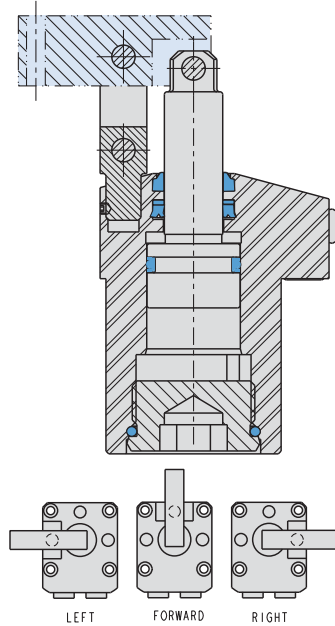


Link Clamps

Low Pressure

Double Acting

- Excellent alternative to swing clamps when swing space is limited.
- Available in three sizes 550 lb. to 2,200 lb. capacities at 1,000 psi.
- Left, forward, or right lever position from the same body.
- Link clamps clear large obstructions better than other types of clamps.
- Top Flange body mount.
- Fluorocarbon seals available.
- Flexible plumbing options accommodate either manifold mounting or SAE (face seal 39-0510-25 included).
- Levers sold separately see Section P.



Lever can be easily positioned in any one of three directions in relation to the ports.
ILS166004 REV D



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Model No.	Lever Position	Clamp Capacity (lb.)*	Vertical Clamping Stroke (in.)****	Std Lever Length **	Effective Piston Area (sq. in.) Extend	Oil Capacity (cu. in.)		Maximum Flow Rate (cu. in./in.)****	Optional Flow Control Model No. *****
						Extend	Retract		
Double Acting (D/A)									
Cylinders, actuated hydraulically both directions									
16-6211-00	Forward	550	0.09	1.875	0.785	0.712	0.433	85.43	70-2037-70
16-6211-01	Right								
16-6211-02	Left								
16-6215-00	Forward	1100	0.125	2.625	1.767	1.988	1.491	238.60	70-2037-71
16-6215-01	Right								
16-6215-02	Left								
16-6221-00	Forward	2200	0.125	3.094	3.546	4.514	4.111	541.89	70-2037-71
16-6221-01	Right								
16-6221-02	Left								

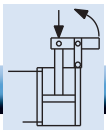
- * Clamp capacities are listed at 1,000 psi maximum operating pressure with a standard length link clamp lever installed.
- ** Equal to $\pm 3^\circ$ with standard lever.
- *** Use of extended length levers will result in a reduction of clamp capacity. See graphs of lever output curves for clamping force of various lever lengths. Minimum operating pressure is 150 psi for double acting devices. The clamping force is adjustable by varying the hydraulic system pressure. To determine the approximate output force for your application, divide the clamp capacity shown above by 1,000 and multiply the resultant number by your system operating pressure to obtain the approximate clamping force for your application. (Actual force will vary slightly due to mechanical inefficiencies and friction.)
- **** To insure maximum service life and trouble-free operation, restrict fluid flow to the above flow ratings when clamping. If you are unable to measure flow rates, the devices should be positioned in no less than 1/2 second. These recommendations apply when using the standard lever. When using the optional long lever or your custom lever, please restrict the flow rates to position the arm in no less than 1 second.
- ***** In-port flow requires the use of manifold mount ports.

Optional in-port flow control is a meter-in device with reverse free flow check valve.

Dimensions

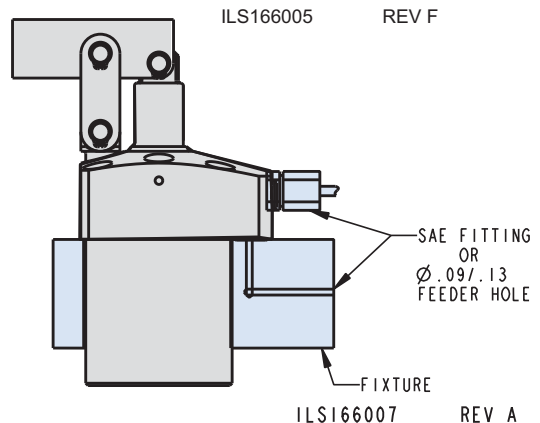
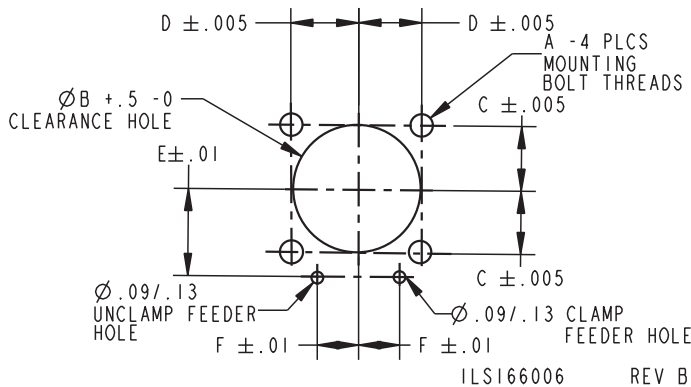
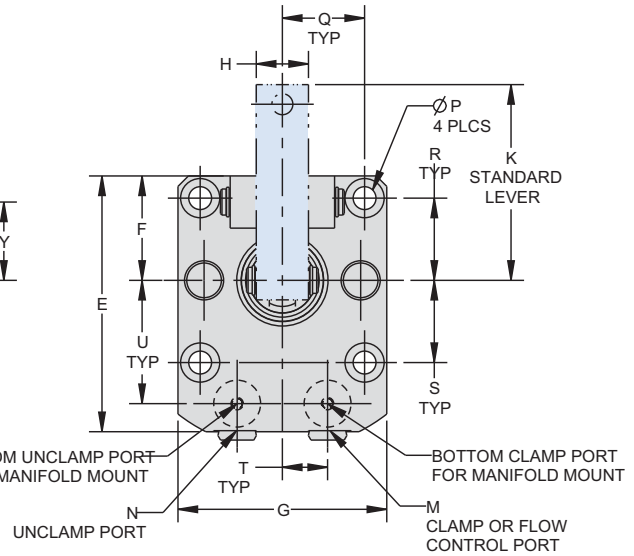
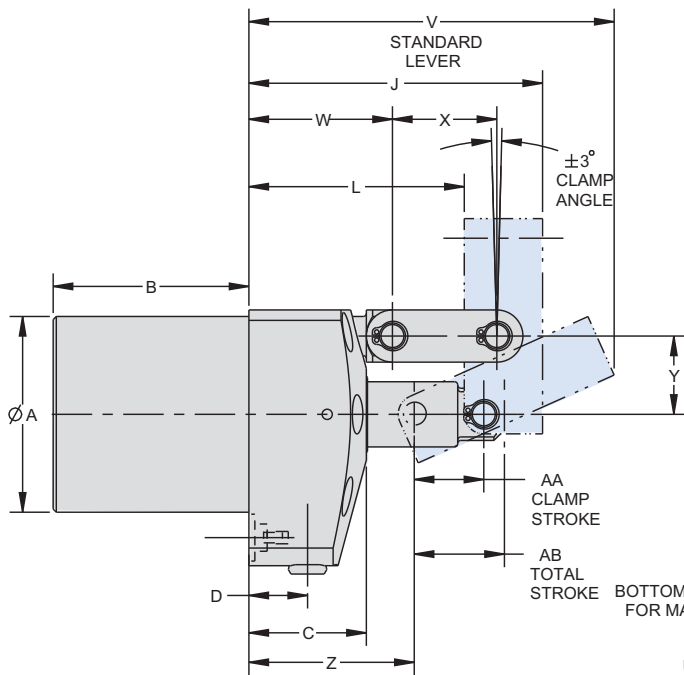
Model No.	Lever Position	Capacity (lb)	A	B	C	D	E	F	G	H	J	K	L	M
Double Acting (D/A)														
16-6211-00	Forward	550	1.88	1.88	1.13	0.56	2.45	1.00	2.00	0.50	2.81	1.88	2.06	SAE 2
16-6211-01	Right													
16-6211-02	Left													
16-6215-00	Forward	1100	2.53	2.50	1.19	0.59	3.19	1.38	2.75	0.75	3.44	2.63	2.44	SAE 4
16-6215-01	Right													
16-6215-02	Left													
16-6221-00	Forward	2200	2.94	2.75	1.44	0.63	3.72	1.67	3.34	0.88	4.13	3.09	2.88	SAE 4
16-6221-01	Right													
16-6221-02	Left													

Link Clamps



Low Pressure

D-10



Manifold Port/Bolt Mounting Dimensions

Model No.	A	B	C	D	E	F
16-6211-OX	10-32 UNF	1.890	0.788	0.788	1.181	0.433
16-6215-OX	1/4-20 UNC	2.560	1.083	1.083	1.555	0.591
16-6221-OX	5/16-18 UNC	2.950	1.240	1.240	1.772	0.630

For proper sealing, mating surface must be flat within 0.003 in. with a maximum 63 μ in. R_a surface finish.

Levers are to be adjusted to within +/- 3° of nominal clamp angle to prevent premature failure.

N	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
Cylinders, actuated hydraulically both directions.													
SAE 2	0.219	0.788	0.788	0.7875	0.433	1.181	3.36	1.38	1.00	0.75	1.47	0.78	0.91
SAE 4	0.281	1.083	1.083	1.083	0.591	1.555	4.42	1.56	1.50	1.00	1.75	1.00	1.13
SAE 4	0.344	1.240	1.240	1.240	0.630	1.772	5.23	1.88	1.75	1.19	2.06	1.19	1.32

Link Clamps



Frequently Asked Questions

D-1

The link clamp arm pivots up and out of the way to accommodate hard-to-reach or hard-to-hit clamping points. Link clamps contain the beam mechanism often preferred by fixture builders. This self-contained beam eliminates the need to build or design a clamp mechanism as part of the fixture. Vekttek's unique body and pivot design provides the least side-to-side axial deflection and the most rigid product on the market today.



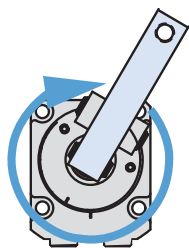
The new Tufflink™ 360° is outfitted with a rotary lug to provide full rotational positioning of the lever. Compare the flexibility of Tufflink™ 360° to others on the market that provide limited positioning.

When should I use a Link Clamp?

A link clamp is often preferred when you must reach over, not swing over or around a height obstacle. Reaching down into a die casting, between two mounting lugs, or a direct overhead load are good examples where these devices are required. Keep in mind that the vertical clearance must be greater when you are bringing a part into position, but direct drop-in loading is easily accomplished by an operator or robot.

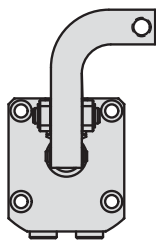
What benefit does the rotary lug offer?

The rotary lug on Tufflink™ 360° simplifies manifold mount drill passage planning and design. The body can be rotated independent of clamping lever for optimal manifold mount port location. Giving the designer greater flexibility and cutting costs in complex fixture designs. The rotary lug also simplifies plumbing location and pipe routing because the body can be rotated independent of clamping lever for optimal positioning. The rotary lug allows the clamping lever to be positioned anywhere, 360° around the mounting flange. When workpiece holding must be offset from the device centerline, simply rotate the rotary lug and lever; don't use an offset lever requiring pressure reduction. The rotary lug feature saves time and money after the fixture is built by allowing greater flexibility for last minute adjustments in workpiece design or casting variations.



Vekttek Solution
Rotary Lug

No More
Eccentric
Levers



Competitive
Solution
ILS160000 REV B

How is the rotary lug better than the eccentric levers offered by the competition?

Never derate a Link Clamp again due to an offset lever design. The clamp lever can now be rotated to adjust for part changes or last minute variations. Because it maintains symmetric loading on levers, pivots and pins, clamp life is vastly improved and failures eliminated.

How do I adjust the position of the rotary lug?

Rotary adjustment is easy, just loosen the two setscrews near the pivot on the rotary lug. Use a wrench on the end of the lever to rotate lever to desired orientation and tighten setscrews. We recommend tightening the setscrews while clamping over a workpiece at operating pressure.

What is the vertical stroke of a link clamp?

The maximum part variation is included in the vertical stroke, when outside the specification, the force generated by the clamp will be reduced and may result in reduced clamp life.

When using a high flow pump, which is better, a swing clamp or a link clamp?

Avoid the high flow pump. The link clamp positions with less mechanical resistance, but mass, acceleration, and sudden stops affect all clamps adversely. Make your decision based on your acceptance of the shortened life cycle.

Is the link clamp more accurate than swing clamps?

In some cases it may be preferred, its link mechanism still has a limited amount of play and may not be as precise as you desire. This type of decision is application dependent.

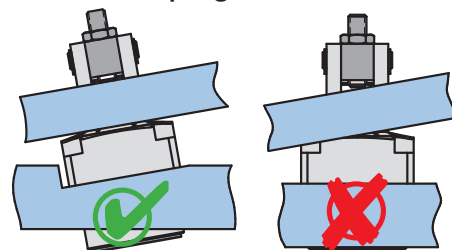
The part thickness varies on my application. Which component will work best for my situation, the swing clamp or the link clamp?

Swing clamps have more part variation tolerance; with nominal installation height being at 1/2 of straight stroke, it can tolerate $\pm 1/2$ stroke variations. The limit on link clamps is spelled out on the individual catalog page.

When should a link clamp not be used?

If you are clamping on a draft angle, the angle will exert undue stresses on the linkage mechanism. Please avoid stressing guidance mechanisms of either swing clamps or link clamps as these stresses will cause premature failure not covered by warranty due to misuse or abuse.

TuffLink™ 360° Clamping on a Draft



CORRECT

INCORRECT

ILS160001 REV B