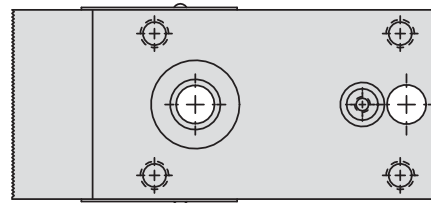
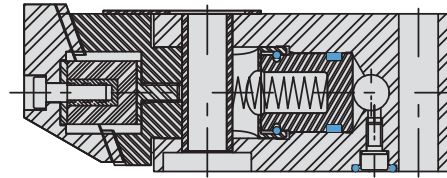


Special Use Clamps

Pull-Down Clamp

Single Acting

- Three capacities available: 870, 3,900 or 6,300 lbs.
- Use when lateral clamping is desired.
- Generates straight clamping motion and force along with pull-down clamping force.
- Pull-down force is approximately 1/3 of the straight clamping force.
- This clamp is shipped with the jaw shown. The interchangeable jaws found on page E-6 can be purchased for use with this clamp.
- Counter hold devices to pull the workpiece down when straight clamping force is applied, see page E-5.



NOTE: Flexible SAE porting or manifold mounting options.

The straight and pull-down movements are independent of each other.

ILS153103 REV E

Model No.	Plumbing Style	Lateral Clamp Force (lb.)*	Pull Down Clamp Force (lb.)*	Effective Horizontal Stroke	Oil Capacity (cu. in.)	Piston Area (sq. in.)	Recommended Mounting Bolts (not supplied)	Mounting Bolts Max. Torque (ft. lb.)
Single Acting (S/A)				Cylinders, actuated hydraulically 1 direction, spring returned				
15-3105-00	Manifold and SAE Ported	870	290	0.20	0.03	0.175	5/16	18
15-3110-00	Manifold and SAE Ported	3900	1300	0.31	0.24	0.761	7/16	63
15-3112-00	Manifold and SAE Ported	6300	2100	0.39	0.49	1.247	5/8	150

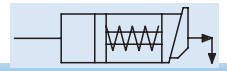
* Cylinder capacities are listed at 5,000 psi maximum operating pressure. The output force is adjustable by varying the hydraulic system pressure. (Actual force may vary slightly due to friction loss, seal and wiper drag, and/or return springs.)

Dimensions

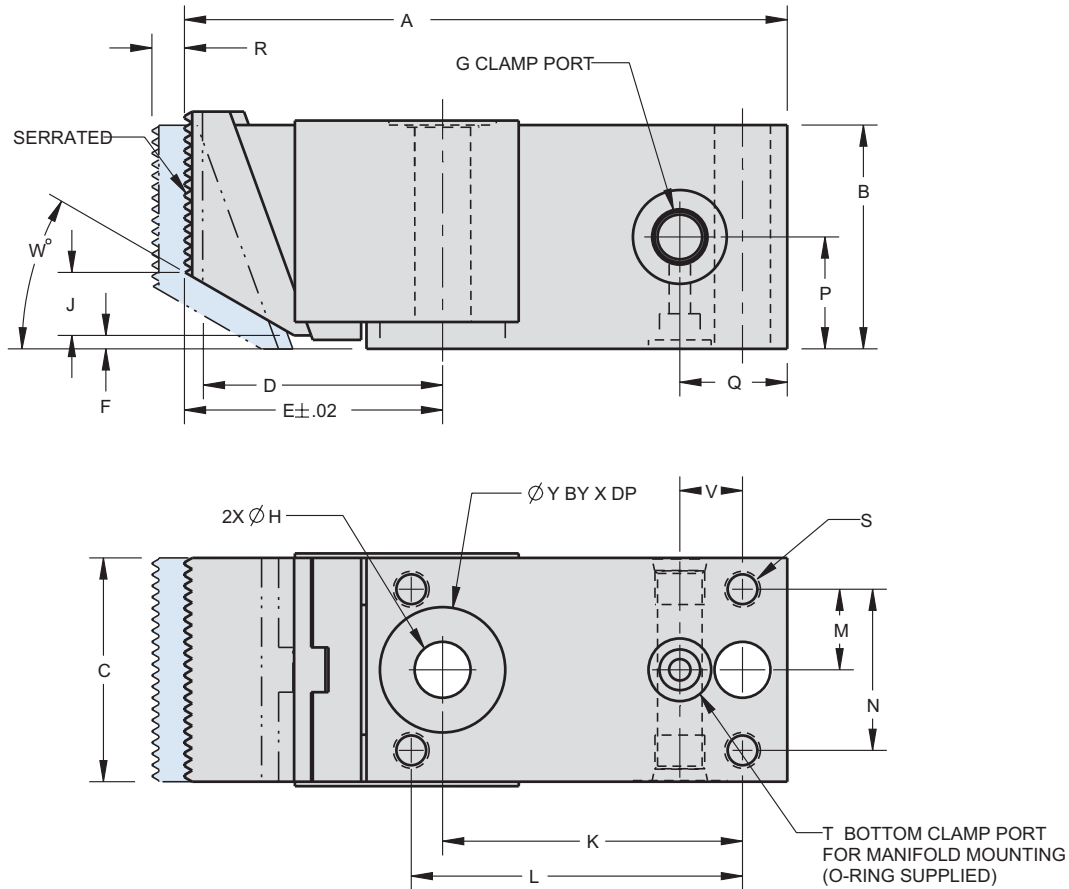
Model No.	A	B	C	D	E	F	G	H	J	K	L	M
Single Acting (S/A)												
15-3105-00	3.94	1.18	1.18	1.50	1.54	0.08	SAE 2	0.33	0.12	2.09	2.32	0.43
15-3110-00	5.31	1.97	1.97	2.24	2.28	0.12	SAE 4	0.49	0.55	2.64	2.91	0.71
15-3112-00	5.89	2.56	2.56	2.46	2.50	0.12	SAE 4	0.65	0.67	2.83	3.27	0.93



Special Use Clamps



Pull-Down Clamp



ILS153104 REV K

E-4

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

NOTE: The vertical travel of stroke "F" can not be exceeded.

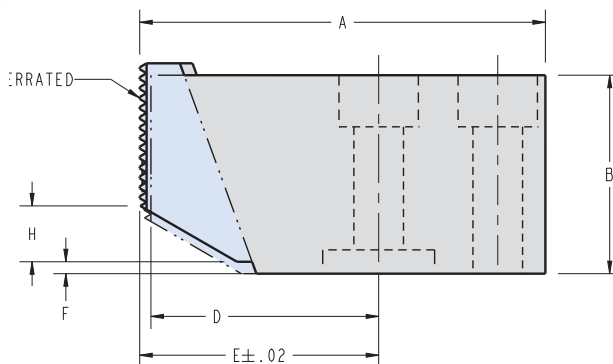
N	P	Q	R	S	T	V	W	X	Y	
Cylinders, actuated hydraulically 1 direction, spring returned.										
0.87	0.59	0.75	0.20	M5 x 0.24 DP	N/A	0.51	15	N/A	N/A	
1.42	0.98	0.98	0.31	M8 x 0.47 DP	M5	0.55	30	0.229	1.103	
1.85	1.19	1.19	0.39	M10 x 0.63 DP	M5	0.69	30	0.225	1.263	

Special Use Clamps

Pull-Down Counter-Hold

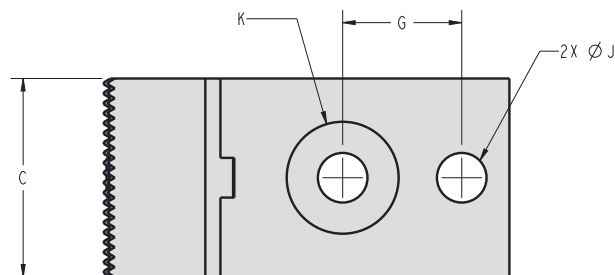


E-5



Pull-Down Counter-Hold

- Complements the pull-down clamp (page E-3) by pulling the workpiece down when straight clamping force is applied.
- Clamping bolt is behind the jaw, keeps clamping jaw from raising.



NOTE: The maximum pull-down stroke of the jaw must not exceed Dimension F.

ILS153105 REV F

Model No.	Description	Pull Down Force (lb)	Recommended Mounting Bolts (not supplied)
15-3105-02	Mechanical counter hold for 15-3105-00	290	5/16
15-3110-02	Mechanical counter hold for 15-3110-00	1300	7/16
15-3112-02	Mechanical counter hold for 15-3112-00	2100	5/8

Dimensions

Model No.	A	B	C	D	E	F	G	H	J	K
15-3105-02	3.11	1.18	1.18	1.61	1.65	0.08	1.02	0.12	0.33 thru 0.55 C'bore x 0.31 deep	N/A
15-3110-02	4.02	1.97	1.97	2.32	2.36	0.12	1.18	0.55	0.49 thru 0.78 C'bore x 0.51 deep	1.10 C'bore x 0.24 deep
15-3112-02	4.49	2.56	2.56	2.40	2.44	0.12	1.46	0.67	0.65 thru 1.00 C'bore x 0.71 deep	1.26 C'bore x 0.24 deep

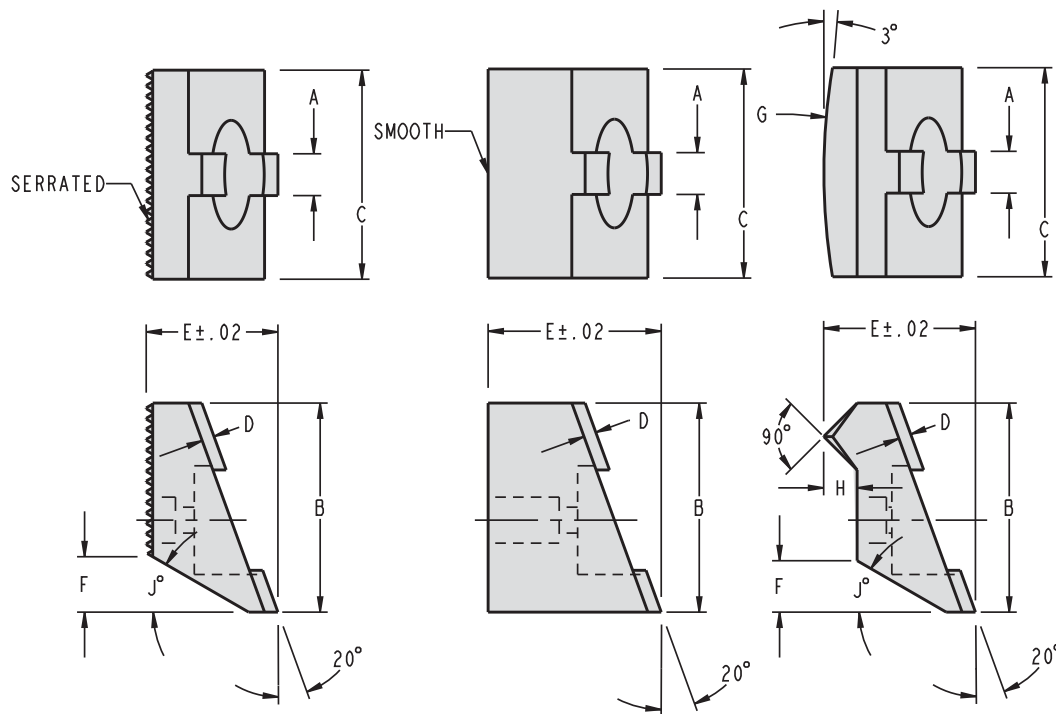
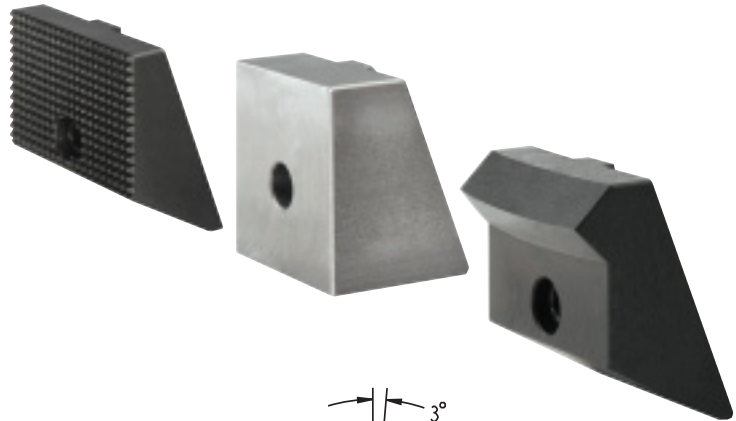


Special Use Clamps

Pull-Down Jaws

Pull-Down Clamping Jaws

- Three styles of clamping jaws are available.
- Serrated, for holding normal surfaces.
- Smooth, not hardened to facilitate shaping into any clamping form or ground flush for sensitive work.
- Clamping nose, for holding hard or uneven workpieces.



ILS153106 REV D

Dimensions

Jaw Model No.	Clamp Model No.	A	B	C	D	E	F	G	H	J
Serrated Jaws										
15-3105-03	15-3105-00	0.24	1.16	1.16	0.10	0.87	0.12	N/A	N/A	15°
15-3110-03	15-3110-00	0.39	1.97	1.97	0.12	1.24	0.55	N/A	N/A	30°
15-3112-03	15-3112-00	0.39	2.56	2.56	0.12	1.46	0.69	N/A	N/A	30°
Smooth Jaws*										
15-3105-04	15-3105-00	0.24	1.16	1.16	0.11	1.26	N/A	N/A	N/A	N/A
15-3110-04	15-3110-00	0.39	1.97	1.97	0.12	1.63	N/A	N/A	N/A	N/A
15-3112-04	15-3112-00	0.39	2.56	2.56	0.12	2.05	N/A	N/A	N/A	N/A
Nose Clamp Jaw										
15-3105-05	15-3105-00	0.24	1.16	1.16	0.11	1.06	0.16	12 RAD	0.20	15°
15-3110-05	15-3110-00	0.39	1.97	1.97	0.12	1.48	0.55	8 RAD	0.32	30°
15-3112-05	15-3112-00	0.39	2.56	2.56	0.12	1.85	0.67	12 RAD	0.39	30°

NOTE: Smooth jaw is not hardened or treated.

