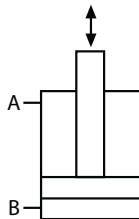


## Pull clamping element double-acting



For power units  
please see product group 7

For accessories  
please see product group 11

### Applications:

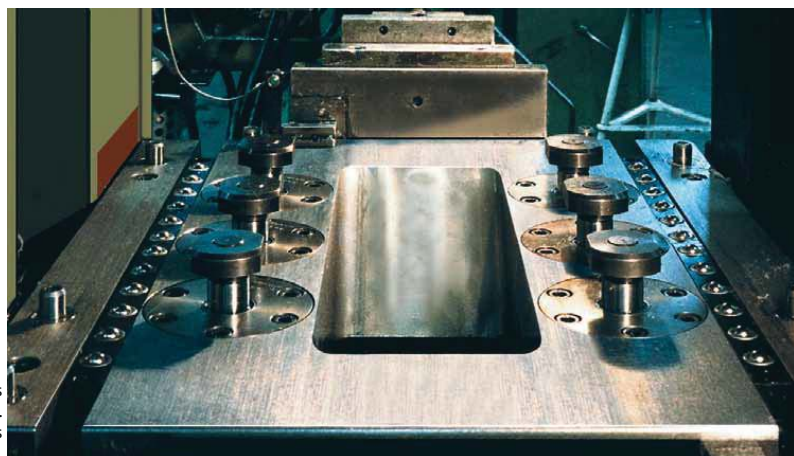
- integrated in press rams
- integrated in press beds
- in machine tools and equipment
- when the available space is limited

### Function:

Double-acting pull clamping element for clamping dies on a press bed or press ram. The die must be provided with T-slots for the tie rod. It is important that the die is correctly pushed into the press, and is parallel with the clamping elements. The clamping and unclamping positions are monitored by inductive proximity switches. The tie rod and the piston are hardened and ground, and the hydraulic system is protected against dirt by wiper rings.

### Special features:

- ◆ position monitoring ensures high functional safety
- ◆ ideal power transmission with centrally arranged clamping elements
- ◆ compact design
- ◆ clamping force of between 60 and 104 kN
- ◆ optimum use of bed and ram surfaces
- ◆ die clamping in barely accessible positions
- ◆ compensates for large clamping edge tolerances ( $\pm 1.5$  mm)



Pull clamping elements in the press bed of a double column press. Feeding of dies is ensured by ball bars in the T-slots of the press bed.

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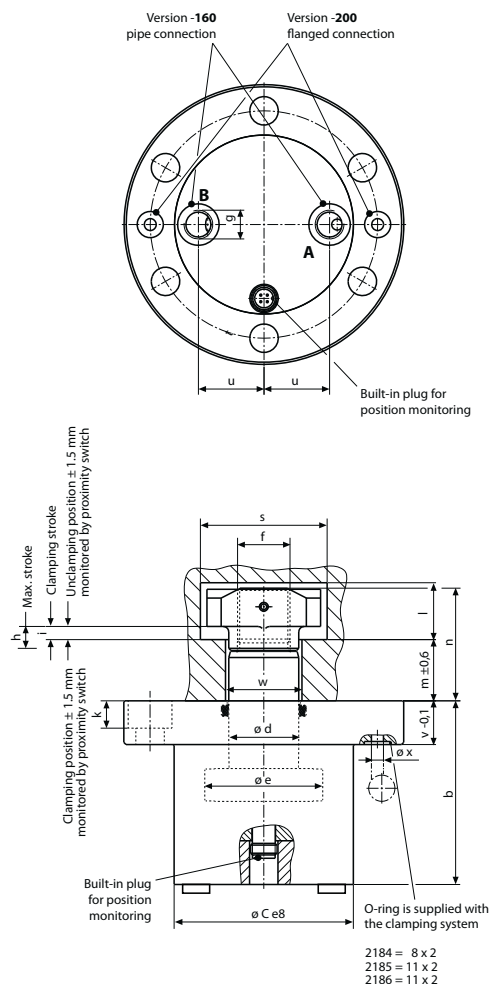


## Pull clamping element double-acting

Pulling force at 400 bar (kN)	60	104	164
Pulling force at 100 bar (kN)	15	26	41
Piston Ø e (mm)	54	70	88
Piston rod Ø d (mm)	32	40	50
Max. stroke h (mm)	10	10	10
Oil consumption clamping (cm³)	10	16	25
Oil consumption unclamping (cm³)	15	23	37
a (mm)	128	160	192
b (mm)	84	104	122
c (mm)	82	104	126
f (mm)	M 24 x 1,5	M 30 x 1,5	M 36 x 1,5
g	G 1/4	G 3/8	G 3/8
i (mm)	6	6	6
k (mm)	13	17	21
l (mm)	26	35	41
m (mm)	28	37	48
n (mm)	51	68	85
o (mm)	20	26	33
p (mm)	13	18	22
q (mm)	□ 52	Ø 74	□ 84
r (mm)	65	74	95
s (mm)	58	82	92
t (mm)	104	130	156
u (mm)	30	38	45
v (mm)	20	28	35
w (mm)	38	48	58
x (mm)	5,5	7	7
Weight (kg)	4,4	9	15
<b>with pipe connection</b>			
Part no.	<b>2184-160</b>	<b>2185-160</b>	<b>2186-160</b>
<b>with flanged connection</b>			
Part no.	<b>2184-200</b>	<b>2185-200</b>	<b>2186-200</b>

max. operating pressure 400 bar

Other sizes and special versions are available on request.

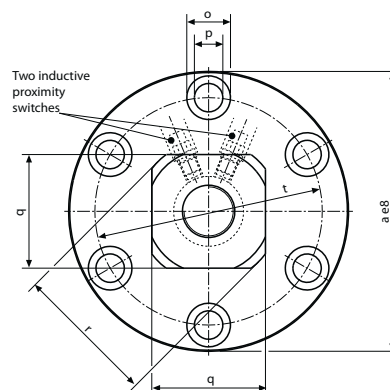


### Please note!

The piston rod is made from tempered steel.  
In the case of aggressive ambient conditions,  
a special material will be required.



Clamping of a complete die changing table with pull clamping elements.



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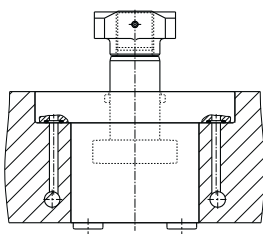
## Pull clamping element double-acting



### Recommended installation

In order to ensure ease of servicing, two alternatives are offered for connecting the pull clamps.

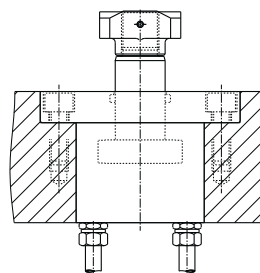
#### Flanged connection



Hydraulic oil is fed through the drilled holes in the bed and in the ram. There are no exposed conduits or screw fittings.

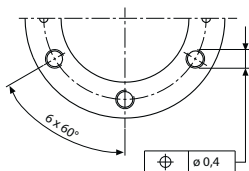
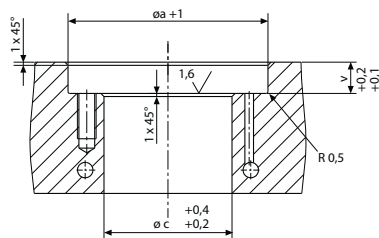
O-rings supplied with the clamping element provide for tight fitting. Easy installation, ease of servicing.

#### Pipe connection



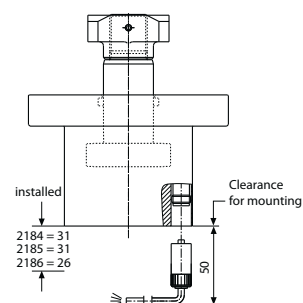
Pipes are recommended in applications where screw fittings are easily accessible and where pipes do not impede installation and dismantling of the pull clamping elements.

#### Drilled hole for flanged or pipe connection



Flanged connection requires a plain and neat surface.

#### Connection of the monitoring system for clamping and unclamping position



Both proximity switches are connected to the base of the pull clamp through a connecting lead with a screw coupling [IP 67]. The connecting lead must be ordered separately. Further installation may be carried out using a distribution block with an LED display, see page 4

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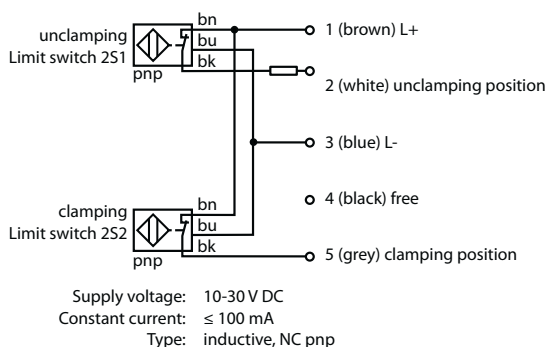
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## Pull clamping element double-acting

### Electrical installation

#### Pin assignment for three-wire proximity switches



#### Distribution block with LED display for connecting 4 clamping elements

Easy installation!  
LED display of the unclamping, change-over  
and clamping position of each clamping element.

Scope of delivery: 1 distribution block  
4 coupler plugs, 5 poles  
1 coupler plug, 16 poles

#### Wiring of output plug:

- Pin 1 = L+
- Pin 2 = L
- Pin 3 = 1L
- Pin 4 = do not use
- Pin 5 = 1S
- Pin 6 = 2L
- Pin 7 = do not use
- Pin 8 = 2S
- Pin 9 = 3L
- Pin 10 = do not use
- Pin 11 = 3S
- Pin 12 = 4L
- Pin 13 = do not use
- Pin 14 = 4S
- Pin 15 = free
- Pin 16 = free

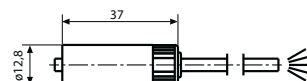
**L = Unclamping position**  
**U = not assigned**  
**S = Clamping position**

#### Hydraulic installation

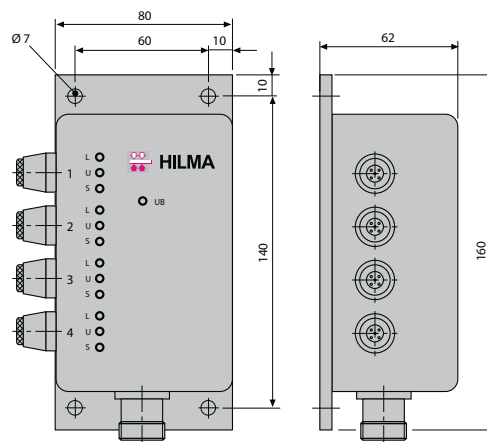
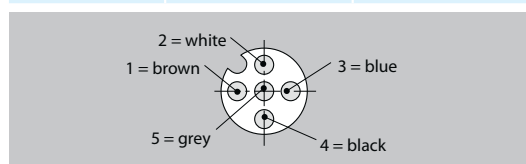
Read the operating instructions before commissioning the system.

Other parameters and recommendations are given in chapter no. 1 "General information".

#### 5-pole connecting lead with screw coupling



Cable length 5 m	Part no.	5700-013
Cable length 10 m	Part no.	5700-014



Part no.

5700-015

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