

TECHNICAL GUIDE

## Porcelain bushings (Medium/Low Voltage)





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# Technical data

| Type       | Catalogue Reference | Standard  | Rated current | Nominal Voltage | Dry lightning impulse voltage | Power frequency |        | Creepage distance (min) | Arcing Distance (min) | MIN Lee Protected Line | Category         |
|------------|---------------------|-----------|---------------|-----------------|-------------------------------|-----------------|--------|-------------------------|-----------------------|------------------------|------------------|
|            |                     |           |               |                 |                               | DRY kV          | WET kV |                         |                       |                        |                  |
|            |                     |           | A             | kV              | kV                            |                 |        | mm                      | mm                    | mm                     |                  |
| 1/250 DIN  | A1                  | DIN 42530 | 250           | 1               | -                             | -               | -      | 60                      | 50                    | 10                     |                  |
| 3/250 DIN  | A1                  | DIN 42539 | 250           | 3               | 40                            | 14              | 10     | 120                     | 100                   | 16                     |                  |
| 1/630 DIN  | A1                  | DIN 42530 | 630           | 1               | -                             | -               | -      | 75                      | 60                    | 10                     |                  |
| 3/630 DIN  | A1                  | DIN 42539 | 630           | 3               | 40                            | 14              | 10     | 120                     | 100                   | 16                     |                  |
| 1/1000 DIN | A2                  | DIN 42530 | 1000          | 1               | -                             | -               | -      | 75                      | 60                    | 10                     |                  |
| 3/1000 DIN | A2                  | DIN 42539 | 1000          | 3               | 40                            | 14              | 10     | 125                     | 100                   | 16                     |                  |
| 1/2000 DIN | A2                  | DIN 42530 | 2000          | 1               | -                             | -               | -      | 75                      | 60                    | 10                     |                  |
| 3/2000 DIN | A2                  | DIN 42539 | 2000          | 3               | 40                            | 14              | 10     | 125                     | 100                   | 18                     |                  |
| 1/3150 DIN | A2                  | DIN 42530 | 3150          | 1               | -                             | -               | -      | 75                      | 60                    | 10                     |                  |
| 3/3150 DIN | A2                  | DIN 42539 | 3150          | 3               | 40                            | 14              | 10     | 125                     | 100                   | 18                     |                  |
| 1/250-A    | A3                  | EN 50386  | 250           | 1               | 20                            | 10              | 10     | 55                      | -                     | -                      | LV - LOW VOLTAGE |
| 1/250-B    | A4                  | EN 50386  | 250           | 1               | 20                            | 10              | 10     | 55                      | -                     | -                      |                  |
| 1/630-A    | A5                  | EN 50386  | 630           | 1               | 20                            | 10              | 10     | 70                      | -                     | -                      |                  |
| 1/630-B    | A6                  | EN 50386  | 630           | 1               | 20                            | 10              | 10     | 70                      | -                     | -                      |                  |
| 1/1250-A   | A7                  | EN 50386  | 1250          | 1               | 20                            | 10              | 10     | 75                      | -                     | -                      |                  |
| 1/1000-B   | A8                  | EN50386   | 1000          | 1               | 20                            | 10              | 10     | 75                      | -                     | -                      |                  |
| 1/1250-B   | A8                  | EN 50386  | 1250          | 1               | 20                            | 10              | 10     | 75                      | -                     | -                      |                  |
| 1/2000     | A9                  | EN 50386  | 2000          | 1               | 20                            | 10              | 10     | 75                      | -                     | -                      |                  |
| 1/3150     | A9                  | EN 50386  | 3150          | 1               | 20                            | 10              | 10     | 75                      | -                     | -                      |                  |
| 1/4000     | A9                  | EN50386   | 4000          | 1               | 20                            | 10              | 10     | 85                      | -                     | -                      |                  |
| 1/5000     | A9                  | EN 50386  | 5000          | 1               | 20                            | 10              | 10     | 85                      | -                     | -                      |                  |
| 3/4500     | A10                 | COMEM     | 4500          | 3               | 40                            | 14              | 10     | 140                     | 107                   | 20                     |                  |
| 3/6500     | A11                 | COMEM     | 6500          | 3               | 40                            | 14              | 10     | 140                     | 107                   | 20                     |                  |

| Type       | Catalogue Reference | Standard | Rated current | Nominal Voltage | Dry lightning impulse voltage | Power frequency |        | Creepage distance (min) | Arcing Distance (min) | Pollution level | Category            |
|------------|---------------------|----------|---------------|-----------------|-------------------------------|-----------------|--------|-------------------------|-----------------------|-----------------|---------------------|
|            |                     |          |               |                 |                               | DRY kV          | WET kV |                         |                       |                 |                     |
|            |                     |          | A             | kV              | kV                            |                 |        | mm                      | mm                    |                 |                     |
| 12/250-P1  | B5                  | EN 50180 | 250           | 12              | 75                            | 30              | 28     | 192                     | 145                   | P1              |                     |
| 12/250-P2  | B5                  | EN 50180 | 250           | 12              | 75                            | 30              | 28     | 240                     | 145                   | P2              |                     |
| 12/250-P4  | B5                  | EN 50180 | 250           | 12              | 75                            | 30              | 28     | 372                     | 260                   | P4              |                     |
| 24/250-P2  | B5                  | EN 50180 | 250           | 24              | 125                           | 55              | 50     | 480                     | 260                   | P2              |                     |
| 24/250-P3  | B5                  | EN 50180 | 250           | 24              | 125                           | 55              | 50     | 600                     | 315                   | P3              |                     |
| 24/250-P4  | B5                  | EN 50180 | 250           | 24              | 125                           | 55              | 50     | 744                     | 465                   | P4              |                     |
| 36/250-P1  | B5                  | EN 50180 | 250           | 36              | 170                           | 77              | 70     | 576                     | 315                   | P1              |                     |
| 36/250-P3  | B5                  | EN 50180 | 250           | 36              | 170                           | 77              | 70     | 900                     | 465                   | P3              |                     |
| 36/250-P4  | B5                  | EN 50180 | 250           | 36              | 170                           | 77              | 70     | 1116                    | 485                   | P4              |                     |
| 12/630-P3  | B6                  | EN 50180 | 630           | 12              | 75                            | 30              | 28     | 300                     | 190                   | P3              |                     |
| 12/630-P4  | B6                  | EN 50180 | 630           | 12              | 75                            | 30              | 28     | 372                     | 285                   | P4              |                     |
| 24/630-P2  | B6                  | EN 50180 | 630           | 24              | 125                           | 55              | 50     | 480                     | 285                   | P2              |                     |
| 24/630-P4  | B6                  | EN 50180 | 630           | 24              | 125                           | 55              | 50     | 744                     | 375                   | P4              |                     |
| 36/630-P2  | B6                  | EN 50180 | 630           | 36              | 170                           | 77              | 70     | 720                     | 375                   | P2              |                     |
| 36/630-P4  | B6                  | EN 50180 | 630           | 36              | 170                           | 77              | 70     | 1116                    | 475                   | P4              | MV - MEDIUM VOLTAGE |
| 12/1250-P4 | B7                  | EN 50180 | 1250          | 12              | 75                            | 30              | 28     | 372                     | 215                   | P4              |                     |
| 24/1250-P3 | B7                  | EN 50180 | 1250          | 24              | 125                           | 55              | 50     | 600                     | 280                   | P3              |                     |
| 24/1250-P4 | B7                  | EN 50180 | 1250          | 24              | 125                           | 55              | 50     | 744                     | 385                   | P4              |                     |
| 36/1250-P3 | B7                  | EN 50180 | 1250          | 36              | 170                           | 77              | 70     | 900                     | 385                   | P3              |                     |
| 36/1250-P4 | B7                  | EN 50180 | 1250          | 36              | 170                           | 77              | 70     | 1116                    | 500                   | P4              |                     |
| 12/2000-P4 | B7                  | EN 50180 | 2000          | 12              | 75                            | 30              | 28     | 372                     | 210                   | P4              |                     |
| 24/2000-P3 | B7                  | EN 50180 | 2000          | 24              | 125                           | 55              | 50     | 600                     | 275                   | P3              |                     |
| 24/2000-P4 | B7                  | EN 50180 | 2000          | 24              | 125                           | 55              | 50     | 744                     | 385                   | P4              |                     |
| 36/2000-P3 | B7                  | EN 50180 | 2000          | 36              | 170                           | 77              | 70     | 900                     | 385                   | P3              |                     |
| 36/2000-P4 | B7                  | EN 50180 | 2000          | 36              | 170                           | 77              | 70     | 1116                    | 495                   | P4              |                     |
| 12/3150-P4 | B7                  | EN 50180 | 3150          | 12              | 75                            | 30              | 28     | 372                     | 210                   | P4              |                     |
| 24/3150-P3 | B7                  | EN 50180 | 3150          | 24              | 125                           | 55              | 50     | 600                     | 275                   | P3              |                     |
| 24/3150-P4 | B7                  | EN 50180 | 3150          | 24              | 125                           | 55              | 50     | 744                     | 385                   | P4              |                     |
| 36/3150-P3 | B7                  | EN 50180 | 3150          | 36              | 170                           | 77              | 70     | 900                     | 385                   | P3              |                     |
| 36/3150-P4 | B7                  | EN 50180 | 3150          | 36              | 170                           | 77              | 70     | 1116                    | 495                   | P4              |                     |

# Technical data

| Type       | Catalogue Reference | Standard | Rated current | Nominal Voltage | Dry lightning impulse voltage | Power frequency |        | Creepage distance (min) | Arcing Distance (min) | Pollution level | Category            |
|------------|---------------------|----------|---------------|-----------------|-------------------------------|-----------------|--------|-------------------------|-----------------------|-----------------|---------------------|
|            |                     |          | A             | kV              | kV                            | DRY kV          | WET kV | mm                      | mm                    |                 |                     |
| 52/1250-P1 | B13                 | EN 50180 | 1250          | 52              | 250                           | 105             | 95     | 832                     | 480                   | P1              | MV - MEDIUM VOLTAGE |
| 52/2000-P1 | B13                 | EN 50180 | 2000          | 52              | 250                           | 105             | 95     | 832                     | 480                   | P1              |                     |
| 52/3150-P1 | B13                 | EN 50180 | 3150          | 52              | 250                           | 105             | 95     | 832                     | 480                   | P1              |                     |
| 52/1250-P3 | B13                 | EN 50180 | 1250          | 52              | 250                           | 105             | 95     | 1300                    | 480                   | P3              |                     |
| 52/2000-P3 | B13                 | EN 50180 | 2000          | 52              | 250                           | 105             | 95     | 1300                    | 480                   | P3              |                     |
| 52/3150-P3 | B13                 | EN 50180 | 3150          | 52              | 250                           | 105             | 95     | 1300                    | 480                   | P3              |                     |
| 52/1250-P4 | B13                 | EN 50180 | 1250          | 52              | 250                           | 105             | 95     | 1612                    | 520                   | P4              |                     |
| 52/2000-P4 | B13                 | EN 50180 | 2000          | 52              | 250                           | 105             | 95     | 1612                    | 520                   | P4              |                     |
| 52/3150-P4 | B13                 | EN 50180 | 3150          | 52              | 250                           | 105             | 95     | 1612                    | 520                   | P4              |                     |
| 24/5000-P2 | B15                 | EN 50243 | 5000          | 24              | 125                           | 55              | 50     | 480                     | 270                   | P2              |                     |
| 24/8000-P2 | B15                 | EN 50243 | 8000          | 24              | 125                           | 55              | 50     | 480                     | 270                   | P2              |                     |
| 24/5000-P4 | B15                 | EN 50243 | 5000          | 24              | 125                           | 55              | 50     | 744                     | 380                   | P4              |                     |
| 24/8000-P4 | B15                 | EN 50243 | 8000          | 24              | 125                           | 55              | 50     | 744                     | 380                   | P4              |                     |
| 36/5000-P2 | B15                 | EN 50243 | 5000          | 36              | 170                           | 77              | 70     | 720                     | 380                   | P2              |                     |
| 36/8000-P2 | B15                 | EN 50243 | 8000          | 36              | 170                           | 77              | 70     | 720                     | 380                   | P2              |                     |
| 36/5000-P3 | B15                 | EN 50243 | 5000          | 36              | 170                           | 77              | 70     | 900                     | 370                   | P3              |                     |
| 36/8000-P3 | B15                 | EN 50243 | 8000          | 36              | 170                           | 77              | 70     | 900                     | 370                   | P3              |                     |

| Type    | Catalogue Reference | Standard | Rated current | Nominal Voltage | Dry lightning impulse voltage | Power frequency |        | Creepage distance (min) | Arcing Distance (min) | MIN Lee Protected Line | Category            |
|---------|---------------------|----------|---------------|-----------------|-------------------------------|-----------------|--------|-------------------------|-----------------------|------------------------|---------------------|
|         |                     |          | A             | kV              | kV                            | DRY kV          | WET kV | mm                      | mm                    | mm                     |                     |
| 36/250  | B8                  | COMEM    | 250           | 36              | 170                           | 77              | 70     | 1320                    | -                     | -                      | MV - MEDIUM VOLTAGE |
| 52/250  | B9                  | COMEM    | 250           | 52              | 250                           | 105             | 95     | 950                     | 480                   | 340                    |                     |
| 52/630  | B9                  | COMEM    | 630           | 52              | 250                           | 105             | 95     | 950                     | 480                   | 340                    |                     |
| 24/6300 | B10                 | COMEM    | 6300          | 24              | 125                           | 55              | 50     | 440                     | 155                   | 90                     |                     |
| 12/4500 | B11                 | COMEM    | 4500          | 12              | 75                            | 30              | 28     | 295                     | 85                    | 48                     |                     |
| 24/4500 | B11                 | COMEM    | 4500          | 24              | 125                           | 55              | 50     | 445                     | 155                   | 90                     |                     |
| 36/4500 | B11                 | COMEM    | 4500          | 36              | 170                           | 77              | 70     | 635                     | 220                   | 168                    |                     |
| 52/1000 | B12                 | COMEM    | 1000          | 52              | 250                           | 105             | 95     | 1430                    | 480                   | 340                    |                     |
| 52/2000 | B12                 | COMEM    | 2000          | 52              | 250                           | 105             | 95     | 1430                    | 480                   | 340                    |                     |
| 52/3150 | B12                 | COMEM    | 3150          | 52              | 250                           | 105             | 95     | 1430                    | 480                   | 340                    |                     |

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| Type        | Catalogue Reference | Standard  | Rated current | Nominal Voltage | Dry lightning impulse voltage | Power frequency |        | Creepage distance (min) | Arcing Distance (min) | Pollution level | Category            |
|-------------|---------------------|-----------|---------------|-----------------|-------------------------------|-----------------|--------|-------------------------|-----------------------|-----------------|---------------------|
|             |                     |           |               |                 |                               | DRY kV          | WET kV |                         |                       |                 |                     |
|             |                     |           | A             | kV              | kV                            |                 |        | mm                      | mm                    |                 |                     |
| 12/250 DIN  | B1                  | DIN 42531 | 250           | 12              | 75                            | 30              | 28     | 305                     | 235                   | 165             |                     |
| 24/250 DIN  | B1                  | DIN 42531 | 250           | 24              | 125                           | 55              | 50     | 450                     | 310                   | 212             |                     |
| 36/250 DIN  | B1                  | DIN 42531 | 250           | 36              | 170                           | 77              | 70     | 607                     | 408                   | 288             |                     |
| 12/630 DIN  | B2                  | DIN 42532 | 630           | 12              | 75                            | 30              | 28     | 305                     | 230                   | 165             |                     |
| 24/630 DIN  | B2                  | DIN 42532 | 630           | 24              | 125                           | 55              | 50     | 440                     | 315                   | 245             |                     |
| 36/630 DIN  | B2                  | DIN 42532 | 630           | 36              | 170                           | 77              | 70     | 662                     | 418                   | 332             |                     |
| 12/1000 DIN | B3                  | DIN 42533 | 1000          | 12              | 75                            | 30              | 28     | 295                     | 85                    | 42              |                     |
| 24/1000 DIN | B3                  | DIN 42533 | 1000          | 24              | 125                           | 55              | 50     | 445                     | 155                   | 90              |                     |
| 36/1000 DIN | B3                  | DIN 42533 | 1000          | 36              | 170                           | 77              | 70     | 635                     | 220                   | 128             |                     |
| 12/2000 DIN | B3                  | DIN 42533 | 2000          | 12              | 75                            | 30              | 28     | 295                     | 85                    | 48              |                     |
| 24/2000 DIN | B3                  | DIN 42533 | 2000          | 24              | 125                           | 55              | 50     | 445                     | 155                   | 90              | MV - MEDIUM VOLTAGE |
| 36/2000 DIN | B3                  | DIN 42533 | 2000          | 36              | 170                           | 77              | 70     | 635                     | 220                   | 168             |                     |
| 12/3150 DIN | B3                  | DIN 42533 | 3150          | 12              | 75                            | 30              | 28     | 295                     | 85                    | 48              |                     |
| 24/3150 DIN | B3                  | DIN 42533 | 3150          | 24              | 125                           | 55              | 50     | 445                     | 155                   | 90              |                     |
| 36/3150 DIN | B3                  | DIN 42533 | 3150          | 36              | 170                           | 77              | 70     | 635                     | 220                   | 168             |                     |
| 52/1000 DIN | B4                  | DIN 42534 | 1000          | 52              | 250                           | 105             | 95     | 950                     | 480                   | 340             |                     |
| 52/2000 DIN | B4                  | DIN 42534 | 2000          | 52              | 250                           | 105             | 95     | 950                     | 480                   | 340             |                     |
| 52/3150 DIN | B4                  | DIN 42534 | 3150          | 52              | 250                           | 105             | 95     | 950                     | 480                   | 340             |                     |
| 24/5000 DIN | B14                 | DIN 42541 | 5000          | 24              | 125                           | 55              | 50     | 470                     | 260                   | 105             |                     |
| 24/8000 DIN | B14                 | DIN 42541 | 8000          | 36              | 125                           | 55              | 50     | 470                     | 260                   | 105             |                     |
| 36/5000 DIN | B14                 | DIN 42541 | 5000          | 24              | 170                           | 77              | 70     | 555                     | 355                   | 140             |                     |
| 36/8000 DIN | B14                 | DIN 42541 | 8000          | 36              | 170                           | 77              | 70     | 555                     | 355                   | 140             |                     |

# Order sheet (Low Voltage)

|                    |  |
|--------------------|--|
| Date               |  |
| Rev.               |  |
| Customer reference |  |

**Electrical features**

|                 |  |    |
|-----------------|--|----|
| Nominal voltage |  | kv |
| Rated current   |  | A  |

**Relevant standard**

|                          |       |
|--------------------------|-------|
| <input type="checkbox"/> | DIN   |
| <input type="checkbox"/> | EN    |
| <input type="checkbox"/> | Comem |
| <input type="checkbox"/> | Other |

**Active parts in air**

|                          |                        |
|--------------------------|------------------------|
| <input type="checkbox"/> | Tinned 10 micron       |
| <input type="checkbox"/> | Silver-plated 3 micron |
| <input type="checkbox"/> | Other                  |

**Catalogue page**

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**Gasket**

|                          |                      |
|--------------------------|----------------------|
| <input type="checkbox"/> | NBR                  |
| <input type="checkbox"/> | VITON                |
| <input type="checkbox"/> | FVMQ (Fluorosilicon) |
| <input type="checkbox"/> | Special              |

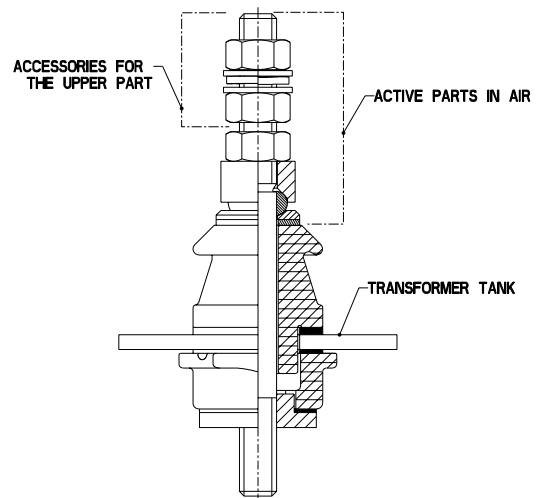
**Terminal contact in the lower part**                      **Notes**

|                          |                       |  |
|--------------------------|-----------------------|--|
| <input type="checkbox"/> | Type A                |  |
| <input type="checkbox"/> | Type B <sup>(1)</sup> |  |
| <input type="checkbox"/> | Customer drawing      |  |

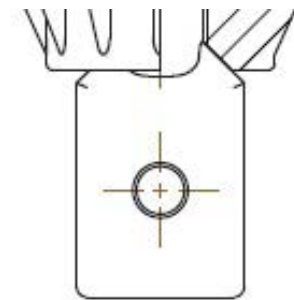
(1) According to EN standard type B is applied to:  
 Brass bolt: 1kV/250A, 1kV/630A, 1kV/1000A, 1kV/1800A  
 Copper bolt: 1kV/1250A, 1kV/2000A

**Terminal contact in the upper part**                      **Notes**

|                          |                  |  |
|--------------------------|------------------|--|
| <input type="checkbox"/> | Type A           |  |
| <input type="checkbox"/> | Type B           |  |
| <input type="checkbox"/> | Customer drawing |  |
| <input type="checkbox"/> | No need          |  |



**Type A**



**Type B**

Notes (Construction details according to customer specifications):

# Order sheet (Medium Voltage)

|                    |  |
|--------------------|--|
| Date               |  |
| Rev.               |  |
| Customer reference |  |

**Electrical features**

|                   |  |    |
|-------------------|--|----|
| Nominal voltage   |  | kv |
| Rated current     |  | A  |
| Creepage distance |  | mm |

**Relevant standard**

|                          |       |
|--------------------------|-------|
| <input type="checkbox"/> | DIN   |
| <input type="checkbox"/> | EN    |
| <input type="checkbox"/> | Comem |
| <input type="checkbox"/> | Other |

**Active parts in air**

|                          |                        |
|--------------------------|------------------------|
| <input type="checkbox"/> | Tinned 10 micron       |
| <input type="checkbox"/> | Silver-plated 3 micron |
| <input type="checkbox"/> | Other                  |

**Fixing components**

|                          |                 |
|--------------------------|-----------------|
| <input type="checkbox"/> | Galvanized      |
| <input type="checkbox"/> | Stainless steel |

**Gasket <sup>(1)</sup>**

|                          |                      |
|--------------------------|----------------------|
| <input type="checkbox"/> | NBR                  |
| <input type="checkbox"/> | VITON                |
| <input type="checkbox"/> | FVMQ (Fluorosilicon) |
| <input type="checkbox"/> | Special              |

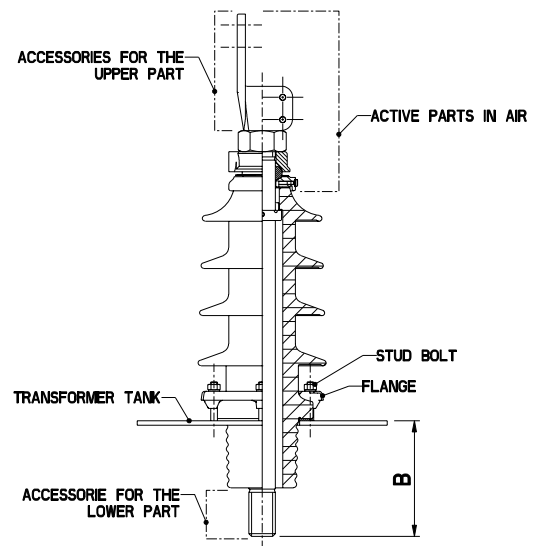
(1) The gasket between porcelain and tank will be always in rubber cork if not differently specified in the notes

**Catalogue page**

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**B Dimension (mm)**

|  |
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|  |
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**Flange**

|                          |            |
|--------------------------|------------|
| <input type="checkbox"/> | Aluminium  |
| <input type="checkbox"/> | Galvanized |

**Arcing horns**

|                          |     |
|--------------------------|-----|
| <input type="checkbox"/> | Yes |
| <input type="checkbox"/> | No  |

**Accessories for lower part**

**Notes**

|                          |                  |  |
|--------------------------|------------------|--|
| <input type="checkbox"/> | Flag             |  |
| <input type="checkbox"/> | Customer drawing |  |

**Accessories for upper part**

**Notes**

|                          |                  |  |
|--------------------------|------------------|--|
| <input type="checkbox"/> | Flag             |  |
| <input type="checkbox"/> | Customer drawing |  |

Notes (Construction details according to customer specifications):

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