



### Advantages:

- ✓ Clamping without shearing force
- ✓ Compatible with competing products
- ✓ Fast movement possible
- ✓ Various designs of clamping arm
- ✓ No interference contour during loading and unloading
- ✓ Incl. Indexing of the clamping arm
- ✓ Solid design
- ✓ Incl. Metal wiper

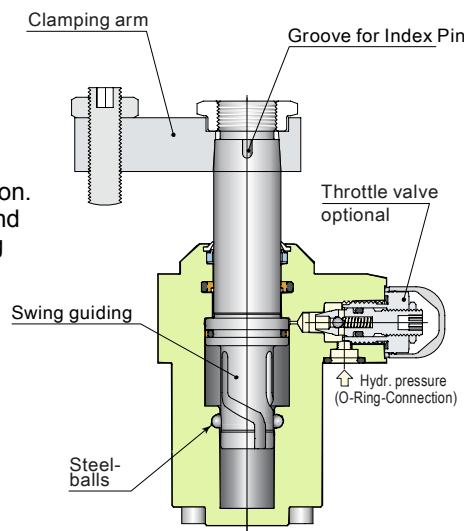


### Generally

### Recommendations for use

Hydraulic swing clamps are used for clamping of workpieces for which the clamping points must be free for loading and unloading the device. This series is very robust and is particularly suitable for continuous use in 3-shift operation. With the robust rotary motion mechanism and the possibility of optional throttling the swing clamps are particularly suitable for:

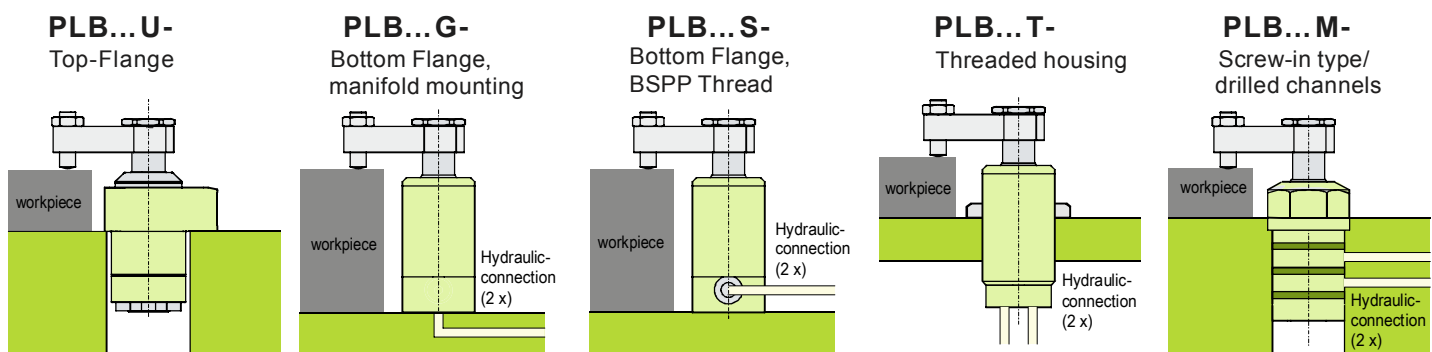
- Fully automated production systems with very short cycle times
- Fixtures with workpiece loading by handling systems or robots
- Test systems for engines, gears
- Assembly lines
- Special machines



### Description

Swing Clamps are pull-type cylinders, for which a part of the total stroke is used to swing the piston. Due to the solid swing mechanism the angle position of the clamping arm remains even after a slight collision during loading and unloading of the workpiece or the clamping operation. The angular position of the clamping arm can be indexed with a straight pin. The metallic wiper protects the underlying FKM wiper against rough and hot chips. Likewise, optional flow control valves are available for throttling / synchronisation. The excellent finishes of the piston and housing make these clamps under harsh conditions very resistance capable.

### Configuration



### Type designation

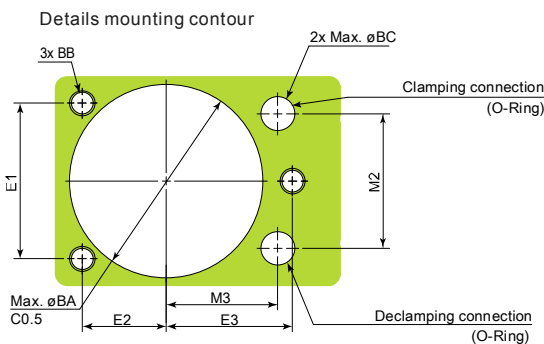
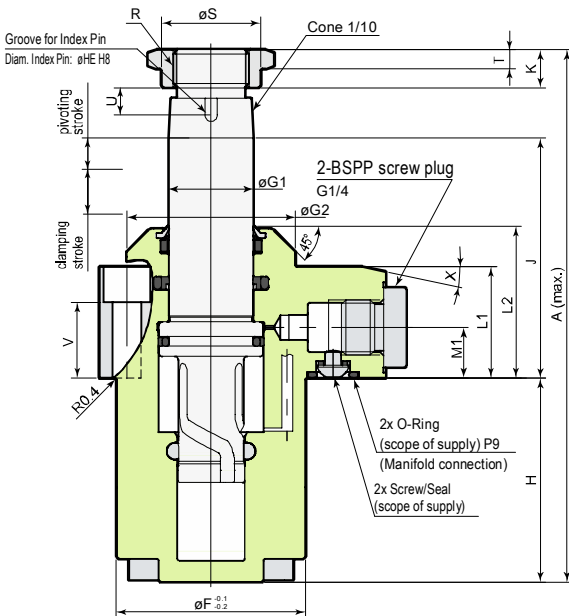
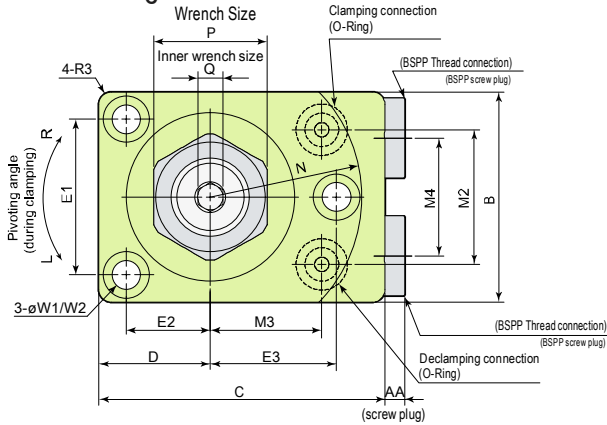
Size code	Piston/rod diam.	Shape	Pivoting angle/ Direction	Example: 90° clockwise
<b>PLB</b>	06	(25/20)	<b>U</b> : Top Flansh	
	16	(40/32)	<b>G</b> : Bottom Flange, Manifold mounting	
	25	(50/40)	<b>S</b> : Bottom Flange BSPP Thread	
	40	(63/50)	<b>T</b> : Threaded housing	
			<b>M</b> : Screw-in type (drilled cannels)	
			<b>L</b> : Anticlockwise, pivoting angle=90° <b>(L45)</b> : Anticlockwise, pivoting angle=45° <b>(L60)</b> : Anticlockwise, pivoting angle=60° <b>R</b> : Clockwise, pivoting angle=90° <b>(R45)</b> : Clockwise, pivoting angle=45° <b>(R60)</b> : Clockwise, pivoting angle=90° <b>(C)</b> : Pivoting angle=90°	

### Example: PLB06U-R

Type „PLB“, Piston-/Rod diameter 25/20, Top-Flange, 90° clockwise

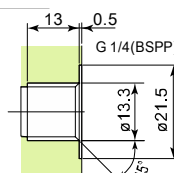
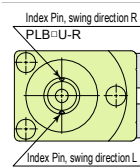
### PLB U Installation dimensions

PLB 06 U-<sup>L</sup>/<sub>16</sub> <sup>R</sup>/<sub>C</sub>



Position of Index Pin (declamped)

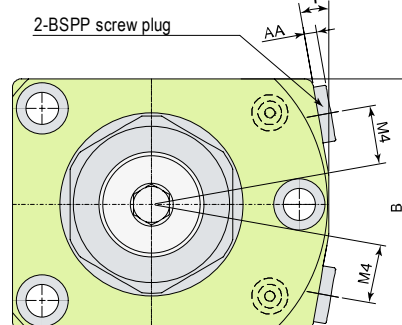
For angles <math>< 90^\circ</math> the position of the Index Pin must be requested!



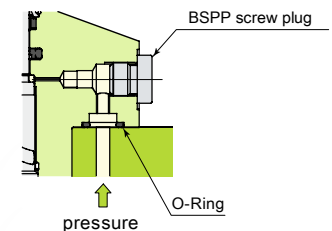
Detail - BSP Thread

**Note:**  
For manifold mounting (O-Rings) the flow valve (VCH) can be used.  
The surface roughness of the counter part should not be higher than (for O-Ring connection) Rz 6.3 (ISO4287:1997).

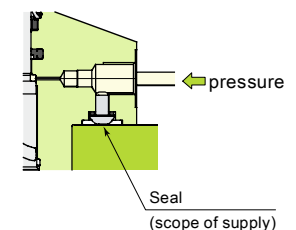
Detail only for **PLB 25/40**



O-Ring-Connection



BSP Thread connection



Type	PLB06U- <sup>L</sup> / <sub>R</sub> <sup>C</sup>	PLB16U- <sup>L</sup> / <sub>R</sub> <sup>C</sup>	PLB25U- <sup>L</sup> / <sub>R</sub> <sup>C</sup>	PLB40U- <sup>L</sup> / <sub>R</sub> <sup>C</sup>
pivoting stroke	7	8	11	9
clamping stroke	11	14	15	15
A	126.5	147.5	172	182
B	50	63	85	95
C	68	80.5	107	122
D	26.5	34.5	47	55
E1	37	48	65	72
E2	20	27	37	42
E3	30	38	50	55
F	44.8	59.8	79.8	89.8
G1	20	32	40	50
G2	40	54	62	74
H	48.5	53.5	68	73
J	57	66	70	69
K	9	10	11	12
L1	26.4	31.4	29.4	29.4
L2	36	42	40	40
M1	14	14	12	12
M2	32	46	62	75
M3	26.5	31	40	45
M4	28	41	20.5	23.5
N	36	45.3	59.5	66
P	27	36	55	65
Q	6	10	12	14
R	M18×1.5	M28×1.5	M35×1.5	M45×1.5
S	23.5	33.5	45	55.5
T	4.5	4.5	5.5	5.5
U	6.5	10.5	12.5	16.5
V	18	19	15	14
W1	6.8	9	11	14
W2	11	14	17.5	20
X	12°	27°	26°	25°
AA	4.8	4.8	4.3	4.3
BA	46	61	81	91
BB	M6	M8	M10	M12
BC	7	7	7	7
HE	3 <sup>+0.014</sup> <sub>0</sub>	5 <sup>+0.018</sup> <sub>0</sub>	6 <sup>+0.018</sup> <sub>0</sub>	8 <sup>+0.022</sup> <sub>0</sub>
Weight	1.3 kg	2.4 kg	4.8 kg	6.5 kg
Recommended Torque for mounting screw	11 N·m	25 N·m	49 N·m	60 N·m

### Contact

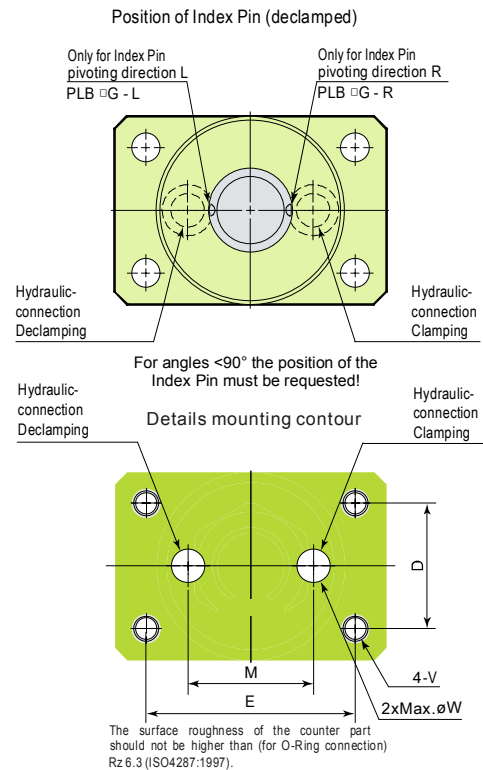
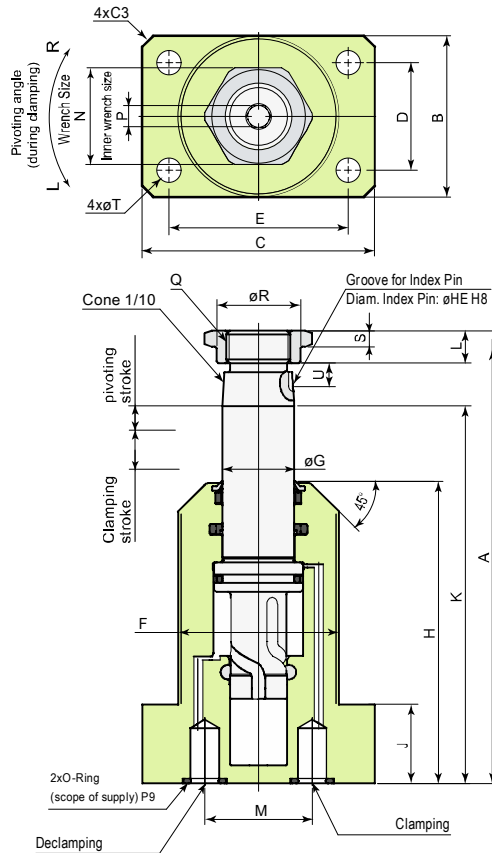
This offer is provided in cooperation with:

**Pascal**  
GmbH

inosol UG  
Frankfurter Str. 18  
35315 Homberg/Ohm (Germany)

web: [www.inosol.solutions](http://www.inosol.solutions)  
email: [info@inosol.solutions](mailto:info@inosol.solutions)  
tel.: (+49) 6633 / 368 95 25

**PLB 06  
16  
25  
40** G-L  
C-R



- Note 1. This drawing refers to the declamped position.  
 Note 2. Index Pins and Screws are not in scope of supply.

Type	PLB06G-L C-R	PLB16G-L C-R	PLB25G-L C-R	PLB40G-L C-R	
pivoting stroke	7	8	11	9	
clamping stroke	11	14	15	15	
A	126.5	147.5	172	182	
B	45	63	80	90	
C	65	85	100	115	
D	30	44	60	68	
E	50	65	80	90	
F	M45×1.5	M60×1.5	M80×2.0	M90×2.0	
G	20	32	40	50	
H	84.5	95.5	108	113	
J	22	22	22	22	
K	105.5	119.5	138	142	
L	9	10	11	12	
M	30	56	62	75	
N	27	36	55	65	
P	6	10	12	14	
Q	M18×1.5	M28×1.5	M35×1.5	M45×1.5	
R	23.5	33.5	45	55.5	
S	4.5	4.5	5.5	5.5	
T	6.8	9	14	15.5	
U	6.5	10.5	12.5	16.5	
V	M6	M8	M12	M14	
W	7	7	7	7	
HE	3 <sup>+0.014</sup> <sub>0</sub>	5 <sup>+0.018</sup> <sub>0</sub>	6 <sup>+0.018</sup> <sub>0</sub>	8 <sup>+0.022</sup> <sub>0</sub>	
Weight	1.2 kg	2.4 kg	4.5 kg	6.2 kg	
Contact	Recommended Torque for mounting screw	11 N•m	25 N•m	60 N•m	100 N•m

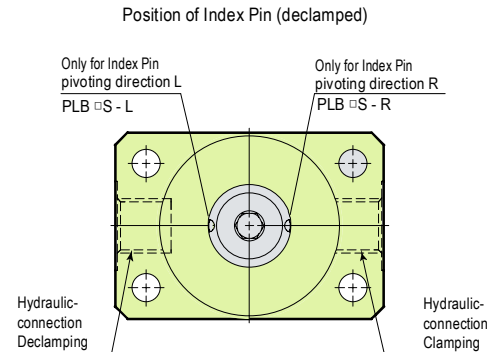
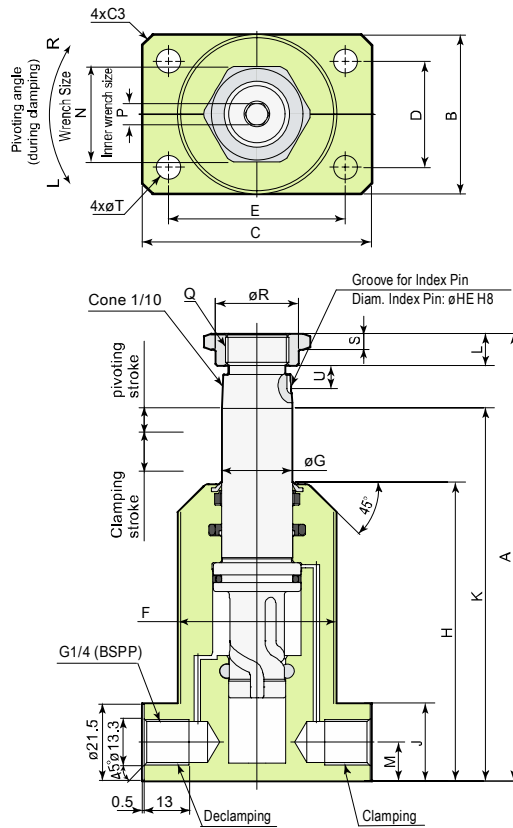
This offer is provided in cooperation with:

**Pascal**  
GmbH

inosol UG  
Frankfurter Str. 18  
35315 Homberg/Ohm (Germany)

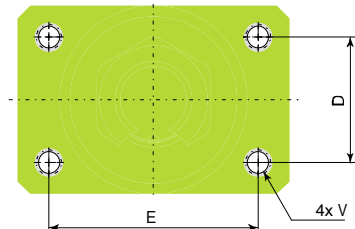
web: www.inosol.solutions  
email: info@inosol.solutions  
tel.: (+49) 6633 / 368 95 25

PLB 06  
16 S-  
25 L  
40 C



For angles <math><90^\circ</math> the position of the Index Pin must be requested!

Details mounting contour



Note 1. This drawing refers to the declamped position.  
2. Index Pins and Screws are not in scope of supply.

Type	PLB06S-L -R-C	PLB16S-L -R-C	PLB25S-L -R-C	PLB40S-L -R-C
pivoting stroke	7	8	11	9
clamping stroke	11	14	15	15
A	126.5	147.5	172	182
B	45	63	80	90
C	65	85	100	115
D	30	44	60	68
E	50	65	80	90
F	M45×1.5	M60×1.5	M80×2.0	M90×2.0
G	20	32	40	50
H	84.5	95.5	108	113
J	22	22	22	22
K	105.5	119.5	138	142
L	9	10	11	12
M	11	11	11	11
N	27	36	55	65
P	6	10	12	14
Q	M18×1.5	M28×1.5	M35×1.5	M45×1.5
R	23.5	33.5	45	55.5
S	4.5	4.5	5.5	5.5
T	6.8	9	14	15.5
U	6.5	10.5	12.5	16.5
V	M6	M8	M12	M14
HE	3 <sup>+0.014</sup> <sub>0</sub>	5 <sup>+0.018</sup> <sub>0</sub>	6 <sup>+0.018</sup> <sub>0</sub>	8 <sup>+0.022</sup> <sub>0</sub>
Weight	1.2 kg	2.4 kg	4.5 kg	6.2 kg
Recommended Torque for mounting screw	11 N•m	25 N•m	60 N•m	100 N•m

### Contact

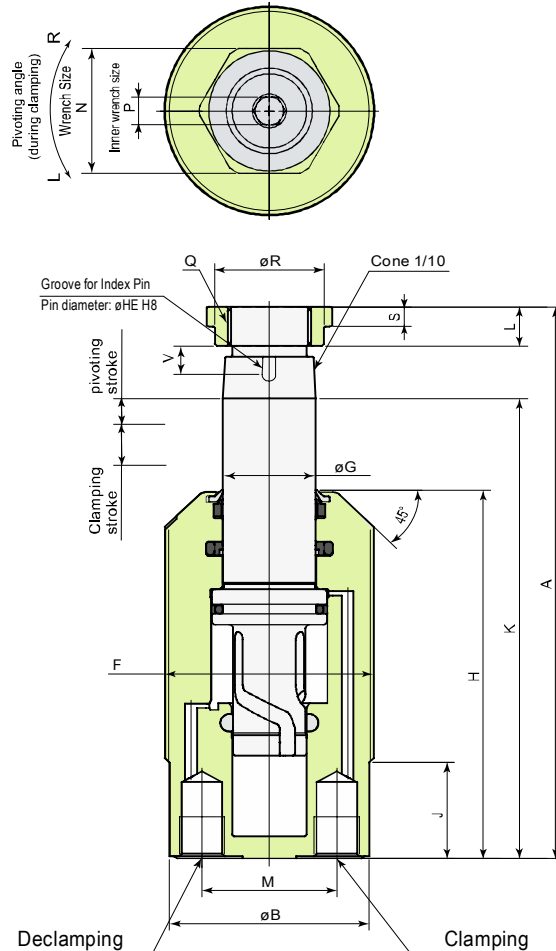
This offer is provided in cooperation with:

**Pascal**  
GmbH

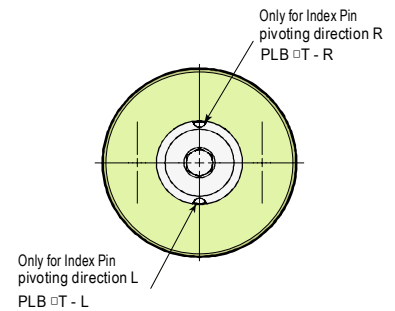
inosol UG  
Frankfurter Str. 18  
35315 Homberg/Ohm (Germany)

web: [www.inosol.solutions](http://www.inosol.solutions)  
email: [info@inosol.solutions](mailto:info@inosol.solutions)  
tel.: (+49) 6633 / 368 95 25

PLB <sup>06</sup><sub>16</sub> T-<sup>L</sup><sub>R</sub>  
25  
40

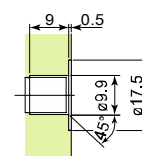


Position of Index Pin (declamped)



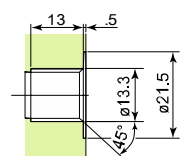
Details - BSPP Thread connection

PLB<sup>06</sup><sub>16</sub> T-



G 1/8 (BSPP)

PLB<sup>25</sup><sub>40</sub> T-



G 1/4 (BSPP)

- Note 1. This drawing refers to the declamped position.  
 2. Index Pins and Screws are not in scope of supply.  
 3. Recommended torques for mounting screws see following pages.

Type	PLB06T- <sup>L</sup> <sub>R</sub> C	PLB16T- <sup>L</sup> <sub>R</sub> C	PLB25T- <sup>L</sup> <sub>R</sub> C	PLB40T- <sup>L</sup> <sub>R</sub> C
pivoting stroke	7	8	11	9
clamping stroke	11	14	15	15
A	126.5	147.5	172	182
B	43	58	77	87
F	M45×1.5	M60×1.5	M80×2.0	M90×2.0
G	20	32	40	50
H	84.5	95.5	108	113
J	22	22	22	22
K	105.5	119.5	138	142
L	9	10	11	12
M	29	41	54	68
N	27	36	55	65
P	6	10	12	14
Q	M18×1.5	M28×1.5	M35×1.5	M45×1.5
R	23.5	33.5	45	55.5
S	4.5	4.5	5.5	5.5
U	6.5	10.5	12.5	16.5
HE	3 <sup>+0.014</sup> <sub>0</sub>	5 <sup>+0.018</sup> <sub>0</sub>	6 <sup>+0.018</sup> <sub>0</sub>	8 <sup>+0.022</sup> <sub>0</sub>
Contact Weight	1.0 kg	2.0 kg	4.0 kg	5.5 kg

### Contact

This offer is provided in cooperation with:

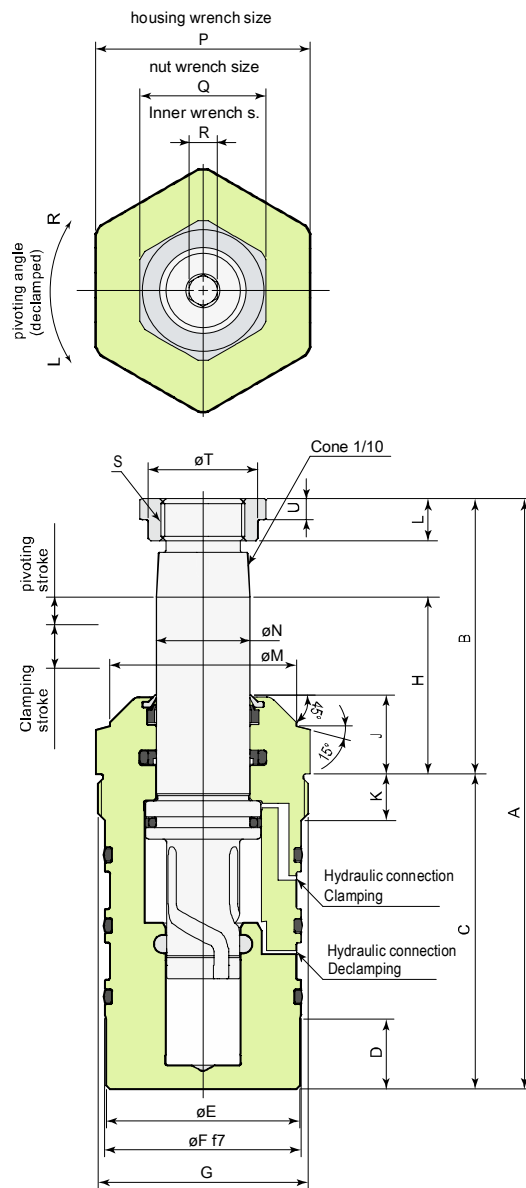
**Pascal**  
GmbH

iNOSOL UG  
Frankfurter Str. 18  
35315 Homberg/Ohm (Germany)

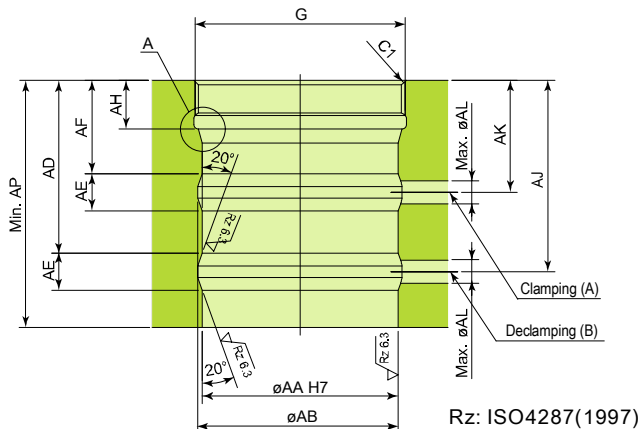
web: www.inosol.solutions  
email: info@inosol.solutions  
tel.: (+49) 6633 / 368 95 25

#### PLB M Installation dimensions

PLB 06 M-L  
16 M-L  
C



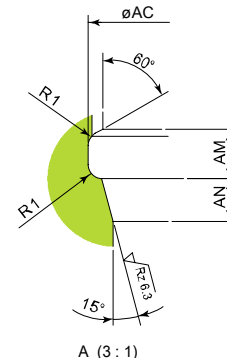
Details mounting contour



Rz: ISO4287(1997)

Type	PLB06M-L C	PLB16M-L C
pivoting stroke	7	8
clamping stroke	11	14
A	126.5	162
B	59	86
C	67.5	76
D	15	15
E	41.5	54.5
F	42 <sup>+0.025</sup> <sub>-0.050</sub>	55 <sup>-0.030</sup> <sub>-0.060</sub>
G	M45×1.5	M60×1.5
H	38	58
J	17	34
K	10	11
L	9	10
M	40	54
N	20	32
P	46	55
Q	27	36
R	6	10
S	M18×1.5	M28×1.5
T	23.5	33.5
U	4.5	4.5
AA	42 <sup>+0.025</sup> <sub>0</sub>	55 <sup>+0.030</sup> <sub>0</sub>
AB	44	57
AC	45.5	60.5
AD	37	41.5
AE	8	10
AF	20	24
AH	10.5	12.5
AJ	41	46.5
AK	24	29
AL	5	5
AM	3.5	3.5
AN	3	3
AP	52.5	61
Recommended torque for mounting screw	65 N·m	220 N·m
Weight	0.9 kg	2.1 kg

Note 1. This drawing refers to the declamped position.  
2. Index Pins and Screws are not in scope of supply.



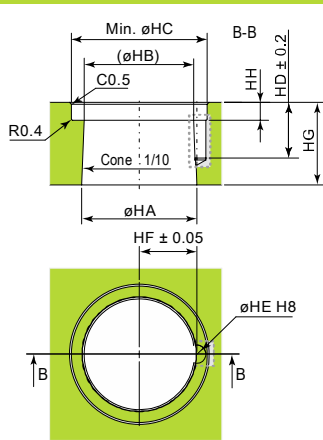
#### Contact

This offer is provided in cooperation with:

**Pascal**  
GmbH

inosol UG  
Frankfurter Str. 18  
35315 Homberg/Ohm (Germany)

web: www.inosol.solutions  
email: info@inosol.solutions  
tel.: (+49) 6633 / 368 95 25



Types	PLB06	PLB16	PLB25	PLB40
HA	20 <sup>-0.020</sup> <sub>-0.041</sub>	32 <sup>-0.025</sup> <sub>-0.050</sub>	40 <sup>-0.025</sup> <sub>-0.050</sub>	50 <sup>-0.025</sup> <sub>-0.050</sub>
HB	18.8	30.2	37.7	47.2
HC	24	38	47	59
HD	10.5	15.5	17.5	22.5
HE	3 <sup>+0.014</sup> <sub>0</sub>	5 <sup>+0.018</sup> <sub>0</sub>	6 <sup>+0.018</sup> <sub>0</sub>	8 <sup>+0.022</sup> <sub>0</sub>
HF	10.1	16.1	20.1	25.1
HG	16	23	28	34
HH	4	5	5	6
HJ	22 <sup>+0.033</sup> <sub>0</sub>	34.5 <sup>+0.039</sup> <sub>0</sub>	43 <sup>+0.039</sup> <sub>0</sub>	54 <sup>+0.046</sup> <sub>0</sub>
HK	19	30	38	47
HL	10	16	21	26
Index Pin	ø 3(h8)×6	ø 5(h8)×10	ø 6(h8)×12	ø 8(h8)×16
Taper sleeves	PLZ06-BS	PLZ16-BS	PLZ25-BS	PLZ40-BS

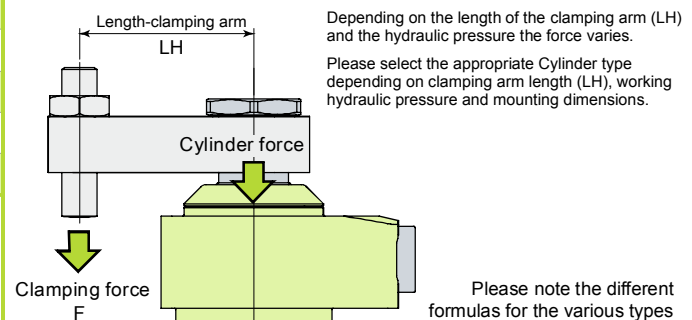
Index hole only when using the indexation!  
Please request the dimensions!

### Technical Data

Type	PLB06	PLB16	PLB25	PLB40
Force (for pressure of 500 bar)	(kN) 8.8	22.6	35.3	57.7
Piston diameter	(mm) 25	40	50	63
Rod diameter	(mm) 20	32	40	50
Usable annular surface	(cm <sup>2</sup> ) 1.8	4.5	7.1	11.5

### Calculation of clamping force

Type	PLB06
Pressure (P)	150 bar
Length of clamping arm	40 mm
Cylinder force	2.7 kN
Clamping force (F)	2.3 kN
Formula Example	$F = \frac{0.1P}{5.66+0.0213 \times LH}$ $= \frac{0.1 \times 150}{5.66+0.0213 \times 40} = 2.3 \text{ kN}$



Type		PLB06											
Hydraulic pressure (bar)	Cylinder force (kN)	Clamping force (kN)										Max. Clamp arm length Max. LH (mm)	
		Length of clamping arm LH (mm)											
		40	50	60	70	80	90	100	120	140	160		
500	35.3	31.7										40	
450	31.8	28.5										45	
400	28.3	25.3	24.7									52	
350	24.7	22.2	21.6	21.1								61	
300	21.2	19.0	18.5	18.1	17.6							73	
250	17.7	15.8	15.4	15.0	14.7	14.3	14.0					91	
200	14.1	12.7	12.3	12.0	11.7	11.5	11.2	10.9	10.5			122	
150	10.6	9.5	9.3	9.0	8.8	8.6	8.4	8.2	7.9	7.5	7.2	185	
100	7.1	6.3	6.2	6.0	5.9	5.7	5.6	5.5	5.2	5.0	4.8	9	
50	3.5	3.2	3.1	3.0	2.9	2.9	2.8	2.7	2.6	2.5	2.4	185	

Type		PLB25											
Hydraulic pressure (bar)	Cylinder force (kN)	Clamping force (kN)										Max. Clamp arm length Max. LH (mm)	
		Length of clamping arm LH (mm)											
		40	50	60	70	80	90	100	120	140	160		
500	35.3	31.7										40	
450	31.8	28.5										45	
400	28.3	25.3	24.7									52	
350	24.7	22.2	21.6	21.1								61	
300	21.2	19.0	18.5	18.1	17.6							73	
250	17.7	15.8	15.4	15.0	14.7	14.3	14.0					91	
200	14.1	12.7	12.3	12.0	11.7	11.5	11.2	10.9	10.5			122	
150	10.6	9.5	9.3	9.0	8.8	8.6	8.4	8.2	7.9	7.5	7.2	185	
100	7.1	6.3	6.2	6.0	5.9	5.7	5.6	5.5	5.2	5.0	4.8	9	
50	3.5	3.2	3.1	3.0	2.9	2.9	2.8	2.7	2.6	2.5	2.4	185	

Type		PLB40											
Hydraulic pressure (bar)	Cylinder force (kN)	Clamping force (kN)										Max. Clamp arm length Max. LH (mm)	
		Length of clamping arm LH (mm)											
		45	50	60	70	80	90	100	120	140	160		
500	57.7	51.1										48	
450	51.9	46.0	45.4									860	
400	46.1	40.9	40.4	39.4								62	
350	40.4	35.8	35.3	34.5	33.7							750	
300	34.6	30.7	30.3	29.6	28.9	28.2						89	
250	28.8	25.6	25.2	24.6	24.1	23.5	23.0	22.5				1250	
200	23.1	20.5	20.2	19.7	19.2	18.8	18.4	18.0	17.2	16.5		152	
150	17.3	15.3	15.1	14.8	14.4	14.1	13.8	13.5	12.9	12.4	11.9	2050	
100	11.5	10.2	10.1	9.9	9.6	9.4	9.2	9.0	8.6	8.2	7.9	9	
50	5.8	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.3	4.1	4.0	237 50	

Type		PLB16											
Hydraulic pressure (bar)	Cylinder force (kN)	Clamping force (kN)										Max. Clamp arm length Max. LH (mm)	
		Length of clamping arm LH (mm)											
		35	40	50	60	70	80	90	100	120	140		
500	22.6	20.2										39	
450	20.4	18.2	17.9									44	
400	18.1	16.2	15.9	15.5								50	
350	15.8	14.2	14.0	13.5								59	
300	13.6	12.1	12.0	11.6	11.3	11.0						71	
250	11.3	10.1	10.0	9.7	9.4	9.2	8.9					89	
200	9.0	8.1	8.0	7.7	7.5	7.3	7.1	6.9	6.8	6.4		121	
150	6.8	6.1	6.0	5.8	5.6	5.5	5.3	5.2	5.1	4.8	4.6	186	
100	4.5	4.0	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.2	3.1	9	
50	2.3	2.0	2.0	1.9	1.9	1.8	1.8	1.7	1.7	1.6	1.5	186	