

# Pull Clamps

double-acting  
max operating pressure 5,800 psi



## Application

For clamping tools on press bed and press slide. Can be installed in press bed and press ram. The tie rod requires that the tool is provided with T-slots. The tool must be inserted into the press in the correct position and parallel to the clamping elements. Any mounting position. Max ambient temperature 158°F.

## Description

Double-acting pull cylinder. Piston and tie rod hardened and ground. Hydraulic system protected by wiper rings. Clamping and unclamping position monitored by inductive proximity switches is available.

## Advantages

- ideal power transmission with centrally arranged clamping elements
- clamping also possible at hard-to-get-to locations
- optimum use of bed and slide surface

## Important notes

The self-contained piston rod is made of tempered steel. Aggressive environmental conditions require a special design.

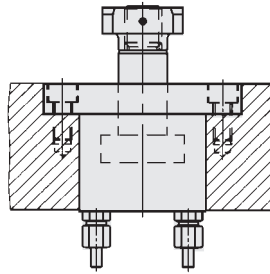
Operating conditions, tolerances, and other data, see page B-3.

## Recommended installation

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

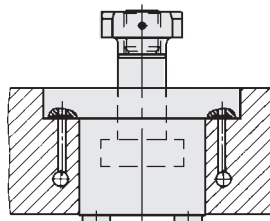
### -Pipe connection

Pipe connection is recommended if the screw fittings are easily accessible, and if unrestricted installation and removal of the pull clamping elements is ensured.



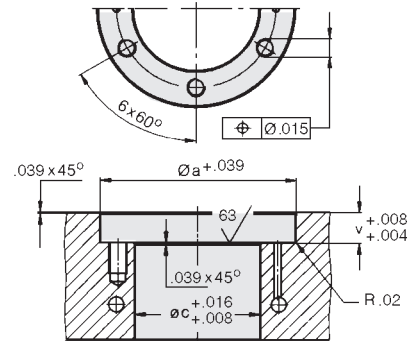
### - Flange connection with O-ring seal

The hydraulic oil is fed through drilled passages. There is no exposed hydraulic tubing or fittings. Easy installation, ease of servicing.



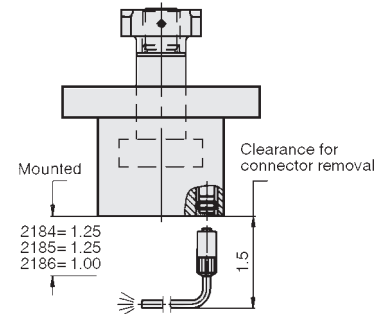
## Location hole

Flange connection requires a smooth and clean surface.



## Connection of monitoring system for clamping and unclamping position

The two proximity switches are connected in the base of the pull clamp by means of a connection cable (IP67).

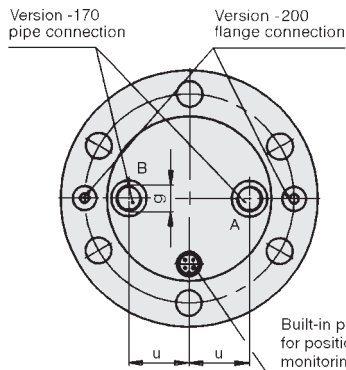
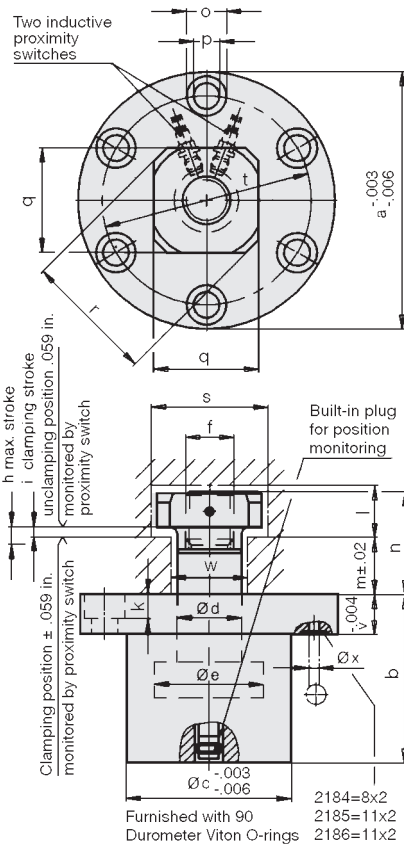


Further installation by using a junction box with LED display, see page E-13.



Pull clamping elements in the press bed of a double column press. Easy die positioning is ensured by roller blocs in the T-slots of the press bed.

## Pull Clamps/Accessories double-acting, max. operating pressure 5,800 psi



Other sizes on request.

### Accessories

Junction box with LED display for the connection of four clamping elements.

Easy and quick installation. Indication of unclamping and clamping position of each clamping element by LED display.

Furnished with four-5 conductor connectors and one-16 conductor connector.

**Part no. HCR-5700-015**

Pulling force	at 5,800 psi (lbs)	13,500	23,400	38,160
	at 1,000 psi (lbs)	2,327	4,034	6,360
Piston Ø e	(in)	2.126	2.755	3.464
Rod Ø d	(in)	1.259	1.574	1.968
Max. stroke h	(in)	0.393	0.393	0.393
Oil requirement/clamping	(in <sup>3</sup> )	0.610	0.980	1.530
Oil requirement/unclamping	(in <sup>3</sup> )	0.920	1.400	2.260
a	(in)	5.039	6.299	7.559
b	(in)	3.307	4.094	4.803
c	(in)	3.228	4.094	4.961
f	(mm)	M24x1.5	M30x1.5	M36x1.5
g BSPP Port (-160)	(in)	G ¼	G ⅜	G ⅝
g SAE Port (-170)	(in)	7/16 20	9/16 18	3/4 16
i	(in)	0.236	0.236	0.236
k	(in)	0.511	0.669	0.826
l	(in)	1.023	1.378	1.614
m	(in)	1.102	1.457	1.890
n	(in)	2.007	2.677	3.346
o	(in)	0.787	1.023	3.740
p	(in)	0.511	0.708	0.866
q	(in)	2.047	2.913	3.307
r	(in)	2.559	2.913	3.740
s	(in)	2.283	3.228	3.622
t	(in)	4.094	5.118	6.141
u	(in)	1.181	1.496	1.771
v	(in)	0.787	1.102	1.378
w	(in)	1.496	1.889	2.283
x	(in)	0.216	0.315	0.315
Weight	(lbs)	9.7	19.8	33.0

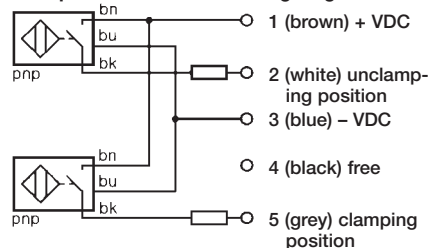
### Part no.

w/pipe connection & prox. switches BSPP Port	<b>HCR-2184-160</b>	<b>HCR-2185-160</b>	<b>HCR-2186-160</b>
w/pipe connection & prox. switches SAE Port	<b>HCR-2184-170</b>	<b>HCR-2185-170</b>	<b>HCR-2186-170</b>
w/flange connection & prox. switches	<b>HCR-2184-200</b>	<b>HCR-2185-200</b>	<b>HCR-2186-200</b>
w/pipe connection, w/o prox. switches SAE Port	<b>HCR-2184-810</b>	<b>HCR-2185-810</b>	<b>HCR-2186-810</b>
w/flange connection, w/o prox. switches	<b>HCR-2184-820</b>	<b>HCR-2185-820</b>	<b>HCR-2186-820</b>

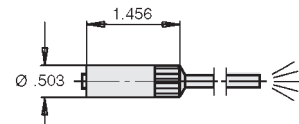
### Monitoring of clamping and unclamping position by means of three-wire proximity switch

Supply voltage 10–30 V DC  
Constant current ≤ 100 mA  
Type inductive, break contact pnp

### Clamp/connection cable wiring diagram



### Five conductor cable with threaded connector.



**Part no., cable length 16 ft HCR-5700-013**

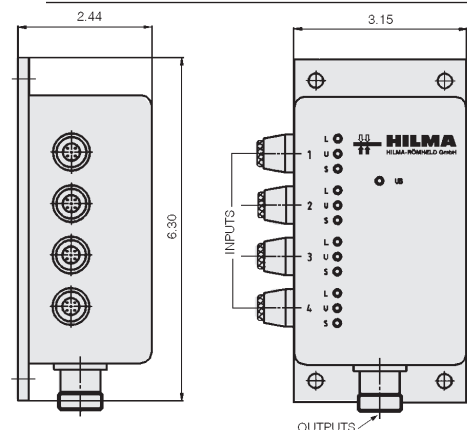
**Part no., cable length 32 ft HCR-5700-014**

Proximity switch tester available see catalog page J-3.

### Wiring of output plug

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

**L = Unclamping position**  
**S = Clamping position**



**CARR LANE ROEMHELD**