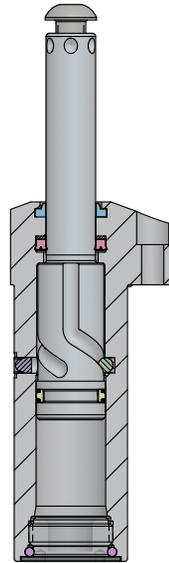


TuffCam™ Swing Clamps

Top Flange Long Stroke

Double Acting Long Stroke

- Available in 1,100 and 2,600 lbs 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.
- Patented ball seat for improved rotary function, cam follower contact and reduced dynamic and static friction.
- Fluorocarbon wipers are standard for improved coolant compatibility.
- Tungsten Carbide ball material for strength and wear.
- TuffCam™ Clocking feature (page C-2) uses standard length Vektek arm.
- Arms sold separately — see Section O.
- Optional In-Port Flow Control is a meter-in device with reverse free flow check valve.
- Optional In-Port Sequence valve is a sequencing device with reverse free flow check valve.



SWING CLAMP PLUNGER SHOWN IN THE EXTENDED LH CAM POSITION

ILS146006 REV H



U. S. Patent No. 7,032,897

Model No.*	Clamp Swing Direction	Cylinder Capacity (lbs.)**	Vertical Clamp Stroke (in.)***	Total Stroke (Swing + Vertical)	Body Dia.	Standard Arm Length**	Effective Piston Area (sq. in.) Retract	Oil Capacity (cu. in.)****		Port X Depth for Optional In-Port Valves *****
								Extend	Retract	
Double Acting (D/A)										
Cylinders, actuated hydraulically both directions.										
14-6209-10-R	Right	1,100	.75	1.21	1.43	1.50	0.295	0.73	0.36	SAE 4 X .58
14-6209-10-L	Left		.75							
14-6209-10-S	Straight		1.21							
14-6213-10-R	Right	2,600	1.34	2.00	1.87	2.00	0.626	2.45	1.25	SAE 4 X .58
14-6213-10-L	Left		1.34							
14-6213-10-S	Straight		2.00							

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

* 2,600 lbs Long Stroke are not interchangeable with TuffCam™ or VersaCam™ Swing Clamp models. Check overall dimensions for correct mounting in fixture.

** 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 at about 50% of the vertical stroke.

**** To ensure maximum service life and trouble-free operation, restrict fluid flow per table at the start of Section C.

***** In-Port valves require the use of manifold mount ports.

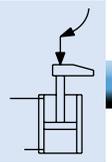


Dimensions

Model No.	Clamp Capacity (lbs.)	A	B	C	D	E	F	G	H	J
Double Acting (D/A)										
14-6209-10- L, R, S	1100	1.43	6.93	6.57	3.44	1.21	1.03	0.38	0.625	3/8-24 x 0.47
14-6213-10- L, R, S	2600	1.87	9.80	9.28	4.98	1.30	1.06	0.41	0.875	1/2-20 x 0.52

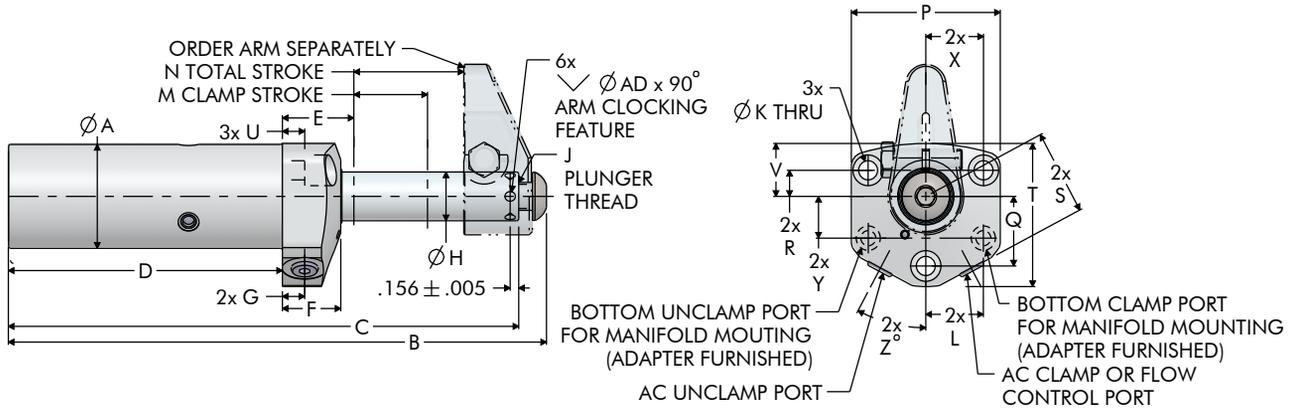


TuffCam™ Swing Clamps



Top Flange Long Stroke

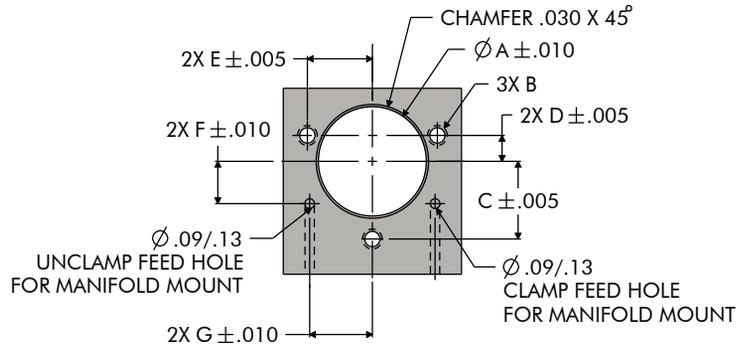
C-8



SWING CLAMP PLUNGER SHOWN IN THE EXTENDED LH CAM POSITION

ILS146007 REV J

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



ILS146008 REV C

Mounting Dimensions

Model No.	M
14-6209-10-L	.75
14-6209-10-R	.75
14-6209-10-S	1.21
14-6213-10-L	1.34
14-6213-10-R	1.34
14-6213-10-S	2.00

Model No.	A	B	C	D	E	F	G
14-6209-10- L, R, S	1.453	1/4-20	1.032	0.344	0.875	0.562	0.844
14-6213-10- L, R, S	1.885	5/16-18	1.250	0.468	1.050	0.750	1.047

	K	L	N	P	Q	R	S	T	U	V	X	Y	Z	AC	AD
Cylinders, actuated hydraulically both directions.															
	0.28	0.84	1.21	2.31	1.03	0.34	1.24	2.08	0.50	0.76	0.88	0.56	28	SAE 4	0.19
	0.34	1.05	2.00	2.71	1.25	0.47	1.53	2.58	0.41	0.95	1.05	0.75	28	SAE 4	0.19

