VersaCam™ Swing Clamps

Frequently Asked Questions

Where and when should I use Swing Clamps?

Swing Clamps are a logical choice where loading of the part is hampered by other styles of clamps. Swing Clamps (as their names indicate) move out of the way for easy access to the load/unload area. They may be easily visualized by tool designers and the action emulates that of manual strap clamps.

Are there some applications where I need to avoid using Swing Clamps?

Yes. Swing Clamps should not be used when there are no fixed stops or hard locators into which the cutter force is transmitted. If Swing Clamps are oriented to hold vertically, horizontal cutter forces should be transmitted into solid stops that can easily absorb their energy. If forces are transmitted to Swing Clamps at 90° to the clamp action, all the force is transmitted into the rotating mechanism. This may result in premature wear and early failure.

How do I size Swing Clamps?

First, calculate the cutter or clamping forces to be resisted. Then examine the direction of these forces. Determine how much of these forces will have to be held by the clamp. Size your clamp based on the estimated working pressure of your fixture. (We recommend using 3,000-4,000 psi at this point to give you some additional capacity if required when your fixture is complete or processes change.)

I want the fastest possible action from my Swing Clamps. How do I do that and how fast can I get?

Look at the appropriate catalog page to determine flow rates. If you are unable to determine flow rates, use the time limitations indicated under the same footnote. A good rule of thumb, “If you see the clamp open, then see it closed, but don’t see it move between, it moved in less than 1/16th second. That is always too fast.” Finally, ask yourself: “Can the operator put that clamp as a solution to the time sensitivity or this small. We do not recommend that the clamp type, or you may want to consider TuffCam™ Swing Clamps.

My Swing Clamps don’t all contact the part at the same time. Why?

Flow restrictions, excess fittings, long tubing and different springs can all cause Swing Clamps to swing at different times. Despite the appearance, they actually build pressure at approximately the same time. Because some customers (often the machine operators) are sensitive to the timing of their Swing Clamps we created the Flow Control Swing Clamp. Look to this clamp as a solution to the time sensitivity or add an in-port flow control valve at each Swing Clamp. See Section M.

NOTE: Do not use this as a sequence valve.

I want to run my Swing Clamp on air; is this easily done?

It can be done for the three larger sizes of double acting hydraulic Swing Clamps (excludes Low Profile models). The smallest Swing Clamp may not be changed to air. It is extremely difficult to control air flow into or out of a pressure vessel this small. We do not recommend that the smallest clamp be converted to air, nor will we warrant its use in this application. Please call us for specific ordering details. We have designed a pneumatic Swing Clamp line; please see our charts provided.

My part won’t take 5,000 psi. How do I make your clamps work?

Your part doesn’t have to take 5,000 psi of pressure. The force exerted on your part is determined by the pressure (psi) times the piston area (sq. in.). The force exerted by VektorFlo® Swing Clamps ranges from 450 to 5,000 lbs at 5,000 psi input pressure. If you adjust the pressure down to 2,500 psi, your force will range from 225 to 2,500 lbs depending on the model selected. You can generally adjust your pressure from 750 to 5,000 psi and get just the force you need to hold your part properly.

How do you decide between a standard and TuffCam™ Swing Clamp?

TuffCam™ Swing Clamps must always be used when the required clamp actuation time is 1/2 second or less. The TuffCam™ rotation mechanism is more durable than the standard clamp, but they have the capability to swing in only one direction, as ordered. VersaCam™ Swing Clamps can be used when clamp speed is not critical (greater than 1/2 second is allowed) or the direction may need to be changed to swing left, right or straight. This is ideal where direction is not yet determined or you want to reduce the requirement for maintenance stock.

I want to use a 450 lbs Swing Clamp but need a 5,000 lbs Swing Clamp arm for length. How do I fit this arm onto the clamp? What are my flow and pressure restrictions?

You will have to add to an extended arm or make a custom. We cannot supply an arm modified to these specifications. A reach of this distance is not recommended. If you must reach beyond the limits charted (Section O), please consult Vektek’s engineers.

I need to clamp over a work support. Are there any special precautions that I should take?

Yes, you will want to be sure that the clamp is sequenced to swing only after the support has built sufficient pressure to hold the clamp’s force. Confirm that your Swing Clamp and work support are sized properly. Sequencing is recommended above 2,000 psi only. Use a Vektek Sequence Valve or In The Port Sequence Valve (other brands will not work).

TuffCam™ Swing Clamps must always be used when the required clamp actuation time is 1/2 second or less. The TuffCam™ rotation mechanism is more durable than the standard clamp, but they have the capability to swing in only one direction, as ordered. VersaCam™ Swing Clamps can be used when clamp speed is not critical (greater than 1/2 second is allowed) or the direction may need to be changed to swing left, right or straight. This is ideal where direction is not yet determined or you want to reduce the requirement for maintenance stock.

VeTeK

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**VersaCam™ Features**

- Large ball and cam rotational mechanism assures the swing action.
- Standard swing is 90°; swing angles less than 90° require Swing Restrictors (Page C-32). Swings angles greater than 90° are special order products.
- The original “duck billed,” cross bolt locking, top cap screw arm design, as originated by Vektek, is highly recommended due to its low mass, versatility and ease of modification, see Section O.
- Special wipers and swept-line cylinder top help keep chips from packing and coolant contaminants from entering the operation.
- Vent port with bronze filter gives the cylinder a place to “breathe” and helps keep chips and coolants from drawing past wipers (Unclamp port on double-acting models).
- Exclusive BHC™ (Black Hard Coating) on the cylinder bodies and rod bearing surface helps prevent leaks caused by scoring and scratching especially in the event of high side or “kick” loads which promote excessive scoring in many other brands. BHC™ gives a Rockwell 60C skin hardness.
- Hardened chrome alloy steel plungers run longer with less wear and drag than other brands.
- Proprietary seal designs reduce leakage and increase seal life for longer lasting, more dependable operations.

**Patented V-groove Cam Design**

- V shaped design provides a tougher mechanism. The ball runs deep in the track eliminating cam to ball edge loading.
- Resists flow related damage better (Please follow recommended flow rates for longest Swing Clamp life) than other clamps.
- Lasts longer and will withstand operator induced “crashes” from improperly loaded parts with less damage.
- Provides planar rather than edge contact with the cam follower.
- Will withstand swing interference better than other cam designs.
- VersaCam™ swing clamp models have hardened V-cam tracks that resist damage and give you a built in extra cam (opposite swing direction) or straight line option should you accidentally damage one.
- Vektek changes the “state-of-the-art” in ball and cam Swing Clamps making them work better at reasonable prices.

**Clamp Time and Fluid Flow Rates for VersaCam™ Swing Clamps**

<table>
<thead>
<tr>
<th>Swing Clamp Capacity (lbs)</th>
<th>Standard Arm Fastest Allowable Clamp Time (sec.)</th>
<th>Standard Arm Maximum Permissible Flow Rate (cu. in./min)</th>
<th>Extended Arm Fastest Allowable Clamp Time (sec.)</th>
<th>Extended Arm Maximum Permissible Flow Rate (cu. in./min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>450</td>
<td>0.4</td>
<td>8</td>
<td>0.9</td>
<td>4</td>
</tr>
<tr>
<td>1100</td>
<td>0.6</td>
<td>23</td>
<td>1.2</td>
<td>12</td>
</tr>
<tr>
<td>2600</td>
<td>0.6</td>
<td>73</td>
<td>1.4</td>
<td>31</td>
</tr>
<tr>
<td>5000</td>
<td>0.7</td>
<td>168</td>
<td>1.4</td>
<td>84</td>
</tr>
</tbody>
</table>

- For upreach and double arms, use extended arm flows and times.
- When using custom arms the extended arm flows and times are to be considered the limiting factor.
- The actual time to position the clamp will vary by custom arm configuration and may require customer testing in specific application to establish limits.

**NOTE:** Arm Length and Pressure Limitation Graphs are found in Section O

**Air Ordering Information**

Vektek offers the VektorAir™ line of pneumatic clamping devices and accessories, rated to run up to 250 psi. Call for a catalog. If you currently use our hydraulic models adapted for air, you may continue to do so; contact our sales office for air ordering information.
VersaCam™ Swing Clamp

Threaded Body

Single and Double Acting

- Available in four capacities from 450 to 5,000 lbs.
- Special concentric design models available to replace competitive product.
- Standard swing is 90°; swing angles less than 90° require Swing Restrictors. Swings angles greater than 90° are special order products.
- Clocking feature (end of Section C) uses standard length Vektek arm.

Hardened V-cam tracks resist damage and give you a built in extra cam or straight line option should you accidentally damage one.

### Model No. | Cylinder Capacity (lbs)** | Vertical Clamping Stroke (in)** | Total Stroke (Swing + Vertical) | Body Thread | Standard Arm Length*** | Effective Piston Area (sq. in.) | Oil Capacity (cu. in.)**** | Retract
--- | --- | --- | --- | --- | --- | --- | --- | ---
** Single Acting (S/A) **
15-0105-00-L | 450 | .22 | .57 | 1 1/16-16 | 1.06 | .098 | N/A | 0.56
15-0105-00-R | .22 | .57
15-0105-00-S | .22 | .57
15-0109-08-L | 1,100 | .31 | .79 | 1 1/2-16 | 1.50 | .295 | N/A | .233
15-0109-08-R | .31 | .79
15-0109-08-S | .31 | .79
15-0113-11-L | 2,600 | .50 | 1.16 | 1 7/8-16 | 2.00 | .626 | N/A | .726
15-0113-11-R | .50 | 1.16
15-0113-11-S | .50 | 1.16
15-0118-00-L | 5,000 | .63 | 1.66 | 2 1/2-16 | 2.50 | 1.178 | N/A | 1.955
15-0118-00-R | .63 | 1.66
15-0118-00-S | .63 | 1.66

** Double Acting (D/A) **
15-0205-00-L | 450 | .22 | .57 | 1 1/16-16 | 1.06 | .098 | .142 | .056
15-0205-00-R | .22 | .57
15-0205-00-S | .22 | .57
15-0209-08-L | 1,100 | .31 | .79 | 1 1/2-16 | 1.50 | .295 | .475 | .233
15-0209-08-R | .31 | .79
15-0209-08-S | .31 | .79
15-0213-11-L | 2,600 | .50 | 1.16 | 1 7/8-16 | 2.00 | .626 | 1.423 | .726
15-0213-11-R | .50 | 1.16
15-0213-11-S | .50 | 1.16
15-0218-00-L | 5,000 | .63 | 1.66 | 2 1/2-16 | 2.50 | 1.178 | 3.992 | 1.955
15-0218-00-R | .63 | 1.66
15-0218-00-S | .63 | 1.66

WARNING! Never allow swing arm to contact workpiece or fixture during arm rotation.

** Cylinder capacities are listed at 5,000 psi maximum operating pressure, with a standard length VektorFlo® arm installed. Minimum operating pressure is 750 psi for single acting, 500 psi for double acting. The clamping force is adjustable by varying the hydraulic system pressure. To determine the approximate output force for your application divide the cylinder capacity shown above by 5,000, and multiply the resultant number by your system operating pressure to obtain the approximate clamping force for your application.

(Acual force will vary slightly due to internal cantilever loading, friction loss and/or return springs.)

*** To allow for piece part height variations, it is recommended that the vertical travel be set to about 50% of the vertical stroke.

To ensure maximum service life and trouble-free operation, restrict fluid flow per table on page C-26.

Order arms separately.
**VersaCam™ Swing Clamp**

Threaded Body

---

**Model No.**

<table>
<thead>
<tr>
<th>J</th>
<th>M</th>
<th>N</th>
<th>P</th>
<th>S</th>
<th>T</th>
<th>V</th>
<th>W</th>
<th>Z</th>
<th>AC</th>
<th>AD</th>
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<tr>
<td>1/4-28 x 0.375</td>
<td>0.22</td>
<td>0.57</td>
<td>1.13</td>
<td>0.81</td>
<td>1.50</td>
<td>0.56</td>
<td>N/A</td>
<td>25</td>
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<tr>
<td>3/8-24 x 0.625</td>
<td>0.31</td>
<td>0.79</td>
<td>1.50</td>
<td>1.03</td>
<td>1.88</td>
<td>0.77</td>
<td>0.09</td>
<td>35</td>
<td>SAE 4</td>
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<tr>
<td>1/2-20 x 0.750</td>
<td>0.50</td>
<td>1.16</td>
<td>1.88</td>
<td>1.20</td>
<td>2.25</td>
<td>0.96</td>
<td>0.08</td>
<td>30</td>
<td>SAE 4</td>
<td>0.19</td>
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<tr>
<td>5/8-18 x 1.00</td>
<td>0.63</td>
<td>1.66</td>
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<td>0.05</td>
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<td>SAE 4</td>
<td>0.19</td>
</tr>
</tbody>
</table>

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**Cylinders, actuated hydraulically 1 direction, spring returned.**

**Cylinders, actuated hydraulically both directions.**

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**All dimensions are in inches. For mounting hardware details, see Section L.**

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Double Acting

- Available in 1,100 and 2,600 capacity.
- Can be pressure limited to yield force matching smaller models, yet retains full straight line clamping stroke.
- Clocking feature (end of Section C) uses standard length Vektek arm.

Threaded plunger end with cap screw provides secure attachment of standard or custom built arms.

SAE porting is all on the top of the cylinder body for easy access, no need to modify fixtures to access cylinder end to unclamp.

Hardened V-cam tracks resist damage and give you a built in extra cam (opposite swing direction) or straight line option should you accidentally damage one.

BHC™ (Black Hard Coating) on the cylinder body helps prevent leaks caused by scoring and scratching, especially in the event of high side or “kick” loads which promote excessive scoring in many other brands.

<table>
<thead>
<tr>
<th>Model No.*</th>
<th>Swing Direction</th>
<th>Cylinder Capacity (lbs)**</th>
<th>Vertical Clamping Stroke (in)***</th>
<th>Total Stroke (Swing + Vertical)</th>
<th>Body Thread</th>
<th>Standard Arm Length**</th>
<th>Effective Piston Area (sq. in.)</th>
<th>Oil Capacity (cu. in.)****</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-0209-10-L</td>
<td>Left</td>
<td>1,100</td>
<td>0.75</td>
<td>1.21</td>
<td>1 1/2-16</td>
<td>1.50</td>
<td>0.295</td>
<td>0.73</td>
</tr>
<tr>
<td>15-0209-10-R</td>
<td>Right</td>
<td>1,100</td>
<td>0.75</td>
<td>1.21</td>
<td>1 1/2-16</td>
<td>1.50</td>
<td>0.295</td>
<td>0.73</td>
</tr>
<tr>
<td>15-0209-10-S</td>
<td>Straight</td>
<td>1,100</td>
<td>0.75</td>
<td>1.21</td>
<td>1 1/2-16</td>
<td>1.50</td>
<td>0.295</td>
<td>0.73</td>
</tr>
<tr>
<td>15-0209-12-L</td>
<td>Left*</td>
<td>1,100</td>
<td>0.75</td>
<td>1.21</td>
<td>1 1/2-16</td>
<td>1.50</td>
<td>0.295</td>
<td>0.36</td>
</tr>
<tr>
<td>15-0209-12-R</td>
<td>Right*</td>
<td>1,100</td>
<td>0.75</td>
<td>1.21</td>
<td>1 1/2-16</td>
<td>1.50</td>
<td>0.295</td>
<td>0.36</td>
</tr>
<tr>
<td>15-0209-12-S</td>
<td>Straight*</td>
<td>1,100</td>
<td>0.75</td>
<td>1.21</td>
<td>1 1/2-16</td>
<td>1.50</td>
<td>0.295</td>
<td>0.36</td>
</tr>
<tr>
<td>15-0213-20-L</td>
<td>Left</td>
<td>2,600</td>
<td>1.35</td>
<td>2.00</td>
<td>1 7/8-16</td>
<td>2.00</td>
<td>0.626</td>
<td>2.45</td>
</tr>
<tr>
<td>15-0213-20-R</td>
<td>Right</td>
<td>2,600</td>
<td>1.35</td>
<td>2.00</td>
<td>1 7/8-16</td>
<td>2.00</td>
<td>0.626</td>
<td>2.45</td>
</tr>
<tr>
<td>15-0213-20-S</td>
<td>Straight</td>
<td>2,600</td>
<td>1.35</td>
<td>2.00</td>
<td>1 7/8-16</td>
<td>2.00</td>
<td>0.626</td>
<td>2.45</td>
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<tr>
<td>15-0213-22-L</td>
<td>Left*</td>
<td>2,600</td>
<td>1.35</td>
<td>2.00</td>
<td>1 7/8-16</td>
<td>2.00</td>
<td>0.626</td>
<td>2.45</td>
</tr>
<tr>
<td>15-0213-22-R</td>
<td>Right*</td>
<td>2,600</td>
<td>1.35</td>
<td>2.00</td>
<td>1 7/8-16</td>
<td>2.00</td>
<td>0.626</td>
<td>2.45</td>
</tr>
<tr>
<td>15-0213-22-S</td>
<td>Straight*</td>
<td>2,600</td>
<td>1.35</td>
<td>2.00</td>
<td>1 7/8-16</td>
<td>2.00</td>
<td>0.626</td>
<td>2.45</td>
</tr>
</tbody>
</table>

WARNING! Never allow swing arm to contact workpiece or fixture during arm rotation.

* Includes optional unclamp porting through the bottom of the Swing Clamp
** Cylinder capacities are listed at 5,000 psi maximum operating pressure, with a standard length VektorFlo™ arm installed. Minimum operating pressure is 750 psi for single acting, 500 psi for double acting. The clamping force is adjustable by varying the hydraulic system pressure. To determine the approximate output force for your application divide the cylinder capacity shown above by 5,000, 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 internal cantilever loading, friction loss and/or return springs.)
*** To allow for piece part height variations, it is recommended that the vertical travel be set to about 50% of the vertical stroke.
**** To ensure maximum service life and trouble-free operation, restrict fluid flow.

Dimensions

<table>
<thead>
<tr>
<th>Model No.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
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<tbody>
<tr>
<td>15-0209-10- L,R,S</td>
<td>1 1/2-16</td>
<td>6.94</td>
<td>6.58</td>
<td>3.38</td>
<td>1.28</td>
<td>1.09</td>
<td>0.38</td>
<td>0.62</td>
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<tr>
<td>15-0213-20- L,R,S</td>
<td>1 7/8-16</td>
<td>9.80</td>
<td>9.28</td>
<td>4.98</td>
<td>1.30</td>
<td>1.06</td>
<td>0.36</td>
<td>0.87</td>
</tr>
</tbody>
</table>

* For bottom unclamp porting, order either 15-0209-12 (R, L, S) or 15-0213-22 (R, L, S)
Order arms separately.

<table>
<thead>
<tr>
<th>J</th>
<th>M</th>
<th>N</th>
<th>P</th>
<th>S</th>
<th>T</th>
<th>V</th>
<th>W</th>
<th>Z</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8-24 X 0.625</td>
<td>0.75</td>
<td>1.21</td>
<td>1.50</td>
<td>1.03</td>
<td>1.87</td>
<td>0.78</td>
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<td>35</td>
<td>SAE 4</td>
</tr>
<tr>
<td>1/2-20 X 0.750</td>
<td>1.35</td>
<td>2.00</td>
<td>1.88</td>
<td>1.20</td>
<td>2.25</td>
<td>0.97</td>
<td>0.08</td>
<td>30</td>
<td>SAE 4</td>
</tr>
</tbody>
</table>

Cylinders, actuated hydraulically both directions.
Double Acting

- Available in our very popular 1,100 lbs capacity model.
- Integral flow control needle valve regulates the speed in both directions.
- Created for applications where multiple clamps must be timed to contact the part at similar times.
- Needle valve is built into the clamp head, no need to add external flow controls or give up space on your fixture for additional plumbing.
- Clocking feature uses standard length Vektek arm.
- Arms sold separately — see Section O.

Special limiting capability prevents the total blockage of the flow path.

**NOTE:** Do not modify the needle valve or seat; excessive pressures may result.

Hardened V-cam tracks resist damage and give you a built in extra cam (opposite swing direction) or straight-line option should you accidentally damage one. Specify right, left or straight cam, we will preset the swing when you order.

Mounting hardware is available or you may tap your fixture and use a retaining collar to lock in place.

Standard SAE 4 O-Ring porting makes plumbing simpler and leak-free.

Available only as a double-acting unit, springs cannot be used in this design.

<table>
<thead>
<tr>
<th>Model No.*</th>
<th>Swing Direction</th>
<th>Cylinder Capacity (lbs)**</th>
<th>Vertical Clamping Stroke (in.)***</th>
<th>Total Stroke (Swing + Vertical)</th>
<th>Body Thread</th>
<th>Standard Arm Length</th>
<th>Effective Piston Area (sq. in.) Retract</th>
<th>Oil Capacity (cu. in.)****</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-0209-09-L</td>
<td>Left</td>
<td>1,100</td>
<td>0.31</td>
<td>0.79</td>
<td>1 1/2-16</td>
<td>1.50</td>
<td>0.295</td>
<td>0.475</td>
</tr>
<tr>
<td>15-0209-09-R</td>
<td>Right</td>
<td>1,100</td>
<td>0.31</td>
<td>0.79</td>
<td>1 1/2-16</td>
<td>1.50</td>
<td>0.295</td>
<td>0.475</td>
</tr>
<tr>
<td>15-0209-09-S</td>
<td>Straight</td>
<td>1,100</td>
<td>0.31</td>
<td>0.79</td>
<td>1 1/2-16</td>
<td>1.50</td>
<td>0.295</td>
<td>0.475</td>
</tr>
<tr>
<td>15-0209-29-L</td>
<td>Left*</td>
<td>1,100</td>
<td>0.31</td>
<td>0.79</td>
<td>1 1/2-16</td>
<td>1.50</td>
<td>0.295</td>
<td>0.475</td>
</tr>
<tr>
<td>15-0209-29-R</td>
<td>Right*</td>
<td>1,100</td>
<td>0.31</td>
<td>0.79</td>
<td>1 1/2-16</td>
<td>1.50</td>
<td>0.295</td>
<td>0.475</td>
</tr>
<tr>
<td>15-0209-29-S</td>
<td>Straight*</td>
<td>1,100</td>
<td>0.31</td>
<td>0.79</td>
<td>1 1/2-16</td>
<td>1.50</td>
<td>0.295</td>
<td>0.475</td>
</tr>
</tbody>
</table>

C-31

**WARNING!** Never allow swing arm to contact workpiece or fixture during arm rotation.

* Includes optional unclamp porting through the bottom of the Swing Clamp, Model number 15-0209-29 (R, L or S).
** Cylinder capacities are listed at 5,000 psi maximum operating pressure, with a standard length VektorFlo™ arm installed.
*** Minimum operating pressure is 750 psi for single-acting, 500 psi for double-acting. The clamping force is adjustable by varying the hydraulic system pressure. To determine the approximate output force for your application divide the cylinder capacity shown above by 5,000, 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 internal cantilever loading, friction loss and/or return springs.)
**** To allow for piece part height variations, it is recommended that the vertical travel be set to about 50% of the vertical stroke.
***** To ensure maximum service life and trouble-free operation, restrict fluid flow per table on page C-26.
**Swing Clamp Restrictors**

Swing Restrictors add just one more element of flexibility when using Vektek TuffCam™ and VersaCam™ Swing Clamps. Normally shipped with the swing angle set to 90°, you can have swing restrictors added to your clamps to limit the arm swing to 30°, 45° or 60° of rotation. Restrictors that are factory installed on new clamps will have the clamp specially marked to avoid intermingling clamps with varying swing angles in your shop. Contact your Vektek Customer Service specialist should you need swing angles greater than 90°.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Clamp Capacity</th>
<th>Swing Restriction</th>
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<tbody>
<tr>
<td>81-5505-30</td>
<td>450</td>
<td>30°</td>
</tr>
<tr>
<td>81-5505-45</td>
<td>450</td>
<td>45°</td>
</tr>
<tr>
<td>81-5505-60</td>
<td>450</td>
<td>60°</td>
</tr>
<tr>
<td>81-5509-30</td>
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<td>60°</td>
</tr>
<tr>
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<td>2,600</td>
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</tr>
<tr>
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<tr>
<td>81-5522-60</td>
<td>TC LP SC 7,500</td>
<td>60°</td>
</tr>
</tbody>
</table>

**Clocking**

We have added 2 (two) more clocking features to Vektek’s VersaCam™ Swing Clamp line. Customers have requested additional clocking features to help improve and speed-up arm changes.

A drill point on each clamp standardizes arm location at a particular position. An additional 3 orientation drill points reside 90° out from that position and each other. Access to the positioning feature is through the back or side of the arm, making modification a snap for users. Each arm position can have its own specification.