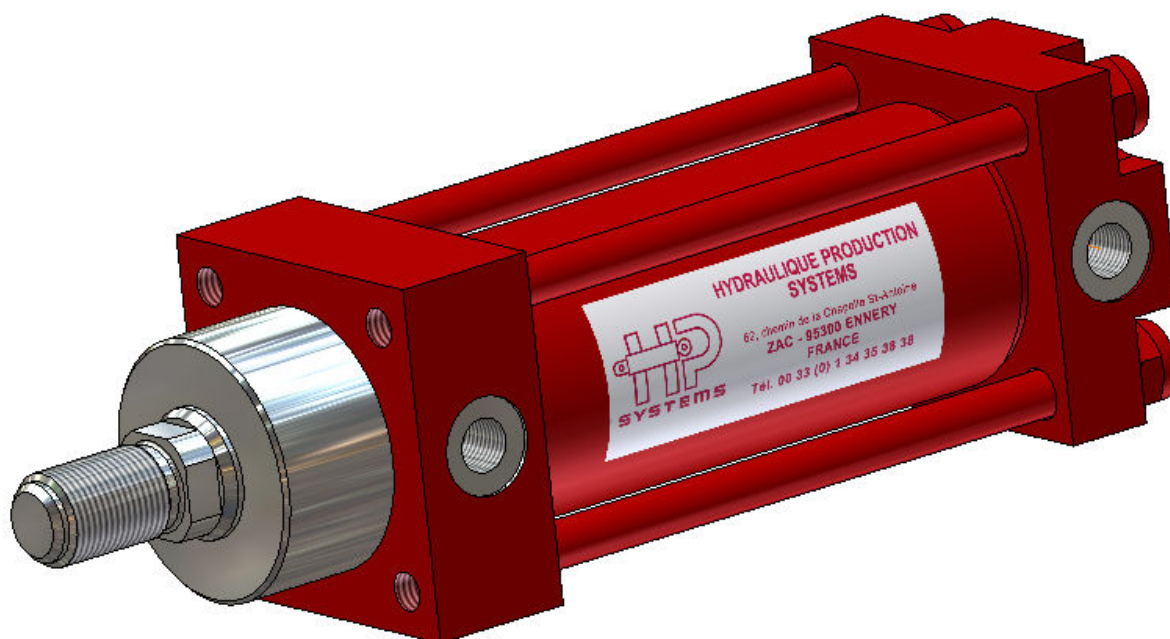


# SIŁOWNIKI HYDRAULICZNE HYDRAULIC CYLINDERS

## Podwójnego działania

*Double acting*



**SERIA HVB, *HVB Series***

**CNOMO 05.07.65 ~ 05.07.70**

**Ciśnienie robocze, *Working pressure* : 200 bar**

**Średnice, *Diameters* : od 25 do 125 mm**



## Charakterystyka ogólna

### General characteristics

- Ciśnienie robocze : 200 bar
- Ciśnienie testowe : 300 bar
  
- Płyny robocze :  
Oleje mineralne HM-HL 10 do 40 ~50° C
  
- Temperatura pracy: od -20do +90° C (H)  
do +160° C (V)
  
- Tolerancja skoku : +2 mm
- Skoki standardowe:  
5-10-16-25-40-63-100-160 mm
- Filtracja : klasa: 9-10 ~ NAS 1638  
filtr:  $\beta_{25} = 75$
- Płyny robocze : oleje mineralne HFA/B/C/D
- Chłonność: 12 ~ 90 mm<sup>2</sup>/s
  
- *Use pressure : 200 bar maxi*
- *Test pressure : 300 bar*
- *Fluid : Mineral oil HM-HL 10 to 40 Cst at 50° C*
- *Temperature: -20 to + 90° C (Designation H)  
until + 160° C (Designation V)*
  
- *Stroke tolerance : +2 mm*
- *Standard strokes:  
5-10-16-25-40-63-100-160 mm*
- *Filtering : Contamination class 9-10  
to NAS 1638 obtained with filter  $\beta_{25} = 75$*
- *Fluid: Mineral oil and fluid HFA/B/C/D*
  
- *Viscosity: 12 to 90 mm<sup>2</sup>/s*

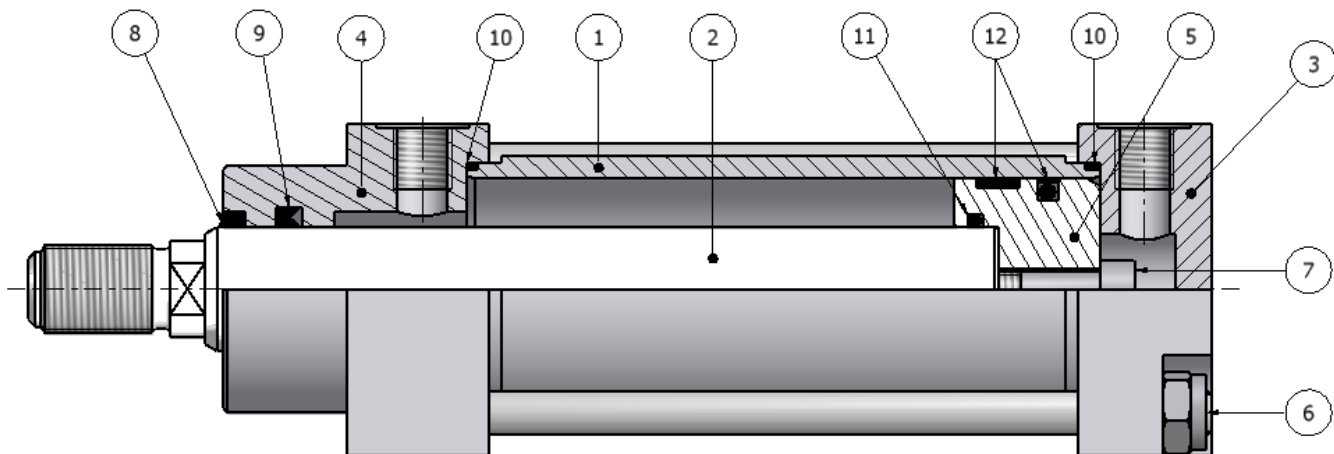
### Maksymalna prędkość przesuwu, *Maximal speed.*

| ØTłoka<br>Bore       | 25  | 32 | 40 | 50 | 63 | 80  | 100 | 125 |
|----------------------|-----|----|----|----|----|-----|-----|-----|
| m/s<br>Meter/seconds | 0.2 |    |    |    |    | 0.1 |     |     |

### Skoki standardowe, *Strokes*

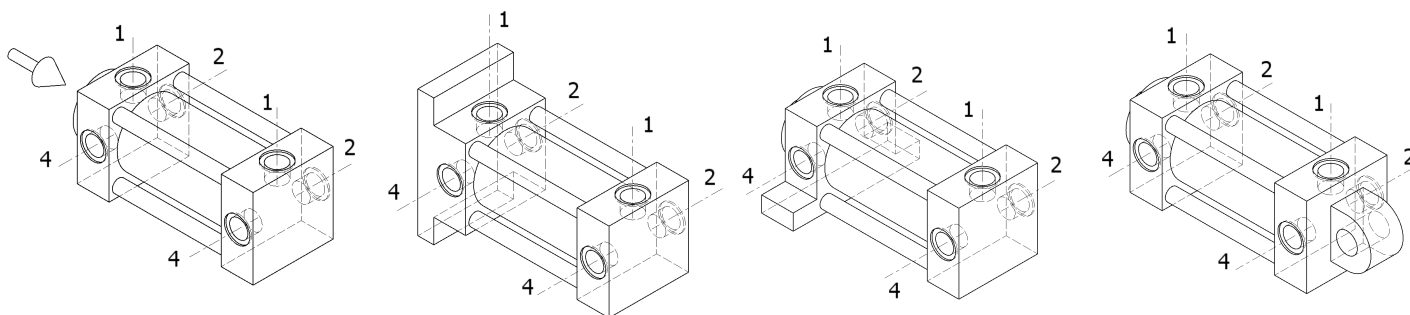
Na żądanie skoki niestandardowe +/- 1mm

| ØTłoka<br>Bore | Skok, <i>Stroke</i> |    |    |    |    |    |     |     |
|----------------|---------------------|----|----|----|----|----|-----|-----|
|                | 5                   | 10 | 16 | 25 | 40 | 63 | 100 | 160 |
| 25             | •                   | •  | •  | •  | •  | •  |     |     |
| 32             | •                   | •  | •  | •  | •  | •  | •   |     |
| 40             | •                   | •  | •  | •  | •  | •  | •   | •   |
| 50             | •                   | •  | •  | •  | •  | •  | •   | •   |
| 63             | •                   | •  | •  | •  | •  | •  | •   | •   |
| 80             | •                   | •  | •  | •  | •  | •  | •   | •   |
| 100            | •                   | •  | •  | •  | •  | •  | •   | •   |
| 125            | •                   | •  | •  | •  | •  | •  | •   | •   |



- |   |  |
|---|--|
| ① <b>Cylinder</b><br><i>Cylinder</i>              | ⑦ <b>Śruba łącząca tłok i tłoczek</b><br><i>Assembly bolt</i>    |
| ② <b>Tłoczek</b><br><i>Piston rod</i>             | ⑧ <b>Zgarniacz</b><br><i>Wiper</i>                               |
| ③ <b>Pokrywa tylna</b><br><i>Head end</i>         | ⑨ <b>Uszczelnienie tłoczkowe</b><br><i>Rod seal</i>              |
| ④ <b>Pokrywa przednia</b><br><i>Cylinder head</i> | ⑩ <b>Uszczelnienie cylindra</b><br><i>Cylinder seal</i>          |
| ⑤ <b>Tłok</b><br><i>Piston</i>                    | ⑪ <b>Uszczelnienie tłok - tłoczek</b><br><i>Piston rod seal</i>  |
| ⑥ <b>Śruba mocująca</b><br><i>Main bolt</i>       | ⑫ <b>Pierścień prowadzący</b><br><i>Piston seal / rider seal</i> |

**Zasilanie(1= Standard), Port location(1=Standard)**



**Standardowy typ zasilania to N°1, możliwe są również poniższe konfiguracje.**  
*Standard design for connections is item N°1 (Refer to red arrow). However, the following configurations are available for other connection design:*

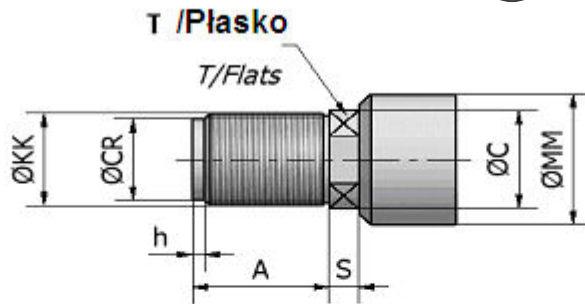
| Pozycja<br><i>Position</i>  | Sposób mocowania, Port                        |   |                                       |                                  |
|-----------------------------|---|---|---------------------------------------|----------------------------------|
|                             | Standardowy cylinder<br><i>Basic cylinder</i> | Przednia flansza<br><i>Front flange</i> | Łapy mocujące<br><i>Low head lugs</i> | Ucho mocujące<br><i>Rear eye</i> |
| <b>Przód</b><br><i>Head</i> | <b>1-2-4</b>                                  | <b>1-2-4</b>                            | <b>1-2-4</b>                          | <b>1-2-4</b>                     |
| <b>Tył</b><br><i>Rear</i>   | <b>1-2-4</b>                                  | <b>1-2-4</b>                            | <b>1-2-4</b>                          | <b>1-2-4</b>                     |

# Końcówki tłoczyska

## Rod end detail

Gwint zewnętrzny  
Exterior Thread

1

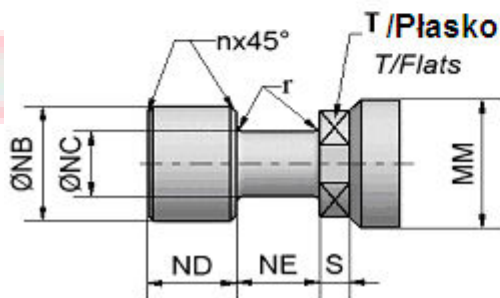


Czop  
Tenon

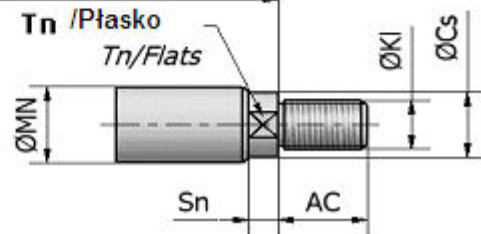
2

Końcówka  
informacyjna  
Information rod

3

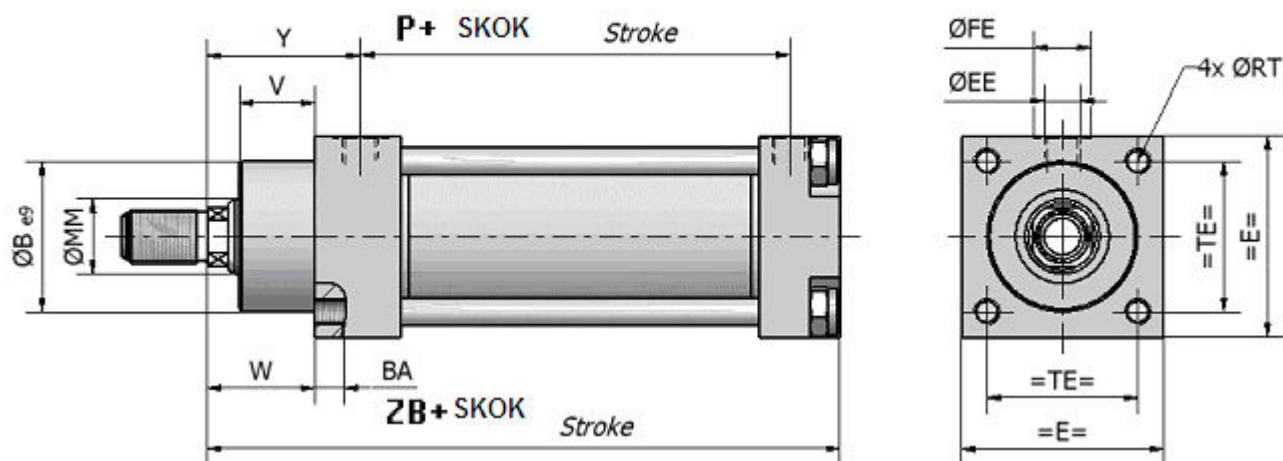


WA+ SKOK  
Stroke

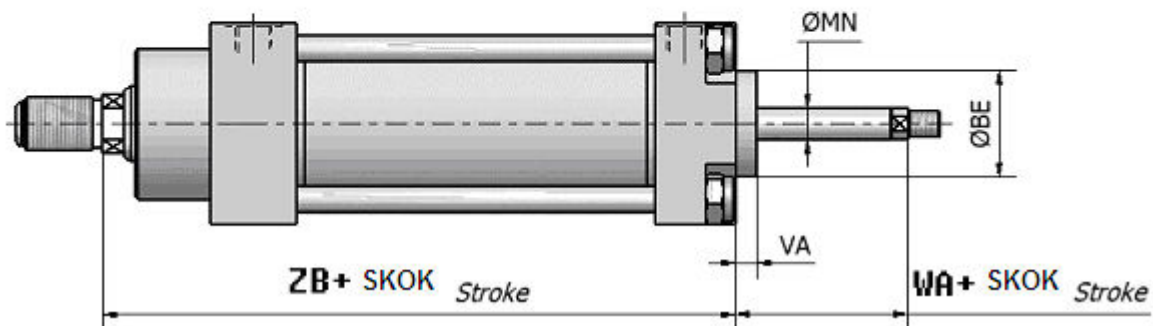


| Ø Tłoka (Ø Bore)   | 25       | 32       | 40       | 50       | 63      | 80      | 100      | 125      |
|--------------------|----------|----------|----------|----------|---------|---------|----------|----------|
| Ø MM (Ø tłoczyska) | 16       | 18       | 22       | 28       | 36      | 45      | 56       | 70       |
| Ø MN - AC          | 10       | 10       | 12       | 12       | 12      | 12      | 16       | 16       |
| A                  | 20       | 20       | 25       | 32       | 40      | 50      | 63       | 80       |
| Ø C                | 14       | 15       | 19       | 25       | 33      | 42      | 53       | 67       |
| Ø CR               | 9.5      | 9.5      | 13       | 17       | 23.5    | 29.5    | 38.5     | 48.5     |
| Ø CS               | 9.5      | 9.5      | 11.5     | 11.5     | 11.5    | 11.5    | 15       | 15       |
| h                  | 2.5      | 2.5      | 3        | 3        | 3       | 4       | 5        | 5        |
| Ø KK               | M12x1.25 | M12x1.25 | M16x1.5  | M20x1.5  | M27x2   | M33x2   | M42x2    | M56x2    |
| Ø KI               | M8x1.25  | M8x1.25  | M10x1.25 | M10x1.25 | M10x1.5 | M10x1.5 | M12x1.25 | M12x1.25 |
| n                  | 0.2      | 0.2      | 0.2      | 0.2      | 0.3     | 0.3     | 0.5      | 0.5      |
| Ø NB               | 14       | 15       | 18       | 22.4     | 28      | 35.5    | 45       | 56       |
| Ø NC               | 8        | 9        | 11.2     | 14       | 18      | 22.4    | 28       | 35.5     |
| ND - NE            | 6        | 6        | 8        | 10       | 12.5    | 16      | 20       | 25       |
| r                  | 0.3      | 0.3      | 0.5      | 0.5      | 0.8     | 0.8     | 1.2      | 1.2      |
| S                  | 8        | 8        | 8        | 8        | 12.5    | 12.5    | 14       | 14       |
| Sn                 | 5        | 5        | 6        | 6        | 6       | 6       | 8        | 8        |
| T                  | 12       | 13       | 17       | 22       | 30      | 36      | 46       | 60       |
| Tn                 | 8        | 8        | 10       | 10       | 10      | 10      | 13       | 13       |

**Montaż za pomocą 4 otw. gwintowanych w  
przedniej pokrywie**  
*Mounting by threaded head end*



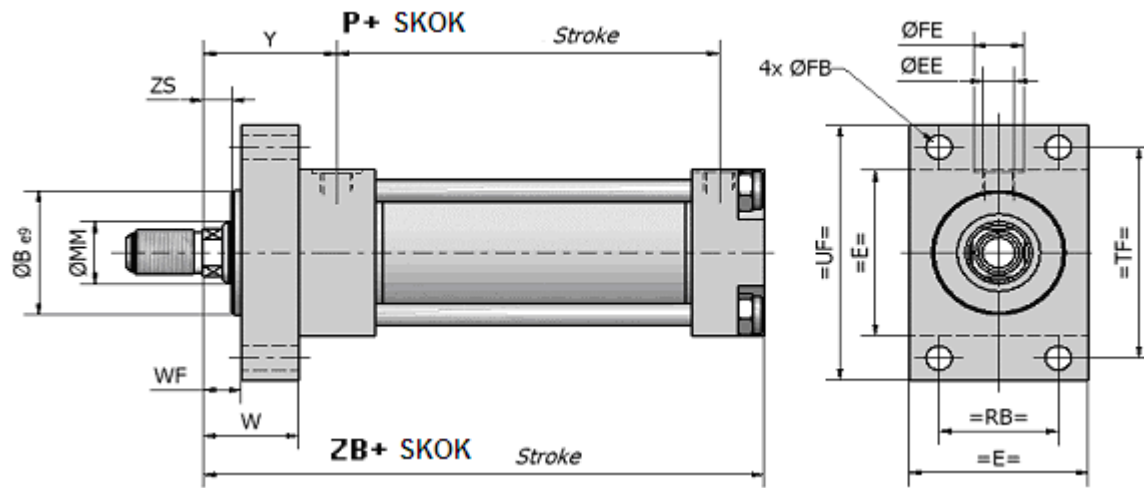
**Końcówka informacyjna**  
*Information rod*



| $\varnothing$ Tłoka<br>( $\varnothing$ Bore)                        | 25  | 32  | 40  | 50  | 63  | 80  | 100  | 125 |
|---|-----|-----|-----|-----|-----|-----|------|-----|
| $\varnothing$ MM ( $\varnothing$ tłoczyska)<br>( $\varnothing$ Rod) | 16  | 18  | 22  | 28  | 36  | 45  | 56   | 70  |
| $\varnothing$ B   | 36  | 40  | 45  | 56  | 63  | 80  | 100  | 125 |
| BA  | 12  | 12  | 12  | 12  | 18  | 18  | 24   | 24  |
| $\varnothing$ BE  | 36  | 36  | 42  | 42  | 63  | 63  | 80   | 80  |
| E   | 45  | 56  | 63  | 75  | 85  | 106 | 125  | 160 |
| $\varnothing$ EE  | 1/8 | 1/8 | 1/4 | 1/4 | 3/8 | 3/8 | 1/2  | 1/2 |
| $\varnothing$ FE  | 19  | 19  | 25  | 25  | 28  | 28  | 34   | 34  |
| $\varnothing$ MN  | 10  | 10  | 12  | 12  | 12  | 12  | 16   | 16  |
| P   | 34  | 45  | 45  | 53  | 56  | 63  | 70   | 80  |
| $\varnothing$ RT  | M6  | M8  | M10 | M10 | M12 | M16 | M18  | M20 |
| TE  | 34  | 42  | 45  | 56  | 65  | 80  | 97.5 | 125 |
| V   | 16  | 20  | 25  | 28  | 28  | 32  | 38   | 40  |
| VA  | 8   | 8   | 12  | 12  | 12  | 12  | 15   | 15  |
| W   | 28  | 32  | 40  | 40  | 45  | 50  | 58   | 63  |
| WA  | 20  | 20  | 32  | 32  | 32  | 32  | 35   | 35  |
| Y   | 46  | 48  | 55  | 57  | 71  | 74  | 81   | 93  |
| ZB  | 92  | 102 | 115 | 125 | 145 | 152 | 177  | 198 |

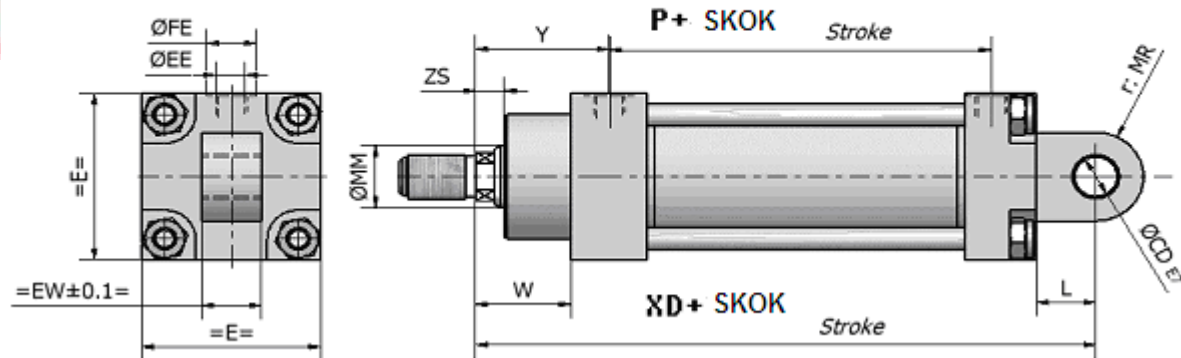
## Montaż za pomocą prostokątnego kołnierza

Mounting by front head



## Montaż ze pomocą ucha

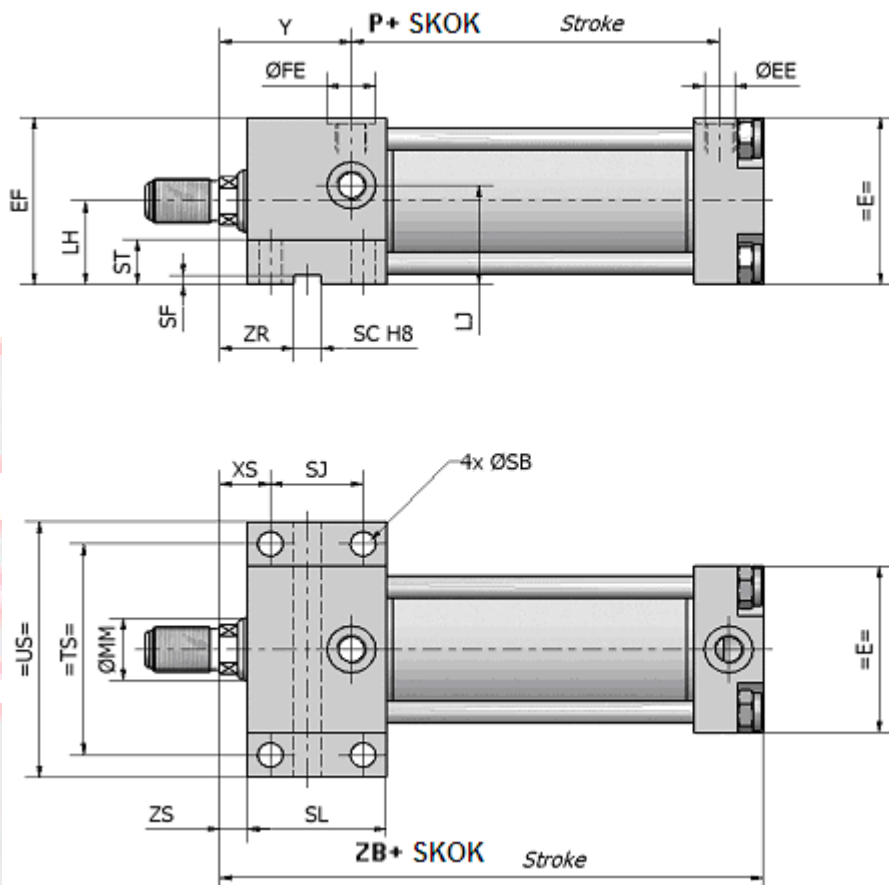
Mounting by rear eye



| Ø Tłoka<br>(Ø Bore)           | 25  | 32  | 40  | 50  | 63  | 80  | 100  | 125 |
|-------------------------------|-----|-----|-----|-----|-----|-----|------|-----|
| Ø MM (Ø tłoczyska)<br>(Ø Rod) | 16  | 18  | 22  | 28  | 36  | 45  | 56   | 70  |
| Ø B                           | 36  | 40  | 45  | 56  | 63  | 80  | 100  | 125 |
| Ø CD                          | 12  | 12  | 16  | 20  | 25  | 32  | 40   | 50  |
| E                             | 45  | 56  | 63  | 75  | 85  | 106 | 125  | 160 |
| Ø EE                          | 1/8 | 1/8 | 1/4 | 1/4 | 3/8 | 3/8 | 1/2  | 1/2 |
| EW                            | 16  | 16  | 20  | 25  | 32  | 40  | 50   | 63  |
| Ø FB                          | 6.6 | 9   | 11  | 11  | 14  | 18  | 20   | 22  |
| Ø FE                          | 19  | 19  | 25  | 25  | 28  | 28  | 34   | 34  |
| L                             | 20  | 20  | 25  | 25  | 32  | 40  | 56   | 63  |
| MR                            | 14  | 14  | 16  | 20  | 25  | 32  | 40   | 50  |
| P                             | 34  | 45  | 45  | 53  | 56  | 63  | 70   | 80  |
| RB                            | 34  | 36  | 45  | 50  | 65  | 80  | 97.5 | 125 |
| TF                            | 56  | 71  | 80  | 95  | 104 | 132 | 155  | 195 |
| UF                            | 70  | 86  | 100 | 115 | 124 | 160 | 185  | 230 |
| W                             | 28  | 32  | 40  | 40  | 45  | 50  | 58   | 63  |
| WF                            | 16  | 16  | 20  | 16  | 21  | 22  | 24   | 27  |
| XD                            | 112 | 122 | 140 | 150 | 177 | 192 | 233  | 261 |
| Y                             | 46  | 48  | 55  | 57  | 71  | 74  | 81   | 93  |
| ZB                            | 92  | 102 | 115 | 125 | 145 | 152 | 177  | 198 |
| ZS                            | 12  | 12  | 15  | 12  | 17  | 18  | 20   | 23  |

## Montaż poziomy

### Mounting by low head lugs



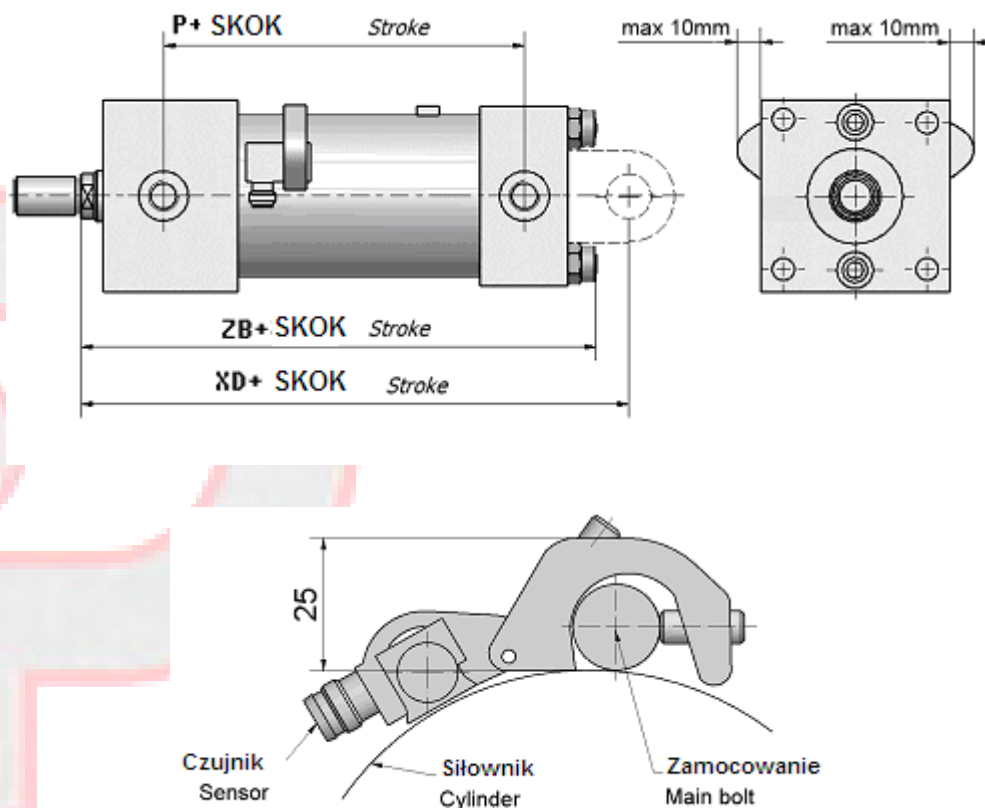
| Ø Tłoka<br>(Ø Bore)           | 25   | 32  | 40   | 50   | 63   | 80  | 100   | 125  |
|-------------------------------|------|-----|------|------|------|-----|-------|------|
| Ø MM (Ø tłoczyska)<br>(Ø Rod) | 16   | 18  | 22   | 28   | 36   | 45  | 56    | 70   |
| <b>E</b>                      | 45   | 56  | 63   | 75   | 85   | 106 | 125   | 160  |
| <b>EE</b>                     | 1/8  | 1/8 | 1/4  | 1/4  | 3/8  | 3/8 | 1/2   | 1/2  |
| <b>EF</b>                     | 47.5 | 59  | 67.5 | 80   | 87.5 | 109 | 129.5 | 162  |
| Ø <b>FE</b>                   | 19   | 19  | 25   | 25   | 28   | 28  | 34    | 34   |
| <b>LH</b>                     | 25   | 31  | 36   | 42.5 | 45   | 56  | 67    | 82   |
| <b>LJ</b>                     | 30   | 32  | 45   | 44.5 | 57   | 60  | 70    | 82   |
| <b>P</b>                      | 34   | 45  | 45   | 53   | 56   | 63  | 70    | 80   |
| Ø <b>SB</b>                   | 6.6  | 9   | 11   | 11   | 14   | 18  | 20    | 22   |
| <b>SC</b>                     | 12   | 12  | 12   | 12   | 16   | 16  | 16    | 20   |
| <b>SF</b>                     | 4    | 4   | 6    | 6    | 6    | 6   | 6     | 6    |
| <b>SJ</b>                     | 32   | 32  | 36   | 40   | 45   | 50  | 56    | 63   |
| <b>SL</b>                     | 45   | 50  | 55   | 60   | 70   | 80  | 90    | 100  |
| <b>ST</b>                     | 12   | 12  | 20   | 20   | 25   | 25  | 32    | 36   |
| <b>TS</b>                     | 56   | 71  | 80   | 95   | 104  | 132 | 155   | 195  |
| <b>US</b>                     | 70   | 86  | 100  | 115  | 124  | 160 | 185   | 230  |
| <b>XS</b>                     | 18.5 | 21  | 24.5 | 22   | 29.5 | 33  | 37    | 41.5 |
| <b>Y</b>                      | 46   | 48  | 55   | 57   | 71   | 74  | 81    | 93   |
| <b>ZB</b>                     | 92   | 102 | 115  | 125  | 145  | 152 | 177   | 198  |
| <b>ZR</b>                     | 28.5 | 31  | 36.5 | 36   | 44   | 50  | 57    | 63   |
| <b>ZS</b>                     | 12   | 12  | 15   | 12   | 17   | 18  | 20    | 23   |



# DETEKCJA MAGNETYCZNA POZYCJI TŁOKA W SIŁOWNIKU HVB

## MAGNETIC DETECTION FOR HVB CYLINDER

**Ciśnienie robocze**, Working pressure: 160 bar max.



| Ø Tłoka<br>(Ø Bore) | 25  | 32  | 40  | 50  | 63  | 80  |
|---------------------|-----|-----|-----|-----|-----|-----|
| <b>P</b>            | 44  | 59  | 65  | 65  | 76  | 82  |
| <b>ZB</b>           | 102 | 116 | 135 | 137 | 165 | 171 |
| <b>XD</b>           | 122 | 136 | 160 | 162 | 197 | 211 |

**UWAGA :** Dla wszystkich siłowników HVBS z detekcją magnetyczną, minimalny skok wynosi 15 mm. Opcja dostępna tylko dla średnic od Ø25 do Ø80. Temperatura pracy od -20 do +90 °C.

**NOTE :** For all HVBS type magnetic detection cylinders, a minimum stroke of 15mm is obligatory. Realizable only from Ø25 to Ø80. Operating temperature -20 +90 °C.

### Uwaga !!!

Aby uniknąć błędów w przekazie sygnału, siłownik nie może pracować w polu magnetycznym przekraczającym 1Ka/m. W bezpośrednim sąsiedztwie czujników, nie mogą znajdować się elementy magnetyczne. Siłownik powinien być zabezpieczony przed kontaktem z opiłkami metalu. Temperatura otoczenia nie może przekraczać +70 °C.

### Warning !!!

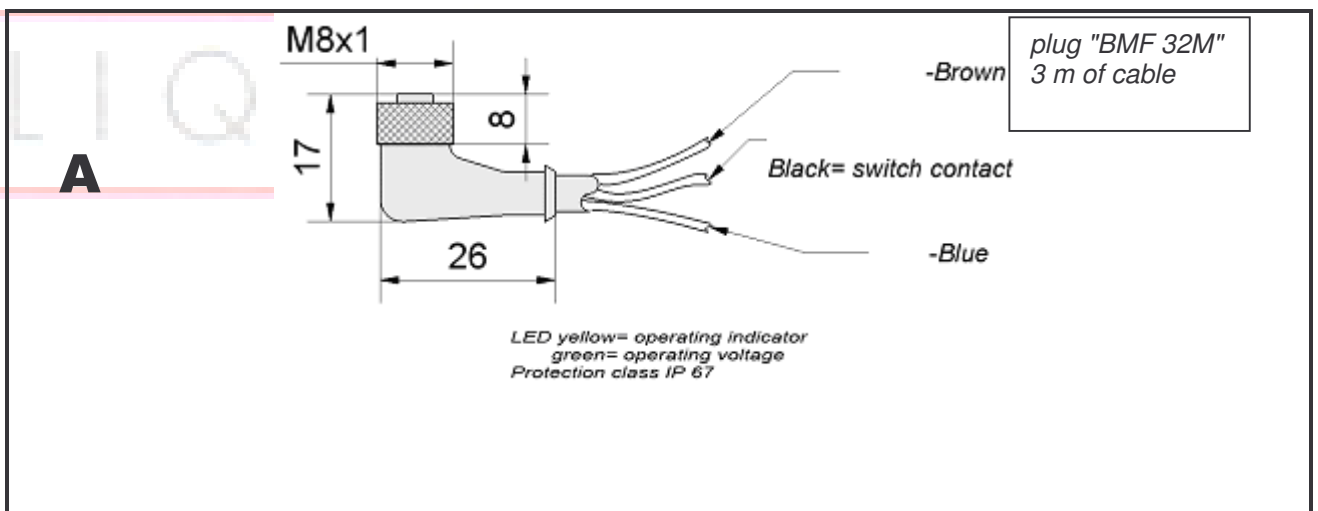
To prevent switching errors, the cylinder must not be installed in an external magnetic field that exceeds 1Ka/m. There must be no ferritic material in the immediate neighbourhood of the sensors. Covers must be provided to protect against ferritic swarf. The ambient temperature must not exceed +70 °C.



# BMF 32 M

Technical data for the magnetic field BMF 32 M

|   |  |                                    |
|---|--|------------------------------------|
| <i>PNP-Normally-open / positive sensing</i> |  |                                    |
| Rated operating field strength $H_n$        | Rated operating field strength $H_n$     | 1,2 kA/m                           |
| Assured operating field strength $H_a$      | Assured operating field strength $H_a$   | $\geq 2$ kA/m                      |
| Hysteresis                                  | Hysteresis                               | $\leq 45\%$ de $H_n$               |
| Temperature drift                           | Temperature drift                        | $\leq 0,3\%/^{\circ}\text{C}$      |
| Supply voltage $U_B$                        | Supply voltage $U_B$                     | 10...30 V DC                       |
| Voltage drop $U_d$ for $I_c \leq 100$ mA    | Voltage drop $U_d$ for $I_c \leq 100$ mA | $\leq 2.5$ V                       |
| Rated insulation voltage $U_i$              | Rated insulation voltage $U_i$           | 75 V DC                            |
| Rated operational current $I_a$             | Rated operational current $I_a$          | 200 mA                             |
| No-load supply current                      | No-load supply current                   | $\leq 30$ mA/ $\leq 10$ mA         |
| Off-state current $I_r$                     | Off-state current $I_r$                  | $\leq 80\mu\text{A}$               |
| Protected against polarity reversal         | Protected against polarity reversal      | <input type="checkbox"/> /Yes      |
| Short circuit protection                    | Short circuit protection                 | <input type="checkbox"/> /Yes      |
| Load capacitance                            | Load capacitance                         | $\leq 1$ $\mu\text{F}$             |
| Ambient temperature range $T_a$             | Ambient temperature range $T_a$          | -25...+70 $^{\circ}\text{C}$       |
| Utilization categories                      | Utilization categories                   | DC 13                              |
| Degree of protection                        | Degree of protection                     | IP67                               |
| Housing material                            | Housing material                         | Aluminium                          |
| Type of connection                          | Type of connection                       | Connecteur<br>Cable with connector |
| Connector                                   | Connector                                | BKS-S 49/ BKS-S 48                 |



| <b>SERIA Serie</b>                                      |          | <b>HVB</b>   |  |                |
|---|----------|--|--|----------------|
| <b>TŁOCZYSKO</b><br><i>Rod</i>                          |          | <b>S</b> = Standardowe - pojedyncze, <i>Single rod</i><br><b>D</b> = Z końcówką informacyjną, <i>Information rod</i> |  |                |
| <b>TŁOK</b><br><i>Bore</i>                              |          | <b>02</b> = 25 mm<br><b>03</b> = 32 mm<br><b>04</b> = 40 mm<br><b>05</b> = 50 mm                                     | <b>06</b> = 63 mm<br><b>08</b> = 80 mm<br><b>10</b> = 100 mm<br><b>12</b> = 125 mm |                |
| <b>SKOK</b><br><i>Strokes</i>                           |          | <b>A</b> = 5 mm<br><b>B</b> = 10 mm<br><b>C</b> = 16 mm<br><b>D</b> = 25 mm  | <b>E</b> = 40 mm<br><b>F</b> = 63 mm<br><b>G</b> = 100 mm<br><b>H</b> = 160 mm     |                |
| <b>MOCOWANIE</b><br><i>Mounting<br/>Rod End</i>         |          | Sposób zamocowania   | Gwint<br><i>Male thread</i>  | Czop,<br>Tenon |
|   |          | Standardowy cyl.<br><i>Basic cylinder</i>  | <b>1</b>   | <b>5</b>       |
|   |          | Kołnierz<br><i>Front flange</i>  | <b>2</b>   | <b>6</b>       |
|   |          | Łapy mocujące<br><i>Low head lugs</i>  | <b>3</b>   | <b>7</b>       |
|   |          | Ucho mocujące<br><i>Rear eye</i>   | <b>4</b>   | <b>8</b>       |
| <b>USZCZELNIENIE</b><br><i>Seals</i>                    |          | <b>H</b> = do 80°C <b>V</b> = do 160°C   |  |                |
| <b>MODYFIKACJE</b><br><i>Modification requirements</i>  |          | <b>0</b> = Brak<br><b>0</b> = Without  |  |                |
| <b>DETEKCJA POZYCJI TŁOKA</b><br><i>Position sensor</i> |          | <b>DM</b> (min. skok = 15mm)<br>dla średnic od Ø25 do Ø80 z uszczelnieniem typu H.                                   |  |                |
| <b>WTYCZKA</b><br><i>plug</i>                           | <b>A</b> | <b>DM</b> Magnetic field (mini stroke=15mm)<br>Realizable from Ø25 to Ø80 with H seal tightness.<br>Consult us       |  |                |

**Siła dokręcenia , Tightening torque**

| Ø Tłoka (Ø Bore)   | 25          | 32         | 40         | 50         | 63       | 80       | 100       | 125       |
|--|-------------|------------|------------|------------|----------|----------|-----------|-----------|
| <b>Zamoc. siłownika / tył (m.daN)</b><br><i>Assembly of cylinder/ rear (m.daN)</i> | <b>0.65</b> | <b>1.6</b> | <b>3.1</b> | <b>3.5</b> | <b>6</b> | <b>9</b> | <b>20</b> | <b>32</b> |


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