



Expand Your Clamping Options

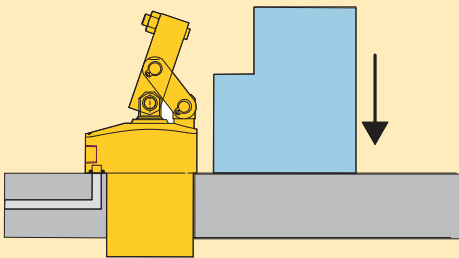
Clamping Solutions for 70 bar applications

Shown: LUCD772

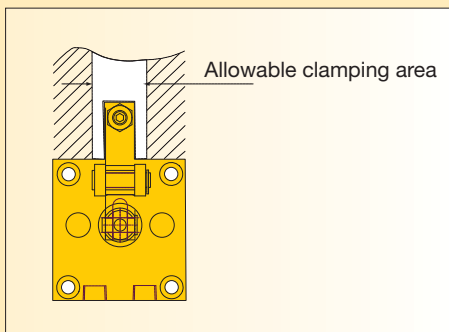
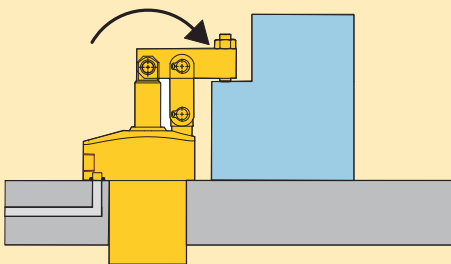


▶ Link Clamp allows unobstructed part loading - extend to produce clamping force and retract to allow part removal.

Arm completely retracts to allow part loading.



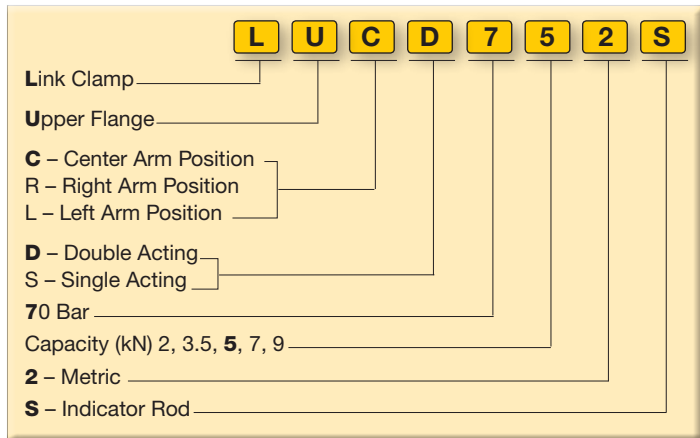
As cylinder extends, arm rotates to clamp part in place.



Quick and accurate clamping action

- 70 bar operating pressure compatible with machine supplied pressure
- Design provides repeatable clamping location
- Mounting flange feature BSPP and manifold ports
- Models available for Center, Right or Left Arm position
- Base features an electroless nickel plating for corrosion resistance and durability

▼ PRODUCT SELECTION



🌐 Product selection

| Clamping force | Stroke | Model number | Cylinder effective area | Oil capacity | Clamp arm (Sold separately) | |
|---|--------|--------------|-------------------------|-----------------|-----------------------------|-----------|
| | | | | | Long | Standard |
| kN | mm | | cm ² | cm ³ | | |
| ▼ Single acting | | | | | | |
| 2 | 20,5 | LUCS-722 | 4,2 | 8,5 | LCAL-7232 | LCAS-7232 |
| 3,5 | 20,5 | LUCS-732 | 6,4 | 13,1 | LCAL-7232 | LCAS-7232 |
| 5 | 26,5 | LUCS-752 | 9,6 | 25,5 | LCAL-7572 | LCAS-7572 |
| 7 | 26,5 | LUCS-772 | 12,6 | 33,3 | LCAL-7572 | LCAS-7572 |
| 9 | 32,5 | LUCS-792 | 15,9 | 51,7 | LCAL-792 | LCAS-792 |
| ▼ Single acting with indicator staff | | | | | | |
| 2 | 20,5 | LUCS-722S | 3,7 | 7,6 | LCAL-7232 | LCAS-7232 |
| 3,5 | 20,5 | LUCS-732S | 5,9 | 12,1 | LCAL-7232 | LCAS-7232 |
| 5 | 26,5 | LUCS-752S | 9,1 | 24,1 | LCAL-7572 | LCAS-7572 |
| 7 | 26,5 | LUCS-772S | 12,1 | 32,1 | LCAL-7572 | LCAS-7572 |
| 9 | 32,5 | LUCS-792S | 15,4 | 50,1 | LCAL-792 | LCAS-792 |
| ▼ Double acting | | | | | | |
| 2 | 20,5 | LUCD-722 | 4,2 | 8,5 | LCAL-7232 | LCAS-7232 |
| 3,5 | 20,5 | LUCD-732 | 6,4 | 13,1 | LCAL-7232 | LCAS-7232 |
| 5 | 26,5 | LUCD-752 | 9,6 | 25,5 | LCAL-7572 | LCAS-7572 |
| 7 | 26,5 | LUCD-772 | 12,6 | 33,3 | LCAL-7572 | LCAS-7572 |
| 9 | 32,5 | LUCD-792 | 15,9 | 51,7 | LCAL-792 | LCAS-792 |
| ▼ Double acting with indicator staff | | | | | | |
| 2 | 20,5 | LUCD-722S | 3,7 | 7,6 | LCAL-7232 | LCAS-7232 |
| 3,5 | 20,5 | LUCD-732S | 5,9 | 12,1 | LCAL-7232 | LCAS-7232 |
| 5 | 26,5 | LUCD-752S | 9,1 | 24,1 | LCAL-7572 | LCAS-7572 |
| 7 | 26,5 | LUCD-772S | 12,1 | 32,1 | LCAL-7572 | LCAS-7572 |
| 9 | 32,5 | LUCD-792S | 15,4 | 50,1 | LCAL-792 | LCAS-792 |



Blank clamp arms for convenient fabrication of custom arms

- Short Arm includes contact bolt and lock nut
- Blank Long Arm can be customized to the length and configuration required
- LCAS-7232/LCAL-7232 used with both the 2 kN and the 3,5 kN Link Clamp Models
- LCAS-7572/LCAL-7572 used with both the 5 kN and the 7 kN Link Clamp Models
- LCAS-792/LCAL-792 used with the 9 kN Link Clamp Models

Clamp Force: 2-9 kN

Stroke: 20,5-32,5 mm

Pressure: 70 bar

E Cilindros amarre de enlace

F Bride basculante

D Gelenkspanner

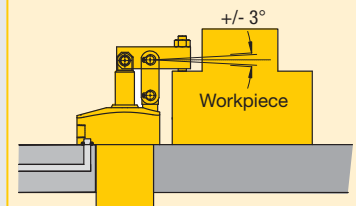
Options

A Long Arm is available for making custom arms.



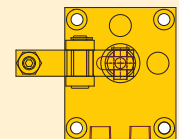
Important

Clamp arm should be parallel to cylinder mounting surface within 3° to avoid damage to cylinder and linkage.

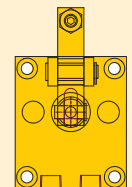


Models are available with Right Hand, Center and Left Hand arm position.

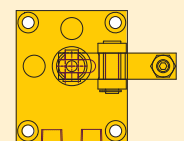
Left



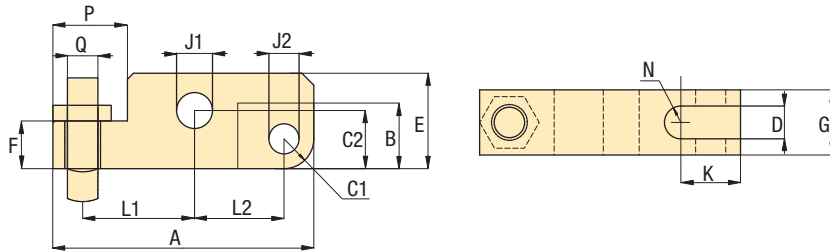
Center



Right



LCAS models Standard Arm

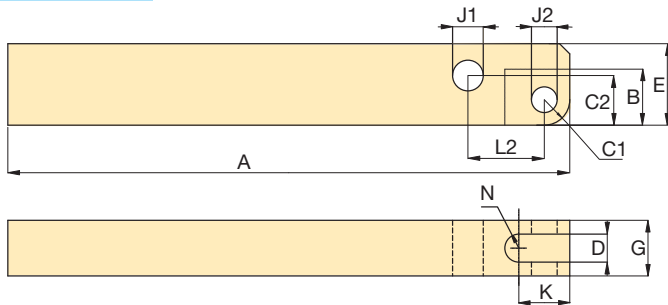


Dimensions in mm []

| Clamp capacity kN | Model number | A | B | C1 | C2 | D | E | F | G |
|-----------------------|--------------|------|------|----|------|----|----|----|-------|
| ▼ Standard clamp arms | | | | | | | | | |
| 2 & 3,5 | LCAS-7232 | 54,0 | 13,0 | 6 | 9,5 | 6 | 16 | 8 | 11,85 |
| 5 & 7 | LCAS-7572 | 74,5 | 17,5 | 8 | 15,5 | 10 | 25 | 13 | 18,85 |
| 9 | LCAS-792 | 87,5 | 22,0 | 10 | 19,5 | 11 | 32 | 16 | 21,85 |

| Clamp. capacity kN | Model number | J1 | J2 | K | L1 | L2 | N | P | Q |
|-----------------------|--------------|-------------|-------------|----|------|------|-----|----|------------|
| ▼ Standard clamp arms | | | | | | | | | |
| 2 & 3,5 | LCAS-7232 | 6,02-6,07 | 6,02-6,07 | 13 | 23,5 | 18,5 | 3 | 13 | M6 x 1,0 |
| 5 & 7 | LCAS-7572 | 10,05-10,10 | 8,05-8,10 | 16 | 32,0 | 24,5 | 5 | 22 | M10 x 1,5 |
| 9 | LCAS-792 | 12,05-12,10 | 10,05-10,10 | 20 | 37,5 | 30,0 | 5,5 | 25 | M12 x 1,75 |

LCAL models Long Arm



NOTE: Custom arms should be manufactured using this print. Make sure to follow all precautions listed.

Dimensions in mm []

| Clamp. capacity kN | Model number | A | B | C1 | C2 | D | E | G | J1 | J2 | K | L2 | N |
|--------------------|--------------|-----|------|----|-------|----|----|-------|-------------|-------------|----|------|-----|
| ▼ Long clamp arms | | | | | | | | | | | | | |
| 2 & 3,5 | LCAL-7232 | 85 | 13,0 | 6 | 9,50 | 6 | 16 | 11,85 | 6,02-6,07 | 6,02-6,07 | 13 | 18,5 | 3,0 |
| 5 & 7 | LCAL-7572 | 105 | 17,5 | 8 | 15,50 | 10 | 25 | 18,85 | 10,05-10,10 | 8,05-8,10 | 16 | 24,5 | 5,0 |
| 9 | LCAL-792 | 100 | 22,0 | 10 | 19,50 | 11 | 32 | 21,85 | 12,05-12,1 | 10,05-10,10 | 20 | 30,0 | 5,5 |

70 Bar Link Clamps, LU7 series

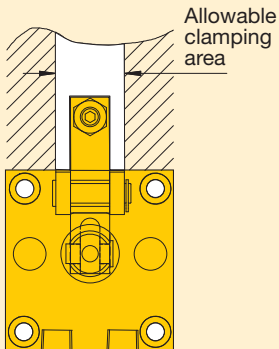
Shown: LUCD772



▶ Link Clamp allows unobstructed part loading - extend to produce clamping force and retract to allow part removal.

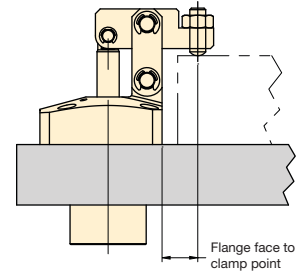
⚠ Important

Clamp point must be within the boundaries of the anchor links of the clamp. Clamping outside of this area will cause damage to the linkage, leading to premature failure.



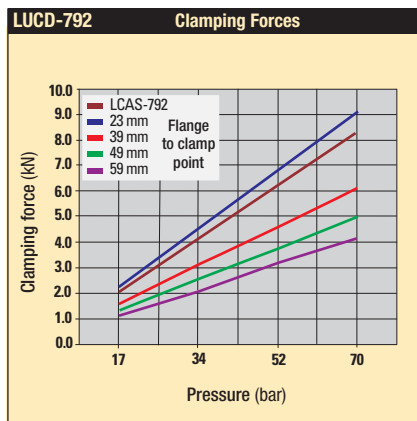
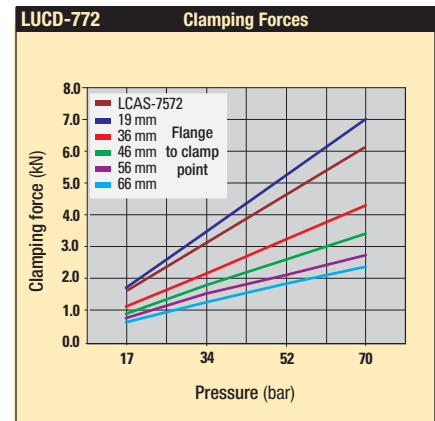
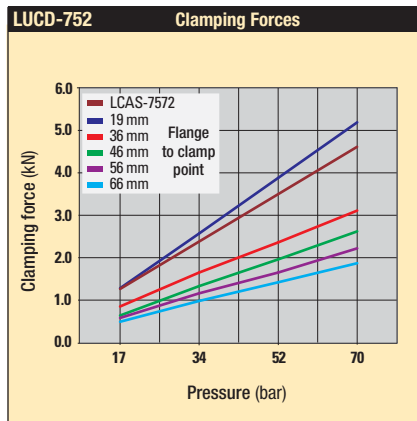
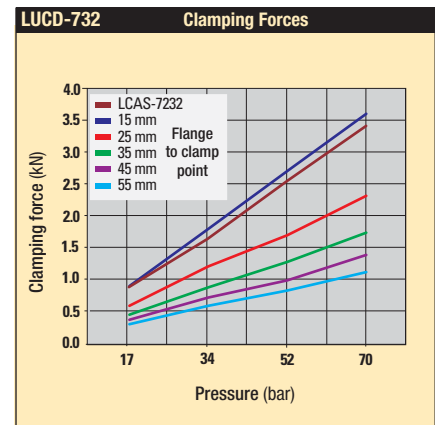
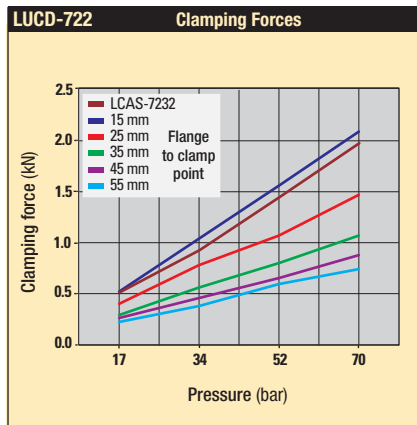
Standard or custom built

- Use **LCAL** clamp arms to make custom length arms
- Make your own custom arm to suit your application



🌐 Pressure vs clamping force

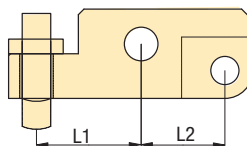
Clamp arm length and operating pressure determine the clamping force.





Pressure vs clamping force

Clamp arm length and operating pressure determine the clamping force.



*LUCD-722

| L-2 Dimension mm | L-1 Dimension mm | L-1 + L-2 Dimension mm | Flange Face to Clamp Point mm | Clamping Force (kN) | | | |
|---------------------|---------------------|---------------------------|----------------------------------|---------------------|----------|----------|----------|
| | | | | 17 (bar) | 34 (bar) | 52 (bar) | 70 (bar) |
| 18,5 | 21,5 | 40 | 15 | 0,52 | 1,04 | 1,56 | 2,20 |
| 18,5 | 23,5 | 42 | 17** | 0,53 | 0,98 | 1,42 | 1,91 |
| 18,5 | 31,5 | 50 | 25 | 0,40 | 0,78 | 1,07 | 1,47 |
| 18,5 | 41,5 | 60 | 35 | 0,29 | 0,56 | 0,80 | 1,07 |
| 18,5 | 51,5 | 70 | 45 | 0,24 | 0,44 | 0,64 | 0,87 |
| 18,5 | 61,5 | 80 | 55 | 0,20 | 0,36 | 0,58 | 0,73 |

**LCAS-7232

*LUCD-732

| L-2 Dimension (mm) | L-1 Dimension (mm) | L-1 + L-2 Dimension (mm) | Flange Face to Clamp Point (mm) | Clamping Force (kN) | | | |
|-----------------------|-----------------------|-----------------------------|------------------------------------|---------------------|----------|----------|----------|
| | | | | 17 (bar) | 34 (bar) | 52 (bar) | 70 (bar) |
| 18,5 | 21,5 | 40 | 15 | 0,89 | 1,79 | 2,70 | 3,60 |
| 18,5 | 23,5 | 42 | 17** | 0,85 | 1,69 | 2,54 | 3,45 |
| 18,5 | 31,5 | 50 | 25 | 0,58 | 1,20 | 1,69 | 2,31 |
| 18,5 | 41,5 | 60 | 35 | 0,44 | 0,87 | 1,27 | 1,73 |
| 18,5 | 51,5 | 70 | 45 | 0,36 | 0,71 | 0,98 | 1,38 |
| 18,5 | 61,5 | 80 | 55 | 0,29 | 0,58 | 0,82 | 1,11 |

**LCAS-7232

*LUCD-752

| L-2 Dimension (mm) | L-1 Dimension (mm) | L-1 + L-2 Dimension (mm) | Flange Face to Clamp Point (mm) | Clamping Force (kN) | | | |
|-----------------------|-----------------------|-----------------------------|------------------------------------|---------------------|----------|----------|----------|
| | | | | 17 (bar) | 34 (bar) | 52 (bar) | 70 (bar) |
| 24,5 | 28,5 | 53 | 19 | 1,28 | 2,57 | 3,88 | 5,19 |
| 24,5 | 32,0 | 56,5 | 22,5** | 1,20 | 2,40 | 3,56 | 4,63 |
| 24,5 | 45,5 | 70 | 36 | 0,85 | 1,65 | 2,36 | 3,11 |
| 24,5 | 55,5 | 80 | 46 | 0,64 | 1,33 | 1,96 | 2,62 |
| 24,5 | 65,5 | 90 | 56 | 0,58 | 1,16 | 1,65 | 2,22 |
| 24,5 | 75,5 | 100 | 66 | 0,49 | 0,98 | 1,42 | 1,87 |

**LCAS-7572

*LUCD-772

| L-2 Dimension (mm) | L-1 Dimension (mm) | L-1 + L-2 Dimension (mm) | Flange Face to Clamp Point (mm) | Clamping Force (kN) | | | |
|-----------------------|-----------------------|-----------------------------|------------------------------------|---------------------|----------|----------|----------|
| | | | | 17 (bar) | 34 (bar) | 52 (bar) | 70 (bar) |
| 24,5 | 28,5 | 53 | 19 | 1,74 | 3,48 | 5,24 | 7,00 |
| 24,5 | 32,0 | 56,5 | 22,5** | 1,65 | 3,16 | 4,72 | 6,18 |
| 24,5 | 45,5 | 70 | 36 | 1,16 | 2,18 | 3,25 | 4,31 |
| 24,5 | 55,5 | 80 | 46 | 0,93 | 1,82 | 2,62 | 3,43 |
| 24,5 | 65,5 | 90 | 56 | 0,80 | 1,56 | 2,14 | 2,76 |
| 24,5 | 75,5 | 100 | 66 | 0,67 | 1,29 | 1,87 | 2,40 |

**LCAS-7572

*LUCD-792

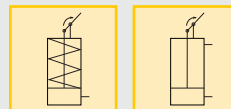
| L-2 Dimension (mm) | L-1 Dimension (mm) | L-1 + L-2 Dimension (mm) | Flange Face to Clamp Point (mm) | Clamping Force (kN) | | | |
|-----------------------|-----------------------|-----------------------------|------------------------------------|---------------------|----------|----------|----------|
| | | | | 17 (bar) | 34 (bar) | 52 (bar) | 70 (bar) |
| 30,0 | 34,0 | 64 | 23 | 2,26 | 4,52 | 6,81 | 9,10 |
| 30,0 | 37,5 | 67,5 | 26,5** | 2,09 | 4,18 | 6,23 | 8,32 |
| 30,0 | 50,0 | 80 | 39 | 1,56 | 3,07 | 4,54 | 6,05 |
| 30,0 | 60,0 | 90 | 49 | 1,25 | 2,49 | 3,69 | 4,94 |
| 30,0 | 70,0 | 100 | 59 | 1,07 | 2,05 | 3,11 | 4,14 |

**LCAS-792

*Note: L-1 is the length from the clamp point to the centerline of the pin in the pivot lug. L-2 is the length from the centerline of the cylinder plunger to the centerline of the pin in the pivot lug. © 2011

- Clamp Force: 2-9 kN
- Stroke: 20,5-32,5 mm
- Pressure: 70 bar

- E** Cilindros amarre de enlace
- F** Bride basculante
- D** Gelenkspanner

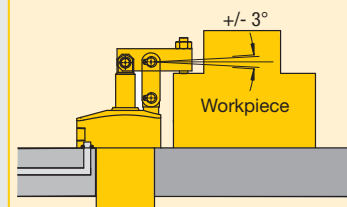


Options

Long clamp arms 3 ▶

Important

Clamp arm should be parallel to cylinder mounting surface within 3° to avoid damage to cylinder and linkage. Use the included set screw to adjust clamp arm alignment.



70 Bar Link clamps, LU7 series

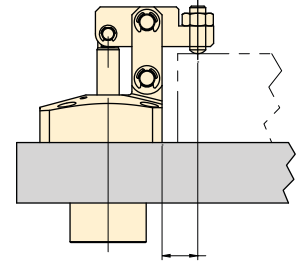
Shown: LUCD772



▶ Link Clamp allows unobstructed part loading - extend to produce clamping force and retract to allow part removal.

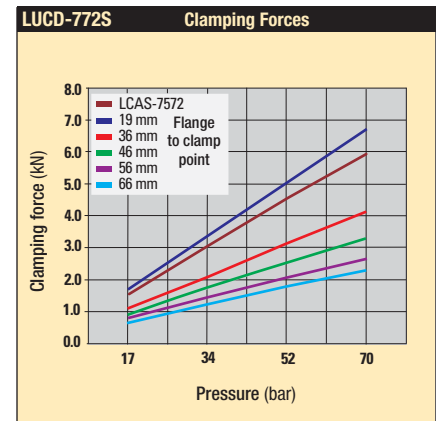
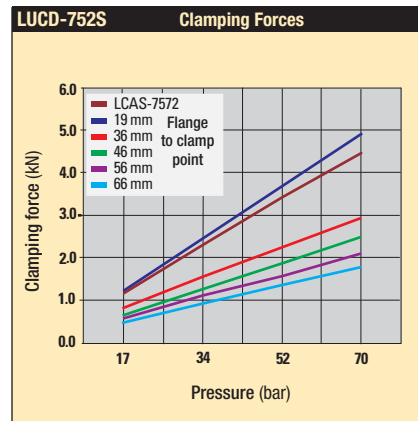
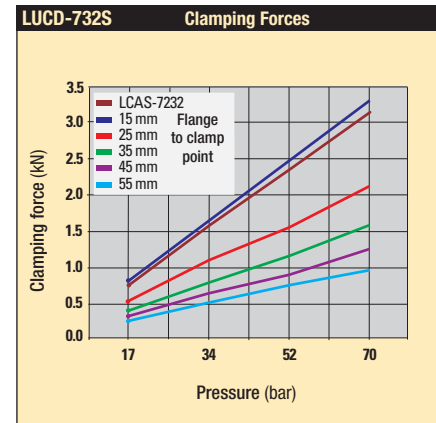
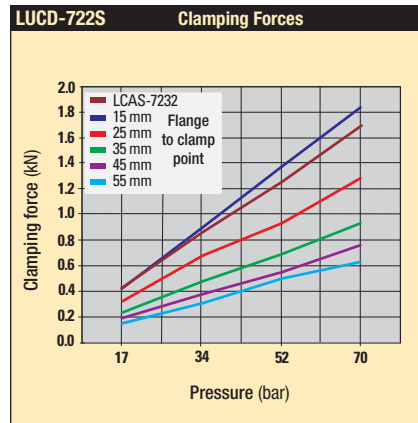
Standard or custom built

- Use **LCAL** clamp arms to make custom length arms
- Make your own custom arm to suit your application



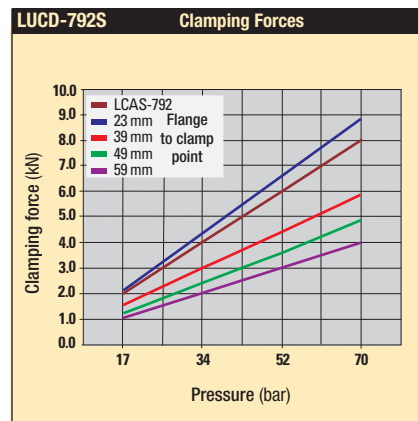
Pressure vs clamping force

Clamp arm length and operating pressure determine the clamping force.



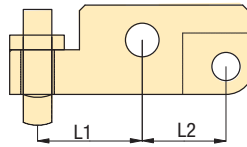
⚠ Important

The Clamping Force developed by a Link Clamp is a function of both the operating pressure and the arm length. The charted capacities are based on the distance from the front of the cylinder flange to the clamping point on the arm.



Pressure vs clamping force

Clamp arm length and operating pressure determine the clamping force.



*LUCD-722S

| L-2 Dimension mm | L-1 Dimension mm | L-1 + L-2 Dimension mm | Flange Face to Clamp Point (mm) | Clamping Force (kN) | | | |
|------------------------|------------------------|------------------------------|--|---------------------|-------------|-------------|-------------|
| | | | | 17 (bar) | 34 (bar) | 52 (bar) | 70 (bar) |
| 18,5 | 21,5 | 40 | 15 | 0,45 | 0,91 | 1,38 | 1,84 |
| 18,5 | 23,5 | 42 | 17** | 0,47 | 0,87 | 1,25 | 1,67 |
| 18,5 | 31,5 | 50 | 25 | 0,35 | 0,69 | 0,94 | 1,29 |
| 18,5 | 41,5 | 60 | 35 | 0,25 | 0,49 | 0,70 | 0,94 |
| 18,5 | 51,5 | 70 | 45 | 0,21 | 0,39 | 0,56 | 0,77 |
| 18,5 | 61,5 | 80 | 55 | 0,17 | 0,32 | 0,51 | 0,64 |

**LCAS-7232

*LUCD-732S

| L-2 Dimension (mm) | L-1 Dimension (mm) | L-1 + L-2 Dimension (mm) | Flange Face to Clamp Point (mm) | Clamping Force (kN) | | | |
|--------------------------|--------------------------|--------------------------------|--|---------------------|-------------|-------------|-------------|
| | | | | 17 (bar) | 34 (bar) | 52 (bar) | 70 (bar) |
| 18,5 | 21,5 | 40 | 15 | 0,82 | 1,65 | 2,48 | 3,30 |
| 18,5 | 23,5 | 42 | 17** | 0,78 | 1,56 | 2,34 | 3,16 |
| 18,5 | 31,5 | 50 | 25 | 0,53 | 1,11 | 1,56 | 2,13 |
| 18,5 | 41,5 | 60 | 35 | 0,41 | 0,80 | 1,17 | 1,59 |
| 18,5 | 51,5 | 70 | 45 | 0,33 | 0,65 | 0,90 | 1,27 |
| 18,5 | 61,5 | 80 | 55 | 0,27 | 0,53 | 0,76 | 0,97 |

**LCAS-7232

*LUCD-752S

| L-2 Dimension (mm) | L-1 Dimension (mm) | L-1 + L-2 Dimension (mm) | Flange Face to Clamp Point (mm) | Clamping Force (kN) | | | |
|--------------------------|--------------------------|--------------------------------|--|---------------------|-------------|-------------|-------------|
| | | | | 17 (bar) | 34 (bar) | 52 (bar) | 70 (bar) |
| 24,5 | 28,5 | 53,0 | 19,0 | 1,22 | 2,45 | 3,68 | 4,92 |
| 24,5 | 32,0 | 56,5 | 22,5** | 1,13 | 2,29 | 3,38 | 4,38 |
| 24,5 | 45,5 | 70,0 | 36,0 | 0,81 | 1,56 | 2,24 | 2,94 |
| 24,5 | 55,5 | 80,0 | 46,0 | 0,61 | 1,26 | 1,86 | 2,48 |
| 24,5 | 65,5 | 90,0 | 56,0 | 0,55 | 1,10 | 1,56 | 2,10 |
| 24,5 | 75,5 | 100,0 | 66,0 | 0,46 | 0,93 | 1,35 | 1,77 |

**LCAS-7572

*LUCD-772S

| L-2 Dimension (mm) | L-1 Dimension (mm) | L-1 + L-2 Dimension (mm) | Flange Face to Clamp Point (mm) | Clamping Force (kN) | | | |
|--------------------------|--------------------------|--------------------------------|--|---------------------|-------------|-------------|-------------|
| | | | | 17 (bar) | 34 (bar) | 52 (bar) | 70 (bar) |
| 24,5 | 28,5 | 53,0 | 19,0 | 1,67 | 3,35 | 5,04 | 6,72 |
| 24,5 | 32,0 | 56,0 | 22,5** | 1,58 | 3,05 | 4,54 | 5,94 |
| 24,5 | 45,5 | 70,0 | 36,0 | 1,11 | 2,09 | 3,12 | 4,14 |
| 24,5 | 55,5 | 80,0 | 46,0 | 0,89 | 1,75 | 2,52 | 3,29 |
| 24,5 | 65,5 | 90,0 | 56,0 | 0,77 | 1,50 | 2,05 | 2,65 |
| 24,5 | 75,5 | 100,0 | 66,0 | 0,64 | 1,24 | 1,80 | 2,30 |

**LCAS-7572

*LUCD-792S

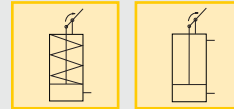
| L-2 Dimension (mm) | L-1 Dimension (mm) | L-1 + L-2 Dimension (mm) | Flange Face to Clamp Point (mm) | Clamping Force (kN) | | | |
|--------------------------|--------------------------|--------------------------------|--|---------------------|-------------|-------------|-------------|
| | | | | 17 (bar) | 34 (bar) | 52 (bar) | 70 (bar) |
| 30,0 | 34,0 | 64,0 | 23,0 | 2,19 | 4,39 | 6,59 | 8,79 |
| 30,0 | 37,5 | 67,5 | 26,5** | 2,02 | 4,05 | 6,05 | 8,05 |
| 30,0 | 50,0 | 80,0 | 39,0 | 1,51 | 2,97 | 4,40 | 5,86 |
| 30,0 | 60,0 | 90,0 | 49,0 | 1,20 | 2,41 | 3,57 | 4,78 |
| 30,0 | 70,0 | 100,0 | 59,0 | 1,04 | 1,99 | 3,01 | 4,00 |

**LCAS-792

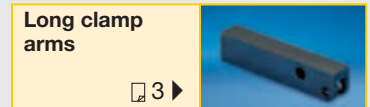
*Note: L-1 is the length from the clamp point to the centerline of the pin in the pivot lug. L-2 is the length from the centerline of the cylinder plunger to the centerline of the pin in the pivot lug. © 2011

| |
|----------------------|
| Clamp Force: 2-9 kN |
| Stroke: 20,5-32,5 mm |
| Pressure: 70 bar |

- E** Cilindros amarre de enlace
- F** Bride basculante
- D** Gelenkspanner

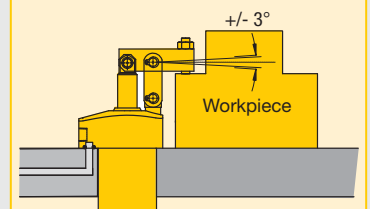


Options



Important

Clamp arm should be parallel to cylinder mounting surface within 3° to avoid damage to cylinder and linkage. Use the included set screw to adjust clamp arm alignment.

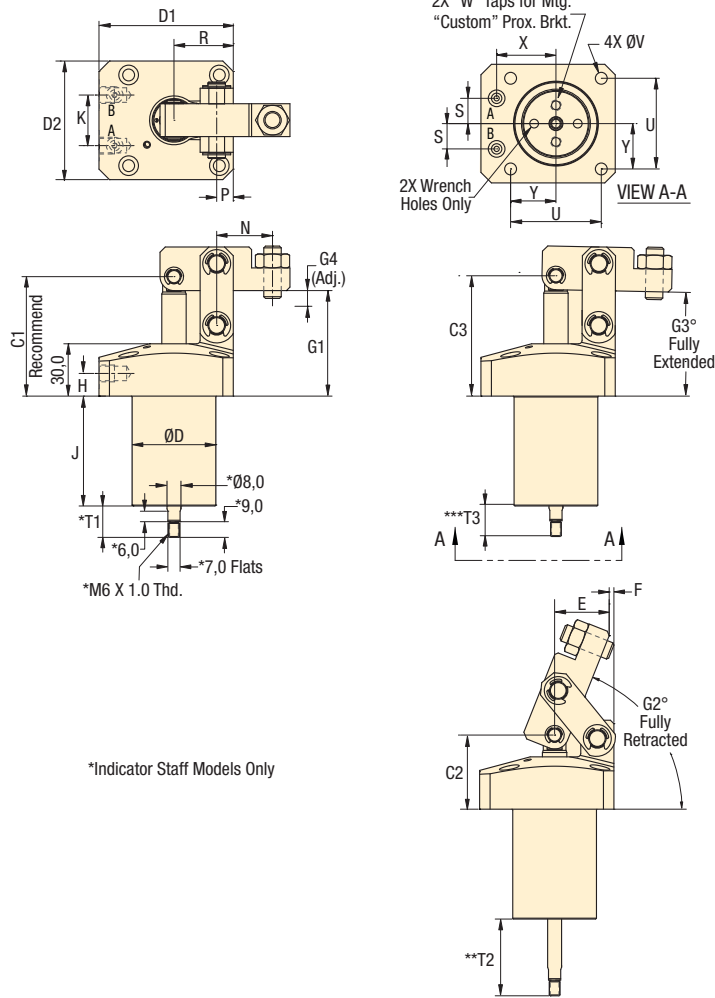


70 Bar Link clamps, LU7 series

Shown: LUCD772



▶ Link Clamp allows unobstructed part loading - extend to produce clamping force and retract to allow part removal.

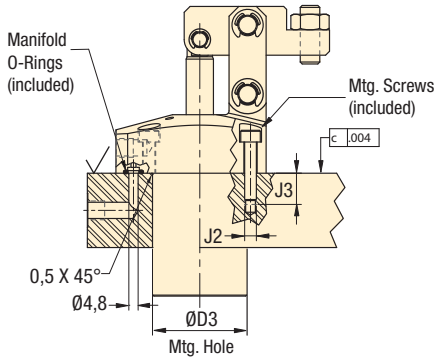


*Indicator Staff Models Only

A Dimensions in mm

| Model Number | Port Size | C1 standard | C2 max. | C3 | D Ø | D1 | D2 | E | F | G1 | G2° | G3° | G4 |
|-----------------------------------|-----------|-------------|---------|------|------|------|------|------|-----|------|------|-----|-----|
| ▼ Single acting | | | | | | | | | | | | | |
| LUCS-722 | G1/8" | 59.5 | 39.5 | 60.0 | 36.0 | 60.0 | 50.0 | 21.8 | 3.2 | 53.5 | 69.4 | 1.5 | 7.0 |
| LUCS-732 | G1/8" | 59.5 | 39.5 | 60.0 | 42.0 | 60.0 | 50.0 | 21.8 | 3.2 | 53.5 | 69.4 | 1.5 | 7.0 |
| LUCS-752 | G1/8" | 68.5 | 42.5 | 69.0 | 48.0 | 77.0 | 68.0 | 31.3 | 2.7 | 60.5 | 68.3 | 1.2 | 9.0 |
| LUCS-772 | G1/8" | 68.5 | 42.5 | 69.0 | 54.0 | 77.0 | 68.0 | 31.3 | 2.7 | 60.5 | 68.3 | 1.2 | 9.0 |
| LUCS-792 | G1/4" | 79.0 | 48.5 | 81.0 | 60.0 | 96.0 | 82.0 | 39.9 | 1.1 | 69.0 | 66.0 | 2.0 | 9.0 |
| ▼ Single-acting with Staff | | | | | | | | | | | | | |
| LUCS-722S | G1/8" | 59.5 | 39.5 | 60.0 | 36.0 | 60.0 | 50.0 | 21.8 | 3.2 | 53.5 | 69.4 | 1.5 | 7.0 |
| LUCS-732S | G 1/8" | 59.5 | 39.5 | 60.0 | 42.0 | 60.0 | 50.0 | 21.8 | 3.2 | 53.5 | 69.4 | 1.5 | 7.0 |
| LUCS-752S | G 1/8" | 68.5 | 42.5 | 69.0 | 48.0 | 77.0 | 68.0 | 31.3 | 2.7 | 60.5 | 68.3 | 1.2 | 9.0 |
| LUCS-772S | G 1/8" | 68.5 | 42.5 | 69.0 | 54.0 | 77.0 | 68.0 | 31.3 | 2.7 | 60.5 | 68.3 | 1.2 | 9.0 |
| LUCS-792S | G 1/4" | 79.0 | 48.5 | 81.0 | 60.0 | 96.0 | 82.0 | 39.9 | 1.1 | 69.0 | 66.0 | 2.0 | 9.0 |
| ▼ Double acting | | | | | | | | | | | | | |
| LUCD-722 | G1/8" | 59.5 | 39.5 | 60.0 | 36.0 | 60.0 | 50.0 | 21.8 | 3.2 | 53.5 | 69.4 | 1.5 | 7.0 |
| LUCD-732 | G 1/8" | 59.5 | 39.5 | 60.0 | 42.0 | 60.0 | 50.0 | 21.8 | 3.2 | 53.5 | 69.4 | 1.5 | 7.0 |
| LUCD-752 | G 1/8" | 68.5 | 42.5 | 69.0 | 48.0 | 77.0 | 68.0 | 31.3 | 2.7 | 60.5 | 68.3 | 1.2 | 9.0 |
| LUCD-772 | G 1/8" | 68.5 | 42.5 | 69.0 | 54.0 | 77.0 | 68.0 | 31.3 | 2.7 | 60.5 | 68.3 | 1.2 | 9.0 |
| LUCD-792 | G 1/4" | 79.0 | 48.5 | 81.0 | 60.0 | 96.0 | 82.0 | 39.9 | 1.1 | 69.0 | 66.0 | 2.0 | 9.0 |
| ▼ Double-acting with Staff | | | | | | | | | | | | | |
| LUCD-722S | G1/8" | 59.5 | 39.5 | 60.0 | 36.0 | 60.0 | 50.0 | 21.8 | 3.2 | 53.5 | 69.4 | 1.5 | 7.0 |
| LUCD-732S | G 1/8" | 59.5 | 39.5 | 60.0 | 42.0 | 60.0 | 50.0 | 21.8 | 3.2 | 53.5 | 69.4 | 1.5 | 7.0 |
| LUCD-752S | G 1/8" | 68.5 | 42.5 | 69.0 | 48.0 | 77.0 | 68.0 | 31.3 | 2.7 | 60.5 | 68.3 | 1.2 | 9.0 |
| LUCD-772S | G 1/8" | 68.5 | 42.5 | 69.0 | 54.0 | 77.0 | 68.0 | 31.3 | 2.7 | 60.5 | 68.3 | 1.2 | 9.0 |
| LUCD-792S | G 1/4" | 79.0 | 48.5 | 81.0 | 60.0 | 96.0 | 82.0 | 39.9 | 1.1 | 69.0 | 66.0 | 2.0 | 9.0 |

* Standard clamp position
 ** Unclamped position
 *** Maximum clamp position



A Installation dimensions (mm)

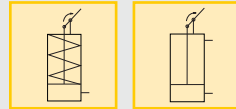
| Clamping force ¹⁾ kN | Fixture hole Ø D3 mm | Mounting Bolts | Mounting Thread J2 mm | Minimum Depth J3 mm |
|------------------------------------|----------------------------|----------------|-----------------------------|---------------------------|
| 2 | 36.5 | M5 X 30 | M5 X 0.8 | 12 |
| 3.5 | 42.5 | M5 X 30 | M5 X 0.8 | 12 |
| 5 | 48.5 | M6 X 30 | M6 X 1.0 | 16 |
| 7 | 54.5 | M6 X 30 | M6 X 1.0 | 16 |
| 9 | 60.5 | M8 X 30 | M8 X 1.25 | 18 |

¹⁾ With standard clamp arm.

Note: Mounting bolts and O-rings included.

- Clamp Force: 2-9 kN**
- Stroke: 20,5-32,5 mm**
- Pressure: 70 bar**

- E Cilindros amarre de enlace**
- F Bride basculante**
- D Gelenkspanner**



D Options

Long clamp arms

| | H | J | K | N | P | R | S | *T1 | *T2 | *T3 | U | V Ø | *W | X | Y | Wt. kgs | Model Number |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|--------|--------------------|------|------|------------|-----------------|
| ▼ Single acting | | | | | | | | | | | | | | | | | |
| | 13.0 | 45.0 | 22.0 | 23.5 | 6.5 | 25.0 | 11.0 | - | - | - | 38.0 | 5.5 | - | 26.0 | 19.0 | 1,13 | LUCS-722 |
| | 13.0 | 45.0 | 22.0 | 23.5 | 6.5 | 25.0 | 11.0 | - | - | - | 38.0 | 5.5 | - | 26.0 | 19.0 | 1,36 | LUCS-732 |
| | 13.0 | 63.0 | 29.0 | 32.0 | 9.5 | 34.0 | 14.5 | - | - | - | 52.0 | 6.8 | - | 34.0 | 26.0 | 2,72 | LUCS-752 |
| | 13.0 | 63.0 | 29.0 | 32.0 | 9.5 | 34.0 | 14.5 | - | - | - | 52.0 | 6.8 | - | 34.0 | 26.0 | 3,63 | LUCS-772 |
| | 14.0 | 79.0 | 36.0 | 37.5 | 11.0 | 41.0 | 18.0 | - | - | - | 64.0 | 8.2 | - | 42.0 | 32.0 | 4,54 | LUCS-792 |
| ▼ Single-acting with Staff | | | | | | | | | | | | | | | | | |
| | 13.0 | 45.0 | 22.0 | 23.5 | 6.5 | 25.0 | 11.0 | 18.0 | 38.0 | 17.5 | 38.0 | 5.5 | M4 X 0.7 X 7.0 DP. | 26.0 | 19.0 | 1,15 | LUCS-722S |
| | 13.0 | 45.0 | 22.0 | 23.5 | 6.5 | 25.0 | 11.0 | 18.0 | 38.0 | 17.5 | 38.0 | 5.5 | M4 X 0.7 X 7.0 DP. | 26.0 | 19.0 | 1,38 | LUCS-732S |
| | 13.0 | 63.0 | 29.0 | 32.0 | 9.5 | 34.0 | 14.5 | 18.0 | 44.0 | 17.5 | 52.0 | 6.8 | M6 X 1.0 X 9.0 DP. | 34.0 | 26.0 | 2,74 | LUCS-752S |
| | 13.0 | 63.0 | 29.0 | 32.0 | 9.5 | 34.0 | 14.5 | 18.0 | 44.0 | 17.5 | 52.0 | 6.8 | M6 X 1.0 X 9.0 DP. | 34.0 | 26.0 | 3,65 | LUCS-772S |
| | 14.0 | 79.0 | 36.0 | 37.5 | 11.0 | 41.0 | 18.0 | 19.5 | 50.0 | 17.5 | 64.0 | 8.2 | M6 X 1.0 X 9.0 DP. | 42.0 | 32.0 | 4,57 | LUCS-792S |
| ▼ Double acting | | | | | | | | | | | | | | | | | |
| | 13.0 | 45.0 | 22.0 | 23.5 | 6.5 | 25.0 | 11.0 | - | - | - | 38.0 | 5.5 | - | 26.0 | 19.0 | 1,13 | LUCD-722 |
| | 13.0 | 45.0 | 22.0 | 23.5 | 6.5 | 25.0 | 11.0 | - | - | - | 38.0 | 5.5 | - | 26.0 | 19.0 | 1,36 | LUCD-732 |
| | 13.0 | 63.0 | 29.0 | 32.0 | 9.5 | 34.0 | 14.5 | - | - | - | 52.0 | 6.8 | - | 34.0 | 26.0 | 2,72 | LUCD-752 |
| | 13.0 | 63.0 | 29.0 | 32.0 | 9.5 | 34.0 | 14.5 | - | - | - | 52.0 | 6.8 | - | 34.0 | 26.0 | 3,63 | LUCD-772 |
| | 14.0 | 79.0 | 36.0 | 37.5 | 11.0 | 41.0 | 18.0 | - | - | - | 64.0 | 8.2 | - | 42.0 | 32.0 | 4,54 | LUCD-792 |
| ▼ Double-acting with Staff | | | | | | | | | | | | | | | | | |
| | 13.0 | 45.0 | 22.0 | 23.5 | 6.5 | 25.0 | 11.0 | 18.0 | 38.0 | 17.5 | 38.0 | 5.5 | M4 X 0.7 X 7.0 DP. | 26.0 | 19.0 | 1,15 | LUCD-722S |
| | 13.0 | 45.0 | 22.0 | 23.5 | 6.5 | 25.0 | 11.0 | 18.0 | 38.0 | 17.5 | 38.0 | 5.5 | M4 X 0.7 X 7.0 DP. | 26.0 | 19.0 | 1,38 | LUCD-732S |
| | 13.0 | 63.0 | 29.0 | 32.0 | 9.5 | 34.0 | 14.5 | 18.0 | 44.0 | 17.5 | 52.0 | 6.8 | M6 X 1.0 X 9.0 DP. | 34.0 | 26.0 | 2,74 | LUCD-752S |
| | 13.0 | 63.0 | 29.0 | 32.0 | 9.5 | 34.0 | 14.5 | 18.0 | 44.0 | 17.5 | 52.0 | 6.8 | M6 X 1.0 X 9.0 DP. | 34.0 | 26.0 | 3,65 | LUCD-772S |
| | 14.0 | 79.0 | 36.0 | 37.5 | 11.0 | 41.0 | 18.0 | 19.5 | 50.0 | 17.5 | 64.0 | 8.2 | M6 X 1.0 X 9.0 DP. | 42.0 | 32.0 | 4,57 | LUCD-792S |

* Standard clamp position
 ** Unclamped position
 *** Maximum clamp position

70 Bar Link clamps, LU7 series

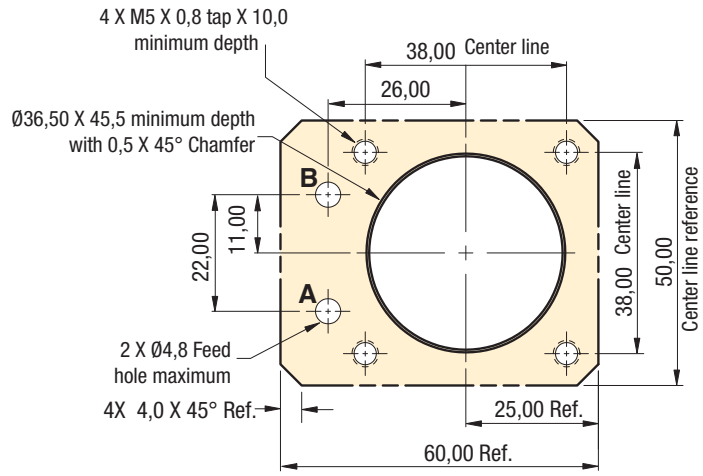
Shown: LUCD772



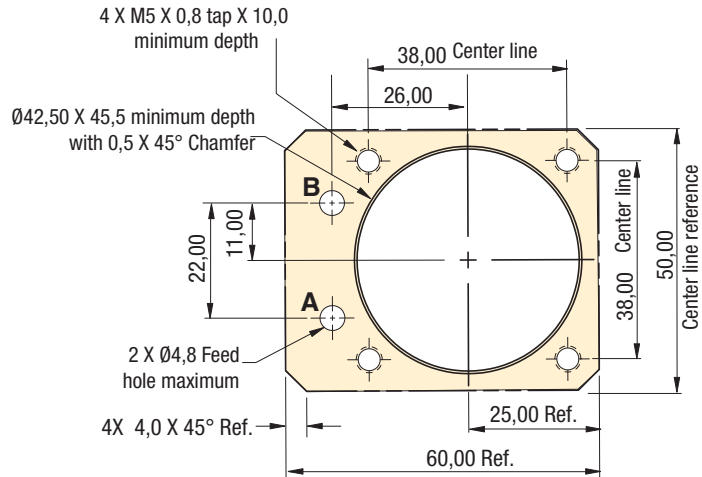
▶ Link Clamp allows unobstructed part loading - extend to produce clamping force and retract to allow part removal.

Installation dimensions (mm)

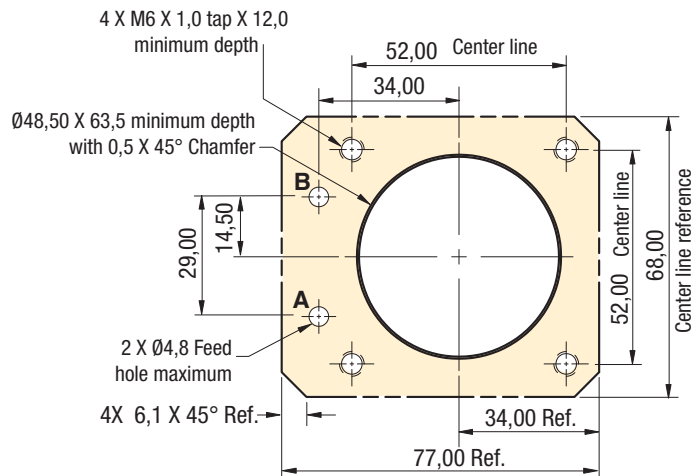
2 kN Mounting Pattern



3,5 kN Mounting Pattern



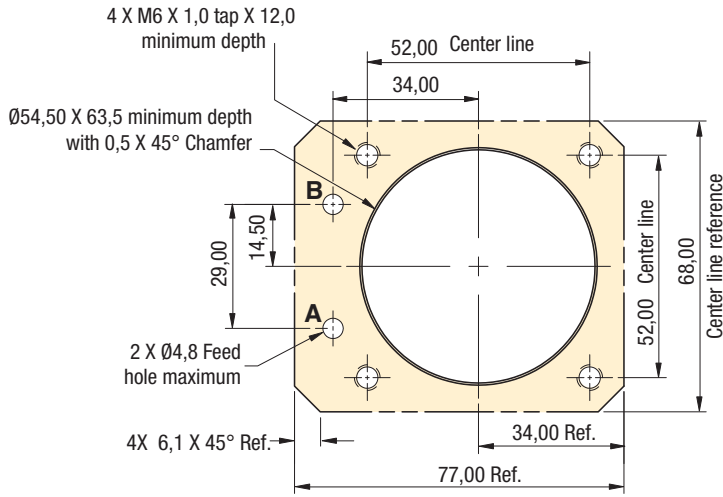
5 kN Mounting Pattern



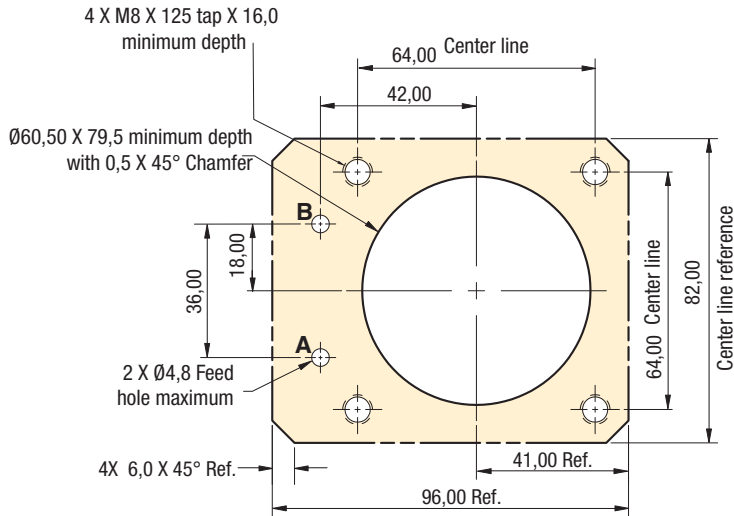


Installation dimensions (mm)

7 kN Mounting Pattern



9 kN Mounting Pattern

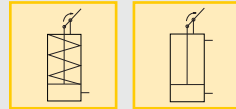


Clamp Force: 2-9 kN


Stroke: 20,5-32,5 mm


Pressure: 70 bar

- E** Cilindros amarre de enlace
- F** Bride basculante
- D** Gelenkspanner



Options

Long clamp arms  3 ▶

 For mounting pattern CAD files go to: enerpacwh.com

70 Bar Link Clamp



The Full Enerpac Workholding Line

Cylinders

- Swing
- Link
- Pull
- Block
- Threaded Body
- Manifold Mount
- Work Supports
- Universal
- Hollow Plunger
- Positive Locking
- Pull Down
- Collet-Lok™

Power Sources

- Air/Oil Boosters
- Turbo Air Driven
- Electric Pumps
- Hand Pumps
- Hydraulic Intensifiers
- Wand and Booster
- Screw Pump

Valves

- Manual
- Solenoid
- Sequence
- Pilot Operated Check
- Flow Control
- Pressure Reducing

System Components

- Accumulators
- Accumulator Pallet Units
- Auto Coupler Systems
- Rotary Couplers
- Gauges
- Fittings
- Tubing
- Manifolds
- Hoses
- Couplers
- AutoCouplers
- Pressure Switches
- Wireless Pressure Monitoring

CAD Files

- Available at www.enerpac.com

Application Assistance

- Contact Enerpac at 1-414-747-8315



See the Enerpac Workholding Catalog for information about other Enerpac products.



See the Enerpac Industrial Tools Catalog for information about other Enerpac high-force tools.

Enerpac Worldwide Locations

Australia and New Zealand

Actuant Australia Ltd.
Block V Unit 3
Regents Park Estate
391 Park Road
Regents Park NSW 2143
(P.O. Box 261) Australia
T +61 297 438 988
F +61 297 438 648
sales-au@enerpac.com

Brazil

Power Packer do Brasil Ltda.
Rua dos Inocentes, 587
04764-050 - Sao Paulo (SP)
T +55 11 5687 2211
F +55 11 5686 5583
Toll Free: 0800 891 5770
vendasbrasil@enerpac.com

Canada

Actuant Canada Corporation
6615 Ordan Drive, Unit 14-15
Mississauga, Ontario
L5T 1X2
T +1 905 564 5749
F +1 905 564 0305
Toll Free:
T +1 800 268 4987
F +1 800 461 2456
customer.service@actuant.com

China

Actuant (China) Industries Co. Ltd.
No. 6 Nanjing East Road
Taicang Economic Dep Zone
Jiangsu, China
T +86 0512 5328 7500
F +86 0512 5335 9690
marketingchina@enerpac.com

France, Switzerland, North Africa and French speaking African countries

ENERPAC
Une division d'ACTUANT
France S.A.S.
ZA de Courtaoef
32, avenue de la Baltique
91140 VILLEBON /YVETTE
France
T +33 1 60 13 68 68
F +33 1 69 20 37 50
sales-fr@enerpac.com

Germany and Austria

ENERPAC GmbH
P.O. Box 300113
D-40401 Düsseldorf
Willstätterstrasse 13
D-40549 Düsseldorf, Germany
T +49 211 471 490
F +49 211 471 49 28
sales-de@enerpac.com

India

ENERPAC Hydraulics Pvt. Ltd.
No. 1A, Peenya Industrial Area
IInd Phase, Bangalore,
560 058, India
T +91 80 40 792 777
F +91 80 40 792 792
sales-in@enerpac.com

Italy

ENERPAC S.p.A.
Via Canova 4
20094 Corsico (Milano)
T +39 02 4861 111
F +39 02 4860 1288
sales-it@enerpac.com

Japan

Applied Power Japan LTD KK
Besshocho 85-7
Kita-ku, Saitama-shi 331-0821, Japan
T +81 48 662 4911
F +81 48 662 4955
sales-jp@enerpac.com

Middle East, Egypt & Libya

ENERPAC Middle East FZE
Office 423, LOB 15
P.O. Box 18004, Jebel Ali,
Dubai
United Arab Emirates
T +971 (0)4 8872686
F +971 (0)4 8872687
sales-ua@enerpac.com

Russia

Rep. office Enerpac
Russian Federation
Admiral Makarova Street 8
125212 Moscow, Russia
T +7 495 98090 91
F +7 495 98090 92
sales-ru@enerpac.com

Singapore

Actuant Asia Pte Ltd.
83 Joo Koon Circle
Singapore 629109
T +65 68 63 0611
F +65 64 84 5669
Toll Free: +1800 363 7722
sales-sg@enerpac.com

South Korea

Actuant Korea Ltd.
3Ba 717, Shihwa Industrial Complex
Jungwang-Dong, Shihung-Shi,
Kyunggi-Do
Republic of Korea 429-450
T +82 31 434 4506
F +82 31 434 4507
sales-kr@enerpac.com

Spain and Portugal

ENERPAC SPAIN, S.L.
Avda. Los Frailes, 40 -
Nave C & D
Pol. Ind. Los Frailes
28814 Daganzo de Arriba
(Madrid) Spain
T +34 91 884 86 06
F +34 91 884 86 11
sales-es@enerpac.com

Sweden, Denmark, Norway, Finland and Iceland

Enerpac Scandinavia AB
Fabriksgatan 7
412 50 Gothenburg
Sweden
T +46 (0) 31 799 0281
F +46 (0) 31 799 0010
scandinavianinquiries@enerpac.com

The Netherlands, Belgium, Luxembourg, Central and Eastern Europe, Baltic States, Greece, Turkey and CIS countries

ENERPAC B.V.
Galvanistraat 115
6716 AE Ede
P.O. Box 8097
6710 AB Ede
The Netherlands
T +31 318 535 800
F +31 318 535 848
sales-nl@enerpac.com

Enerpac Integrated Solutions B.V.

Opaalstraat 44
7554 TS Hengelo
P.O. Box 421
7550 AK Hengelo
The Netherlands
T +31 74 242 20 45
F +31 74 243 03 38
integratedsolutions@enerpac.com

South Africa and other English speaking African countries

ENERPAC B.V.
Galvanistraat 115
6716 AE Ede
P.O. Box 8097
6710 AB Ede
The Netherlands
T +31 318 535 911
F +31 318 525 613
sales-za@enerpac.com

United Kingdom and Ireland

ENERPAC Ltd.,
Bentley Road South
Darlaston, West Midlands
WS10 8LQ
England
T +44 (0)121 50 50 787
F +44 (0)121 50 50 799
sales-uk@enerpac.com

USA, Latin America and Caribbean

ENERPAC
P.O. Box 3241
Milwaukee
WI 53201-3241 USA
T +1 262 293 1500
F +1 262 293 7036
User inquiries:
+1 800 433 2766
Distributor inquiries/orders:
+1 800 558 0530
Technical inquiries:
techservices@enerpac.com
sales-us@enerpac.com

e-mail: info@enerpac.com

Internet: www.enerpac.com

L3008 Rev. A Date: 02/11

Index:

| | |
|-----------------|-----|
| English..... | 1-5 |
| Français..... | N/A |
| Deutsch..... | N/A |
| Italiano..... | N/A |
| Español..... | N/A |
| Nederlands..... | N/A |
| Portuguese..... | N/A |
| 中文..... | N/A |

Repair Parts Sheets for this product are available from the Enerpac web site at www.enerpac.com, or from your nearest Authorized Enerpac Service Center or Enerpac Sales office.

1.0 IMPORTANT RECEIVING INSTRUCTIONS

Visually inspect all components for shipping damage. Shipping damage is not covered by warranty. If shipping damage is found, notify carrier at once. The carrier is responsible for all repair and replacement costs resulting from damage in shipment.

SAFETY FIRST

2.0 SAFETY ISSUES



Read all instructions, warnings and cautions carefully. Follow all safety precautions to avoid personal injury or property damage during system operation. Enerpac cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect product and/or system operation. Contact Enerpac when in doubt as to the safety precautions and operations. If you have never been trained on high-pressure hydraulic safety, consult your distribution or service center for a free Enerpac Hydraulic safety course.

Failure to comply with the following cautions and warnings could cause equipment damage and personal injury.

A **CAUTION** is used to indicate correct operating or maintenance procedures and practices to prevent damage to, or destruction of equipment or other property.

A **WARNING** indicates a potential danger that requires correct procedures or practices to avoid personal injury.

A **DANGER** is only used when your action or lack of action may cause serious injury or even death.



WARNING: Wear proper personal protective gear when operating hydraulic equipment.



WARNING: Stay clear of loads supported by hydraulics. A cylinder, when used as a load lifting device, should never be used as a load holding device. After the load has been raised or lowered, it must always be blocked mechanically.



DANGER: To avoid personal injury keep hands and feet away from cylinder and workpiece during operation.



WARNING: Do not exceed equipment ratings. Never attempt to lift a load weighing more than the capacity of the cylinder. Overloading causes equipment failure and possible personal injury. The cylinders are designed for a max. pressure of 350 bar [5,000 psi]. Do not connect a jack or cylinder to a pump with a higher pressure rating.



DANGER: Never set the relief valve to a higher pressure than the maximum rated pressure of the pump. Higher settings may result in equipment damage and/or personal injury. Do not remove relief valve.



WARNING: The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure. It is your window to what is happening in the system.



CAUTION: Avoid damaging hydraulic hose. Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose will cause severe back-pressure. Sharp bends and kinks will internally damage the hose leading to premature hose failure.



Do not drop heavy objects on hose. A sharp impact may cause internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture.



IMPORTANT: Do not lift hydraulic equipment by the hoses or swivel couplers. Use the carrying handle or other means of safe transport.



CAUTION: Keep hydraulic equipment away from flames and heat. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings. For optimum performance do not expose equipment to temperatures of 65 °C [150 °F] or higher. Protect hoses and cylinders from weld spatter.



DANGER: Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin, causing serious injury. If oil is injected under the skin, see a doctor immediately.



WARNING: Only use hydraulic cylinders in a coupled system. Never use a cylinder with unconnected couplers. If the cylinder becomes extremely overloaded, components can fail catastrophically causing severe personal injury.



IMPORTANT: Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact the Authorized ENERPAC Service Center in your area. To protect your warranty, use only ENERPAC oil.



WARNING: Immediately replace worn or damaged parts with genuine ENERPAC parts. Standard grade parts will break causing personal injury and property damage. ENERPAC parts are designed to fit properly and withstand high loads.

3.0 INSTALLATION

The Enerpac 70 bar link clamp features an upper flange design. The clamp can be mounted to the fixture using the supplied mounting bolts. Oil can be supplied to the clamp using either the BSPP hydraulic ports on the flange or via the O-ring manifold ports on the underside of the flange. The following sections of this manual include detailed mounting instructions that should be reviewed before attempting to install the clamp on the fixture.

3.1 Clamp Arm Location

The Enerpac 70 bar link clamp contains an anchor lug that is integral to the body. Models are available that place this lug at a *center*, *right* or *left* position in relation to the hydraulic ports (See Figure 1).

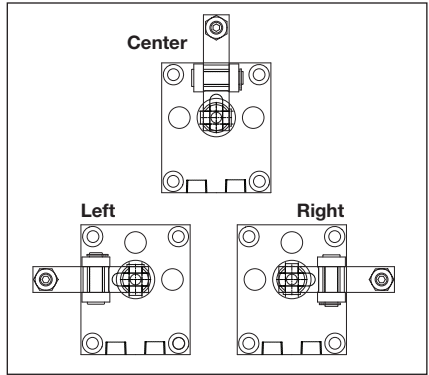


Figure 1

To install the linkage components, line up the two (2) links with the hole in the anchor lug. Insert one (1) of the long pivot pins through the links and the anchor lug. Secure the pivot pin in place using two (2) of the supplied E-clips (See Figures 2 and 3).

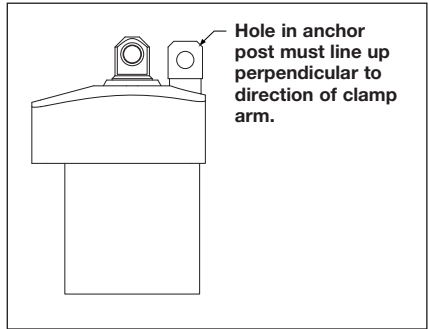


Figure 2

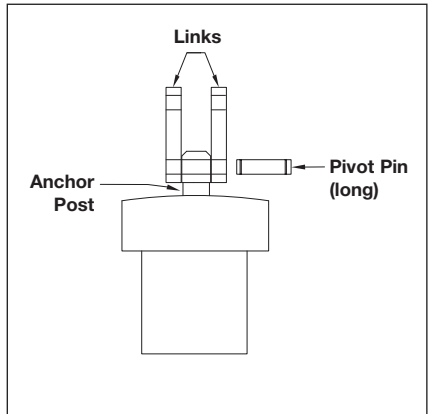


Figure 3

3.2 Arm Attachment

Place the clamp arm over the plunger end, lining up the pivot pin holes. The clamp arm should extend between the two links previously installed. Insert the supplied short pivot pin through the arm and the plunger, securing the parts together with the supplied E-clips (See Figure 4).

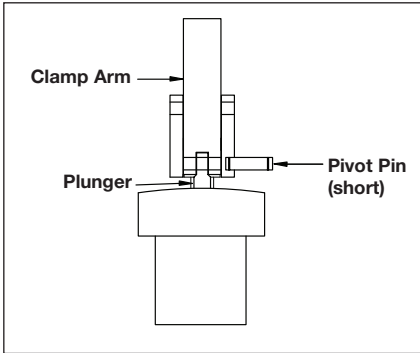


Figure 4

Then, insert the second long pivot pin through the top holes on the links and through the top hole on the clamp arm, securing it with the last two supplied E-clips (See Figure 5).

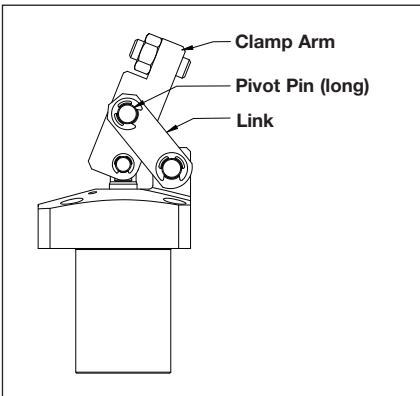


Figure 5

3.3 Cylinder Mounting

The Enerpac 70 bar link clamp features a 4 bolt flange style body for mounting the cylinder to the fixture plate. Mounting bolts of the proper size and length are supplied. Flange mounting requires the machining of a through hole in the fixture plate or mounting block and threads for the four (4) mounting bolts. (See Figure 6 and Table 1).

Align the cylinder in the proper orientation to provide clamping force to the part. Then, install the mounting bolts and tighten per the value shown in Table 1. Failure to properly tighten the mounting bolts can result in damage to the cylinder and premature failure of the clamp.

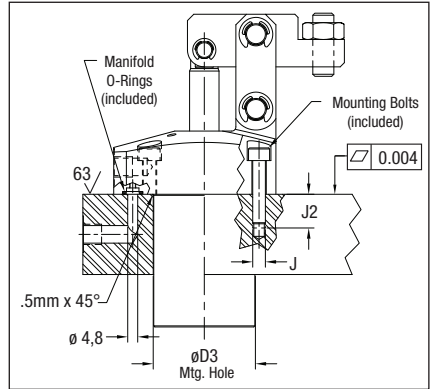


Figure 6

3.4 Oil Connections

The cylinder can be plumbed using either the hydraulic ports on the side of the flange, or the manifold O-ring ports on the underside of the flange. When using the manifold O-ring ports, use a 4.8 mm diameter feed passage. The feed passage should align with the center of the O-ring.

Hydraulic Fittings

The Enerpac 70 bar link clamp is supplied with BSPP ports in the side of the flange. Connect the oil supply to these ports using fittings rated for a minimum of 70 bar [1000 psi] only. Single acting (spring return) models are vented. The supplied vent fitting may be removed if using the manifold port for the vented port.

Table 1 - Specifications

| Clamp Force ¹⁾ | | Mounting Hole Ø D3 mm | Mounting Bolt Thread J | Min. Depth J2 mm | Manifold O-ring ²⁾ ARP No. | Lubricated Bolt Torque Nm |
|---------------------------|------|-----------------------------|------------------------------|------------------------|--|---------------------------------|
| kN | lbs. | | | | | |
| 2 | 450 | 36.5 | M5 x .08 x 30 mm long | 12 | 568-010 | 8.0-9.0 |
| 3.5 | 787 | 42.5 | M5 x .08 x 30 mm long | 12 | 568-010 | 8.0-9.0 |
| 5 | 1124 | 48.5 | M6 x 1.0 x 30 mm long | 16 | 568-011 | 13.5-15.0 |
| 7 | 1574 | 54.5 | M6 x 1.0 x 30 mm long | 16 | 568-011 | 13.5-15.0 |
| 9 | 2023 | 60.5 | M8 x 1.25 x 30 mm long | 18 | 568-011 | 32.0-38.0 |

¹⁾ At rated clamp point. ²⁾ O-rings and mounting bolts are included.

Double-acting cylinders require two ports to operate. The port marked "A" should be connected to the clamp line of the circuit. The port marked "B" should be connected to the unclamp side of the circuit. Make sure that fittings, hoses and tubing used are rated at 70 bar [1000 psi] minimum working pressure.

Manifold Ports

Enerpac link clamps can also be plumbed using the manifold ports on the underside of the flange. The clamp is supplied from the factory with a small cap screw and copper gasket installed in each port. (Figure 7). Remove these items before installation. The manifold ports require the use of O-rings as face seals between the cylinder flange and the fixture plate. These O-rings are supplied with the clamp, typically in a small plastic bag along with the mounting bolts and the documentation. Install these O-rings (only one O-ring required for single acting cylinders) into the seal grooves on the underside of the mounting flange (See Figure 7).

Note: Before installation, the O-rings should be coated with a small amount of hydraulic oil to prevent damage during operation.

After installing O-rings, install the clamp as described in section 3.3 (See Figure 6).

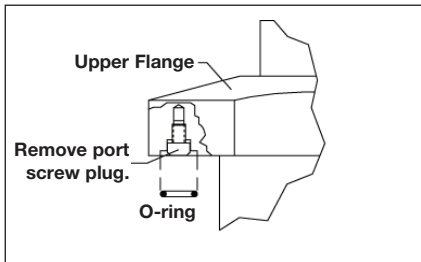


Figure 7

4.0 OPERATION

Enerpac link clamps operate on hydraulic pressure from 10 to 70 bar. The oil pressure is supplied via an external pump plumbed through a circuit of valves to the link clamps and other clamping elements on the fixture. Single acting cylinders only require one hydraulic line to provide clamping force, and use an internal spring to retract the clamp arm when pressure is removed. Double acting cylinders require two hydraulic lines; one line provides pressure to advance the arm and clamp the part; the other line provides pressure to push the arm back and unclamp the part. Either manual, air or electrically operated valves are used to direct oil to one port or another.

5.0 MAINTENANCE

1. Use only Enerpac oil with this product. The use of any other oil may invalidate your warranty.
2. Dynamic hydraulic seals need periodic replacement due to normal wear and tear. A regularly scheduled maintenance inspection plan will help prevent unnecessary interruptions in production due to seal wear.
3. The clamp linkage can be damaged or broken due to mis-loaded parts or excessive contamination build up. Any clips or pins that appear damaged or worn should be replaced immediately.
4. All maintenance should be done by a qualified hydraulic service technician. Enerpac has a global service center network that can provide repair and maintenance services if needed.

6.0 TROUBLESHOOTING GUIDE

Allow only qualified hydraulic technicians to service the link clamp or system components. A system failure may or may not be the result of a link clamp malfunction. To determine the cause of the problem, the complete system must be included in any diagnostic procedure.

The information in the following chart is intended to be used only as an aid in determining if a problem exists. For repair service, contact your local Authorized Enerpac Service Center.

| PROBLEM | POSSIBLE CAUSE/SOLUTION |
|--|---|
| Cylinder plunger will not advance. | Control valve not open or damaged. Couplers or fittings not properly connected. Pump is not developing flow or pressure. Linkage is not attached properly. Linkage is bound by either misalignment or built up contamination. |
| Cylinder advances in spurts. | Control valve not open or damaged. Couplers or fittings not properly connected. Pump is malfunctioning. Linkage is bound by either misalignment or built up contamination. Air in hydraulic system. |
| Cylinder advances but does not hold pressure or provide clamp force. | Control valve damaged. Couplers or fittings leaking. Pump is malfunctioning. Internal seals are damaged and need replacement. Cylinder bore or plunger are damaged and need replacement. Clamp arm is not properly contacting part. Adjust contact bolt. |
| Cylinder leaks oil. | Internal seals are damaged and need replacement. Cylinder bore or plunger are damaged and need replacement. If cylinder is manifold mounted, O-rings could be damaged or pinched and need replacement. |
| Cylinder will not retract or retracts slowly. | Control valve not open or damaged. Couplers or fittings not properly connected. Pump is malfunctioning. Linkage is bound by either misalignment or built up contamination. Air in hydraulic system. Restrictions in return line. Check all installed accessories such as filters for proper operation. |

Australia and New Zealand

Actuant Australia Ltd.
Block V Unit 3
Regents Park Estate
391 Park Road
Regents Park NSW 2143
(P.O. Box 261) Australia
T +61 297 438 988
F +61 297 438 648
sales-au@enerpac.com

Brazil

Power Packer do Brasil Ltda.
Rua dos Inocentes, 587
04764-050 - Sao Paulo (SP)
T +55 11 5687 2211
F +55 11 5686 5583
Toll Free: 0800 891 5770
vendasbrasil@enerpac.com

Canada

Actuant Canada Corporation
6615 Ordan Drive, Unit 14-15
Mississauga, Ontario L5T 1X2
T +1 905 564 5749
F +1 905 564 0305
Toll Free:
T +1 800 268 4987
F +1 800 461 2456
customer.service@actuant.com

China (Taicang)

Actuant (China) Industries Co. Ltd.
No.6 Nanjing Road,
Taicang Economic Dep Zone
Jiangsu, China
T +86 0512 5328 7500
F +86 0512 5335 9690
sales-cn@enerpac.com

China (Beijing)

Actuant (China) Industries Co. Ltd.
709B Diyang Building
Xin No. 2, Dong San Huan North Rd.
Beijing City, 100028 China
T +86 10 845 36166
F +86 10 845 36220
sales-cn@enerpac.com

France, Switzerland, North Africa and French speaking African countries

ENERPAC
Une division d'ACTUANT France S.A.S.
ZA de Courtaboeuf
32, avenue de la Baltique
91140 VILLEBON /YVETTE
France
T +33 1 60 13 68 68
F +33 1 69 20 37 50
sales-fr@enerpac.com

Germany and Austria

ENERPAC GmbH
P.O. Box 300113
D-40401 Düsseldorf
Willstätterstrasse 13
D-40549 Düsseldorf, Germany
T +49 211 471 490
F +49 211 471 49 28
sales-de@enerpac.com

India

ENERPAC Hydraulics Pvt. Ltd.
No. 1A, Peenya Industrial Area
IInd Phase, Bangalore, 560 058, India
T +91 80 40 792 777
F +91 80 40 792 792
sales-in@enerpac.com

Italy

ENERPAC S.p.A.
Via Canova 4
20094 Corsico (Milano)
T +39 02 4861 111
F +39 02 4860 1288
sales-it@enerpac.com

Japan

Applied Power Japan LTD KK
Besshocho 85-7
Kita-ku, Saitama-shi 331-0821, Japan
T +81 48 662 4911
F +81 48 662 4955
sales-jp@enerpac.com

Middle East, Egypt and Libya

ENERPAC Middle East FZE
Office 423, LOB 15
P.O. Box 18004, Jebel Ali, Dubai
United Arab Emirates
T +971 (0)4 8872686
F +971 (0)4 8872687
sales-ua@enerpac.com

Russia

Rep. office Enerpac
Russian Federation
Admiral Makarova Street 8
125212 Moscow, Russia
T +7 495 98090 91
F +7 495 98090 92
sales-ru@enerpac.com

Singapore

Actuant Asia Pte Ltd.
83 Joo Koon Circle
Singapore 629109
T +65 68 63 0611
F +65 64 84 5669
Toll Free: +1800 363 7722
sales-sg@enerpac.com

South Korea

Actuant Korea Ltd.
3Ba 717, Shihwa Industrial Complex
Jungwang-Dong, Shihung-Shi,
Kyunggi-Do
Republic of Korea 429-450
T +82 31 434 4506
F +82 31 434 4507
sales-kr@enerpac.com

Spain and Portugal

ENERPAC SPAIN, S.L.
Avda. Los Frailes, 40 – Nave C & D
Pol. Ind. Los Frailes
28814 Daganzo de Arriba
(Madrid) Spain
T +34 91 884 86 06
F +34 91 884 86 11
sales-es@enerpac.com

Sweden, Denmark, Norway, Finland and Iceland

ENERpac Scandinavia AB
Fabriksgatan 7
412 50 Gothenburg
Sweden
T +46 (0) 31 799 0281
F +46 (0) 31 799 0010
scandinavianinquiries@enerpac.com

The Netherlands, Belgium, Luxembourg, Central and Eastern Europe, Baltic States, Greece, Turkey and CIS countries

ENERPAC B.V.
Galvanistraat 115
6716 AE Ede
P.O. Box 8097
6710 AB Ede
The Netherlands
T +31 318 535 800
F +31 318 535 848
sales-nl@enerpac.com

Enerpac Integrated Solutions B.V.
Opaalstraat 44
7554 TS Hengelo
P.O. Box 421
7550 AK Hengelo
The Netherlands
T +31 74 242 20 45
F +31 74 243 03 38
integratedsolutions@enerpac.com

South Africa and other English speaking African countries

ENERPAC B.V.
Galvanistraat 115
6716 AE Ede
P.O. Box 8097
6710 AB Ede
The Netherlands
T +31 318 535 911
F +31 318 525 613
sales-za@enerpac.com

United Kingdom and Ireland

ENERPAC Ltd.,
Bentley Road South
Darlaston, West Midlands
WS10 8LQ
England
T +44 (0)121 50 50 787
F +44 (0)121 50 50 799
sales-uk@enerpac.com

USA, Latin America and Caribbean

ENERPAC
P.O. Box 3241
6100 N. Baker Road
Milwaukee
WI 53209 USA
T +1 262 781 6600
F +1 262 783 9562
User inquiries:
+1 800 433 2766
Distributor inquiries/orders:
+1 800 558 0530
sales-us@enerpac.com

L3096 Rev. B Date: 12/11

Index:

| | |
|-----------------|------|
| English..... | 1-11 |
| Français..... | N/A |
| Deutsch..... | N/A |
| Italiano..... | N/A |
| Español..... | N/A |
| Nederlands..... | N/A |
| Portuguese..... | N/A |
| 中文..... | N/A |

Repair Parts Sheets for this product are available from the Enerpac web site at www.enerpac.com, or from your nearest Authorized Enerpac Service Center or Enerpac Sales office.

1.0 IMPORTANT RECEIVING INSTRUCTIONS

Visually inspect all components for shipping damage. Shipping damage is not covered by warranty. If shipping damage is found, notify carrier at once. The carrier is responsible for all repair and replacement costs resulting from damage in shipment.

SAFETY FIRST

2.0 SAFETY ISSUES



Read all instructions, warnings and cautions carefully. Follow all safety precautions to avoid personal injury or property damage during system operation. Enerpac cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect product and/or system operation. Contact Enerpac when in doubt as to the safety precautions and operations. If you have never been trained on high-pressure hydraulic safety, consult your distribution or service center for a free Enerpac Hydraulic safety course.

Failure to comply with the following safety precautions could cause equipment damage and personal injury.

A **CAUTION** is used to indicate correct operating or maintenance procedures and practices to prevent damage to, or destruction of equipment or other property.

A **WARNING** indicates a potential danger that requires correct procedures or practices to avoid personal injury.

A **DANGER** is only used when your action or lack of action may cause serious injury or even death.



WARNING: Wear proper personal protective gear when operating hydraulic equipment.



WARNING: Stay clear of loads supported by hydraulics. A cylinder, when used as a load lifting device, should never be used as a load holding device. After the load has been raised or lowered, it must always be blocked mechanically.



DANGER: To avoid personal injury keep hands and feet away from cylinder and workpiece during operation.



WARNING: Do not exceed the product operating specifications. The cylinders are designed for a maximum pressure of 70 bar [1000 psi]. Never adjust the circuit pressure beyond the maximum operating pressure recommendation for the clamp arm length. Exceeding these specifications can cause equipment failure and possible personal injury.



DANGER: Never set the relief valve to a higher pressure than the maximum rated pressure of the pump. Higher settings may result in equipment damage and/or personal injury. Do not remove relief valve.



WARNING: The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure. It is your window to what is happening in the system.



CAUTION: Avoid damaging hydraulic hose. Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose will cause severe back-pressure. Sharp bends and kinks will internally damage the hose leading to premature hose failure.



Do not drop heavy objects on hose. A sharp impact may cause internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture.



IMPORTANT: Do not lift hydraulic equipment by the hoses or swivel couplers. Use the carrying handle or other means of safe transport.



CAUTION: Keep hydraulic equipment away from flames and heat. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings. For optimum performance do not expose equipment to temperatures of 65 °C [150 °F] or higher. Protect hoses and cylinders from weld spatter.



DANGER: Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin, causing serious injury. If oil is injected under the skin, see a doctor immediately.



WARNING: Only use hydraulic cylinders in a coupled system. Never use a cylinder with unconnected couplers. If the cylinder becomes extremely overloaded, components can fail catastrophically causing severe personal injury.



IMPORTANT: Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact the Authorized ENERPAC Service Center in your area. To protect your warranty, use only ENERPAC oil.



WARNING: Immediately replace worn or damaged parts with genuine ENERPAC parts. Standard grade parts will break causing personal injury and property damage. ENERPAC parts are designed to fit properly and withstand high loads.

3.0 PRODUCT DATA

Table 1 - Model Number Code

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-----------------------|------------------------|---------------------------------------|--|------------------------------------|--|---------------|---------------------------------------|
| S = Swing Clamp | U = Upper Flange | R = Right Hand L = Left Hand | S = Single Acting D = Double Acting | 7= 70 bar pressure rating | 2 = 2 kN [441 lbs] 3 = 3,5 kN [769 lbs] 5 = 5,0 kN [1111 lbs] 7 = 7,0 kN [1570 lbs] 9 = 9,0 kN [2019 lbs] 20 = 20,0 kN [4490 lbs] | 2 = Metric | S = Position Indicator Staff |

Table 2 - Cylinder Specifications

| Capacity kN [lbs] | | 2 kN [441 lbs] | 3,5 kN [769 lbs] | 5 kN [1111 lbs] | 7 kN [1570 lbs] | 9 kN [2019 lbs] | 20 kN [4490 lbs] |
|---|----------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Body Style | | Upper Flange | Upper Flange | Upper Flange | Upper Flange | Upper Flange | Upper Flange |
| Cylinder Type | | Single or Double Acting | Single or Double Acting | Single or Double Acting | Single or Double Acting | Single or Double Acting | Single or Double Acting |
| Hydraulic Stroke mm [in] | clamp | 12,0 [0.47] | 12,0 [0.47] | 12,0 [0.47] | 12,0 [0.47] | 12,0 [0.47] | 12,0 [0.47] |
| | total | 22,1 [0.87] | 22,1 [0.87] | 22,1 [0.87] | 22,1 [0.87] | 22,1 [0.87] | 22,1 [0.87] |
| Effective Area mm² [in²] | clamp | 3,02 [0.47] | 5,28 [0.82] | 7,54 [1.17] | 10,30 [1.60] | 13,19 [2.04] | 30,44 [4.72] |
| | unclamp | 6,16 [0.95] | 9,08 [1.41] | 11,34 [1.76] | 15,21 [2.36] | 18,10 [2.80] | 38,48 [5.97] |
| Oil Capacity cm³ [in³] | clamp | 6,7 [0.41] | 11,7 [0.71] | 16,7 [1.02] | 22,8 [1.39] | 29,1 [1.78] | 67,3 [4.10] |
| | unclamp | 13,61 [0.83] | 20,07 [1.22] | 25,06 [1.53] | 33,60 [2.05] | 39,99 [2.44] | 85,05 [5.19] |

3.1 Clamping Force vs. Arm Length

Refer to the tables in this section when selecting the swing cylinder model and arm length for your application.

IMPORTANT: As the arm length increases, the maximum allowable pressure and flow rate decreases. Exceeding these limits may cause damage to the product. If the pressure required for a desired clamping force and arm length exceeds the specified limits, select a higher capacity swing cylinder model.

Table 3 - Clamp Arm Dimensions “M”, “N” and “P”

| Size | 2 kN | 3,5 kN | 5 kN | 7 kN | 9 kN | 20 kN |
|---|-------------|-------------|-------------|-------------|-------------|-------------|
| Dimension “M” | See Table 4 | See Table 5 | See Table 6 | See Table 7 | See Table 8 | See Table 9 |
| Dimension “N” | 25 mm | 27 mm | 30 mm | 37 mm | 38 mm | 49 mm |
| Dimension “P” | M + N | M + N | M + N | M + N | M + N | M + N |
| Conversion Information: 1 mm = 0.039 in. | | | | | | |

Table 4 - Clamping Force vs. Arm Length - 2 kN Models

| Pressure (bar) | Dimension “M” (See Graphic in Table 3) Flange Face to Clamping Point - In Millimeters | | | | | | | | |
|--|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 10* | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 95** |
| | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) |
| 70 | 1,96 | NOT RECOMMENDED | | | | | | | |
| 65 | 1,82 | | | | | | | | |
| 60 | 1,69 | | | | | | | | |
| 55 | 1,56 | | | | | | | | |
| 45 | 1,25 | | | | | | | | |
| 40 | 1,11 | 1,20 | 1,18 | | | | | | |
| 35 | 0,98 | 1,07 | 1,02 | 1,02 | | | | | |
| 30 | 0,85 | 0,89 | 0,85 | 0,85 | 0,85 | | | | |
| 25 | 0,71 | 0,76 | 0,71 | 0,71 | 0,71 | 0,71 | | | |
| 20 | 0,56 | 0,62 | 0,58 | 0,58 | 0,58 | 0,58 | 0,58 | 0,56 | |
| 15 | 0,42 | 0,44 | 0,40 | 0,40 | 0,40 | 0,40 | 0,40 | 0,40 | 0,38 |
| 10 | 0,29 | 0,31 | 0,27 | 0,27 | 0,27 | 0,27 | 0,27 | 0,27 | 0,27 |
| Maximum Flow (lpm) | 0,41 | 0,31 | 0,25 | 0,21 | 0,18 | 0,15 | 0,14 | 0,12 | 0,11 |
| Notes: * CAS-722 standard arm ** CAL-722 long arm | | | | | | | | | |
| Conversion Information: 1 mm = 0.039 in. 1 kN = 224.82 lbs. 1 bar = 14.5 psi 1 lpm = 61.02 in ³ /min | | | | | | | | | |

Table 5 - Clamping Force vs. Arm Length - 3,5 kN Models

| Pressure (bar) | Dimension "M" (See Graphic in Table 3) Flange Face to Clamping Point - In Millimeters | | | | | | | | | | | | | | | | | | | | |
|--|--|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------|------|------|------|------|------|------|------|------|
| | 23* | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 125** | | | | | | | | | |
| | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | | | | | | | | | |
| 70 | 3,42 | NOT RECOMMENDED | | | | | | | | | | | | | | | | | | | |
| 65 | 3,20 | | | | | | | | | | | | | | | | | | | | |
| 60 | 2,94 | | | | | | | | | | | | 3,16 | | | | | | | | |
| 55 | 2,71 | | | | | | | | | | | | 2,89 | | | | | | | | |
| 45 | 2,22 | | | | | | | | | | | | 2,36 | 2,36 | 2,36 | | | | | | |
| 40 | 1,96 | | | | | | | | | | | | 2,09 | 2,09 | 2,09 | 2,09 | | | | | |
| 35 | 1,73 | | | | | | | | | | | | 1,85 | 1,78 | 1,78 | 1,78 | 1,78 | | | | |
| 30 | 1,47 | | | | | | | | | | | | 1,60 | 1,51 | 1,51 | 1,51 | 1,51 | 1,51 | 1,51 | | |
| 25 | 1,25 | | | | | | | | | | | | 1,33 | 1,25 | 1,25 | 1,25 | 1,25 | 1,25 | 1,25 | 1,25 | 1,22 |
| 20 | 0,98 | | | | | | | | | | | | 1,07 | 0,98 | 0,98 | 0,98 | 0,98 | 0,98 | 0,98 | 0,98 | 0,98 |
| 15 | 0,73 | 0,80 | 0,76 | 0,76 | 0,76 | 0,76 | 0,76 | 0,76 | 0,76 | 0,76 | 0,71 | 0,69 | | | | | | | | | |
| 10 | 0,49 | 0,53 | 0,49 | 0,49 | 0,49 | 0,49 | 0,49 | 0,49 | 0,49 | 0,49 | 0,49 | 0,49 | | | | | | | | | |
| Maximum Flow (lpm) | 0,82 | 0,79 | 0,73 | 0,67 | 0,63 | 0,59 | 0,55 | 0,52 | 0,50 | 0,47 | 0,45 | 0,44 | | | | | | | | | |
| Notes: * CAS-7352 standard arm ** CAL-7352 long arm | | | | | | | | | | | | | | | | | | | | | |
| Conversion Information: 1 mm = 0.039 in. 1 kN = 224.82 lbs. 1 bar = 14.5 psi 1 lpm = 61.02 in ³ /min | | | | | | | | | | | | | | | | | | | | | |

Table 6 - Clamping Force vs. Arm Length - 5 kN Models

| Pressure (bar) | Dimension "M" (See Graphic in Table 3) Flange Face to Clamping Point - In Millimeters | | | | | | | | | | | | | | | | | | | | |
|--|--|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------|------|------|------|------|------|------|------|------|
| | 23* | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 125** | | | | | | | | | |
| | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | | | | | | | | | |
| 70 | 4,94 | NOT RECOMMENDED | | | | | | | | | | | | | | | | | | | |
| 65 | 4,58 | | | | | | | | | | | | | | | | | | | | |
| 60 | 4,27 | | | | | | | | | | | | 4,51 | | | | | | | | |
| 55 | 3,91 | | | | | | | | | | | | 4,14 | | | | | | | | |
| 45 | 3,20 | | | | | | | | | | | | 3,38 | 3,38 | | | | | | | |
| 40 | 2,85 | | | | | | | | | | | | 3,02 | 2,94 | 2,94 | 2,94 | | | | | |
| 35 | 2,49 | | | | | | | | | | | | 2,67 | 2,54 | 2,54 | 2,54 | 2,54 | | | | |
| 30 | 2,14 | | | | | | | | | | | | 2,27 | 2,14 | 2,14 | 2,14 | 2,14 | 2,11 | | | |
| 25 | 1,78 | | | | | | | | | | | | 1,87 | 1,78 | 1,78 | 1,78 | 1,78 | 1,78 | 1,73 | 1,73 | 1,71 |
| 20 | 1,42 | | | | | | | | | | | | 1,51 | 1,42 | 1,42 | 1,42 | 1,42 | 1,42 | 1,42 | 1,42 | 1,40 |
| 15 | 1,07 | 1,11 | 1,02 | 1,02 | 1,02 | 1,02 | 1,02 | 1,02 | 1,00 | 1,00 | 0,98 | 0,98 | | | | | | | | | |
| 10 | 0,71 | 0,76 | 0,71 | 0,71 | 0,71 | 0,71 | 0,71 | 0,71 | 0,71 | 0,71 | 0,67 | 0,67 | | | | | | | | | |
| Maximum Flow (lpm) | 1,31 | 1,26 | 1,16 | 1,08 | 1,01 | 0,94 | 0,89 | 0,84 | 0,79 | 0,75 | 0,72 | 0,70 | | | | | | | | | |
| Notes: * CAS-7352 standard arm ** CAL-7352 long arm | | | | | | | | | | | | | | | | | | | | | |
| Conversion Information: 1 mm = 0.039 in. 1 kN = 224.82 lbs. 1 bar = 14.5 psi 1 lpm = 61.02 in ³ /min | | | | | | | | | | | | | | | | | | | | | |

Table 7 - Clamping Force vs. Arm Length - 7 kN Models

| Pressure (bar) | Dimension "M" (See Graphic in Table 3) Flange Face to Clamping Point - In Millimeters | | | | | | | | | | | |
|---|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------|
| | 18,5* | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 115** | |
| | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | |
| 70 | 6,98 | | | | | | | | | | | |
| 65 | 6,54 | 6,98 | | | | | | | | | | |
| 60 | 6,00 | 6,18 | | | | | | | | | | |
| 55 | 5,52 | 5,65 | 5,52 | | | | | | | | | |
| 45 | 4,49 | 4,63 | 4,45 | 4,45 | | | | | | | | |
| 40 | 4,00 | 4,14 | 3,91 | 3,91 | 3,91 | | | | | | | |
| 35 | 3,51 | 3,60 | 3,38 | 3,38 | 3,38 | 3,34 | 3,34 | | | | | |
| 30 | 3,02 | 3,11 | 2,89 | 2,89 | 2,89 | 2,89 | 2,89 | 2,85 | | | | |
| 25 | 2,49 | 2,58 | 2,36 | 2,36 | 2,36 | 2,34 | 2,34 | 2,31 | 2,31 | 2,31 | | |
| 20 | 2,00 | 2,05 | 1,87 | 1,87 | 1,87 | 1,87 | 1,87 | 1,87 | 1,82 | 1,82 | 1,78 | |
| 15 | 1,51 | 1,56 | 1,42 | 1,42 | 1,42 | 1,42 | 1,42 | 1,42 | 1,42 | 1,42 | 1,42 | 1,38 |
| 10 | 1,00 | 1,02 | 0,93 | 0,93 | 0,93 | 0,93 | 0,93 | 0,93 | 0,89 | 0,89 | 0,89 | |
| Maximum Flow (lpm) | 1,64 | 1,62 | 1,51 | 1,42 | 1,35 | 1,28 | 1,21 | 1,16 | 1,11 | 1,06 | 1,04 | |
| Notes: * CAS-7792 standard arm ** CAL-7792 long arm | | | | | | | | | | | | |
| Conversion Information: 1 mm = 0.039 in. 1 kN = 224.82 lbs. 1 bar = 14.5 psi 1 lpm = 61.02 in ³ /min | | | | | | | | | | | | |

Table 8 - Clamping Force vs. Arm Length - 9 kN Models

| Pressure (bar) | Dimension "M" (See Graphic in Table 3) Flange Face to Clamping Point - In Millimeters | | | | | | | | | | | |
|---|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|--|
| | 17,5* | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 120** | |
| | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | |
| 70 | 8,98 | | | | | | | | | | | |
| 65 | 8,38 | 8,72 | | | | | | | | | | |
| 60 | 7,74 | 8,05 | | | | | | | | | | |
| 55 | 7,12 | 7,38 | 7,25 | | | | | | | | | |
| 45 | 5,78 | 6,05 | 5,87 | 5,87 | | | | | | | | |
| 40 | 5,16 | 5,34 | 5,12 | 5,12 | 5,12 | | | | | | | |
| 35 | 4,49 | 4,67 | 4,49 | 4,49 | 4,45 | 4,45 | 4,45 | | | | | |
| 30 | 3,87 | 4,00 | 3,83 | 3,83 | 3,83 | 3,78 | 3,78 | 3,74 | | | | |
| 25 | 3,20 | 3,34 | 3,16 | 3,16 | 3,16 | 3,11 | 3,11 | 3,09 | 3,07 | 3,07 | | |
| 20 | 2,58 | 2,67 | 2,49 | 2,49 | 2,49 | 2,49 | 2,49 | 2,45 | 2,45 | 2,45 | 2,40 | |
| 15 | 1,91 | 2,00 | 1,87 | 1,87 | 1,87 | 1,87 | 1,87 | 1,82 | 1,78 | 1,78 | 1,73 | |
| 10 | 1,29 | 1,33 | 1,25 | 1,25 | 1,25 | 1,25 | 1,25 | 0,71 | 1,20 | 1,20 | 1,16 | |
| Maximum Flow (lpm) | 2,05 | 2,02 | 1,89 | 1,78 | 1,68 | 1,60 | 1,52 | 1,45 | 1,38 | 1,32 | 1,27 | |
| Notes: * CAS-7792 standard arm ** CAL-7792 long arm | | | | | | | | | | | | |
| Conversion Information: 1 mm = 0.039 in. 1 kN = 224.82 lbs. 1 bar = 14.5 psi 1 lpm = 61.02 in ³ /min | | | | | | | | | | | | |

Table 9 - Clamping Force vs. Arm Length - 20 kN Models

| Pressure (bar) | Dimension "M" (See Graphic in Table 3) Flange Face to Clamping Point - In Millimeters | | | | | | | | | | | |
|--------------------------------|--|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| | 19* | 20 | 20 | 20 | 20 | 60 | 70 | 80 | 90 | 100 | 120 | 125** |
| | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) | Clamp Force (kN) |
| 70 | 19,97 | | | | | | | | | | | |
| 65 | 18,64 | 19,79 | | | | | | | | | | |
| 60 | 17,21 | 18,24 | | | | | | | | | | |
| 55 | 15,79 | 16,72 | 16,41 | | | | | | | | | |
| 45 | 12,90 | 13,70 | 13,30 | 13,30 | 13,26 | | | | | | | |
| 40 | 11,48 | 12,19 | 11,70 | 11,70 | 11,70 | 11,65 | | | | | | |
| 35 | 10,05 | 10,63 | 10,10 | 10,10 | 10,05 | 10,05 | 10,01 | 10,01 | | | | |
| 30 | 8,58 | 9,12 | 8,67 | 8,67 | 8,67 | 8,67 | 8,63 | 8,63 | 8,63 | | | |
| 25 | 7,16 | 7,61 | 7,16 | 7,16 | 7,12 | 7,12 | 7,12 | 7,07 | 7,03 | 6,98 | 6,98 | |
| 20 | 5,74 | 6,09 | 5,74 | 5,74 | 5,74 | 5,74 | 5,74 | 5,69 | 5,65 | 5,60 | 5,60 | 5,56 |
| 15 | 4,31 | 4,58 | 4,27 | 4,27 | 4,27 | 4,23 | 4,23 | 4,23 | 4,23 | 4,18 | 4,18 | 4,14 |
| 10 | 2,85 | 3,02 | 2,8 | 2,80 | 2,80 | 2,78 | 2,76 | 2,76 | 2,76 | 2,76 | 2,76 | 2,71 |
| Maximum Flow (lpm) | 4,10 | 4,05 | 3,71 | 3,42 | 3,17 | 2,96 | 2,77 | 2,61 | 2,47 | 2,33 | 2,22 | 2,16 |
| Notes: | * CAS-7202 standard arm ** CAL-7202 long arm | | | | | | | | | | | |
| Conversion Information: | 1 mm = 0.039 in. 1 kN = 224.82 lbs. 1 bar = 14.5 psi 1 lpm = 61.02 in ³ /min | | | | | | | | | | | |

NOT RECOMMENDED

4.0 DESCRIPTION

Enerpac 70 Bar swing cylinders are designed to swing 90° in a clockwise or counter-clockwise direction. Single-acting and double-acting models are available. Clamp arms are not supplied with cylinders. Clamp arms can be purchased separately or may be fabricated according to the specifications in Section 10.0 of this manual.

4.1 Preliminary Information

IMPORTANT: Failure to read and follow these instructions may lead to system malfunction or product failure, and could invalidate your warranty.

1. High flow rates can lead to excessive cylinder speed which can damage the index mechanism. Hydraulic pressure and cylinder speed must be adjusted to match the length of clamp arm. The clamping force also varies with the length of the clamp arm. Refer to sections 3.0 and 3.1 of this manual for operating specifications and clamp arm length information.
2. Flow controls with return checks should be used to reduce swing cylinder speed to the recommended rate. The return checks help minimize back pressure that could lead to an unclamp malfunction on single-acting systems.
3. When using single-acting swing cylinders, limit the return flow back pressure to 3,5 bar [50 psi] maximum. Large diameter tubing (10 mm [3/8 in.] O.D. or larger) and flow controls with free flow

return checks help minimize back pressure. Consult Enerpac for proper system design.

4. An excessive retract flow rate can cause damage to the index mechanism. Double acting systems should be set up with a metered-in flow control, with a reverse check used in the clamp port.
5. Clamping of the part should occur at the midpoint of the vertical travel. No clamping of part shall occur while the swing cylinder clamp is turning. Clamp arm should freely travel during the 90° rotation (avoid contact with cutter heads, tools, etc.).
6. Attaching clamp arm to cylinder plunger must be done according to the instructions in Section 6.4.

5.0 MOUNTING SPECIFICATIONS

5.1 Mounting Upper Flange Cylinders

The Enerpac 70 bar swing cylinders feature an upper flange design. The cylinder can be mounted to the fixture using the supplied mounting bolts. Oil can be supplied to the cylinder using either the BSPP hydraulic ports on the flange or the O-Ring manifold ports on the underside of the flange. The sections that follow provide detailed mounting instructions and should be reviewed before attempting to install the cylinders on the fixture.



WARNING: The fixture must be capable of withstanding 70 bar [1000 psi] hydraulic working pressure when the cylinders are manifold mounted.

Table 10 - Mounting Dimensions (Refer to Figure 1)

| Cylinder Capacity | Fixture Thread \varnothing D3 mm | Mounting Bolt Thread (J) | Minimum Mounting Depth (J2) | | Manifold O-ring ARP No. | Lubricated Bolt Torque | |
|--------------------|------------------------------------|--------------------------|-----------------------------|------|-------------------------|------------------------|-----------|
| | | | mm | inch | | Nm | ft-lbs |
| 2,0 kN [441 lbs] | 44,5 | M5 x 0,8 x 30 mm long | 10 | 0.39 | 568-010 | 8,0-9,0 | 5.9-6.6 |
| 3,5 kN [769 lbs] | 50,5 | M5 x 0,8 x 30 mm long | 11 | 0.43 | 568-010 | 8,0-9,0 | 5.9-6.6 |
| 5,0 kN [1111 lbs] | 55,5 | M6 x 1,0 x 30 mm long | 12 | 0.47 | 568-011 | 13,5-15,0 | 10.0-11.0 |
| 7,0 kN [1570 lbs] | 65,5 | M6 x 1,0 x 30 mm long | 15 | 0.59 | 568-011 | 13,5-15,0 | 10.0-28.0 |
| 9,0 kN [2019 lbs] | 88,5 | M8 x 1,25 x 30 mm long | 15 | 0.59 | 568-011 | 32,0-38,0 | 23.6-28.0 |
| 20,0 kN [4490 lbs] | 90,5 | M10 x 1,5 x 35 mm long | 20 | 0.79 | 568-011 | 47,9-53,1 | 65.0-72.0 |

Note: O-rings and mounting bolts included with cylinder.

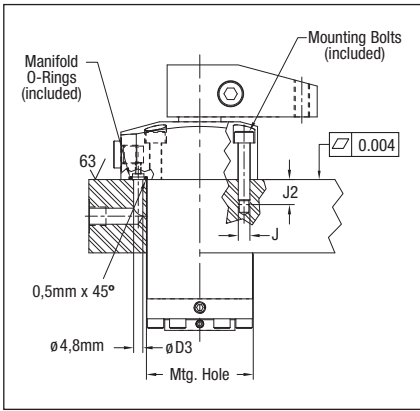


Figure 1, Cylinder Mounting Details

Before a swing cylinder can be manifold mounted, the port screw plugs must be removed. The O-Rings provided should be lubricated and installed in the counter-bore around the port prior to mounting and bolting down the swing cylinder.

Be sure that the O-Ring does not get pinched or damaged during mounting as leakage could result. To prevent leakage from the manifold mounting, provide a fixture mounting surface with flatness within 0,08 mm [0.003 inch] and a surface roughness not to exceed Ra 1,6.

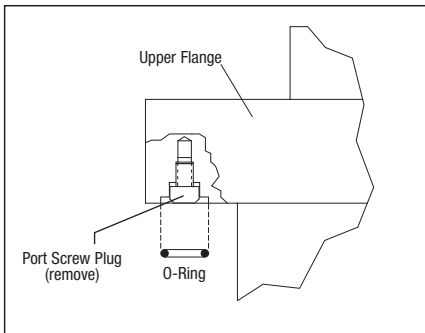


Figure 2, Port Screw Plug Removal

6.0 INSTALLATION

6.1 Port Identification

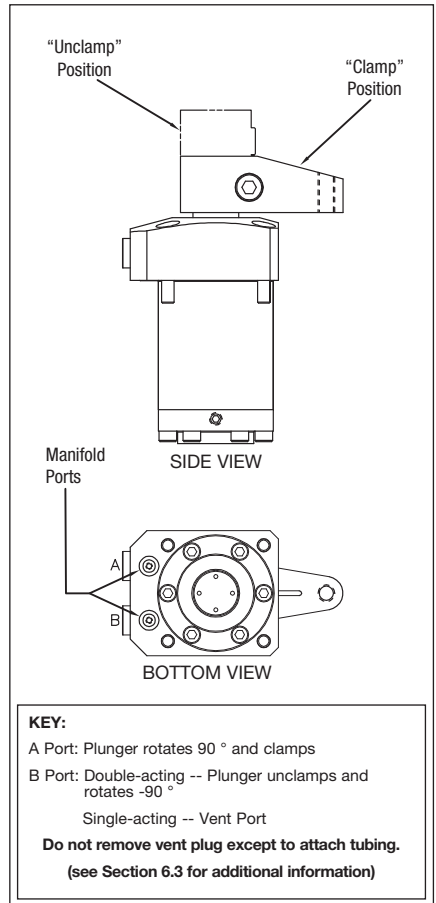


Figure 3, Cylinder Port Locations

6.2 Hydraulic Connections

To make port connections, install fittings rated for 70 bar [1000 psi].

DO NOT use thread sealant. Sealing is accomplished by using an O-Ring on the fitting boss. Lubricate the O-Ring prior to assembly.

When designing your hydraulic circuit, consider the factors listed in Section 4.1 of this manual. For additional information about plumbing hydraulic circuits, refer to the Enerpac Workholding product catalog.

Table 11 - Cylinder Ports

| Cylinder Capacity | BSPP Port Size |
|--------------------|----------------|
| 2,0 kN [441 lbs] | G 1/8 |
| 3,5 kN [769 lbs] | G 1/8 |
| 5,0 kN [1111 lbs] | G 1/8 |
| 7,0 kN [1570 lbs] | G 1/4 |
| 9,0 kN [2019 lbs] | G 1/4 |
| 20,0 kN [4490 lbs] | G 1/4 |

6.3 Vent Plug

Single-acting cylinders have a vented plug on the left side of the cylinder when you are facing the hydraulic ports. To prevent entry of chips and coolant, the vent plug must not be removed. If the vent plug is subjected to a continuous coolant flood condition, attach tubing to the port using a BSPP fitting, and run the tubing to a non-contaminated area of the fixture.

6.4 Attaching Clamp Arm

1. Remove the retaining ring from the top of the plunger.
2. Slide the clamp arm down over the plunger and use a pliers to push the retaining ring back onto the plunger groove. Orient the retaining ring so the retaining ring gap will face the back of the clamp arm. See Figure 4.
3. Move the clamp arm up until it is firmly against the retaining ring and in the desired position. While maintaining this position, torque the clamp arm bolt to specification shown in Table 12.

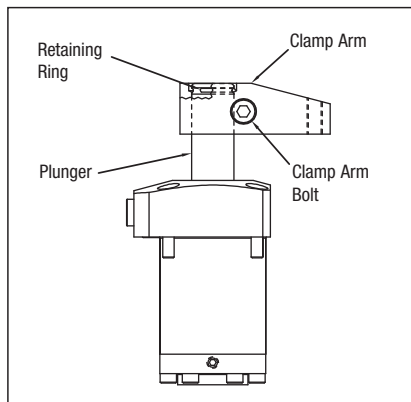


Figure 4, Attaching Clamp Arm



CAUTION: Inadequate torquing of the clamp arm bolt could cause the arm to slip during operation. BE SURE TO USE QUALITY 12.9 DIN 912 (GRADE 8) SOCKET HEAD CAP SCREWS (supplied with standard clamp arms).

6.5 Contact Bolt Clearance

When using a contact bolt with upper flange body style cylinders, you must be certain that the bolt head will clear the cylinder upper flange during operation. The clamp arm must be long enough for the bolt head to clear the upper flange as the arm swings down. Refer to Figure 5 and Table 13.

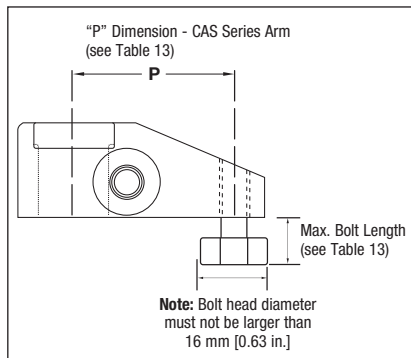


Figure 5, Contact Bolt Clearance

Table 12 - Clamp Arm Bolt Torque

| Cylinder Capacity | Bolt Type | Torque |
|--------------------|-------------------------|------------------------------|
| 2,0 kN [441 lbs] | M8 x 1,0 x 20 mm long | 32,5-39,0 Nm [24-29 ft-lbs] |
| 3,5 kN [769 lbs] | M8 x 1,0 x 25 mm long | 32,5-39,0 Nm [24-29 ft-lbs] |
| 5,0 kN [1111 lbs] | M8 x 1,0 x 25 mm long | 32,5-39,0 Nm [24-29 ft-lbs] |
| 7,0 kN [1570 lbs] | M10 x 1,25 x 25 mm long | 60,0-72,0 Nm [44-53 ft-lbs] |
| 9,0 kN [2019 lbs] | M10 x 1,25 x 25 mm long | 60,0-72,0 Nm [44-53 ft-lbs] |
| 20,0 kN [4490 lbs] | M12 x 1.25 x 35 mm long | 95,5-108,0 Nm [70-80 ft-lbs] |

Table 13 - Maximum Contact Bolt Length

| Cylinder Capacity | CAS Series Arm (See Fig. 5) "P" Dimension | Maximum Contact Bolt Length (See Fig. 5) |
|--------------------|--|---|
| 2,0 kN [441 lbs] | CAS-722 35,05 mm [1.38 inch] | 14,48 mm [0.57 inch] |
| 3,5 kN [769 lbs] | CAS-7352 53,09 mm [2.09 inch] | (unlimited) |
| 5,0 kN [1111 lbs] | CAS-7352 53,09 mm [2.09 inch] | (unlimited) |
| 7,0 kN [1570 lbs] | CAS-7792 55,63 mm [2.19 inch] | 14,48 mm [0.57 inch] |
| 9,0 kN [2019 lbs] | CAS-7792 55,63 mm [2.19 inch] | 14,48 mm [0.57 inch] |
| 20,0 kN [4490 lbs] | CAS-7202 68,07 mm [2.68 inch] | 14,48 mm [0.57 inch] |

Clearance problems are most common when using the CAS series standard length arm, with the final clamping position located at the side of the cylinder. You may need to use the longer CAL Series clamp arm for these applications. You can cut CAL series arms to meet your own requirements, or make your own custom arms, in accordance with the dimensions shown in Section 10.0 of this manual.

7.0 OPERATION

Swing cylinders rotate 90° during the first portion of the stroke, continuing without rotation for the final clamping stroke. The straight downward stroke is the clamping stroke of the cylinder. Clamping force must be applied only during the vertical travel, not during the swing motion.



CAUTION: If clamping force is applied during the rotation portion of the stroke, internal plunger damage may result.

- To ensure maximum cylinder performance and safety, be sure all hydraulic connections, hoses, and fittings are properly sealed and fully tightened.
- Be sure all items are rated to withstand system pressures. Under-rated components will not withstand higher pressure. Using under-rated components will lead to equipment damage and possible personal injury.

7.1 Pressure and Flow Rate

The clamp arm length determines the swing cylinder's required operating pressure and flow rate.

Set operating pressure and flow rate according to the recommendations contained in Section 3.1 for your swing cylinder model.

IMPORTANT: Do not exceed the load-to-length pressure ratios described in Section 3.1, tables 4 through 9. As the arm length increases, the clamping force and maximum operating pressure are reduced.

7.2 Position Indicating Staff

Enerpac 70 Bar Swing Cylinders are available with a positioning indicating staff (optional equipment) that anchors into the plunger and follows the plunger movement. The indicating staff is designed for use with either limit or proximity switches.

A suitable target or flag can be attached using the male M4 x .07 mm threads on the staff end. See Figure 6.

Clearance below the clamp must be sufficient for the extended portion of the staff to avoid damage.



CAUTION: It is very important that you use the correct pressure and flow settings.

Operating outside these limits will cause damage to the swing cylinder. Damage caused by exceeding rated pressure and maximum flow is NOT COVERED BY WARRANTY.

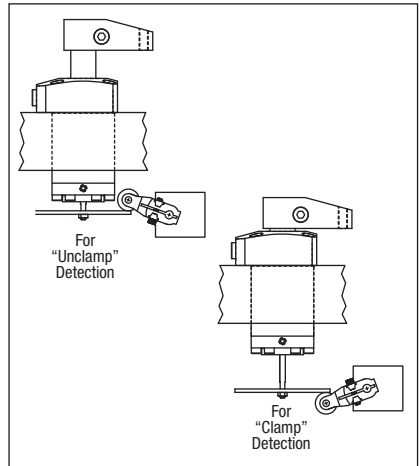


Figure 6, Position Indicating Staff

8.0 MAINTENANCE

Maintenance is required when wear or leakage is noticed. Periodically inspect all components to detect any problem requiring service and maintenance. Enerpac offers ready-to-use repair parts kits. Repair parts sheets are available with assembly diagrams and parts lists. Contact Enerpac.

IMPORTANT: Consult the swing cylinder repair parts sheet for service information about correct assembly and disassembly. Incorrect maintenance and service such as wrong torque values may cause product malfunctions and/or personal injury.

9.0 TROUBLESHOOTING

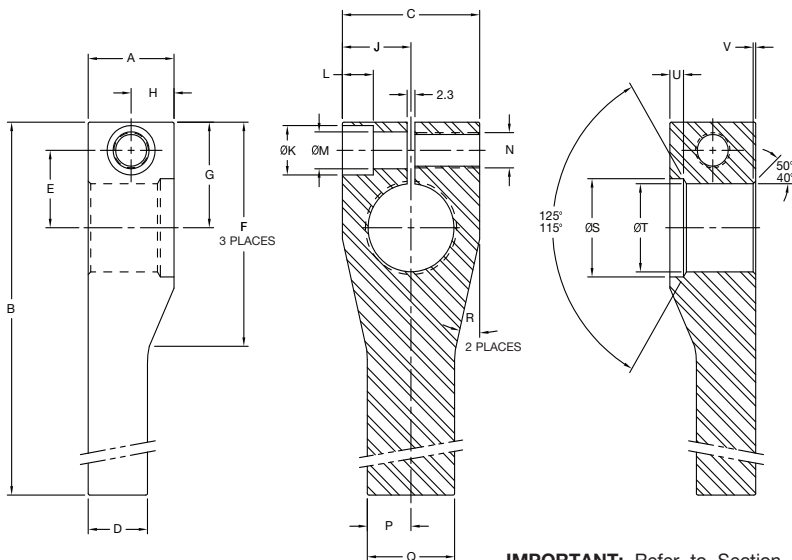
Allow only qualified hydraulic technicians to service the swing cylinder or system components. A system failure may or may not be the result of a swing cylinder malfunction. To determine the cause of the problem, the complete system must be included in any diagnostic procedure.

The information in the following chart is intended to be used only as an aid in determining if a problem exists. For repair service, contact your local Enerpac Authorized Service Center.

Table 13 - Troubleshooting Guide

| Problem | Possible Cause | Solution |
|---|---|---|
| 1. Cylinder will not clamp/unclamp. | a. Pump release valve open. | Close pump release valve. |
| | b. No oil in pump reservoir. | Fill pump reservoir. |
| | c. Air in system. | Remove air from hydraulic system. |
| | d. Couplers not fully tightened. | Retighten couplers. |
| | e. Blocked hydraulic line. | Check valves, fittings, and tubing. |
| | f. Spring broken in cylinder. (single-acting models only) | Replace spring. |
| 2. Cylinder advances part way. | a. Oil level in pump too low. | Fill pump reservoir. |
| | b. Plunger binding. | Replace damaged parts - refer to cylinder repair parts sheet. |
| 3. Cylinder clamps/unclamps slower than normal. | a. Leaking connection or loose fitting. | Retighten fittings, couplers and tubing. |
| | b. Restricted hydraulic line. | Check valves, fittings and tubing. |
| | c. Pump malfunction. | Refer to pump instruction sheet. |
| 4. Cylinder clamps/unclamps but will not hold pressure. | a. Seals damaged. | Replace seals - refer to cylinder repair parts sheet. |
| | b. Leaking connection. | Retighten fittings, couplings and tubing. |
| | c. Pump malfunction. | Refer to pump instruction sheet. |
| 5. Cylinder leaks oil. | a. Seals damaged. | Replace seals - refer to cylinder repair parts sheet. |
| | b. Plunger worn or damaged. | Replace worn or damaged parts - refer to cylinder repair parts sheet. |
| 6. Clamp arm does not make swing movement. | a. Clamp arm loose. | Reposition and tighten clamp arm - refer to Section 6.4 for instructions. |
| | b. Plunger worn or damaged. | Replace worn or damaged parts - refer to cylinder repair parts sheet. |

10.0 CLAMP ARM MACHINING SPECIFICATIONS



IMPORTANT: Refer to Section 3.1 to determine the maximum clamp arm length and pressure for the desired clamping force.

| Item | Dimensions in millimeters [inches] unless otherwise noted | | | |
|--------------|---|-----------------------------------|-----------------------------------|-----------------------------------|
| | 2,0 kN | 3,5 kN and 5,0 kN | 7,0 kN and 9,0 kN | 20,0 kN |
| A | 25 [0.99] | 27 [1.06] | 30 [1.18] | 38 [1.49] |
| B (Max.) | 150 [5.90] | 190 [7.48] | 190 [7.48] | 210 [8.26] |
| C | 30 [1.18] | 34 [1.34] | 40 [1.57] | 48 [1.89] |
| D | 16 [0.63] | 16 [0.63] | 18 [0.70] | 21 [0.82] |
| E | 19,5 [0.77] | 20 [0.79] | 22 [0.87] | 26 [1.02] |
| F (3 places) | 67 [0.26] | 84 [3.30] | 86 [3.39] | 100 [3.94] |
| G | 29 [1.14] | 31 [1.22] | 34 [1.34] | 40 [1.58] |
| H | 12,5 [0.49] | 13,5 [0.53] | 15 [0.59] | 19 [0.74] |
| J | 15 [0.59] | 17 [0.67] | 20 [0.79] | 24 [0.94] |
| K (Dia.) | Ø13,5 [0.53] | Ø13,5 [0.53] | Ø16,5 [0.65] | Ø18,5 [0.73] |
| L | 9 [0.35] | 11 [0.43] | 11 [0.43] | 13 [0.51] |
| M (Dia.) | Ø8,5 [0.33] | Ø8,5 [0.33] | Ø10,5 [0.41] | Ø12,5 [0.49] |
| N (thread) | M8 x 1,25 | M8 x 1,25 | M10 x 1,5 | M12 x 1,25 |
| P | 6 [0.23] | 8 [0.31] | 9 [0.35] | 12,75 [0.50] |
| Q | 12 [0.47] | 16 [0.63] | 18 [0.71] | 25,5 [1.00] |
| R (2 places) | 21° - 23° | 21° - 23° | 21° - 23° | 21° - 23° |
| S (Dia.) | Ø22,75 - 23,00 [0.895 - 0.905] | Ø24,75 - 25,00 [0.974 - 0.984] | Ø27,75 - 28,00 [1.092 - 1.102] | Ø35,50 - 36,00 [1.397 - 1.417] |
| T (Dia.) | Ø20 H8 | Ø22 H8 | Ø25 H8 | Ø32 H8 |
| U | 3,8 - 4,3 [0.15 - 0.17] | 3,8 - 4,3 [0.15 - 0.17] | 3,8 - 4,3 [0.15 - 0.17] | 4,7 - 5,3 [0.19 - 0.21] |
| V | 1,0 - 2,0 [0.04 - 0.09] | 1,0 - 2,0 [0.04 - 0.09] | 1,0 - 2,0 [0.04 - 0.09] | 1,0 - 2,0 [0.04 - 0.09] |

Australia and New Zealand

Actuant Australia Ltd.
Block V Unit 3
Regents Park Estate
391 Park Road
Regents Park NSW 2143
(P.O. Box 261) Australia
T +61 (0)2 9743 8988
F +61 (0)2 9743 8648
sales-au@enerpac.com

Brazil

Power Packer do Brasil Ltda.
Rua dos Inocentes, 587
04764-050 - Sao Paulo (SP)
T +55 11 5687 2211
F +55 11 5686 5583
Toll Free: 0800 891 5770
vendasbrasil@enerpac.com

Canada

Actuant Canada Corporation
6615 Ordan Drive, Unit 14-15
Mississauga, Ontario L5T 1X2
T +1 905 564 5749
F +1 905 564 0305
Toll Free:
T +1 800 268 4987
F +1 800 461 2456
customer.service@actuant.com

China

Actuant (China) Industries Co. Ltd.
No.6 Nanjing East Road,
Taicang Economic Dep Zone
Jiangsu, China
T +86 0512 5328 7500
F +86 0512 5335 9690
Toll Free: +86 400 885 0369
sales-cn@enerpac.com

France, Switzerland, North Africa and French speaking African countries

ENERPAC
Une division d'ACTUANT France S.A.
ZA de Courtaboeuf
32, avenue de la Baltique
91140 VILLEBON /YVETTE
France
T +33 1 60 13 68 68
F +33 1 69 20 37 50
sales-fr@enerpac.com

Germany and Austria

ENERPAC GmbH
P.O. Box 300113
D-40401 Düsseldorf
Willstätterstrasse 13
D-40549 Düsseldorf, Germany
T +49 211 471 490
F +49 211 471 49 28
sales-de@enerpac.com

India

ENERPAC Hydraulics Pvt. Ltd.
No. 1A, Peenya Industrial Area
IInd Phase, Bangalore, 560 058, India
T +91 80 40 792 777
F +91 80 40 792 792
sales-in@enerpac.com

Italy

ENERPAC S.p.A.
Via Canova 4
20094 Corsico (Milano)
T +39 02 4861 111
F +39 02 4860 1288
sales-it@enerpac.com

Japan

Applied Power Japan LTD KK
Besshocho 85-7
Kita-ku, Saitama-shi 331-0821, Japan
T +81 48 662 4911
F +81 48 662 4955
sales-jp@enerpac.com

Middle East, Egypt and Libya

ENERPAC Middle East FZE
Office 423, LOB 15
P.O. Box 18004, Jebel Ali, Dubai
United Arab Emirates
T +971 (0)4 8872686
F +971 (0)4 8872687
sales-ua@enerpac.com

Russia

Rep. office Enerpac
Russian Federation
Admirala Makarova Street 8
125212 Moscow, Russia
T +7 495 98090 91
F +7 495 98090 92
sales-ru@enerpac.com

Singapore

Actuant Asia Pte Ltd.
83 Joo Koon Circle
Singapore 629109
T +65 68 63 0611
F +65 64 84 5669
Toll Free: +1800 363 7722
sales-sg@enerpac.com

South Korea

Actuant Korea Ltd.
3Ba 717, Shihwa Industrial Complex
Jungwang-Dong, Shihung-Shi,
Kyunggi-Do
Republic of Korea 429-450
T +82 31 434 4506
F +82 31 434 4507
sales-kr@enerpac.com

Spain and Portugal

ENERPAC SPAIN, S.L.
Avda. Los Frailes, 40 - Nave C & D
Pol. Ind. Los Frailes
28814 Daganzo de Arriba
(Madrid) Spain
T +34 91 884 86 06
F +34 91 884 86 11
sales-es@enerpac.com

Sweden, Denmark, Norway, Finland and Iceland

Enerpac Scandinavia AB
Fabriksgatan 7
412 50 Gothenburg
Sweden
T +46 (0) 31 799 0281
F +46 (0) 31 799 0010
scandinavianinquiries@enerpac.com

The Netherlands, Belgium, Luxembourg, Central and Eastern Europe, Baltic States, Greece, Turkey and CIS countries

ENERPAC B.V.
Galvanistraat 115
6716 AE Ede
P.O. Box 8097
6710 AB Ede
The Netherlands
T +31 318 535 911
F +31 318 535 848
sales-nl@enerpac.com

Enerpac Integrated Solutions B.V.

Opaalstraat 44
7554 TS Hengelo
P.O. Box 421
7550 AK Hengelo
The Netherlands
T +31 74 242 20 45
F +31 74 243 03 38
integratedsolutions@enerpac.com

South Africa and other English speaking African countries

Enerpac Africa Pty Ltd.
No. 5 Bauhinia Avenue
Cambridge Office Park
Block E
Highveld Techno Park
Centurion 0157
South Africa
T: +27 12 940 0656

United Kingdom and Ireland

ENERPAC Ltd.,
Bentley Road South
Darlaston, West Midlands
WS10 8LQ
England
T +44 (0)121 50 50 787
F +44 (0)121 50 50 799
sales-uk@enerpac.com

USA, Latin America and Caribbean

ENERPAC
P.O. Box 3241
Milwaukee WI 53201 USA
T +1 262 293 1600
F +1 262 293 7036
User inquiries:
T +1 800 433 2766
Distributor inquiries/orders:
T +1 800 558 0530
F +1 800 628 0490
Technical inquiries:
techservices@enerpac.com
sales-us@enerpac.com

All Enerpac products are guaranteed against defects in workmanship and materials for as long as you own them.

For the location of your nearest authorized Enerpac Service Center, visit us at www.enerpac.com