
| 34 | 16 | 34 |
| 33 | 15 | 33 |
| 32 | 14 | 32 |
| 31 | 13 | 31 |
| 30 | 12 | 30 |
| 29 | 11 | 29 |
| 28 | 10 | 28 |
| 27 | 9  | 27 |
| 26 | 8  | 26 |
| 25 | 7  | 25 |
| 24 | 6  | 24 |
| 23 | 5  | 23 |
| 22 | 4  | 22 |
| 21 | 3  | 21 |
| 20 | 2  | 20 |
| 19 | 1  | 19 |
| 18 | K  | 18 |
| 17 | 17 | 17 |
| 16 | 16 | 16 |
| 15 | 15 | 15 |
| 14 | 14 | 14 |
| 13 | 13 | 13 |
| 12 | 12 | 12 |
| 11 | 11 | 11 |
| 10 | 10 | 10 |
| 9  | 9  | 9  |
| 8  | 8  | 8  |
| 7  | 7  | 7  |
| 6  | 6  | 6  |
| 5  | 5  | 5  |
| 4  | 4  | 4  |
| 3  | 3  | 3  |
| 2  | 2  | 2  |
| 1  | 1  | 1  |

|                                                                        |
|------------------------------------------------------------------------|
| STELLUNG DES GROBWÄHLERS<br>POSITION OF COARSE TAP SELECTOR            |
| BETRIEBSSTELLUNG<br>SERVICE POSITION                                   |
| BEZEICHNUNG DER WÄHLERKONTAKTE<br>DESIGNATION OF TAP SELECTOR CONTACTS |
| BEZEICHNUNG DER STELLUNGEN<br>DESIGNATION OF POSITIONS                 |
| REGELBEREICH (kV)<br>REGULATION RANGE (kV)                             |

|                                               |    |
|-----------------------------------------------|----|
| BETRIEBSSTELLUNGEN<br>SERVICE POSITIONS       | 35 |
| VERSCHIEDENE SPANNUNGEN<br>DIFFERENT VOLTAGES | 35 |
| JUSTIERSTELLUNG<br>ADJUSTMENT POSITION        | 18 |

LASTSTUFENSCHALTER VACUTAP® VRS III 700Y-123/C-18 35 1G  
ON-LOAD TAP-CHANGER

|     |              |      |      |
|-----|--------------|------|------|
| NO. | MODIFICATION | DATE | NAME |
|     |              |      |      |



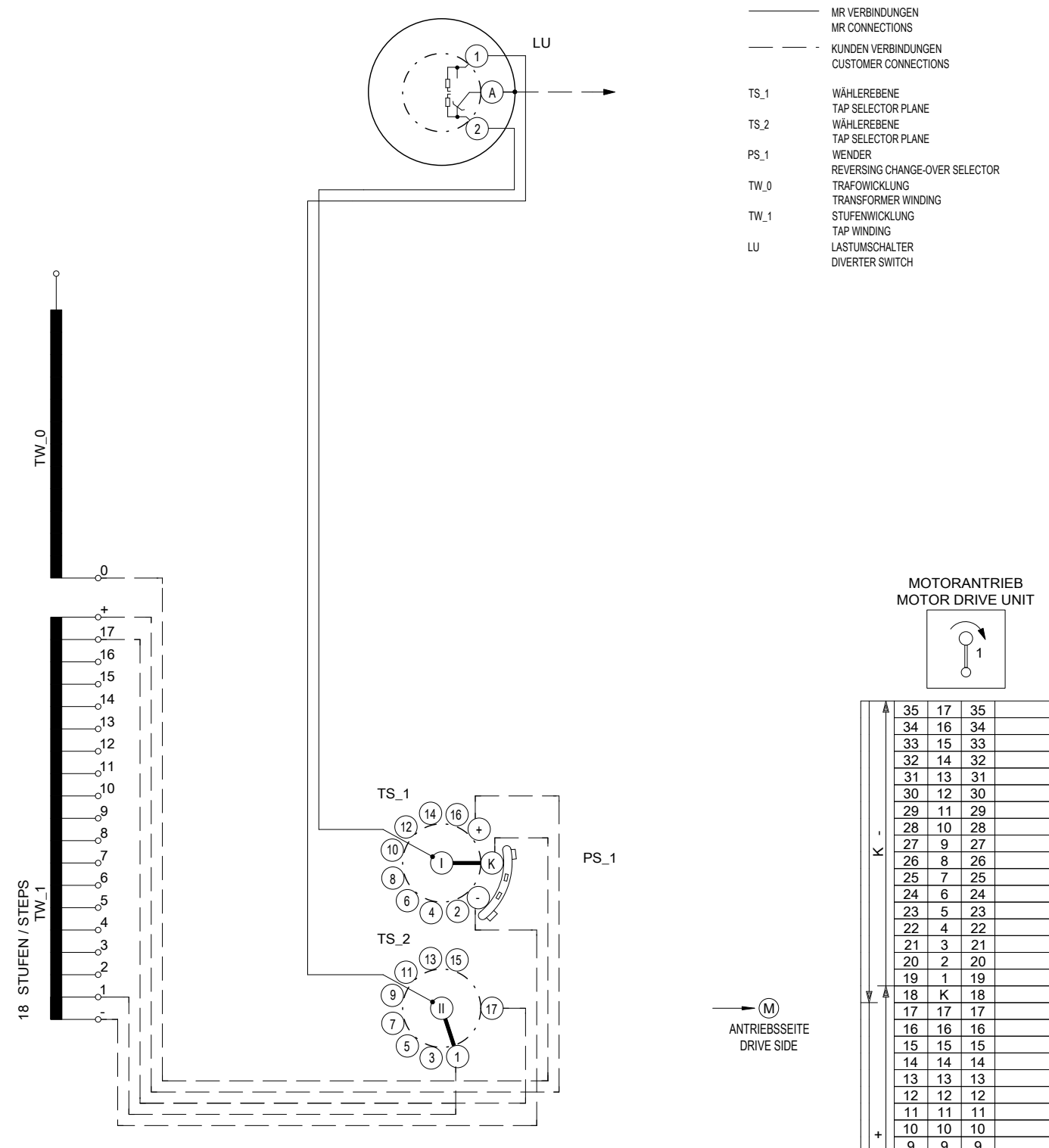
|          |            |
|----------|------------|
| DATE     | 02.08.2017 |
| ERIC     | KONFIG     |
| VERIFIED | CSO        |
| STANDARD |            |

SCHALTBILD  
CONNECTION DIAGRAM

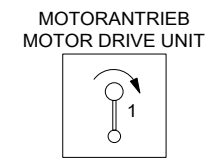
LANGUAGE:  
DE  
EN

PROJECT:  
5140631\_01

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- MR VERBINDUNGEN  
MR CONNECTIONS
- - - KUNDEN VERBINDUNGEN  
CUSTOMER CONNECTIONS
- TS\_1 WÄHLEREBENE  
TAP SELECTOR PLANE
- TS\_2 WÄHLEREBENE  
TAP SELECTOR PLANE
- PS\_1 WENDER  
REVERSING CHANGE-OVER SELECTOR
- TW\_0 TRAFOWICKLUNG  
TRANSFORMER WINDING
- TW\_1 STUFENWICKLUNG  
TAP WINDING
- LU LASTUMSCHALTER  
DIVERTER SWITCH



|    |    |    |
|----|----|----|
| 35 | 17 | 35 |
| 34 | 16 | 34 |
| 33 | 15 | 33 |
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| 31 | 13 | 31 |
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| 29 | 11 | 29 |
| 28 | 10 | 28 |
| 27 | 9  | 27 |
| 26 | 8  | 26 |
| 25 | 7  | 25 |
| 24 | 6  | 24 |
| 23 | 5  | 23 |
| 22 | 4  | 22 |
| 21 | 3  | 21 |
| 20 | 2  | 20 |
| 19 | 1  | 19 |
| 18 | K  | 18 |
| 17 | 17 | 17 |
| 16 | 16 | 16 |
| 15 | 15 | 15 |
| 14 | 14 | 14 |
| 13 | 13 | 13 |
| 12 | 12 | 12 |
| 11 | 11 | 11 |
| 10 | 10 | 10 |
| 9  | 9  | 9  |
| 8  | 8  | 8  |
| 7  | 7  | 7  |
| 6  | 6  | 6  |
| 5  | 5  | 5  |
| 4  | 4  | 4  |
| 3  | 3  | 3  |
| 2  | 2  | 2  |
| 1  | 1  | 1  |

(M) ANTRIEBSSEITE  
DRIVE SIDE

FÜR DIESE TECHNISCHE UNTERLAGE BEHALTEN WIR UNS GEMÄSS DIN 34 ABSCHNITT 2.1 UND 2.2 ALLE RECHTE VOR.  
DRAWING BY CAD - DO NOT MODIFY MANUALLY

|                                               |    |
|-----------------------------------------------|----|
| BETRIEBSSTELLUNGEN<br>SERVICE POSITIONS       | 35 |
| VERSCHIEDENE SPANNUNGEN<br>DIFFERENT VOLTAGES | 35 |
| JUSTIERSTELLUNG<br>ADJUSTMENT POSITION        | 18 |

|                                                                        |  |
|------------------------------------------------------------------------|--|
| STELLUNG DES WENDERS<br>POSITION OF REVERSING CHANGE-OVER SELECTOR     |  |
| BETRIEBSSTELLUNG<br>SERVICE POSITION                                   |  |
| BEZEICHNUNG DER WÄHLERKONTAKTE<br>DESIGNATION OF TAP SELECTOR CONTACTS |  |
| BEZEICHNUNG DER STELLUNGEN<br>DESIGNATION OF POSITIONS                 |  |
| REGELBEREICH (kV)<br>REGULATION RANGE (kV)                             |  |

**LASTSTUFENSCHALTER VACUTAP® VRS I 701-123/C-18 35 1W**  
**ON-LOAD TAP-CHANGER**

| NO. | MODIFICATION | DATE | NAME |
|-----|--------------|------|------|
|     |              |      |      |



|          |            |
|----------|------------|
| DATE     | 01.08.2017 |
| EXEC     | KONFIG     |
| VERIFIED | CSO        |
| STANDARD |            |

SCHALTBILD  
CONNECTION DIAGRAM

LANGUAGE:  
DE  
EN

PROJECT:  
5140632\_01





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F0343209 - 07/23  
Maschinenfabrik Reinhausen GmbH 2023

THE POWER BEHIND POWER.