



TuffCam™ Swing Clamps

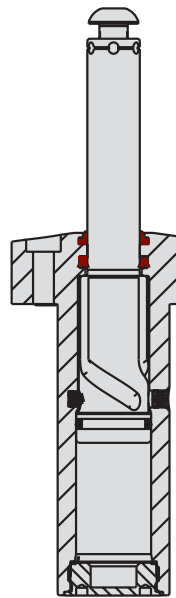
Top Flange Long Stroke Swing Clamp

Double Acting Long Stroke

- Long Stroke Swing Clamps are available in 4.9 kN and 11.6 kN capacities.
- More than double the vertical clamping stroke for maximum part deviation allowance and swing clearance.
- Three cams for accurate arm positioning, smoother rotation and lower per cam surface contact pressure.
- Tungsten Carbide ball cam followers for strength and wear.
- Patented ball seat for improved rotary function, cam follower contact, and reduced dynamic and static friction.
- Same mounting envelope as standard VektorFlo® Metric Swing Clamps.
- To avoid cylinder damage and preserve warranty, use recommended flow rate limits and time calculations on page C-2.
- Fluorocarbon wipers are standard for improved coolant compatibility.
- Standard swing is 90°; swing angles of less than 90° require Swing Restrictors (Page C-29). Swings angles greater than 90° are special order products.
- Arm clocking feature is compatible with all standard Vektek arms. Clocking drawing is on page C-2.
- Arms sold separately – see section O.
- Top flange TuffCam™ swing clamps can be either manifold mounted or standard plumbed.

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BHC™ (Black Hard Coating) on the cylinder body helps prevent scoring and scratching.



ILMV414604 REV E



TuffCam™

U.S. Patent Nos.
7,032,897

SWING CLAMP PLUNGER SHOWN IN THE EXTENDED LH CAM POSITION

Specifications

Model No.	Swing Direction	Cylinder Capacity* (kN)	Vertical Clamp Stroke** (mm)	Total Stroke (Swing + Vertical) (mm)	Piston Area (cm ²)	Oil Capacity*** (cm ³)		Optional Flow Control Model No.****
						Retract	Extend	
Double Acting (D/A) Cylinders, actuated hydraulically both directions.								
41-4605-23	Right	4.9	19	31	1.90	11.96	5.90	47-0203-71
41-4605-24	Left							
41-4611-23	Right	11.6	34	51	4.04	40.15	20.48	47-0203-74
41-4611-24	Left							

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

* Cylinder capacities are listed at 350 bar (35 MPa) maximum operating pressure, with a standard length VektorFlo® arm installed. Minimum operating pressure is 52 bar (5.2 MPa) for single acting, 35 bar (3.5 MPa) 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 350, and multiply the resultant number times 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 workpiece 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-2.

**** In-port flow control requires the use of manifold mount ports.

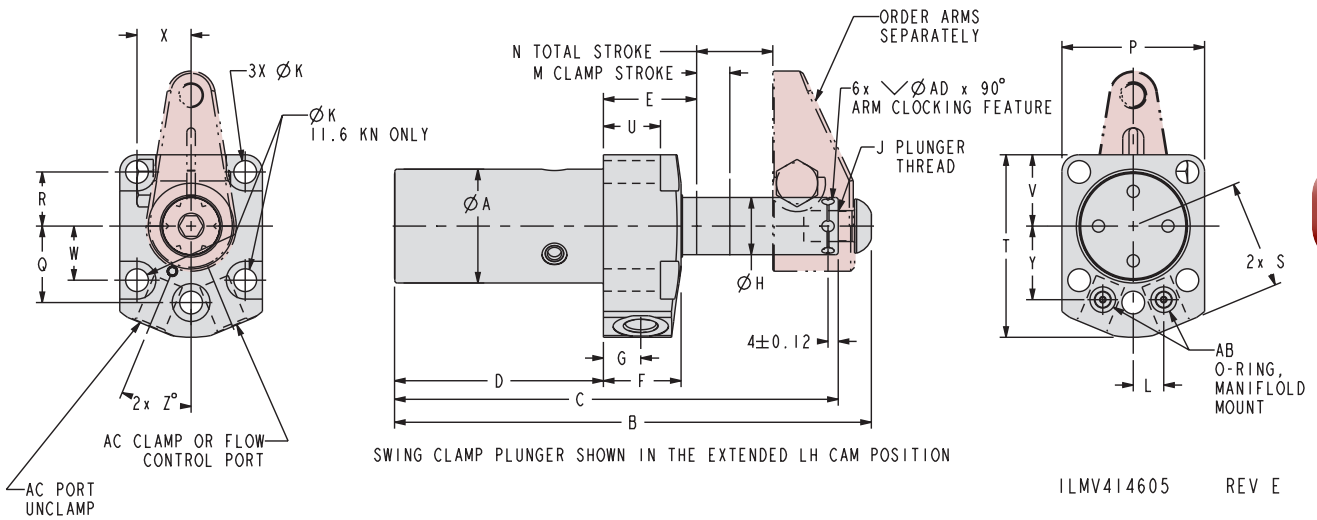
Optional in-port flow control is a meter-in device with reverse free flow check valve.



TuffCam™ Swing Clamps



Top Flange Long Stroke Swing Clamp



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For proper sealing, the mating surface must be flat within 0.08 mm with a maximum surface roughness of 1.6 μm R_a

Dimensions

Model No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
Double Acting (D/A) Cylinders, actuated hydraulically both directions.																		
41-4605-23	36.3	177	167	86.5	31.5	27	13	15.88	M10 x 1.5 x 12	7	20.5	19	31	57	25	12.5	33.5	54
41-4605-24	47.4	249	236	123.5	36	30	14.5	22.23	M12 x 1.75 x 13	9	11.8	34	51	55.5	29.7	21	42	71
Model No.	U	V	W	X	Y	Z	AB (O-ring)	AC	AD									
Double Acting (D/A) Cylinders, actuated hydraulically both directions.																		
41-4605-23	19	19	N/A	21.7	14.4	30	Ø7.65 x 1.78	G 1/8	4.8									
41-4605-24	22.1	27.5	21	21	28.6	22.5	Ø6.0 x 2.0	G 1/4	4.8									

Mounting Dimensions								
TuffCam™ Top Flange Long Stroke Swing Clamps								
Model No.	A	K	L	Q	R	W	X	Y
41-4605-23	37	M6	20.5	25	12.5	N/A	21.7	14.4
41-4611-23	48	M8	11.8	29.7	21	21	21	28.6
41-4611-24								

