TOOLFAST

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WORKHOLDING SPECIFICATION CATALOGUE 2016

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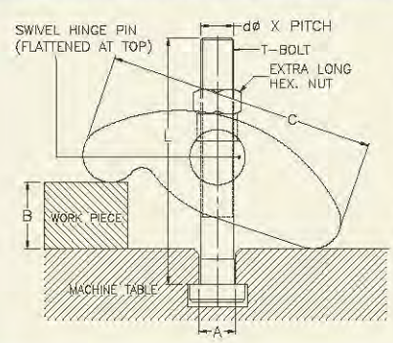
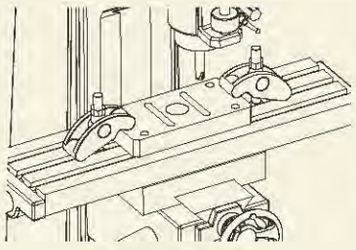
UNIVERSAL STRAP CLAMP

FOR POWER PRESSES, MILLING, DRILLING, SHAPING, BORING ETC.

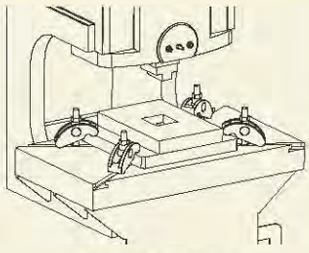
'TOOLFAST' Universal Strap Clamp is most suitable for die clamping on power presses and a very useful clamp for job clamping on 'T' slot table of Drilling, Milling, Shaping, Boring and other machine tools. No supports are required at the rear of the clamp since the body of the clamp is self-positioning as the rear part rests on the table and front holds the job. The body positions itself with the help of swival hinge pin according to the thickness of the workpiece, the T-Bolt remaining in vertical position and the nut is tightened on the flattened portion of swival hinge pin.

Clamp is supplied complete with hardened T-Bolt & special nut.





CLAMPING ON MILLING



PRESS TOOL CLAMPING

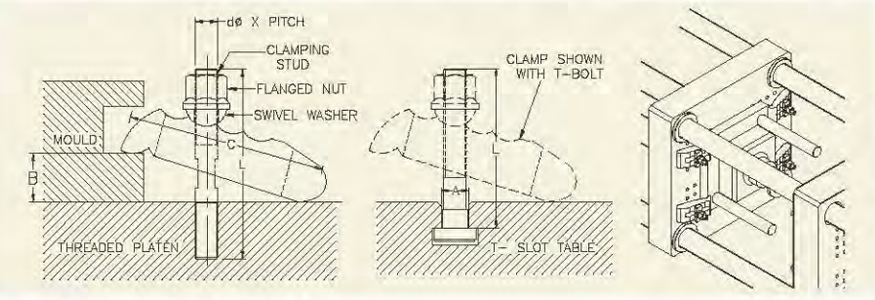
MODEL	T-SLOT SIZE A	dø x PITCH x L	CLAMPING RANGE B	LENGTH OF CLAMP C	BREADTH OF CLAMP	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs.
USC-12A	12	M12 x 1.75 x 100	0-60	105	42	90	2000 Kgs.	0.84
USC-12B	14	M12 x 1.75 x 100	0-60	105	42	90	2000 Kgs.	0.86
USC-16A	16	M16 x 2.0 x 130	0-80	130	50	220	3200 Kgs.	1.73
USC-16B	18	M16 x 2.0 x 130	0-80	130	50	220	3200 Kgs.	1.74
USC-20A	20	M20 x 2.5 x 150	0-100	160	55	420	5000 Kgs.	2.45
USC-20B	22	M20 x 2.5 x 150	0-100	160	55	420	5000 Kgs.	2.48
USC-24A	24	M24 x 3.0 x 210	0-120	190	65	730	6000 Kgs.	4.39
USC-24B	28	M24 x 3.0 x 210	0-120	190	65	730	6000 Kgs.	4.68

MOULD CLAMP

FOR PLASTIC INJECTION MOULDING & PRESSURE DIE CASTING MACHINES

'TOOLFAST' Mould Clamp is designed specially for low height applications only such as clamping of moulds on plastic injection moulding machines & pressure die casting machines. The compact front portion of the clamp enables it to penetrate into the limited clamping area of the mould and clamp it. The positioning of forged swival washer on required curved groove enables the operator to set the center distance between the clamping portion and the clamping bolt as per the nearest tapped hole available on platen (where there are no T-slots). No supports are required at the rear of the clamp as the rear portion rests on the platen and front holds the mould. Flanged nut is tightened on the swival washer which takes care of the positioning of clamp body. These clamps are equally useful on pressure die casting machines, hydraulic presses & power presses where low height clamping is done.

Clamps are supplied complete with swival washer, flanged nut & clamping stud or T-Bolt as shown in tables below.



MOULD CLAMP - WITH CLAMPING STUD

MODEL	dø x PITCH x L	CLAMPING RANGE B	LENGTH OF CLAMP C	BREADTH OF CLAMP	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs.
MC-12	STUD M-12 x 1.75 x 100	0-35	110	50	90	2000 Kgs.	0.99
MC-16	STUD M-16 x 2.0 x 125	0-40	135	60	220	3200 Kgs.	1.67
MC-20	STUD M-20 x 2.5 x 175	0-50	160	70	420	5000 Kgs.	2.81
MC-24	STUD M-24 x 3.0 x 200	0-60	180	80	730	6000 Kgs.	4.19

MOULD CLAMP - WITH T- BOLT

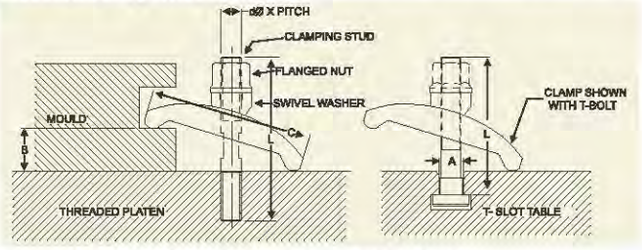
MODEL	dø x PITCH x L	T-SLOT SIZE A	CLAMPING RANGE B	LENGTH OF CLAMP C	BREADTH OF CLAMP	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs
MC-12A	T-BOLT M-12 x 1.75 x 100	12	0-35	110	50	90	2000 Kgs.	1.15
MC-12B	T-BOLT M-12 x 1.75 x 100	14	0-35	110	50	90	2000 Kgs.	1.30
MC-16A	T-BOLT M-16 x 2.0 x 130	16	0-40	135	60	220	3200 Kgs.	1.76
MC-16B	T-BOLT M-16 x 2.0 x 130	18	0-40	135	60	220	3200 Kgs.	1.78
MC-20A	T-BOLT M-20 x 2.5 x 150	20	0-50	160	70	420	5000 Kgs.	2.89
MC-20B	T-BOLT M-20 x 2.5 x 150	22	0-50	160	70	420	5000 Kgs.	2.92
MC-24A	T-BOLT M-24 x 3.0 x 210	24	0-60	180	80	430	6000 Kgs.	4.40
MC-24B	T-BOLT M-24 x 3.0 x 210	28	0-60	180	80	730	6000 Kgs.	4.72

* Exceeding the maximum torque damages the clamp parts and warranty expires.

MOULD CLAMP - FORGED

FOR PLASTIC INJECTION MOULDING & PRESSURE DIE CASTING MACHINES

The Popular 'TOOLFAST' mould clamp is now available in forged steel body for extra strength. All models shown below are similar to the MC models on the previous page.



MOULD CLAMP - FORGED - WITH CLAMPING STUD

MODEL	dø x PITCH x L	CLAMPING RANGE B	LENGTH OF CLAMP C	BREADTH OF CLAMP	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs.
MCF-12	STUD M-12 x 1.75 x 100	0-35	102	46	90	2000 Kgs.	0.50
MCF-16	STUD M-16 x 2.0 x 125	0-50	124	58	220	3200 Kgs.	0.98
MCF-20	STUD M-20 x 2.5 x 175	0-65	156	68	420	5000 Kgs.	2.0
MCF-24	STUD M-24 x 3.0 x 200	0-75	178	82	730	6000 Kgs.	3.0

MOULD CLAMP - FORGED - WITH T- BOLT

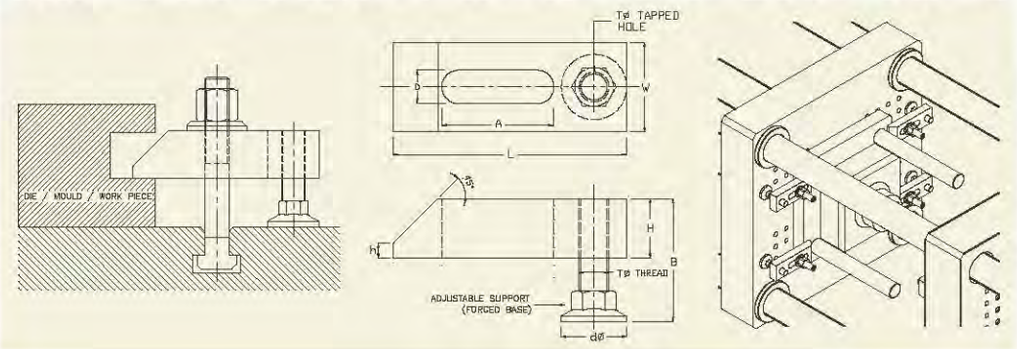
MODEL	dø x PITCH x L	T-SLOT SIZE A	CLAMPING RANGE B	LENGTH OF CLAMP C	BREADTH OF CLAMP	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs.
MCF-12A	T-BOLT M-12 x 1.75 x 100	12	0-35	102	46	90	2000 Kgs.	0.52
MCF-12B	T-BOLT M-12 x 1.75 x 100	14	0-35	102	46	90	2000 Kgs.	0.54
MCF-16A	T-BOLT M-16 x 2.0 x 130	16	0-50	124	58	220	3200 Kgs.	1.1
MCF-16B	T-BOLT M-16 x 2.0 x 130	18	0-50	124	58	220	3200 Kgs.	1.1
MCF-20A	T-BOLT M-20 x 2.5 x 150	20	0-65	156	68	420	5000 Kgs.	2.0
MCF-20B	T-BOLT M-20 x 2.5 x 150	22	0-65	156	68	420	5000 Kgs.	2.1
MCF-24A	T-BOLT M-24 x 3.0 x 210	24	0-75	178	82	430	6000 Kgs.	3.24
MCF-24B	T-BOLT M-24 x 3.0 x 210	28	0-75	178	82	730	6000 Kgs.	3.34

TAPPED END CLAMP - WITH ADJUSTABLE SUPPORT

FOR PLASTIC INJECTION MOULDING & PRESSURE DIE CASTING MACHINES

'TOOLFAST' Tapped End Clamps are Straps having special threaded adjustable support at the rear which can be adjusted to required height. Most useful clamp for plastic injection moulding or pressure die casting machines where mould / die is clamped in vertical position and these clamps with screwed in adjustable support are convenient to the operator as other loose supports tend to fall down while setting. Hardened adjustable support with large diameter forged base gives rigid clamping support and ensures machine bed safety. Extra thick body of the clamp accommodates more number of threads for rigidity of screwed support.

Supplied with adjustable threaded support only. T-Bolt or Stud with nut, washer etc. to be ordered separately.



MODEL	D SUITABLE FOR BOLT	L	A	W	H	h	TØ TAPPED HOLE	dØ	B Max	N. W. Kgs.
TTUC-12	M-12	110	55	38	18	6	M-12	30	60	0.54
TTUC-16	M-16	125	60	48	24	8	M-16	35	70	0.98
TTUC-20	M-20	160	80	62	30	10	M-20	40	80	2.45
TTUC-24	M-24	200	110	72	38	10	M-24	50	85	3.67

FORGED STRAP CLAMP WITH TAPPED END

Forged, Hardened & Tempered

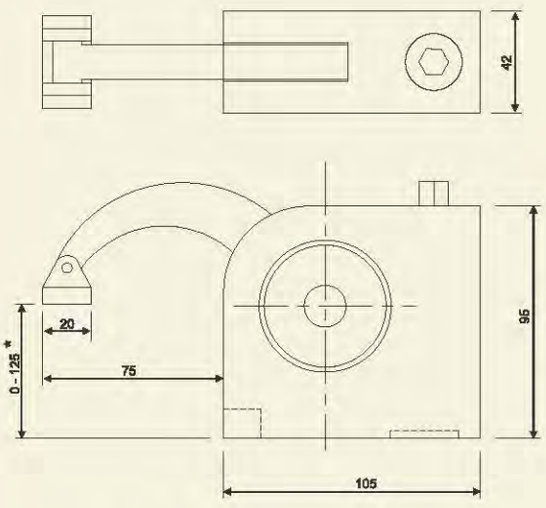
This clamp is a forged version of above TTUC clamps available only for the most popular size M-16. Most suitable for mould clamping on Plastic Injection Moulding Machine.

MODEL	SUITABLE FOR BOLT	LENGTH	WIDTH	THICK NESS	SLOT LENGTH	TAPPED END	N. W. Kgs.
TTFC -16	M-16	152	44	22	52	M -16	0.73

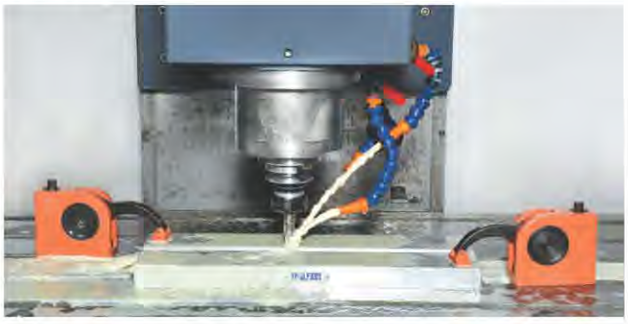
Also available as Model TTFC-16S with threaded support TS-16 (M-16 x 70 long).N.W. 0.87 Kgs.

COMPACT MILLING CLAMP

'TOOLFAST' compact milling clamp is the most multipurpose, quick and easy to use down-hold milling clamp. It is equally suitable for clamping while all kinds of machining operation on Drilling, Milling, Machining Centre, EDM etc. This clamp does not require any support blocks or any kind of adjustment, clamping is done by simple turning of the removable spanner key.



*Arm can also clamp 55mm below 0 i.e. its base surface

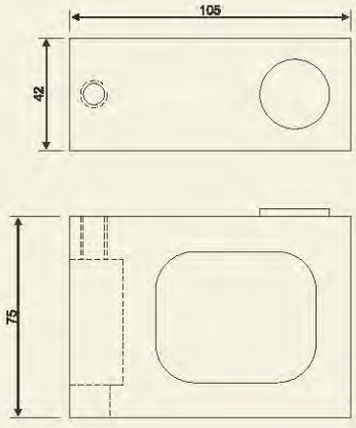


MODEL	CLAMPING HEIGHT RANGE	SUITABLE FOR T-SLOT SIZE	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs. (Including Spanner)
CMC-12	0-125	12	70	1600 kgs.	2.0
CMC-14	0-125	14	70	1600 kgs.	2.0
CMC-16	0-125	16	70	1600 kgs.	2.0
CMC-18	0-125	18	70	1600 kgs.	2.1

* Required torque can be achieved manually by tightening spanner included with CMC clamp. Applying extra torque by using extension pipe or by hammering damages the clamp parts and warranty expires.

HEIGHT BLOCK FOR CMC CLAMP :

By stacking one Height block over another and a CMC clamp at the top can enable clamping of any height of workpiece. Each height block model HB-CMC-75 increases clamping height range by 75mm.



HB-CMC-75 stacked under CMC clamp to increase height by 75 mm. More height blocks can also be stacked over one another to increase height in multiples of 75mm.

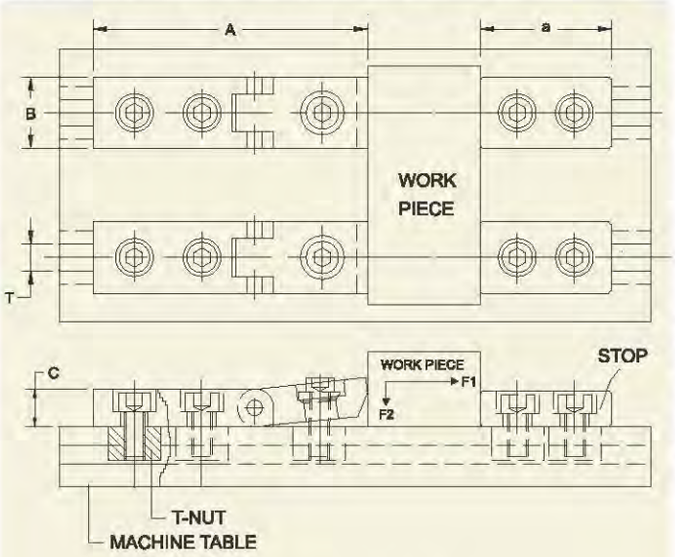
Height Block HB-CMC-75 N.W. 1.53 Kgs.

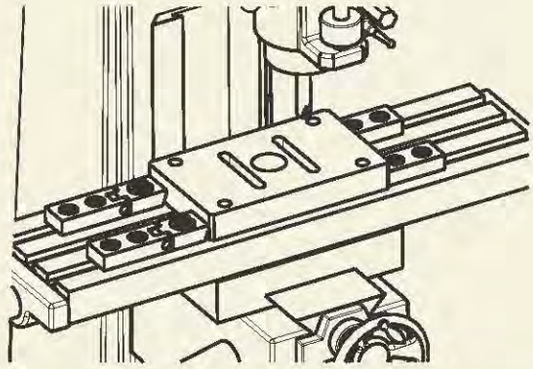
PINCH CLAMPS AND STOPS

FOR MACHINING CENTER, MILLING, SHAPING, PLANNING, JIG BORING ETC.

Low Height Pinch Clamp

'TOOLFAST' Low Height Pinch Clamp is useful for job clamping where complete top surface of the job is to be machined in one setting and hence can be clamped only from side faces. When serrated front portion is pressed against the job by tightening the front bolt, it gives a downward as well as forward clamping force. Body is made of hardened alloy steel. It is most useful on Milling, Shaping, Planning and Jig boring machines.
Supplied complete with hardened T-Nuts & Standard Bolts.





MODEL	SUITABLE FOR T-SLOT SIZE T	A	B	C	CLAMPING FORCE Max.		N. W. Kgs.
					F1	F2	
PC-1A	12	105	30	15	1600 Kgs.	60 Kgs.	0.44
PC-1B	14	105	30	15	1600 Kgs.	60 Kgs.	0.49
PC-2	16	130	38	18	2500 Kgs.	100 Kgs.	0.92
PC-3	18	130	38	18	2500 Kgs.	100 Kgs.	1.00
PC-4A	20	175	48	24	4000 Kgs.	250 Kgs.	1.65
PC-4B	22	175	48	24	4000 Kgs.	250 Kgs.	2.30
PC-5A	24	175	48	24	4000 Kgs.	250 Kgs.	2.31
PC-5B	28	175	48	24	4000 Kgs.	250 Kgs.	2.72

Heavy Duty Pinch Clamp

'TOOLFAST' Heavy Duty Pinch Clamp is a heavier version of Low Height Pinch Clamp. Basic function is same but this is used for clamping from sides of heavy blocks or thicker plates for facing of top face in one setting. Supplied complete with hardened T-Nuts & Standard Bolts

MODEL	SUITABLE FOR T-SLOT SIZE T	A	B	C	CLAMPING FORCE Max.		N. W. Kgs.
					F1	F2	
HDPC-1A	18	185	62	38	4000 Kgs.	250 Kgs.	3.35
HDPC-1B	20	185	62	38	4000 Kgs.	250 Kgs.	3.39
HDPC-2A	22	185	62	38	4000 Kgs.	250 Kgs.	3.36
HDPC-2B	24	185	62	38	4000 Kgs.	250 Kgs.	3.96
HDPC-3	28	185	62	38	4000 Kgs.	250 Kgs.	4.42

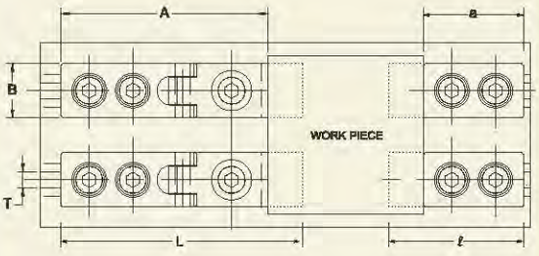
Stop For Pinch Clamps

Stop or stopper blocks in different sizes as shown in table below are available to suit all above models of low height pinch clamps (PC Series) and Heavy Duty Pinch Clamps (HDPC Series). These stops are to be mounted on the opposite side of workpiece as shown in drawing above. All faces are ground for precise stopping of workpiece. Available separately in all below sizes.

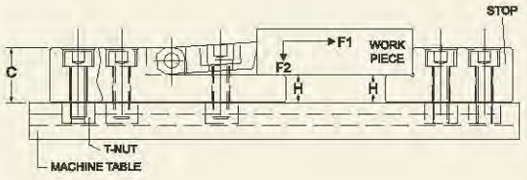
MODEL	SUITABLE FOR PINCH CLAMP MODEL	SUITABLE FOR T-SLOT SIZE T	TOTAL LENGTH a	BREADTH B	HEIGHT C	N. W. Kgs.
ST-PC-1A	PC-1(a)	12	55	30	15	0.25
ST-PC-1B	PC-1(b)	14	55	30	15	0.27
ST-PC-2	PC-2	16	66	38	18	0.51
ST-PC-3	PC-3	18	66	38	18	0.55
ST-PC-4A	PC-4(a)	20	95	48	24	0.91
ST-PC-4B	PC-4(b)	22	95	48	24	1.26
ST-PC-5A	PC-5(a)	24	95	48	24	1.28
ST-PC-5B	PC-5(b)	28	95	48	24	1.50
ST-HDPC-1A	HDPC-1(a)	18	95	62	38	1.85
ST-HDPC-1B	HDPC-1(b)	20	95	62	38	1.86
ST-HDPC-2A	HDPC-2(a)	22	95	62	38	1.87
ST-HDPC-2B	HDPC-2(b)	24	95	62	38	2.18
ST-HDPC-3	HDPC-3	28	95	62	38	2.44

LOW HEIGHT PINCH CLAMP AND STOP WITH STEP

This is a new version of low height pinch clamp (PC Series) having step to support the workpiece above the machine table for through milling and drilling. Each PCS series clamp comes with a suitable size step (ST-PCS Series) as standard.



MODEL	SUITABLE FOR T-SLOT SIZE T	A	L	B	C	H ± 0.01	CLAMPING FORCE Max.		N. W. Kgs.
							F1	F2	
PCS-1A	12	110	125	30	30	14	1600 Kgs.	60 Kgs.	0.84
PCS-1B	14	110	125	30	30	14	1600 Kgs.	60 Kgs.	0.88
PCS-2	16	140	160	38	38	19	2500 Kgs.	100 Kgs.	1.75
PCS-3	18	140	160	38	38	19	2500 Kgs.	100 Kgs.	1.81



STOP FOR LOW HEIGHT PINCH CLAMP WITH STEP

These are stepped stops to suit clamping with low height pinch clamps with steps (PCS Series shown above). To be mounted on the opposite side of workpiece for stopping and supporting it on the machine table as shown in drawing. All faces are ground for precise stopping and supporting of workpiece. One stop (ST-PCS Series) comes as standard with each of above model PCS Series Clamps.

MODEL*	SUITABLE FOR PCS MODEL	SUITABLE FOR T-SLOT SIZE T	LENGTH a	OVERALL LENGTH ℓ	BREADTH B	HEIGHT C	HEIGHT H ± 0.01	N. W. Kgs.
ST-PCS-1A	PCS-1A	12	55	70	30	30	14	0.49
ST-PCS-1B	PCS-1B	14	55	70	30	30	14	0.53
ST-PCS-2	PCS-2	16	66	86	38	38	19	0,96
ST-PCS-3	PCS-3	18	66	86	38	38	19	1.02

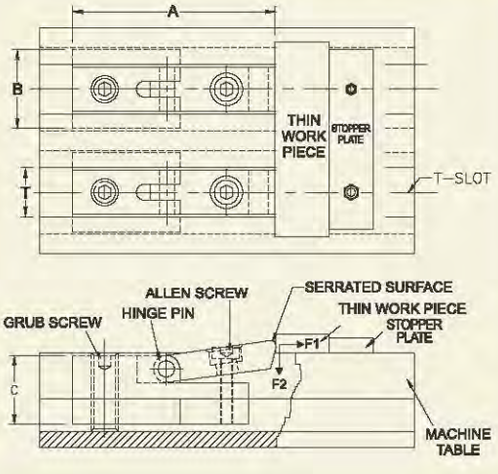
*Are supplied as standard with PCS Series Clamps. To be purchased separately only in case required extra stops.

MINI PINCH CLAMP

FOR MILLING, SHAPING & PLANNING ETC.

'TOOLFAST' Mini Pinch Clamp is useful for clamping of thin plates form side faces. Body made of hardened alloy steel is in the form of a T-Nut which slides easily into the T-slot. When rear screw is tightened, the clamp is held tightly with the T-slot and then by tightening the front bolt, it gives a downward as well as forward clamping force to the job. Only a required small portion of the clamp comes above the surface of T-Slot table, rest of the body of clamp remains under the top surface of the T-Slot table. Hence, it can clamp thinnest plates positively and still remain under the top level of the job. This clamp is most suitable for top facing of thin plates on milling, shaping and planning machines.

Supplied complete with standard front & rear screws.

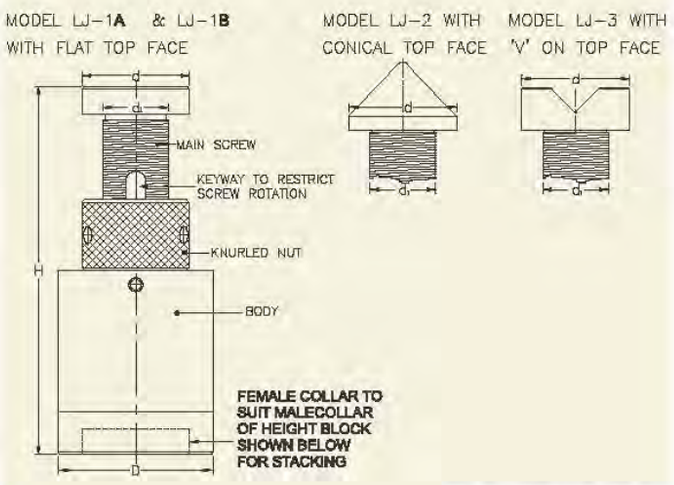


MODEL	SUITABLE FOR T-SLOT SIZE T	A	B	C	CLAMPING FORCE Max.		N. W. Kgs.
					F1	F2	
MPC-1	14	65	22	21	400 Kgs.	20 Kgs.	0.14
MPC-2	16	75	25	23	600 Kgs.	25 Kgs.	0.20
MPC-3	18	75	28	26	600 Kgs.	25 Kgs.	0.26

LEVELLING JACKS & HEIGHT BLOCKS

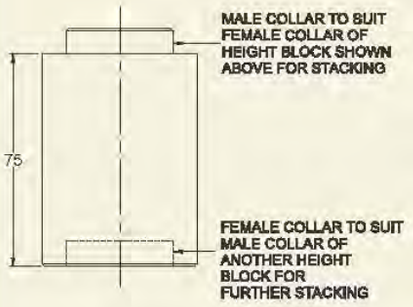
'TOOLFAST' Levelling Jack can be used as an adjustable support block for clamps and as a stopper or levelling block in fixtures or machines, as well as for levelling surface plates or other heavy duty work pieces. **Its unique design does not allow the levelling screw to rotate while adjustment, hence makes it suitable for fine level adjustment.** Also available in conical & V top for other applications such as inspection.

Picture (a) shows levelling jack model LJ-1(b) and picture (c) shows **HEIGHT BLOCK FOR LEVELLING JACK MODEL HBLJ-75** available separately for the purpose of stacking below levelling jack in order to increase its height. Picture (b) shows levelling jack model LJ-1(b) stacked on height block for levelling jack model HBLJ-75 to increase the height range of levelling jack by 75mm. Any required number of height blocks can be stacked one over another to achieve any required height and finally on top, any model of levelling jack can be kept for final height adjustment as shown in picture (b). Bottom female collar of any levelling jack and height block fits with top male collar of the height blocks to enable stacking.



LEVELLING JACK

MODEL	H MIN. AT CLOSED POSITION	H MAX. AT OPEN POSITION	DIA AT BOTTOM D	DIA AT TOP d	DIA OF SCREW d_1	TYPE OF TOP FACE	MAX. LOAD TONS.	N. W. Kgs.
LJ-1A	75	100	48	38	M-24	FLAT	5.0	0.76
LJ-1B	100	150	48	38	M-24	FLAT	5.0	1.11
LJ-2	120	170	48	38	M-24	CONICAL	5.0	1.13
LJ-3	105	155	48	38	M-24	'V'	5.0	1.11



HEIGHT BLOCK FOR LEVELLING JACK

MODEL	EFFECTIVE HEIGHT INCREASE WITH ONE HEIGHT BLOCK	N. W. Kgs.
HBLJ-75	75	0.77

LEVELLING JACK - HEAVY DUTY

'TOOLFAST' Levelling Jack-Heavy Duty is a heavier version of Levelling Jack with a heavy body and Levelling Screw & knurled nut. This jack is specially designed for heavy castings & machines. Available in flat head Levelling Screw only.

MODEL	H MIN. AT CLOSED POSITION	H MAX. AT OPEN POSITION	DIA AT BOTTOM D	DIA AT TOP d	DIA OF SCREW d_1	TYPE OF TOP FACE	MAX LOAD TONS.	N. W. Kgs.
LJ-HD	160	230	75	50	32ϕ	FLAT	8.0	2.82

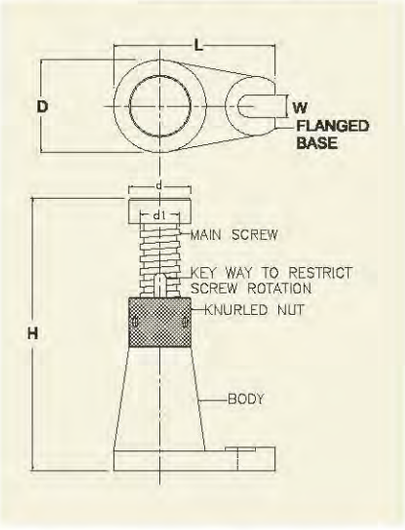
HEIGHT BLOCK FOR LEVELLING JACK - HEAVY DUTY

As in case of Levelling Jacks, Height Block for Levelling Jack-Heavy Duty Model HBLJ-HD-75 is available for stacking with Levelling Jack-Heavy Duty.

MODEL	EFFECTIVE HEIGHT INCREASE WITH ONE HEIGHT BLOCK	N. W. Kgs.
HBLJ-HD-75	75	1.58

LEVELLING JACK - HEAVY DUTY - FLANGE MOUNTING

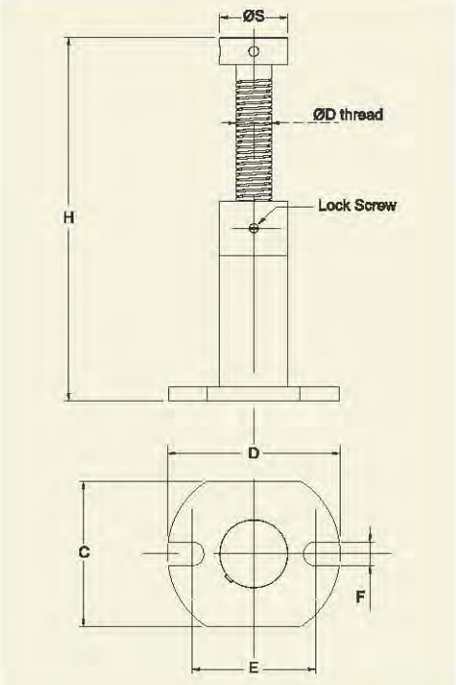
'TOOLFAST' Levelling Jack-Heavy Duty-Flange Mounting is same as LJ-HD but with flanged base for mounting on machine bed for additional rigidity.



MODEL	H MIN. AT CLOSED POSITION	H MAX. AT OPEN POSITION	DIA AT BOTTOM D	L	MOUNTING SLOT WIDTH W	DIA AT TOP d	DIA OF SCREW d	TYPE OF TOP FACE	MAX LOAD TONS.	N. W. Kgs.
LJ-HD-FB	160	230	75	130	18	50	32ø	FLAT	8.0	3.32

SCREW JACK - HEAVY DUTY

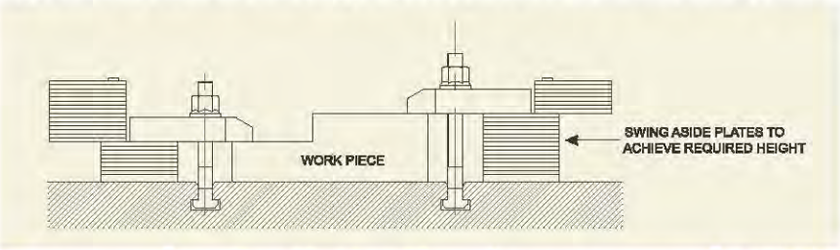
'TOOLFAST' Screw Jack-Heavy Duty is meant for heavy applications and with more height upto 660 mm. In this series of screw jacks the screw rotates while going up or down. Body is rigid, steel fabricated.



MODEL	H Min.	H Max.	C	D	E	F	ØS	ØD	CAPACITY
SJ-HD-1	250	400	160	190	136	26	75	40	25 Tons
SJ-HD-2	380	660	160	190	136	26	75	40	25 Tons

ADJUSTABLE SUPPORT PLATES

'TOOLFAST' Adjustable Support Plates are used as adjustable supports at the rear of the clamp. It comprises of a number of plates each 2mm thick hinged together. Desired height is achieved very easily by swinging aside the required number of plates and using the remaining as support block. Different models of support plates can be stacked on each other to achieve extra height.

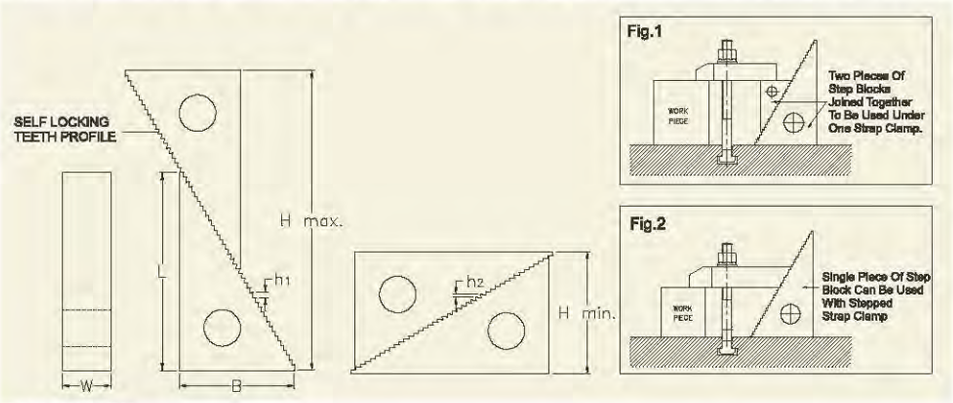


MODEL	HEIGHT ADJUSTMENT MIN.	MAX.	PLATES THICKNESS	PLATE OVERALL SIZE	SIZE OF CLAMP REST AREA	N. W. Kgs.
TASP-250	10	50	2	50 x 35	25 X 35	0.66
TASP-2100	10	100	2	50 x 35	25 X 35	1.33
TASP-2150	10	150	2	50 x 35	25 X 35	1.99
TASP-L-250	10	50	2	60 x 50	35 x 50	1.15
TASP-L-2100	10	100	2	60 x 50	35 x 50	2.30
TASP-L-2150	10	150	2	60 x 50	35 x 50	3.41

STEP BLOCKS Machined Steel, hardened & tempered, Black finish

'TOOLFAST' Step Blocks are used as adjustable supporting Blocks at the rear of the clamp while clamping the workpiece. Different heights can be achieved by using combination of two different sizes of Step Blocks. Available in pairs. (Pair consists of 2 identical Step Blocks)

Combination of two Step Blocks of same or different sizes is kept as support under one Strap Clamp as shown in Fig.1 below. But in case of use of Step Blocks with Stepped Strap Clamp, as shown in Fig.2 below, only one Step Block of suitable size is kept as support under one stepped strap clamp.



STEP BLOCK

MODEL	L	B	W	HEIGHT ADJUSTMENT H MINIMUM	HEIGHT ADJUSTMENT H MAXIMUM	HEIGHT OF STEP h_1	HEIGHT OF STEP h_2	N. W. Kgs. (Pair)
TSB-1L	30	18	24	20	44	2.7	1.6	0.11
TSB-2L	66	38	24	40	100	2.7	1.6	0.31
TSB-3L	101	58	24	60	155	2.7	1.6	1.10
TSB-1	30	18	30	20	44	2.7	1.6	0.14
TSB-2	66	38	30	40	100	2.7	1.6	0.39
TSB-3	101	58	30	60	155	2.7	1.6	1.36

STEP BLOCK - HEAVY DUTY

'TOOLFAST' Step Block-Heavy Duty is different than step blocks above in width only. More width enables use on bigger T-slots and also with bigger sizes of stepped strap clamps.

MODEL	L	B	W	HEIGHT ADJUSTMENT H MINIMUM	HEIGHT ADJUSTMENT H MAXIMUM	HEIGHT OF STEP h_1	HEIGHT OF STEP h_2	N. W. Kgs. (Pair)
THSB-5	66	38	48	40	100	2.7	1.6	0.95
THSB-6	117	68	48	72	180	2.7	1.6	2.83

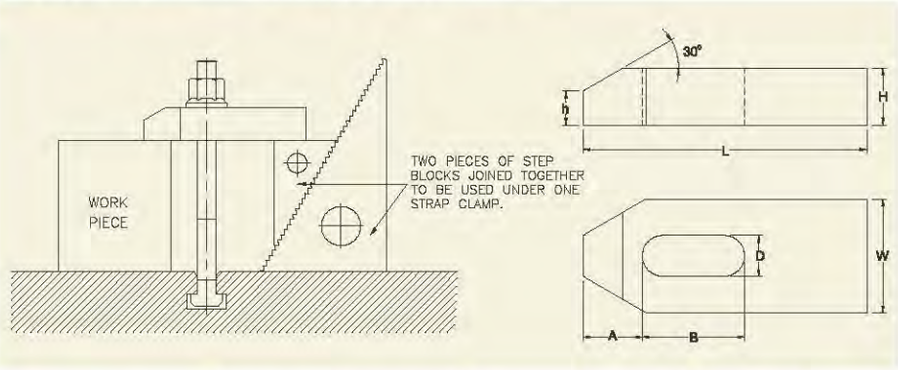
THREADED SUPPORT FOR TAPPED END CLAMPS Forged Base, Hardened & Tempered , Black Finish

These have large resting base and hexagon at bottom for height adjustment.

MODEL	DIA AT BOTTOM	THREAD SIZE	OVERALL LENGTH	N. W. Kgs.
TS-12	30	M-12 x 1.75 P	60	0.07
TS-16	35	M-16 x 2.0 P	70	0.14
TS-20	40	M-20 x 2.5 P	80	0.23
TS-24	50	M-24 x 3.0 P	85	0.40

STRAP CLAMP Hardened & Tempered, Black Finish

based on IS : 4292



MODEL	D SUITABLE FOR BOLT	L	W	H	A	B	h	N. W. Kgs.
TSC-8-60	M-8	60	24	12	13	22	7	0.09
TSC-10-80	M-10	80	30	15	15	30	9	0.23
TSC-12-100	M-12	100	38	18	21	40	12	0.43
TSC-12-125	M-12	125	38	18	21	50	12	0.56
TSC-14-125	M-14	125	48	24	26	45	15	0.85
TSC-16-125	M-16	125	48	24	26	45	15	0.85
TSC-16-160	M-16	160	48	24	26	65	15	1.11
TSC-20-160	M-20	160	62	30	30	60	18	1.89
TSC-24-200	M-24	200	72	38	35	80	21	3.39
TSC-30-250	M-30	250	72	48	45	100	28	5.26

STRAP CLAMP - FORGED BODY Tapped End

The most popular sizes of strap clamps are now made in forged body with additional benefit of tapped end for threaded supports.

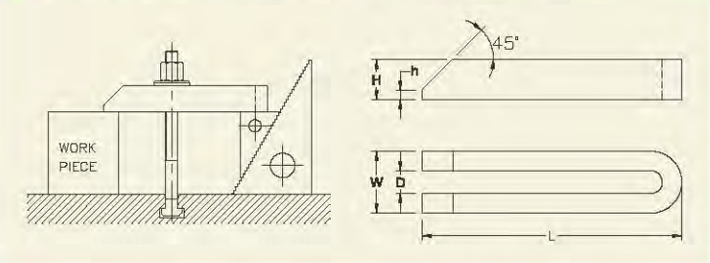
MODEL	SUITABLE FOR BOLT	LENGTH	WIDTH	THICKNESS	SLOT LENGTH	TAPPED END	N. W. Kgs.
TSCF-12	M-12	120	44	19	55	M-12	0.55
TSCF-16	M-16	140	50	22	65	M-16	0.86
TSCF-20	M-20	180	62	28	86	M-20	1.61
TSCF-24	M-24	220	76	35	102	M-24	3.28

PLAIN CLAMP Hardened & Tempered

These are economy models of strap clamps. Can be used where simple shape of a plain strap can serve the purpose.

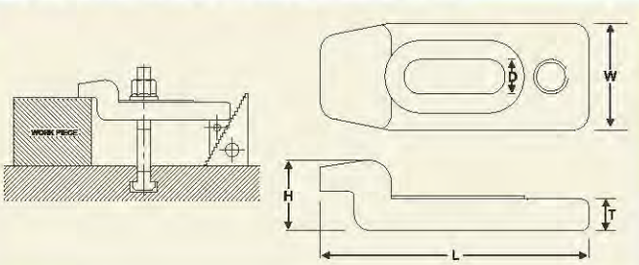
MODEL	SUITABLE FOR BOLT	LENGTH	WIDTH	THICKNESS	SLOT LENGTH	N. W. Kgs.
TES - 12	M-12	70	38	11	35	0.20
TES - 16	M-16	90	48	18	45	0.50

U - CLAMP Hardened & Tempered, Black Finish



MODEL	D SUITABLE FOR BOLT	L	W	H	h	N. W. Kgs.
TUC-12-160	M-12	160	38	24	6	0.68
TUC-16-200	M-16	200	50	30	8	1.44
TUC-20-250	M-20	250	62	38	10	2.72
TUC-24-250	M-24	250	66	38	10	2.72

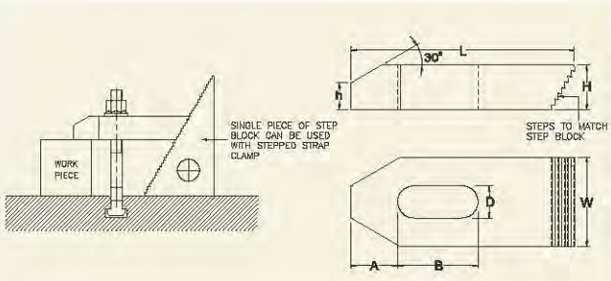
GOOSE NECK CLAMP - FORGED STEEL



MODEL	D SUITABLE FOR BOLT	L	H	W	T	N. W. Kgs.
TGNCF-12	M-12	125	33	50	18	0.65
TGNCF-16	M-16	125	33	50	18	0.65
TGNCF-20	M-20	165	47	68	24	1.44
TGNCF-24	M-24	200	52	76	28	2.34

STEPPED STRAP CLAMP Hardened & Tempered, Black Finish

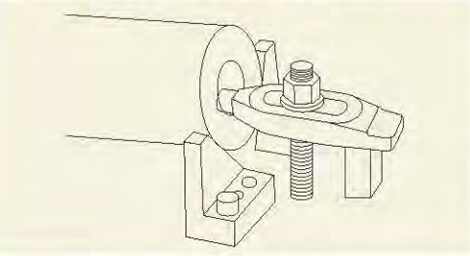
These Strap Clamps have teeth at rear matching to that of Step Blocks for the Step Blocks to be used as supports. Unlike other clamps, single piece of Step Block not a pair can be used as support with Stepped Strap Clamp.



MODEL	D SUITABLE FOR BOLT	L	W	H	A	B	h	N. W. Kgs.
TSSC-10-60	M-10	60	30	15	15	20	9	0.16
TSSC-10-80	M-10	80	30	15	15	30	9	0.22
TSSC-10-120	M-10	120	30	15	15	45	9	0.33
TSSC-12-65	M-12	65	30	15	15	25	9	0.16
TSSC-12-100	M-12	100	38	18	21	35	12	0.42
TSSC-12-125	M-12	125	38	18	21	45	12	0.55
TSSC-16-75	M-16	75	38	18	21	32	12	0.29
TSSC-16-125	M-16	125	48	24	26	45	15	0.75
TSSC-16-160	M-16	160	48	24	26	65	15	1.10
TSSC-20-160	M-20	160	62	30	30	60	18	1.64
TSSC-24-200	M-24	200	72	38	35	80	21	3.21

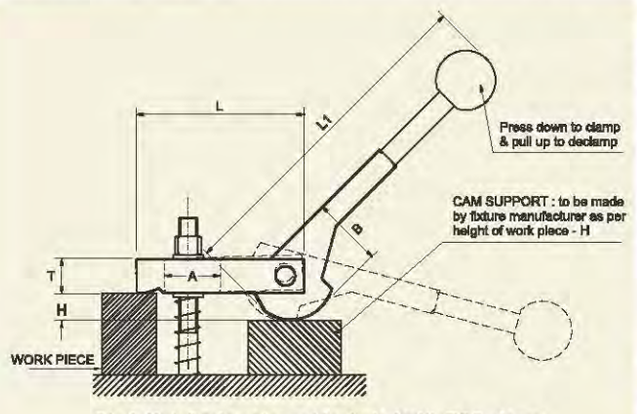
FINGER STRAP CLAMP Forged Steel

Finger clamp is specially designed for holding at curved surfaces or inside holes. Most useful for clamping of heavy blocks while machining where there are no steps for clamping and top surface has to be left clear for machining. In such cases holes are drilled on the side faces and finger clamps can be used for clamping on that holes.



MODEL	SUITABLE FOR BOLT	LENGTH	WIDTH	THICK NESS	SLOT LENGTH	FINGER DIA	N. W. Kgs.
TCF -16	M-16	152	44	22	66	18	0.73

CAM CLAMP - HOLD DOWN TYPE - FOR QUICK CLAMPING ON MACHINING FIXTURES



Stud, Nut, Spring etc. not included with TCC clamp

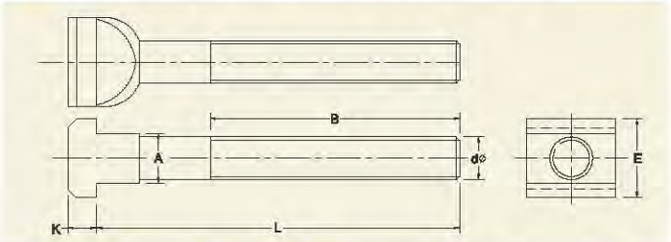
Most ideal for quick Hold Down Clamping in fixtures. Conventional Strap Clamps in fixtures can be replaced by these quick acting Cam clamps without much effort. These clamps have high clamping force suitable for machining fixtures.

MODEL	SUITABLE FOR CLAMPING BOLT	L	T	WIDTH OF CLAMP	A	B	L1	H	HOLDING CAPACITY	N. W. Kgs.
TCC-10	M10	90	19	30	30	38	180	14	1400 Kgs.	0.56
TCC-12	M12	100	24	38	35	38	180	12	2000 Kgs.	0.86

2D / 3D CAD FILES AVAILABLE

T-BOLT Forged Head, Hardened & Tempered, High Tensile Steel, Black Finish

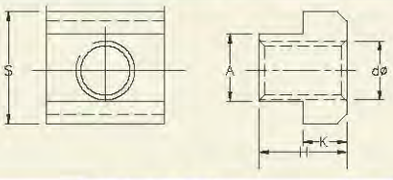
based on IS:2014



MODEL	A SUITABLE FOR T-SLOT SIZE	E	K	L	dØ THREAD SIZE	B	N. W. Kgs.
TTB-1212-80	12	18	7	80	M12	40	0.08
TTB-1212-100				100		60	0.10
TTB-1212-160				160		100	0.14
TTB-1214-60	14	22	8	60	M12	35	0.09
TTB-1214-80				80		55	0.10
TTB-1214-100				100		65	0.12
TTB-1214-125				125		80	0.14
TTB-1214-160				160		100	0.16
TTB-1214-200				200		125	0.19
TTB-1616-80	16	25	9	80	M16	40	0.17
TTB-1616-130				130		80	0.23
TTB-1616-200				200		125	0.33
TTB-1618-80	18	28	10	80	M16	55	0.19
TTB-1618-100				100		65	0.22
TTB-1618-130				130		80	0.25
TTB-1618-160				160		100	0.29
TTB-1618-200				200		125	0.35
TTB-1618-250				250		155	0.40
TTB-1618-290				290		175	0.47
TTB-2020-110	20	32	12	110	M20	70	0.35
TTB-2020-150				150		95	0.43
TTB-2020-210				210		130	0.55
TTB-2022-110	22	35	14	110	M20	70	0.40
TTB-2022-150				150		95	0.48
TTB-2022-210				210		130	0.60
TTB-2022-285				285		170	0.76
TTB-2424-150	24	40	16	150	M24	95	0.68
TTB-2424-210				210		130	0.87
TTB-2428-110	28	44	18	110	M24	65	0.67
TTB-2428-150				150		95	0.79
TTB-2428-210				210		130	0.96
TTB-2428-250				250		160	1.10
TTB-2428-300				300		190	1.23
TTB-3036-200	36	54	22	200	M30	130	1.52
TTB-3036-250				250		150	1.77
TTB-3036-300				300		190	2.02

T- NUT Hardened & Tempered, Black Finish

based on IS : 2015



MODEL	A SUITABLE FOR T-SLOT SIZE	dø THREAD SIZE	H	K	S	N. W. Kgs.
TTN-10-8	10	M-8	12	6	15	0.015
TTN-12-10*	12	M-10	14	7	18	0.02
TTN-14-10	14	M-10	16	8	22	0.04
TTN-14-12*	14	M-12	16	8	22	0.035
TTN-16-12	16	M-12	18	9	25	0.055
TTN-16-14*	16	M-14	18	9	25	0.05
TTN-18-12	18	M-12	20	10	28	0.085
TTN-18-16*	18	M-16	20	10	28	0.07

MODEL	A SUITABLE FOR T-SLOT SIZE	dø THREAD SIZE	H	K	S	N. W. Kgs.
TTN-20-16	20	M-16	24	12	32	0.12
TTN-22-16	22	M-16	28	14	35	0.18
TTN-22-20*	22	M-20	28	14	35	0.15
TTN-24-20	24	M-20	32	16	40	0.24
TTN-28-24	28	M-24	36	18	44	0.33
TTN-36-24	36	M-24	44	22	54	0.64
TTN-36-30	36	M-30	44	22	54	0.55

*** marked models are not recommended for heavy duty use because of less wall thickness outside the threading.**

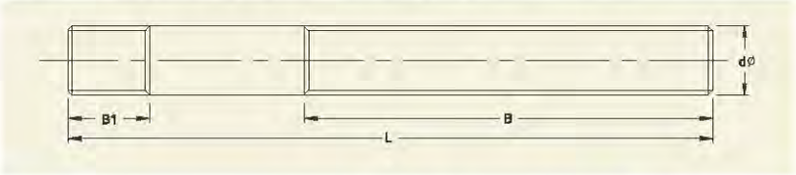
T-Slot size mentioned in these pages is size 'A' of the T-Slot as shown here.

CLAMPING STUD - FOR USE WITH T-NUTS

based on IS : 1862

Hardened & Tempered, High Tensile Steel, Black Finish.

These Studs are meant to be used with T-nuts to be tightened on smaller threaded length B1 shown in figure below and longer threaded length B shown in figure below is to accommodate Clamp / Nut / Washer etc.



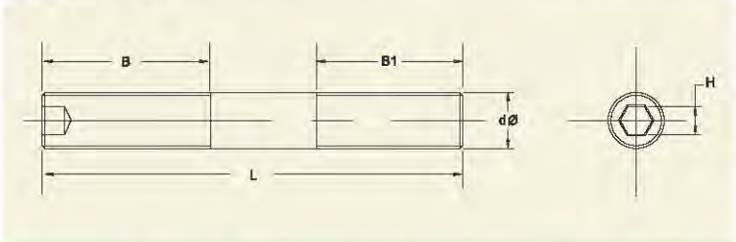
MODEL	dØ THREAD SIZE	L	B1	B	N. W. Kgs
TCS-8-75	M-8	75	11	48	0.025
TCS-8-100		100		63	0.03
TCS-8-150		150		95	0.05
TCS-10-75	M-10	75	13	48	0.04
TCS-10-100		100		63	0.05
TCS-10-125		125		75	0.065
TCS-10-150		150		95	0.075
TCS-10-175		175		110	0.09
TCS-10-200		200		125	0.10
TCS-12-75	M-12	75	15	48	0.055
TCS-12-100		100		63	0.075
TCS-12-125		125		75	0.09
TCS-12-150		150		95	0.11
TCS-12-175		175		110	0.13
TCS-12-200		200		125	0.15
TCS-12-250		250		160	0.19
TCS-12-300		300		190	0.23
TCS-14-100	M-14	100	17	63	0.10
TCS-14-150		150		95	0.15
TCS-14-200		200		125	0.21
TCS-14-250		250		160	0.26
TCS-16-75	M-16	75	19	50	0.10
TCS-16-100		100		63	0.13
TCS-16-125		125		75	0.17
TCS-16-150		150		95	0.20
TCS-16-175		175		110	0.24
TCS-16-200		200		125	0.27
TCS-16-250		250		160	0.34
TCS-16-300		300		190	0.41

MODEL	dØ THREAD SIZE	L	B1	B	N. W. Kgs.
TCS-20-100	M-20	100	27	60	0.21
TCS-20-150		150		95	0.31
TCS-20-200		200		125	0.42
TCS-20-250		250		160	0.53
TCS-20-300		300		190	0.63
TCS-20-400		400		250	0.86
TCS-20-500		500		250	1.11
TCS-24-150	M-24	150	35	95	0.41
TCS-24-200		200		120	0.61
TCS-24-250		250		160	0.76
TCS-24-300		300		190	0.92
TCS-24-400		400		250	1.23
TCS-24-500		500		250	1.58
TCS-30-150	M-30	150	43	95	0.69
TCS-30-200		200		120	0.95
TCS-30-250		250		160	1.18
TCS-30-300		300		190	1.40
TCS-30-400		400		250	1.93
TCS-30-500		500		250	2.47

CLAMPING STUD - FOR USE ON MACHINE BEDS HAVING TAPPED HOLES

Hardened & Tempered, High Tensile Steel, Black Finish.

These Studs having longer threaded length of side B1 shown in figure below which enables use on threaded platens of moulding machines or threaded beds of presses for longer insertion in the tapped holes. These studs also have a **hex key hole at top face for tightening** & loosening with of a hex key.



MODEL	dØ THREAD SIZE	L	B1	B	H	N. W. Kgs.
TCSB-12-100	M-12	100	30	40	6	0.07
TCSB-12-125		125		50		0.09
TCSB-12-150		150		65		0.12
TCSB-12-175		175		80		0.13
TCSB-16-125	M-16	125	40	50	8	0.17
TCSB-16-150		150		65		0.20
TCSB-16-175		175		80		0.23
TCSB-16-200		200		100		0.27

MODEL	dØ THREAD SIZE	L	B1	B	H	N. W. Kgs.
TCSB-20-150	M-20	150	50	60	10	0.31
TCSB-20-175		175		70		0.37
TCSB-20-200		200		80		0.43
TCSB-24-175	M-24	175	60	70	12	0.52
TCSB-24-200		200		80		0.60
TCSB-24-225		225		90		0.68

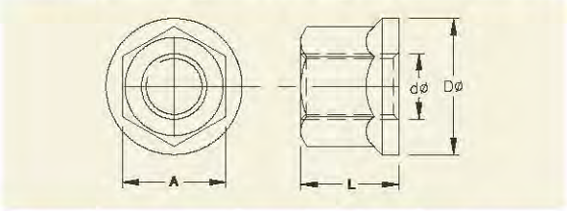
EXTRA LONG NUT Hardened & Tempered, Black Finish

These nuts have longer life as they have more number of threads than ordinary nuts.

MODEL	THREAD SIZE	TOTAL LENGTH	TIGHTENING TORQUE Nm Max.*	N. W. Kgs.
TELN-8	M-8	12	25	0.01
TELN-10	M-10	15	50	0.02
TELN-12	M-12	18	90	0.03
TELN-14	M-14	21	140	0.045
TELN-16	M-16	24	220	0.06
TELN-20	M-20	30	420	0.12
TELN-24	M-24	36	730	0.20
TELN-30	M-30	45	1450	0.41

FLANGED NUT Forged, Hardened & Tempered, Black Finish

These nuts have flanged face for larger face contact with the surface to be tightened on.



MODEL	dØ THREAD SIZE	DØ	A	L	TIGHTENING TORQUE Nm Max.*	N. W. Kgs.
TFN-10	M-10	22	17	15	50	0.02
TFN-12	M-12	25	19	18	90	0.035
TFN-16	M-16	32	24	24	220	0.07
TFN-20	M-20	40	30	30	420	0.14
TFN-24	M-24	47	36	36	730	0.23

* Exceeding maximum torque could damage threads.

EXTENSION NUT Hardened & Tempered, Black Finish

These nuts are used to couple the studs with studs or T- Bolts in order to increase their length.

MODEL	THREAD SIZE	TOTAL LENGTH	N. W. Kgs.
TEN-8	M-8	24	0.02
TEN-10	M-10	30	0.04
TEN-12	M-12	36	0.06
TEN-14	M-14	42	0.09
TEN-16	M-16	48	0.12
TEN-20	M-20	60	0.23
TEN-24	M-24	72	0.41
TEN-30	M-30	90	0.82

PLAIN WASHER Case Hardened, Black Finish

based on IS : 4291

MODEL	SUITABLE FOR BOLT	THICKNESS	OUTSIDE DIA.	N. W. Kgs.
TPW-8	M-8	4	23	0.01
TPW-10	M-10	4	28	0.015
TPW-12	M-12	5	35	0.03
TPW-14	M-14	6	40	0.05
TPW-16	M-16	7	45	0.07
TPW-20	M-20	7	48	0.07
TPW-24	M-24	9	60	0.15
TPW-30	M-30	11	70	0.25

C-WASHER Case Hardened, Ground Faces, Black Finish

based on IS : 4291

Knurled outside diameter for easy gripping while quick insertion or removal.

MODEL	SUITABLE FOR BOLT	THICKNESS	OUTSIDE DIA.	N. W. Kgs.
TCW-10	M-10	9	40	0.07
TCW-12	M-12	9	48	0.11
TCW-14	M-14	11	63	0.20
TCW-16	M-16	11	63	0.20
TCW-20	M-20	11	80	0.36
TCW-24	M-24	12	100	0.59
TCW-30	M-30	14	100	0.64

CLAMPING KIT - 58 PIECE (WITH STEP BLOCKS & STEPPED STRAP CLAMPS)

'TOOLFAST' Clamping Kit - 58 piece is available in an attractive powder coated metallic rack which can be hanged on machines or a wall or kept on a table. Each kit consists of all important clamping elements required to clamp a variety of work pieces. Following table shows the contents of each model of clamping kit suitable for different T-Slot sizes. All the items of clamping kit are taken from our range of products given in this catalogue.

CONTENTS \ MODEL	TCK-58-1210 T-SLOT SIZE 12MM (M-10)	TCK-58-1410 T-SLOT SIZE 14MM (M-10)	TCK-58-1412L T-SLOT SIZE 14MM (M-12)	TCK-58-1412 T-SLOT SIZE 14MM (M-12)	TCK-58-1612L T-SLOT SIZE 16MM (M-12)	TCK-58-1612 T-SLOT SIZE 16MM (M-12)	TCK-58-1812 T-SLOT SIZE 18MM (M-12)	TCK-58-1816 T-SLOT SIZE 18MM (M-16)	TCK-58-2016 T-SLOT SIZE 20MM (M-16)	TCK-58-2216 T-SLOT SIZE 22MM (M-16)
 T-NUTS (6 nos.)	TTN-12-10	TTN-14-10	TTN-14-12	TTN-14-12	TTN-16-12	TTN-16-12	TTN-18-12	TTN-18-16	TTN-20-16	TTN-22-16
 CLAMPING STUDS (4 nos. each size)	TCS-10-75 TCS-10-100 TCS-10-125 TCS-10-150 TCS-10-175 TCS-10-200	TCS-10-75 TCS-10-100 TCS-10-125 TCS-10-150 TCS-10-175 TCS-10-200	TCS-12-75 TCS-12-100 TCS-12-125 TCS-12-150 TCS-12-175 TCS-12-200	TCS-12-75 TCS-12-100 TCS-12-125 TCS-12-150 TCS-12-175 TCS-12-200	TCS-12-75 TCS-12-100 TCS-12-125 TCS-12-150 TCS-12-175 TCS-12-200	TCS-12-75 TCS-12-100 TCS-12-125 TCS-12-150 TCS-12-175 TCS-12-200	TCS-12-75 TCS-12-100 TCS-12-125 TCS-12-150 TCS-12-175 TCS-12-200	TCS-16 -75 TCS-16 -100 TCS-16 -125 TCS-16 -150 TCS-16 -175 TCS-16 -200	TCS-16 -75 TCS-16 -100 TCS-16 -125 TCS-16 -150 TCS-16 -175 TCS-16 -200	TCS-16 -75 TCS-16 -100 TCS-16 -125 TCS-16 -150 TCS-16 -175 TCS-16 -200
 FLANGED NUTS (6 nos.)	TFN-10	TFN-10	TFN-12	TFN-12	TFN-12	TFN-12	TFN-12	TFN-16	TFN-16	TFN-16
 EXTENSION NUTS (4 nos.)	TEN-10	TEN-10	TEN-12	TEN-12	TEN-12	TEN-12	TEN-12	TEN-16	TEN-16	TEN-16
 STEPPED STRAP CLAMPS (2 nos. each size)	TSSC-10-60 TSSC-10-80 TSSC-10-120	TSSC-10-60 TSSC-10-80 TSSC-10-120	TSSC-12-65 TSSC-12-100 TSSC-12-125	TSSC-12-65 TSSC-12-100 TSSC-12-125	TSSC-12-65 TSSC-12-100 TSSC-12-125	TSSC-12-65 TSSC-12-100 TSSC-12-125	TSSC-12-65 TSSC-12-100 TSSC-12-125	TSSC-16-75 TSSC-16-125 TSSC-16-160	TSSC-16-75 TSSC-16-125 TSSC-16-160	TSSC-16-75 TSSC-16-125 TSSC-16-160
 STEP BLOCKS 2 pairs (4 nos. each size)	TSB-1L TSB-2L TSB-3L	TSB-1L TSB-2L TSB-3L	TSB-1L TSB-2L TSB-3L	TSB-1 TSB-2 TSB-3	TSB-1L TSB-2L TSB-3L	TSB-1 TSB-2 TSB-3	TSB-1 TSB-2 TSB-3	TSB-1 TSB-2 TSB-3	TSB-1 TSB-2 TSB-3	TSB-1 TSB-2 TSB-3
TOTAL NO. OF PIECES	58	58	58	58	58	58	58	58	58	58
N.W. Kgs.	9	9	12	13	12	13	13	18	18.5	19

CLAMPING KIT - 34 PIECE (WITH ADJUSTABLE SUPPORT PLATES & STRAP CLAMPS)

'TOOLFAST' Clamping Kit - 34 piece is an economical clamping kit housed in an elegant wooden box. Following table shows the contents of each model of clamping kit suitable for different T-Slot sizes. All the items of clamping kit are taken from our range of products given in this catalogue.

Also Included T-Slot Cleaner FREE

MODEL / CONTENTS	TCK-34-1412 T-SLOT SIZE 14MM (M-12)	TCK-34-1612 T-SLOT SIZE 16MM (M-12)	TCK-34-1812 T-SLOT SIZE 18MM (M-12)
T-NUTS	TTN-14-12 - 4 nos.	TTN-16-12 - 4 nos.	TTN-18-12 - 4 nos.
CLAMPING STUDS	TCS-12-75 - 4 nos. TCS-12-100 - 4 nos. TCS-12-150 - 4 nos TCS-12-200 - 4 nos.	TCS-12-75 - 4 nos. TCS-12-100 - 4 nos. TCS-12-150 - 4 nos. TCS-12-200 - 4 nos.	TCS-12-75 - 4 nos. TCS-12-100 - 4 nos. TCS-12-150 - 4 nos. TCS-12-200 - 4 nos.
FLANGED NUTS	TFN-12 - 4 nos.	TFN-12 - 4 nos.	TFN-12 - 4 nos.
EXTENSION NUTS	TEN-12 - 2 nos.	TEN-12 - 2 nos.	TEN-12 - 2 nos.
STRAP CLAMPS	TSC-12-100 - 2 nos. TSC-12-125 - 2 nos.	TSC-12-100 - 2 nos. TSC-12-125 - 2 nos.	TSC-12-100 - 2 nos. TSC-12-125 - 2 nos.
ADJUSTABLE SUPPORT PLATES	TASP-250 - 2 nos. TASP-2100 - 2 nos.	TASP-250 - 2 nos. TASP-2100 - 2 nos.	TASP-250 - 2 nos. TASP-2100 - 2 nos.
TOTAL NO. OF PIECES	34 PIECES	34 PIECES	34 PIECES
N.W. Kgs.	9.2	9.3	9.4

CMM CLAMPING KIT - 62 PIECE (WITH ALUMINIUM / PLASTIC ELEMENTS) MODEL CMMCK - 62

'TOOLFAST' CMM clamping kit is specially designed for 3D coordinate measuring machine and other inspection and gauging applications. The light weight construction of the aluminium clamps and aluminium / plastic elements prevent damage to granite plates and delicate workpieces.

M-8 threaded* elements with hand-tightening design allows the user to apply a limited hold down force most suitable for inspection clamping.

All 62 pieces are suitably housed in an elegant wooden box N.W. 2.0 kgs.

Each Kit Contains :

- 28 nos. **Studs** of M-8 threads made out of suitable aluminium Alloy - 4nos. each of 50mm, 75mm, 100mm, 125mm, 150mm, 175mm and 200 mm length.

- 8nos. of M-8 **Flanged Nuts** made of suitable aluminium alloy designed for hand-tightening without spanner. These nuts can also be used as extension nuts for joining studs.

- 6nos. **Strap Clamps** suitable for M-8 studs made out of suitable aluminium alloy - 2nos. each of 60mm, 100mm and 140mm length.

- 8nos. Aluminium **Screw Jacks**
  Closed Height = 38 mm
  Max open Height = 56 mm
  Top = Flat face having M-8 female thread
  Bottom = M-8 screw-in type for thread mounting on the granite plate of CMM.

- 4nos. Aluminium **Top Rest Pads** for Screw Jacks
  2nos. with 'V' on top face and 2nos. having conical top face

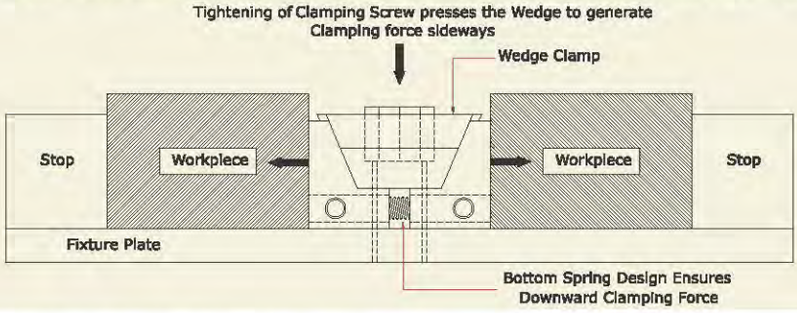
- 8nos. Plastic **Bottom Rest Pads** with M-8 blind hole for use as rest pads at the bottom of screw jacks when screw jacks have to be used directly on the granite surface as shown in picture (a) or for use as rest pads at the bottom of studs when the studs have to be used as threaded supports of strap clamps as shown in picture (b).

(a) (b)

* FOR CMM BEDS WITH M-10 OR M-12 THREAD, **ADAPTORS ARE AVAILABLE ON REQUEST** TO ENABLE USE OF ABOVE CLAMPING KIT.

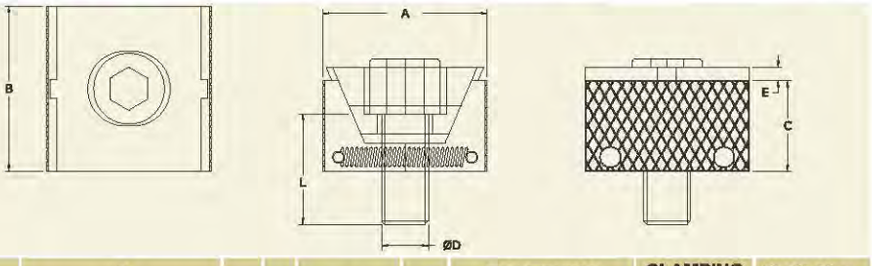
WEDGE CLAMP - RIGID BODY, HARDENED TOOL STEEL, DOWNWARD FORCE

'TOOLFAST' manufactures all models of wedge clamps with new patented design now in India.



- Improved patented design with bottom spring ensures downward Clamping force
- Hidden spring eliminates clogging of chips in spring coil

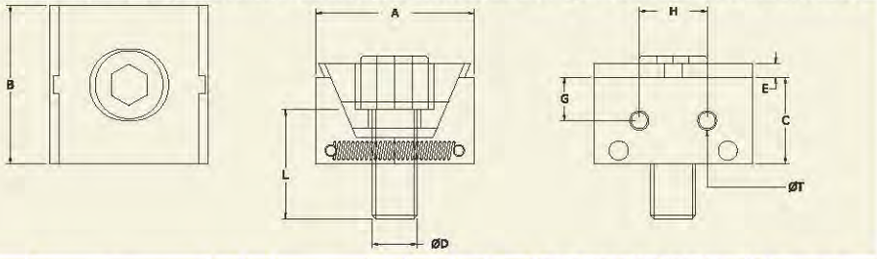
WEDGE CLAMP - TWC Series - Serrated Hardened Jaws



MODEL	A			B	C	ØD X L	E	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs. (Including Clamping bolt)
	min.	optimum	max.							
TWC-8	27	29 ~ 30	32	31	16	M8 X 20	2	40	2500 Kgs.	0.09
TWC-12	42	45 ~ 46	49	42	23	M12 X 30	3.5	140	5000 Kgs.	0.26
TWC-16	57	61 ~ 63	66	58	30	M16 X 35	4	350	10000 Kgs.	0.66

WEDGE CLAMP - TWC-P Series - Plain Hardened Jaws with Tapped holes

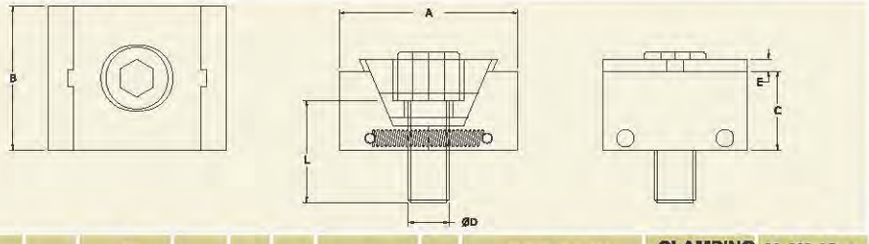
These have plain hardened jaws with added two tapped holes for attaching additional jaw inserts if need be.



MODEL	A			B	C	ØD X L	E	G	H	ØT	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs. (Including Clamping bolt)
	min.	optimum	max.										
TWC-8P	27	29 ~ 30	32	31	16	M8 X 20	2	7.5	12	M-5	40	2500 Kgs.	0.09
TWC-12P	42	45 ~ 46	49	42	23	M12 X 30	3.5	11.5	18	M-5	140	5000 Kgs.	0.26
TWC-16P	57	61 ~ 63	66	58	30	M16 X 35	4	15	26	M-5	350	10000 Kgs.	0.66

WEDGE CLAMP - TWC-M Series - Machinable Jaws

These have extra material on jaws(soft) to machine as per the workpiece shape enabling fixturing of uneven or unusual shape workpieces.

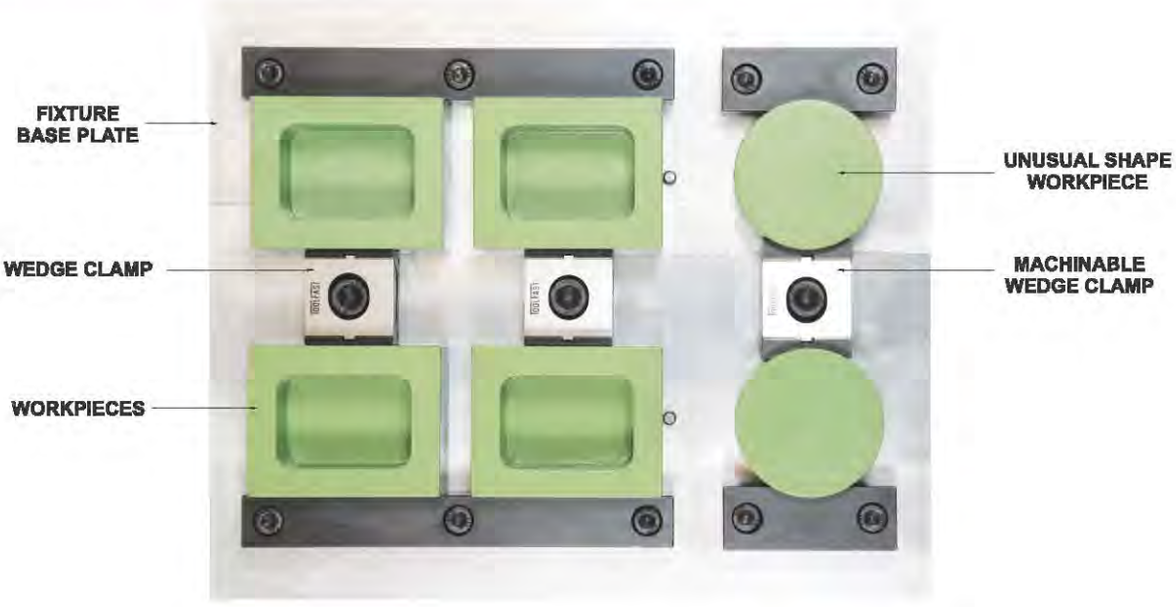


MODEL		A		B	C	ØD X L	E	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs. (Including Clamping bolt)
	min.	optimum	max.							
TWC-8M	33	35 ~ 36	38	31	16	M8 X 20	2	40	2500 Kgs.	0.12
TWC-12M	52	55 ~ 56	59	42	23	M12 X 30	3.5	140	5000 Kgs.	0.34
TWC-16M	67	71 ~ 73	76	58	30	M16 X 35	4	350	10000 Kgs.	0.86

2D / 3D CAD FILES AVAILABLE ON REQUEST

* Exceeding the maximum torque damages the clamp parts and warranty expires.

MULTIPLE WORKPIECE CLAMPING FIXTURES WITH TWC SERIES WEDGE CLAMPS DESIGNED & MANUFACTURED BY TOOLFAST

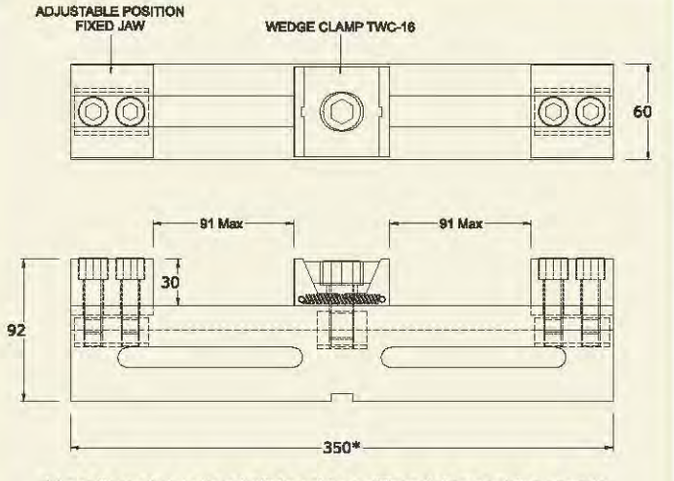


If your workpiece is suitable for clamping with 'TOOLFAST' Wedge clamps, our team can design and manufacture a multiple clamping fixture for you as the one shown in the picture.

Please send in your enquiries with workpiece / machine table specifications of your Machining Center to enable us check suitability of our WEDGE CLAMPS and submit an offer to you.

MULTIPLE CLAMPING VICE WITH TWC-16 WEDGE CLAMPS

TOOLFAST offers a standard 60mm jaw width vice which is capable of clamping multiple workpieces. All parts such as TWC wedge clamp, fixed jaws and the main body are modular and interchangeable.



* Length can be custom built to achieve different Jaw opening or more number of workpieces

- Model VTWC-16-60-350 available as standard having overall length 350mm capable of jaw opening 91mm in case of two workpieces.
- This vice can also be supplied in custom built lengths to suit different sizes of workpieces. Send your enquiries to us if you feel that 60mm jaw width vice is suitable for your workpiece. Additional fixed jaws and TWC series clamps can be included in the vice if more than two workpieces to be clamped.
- For uneven or unusual shape workpieces, TWC-M and TWC-P series wedge clamps can also be used in above vice.

PRECISION STEEL PARALLELS

'TOOLFAST' Steel Parallels are used as precision packing supports under jobs or fixtures. Made from tool steel, hardened, tempered & precision ground in matched pairs. Matched pairs are marked with identical serial numbers. All sides are chamfered. Overall sizes are nominal.

- ❑ **Hardened & Tempered 52 - 56 HRC.**
- ❑ **Parallelism within 0.005mm upto 200mm length.**
- ❑ **Inspection certificate is furnished.**

MODEL	SIZE	N. W. Kgs.
TSP-20	10 x 20 x 150	0.47
TSP-35	15 x 35 x 150	1.24
TSP-45	20 x 45 x 200	2.80
TSP-55	25 x 55 x 250	5.34
TSP-60	30 x 60 x 300	8.50
TSP-75	45 x 75 x 300	15.80

EDGE FINDER

TOOLFAST' Edge Finder is used for fast and accurate location of starting point of work pieces with respect to the machine spindle on milling or jig boring machine tables.

Application: Edge finder is used for location of edges, shoulders, grooves etc. of work pieces kept on machine table with respect to the machine spindle. Shank of the Edge Finder is held in the collet or chuck and work table is traversed to cause the rotating tip of the edge finder make contact with the edge of the work piece to be located. Once the rotating tip comes in contact with the work piece, work table is further traversed so that the rotating tip shifts to a concentric position with respect to the shank. Now any movement to "off centre" will cause a distinct 'wobble'. At this point, the distance from the work edge to the centre of machine spindle is equal to half the diameter of the tip of the edge finder. Available in single & double ended tip. In double ended tip, Edge Finder can be held from both ends and both the tips of two different sizes can be used for edge finding.

Shank and tip of the edge finder are coupled together with the help of an internal spring for independent rotation of both. It is hardened and accurately ground all over to ensure repeatability of work location within 0.01 mm.

MODEL	SHANK DIA	TIP DIA	TYPE	N. W. Kgs.
EF-S1	10	10	Edge Finder-single end	0.03
EF-D1	10	5 &10	Edge Finder-double end	0.03
EFR-10	10	10	Edge Finder-disc type	0.06
EFR-104	10	4 & 10	Disc Type - double end	0.06

EF-S1 EF-D1 EFR-10 EFR-104

GRINDING VICE - SCREW TYPE

'TOOLFAST' Grinding Vice - screw type is a precision machine vice. Body & jaw made of tool steel, hardened, tempered & precision ground.

- ❑**Hardened & Tempered to 52 - 56 HRC.**
- ❑ **All sides Parallelism & Squareness within ± 0.005mm.**
- ❑ **Inspection certificate is furnished.**

MODEL	JAW WIDTH	JAW DEPTH	MAX. JAW OPENING	OVERALL LENGTH	OVERALL HEIGHT	N. W. Kgs.
GV-65	63	32	85	190	65	4.4
GV-75	73	35	100	210	74	6.2
GV-90	88	40	125	250	88	10.0
GV-100	100	45	125	260	95	13.0
GV-125	125	50	158	300	110	20.0
GV-150	150	50	175	315	110	24.5

PRECISION SINE VICE

'TOOLFAST' Precision Sine Vice is used to obtain precise angles by means of gauge blocks. Apart from its use on milling and grinding machine, this Sine Vice can also be used as a reference for inspection.

- ❑ **All Hardened & Tempered to 52 - 56 HRC.**
- ❑ **All side Parallelism & Squareness within ± 0.005mm.**
- ❑ **Centre distance of rollers within ± 0.005mm.**
- ❑ **Inspection certificate is furnished.**

Chart for setting sine angles with the help of gauge blocks is provided.

MODEL	JAW WIDTH	JAW DEPTH	MAX. JAW OPENING	OVERALL LENGTH	OVERALL HEIGHT	N. W. Kgs.
PSV-2	50	25	65	140	80	3.2
PSV-3	73	35	100	190	104	7.2
PSV-4	100	45	125	245	134	16.5

PRECISION COMPOUND SINE VICE - SCREW TYPE

'TOOLFAST' Precision compound Sine Vice has compound sine angle setting on two sine plates. Both the tiltings are controlled by fine screws.

- ❑ **All Hardened & Tempered to 52 - 56 HRC.**
- ❑ **All side Parallelism & Squareness within ± 0.005mm.**
- ❑ **Centre distance of rollers within ± 0.005mm.**
- ❑ **Inspection certificate is furnished.**

Charts for setting both sine angles with the help of gauge blocks is provided.

MODEL	JAW WIDTH	JAW DEPTH	MAX. JAW OPENING	OVERALL LENGTH	OVERALL HEIGHT	N. W. Kgs.
CSGV-3	75	30	76	160	124	9.0

STEEL V-BLOCK

'TOOLFAST' Steel V-Blocks are made of tool steel, hardened, tempered & precision ground on all sides. These are supplied in matched pairs having both sides 'V' with one clamp.

- ❑ **Unbreakable Steel Clamp.**
- ❑ **All Hardened & Tempered 52 - 56 HRC.**
- ❑ **Parallelism & Squareness of all faces & 'V' within ± 0.005mm.**
- ❑ **Inspection certificate is furnished.**

MODEL	LENGTH	HEIGHT	WIDTH	HOLDING CAPACITY Ø MAX	N. W. Kgs. (Pair with one clamp)
SVB-50	50	37	37	35	1.1
SVB-80	80	60	60	60	3.8
SVB-100	100	75	75	75	7.6
SVB-125	125	95	95	90	14.3
SVB-150	150	98	98	95	19.0

MAGNETIC V-BLOCK

'TOOLFAST' Magnetic V-Blocks are precision ground V-Blocks with high power magnets. Accurately fitted magnet ensures easy movement of knob. Available in single as well as matched pairs.
These V-blocks have main holding 'V' and bottom face fitted with hardened steel plates having hardness 52-56 HRC.

- ❑ **Parallelism & Squareness of all faces & 'V' within ± 0.005mm.**
- ❑ **Most suitable for inspection and tool room applications.**
- ❑ **Inspection certificate is furnished.**

MODEL	LENGTH	HEIGHT	WIDTH	N. W. Kgs. (Pair)
MVB-4-H	100	95	75	9.0
MVB-6-H	150	95	75	13.5

C. I. ANGLE PLATE - SLOTTED

'TOOLFAST' C. I. Angle Plate-Slotted is made out of high quality seasoned casting having precision ground outside faces & ends. Machined slots for clamping on both faces.

- ❑ **Accuracy in parallelism & squareness within ± 0.01mm per 200 mm length.**
- ❑ **Inspection certificate is furnished.**

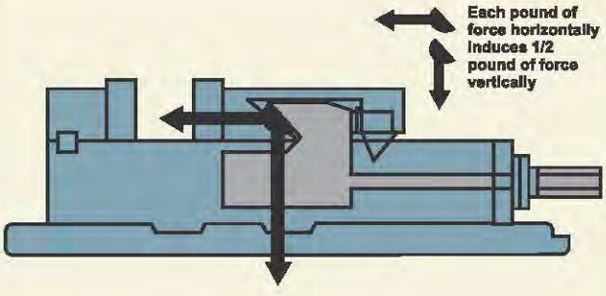
MODEL	SIZE	N. W. Kgs.
APS-110	110 x 85 x 75	2.9
APS-150	150 x 125 x 110	4.7
APS-175	175 x 135 x 110	5.5
APS-200	200 x 150 x 125	8.0
APS-225	225 x 175 x 150	13.0
APS-250	250 x 200 x 150	15.0
APS-300	300 x 225 x 200	25.0

Sizes APS-110 to APS-200 are in open ends type as shown in picture.
Sizes APS-225 to APS-300 are in webbed ends type .

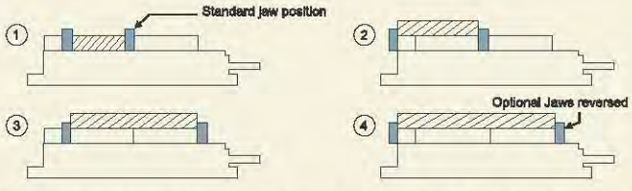
LOCK DOWN JAW MACHINE VICE

FOR MACHINING CENTRE AND MILLING MACHINE

- ❑ Accuracy In Parallelism & Squareness within 0.02 mm
- ❑ Unbreakable ductile Iron cast body
- ❑ No work piece tilt after clamping
- ❑ All parts interchangeable and available as spares
- ❑ Tenons and tenon slots provided for effortless trueing of vice on machine table



Down thrust "Semi Sphere Segment" mechanism eliminates jaw lift and work piece tilt. No need to hammer the workpiece as in other vices.



Examples ②, ③ and ④ shown above are possible only with optional THICK Jaw plates supplied separately on demand.

MODEL	JAW WIDTH	MAX. JAW OPENING WITH STANDARD JAW POSITION	MAX. JAW OPENING WITH JAWS REVERSED	JAW DEPTH	OVERALL LENGTH	OVERALL HEIGHT WITH SWIVAL BASE	OVERALL HEIGHT WITHOUT SWIVAL BASE	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N.W. WITH SWIVAL BASE Kgs.	N.W. WITHOUT SWIVAL BASE Kgs.
MMV-4-H	110	105	270	37	330	135	95	150	2000 Kgs.	22	16
MMV-6-HXL	160	190	395	48	430	160	115	580	3500 Kgs.	49	38
MMV-8-H	210	210	480	60	550	190	145	650	4000 Kgs.	80	62

* Required torque can be achieved by tightening handle included with vice. Applying extra torque by using extension pipe or by hammering damages the vice parts and warranty expires.

OPTIONAL ACCESSORIES

SWIVAL BASE:
Available separately for all above three sizes of vice.

OPTIONAL JAWS FOR MMV-6HXL

SERRATED JAW PLATE

Dimensions same as standard plain Jaw but having serrations for extra grip.

V-JAW PLATE

MACHINABLE JAW PLATE

- Extra thick (40mm) for carving part shapes into jaw plate.
- Reversible top to bottom and front to back, (counter bore both sides).
- Available in Aluminium and steel both.

PRECISION MODULAR VISE 'STANDARD SERIES' WITH GUIDED MOVABLE JAW (ART. 1)

VISE WITH STANDARD ACCESSORIES

- ❑ High precision and gang operation
- ❑ Pull down easy to change jaws
- ❑ Unlimited longevity
- ❑ Space saving design
- ❑ No "wear" construction
- ❑ Unlimited clamping range
- ❑ All steel construction hardened and ground HRc60

ART. 1	VISE SIZE																		
	1	2	3	4					5					6					
JAW WIDTH	100	125	150	175					200					300					
JAW DEPTH	30	40	50	60					65					80					
MAX. JAW OPENING	100	150	200	300	200	300	400	500	200	300	400	500	600	200	300	400	500	600	700	800

Mention vise size (jaw width) and max. jaw opening for ordering

List of Optional Accessories

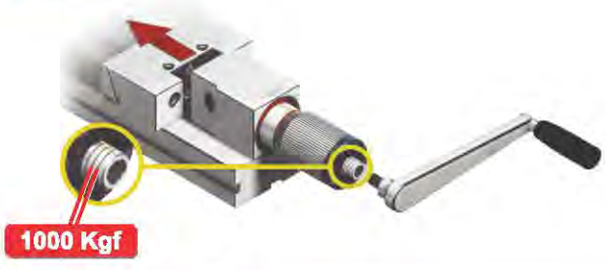
- **A** Swivel base - **ART. 105**
- **B** Blocking support with hydraulic cylinder - **ART. 271**
- **C** Hydraulic hand screw blocking device - **ART. 257**
- **D** Intermediate movable jaw with double step - **ART. 212**
- **E** Floating movable jaw for round parts - **ART. 210**
- **F** Fixed stack type prismatic jaw - **ART. 150**
- **G** Fixed and movable stack-type jaws for round parts - **ART.131**
- **H** Square stack-type jaws - **ART. 138**
- **I** Movable jaw with 2 floating segments - **ART. 190**
- **J** Floating movable jaw - hydraulic control - **ART. 188**
- **K** Step-prismatic guided movable jaw - **ART. 217**
- **L** Guided movable jaw - straight plate - **ART. 146**
- **M/N** Extension for fixed and movable jaw with screws - **ART. 132/133**

Optional Accessories

VISE Art. 1

HYDRAULIC CLAMPING OPTION

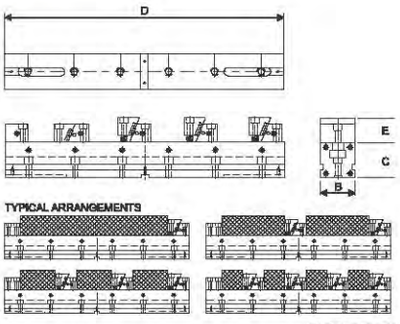
Art. 257



The hand hydraulic clamping group Art.257 is an optional manual power multiplier alternative to the mechanical clamping of above vices. This device allows to reach the same clamping power reachable with the mechanical screw through a minimum effort. The hand hydraulic screw of Art.257 is manually operated by the wrench included. All above Art. 1 vices can be purchased with Art. 257 fitted.

"MULTIFLEX" VICES ART. 600

Available in jaw width 49 mm, 74 mm and 99 mm having jaw opening up to 832 mm for single piece and up to 134 mm each for four work pieces held simultaneously.



The "MULTIFLEX" series vises are a total new concept of modular clamping system able to maximize the machine table capacity and increase its productivity. The comb system even between the fixed and movable jaw, increases and improves the clamping capacity. Each vice is supplied with 1 fixed jaw and 4 fixed-movable jaws, One "T" wrench, 1 pair of positioning key nuts and 4 workstops.

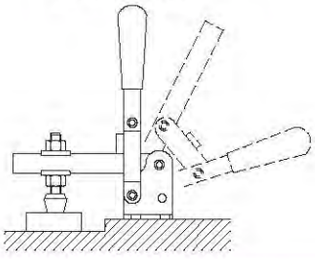
SIZE	D	B	C	E	Max opening according to pieces to be clamped								
					1	2	3	4	5	6	7	8	9
1	300	50	50	32/25	208	75	30	8	\	\	\	\	\
	400	50	50	32/25	308	125	64	33	15	3	\	\	\
	500	50	50	32/25	408	175	96	58	35	19	8	\	\
	600	50	50	32/25	508	225	129	83	55	36	22	12	5
	700	50	50	32/25	608	275	161	108	75	52	36	24	16
2	400	75	75	40	275	100	41	12	\	\	\	\	\
	500	75	75	40	375	150	75	37	15	\	\	\	\
	600	75	75	40	475	200	108	62	35	16	3	\	\
	700	75	75	40	575	250	141	87	55	33	17	6	\
	800	75	75	40	675	300	175	112	75	50	32	18	8
3	700	100	100	60	532	217	112	59	28	7	\	\	\
	800	100	100	60	632	267	145	84	48	23	6	\	\
	900	100	100	60	732	317	178	109	68	39	20	5	\
	1000	100	100	60	832	367	211	134	88	55	34	18	5

INTRODUCTION

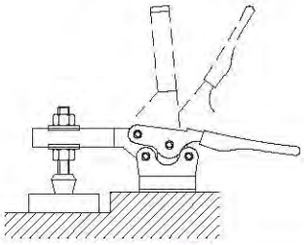
There are four basic types of toggle actions as shown below:

HOLD DOWN ACTION

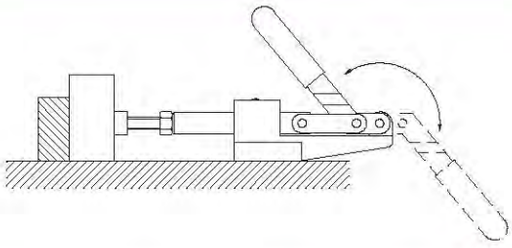
VERTICAL HANDLE



HORIZONTAL HANDLE

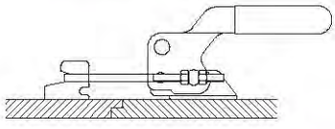


PUSH/PULL ACTION

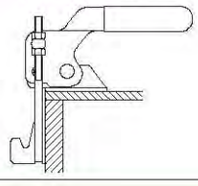


LATCH TYPE PULL ACTION CLAMPS

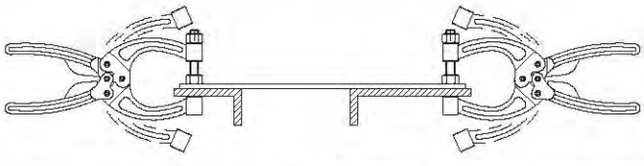
HORIZONTAL LOCKING



VERTICAL LOCKING



SQUEEZE ACTION



Stainless Steel Rivets as Pivot Pins

Rivets Housed in Reamed Hole Bushes

Hardened & Ground Plungers

Red Vinyl Grip Handles

Features of TOOLFAST Toggle Clamps

- Most rivets as pivot pins are of stainless steel for long life of clamps.
- Rivets are housed in reamed hole bushes for accuracy and longer life in most of the models.
- Red Vinyl grip handles for easy identification and operator comfort.
- Pressings from low carbon-cold rolled sheet, zinc plated with blue-brite finish for longer rust prevention.
- Hardened & Ground Plungers & precision machined bearing surfaces in Push/Pull Action Clamps.
- **2D/3D cad files available on request.**

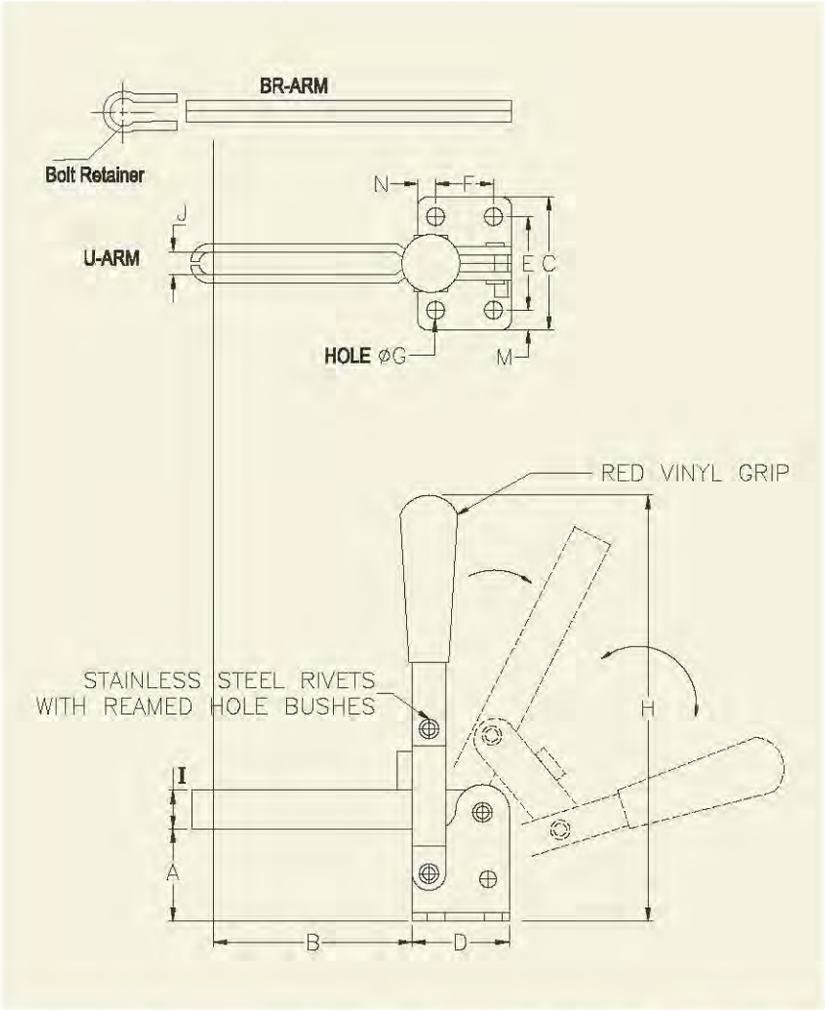
In the following pages of this catalogue different models of above types of toggle clamps manufactured by us to suit different applications are illustrated.

HOLD DOWN TOGGLE CLAMP - VERTICAL HANDLE - FLANGED BASE

These toggle clamps have a flanged base with holes for mounting on the fixture plate. Handle remains in vertical position while clamping. Available in two types of clamping arms as shown below:

U - Arm : This is the most widely used type which permits to locate the clamping spindle anywhere along the length of the arm.

BR - Arm : This type of Arm has Strip Arm onto which the bolt retainer can be welded by the user at any desire angle. Bolt retainer is supplied loose with this model.



U-ARM MODEL

BR-ARM MODEL

VHDT-80-U

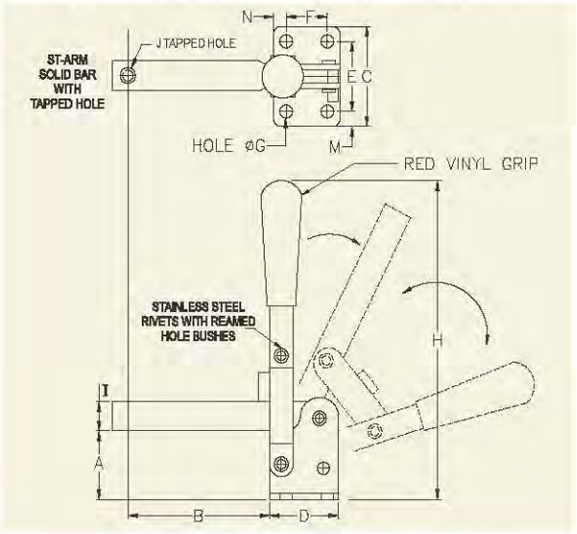
MODEL	ARM TYPE	A	B MAX.	MOUNTING BASE							I	J SUITABLE FOR SPINDLE DIA	H	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	N	ØG					
VHDT-19-U	U-ARM	19	35	32	26	24	15	4	5.5	4.5Ø	12	M-6	90	70 Kgs.	0.11
VHDT-19-BR	BR-ARM		50												0.11
VHDT-25-U	U-ARM	25	35	40	26	27	13	6.5	6.5	5.5Ø	10	M-6	100	100 Kgs.	0.18
VHDT-25-BR	BR-ARM		50												0.19
VHDT-32-U	U-ARM	32	65	43	35	32	19	5.5	8	6.8Ø	16	M-8	145	200 Kgs.	0.34
VHDT-32-BR	BR-ARM		80												0.35
VHDT-45-U	U-ARM	45	95	62	45	44	28	9	8.5	8.5Ø	18	M-10	210	400 Kgs.	0.74
VHDT-45-BR	BR-ARM		115												0.75
VHDT-60-U	U-ARM	60	120	70	55	53	36.5	8.5	9	8.5Ø	20	M-10	270	500 Kgs.	1.35
VHDT-60-BR	BR-ARM		140												1.37
VHDT-80-U	U-ARM	80	135	95	75	70	50	12.5	12.5	10.5Ø	32	M-16	340	700 Kgs.	2.28
VHDT-80-BR	BR-ARM		165												2.31

Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly is provided as standard accessory with all above clamps. U-Arm models are provided with 2 nos. U-Flanged Washers also along with clamping spindle assembly and BR-arm models are provided with bolt retainers along with clamping spindle assembly.

Optional Accessories : User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

HOLD DOWN TOGGLE CLAMP - VERTICAL HANDLE - SOLID ARM

These toggle clamps have a Solid Arm with a tapped hole at the end. This arm can also be cut to any length and hole can be made at any desired position or a separate clamping assembly can be welded at any desired point as per the application.



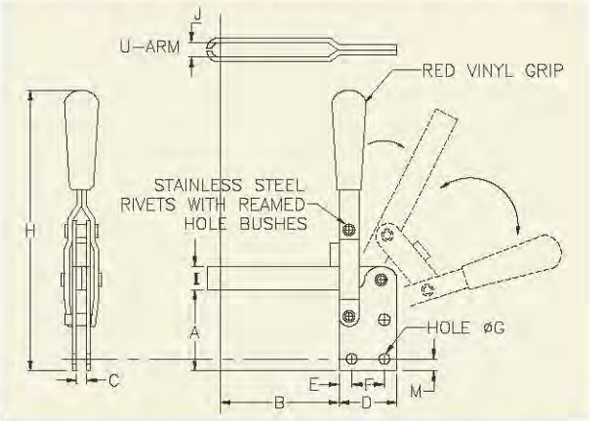
MODEL	ARM TYPE	A	B	MOUNTING BASE							I	J TAPPED HOLE	H	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	N	øG					
VHDT-25-ST	ST-ARM	25	35	40	26	27	13	6.5	6.5	5.5Ø	10	M-6	100	150 Kgs.	0.17
VHDT-32-ST	ST-ARM	32	65	43	35	32	19	5.5	8	6.8Ø	16	M-8	145	250 Kgs.	0.41
VHDT-45-ST	ST-ARM	45	95	62	45	44	28	9	8.5	8.5Ø	18	M-10	210	500 Kgs.	0.84
VHDT-60-ST	ST-ARM	60	120	70	55	53	36.5	8.5	9	8.5Ø	20	M-10	270	600 Kgs	1.60
VHDT-80-ST	ST-ARM	80	135	95	75	70	50	12.5	12.5	10.5Ø	28	M-16	340	800 Kgs.	2.71

Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly is provided as standard accessory with all above clamps.

Optional Accessories : User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

HOLD DOWN TOGGLE CLAMP - VERTICAL HANDLE - BASE STRAIGHT

These toggle clamps are similar to VHDT models but with Base Straight. Straight Base design enables mounting on a vertical surface.



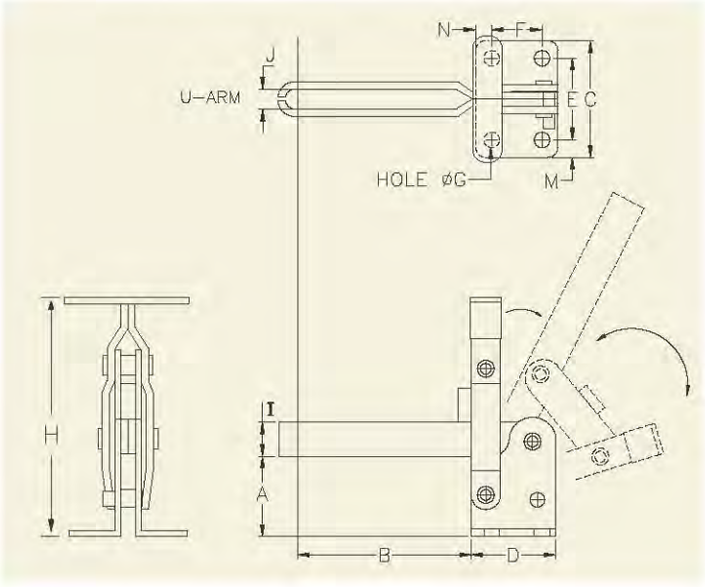
MODEL	ARM TYPE*	A	B MAX.	MOUNTING BASE						I	J SUITABLE FOR SPINDLE DIA	H	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	øG					
VHDT-19-U-BS	U-ARM	50	35	4	26	5.5	15	4	4.5Ø	12	M-6	100	70 Kgs.	0.11
VHDT-25-U-BS	U-ARM	40	35	6	26	6.5	13	6.5	5.5Ø	10	M-6	115	100 Kgs.	0.18
VHDT-32-U-BS	U-ARM	47	65	6	35	8	19	5.5	6.8Ø	16	M-8	160	200 Kgs.	0.34
VHDT-45-U-BS	U-ARM	70	95	8	45	8.5	28	9	8.5Ø	18	M-10	235	400 Kgs.	0.74
VHDT-60-U-BS	U-ARM	88	120	8	55	9	36.5	8.5	8.5Ø	20	M-10	298	500 Kgs	1.35
VHDT-80-U-BS	U-ARM	125	135	10	75	12.5	50	12.5	10.5Ø	32	M-16	385	700 Kgs.	2.28

*** All above base straight models are available with BR ARM or ST ARM also on request.**

Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly complete with U-Flanged washers and lock nuts is provided as standard accessory with above clamps.

HOLD DOWN TOGGLE CLAMP - T HANDLE - FLANGED BASE

Smaller sizes of VHDT models are also available in T-Handles.These are available in U-arm models only as shown in table below.

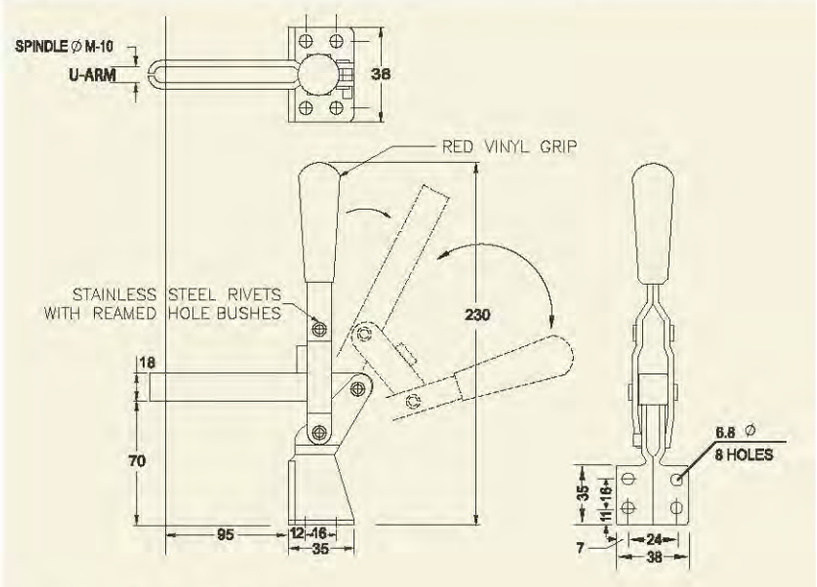


MODEL	ARM TYPE	A	B MAX.	MOUNTING BASE							I	J SUITABLE FOR SPINDLE DIA	H	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	N	ØG					
VHDT-25-TU	U-ARM	25	35	40	26	27	13	6.5	6.5	5.5Ø	10	M-6	80	100 Kgs.	0.18
VHDT-32-TU	U-ARM	32	65	43	35	32	19	5.5	8	6.8Ø	16	M-8	115	200 Kgs.	0.34

Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly complete with U-Flanged washers and lock nuts is provided as standard accessory with above clamps.

HOLD DOWN TOGGLE CLAMP - VERTICAL HANDLE - RIGHT ANGLE BASE - Model RATC-70

This model has vertical handle with a right angled dual mounting base which can be base flange mounted as well as front mounted on side wall of a fixture.

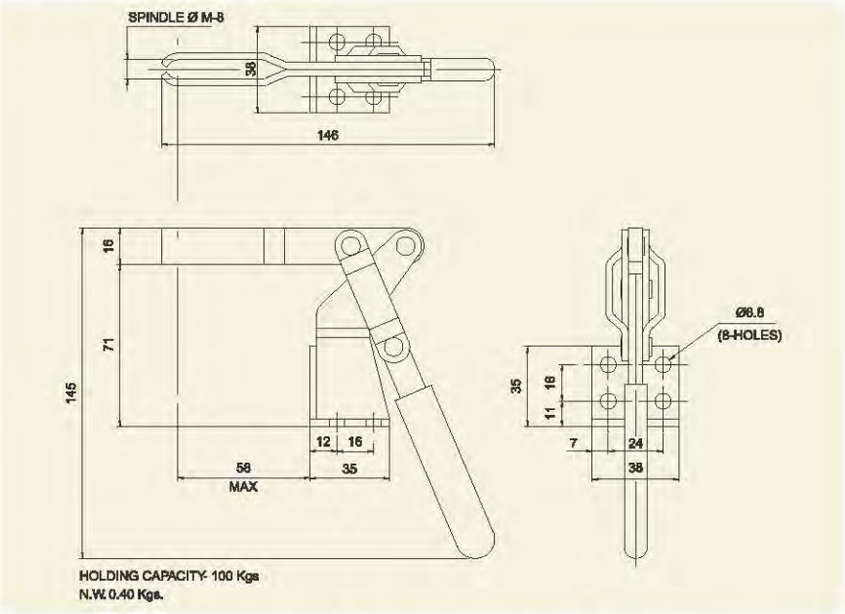


Holding capacity 300 Kgs.
N.W. 0.66 Kgs.

Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly complete with U-Flanged washers and lock nuts is provided as standard accessory with above clamps.

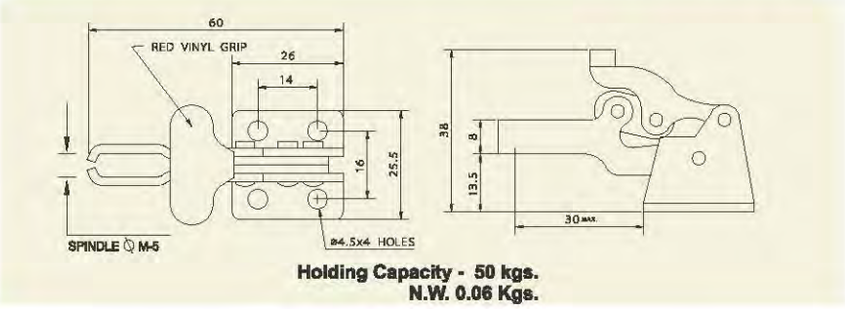
HOLD DOWN TOGGLE CLAMP - DROP HANDLE - Model DTC-70

These are low silhouette clamps with mounting flexibility of front as well as base mounting. Its unique design keeps the arm and handle clear for easy loading and unloading of parts.

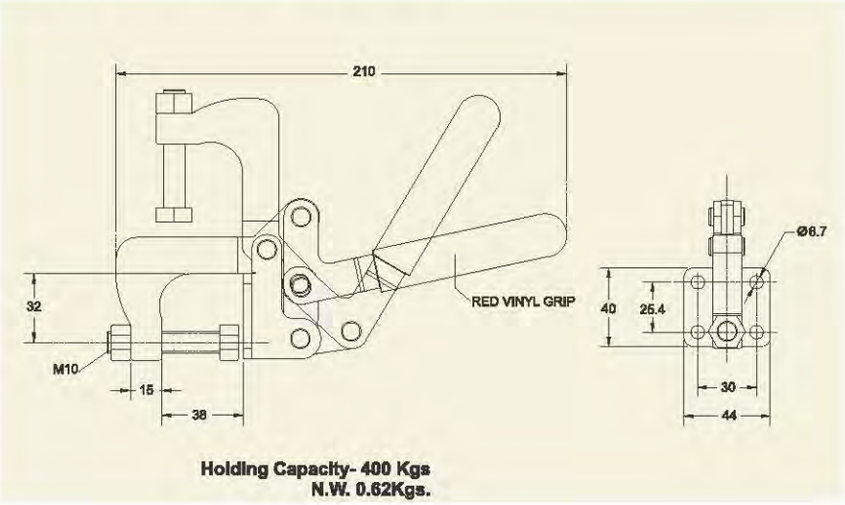


Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly complete with U-Flanged washers and lock nuts is provided as standard accessory with above clamps.

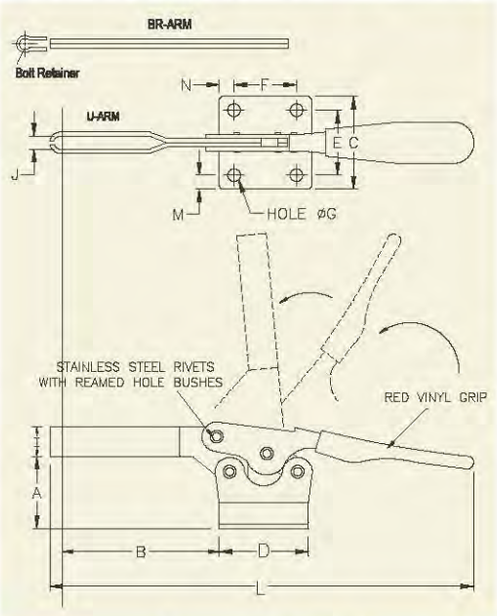
HOLD DOWN TOGGLE CLAMP - FORWARD HANDLE - Model FHTC-13



PULL BACK CLAMP - Model PBC-38



HOLD DOWN TOGGLE CLAMP - HORIZONTAL HANDLE - THUMB TYPE



Low height design of these hold down toggle clamps requires less overhead clearance as the handle remains in horizontal position while clamping.

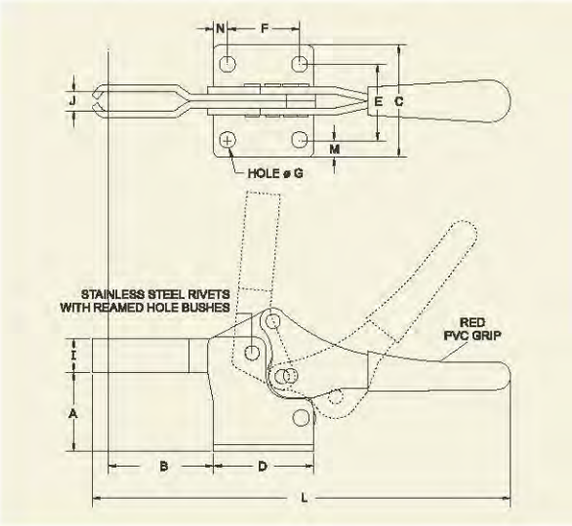
U-ARM MODEL

BR-ARM MODEL

MODEL	ARM TYPE	A	B MAX.	MOUNTING BASE							I	J SUITABLE FOR SPINDLE DIA	L	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	N	ØG					
HDTC-25	U-ARM	27	59	33	35	21	21	6	7	5.5Ø	12	M-6	150	150 Kgs.	0.15
HDTC-25-BR	BR-ARM		68												0.16
HDTC-35	U-ARM	37	63	37	38	23	25	7	6.5	6.8Ø	13	M-8	172	250 Kgs.	0.26
HDTC-35-BR	BR-ARM		75												0.27
HDTC-35-HA (High Arm Model)	U-ARM	54	75	36	38	22.2	22.2	7	8	6.8Ø	13	M-8	172	250 Kgs.	0.30

Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly complete with U-Flanged washers and lock nuts is provided as standard accessory with above clamps. BR-arm models are provided with bolt retainers along with clamping spindle assembly.

HOLD DOWN TOGGLE CLAMP - HORIZONTAL HANDLE - LONG TYPE



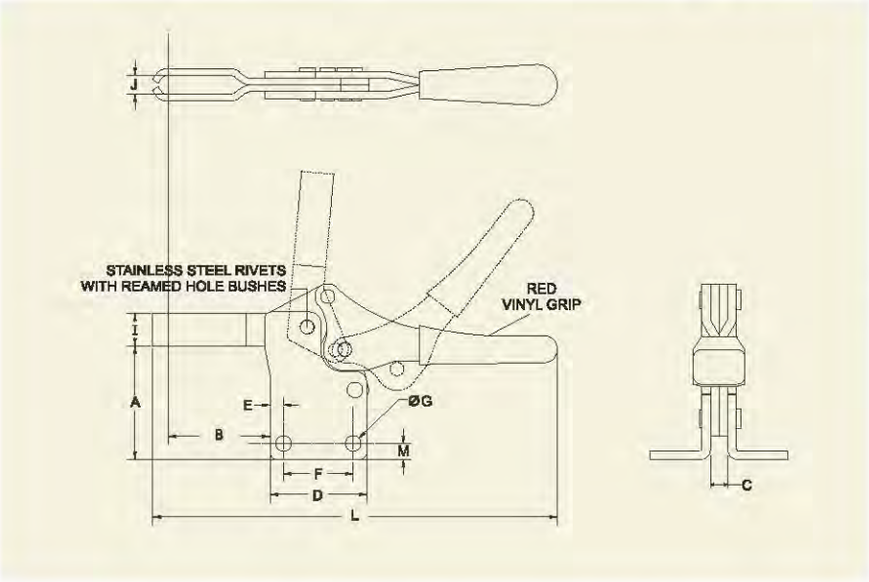
Low height design of these hold down toggle clamps requires less overhead clearance as the handle remains in horizontal position while clamping. BR Arm models are also available.

U-ARM MODEL

BR-ARM MODEL

MODEL	ARM TYPE	A	B MAX.	MOUNTING BASE							I	J SUITABLE FOR SPINDLE DIA	L	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	N	ØG					
HDTC-45	U-ARM	45	60	64	57	44	41	9.5	8	9Ø	19	M-10	238	500 Kgs.	0.74
HDTC-45-BR	BR-ARM		80												0.75
HDTC-50	U-ARM	50	105	56	57	37	41	9.5	8	9Ø	19	M-10	285	500 Kgs.	0.80
HDTC-50-BR	BR-ARM		125												0.81

HOLD DOWN TOGGLE CLAMP - HORIZONTAL HANDLE - BASE STRAIGHT



MODEL	ARM TYPE*	A	B MAX.	MOUNTING BASE						I	J SUITABLE FOR SPINDLE DIA	L	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	ØG					
HDTC-45-BS	U-ARM	67	60	8	57	8	41	9.5	9	19	M-10	238	500 Kgs.	0.74
HDTC-50-BS	U-ARM	67	105	8	57	8	41	9.5	9	19	M-10	285	500 Kgs.	0.80

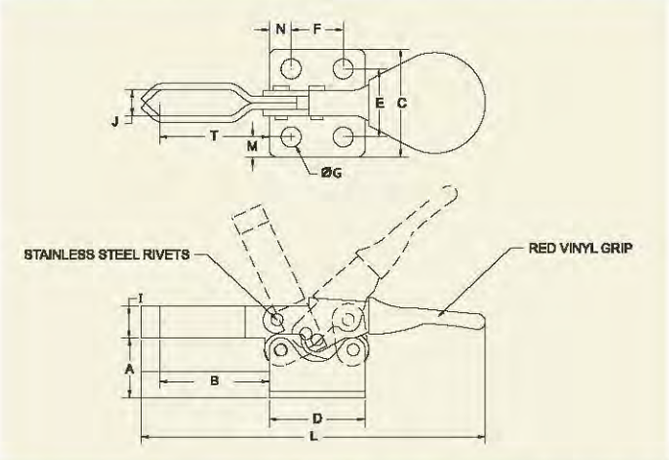
Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly is provided as standard accessory with all above clamps. U-Arm models are provided with 2 nos. U-Flanged Washers also along with clamping spindle assembly and BR-arm models are provided with bolt retainers along with clamping spindle assembly.

Optional Accessories : User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

*** ABOVE BASE STRAIGHT MODELS ARE AVAILABLE WITH BR ARM ALSO ON REQUEST**

HOLD DOWN TOGGLE CLAMP - HORIZONTAL HANDLE - MINIATURE SERIES

These two models are miniature versions of horizontal handle clamps useful for light and miniature applications.

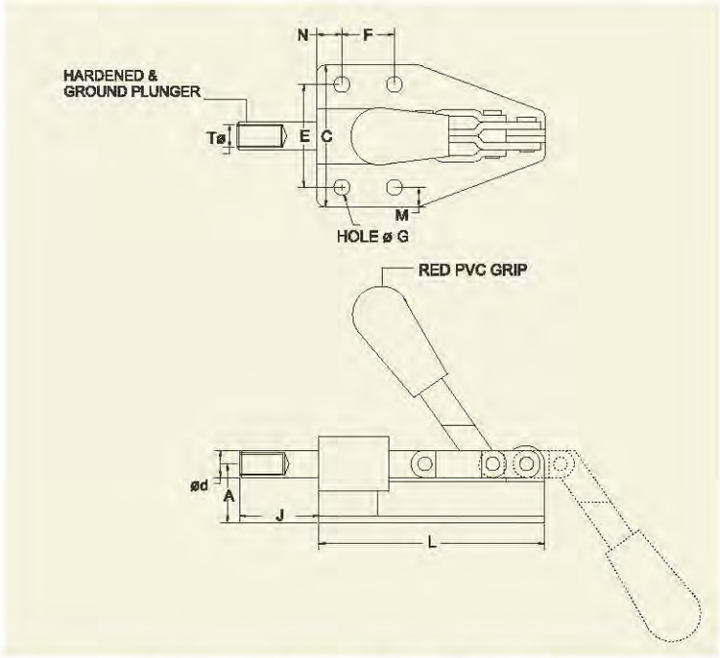


MODEL	ARM * TYPE	A	B MAX.	MOUNTING BASE							I	J SUITABLE FOR SPINDLE DIA	L	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	N	ØG					
HDTC-8	U-ARM	8	16	24	24	16	14	4	5	Slot 7x4.5	6	M-4	68	25 Kgs.	0.03
HDTC-15	U-ARM	15	27	27	24	17	13	5	5.5	5Ø	8	M-6	86	50 Kgs.	0.055

PUSH / PULL ACTION TOGGLE CLAMP - FRONT BASE - STEEL FABRICATED BODY

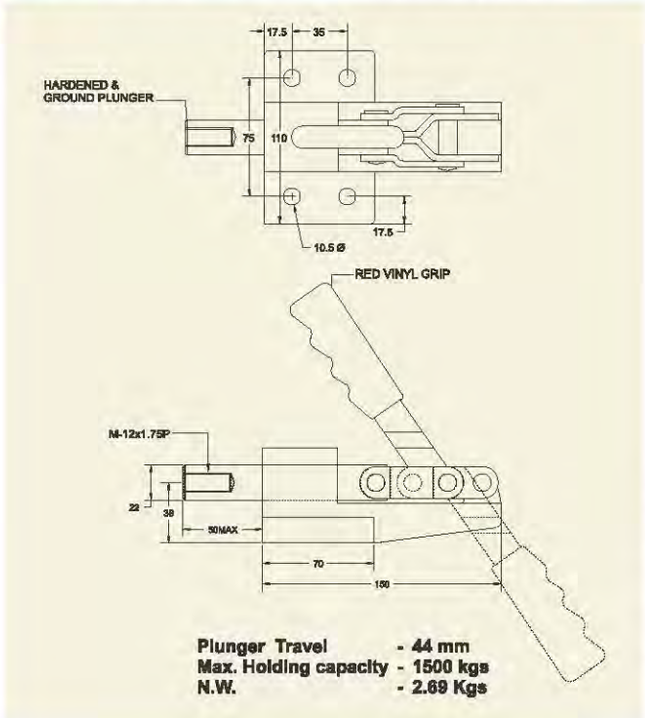
'TOOLFAST' Push/Pull Action Toggle Clamps have a straight line action as the plunger moves in straight line forward & backward with easy to operate handle. The plunger moves forward and locks as the handle is moved forward and plunger also locks in retracted position when handle is moved backward. Hence these clamps can be used as push as well as pull action clamps. Hardened & ground plunger moves in precision machined bore.

This model with front base is most popular because of its rigidity due to mounting base just under the load bearing surface of plunger movement.



MODEL	PLUNGER Ø dØ	TØ	A	PLUNGER TRAVEL	MOUNTING BASE						J MAX.	L	HOLDING CAPACITY	N. W. Kgs.
					C	E	F	M	N	ØG				
PATC-9-FB	9Ø	M-5x0.8	15	28	50	36	20	7	8	5Ø	32	80	200 Kgs.	0.18
PATC-12-FB	12Ø	M-8x1.25	26	30	62	45	23	8.5	11	6.8Ø	35	100	600 Kgs.	0.47
PATC-16-FB	16Ø	M-10x1.5	30	36	80	60	28	10	14	8.5Ø	42	125	1000 Kgs.	0.92

PUSH / PULL ACTION TOGGLE CLAMP - FRONT BASE - C.I. BODY - PATC-22-FB



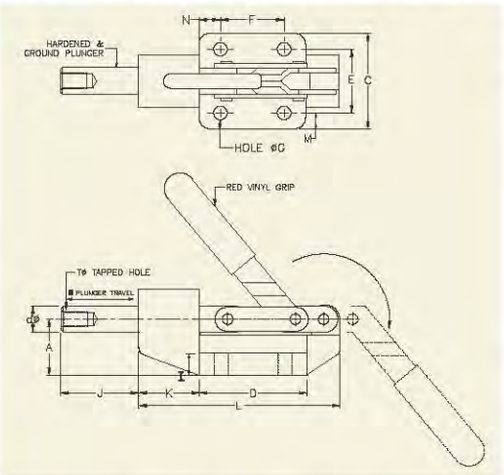
Plunger Travel - 44 mm
Max. Holding capacity - 1500 kgs
N.W. - 2.69 Kgs

Standard Accessories provided with Clamp:
Standard Hex. Head Clamping Spindle assembly is provided as standard accessory.

Optional Accessories:

User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

PUSH / PULL ACTION TOGGLE CLAMP - CENTRE BASE



'TOOLFAST' Push/Pull Action Toggle Clamp - Centre Base has its base at the centre and the bigger sizes have more centre height than the front base model to accommodate larger work pieces. Width of the mounting base is also less in this case which makes this type of push action clamp more compact. Other features of this clamp are same as in case of front base model.

PATC-12-CB
PATC-16-CB - STEEL BODY

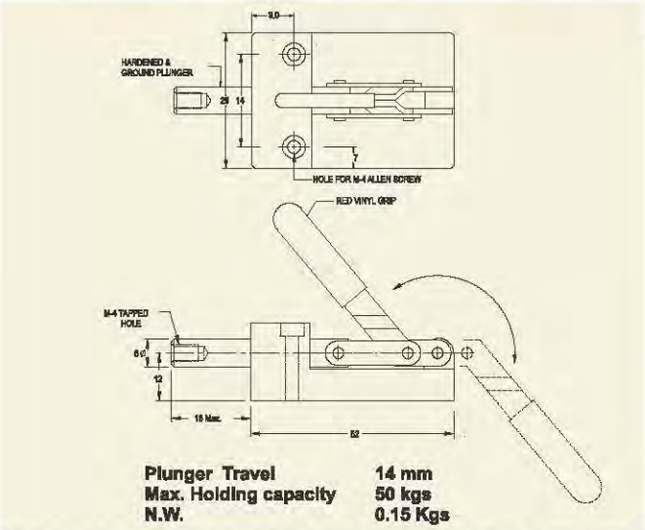
PATC-22-CB - C.I. BODY

MODEL	PLUNGER DIA dØ	TØ	A	PLUNGER TRAVEL B	MOUNTING BASE							I	J MAX.	K	L	HOLDING CAPACITY	BODY	N. W. Kgs.
					C	D	E	F	M	N	ØG							
PATC-12-CB	12Ø	M-8x1.25	26	30	55	55	35	35	10	10	6.8Ø	6	35	26	100	400 Kgs.	STEEL	0.51
PATC-16-CB	16Ø	M-10x1.5	35	36	60	67	40	40	10	13.5	8.5Ø	7	43	38	125	700 Kgs.	STEEL	1.00
PATC-22-CB	22Ø	M-12x1.75	45	60	75	75	50	50	12.5	12.5	10.5Ø	16	62	46	162	1000 Kgs.	C.I.	2.80

Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly is provided as standard accessory.

Optional Accessories : User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

PUSH / PULL ACTION TOGGLE CLAMP - MINIATURE MODEL - PATC - 6



Plunger Travel 14 mm
Max. Holding capacity 50 kgs
N.W. 0.15 Kgs

This is a Miniature Model of Push/Pull Action Toggle Clamp useful for light clamping where less space is available.

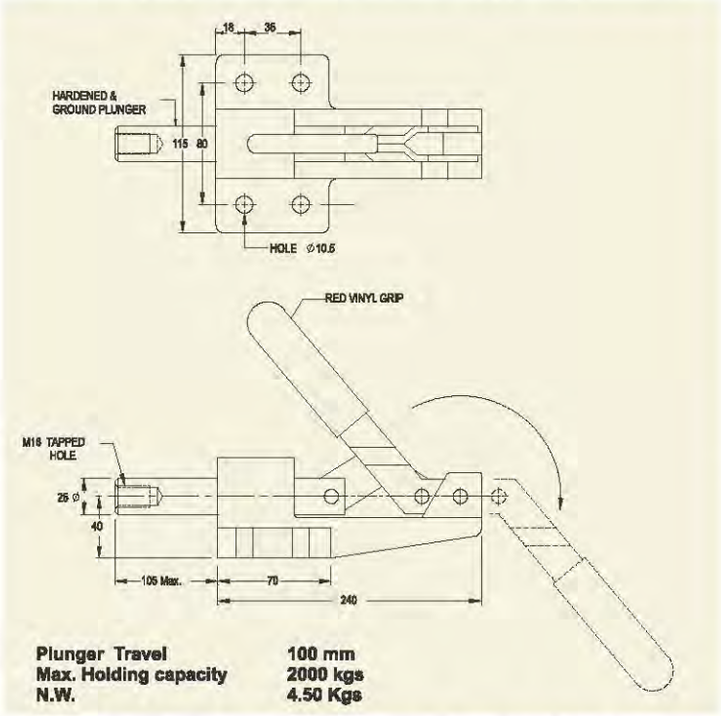
Standard Accessories provided with Clamp: Standard Hex. Head Clamping Spindle assembly is provided as standard accessory.

PUSH / PULL ACTION TOGGLE CLAMP - SIDE HANDLE-PATC-9-FB-SH

Plunger Travel - 28mm
Holding Capacity - 150kgs
N.W. 0.18 Kgs

PUSH / PULL ACTION TOGGLE CLAMP - HEAVY DUTY - Model PATC-25

This is a Heavy Duty version of Push/Pull Action Toggle Clamp useful where high clamping force or long plunger travel is required.

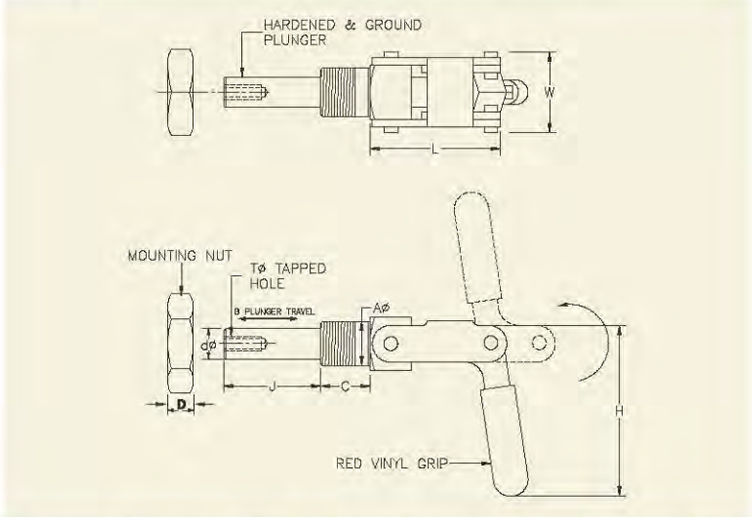


Plunger Travel	**100 mm**
Max. Holding capacity	**2000 kgs**
N.W.	**4.50 Kgs**

Standard Accessories provided with Clamp: Standard Hex. Head Clamping Spindle assembly is provided as standard accessory.

PUSH / PULL ACTION TOGGLE CLAMP - FRONT MOUNTING TYPE

'TOOLFAST' Push/Pull Action Toggle Clamps - Front Mounting Type are simply flush mounted through a panel or plate by a hexagonal lock nut on the work piece side. Can also be mounted directly into a tapped hole without using the nut. Plunger is hardened & ground. These clamps can also be used as push as well as pull action clamps.



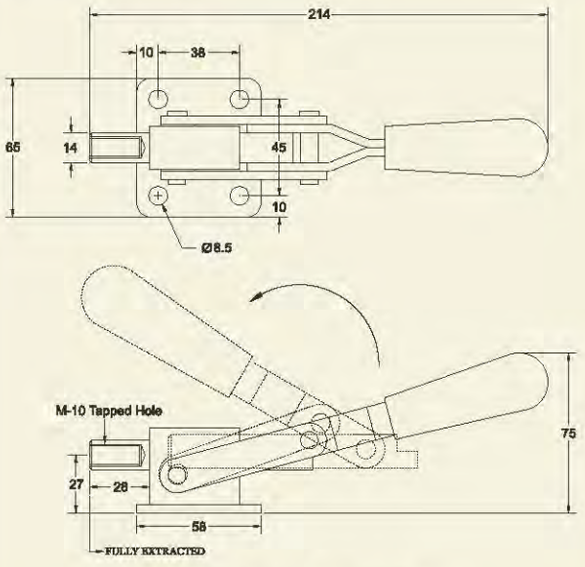
MODEL	PLUNGER DIA dØ	TØ TAPPED HOLE	MOUNTING THREAD SIZE AØ	PLUNGER TRAVEL B	C	D	J	L	W	H	HOLDING CAPACITY	N. W. Kgs.
PAFM-9	9	M-5 x 0.8 P	M-16 x 1.5 P	25	11	6	36	35	26	75	50 Kgs.	0.13
PAFM-12	12	M-8 x 1.25 P	M-20 x 1.5 P	36	16	8	41	50	31	103	100 Kgs.	0.32
PAFM-16	16	M-10 x 1.5 P	M-24 x 2.0 P	65	25	10	65	84	43	143	350 kgs.	0.86

Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly is provided as standard accessory.

Optional Accessories : User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

PUSH / PULL ACTION TOGGLE CLAMP - REVERSE HANDLE - MODEL PAR-14

These Push / Pull Action Toggle clamps have reverse handle action as the plunger moves in pushing position when the handle is moved back towards the operator. Hence, these clamps are most suitable for operations where the operator has to keep hand away from the workpiece while locking the clamp.



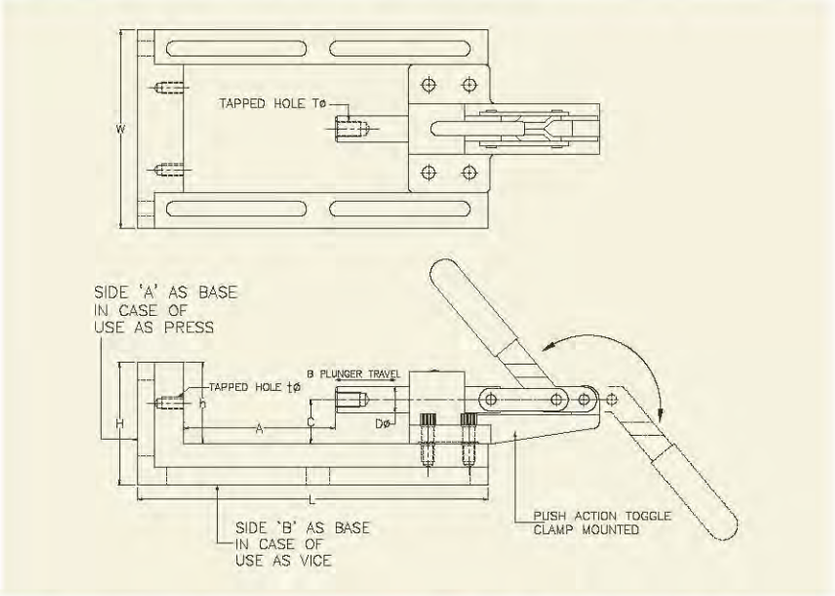
Holding Capacity - 1200kgs
N.W. 0.68 Kgs

TOGGLE VICE CUM PRESS

'TOOLFAST' Toggle vice cum press is a multifunction quick action vice cum press having a unique design with precision machined body on which Push Action Toggle Clamp of suitable model is mounted to make it a very versatile tool.

Toggle Vice : When side 'B' is used as base, it can be used as a quick action vice as shown in picture (b) or you can make your own drill Jig on it.

Toggle Press : When side 'A' is used as base, it can be used as a toggle press for light press operations as shown in picture (a)



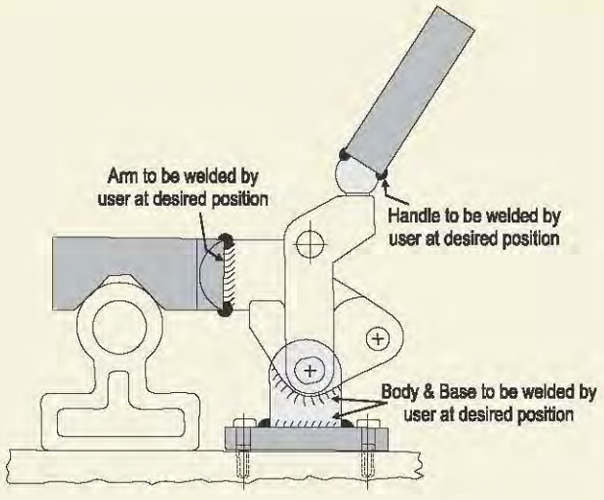
(a)

(b)

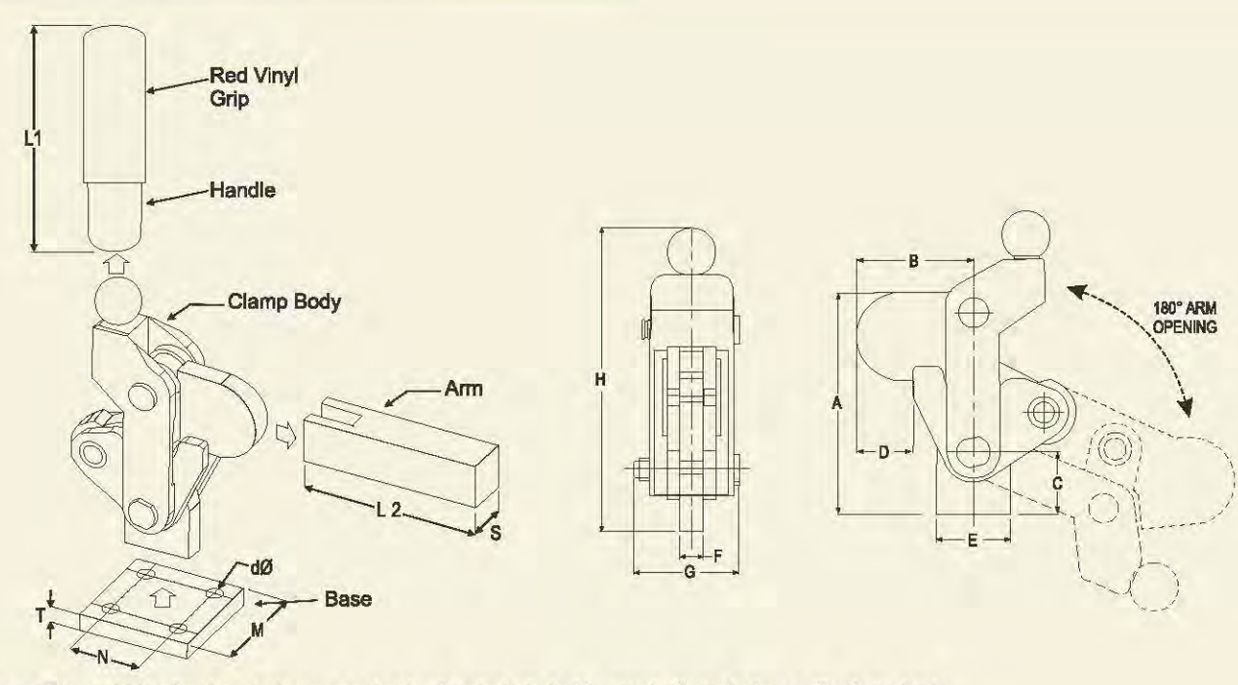
MODEL	A	PLUNGER TRAVEL B	C	DØ	TØ	tØ	h	L	W	H	PUSH ACTION TOGGLE CLAMP MOUNTED	CAPACITY	N. W. Kgs.
TVP-12	100	30	26	12Ø	M-8	M-6	50	205	110	70	MODEL PATC-12-FB	600 Kgs.	3.7
TVP-16	120	36	30	16Ø	M-10	M-8	60	250	138	90	MODEL PATC-16-FB	1000 Kgs.	7.6
TVP-22	140	44	38	22Ø	M-12	M-10	70	300	170	105	MODEL PATC-22-FB	1500 Kgs.	15.0

HEAVY DUTY WELDABLE TOGGLE CLAMP - MODULAR DESIGN

These are modular weldable clamps which allow the designer complete flexibility to position the base, clamp arm and handle and weld them in any desired position to suit the application. The base, arm and the pipe handle are supplied alongwith the clamp separately, to be welded by the user before use. The main body is made of accurately machined components having hardened and ground pivot pins and bushes.



Example of Application

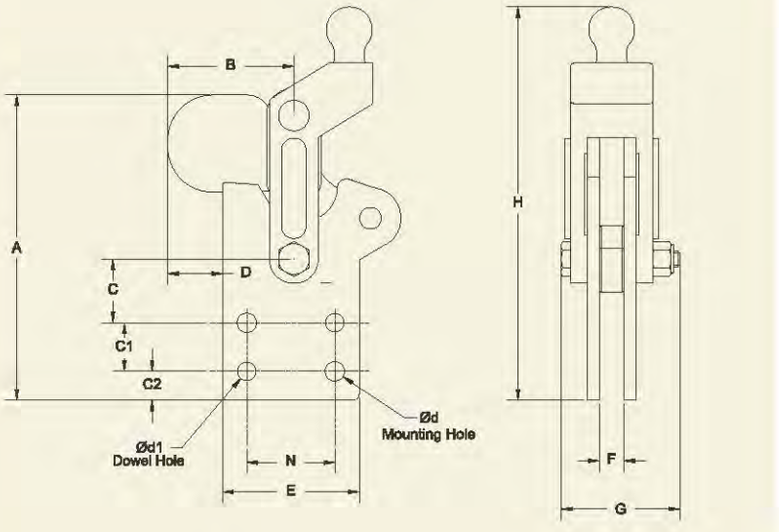


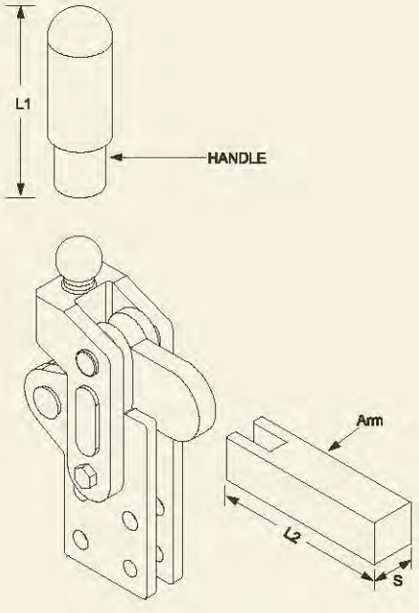
Base, Arm and Handle shown above are standard parts included in supply (loose) along with clamp body.

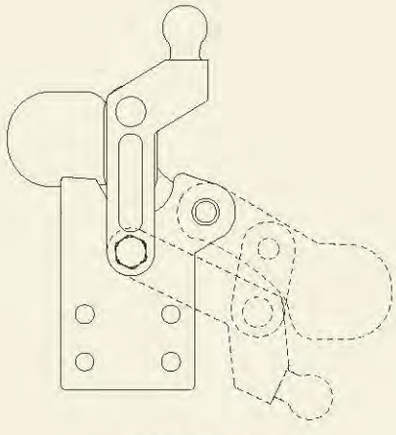
MODEL	A	B	C	D	E	F	G	H	L1	M Sq.	N Sq.	T	dØ	L2	S Sq.	HOLDING CAPACITY	N. W. Kgs.
WTC-200	75	42	21	18	24	8	39	104	82	45	29	6	7	75	20	500 Kgs.	0.81
WTC-300	91	53	26	26	30	10	47	127	90	50	30	8	7	90	22	700 Kgs.	1.38
WTC-500	106	59	32	30	36	12	55	152	114	63	40	9	9	100	25	1100 Kgs.	2.23

HEAVY DUTY WELDABLE TOGGLE CLAMP - MODULAR DESIGN - BASE STRAIGHT

These are straight base version of WTC series. All other features are same. Arm and handle are supplied loose alongwith the clamp which will be welded at desired position before use.







ARM MOVES-180°

Arm and Handle shown above are standard parts included in supply (loose) along with clamp body.

MODEL	A	B	C	D	E	F	G	H	dØ	d1Ø	C1	C2	N	L1	L2	S Sq.	HOLDING CAPACITY	N. W. Kgs.
WTC-200 BS	101	42	21	18	45	8	39	130	6.3	6	16	9.5	29	82	75	20	500 Kgs.	0.82
WTC-300 BS	122	53	20	26	50	10	47	158	9	8	25	12	30	90	90	22	700 Kgs.	1.40
WTC-500 BS	132	59	23	30	53	12	55	178	9	8	25	10	35	114	100	25	1100 Kgs.	2.24

PULL ACTION CLAMP- LATCH TYPE - HORIZONTAL CUM VERTICAL

Pull Action Clamps are Latch type clamps used for sealing chambers, lids, doors of moulds, drums, containers or other vessels etc. Also suitable for clamping moulds in industries such as resin, fibre glass, chemical & food.

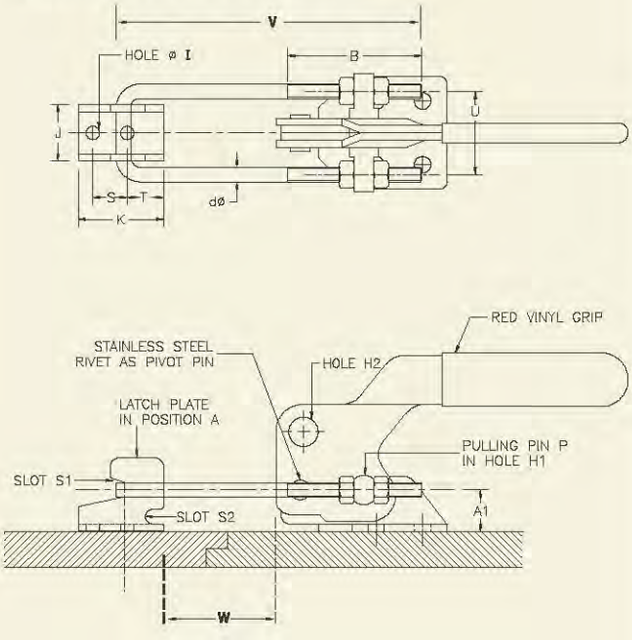
'TOOLFAST' Pull Action Clamp has a unique design which enables use of the same clamp as a horizontal pull action clamp as shown in figure (A) as well as a vertical pull action clamp as shown in figure (B) below by using two different holes H1 and H2 for pulling pin P to be located in.

Clamp is supplied complete with U-bolt & Latch Plate.

Same Clamp Can Be Used For Horizontal As well As Vertical Locking

FIGURE(A): PAC BEING USED AS HORIZONTAL PULL ACTION CLAMP

THE PULLING PIN P ALONGWITH THE U-BOLT IS ASSEMBLED USING HOLE H1 SO THAT THE CLAMP IS USED FOR HORIZONTAL LOCKING AS SHOWN BELOW.

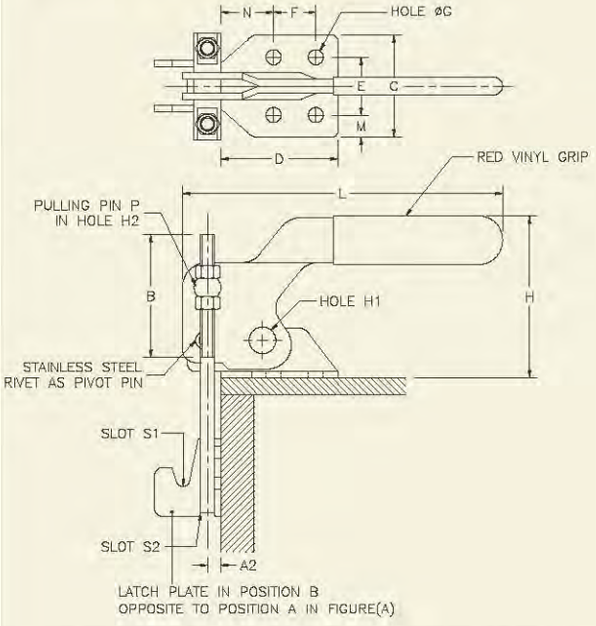


LOCKING IS DONE WHEN ADJUSTABLE U-BOLT IS PLACED AROUND THE SLOT S1 OF LATCH PLATE IN POSITION A AND THE HANDLE IS PULLED DOWN TO REACH THE LOCK POSITION.

TO ENSURE THAT THE CLAMP LOCKS POSITIVELY, IT IS IMPORTANT THAT THE BASE OF CLAMP AND THE BASE OF LATCH PLATE ARE PROPERLY ALIGNED AS SHOWN ABOVE.

FIGURE(B): PAC BEING USED AS VERTICAL PULL ACTION CLAMP

THE PULLING PIN P ALONGWITH THE U-BOLT IS ASSEMBLED USING HOLE H2 SO THAT THE CLAMP IS USED FOR VERTICAL LOCKING AS SHOWN BELOW.



LOCKING IS DONE WHEN ADJUSTABLE U-BOLT IS PLACED AROUND THE SLOT S2 OF LATCH PLATE IN POSITION B AND THE HANDLE IS PULLED DOWN TO REACH THE LOCK POSITION.

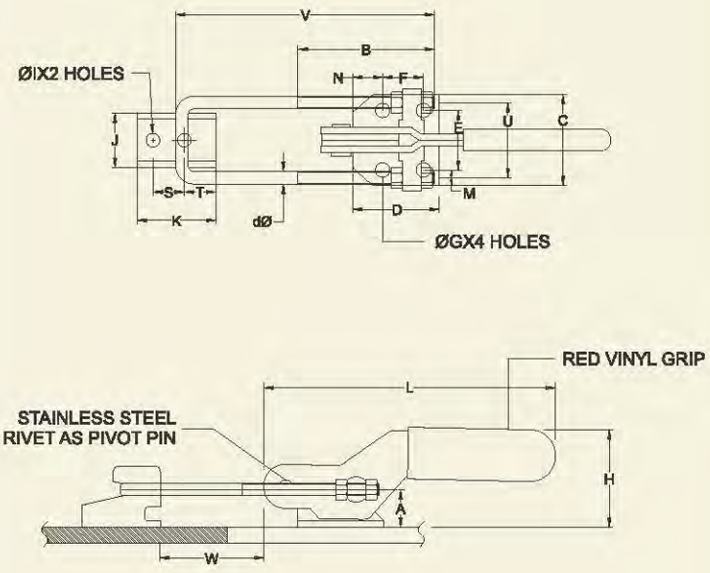
TO ENSURE THAT THE CLAMP LOCKS POSITIVELY, IT IS IMPORTANT THAT THE BASE OF THE LATCH PLATE IS ALIGNED WITH THE FRONT EDGE OF THE CLAMP BASE IN PERPENDICULAR POSITION AS SHOWN ABOVE.

MODEL	A1	A2	dØ	U	V	B THREAD LENGTH	W		MOUNTING BASE OF CLAMP							MOUNTING BASE OF LATCH PLATE					H	L	HOLDING CAPICITY	N. W. Kgs.
							Min.	Max.	C	D	E	F	M	N	GØ	J	K	S	T	IØ				
PAC-4-HV	13	4	4Ø	22	90	52	5	42	32	35	20	15	6	14	5Ø	15	30	12	12	5Ø	53	100	150 Kgs.	0.16
PAC-6-HV	17	6	6Ø	34	128	68	5	55	46	54	26	19	10	19	6.8Ø	23	36	15	15	5.5Ø	75	152	400 Kgs.	0.49
PAC-8-HV	24	8	8Ø	48	165	87	5	67	58	55	38	26	10	20	8.5Ø	35	50	20	20	8.5Ø	96	185	900 Kgs.	1.06

PAC-4-HV and PAC-6-HV are also available in stainless steel as model PAC-4-HV-S.S. and PAC-6-HV-S.S. respectively.

PULL ACTION CLAMP - LATCH TYPE - HORIZONATAL

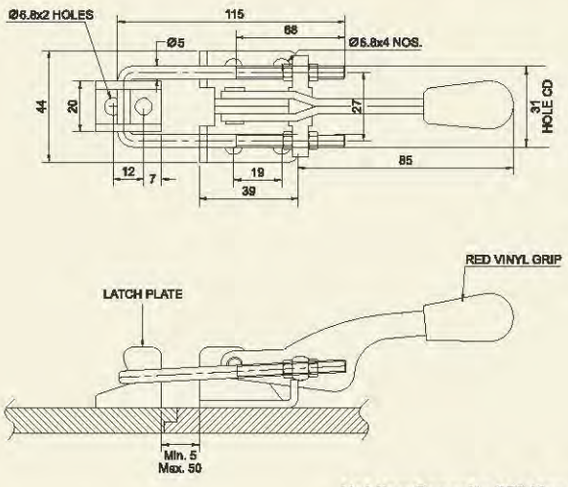
These are newly introduced models having same dimensions of mounting etc. as PAC-HV series given on previous page but with a modified low height handle suitable for only horizontal locking.



MODEL	A	dØ	U	V	B THREAD LENGTH	W		MOUNTING BASE OF CLAMP							MOUNTING BASE OF LATCH PLATE					H	L	HOLDING CAPICITY	N. W. Kgs.
						Min.	Max.	C	D	E	F	M	N	GØ	J	K	S	T	IØ				
PAC-4-H	13	4Ø	22	90	52	5	42	32	35	20	15	6	14	5Ø	15	30	12	12	5Ø	29	100	150 Kgs.	0.14
PAC-6-H	17	6Ø	34	128	68	5	55	46	54	26	19	10	19	6.8Ø	23	36	15	15	5.5Ø	50	152	400 Kgs.	0.44
PAC-8-H	24	8Ø	48	165	87	5	66	58	55	38	26	10	20	8.5Ø	35	50	20	20	8.5Ø	61	185	900 Kgs.	0.88

PAC-4-H and PAC-6-H are also available in stainless steel as model PAC-4-H-S.S. and PAC-6-H-S.S. respectively.

HORIZONTAL LATCH CLAMP - MEDIUM DUTY MODEL PAC-5-H

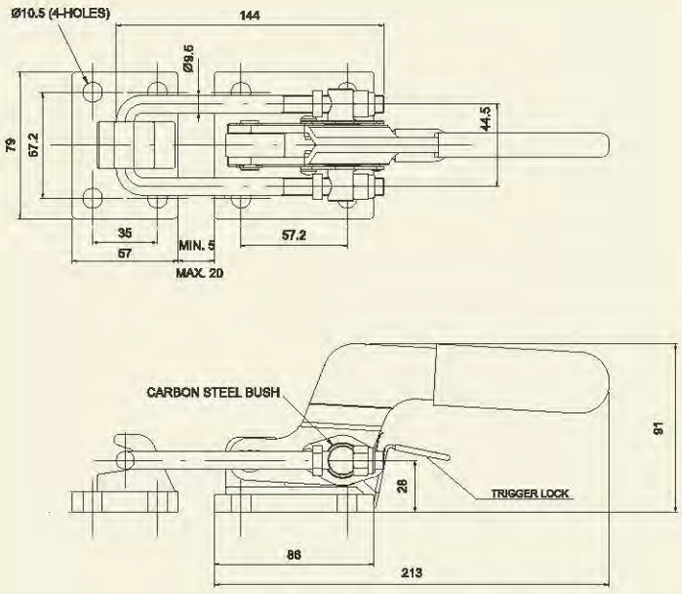


Holding Capacity 250 Kgs.
N.W. 0.22 Kgs.

Also available in Stainless Steel as PAC-5-H-S.S.

HORIZONTAL LATCH CLAMP - HEAVY DUTY MODEL PAC-10-H & PAC-10-H-TR with TRIGGER LOCK

This model is for applications where heavy duty Latch type clamping is required. Clamp base and Latch plate are made of solid steel. Pulling pin is housed in carbon steel bush for extra rigidity. Also available TR model with an added advantage of trigger lock which enables the clamp to remain locked even in conditions of high vibration unless the trigger is pulled.



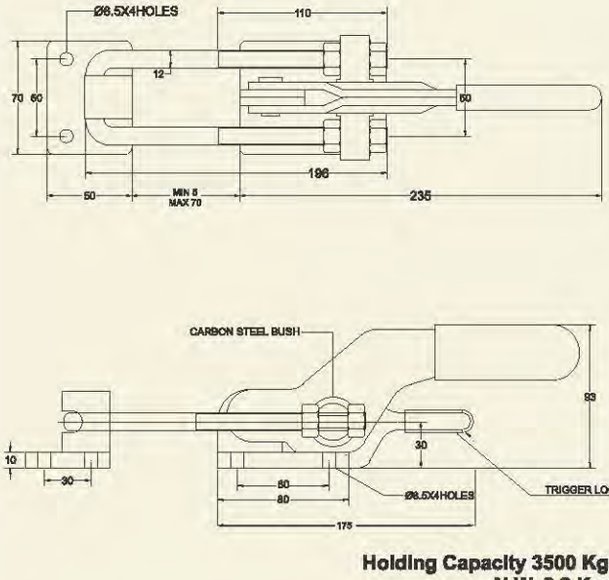
HOLDING CAPACITY- 1800 Kgs
N.W. 1.80 Kgs.

PAC-10-H
WITHOUT TRIGGER LOCK

PAC-10-H-TR
WITH TRIGGER LOCK

HORIZONTAL LATCH CLAMP - HEAVY DUTY MODEL PAC-12-H & PAC-12-H-TR with TRIGGER LOCK

This model is for applications where heavy duty Latch type clamping is required. Clamp base and Latch plate are made of solid steel. Pulling pin is housed in carbon steel bush for extra rigidity. Also available TR model with an added advantage of trigger lock which enables the clamp to remain locked even in conditions of high vibration unless the trigger is pulled.

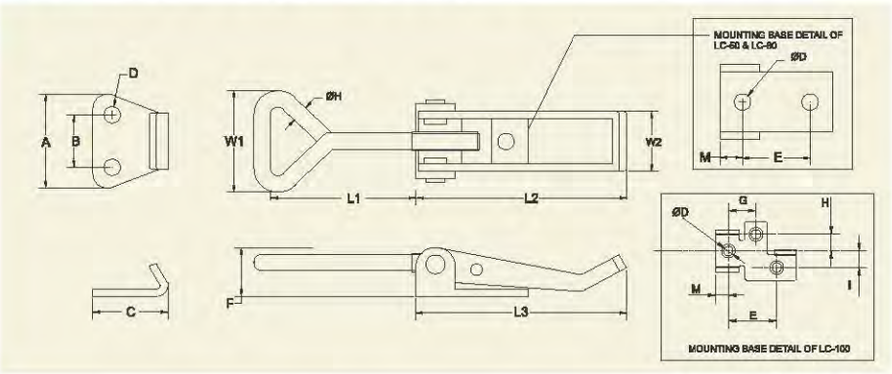


Holding Capacity 3500 Kgs
N.W. 2.2 Kgs.

PAC-12-H
WITHOUT TRIGGER LOCK

PAC-12-H-TR
WITH TRIGGER LOCK

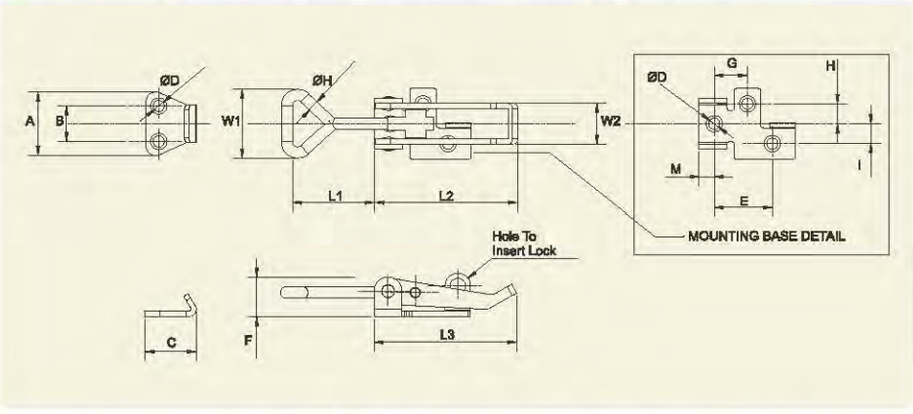
HORIZONTAL LATCH CLAMP - LIGHT DUTY



MODEL	L1	L2	F	W1	W2	A	B	C	ØD	ØH	E	M	G	H	I	HOLDING CAPACITY	N. W. Kgs.
LC-50	18~38	55	14	27	16	25	14	20	4.3	4.4	18	6	-	-	-	70 Kgs.	0.045
LC-80	20~54	67	18	32	20	30	17	22	5.3	5.3	17	14	-	-	-	80 Kgs.	0.09
LC-100	30~60	98	23	48	30	45	22	29	5.3	7.0	36	12	19	11	11	100 Kgs.	0.21

Above models are also available in Stainless Steel as model LC-50-S.S., LC-80-S.S and LC-100-S.S.

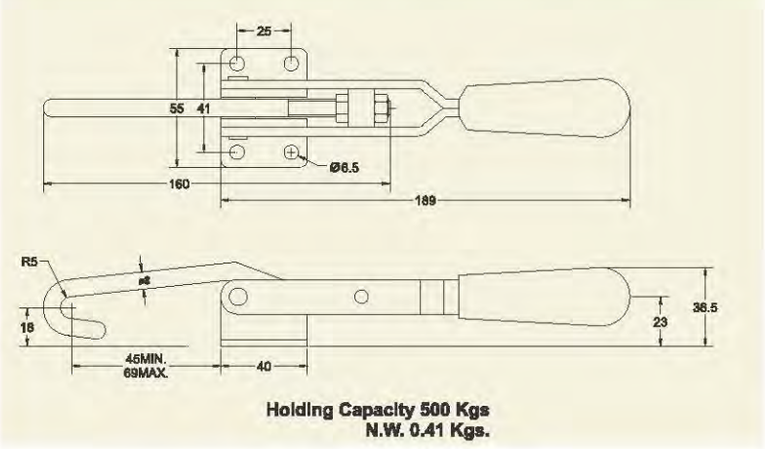
HORIZONTAL LATCH CLAMP - LIGHT DUTY - LOCKABLE TYPE



MODEL	L1	L2	F	W1	W2	A	B	C	ØD	ØH	E	M	G	H	I	HOLDING CAPACITY	N. W. Kgs.
LC-50-L	18~38	55	14	27	16	25	14	20	4.3	4.4	23	6	13	8	8	70 Kgs.	0.05
LC-80-L	20~54	67	18	32	20	30	17	22	5.3	5.3	27	14	10	8	9	80 Kgs.	0.095

Above models are also available in Stainless Steel as model LC-50-L-S.S. and LC-80-L-S.S.

PULL ACTION CLAMP - HOOK TYPE MODEL HPA-8



Holding Capacity 500 Kgs
N.W. 0.41 Kgs.

INTRODUCTION

Toggle Clamps with Pneumatic Operation have a Pneumatic cylinder mounted for operation only, the clamping force exerted comes from the toggle mechanism. Pneumatic operation has following advantages :

- **High speed operation**
- **Any number of clamps can be operated simultaneously with the help of a switch.**
- **Clamps can be operated in any desired sequence automatically by controlling the cycle electrically.**
- **Clamps can be mounted at normally inaccessible position which are not in operator's reach for manual operation.**
- **Reed switch mounted pneumatic cylinders can be used if position sensoring is required.**

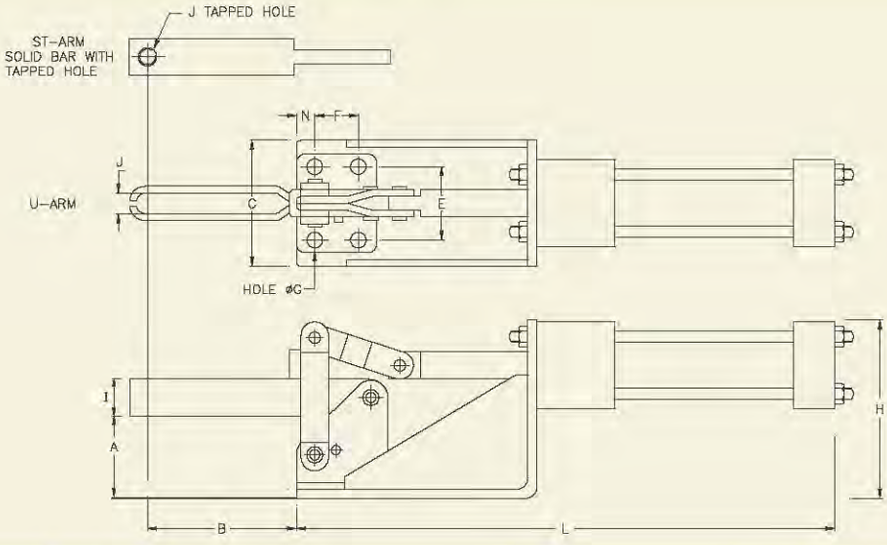
'TOOLFAST' Toggle Clamps with Pneumatic Operation are available in different sizes in both Hold Down Action and Push Action as given below.

HOLD DOWN TOGGLE CLAMP - PNEUMATIC OPERATION

'TOOLFAST' Hold Down Toggle Clamps with Pneumatic Operation are available in following sizes and following two types of arms :

U- Arm :- This is the most widely used type which permits to locate the clamping spindle anywhere along the length of the arm.

ST- Arm :- This is a solid bar with a tapped hole at the end. This arm can also be cut to any required length and hole can be made at any desired position or a separate clamping assembly can be welded at any desired point as per the application.



MODEL	ARM TYPE*	A	B MAX.	MOUNTING BASE					I	J SUITABLE FOR SPINDLE DIA	L	H	HOLDING CAPACITY	N. W. Kgs.
				C	E	F	N	øG						
POHD-35-U	U-ARM	36	65	60	32	19	8	6.8Ø	16	M-8	276	81	200 Kgs.	1.52
POHD-35-ST	ST-ARM													1.60
POHD-50-U	U-ARM	49	95	75	44	28	8.5	8.5Ø	18	M-10	345	104	400 Kgs.	2.57
POHD-50-ST	ST-ARM													2.67
POHD-85-U	U-ARM	85	135	110	70	50	12.5	10.5Ø	32	M-16	499	167	700 Kgs.	7.40
POHD-85-ST	ST-ARM													7.83

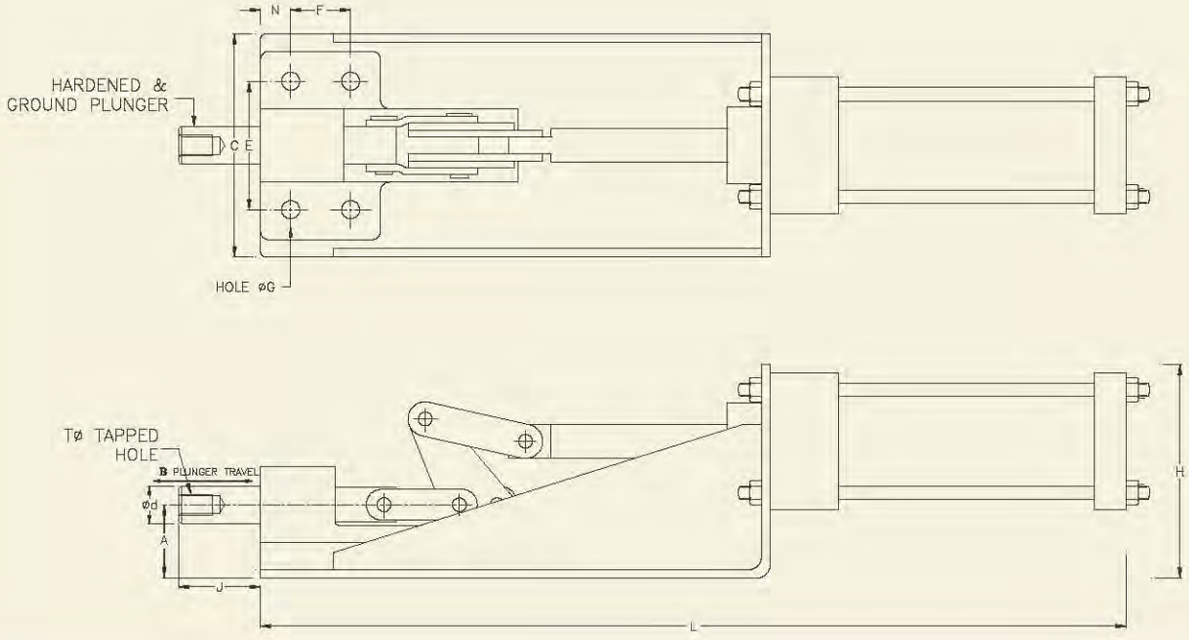
***Above models are also available in BR ARM.**

Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly is provided as standard accessory with all above clamps. U-Arm models are provided with 2 nos. U-Flanged Washers also along with clamping spindle assembly.

Optional Accessories : User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

PUSH ACTION TOGGLE CLAMP - PNEUMATIC OPERATION

'TOOLFAST' Push Action Toggle Clamps with Pneumatic Operation are available in following sizes.



MODEL	PLUNGER Ø dØ	TØ	A	PLUNGER TRAVEL B	MOUNTING BASE					J MAX.	L	H	HOLDING CAPACITY	N. W. Kgs.
					C	E	F	N	ØG					
POPA-12	12Ø	M-8x1.25	30	20	80	45	23	11	6.8Ø	34	400	72	600 Kgs.	2.41
POPA-16	16Ø	M-10x1.5	34	25	95	60	28	14	8.5Ø	40	427	82	1000 Kgs.	3.15
POPA-22	22Ø	M-12x1.75	43	30	130	75	35	17.5	10.5Ø	48	549	121	1500 Kgs	8.30

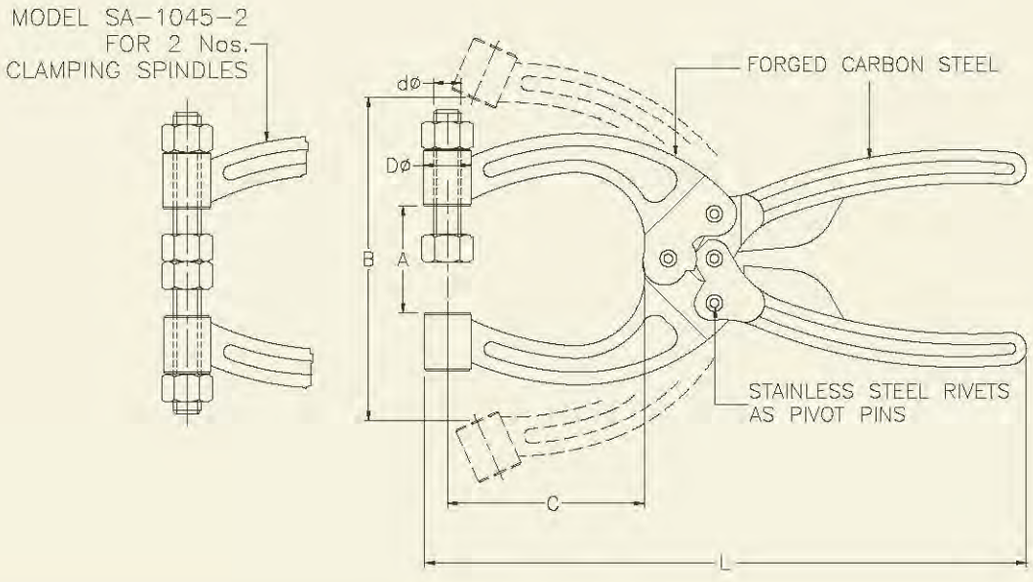
Standard Accessories provided with Clamp: Standard Hex. Head Clamping Spindle assembly is provided as standard accessory.

Optional Accessories: User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

2D / 3D CAD FILES AVAILABLE FOR ALL TOGGLE CLAMP MODELS ON REQUEST

SQUEEZE ACTION TOGGLE CLAMP

'TOOLFAST' Squeeze Action Toggle Clamps hold the work piece between two clamping jaws like a plier and lock in that position like a toggle clamp and stay locked until the handles are pulled apart. These clamps are precision machined carbon steel forgings which withstand the heat of welding temperature without distortion.
These are available in two different types, one allowing use of single clamping spindle and other allowing use of two clamping spindles.



MODEL	dØ CLAMPING SPINDLE	A	MAX. JAW OPENING B	C	DØ	L	HOLDING CAPACITY	N. W. Kgs.
SA-1045	M10 (1 No.)	45	85	70	19	220	400 Kgs.	0.70
SA-1045-2	M10 (2 Nos)	45	85	70	19	220	400 Kgs.	0.71

Standard Accessories provided with Clamp: Standard Hex. Head Clamping Spindle assembly is provided as standard accessory. 2nos. Spindle assemblies are provided with 2 spindle model.

Optional Accessories: User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

CLAMPING SPINDLE ASSEMBLIES FOR TOGGLE CLAMPS

STANDARD ACCESSORIES

STANDARD HEX. HEAD SPINDLE ASSEMBLY : Suitable sizes of these spindle assemblies are provided as standard accessory with all toggle clamps.

U-FLANGED WASHERS : Set of U-Flanged Washers is provided as standard accessory with all U models of toggle clamps.

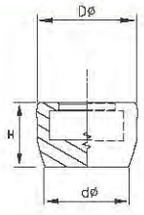
OPTIONAL ACCESSORIES

User can select an optional spindle accessories from following types and if required can order these separately.

RUBBER CAPS FOR STANDARD HEX. HEAD SPINDLE

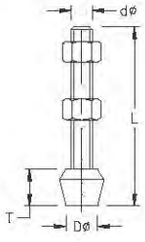
MODEL	DØ	dØ	H
RC-5	12	9	10
RC-6	15	12	10
RC-8	18	15	12
RC-10	23	19	15
RC-12	25	21	17
RC-16	32	27.5	21.5

Most convenient to convert the standard hex head spindle into rubber tip spindle by simply manually inserting the rubber cap onto the spindle hex.



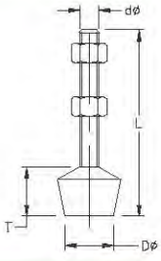
NYLON TIPPED SPINDLE ASSEMBLY

MODEL	THREAD SIZE dØ	L	T	DØ	N. W. Kgs.
NT-5-25	M-5	25	7	7Ø	0.01
NT-6-25	M-6	25	7	7Ø	0.01
NT-6-40	M-6	40	7	7Ø	0.01
NT-8-50	M-8	50	14	11Ø	0.03
NT-8-100	M-8	100	14	11Ø	0.04
NT-10-75	M-10	75	14	11Ø	0.06
NT-12-50	M-12	50	22	19Ø	0.07
NT-16-60	M-16	60	22	19Ø	0.17
NT-16-125	M-16	125	22	19Ø	0.23



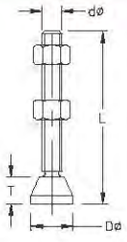
NEOPRENE TIPPED SPINDLE ASSEMBLY

MODEL	THREAD SIZE dØ	L	T	DØ	N. W. Kgs.
NRT-5-45	M-5	45	12	12	0.02
NRT-6-50	M-6	50	15	15	0.02
NRT-8-60	M-8	60	20	20	0.04
NRT-10-90	M-10	90	22	22	0.08



SWIVAL FOOT SPINDLE ASSEMBLY

MODEL	THREAD SIZE dØ	L	T	DØ	N. W. Kgs.
SF-8-60	M-8	60	10	16	0.04
SF-10-80	M-10	80	13	20	0.08

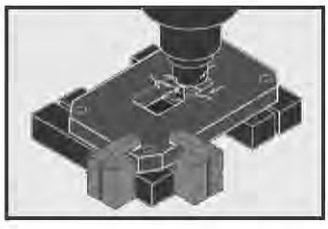


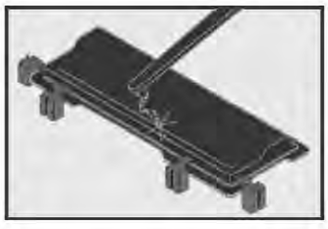
TOOLFAST

PNEUMATIC AND HYDRAULIC CLAMPS

INTRODUCTION

Power clamping whether Pneumatic or Hydraulic is most widely used in the form of **swing clamps**, which allow unobstructed part fixturing and placement. The plunger rod and the attached clamping arm swings in either a clockwise or counter clockwise direction, then travels down an additional distance to clamp down the fixtured part. Upon release of clamping pressure, the clamping arm travels up to unclamp and swings back in the opposite direction to allow for part removal and new part placement.



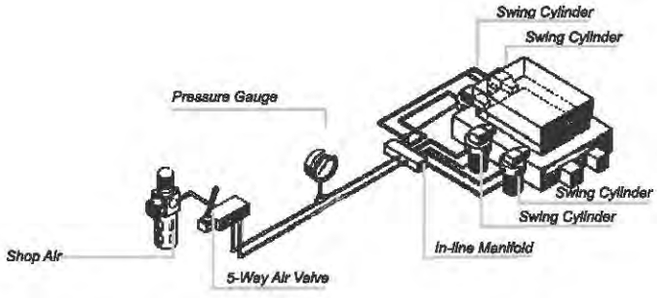


Different types of Pneumatic and Hydraulic Swing Clamps offered by us are illustrated in the following pages of this catalogue.

1. **PNEUMATIC SWING CLAMPS** are used where low clamping forces are needed such as in drilling, tapping or light machining operations of aluminum components. Also widely used in welding fixtures. These clamps are most economical to use as can be operated on in-house air line.

'TOOLFAST' Pneumatic swing clamps are double acting swing cylinders available in different models, shapes and mountings as illustrated in following pages.

Schematic Diagram of Air Line



2. **HYDRAULIC SWING CLAMPS** are used where medium to high clamping force is required such as in machining of components on conventional or CNC Machines.

Selection of type of Hydraulic Cylinder

Single Acting spring return Cylinders are chosen when there are few system restrictions and there are not many cylinders (less than 5 cylinders) retracting simultaneously. These are widely used on conventional machines where a hydraulic power unit is not available on the machine. Single Acting, Spring return cylinders can also be used with hydropneumatic Intensifier.

Double Acting Cylinders are normally used with Hydraulic power units or with Air drive hydraulic pump which gives required hydraulic pressure at its outlet by using in-house air at its input. Double acting Cylinders are used when timing sequences are critical. They are advantageous, as they are less sensitive to system back pressures resulting from long tube lengths or numerous cylinders being retracted at the same time. Unclamp cycle can also be controlled in double acting cylinders.

Selection of Cylinder in terms of Clamping force : Suitable size of Cylinder should be selected depending upon the clamping force required to clamp the work piece. For determination of clamping force required, apart from clamping force calculation, the best clue can be had from the bolt size being used in the mechanical clamp of the existing fixture.

'TOOLFAST' Hydraulic Clamps are available in single as well as double acting cylinders in different models, shapes and mountings as illustrated in following pages.

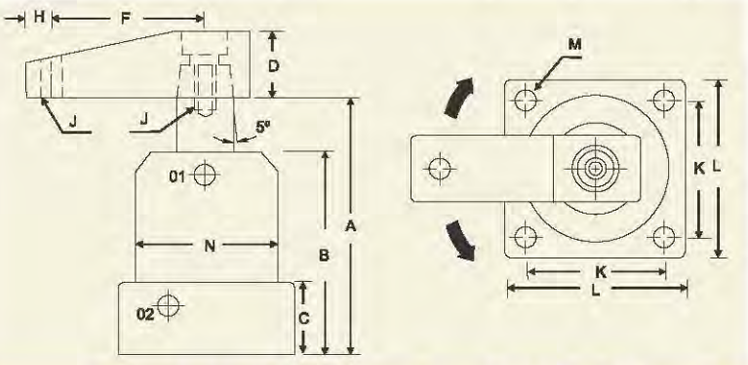
2D / 3D CAD FILES AVAILABLE ON REQUEST

PSF SERIES : PNEUMATIC LOWER FLANGE VERSION SWING CLAMP - DOUBLE ACTING, 4-7 KG/CM^2 INLET AIR PRESSURE

Widely used for low clamping forces such as in light machining of aluminium parts or in welding fixtures.
Stainless steel piston rod, black aluminium body with wear resistant anodised finish. Flange version has flanged lower face for easy mounting

Features

- ❑ **Ideal for use on fixtures for mass production on all types of conventional or CNC Machine tools.**
- ❑ **Operates on In-house air line.**
- ❑ **Arm travels vertically straight up and then swings 90 degree for easy job loading / unloading from above.**



MODEL	Unclamp Position A	B	C	D □	F	H	O1,O2 INLETS	J	K	L	MØ	NØ	Piston RodØ	Piston Ø	Stroke During Swing	Straight Clamping Stroke	Total Stroke	Clamping Force at 5kg/cm2	Air Consumption (cc.)		N. W. Kgs.
																			Extend	Retract	
PSF 25 R/L	95.5	66.5	23	16	30	8	M 5	M6x1	30	40	4.5	35	14	25	12	14	26	16kg	12.75	8.76	0.40
PSF 32 R/L	102.5	71	23	19	50	9	1/8 BSP	M8x1.25	44	54	6.5	50	16	32	12	14	26	30kg	20.90	15.67	0.70
PSF 40 R/L	106	75	26	19	50	9	1/8 BSP	M8x1.25	48	58	6.5	55	16	40	12	15	27	50kg	33.91	28.49	0.85
PSF 50 R/L	113	80	26	25	70	10	1/8 BSP	M10x1.5	55	68	8.5	60	20	50	14	15	29	85kg	56.91	47.80	1.30
PSF 63 R/L	119	86	30	25	70	10	1/8 BSP	M10x1.5	64	80	8.5	75	20	63	14	15	29	140kg	90.35	81.25	1.80

R/L Signifies right hand swing / Left hand swing. Please indicate while ordering. Standard swing angle is 90°. Other Swing angles are also available on request.

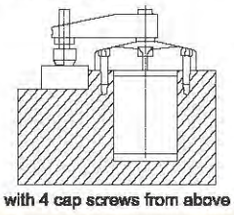
In right hand swing, when seen from above while clamping down, the arm first swings 90 degrees clockwise and then clamps down whereas in left hand swing it rotates 90 degrees counterclockwise and then clamps down.

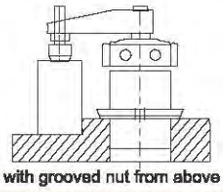
NPSU SERIES : PNEUMATIC UPPER FLANGE VERSION THREADED BODY SWING CLAMP - DOUBLE ACTING, 4-7KG/CM2 INLET AIR PRESSURE

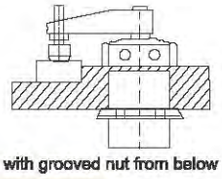
Features

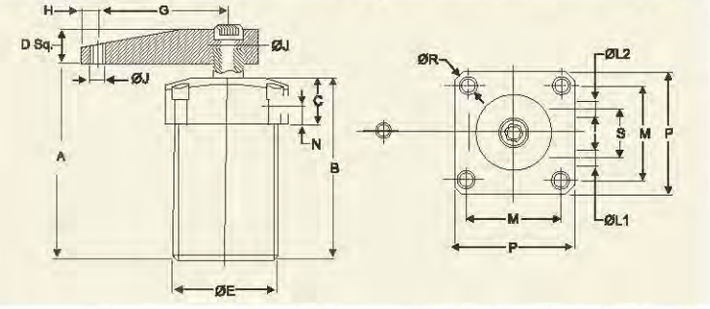
- ❑ Easiest mounting preparation in the swing clamp line.
- ❑ Material Aluminum Alloy Body
- ❑ Swivel Angle 90° ± 2°

MOUNTING EXAMPLES


with 4 cap screws from above


with grooved nut from above


with grooved nut from below



MODEL	A Unclamp Position	B	C	D □	E*	G	H	J	Inlets L1 & L2	M	N	P	R	S	Bore Dia.	Swing Stroke	Clamping Stroke	Force in Kgs at (5 kg/cm^2)	N. W. Kgs.
NPSU-25-R/L	119	87	25	16	M40 x 1.5	50	6	M6	M5	37	11.5	50	5.5	23	25	13	14	16	0.70
NPSU-32-R/L	135	98	25	19	M50 x 1.5	60	9	M8	G1/8	45	10.5	60	6.5	23	32	16	14	30	0.80
NPSU-40-R/L	135	98	25	19	M55 x 1.5	70	9	M8	G1/8	50	10.5	65	6.5	26	40	15	15	50	0.85
NPSU-50-R/L	143	105	25	25	M65 x 1.5	80	10	M12	G1/8	58	10.5	75	8.5	32	50	17	15	85	1.00
NPSU-63-R/L	144	106	25	25	M80 x 1.5	90	10	M12	G1/8	70	10.5	90	8.5	35	63	15	15	140	1.20

*** GROOVED NUT SUPPLIED AS STANDARD.**

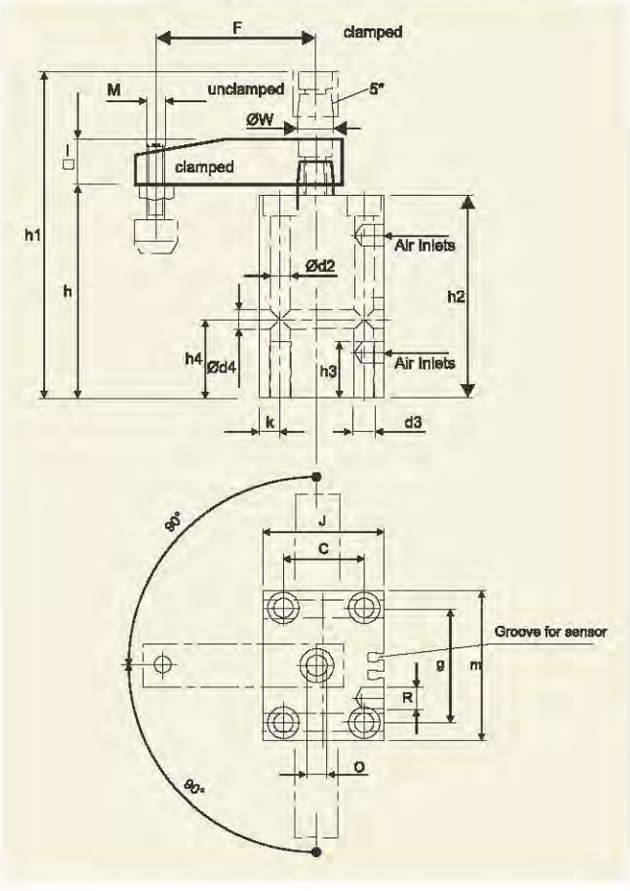
PSB SERIES : PNEUMATIC, SWING CLAMP, BLOCK VERSION - DOUBLE ACTING, 4-7 KG/CM^2 INLET AIR PRESSURE

Widely used for low clamping forces such as in light machining of aluminium parts or in welding fixtures. Cylinder body is made of light weight aluminium alloy having stainless steel piston rod.

Block version can be mounted directly to side of fixture plate on front or rear faces using through holes or from above with long socket screws or from below using tapped holes in base as shown below. It has magnetic piston to signal end positions. End-position sensors are also available. Details can be given on request.

Features

- **Ideal for use on fixtures for mass production on all types of conventional or CNC Machine tools.**
- **Operates on in-house air line.**
- **Arm travels vertically straight up and then swings 90 degree for easy job loading / unloading from above.**



Examples of Mountings

Model	C	dia. d4	dia. d2	d3	F	g	Clamp Position h	h1	h2	h3	h4	i □
PSB 25 R/L	20	8.5	6.5	M 8	50	40	82	125	78	20	32	16
PSB 32 R/L	30	8.5	6.5	M 8	60	45	95	145	90	20	43	19
PSB 40 R/L	37	8.5	8.5	M 10	70	52	95	145	90	25	40	19
PSB 50 R/L	46	10.5	8.5	M 10	80	66	105	162	100	30	45	25
PSB 63 R/L	60	10.5	10.5	M 12	90	80	105	162	100	30	36	25

Model	k	J	M	m	o	Air Inlets R 2 Nos.	w dia	Piston dia	Stroke During Swing	Straight Clamping Stroke	Total Stroke	Clamping Force at 5kg/cm2	N. W. Kgs
PSB 25 R/L	7.5	35	M 6	55	M 8	M 5	14	25	13	14	27	16 kg	0.70
PSB 32 R/L	7.5	45	M 8	60	M 8	1/8 BSP	16	32	16	14	30	30 kg	0.90
PSB 40 R/L	9	55	M 8	70	M 8	1/8 BSP	16	40	15	15	30	50 kg	1.10
PSB 50 R/L	9.5	65	M12	85	M 10	1/8 BSP	20	50	17	15	32	85 kg	1.20
PSB 63 R/L	10	80	M 12	100	M 10	1/8 BSP	20	63	15	15	30	140 kg	1.40

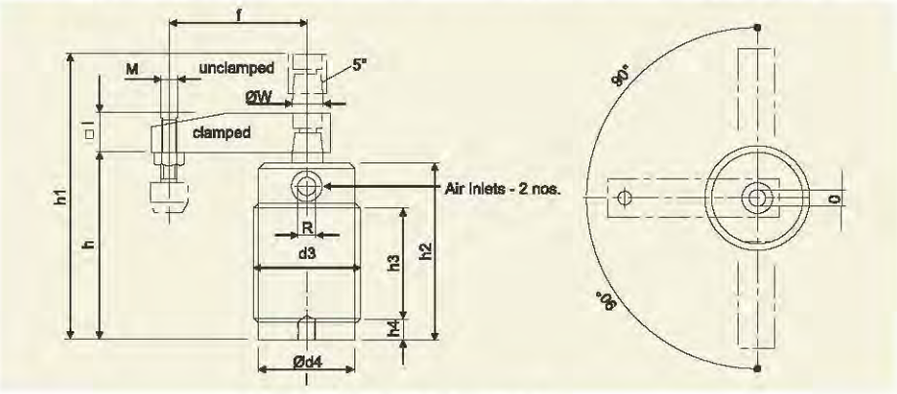
R/L signifies right hand swing / Left hand swing. Please indicate while ordering.
Standard Swing angle is 90°. Other Swing angles are also available on request.

In right hand swing, when seen from above while clamping down, the arm first swings 90 degrees clockwise and then clamps down whereas in left hand swing it rotates 90 degrees counterclockwise and then clamps down.

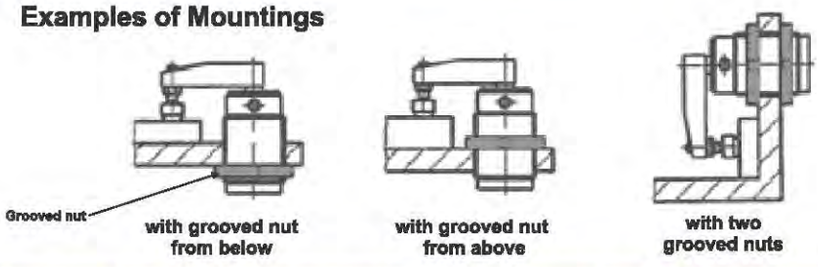
PST SERIES : PNEUMATIC, THREADED VERSION, SWING CLAMP, DOUBLE ACTING, 4-7 KG/CM^2 INLET AIR PRESSURE

Widely used for low clamping forces such as in light machining of aluminum parts or in welding fixtures.

Screw-in version can be mounted inside a hole provided in the fixture plate by locking the cylinder at desired height with the help of grooved nuts supplied as standard accessory, as shown below. These cylinders are also light weight aluminium cylinders having stainless steel piston rod.



Examples of Mountings



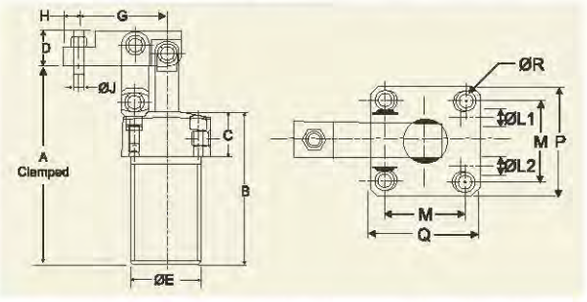
MODEL	d3	dia. d4	f	Clamp Position h	h1	h2	h3	h4	I □	M	O	Air Inlets R 2 nos.	dia. w	Piston dia	Stroke During Swing	Straight Clamping Stroke	Total Stroke	Clamping Force at 5kg/cm2	N. W. Kgs
PST 25 R/L	M40x1.5	38	30	74	118	70	35	10	16	M6	M8	M5	14	25	14	14	28	16 kg	0.80
PST 32 R/L	M50x1.5	48	50	83	132	79	40	15	19	M8	M8	1/8 BSP	16	32	16	14	30	30 kg	1.10
PST 40 R/L	M55x1.5	53	50	87	135	83	45	15	19	M8	M8	1/8 BSP	16	40	15	14	29	50 kg	1.25
PST 50 R/L	M65x1.5	62	70	92	145	87	50	15	25	M12	M10	1/8 BSP	20	50	14	14	28	85 kg	1.70
PST 63 R/L	M80x1.5	77	70	97	152	92	56	15	25	M12	M10	1/8 BSP	20	63	15	15	30	140 kg	2.20

R/L signifies right hand swing / Left hand swing. Please indicate while ordering.
Standard Swing angle is 90°. Other Swing angles are also available on request.
2 nos. Grooved nuts are supplied as standard accessory with above clamps

In right hand swing, when seen from above while clamping down, the arm first swings 90 degrees clockwise and then clamps down whereas in left hand swing it rotates 90 degrees counterclockwise and then clamps down.

PLCU SERIES: PNEUMATIC, UPPER FLANGED VERSION, THREADED BODY LEVER CLAMPS, DOUBLE ACTING, 4-7KG/CM^2 INLET AIR PRESSURE

❑ Unlike swing clamps, in link clamps Arm swings straight up to declamp and down to clamp.

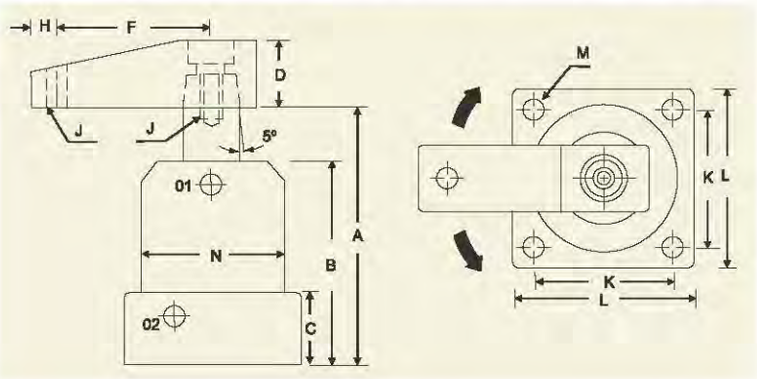


MODEL	A clamped Position	B	C	D □	E*	G	H	J	INLETS L1 & L2	M	P	Q	R	Bore Dia.	Stroke	Force in Kgs. at (7 kg/cm^2)	N. W. Kgs.
PLCU-25	111.5	86.5	25	17	M40 x 1.5	41	7	M6x1.0	M5	37	50	60	5.5	25	22	34	0.60
PLCU-32	129.5	97.5	25	20	M50 x 1.5	52	8	M8x1.25	G1/8	45	60	70	6.5	32	28	58	1.00
PLCU-40	132.5	97.5	25	25	M55 x 1.5	56	10	M8x1.25	G1/8	50	65	75	6.5	40	30	88	1.20
PLCU-50	144	104	25	30	M65 x 1.5	63.5	14	M12x1.75	G1/8	58	75	88	8.5	50	30	137	2.00
PLCU-63	149	105	25	30	M80 x 1.5	74	14	M12x1.75	G1/8	70	90	108	8.5	63	30	218	2.70

*** GROOVED NUT SUPPLIED AS STANDARD.**

HSF SERIES : LOW OIL PRESSURE, HYDRAULIC, FLANGE VERSION SWING CLAMP - DOUBLE ACTING, 20-70 kg/cm^2 INLET OIL PRESSURE.

These are light duty hydraulic swing clamps for medium clamping force having flanged lower face for easy mounting.



Model	Unclamp Position A	B	C	D	F	H	O1, O2	J	K	L	MØ	NØ	Piston Rod Ø	Piston Ø	Stroke During Swing	Straight Clamping Stroke	Total Stroke	Clamping Force at 25kg/cm2	Max. Oil Flow Rate (cm2/s)	N. W. Kgs.
HSF 25 R/L	100.5	70	23	25	50	10	M5	M10 x 1.5	40	50	6.5	45	18	25	12	14	26	59 kg	4.7	0.80
HSF 32 R/L	111.0	76	25	25	55	10	1/8 BSP	M10 x 1.5	44	55	6.5	50	20	32	14	15	29	125 kg	11.8	1.00
HSF 40 R/L	113.6	80	27	25	55	10	1/8 BSP	M10 x 1.5	48	62	8.5	54	20	40	14	15	29	200 kg	22.6	1.10
HSF 50 R/L	114.5	80	27	25	55	10	1/8 BSP	M10 x 1.5	57	74	8.5	65	20	50	14	15	29	400 kg	39.6	1.40
HSF 63 R/L	118.0	85	32	32	75	12	1/8 BSP	M12 x 1.75	70	88	10.5	80	25	63	14	15	29	600 kg	63.0	2.30

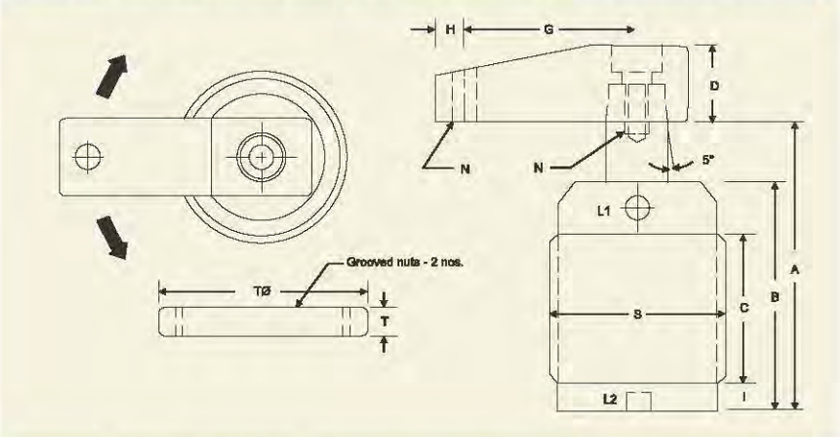
R/L Signifies right hand swing / Left hand swing. Please indicate while ordering. Standard swing angle is 90°. Other Swing angles are also available on request.

In right hand swing, when seen from above while clamping down, the arm first swings 90 degrees clockwise and then clamps down whereas in left hand swing it rotates 90 degrees counterclockwise and then clamps down.

Also available in manifold type mounting.

HST SERIES : LOW OIL PRESSURE, HYDRAULIC, THREADED VERSION SWING CLAMP - DOUBLE ACTING, 20-70 kg/cm^2 INLET OIL PRESSURE.

These are light duty Hydraulic Swing Clamps for medium clamping force having threading on outside of cylinder as in PST Series.

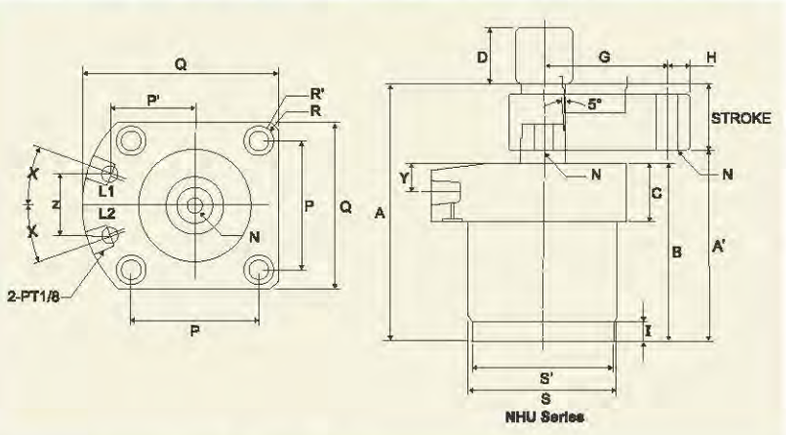


Model	Unclamp Position A	B	C	D	G	H	L1, L2	N	S	T (x 2 pieces)	TØ	Piston Rod Ø	Piston Ø	Stroke During Swing	Straight Clamping Stroke	Total Stroke	Clamping Force at 25kg/cm2	Max. Oil Flow Rate (cm2/s)	N. W. Kgs.
HST 25 R/L	100.5	70	35	25	50	10	M5	M10 x 1.5	M45 x 1.5	10	65	18	25	12	14	26	59 kg	4.7	0.80
HST 32 R/L	111.0	76	45	25	55	10	1/8 BSP	M10 x 1.5	M50 x 1.5	11	70	20	32	14	15	29	125 kg	11.8	1.00
HST 40 R/L	113.6	80	45	25	55	10	1/8 BSP	M10 x 1.5	M55 x 1.5	11	75	20	40	14	15	29	200 kg	22.6	1.25
HST 50 R/L	114.5	80	45	25	55	10	1/8 BSP	M10 x 1.5	M65 x 1.5	12	85	20	50	14	15	29	400 kg	39.6	1.70

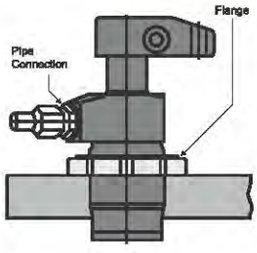
R/L Signifies right hand swing / Left hand swing. Please indicate while ordering. Standard swing angle is 90°. Other Swing angles are also available on request.
2 nos. grooved nuts supplied as standard accessory.

In right hand swing, when seen from above while clamping down, the arm first swings 90 degrees clockwise and then clamps down whereas in left hand swing it rotates 90 degrees counterclockwise and then clamps down.

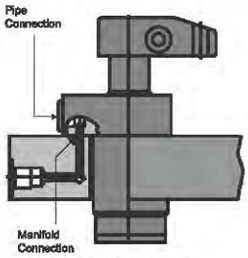
NHU SERIES : LOW OIL PRESSURE, HYDRAULIC, UPPER FLANGE PIPE MOUNTING / MANIFOLD MOUNTING SWING CLAMP - DOUBLE ACTING, 20-70 Kg/cm² INLET OIL PRESSURE



NHU Series



Threaded



Manifold Mount

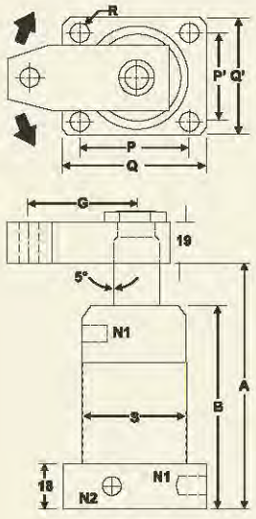
	NHU-32 R/L	NHU-40 R/L	NHU-50 R/L	NHU-63 R/L
Normal Pressure		20-45 kg/cm²		
Swivel Stroke	14	14	14	14
Clamping Stoke (mm)	15	15	15	15
Bore Diameter Ø (mm)	32	40	50	63
Piston Rod Ø (mm)	20	20	20	25
Clamp Force (25 kg/cm²)	125kg	200kg	400kg	600kg
A (mm) *unclamp	111	114	114.5	118
A' (mm) *clamp	82	85	85.5	89
B (mm)	76	80	80	85
C (mm)	25	27	27	32
D (mm)	□25.4	□25.4	□25.4	□32
G (mm)	55	55	55	75
H (mm)	10	10	10	11
I (mm)	9	9	9	9
L1 (clamp)/ L2 (unclamp)	1/8 PT	1/8 PT	1/8 PT	1/8 PT
Manifold Mounting O-ring	P7	P7	P7	P7
N (mm)	M10 x 1.5	M10 x 1.5	M10 x 1.5	M12 x 1.75
P/P' (mm)	44 / 30	48 / 31.4	57 / 37.6	70 / 46
Q/Q' (mm)	55 / 68.5	62 / 71.5	74 / 87	88 / 105.5
R/R' (mm)	Ø6.5 /Ø11	Ø6.5 /Ø11	Ø8.5 /Ø14	Ø8.5 /Ø14
S (mm)	M50 x 1.5	M55 x 1.5	M65 x 1.5	M80 x 1.5
S' (mm)	49	53	63	77
X	22.5°	22.5°	20°	22.5°
Y (mm)	12.5	14	14	19
Z (mm)	24.9	26	27.4	38
Net Weight Kgs	1.00	1.10	1.30	2.30

R/L Signifies right hand swing / Left hand swing. Please indicate while ordering. Standard swing angle is 90°. Other Swing angles are also available on request.

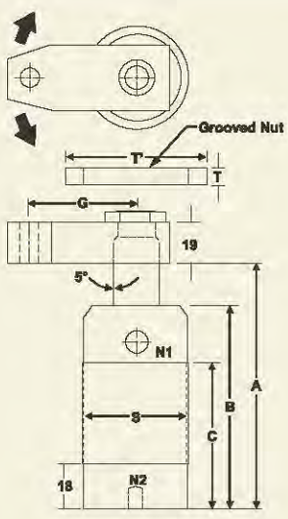
NFS, NFT SERIES : HIGH OIL PRESSURE, HYDRAULIC SWING CLAMPS, INLET OIL PRESSURE 50-350kg/cm²

These are heavy duty Hydraulic Swing Clamps having cylinder made of medium Carbon steel and are used where high clamping force is required.

Available in different types as given below:
NFS Series : Flange Type
NFT Series : Threaded Version



NFS



NFT

FLANGE TYPE	NFS-25A	NFS-32A	NFS-40A	NFS-25B	NFS-32B	NFS-40B
THREADED TYPE	NFT-25A	NFT-32A	NFT-40A	NFT-25B	NFT-32B	NFT-40B
MAX. OPERATING RESSURE	350kg/cm²					
NORMAL OPERATING PRESSURE	50-210kg/cm²					
CYLINDER OPERATION	SINGLE - ACTING			DOUBLE-ACTING		
STROKE DURING SWING (mm)	12			15		
STRAIGHT CLAMPING STROKE (mm)	11			18		
SWIVEL ANGLE	90°(60°45°0°)±2°					
PISTON-Ø (mm)	25	32	40	25	32	40
PISTON ROD-Ø (mm)	18	22	25	18	22	25
THEORETICAL CLAMPING FORCE at 210kg/cm²	495kg	890kg	1600kg	495kg	890kg	1600kg
A (UNCLAMP POSITION) (mm)	127	127	127	134	134	134
B (mm)	98	97	98	98	97	98
C (mm)	66	70	72	66	70	72
G (mm)	45	50	50	45	50	50
K (mm)	9	10	12	9	10	12
N1 (clamp) (mm)	1/8 BSP	1/8 BSP	1/8 BSP	1/8 BSP	1/8 BSP	1/8 BSP
N2 (unclamp) (mm)				1/8 BSP	1/8 BSP	1/8 BSP
P (mm)	50	54	66	50	54	66
P' (mm)	30	34	40	30	34	40
Q (mm)	64	68	84	64	68	84
Q' (mm)	46	54	64	46	54	64
R (mm)	6.5Ø	8.5Ø	8.5Ø	6.5Ø	8.5Ø	8.5Ø
S (mm)	45x1.5	50x1.5	60x1.5	45x1.5	50x1.5	60x1.5
T (x2 pcs) (mm)	10	11	11	10	11	11
T' (mm)	65Ø	70Ø	80Ø	65Ø	70Ø	80Ø
N.W. Kgs NFS	1.60	1.80	2.80.	1.40	1.70	2.70
NFT	1.80	2.10	3.20	1.80	2.10	3.20

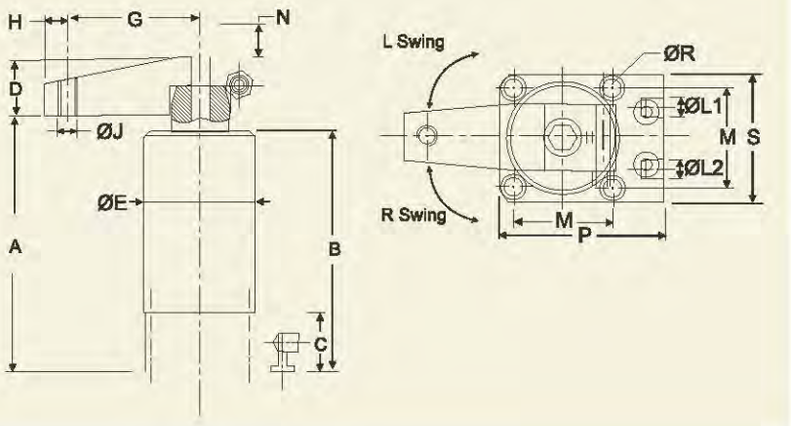
Please indicate while ordering whether required Right Hand Swing or Left Hand Swing (R/L). Standard swing angle is 90°. Other swing angles (60°, 45°, 0°) are also available on request. 2 nos. grooved nuts are supplied as standard accessory with NFT series.

In right hand swing, when seen from above while clamping down, the arm first swings 90 degrees clockwise and then clamps down whereas in left hand swing it rotates 90 degrees counterclockwise and then clamps down.

030 SERIES: HIGH OIL PRESSURE HYDRAULIC, BOTTOM FLANGE VERSION SWING CLAMP, DOUBLE ACTING, INLET OIL PRESSURE 35-350 kg/cm²

Features

- Flexible design allows for manifold or threaded port connection in one cylinder body.
- Material Medium Carbon steel Body
- Swivel Angle 90° ± 2°



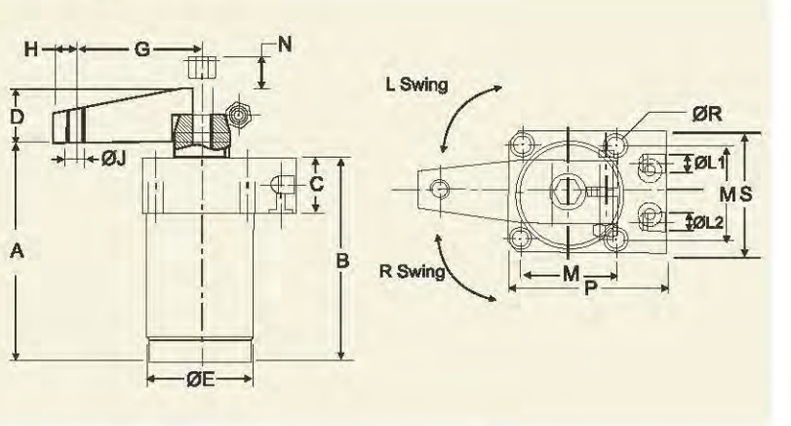
MODEL	A Unclamp Position	B	C	D □	E	G	H	J	INLETS L1 & L2	M	N	P	R	S	Bore Dia.	Swing Stroke	Clamping Stroke	Clamping Force in Kgs (210 kg/cm²)	N. W. Kgs.
030 - 92 - R/L	126	102	25	25	47.8	45	11	M10	G1/4	42	14.5	70.1	6.9	54	32	10	12	550	2.2
030 - 202 - R/L	143	110	25	30	63.8	55	15	M12	G1/4	55	16	85.1	8.5	70	44	14	14	1100	4.0
030 - 352 - R/L	155	115	25	40	80	68	15	M16	G1/4	70	24	100.1	10.8	89	55	14	16	2100	5.95

ABOVE CLAMPS ALSO AVAILABLE IN SINGLE ACTING CYLINDERS

050 SERIES: HYDRAULIC HIGH OIL PRESSURE, UPPER FLANGE VERSION SWING CLAMP, DOUBLE ACTING, INLET OIL PRESSURE 35-350 kg/cm²

Features

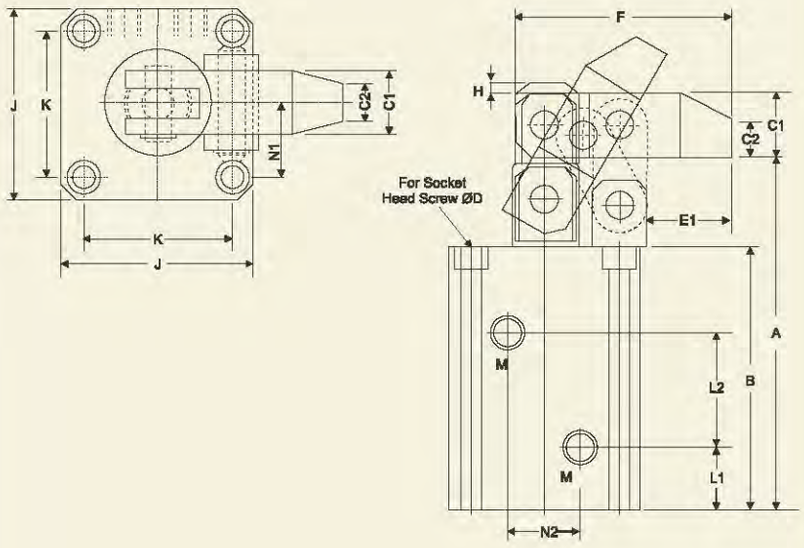
- Flexible design allows for manifold or threaded port connection in one cylinder body.
- Material : Medium Carbon steel Body
- Swivel Angle : 90° ± 2°



MODEL	A Unclamp Position	B	C	D	E	G	H	J	INLETS L1 & L2	M	N	P	R	S	Bore Dia.	Swing Stroke	Clamping Stroke	Clamping Force in Kgs at(210 kg/cm²)	N. W. Kgs.
050 - 92 - R/L	118	93.5	25.4	25	47.8	45	11	M10	G1/4	42	14.5	70.1	6.9	54	32	10	12	550	2.2
050 - 202-R/L	135	104.4	25.4	30	63.0	55	15	M12	G1/4	55	16	85.1	8.5	70	44	14	14	1100	4.0
050 - 352-R/L	147	113.8	25.4	40	77.0	68	15	M16	G1/4	70	24	100.1	10.8	89	55	14	16	2100	5.95

ABOVE CLAMPS ALSO AVAILABLE IN SINGLE ACTING CYLINDERS

HLC SERIES : DOUBLE ACTING, 5 - 50 kg/cm² INLET OIL PRESSURE HYDRAULIC LEVER CLAMP



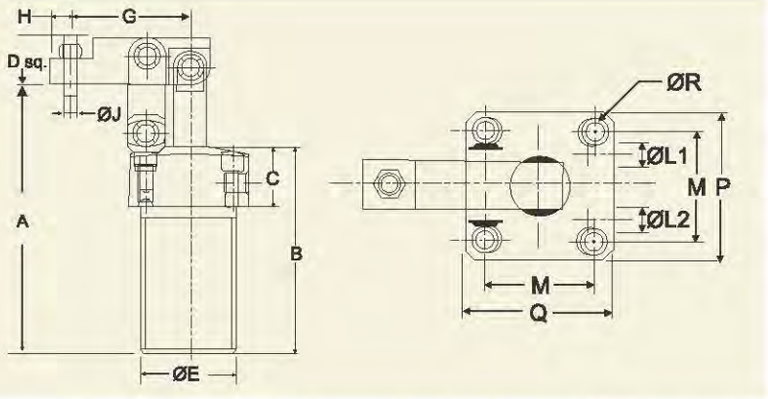
Model	Bore mm	Total Stroke mm	Max. Pressure	Operating Range of Pressure	Clamping Force at 25kg./cm²	A	B	C1	C2	E1	F	H	J	K	L1	L2	M	N1	N2	DØ	N. W. Kgs.
HLC-25	25	25	70kg./cm²	5~50kg./cm²	123Kg.	103	76	19	11	25	64	3	55	42	17	33	1/8PT	20	18	M-6	1.84
HLC-32	32	25			200Kg.	112	85	19	11	25	64	3	57	44	19	38	1/8PT	22	22	M-6	2.11
HLC-40	40	30			315Kg.	122	90	22.2	13	30	77	4	69	52	19	40	1/4PT	26	26	M-8	3.30
HLC-50	50	35			490Kg.	137	100	25.4	15	35.5	90	5	75	58	21.5	45	1/4PT	30	32	M-8	4.33

HLC SERIES ALSO AVAILABLE IN MANIFOLD TYPE MOUNTING

LHC01D SERIES: HYDRAULIC - UPPER FLANGE VERSION, THREADED BODY, DOUBLE ACTING LEVER CLAMP, 20-70 kg/cm² INLET OIL PRESSURE

Features

- Arm swings straight up to declamp and down to clamp.
- Material : S45C Body



MODEL	A clamp Position	B	C	D □	E*	G	H	J	Inlets L1 & L2	M	P	Q	R	Bore Dia.	Stroke	Force in Kgs at(25 kg/cm²)	N. W. Kgs.
LHC01D-25	111.5	86.5	25	17	M40 x 1.5	41	7	M6x1.0	1/8 PT	37	50	60	5.5	25	22	123	1.20
LHC01D-32	129	97	25	20	M50 x 1.5	52	8	M8x1.25	1/8 PT	45	60	70	6.5	32	28	200	1.80
LHC01D-40	132	97	25	25	M55 x 1.5	56	10	M8x1.25	1/8 PT	50	65	75	6.5	40	30	315	2.50
LHC01D-50	144	104	25	30	M65 x 1.5	63.5	14	M12x1.75	1/8 PT	58	75	88	8.5	50	30	490	4.00
LHC01D-63	149	105	25	30	M80 x 1.5	74	14	M12x1.75	1/8 PT	70	90	108	8.5	63	30	780	6.50

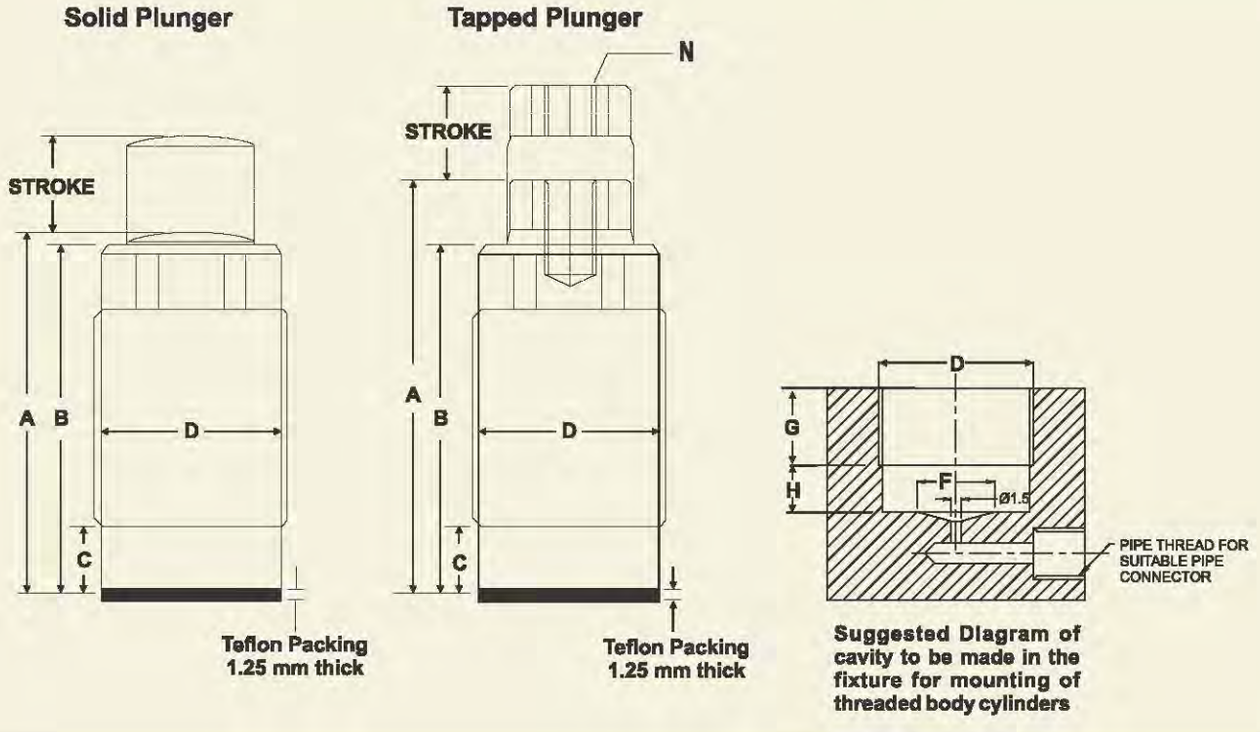
*** GROOVED NUT SUPPLIED AS STANDARD.**
ALSO AVAILABLE IN SINGLE ACTING CYLINDERS

TC SERIES : THREADED BODY CYLINDER, HYDRAULIC, SINGLE ACTING, SPRING RETURN 20 - 350 kg/cm^2 INLET OIL PRESSURE

This is a most simple hydraulic cylinder whose force can be directly used within its stroke for clamping as a push clamp or as a hydraulic support at the rear of a strap clamp. The mounting method of this cylinder is shown in the mounting diagram below illustrating suggested dimensions of the cavity to be made in the fixture. Teflon packing is provided for mounting to avoid oil leakage.

Solid Plunger
A Series

Tapped Plunger
B Series



Suggested Diagram of cavity to be made in the fixture for mounting of threaded body cylinders

MODEL	A	B	C	D	F	G (min)	H (max)	N	Piston dia	Stroke	Force at 200 kg/cm2	N. W. Kgs
TC 12A	38	36	7	M22x1.5	12	12	6	-	12	10	200kg	0.07
TC 16A	46.5	44.5	8	M26x1.5	16	16	7	-	16	12	400kg	0.14
TC 20A	56	54	8	M30x1.5	20	20	7	-	20	15	620kg	0.22
TC 25A	58	55	11	M38x1.5	25	20	10	-	25	16	980kg	0.37
TC 12B	45	36	7	M22x1.5	12	12	6	M6x1.0	12	10	200kg	0.08
TC 16B	52	44.5	8	M26x1.5	16	16	7	M6x1.0	16	12	400kg	0.15
TC 20B	64.5	54	8	M30x1.5	20	20	7	M8x1.25	20	15	620kg	0.24
TC 25B	67	55	11	M38x1.5	25	20	10	M8x1.25	25	16	980kg	0.40

HYDRAULIC WORK SUPPORT

Hydraulic work support is a hydraulic version of a mechanical screw Jack used as a work support element for positively supporting the workpiece to avoid deformation and minimize distortion and vibration of work piece due to cutting and clamping forces.

The Hydraulic work support automatically adjusts to the contour of the workpiece, and then locks in position. This support then adds rigidity to the fixtured component to avoid machining vibrations. They provide either unrested location points to the clamps or support to larger or thin section area of workpiece.

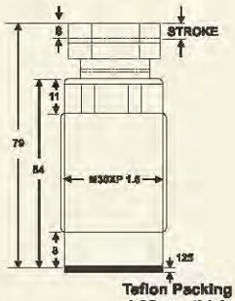
A Type : Spring advance : The spring is used to control a contact force when the knocking out rod (piston rod) extends to a highest knocking-out position and contacts the workpiece.

B Type : Hydraulic advance : When the knocking out rod is at a lowest position, it is operated by means of oil pressure and is knocked out when being filled with oil and uses a spring to control the contact force with the workpiece.

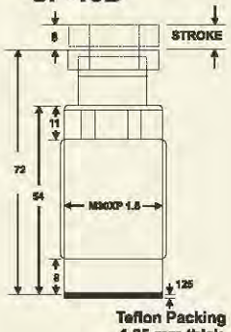
Mounting method of the threaded type Hydraulic Work supports is shown in the mounting diagram below illustrating suggested dimensions of the cavity to be made in the fixture. Teflon packing is provided for mounting to avoid oil leakage.

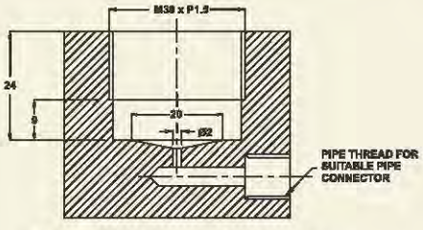
SP SERIES : Hydraulic Work Support - high inlet oil pressure 100- 350 Kg/cm²

Spring Advance Threaded Body Type SP-16A



Hydraulic Advance Threaded Body Type SP-16B



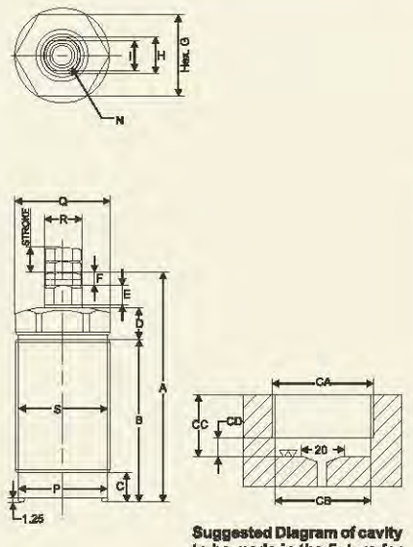


Suggested Diagram of cavity to be made in the fixture for mounting of threaded body work support

MODEL	SP-16A / SP-16B
Normal Operating Pressure	100-350kg/cm²
Cylinder Operation	Single Acting
Piston Diameter (mm)	16
Stroke (mm)	8
Supporting Force at 200 kg/cm²	210kg
Net Weight Kgs	0.30

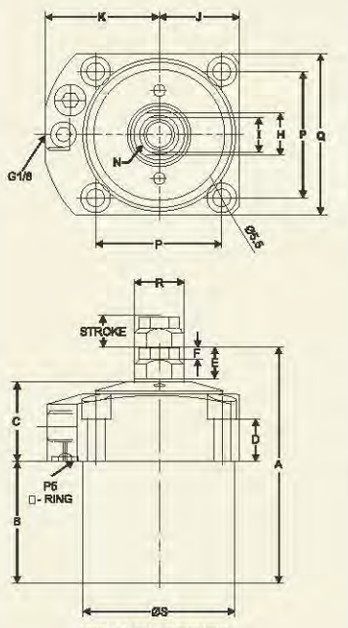
WS-BL SERIES : HYDRAULIC WORK SUPPORT - LOW OIL WORKING PRESSURE - 25-70 Kg/cm²

Smaller three sizes are manifold mounting type threaded body and larger sizes are piping type upper flange mounting. All below models are **hydraulic advance.**



Suggested Diagram of cavity to be made in the fixture for mounting of threaded body work support (WS-T-BL Series)

WS-T-BL SERIES



WS-U-BL SERIES

Manifold Type
WS-T-BL

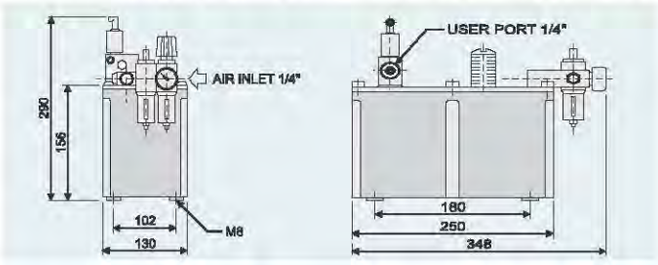
Upper Flange Type
WS-U-BL

Model	WS-T30BL	WS-T36BL	WS-U40BL	WS-U48BL	WS-U55BL
Supporting Force (70kg/cm2) kg	300	400	550	720	1100
Stroke	8	8	8	10	12
Max Pressure			105 kg/cm		
Normal Pressure			25-70 kg/cm		
A	73	69	67	75	85
B	51.8	50	31	39	45
C	9.5	8.4	25	25	25
D	10.2	8	14.5	13.5	11.5
E	7	7	10	10	14
F	4	4	4	4	6
G	27	32	-	-	-
H	8	11	11	12	15
I	10.5	10.5	11	11	14
J	-	-	22.5	25.5	30
K	-	-	31.5	31.5	39
N	M6X12D	M8X11D	M10X11D	M10X11D	M12X13D
P	Ø 28.2	Ø 34.2	34	40	47
Q	Ø 30	Ø 36	45	51	60
Ø R	10	13	13	14	18
S	M30X1.5	M36X1.5	Ø 40	Ø 48	Ø 55
CA	M30X1.5	M36X1.5	-	-	-
CB	28.5	34.5	-	-	-
CC	20-50	20-48	-	-	-
CD	9	8	-	-	-
N. W. Kgs.	0.25	0.35	0.6	0.8	1.4

2D / 3D CAD FILES AVAILABLE ON REQUEST FOR ALL MODELS

HYDROPNEUMATIC POWER UNIT

GERARDI Hydropneumatic Power Unit for hydraulic clamping devices and its bi-products is designed to meet all needs regarding the powering of hydraulic cylinders where low flow rates and high pressures are required. It is driven by air at its inlet to produce hydraulic pressure at its outlet. The special design shape of the power unit is such that a high performance system can be implemented taking up very little space. Thanks to the special design principles, the pump section adopted allows the hydropneumatic power unit to be installed in very hostile environments, such as the work area of machine tools, etc. The unique modular hydraulic flow control system allows controlling up to 6 separate users from just one power unit.



SPECIFICATION	
MAX. PERMISSIBLE INLET AIR PRESSURE:	7 bar
RECOMMENDED INLET AIR PRESSURE:	5,5 bar
OIL DELIVERIES: 1.2-1.4-2.2-2.7-4.3	Liters/min
MAX. OIL OUTLET PRESSURE AT 5 BAR AIR INLET PRESSURE:	400 bar
MAX. NO. OF USERS RECOMMENDED:	6

Outlet pressure can be regulated and set to desired pressure.

Art. 393 - Power unit with Manual control, Art. 394 - Power unit with Pneumatic control, Art. 395 - Power unit with Electrical control

The pump in its basic version is supplied complete with teflon tank, fill plug, silencer, quick acting air connector fitting and hydraulic control box.
Very suitable for operating Single Acting Swing Clamps.

POINTS TO REMEMBER

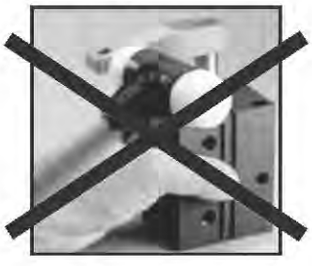
- If user wants to change the length of the single arm of a clamping cylinder, it should be noted that the length must be less than 1.2 times the standard length in order to avoid serious slanting of the piston rod. If the length in design needs to be larger than the aforesaid limit value, it is better to use double arms in order to extend the life of the cylinder. Double arms are arms extended equally on the other side of piston rod with a support of same height as the workpiece.
- Workpiece should not be clamped within the swing stroke during the downward movement of the clamping arm, and should be clamped within the vertical stroke only.
- During the loading and unloading of a workpiece, it is necessary to use an air gun to clean the cylinder for removing the iron slag or foreign objects attached thereon in order to prevent the foreign objects from entering the seal to cause oil / air leakage.
- It is necessary to use device having F.R.L. (Filters / Regulators / Lubricators) function in the pneumatic line in order to effectively remove the moisture, lubricate the cylinder and avoid the damage of the swing mechanism due to inertia impact of the clamping arm.
- If the direction of the single arm needs to be changed due to the problem of piping, it should be done with a wrench by holding the clamping arm first, and then unscrewing the screw and knocking the clamping arm upward to change its direction as shown in figure below. One should not apply lateral force to the clamping arm or laterally impact the clamping arm to change its direction in assembled position. This can cause damage of the swing mechanism due to improper force applied on it.

Fitting and removing clamping arm:

Hold clamping arm with spanner. Tighten/loosen screw.

Knock out clamping arm from piston rod.

Caution! Do not strike sides of clamping arm.



- R/L signifies right hand swing / Left hand swing. Please indicate while ordering. **In right hand swing, when seen from above while clamping down, the arm first swings 90 degrees* clockwise and then clamps down whereas in left hand swing it rotates 90 degrees counterclockwise and then clamps down.**
- *Clamps with swing angle other than 90 degrees are also available. Other swing angles available are 60° and 45°.
- The power source should not exceed the rated maximum pressure and the highest flow value.

TOOLFAST

MITEE-BITE PRODUCTS INC.
Made In USA

FIXTURE CLAMPS

INTRODUCTION

A machining centre makes tool changes in fractions of a second and cuts at unbelievable high speeds but the question is that whether the high efficiency of this machine is being optimally utilized or not. Number of pallets on a machine are important but more important is the extent to which the capacity of each pallet can be utilized, in other words - how many pieces can be clamped and machined at the same time on a pallet.

Realizing the need of multiple clamping on fixtures for CNC machining centre TOOLFAST joined hands with MITEE-BITE of U.S.A. to bring complete range of fixture clamps to India. By using Mitee-Bite fixture clamps of different types for different types of workpieces, one can succeed in clamping more number of workpieces in one setup and gaining clear benefits such as decreased downtime resulting in shorter machine stop times and longer actual machine cycles.

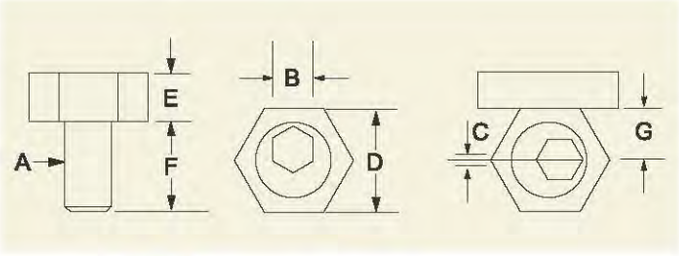
In the following pages, Mitee-Bite fixture clamps are illustrated which are now available in India from all TOOLFAST outlets.

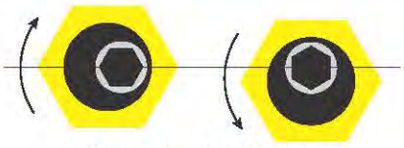
EXAMPLES OF MULTIPLE JOB CLAMPING WITH MITEE-BITE CLAMPS

FIXTURE CLAMPS

The Cam Action MITEE-BITE Fixture Clamp is made up of two simple components: a hardened steel socket cap screw with an offset head and a hexagonal washer.

- **Low profile makes computer programming easier.**
- **Cam action provides fast, strong clamping.**
- **Small size allows more parts per load.**
- **Simple design keeps cost low.**





Cam action side clamping

The following measurements are the correct locations to drill and tap holes for MITEE-BITE Fixture Clamps.

DISTANCE FROM EDGE OF WORKPIECE

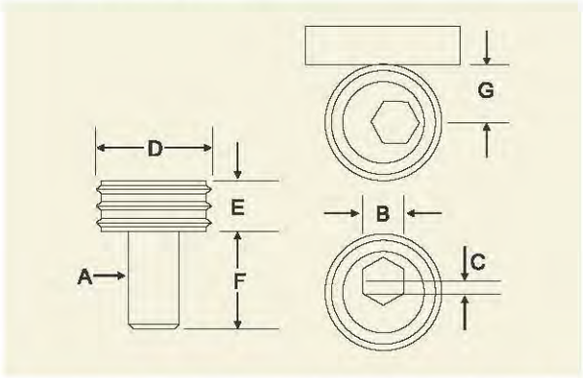
SCREW SIZE	PART NUMBER	DISTANCE
M4	50204	3.8 mm
M6	50206	7.8 mm
M8	50208	10.2 mm
M10	50210	10.2 mm
M12	50212	12.7 mm
M16	50216	15.0 mm

FIXTURE CLAMPS

PART NUMBER	A	B	C	D	E	F	G	MAXIMUM HOLDING FORCE (N)
50204	M4	3M	0.76	7.93	2.80	9.6	3.80	910
50206	M6	4M	1.01	15.86	4.75	11.2	7.80	3558
50208	M8	5M	1.01	20.60	4.75	15.0	10.15	3355
50210	M10	7M	1.52	20.60	6.35	19.0	10.15	8895
50212	M12	8M	2.03	25.40	9.52	22.8	12.70	17790
50216	M16	12M	2.54	30.13	12.70	28.5	15.00	26680

KNIFE EDGE CLAMPS

Knife Edge Clamps can be used instead of the original brass hex clamps for clamping rough cut stock, castings and any material that requires a hardened clamping element.

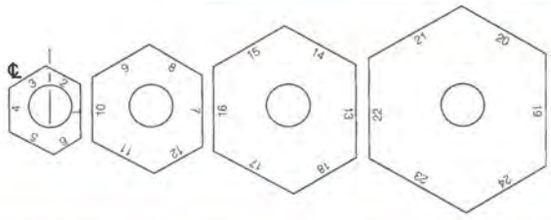


PART NUMBER	A	B	C	D	E	F	G
82584	M10	7M	1.52	20.60	6.35	19.0	10.15
82588	M12	8M	2.03	25.40	9.52	22.8	12.70
82592	M16	12M	2.54	30.15	12.70	28.5	15.00

SERIES-9 CLAMPS

This adjustable low profile, cam action clamp provides clamping of different size work pieces merely by rotating the clamp to one of its other edges. the clamps are 10mm high and use an M12 cam screw. Each of the six clamping surfaces is a different distance from the centerline by 1mm as shown in the chart. Therefore, one Series - 9 Clamp can hold parts that vary up to 6mm simply by rotating the clamp to a different clamping surface.

- **Serrated edges**
- **Heat treated and plated**



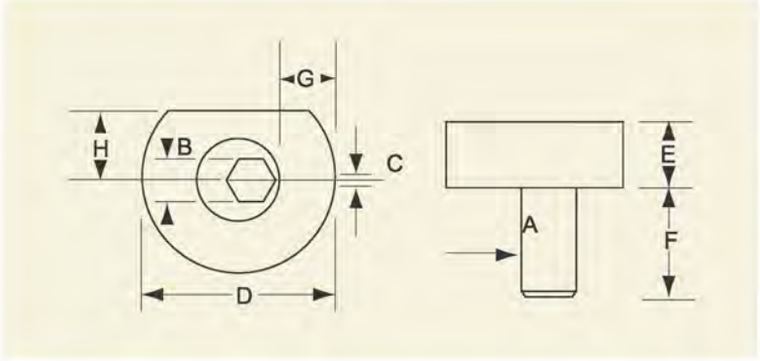
PART NUMBER	DESCRIPTION	FACE NUMBER	DISTANCE FROM℄
95115	1 - 6 Serrated	1	12 mm
		2	13 mm
		3	14 mm
		4	15 mm
		5	16 mm
		6	17 mm
95125	7 - 12 Serrated	7	18 mm
		8	19 mm
		9	20 mm
		10	21 mm
		11	22 mm
		12	23 mm

PART NUMBER	DESCRIPTION	FACE NUMBER	DISTANCE FROM℄
95135	13 - 18 Serrated	13	24 mm
		14	25 mm
		15	26 mm
		16	27 mm
		17	28 mm
		18	29 mm
95145	19 - 24 Serrated	19	30 mm
		20	31 mm
		21	32 mm
		22	33 mm
		23	34 mm
		24	35 mm

MACHINABLE FIXTURE CLAMPS

These clamps with the machinable steel washers provide more flexibility for holding round or unusual shape parts. Parts can be held directly to the fixture plate surface or elevated for through drilling. A special screw is provided with each package to hold the washer in the proper place during machining. The flat edge is the same location as our original fixture clamp. It can be used where a stronger clamping surface is required.

- **Low profile**
- **Made of soft steel for machinability**



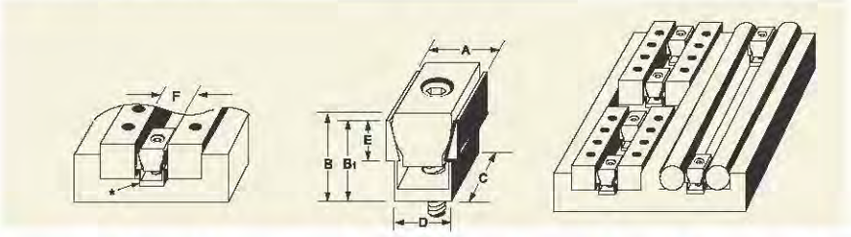
PART NUMBER	A	B	C	D	E	F	G*	H†	MAXIMUM HOLDING FORCE (N)	CLAMPS PER PACK
50506	M6	4M	1.01	24.9	6.4	11.9	6.4	7.8mm	3355	4
50510	M10	7M	1.52	31.2	8.9	18.0	7.0	10.2mm	8895	4
50512	M12	8M	2.03	37.6	11.4	22.9	7.6	12.7mm	17790	4
50516	M16	12M	2.54	43.9	14.4	28.6	8.9	15.0mm	26680	4

G* - The amount of machinable stock.
H† - The distance to drill & tap hole from edge of workpiece to use flat face.
** Every package includes one machining screw.

UNIFORCE CLAMPS

The compact, economical MITEE-BITE Uniforce Clamp enables you to fixture more parts on the machine table. The specially designed steel wedge spreads the clamping force uniformly on both sides of the 7075 - T6 aluminum channel.

- **Increases production.**
- **Minimizes tool changes.**
- **Holds two parts with equilateral clamping action.**
- **Ideal for clamping flat or round work pieces.**
- **Reduces wasted space.**



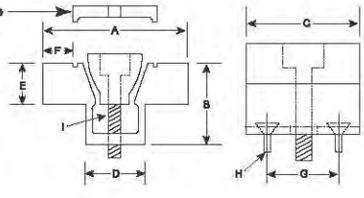
PART NUMBER	A	B	B_1	C	D*	E	F†	THREAD SIZE	MAXIMUM SPREAD	MAXIMUM HOLDING FORCE (N)
80250	6.1	6.9	6.4	8.1	5.3	3.6	6.4	M2	6.7	880
80375	9.1	9.7	9.5	11.9	7.9	4.7	9.5	M2.5	10.0	1350
80500	12.3	14.5	12.70	15.9	10.4	5.6	12.7	M4	13.2	2224
80750	18.6	19.0	19.05	23.8	16.1	9.5	19.0	M6	20.3	6670
81000	24.8	25.9	25.40	31.7	20.8	12.7	25.4	M8	26.9	8895
81500	37.3	38.6	38.10	47.6	30.8	19.0	38.1	M12	39.9	15565
82000	49.7	51.5	50.80	63.5	41.2	25.4	50.8	M16	53.0	26690

D* - A milled slot wider than D dimension will insure clamp remains in line with workpiece. Clamp sides should not come in contact with slot walls during expansion.
F† - The distance needed between workpieces for clamp clearance. Drill and tap mounting hole on the center of F dimension.

MACHINABLE UNIFORCE CLAMPS

The compact Mitee-Bite Uniforce Clamp is available with extra material on the clamping jaws so it can be machined to conform to the shape of your workpiece enabling you to fixture unusual applications easily. The specially designed steel wedge spreads the clamping force uniformly on both sides of the 7075-T6 aluminum channel. A unique locking plate is provided to make the clamp rigid while machining the jaws to your specifications, without vibration. Available in five size.

Now you can hold those round and unusual shape parts with ease. This compact method of work holding will allow more parts per load at a lower price than vise soft jaws.



Note: Locking plate is used only to machine jaws, remove to clamp workpiece.

PART NUMBER	DESCRIPTION	MODEL	A*	B	C	D	E	F†	G	H**	I
80050	1 Clamp Assembly with Lockring Plate	500	28.6	12.7	15.7	10.67	6.3	4.6	10.16	M2	M4
80055	1 Clamp Assembly, No Locking Plate	500	28.6	12.7	15.7	10.67	6.3	4.6	10.16	M2	M4
80075	1 Clamp Assembly with Locking Plate	750	38.1	19.1	23.9	16.05	9.4	6.6	15.87	M4	M6
80080	1 Clamp Assembly, No Locking Plate	750	38.1	19.1	23.9	16.05	9.4	6.6	15.87	M4	M6
80100	1 Clamp Assembly with Lockring Plate	1000	50.8	25.4	31.8	20.83	12.7	9.9	20.62	M4	M8
80105	1 Clamp Assembly, No Locking Plate	1000	50.8	25.4	31.8	20.83	12.7	9.9	20.62	M4	M8
80150	1 Clamp Assembly with Locking Plate	1500	76.2	38.1	47.5	30.86	19.1	15.7	30.48	M5	M12
80155	1 Clamp Assembly, No Locking Plate	1500	76.2	38.1	47.5	30.86	19.1	15.7	30.48	M5	M12
80200	1 Clamp Assembly with Locking Plate	2000	101.6	50.8	63.5	41.28	25.4	20.3	41.28	M6	M16
80205	1 Clamp Assembly, No Locking Plate	2000	101.6	50.8	63.5	41.28	25.4	20.3	41.28	M6	M16

A* - The distance needed between workpieces for clamp clearance. Drill and tap mounting holes on the center "A" dimension.
F† - The amount of machinable stock on jaws.
H** - Mounting Screws included.

ID XPANSION™ CLAMP

The ID Xpansion™ Clamp is the ideal way to hold part on an inside diameter for multiple machining on a vertical machining center or a horizontal machining center.

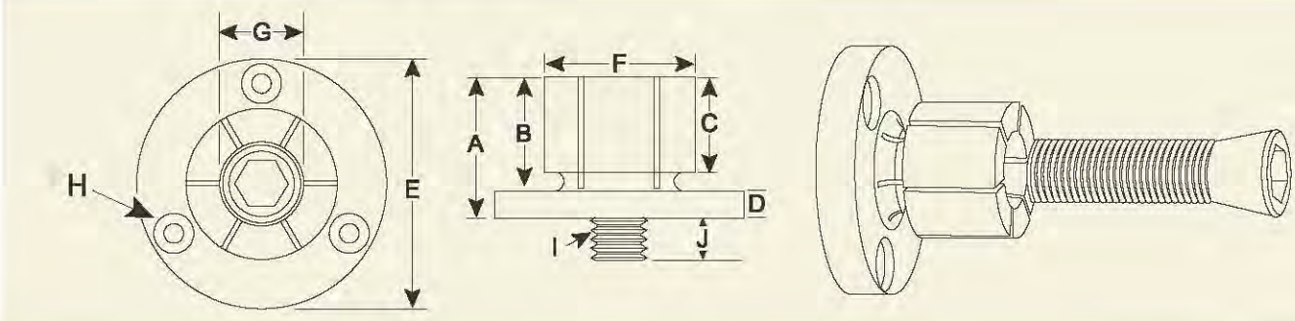
These machinable clamps are produced in 8 sizes and can hold internal diameters from 8mm to over 103mm. The clamps use a heat treated tapered screw for expansion.

The larger diameter of the clamp is held to a close tolerance for precision locating in a machined pocket on work cubes and fixture plates.

The customer machines the mild steel clamp to match the bore of the part ensuring proper fit. Often times the clamps can be remachined for different size jobs.

One of the benefits of these low profile clamps is holding may lathe parts, for secondary machining, on one compact set up. They are quickly tightened with a hex key, torque driver or can be mated to hydraulic pull cylinders for automation.

- **Low Profile**
- **Ideal for Secondary Operations on Lathe Parts**
- **Allows More Parts Per Workcube or Fixture Plates**
- **Excellent for Palletized Setups**
- **Screw Coated to Prevent Seizing**
- **Clamp Body Made of Soft Steel for Machinability**
- **Tighten with Hex Key or Hydraulic Pull Cylinders (Screw protrudes from bottom of base)**



PART NUMBER	MODEL NUMBER	A	B	C	D	E +.000 -.050	F	G†	H*	I	J	HOLDING FORCE N
38000	#00	10.7	7.6	6.1	3.0	20.00	7.4	4.1	M2 on 13.7 BHC	M2	4.1	1113
38050	# 0	21.8	16.0	15.0	5.9	29.72	12.4	7.1	M3 on 20.95 BHC	M4	7.2	4228
38100	# 1	24.9	19.0	15.0	5.9	31.5	14.2	12.2	M3 on 23.1 BHC	M6	11.2	8455
38150	# 2	24.9	19.0	15.0	5.9	37.5	20.0	13.5	M3 on 29.0 BHC	M8	13.2	11125
38200	# 3	28.6	22.2	17.5	6.4	50.0	27.0	18.0	M4 on 39.4 BHC	M10	16.3	20025
38250	# 4	31.8	25.4	20.6	6.4	56.0	35.3	23.0	M4 on 45.5 BHC	M12	20.3	26255
38300	# 5	39.6	31.8	27.0	7.9	69.5	42.0	29.3	M5 on 55.9 BHC	M16	21.4	44500
38350	# 6	39.6	31.8	27.0	7.9	75.5	51.5	29.3	M5 on 63.9 BHC	M16	21.4	44500
38400	# 7	45.5	37.6	32.3	7.9	105.5	77.7	29.3	M6 on 92.6 BHC	M16	19.3	44500
38450	# 8	45.5	37.6	32.3	7.9	132.9	103.12	29.3	M6 on 118.06 BHC	M16	19.3	44500
38500	# 9	45.5	37.6	32.3	7.9	132.9	175.0	29.3	M6 on 118.06 BHC	M16	19.3	44500
38550	# 10	45.5	37.6	32.3	7.9	152.4	250.2	29.3	M6 on 133.35 BHC	M16	19.3	26000

G† - Minimum diameter the "F" dimension can be machined or turned down to.
H*- (3) Mounting Screws included.

MACHINING AND INSTALLATION

- **Expand clamp approximately 0.1mm over relaxed diameter and machine to fit workpiece bore, either on lathe or mill**
- **If machining the clamp on a lathe use the nut provided, on the back of the clamp, to tighten the tapered screw. This nut is used only to machine the clamp.**
- **Machine a pocket, in the fixture, for the close tolerance "E" dimension and drill and tap mounting holes per "H" column. Drill and tap a hole from the "I" column in the center of the pocket for the tapered screw.**
- **A recessed dowel pin may be installed into the flange for additional rigidity if required.**

ALSO AVAILABLE SIDE-LOC EXPANSION CLAMPS FOR BLIND HOLES - FOR DETAILS WRITE TO US OR VISIT www.miteebite.com

PITBULL CLAMPS

The Pitbull™ Clamp is a revolutionary new fixture clamp with positive down force and a low gripping profile. High vertical and horizontal clamping forces are generated, considering the size of the Pitbull™ clamps. It uses a standard cap screw and an oil resistant O-ring. The Pitbull™ clamp is available in 5 sizes and several styles, a tool steel knife edge for aggressive stock removal, a tool steel blunt edge for general purpose and a brass version to help prevent marring the workpiece.

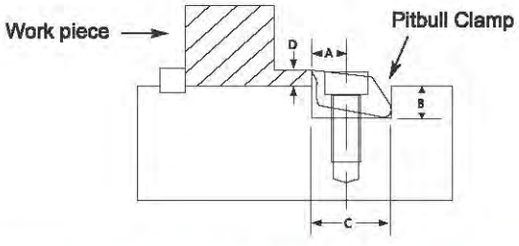
Use Pitbull™ Clamps and machine with confidence

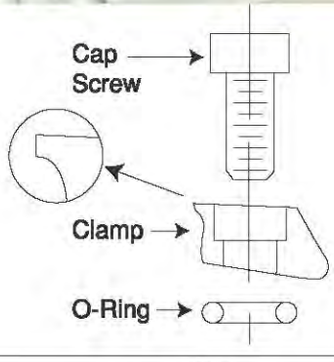
Unique features of PITBULL CLAMP

- Extremely low bite
- Positive down force
- High resistance to rip-out
- Simple, sturdy, high quality design and components

Take a bite out of production costs

- Gain maximum tool access to your work
- Employ fewer clamps per fixture
- Virtually eliminate lost work

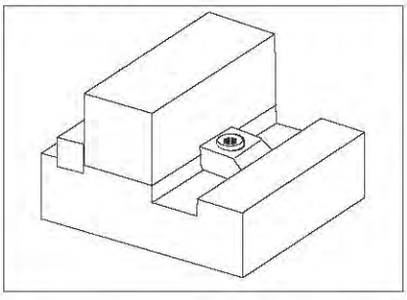


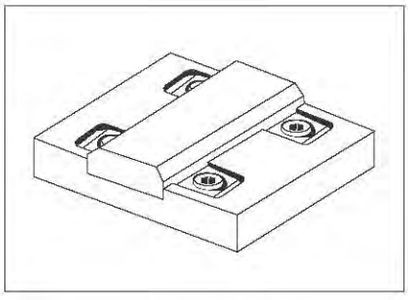


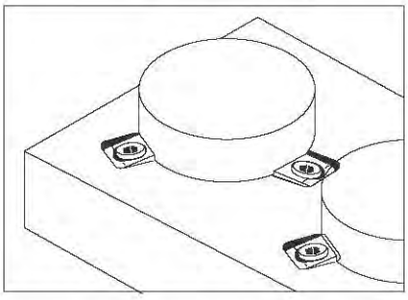
Creating Fixtures is Easy...Simply:

1. Machine a slot for the Pitbull™ Clamp.
2. Drill and tap a hole for the cap screw.
3. Assemble the clamps as shown in diagram.
4. Position clamp as shown in diagram and loosely screw to fixture.
5. Insert workpiece and lighten cap screw.

FIXTURE EXAMPLES:







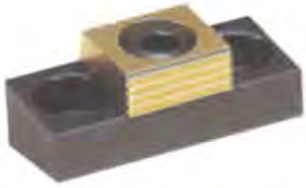
PART NUMBER	DESCRIPTION	A	B	C	D*	CLAMP WIDTH	SCREW SIZE	MAXIMUM HOLDING FORCE (N)	TORQUE (N.M.)	TOTAL THROW
56000	Tool Steel, Knife Edge	3.81	3.55	9.52	1.90	9.52	M2.5	2,800	1.80	0.190
56010	Tool Steel, Blunt Edge	3.81	3.55	9.52	1.90	9.52	M2.5	2,800	1.80	0.190
56015	Brass, Blunt Edge	3.81	3.55	9.52	1.90	9.52	M2.5	875	0.56	0.190
56020	Tool Steel, Knife Edge	5.08	4.75	12.70	1.90	12.70	M4	6,600	5.60	0.406
56030	Tool Steel, Blunt Edge	5.08	4.75	12.72	2.54	12.70	M4	6,600	5.60	0.406
56040	Brass, Blunt Edge	5.08	4.75	12.72	2.54	12.70	M4	1,750	2.80	0.406
56050	Tool Steel, Knife Edge	7.62	7.11	19.05	3.81	19.05	M6	16,000	22.50	0.610
56060	Tool Steel, Blunt Edge	7.62	7.11	19.05	3.81	19.05	M6	16,000	22.50	0.610
56065	Brass, Blunt Edge	7.62	7.11	19.05	3.81	19.05	M6	4,200	5.60	0.610
56070	Tool Steel, KnifeEdge	10.16	11.43	25.40	6.35	25.40	M10	26,000	40.60	1.270
56075	Tool Steel, Blunt Edge	10.16	11.43	25.40	6.35	25.40	M10	26,000	40.60	1.270
56080	Tool Steel, Knife Edge	15.24	16.26	38.10	9.52	38.10	M12	37,500	200.00	1.900
56085	Tool Steel, Blunt Edge	15.24	12.26	38.10	9.52	38.10	M12	37,500	200.00	1.900

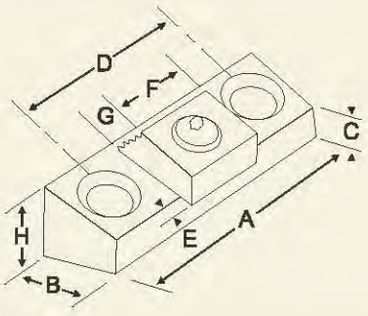
D* - Minimum Clamp height

ALSO AVAILABLE MACHINABLE PITBULL CLAMPS AND MODULAR PITBULL CLAMPS - FOR DETAILS WRITE TO US OR VISIT www.miteebite.com

COMPACT TOE CLAMPS

This cam action fixture clamp provides positive down force while using very little space on a fixture. Workpieces can be clamped in series by using the back surface of a clamp to locate the next workpiece. The hardened steel clamping element has both a smooth surface for machined workpieces and a serrated clamping surface for rougher work. The height of the clamp can be adjusted by milling the slot deeper in the fixture plate.





PART NUMBER	A	B	C	D	E†	F	G	H	CAM SCREW	TOTAL DISTANCE OF MOVEMENT	MOUNTING SCREWS (INCLUDED)	HOLDING FORCE (N.)
54110	43.2	19.0	12.7	25.4	2.3	19.0	6.4	15.75	50368	1.6	M8	8900
54112	54.0	25.4	11.4	33.5	2.8	25.4	9.7	15.75	50372	2.0	M10	17800
54116	75.0	38.1	25.2	50.8	3.3	38.1	12.7	31.75	50374	2.5	M12	26700

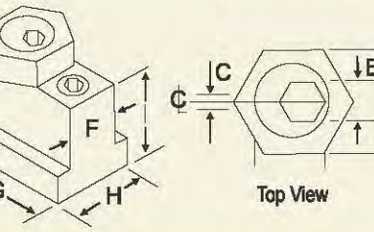
E†- The distance needed between the front of the clamp base and the workpiece.

T-SLOT CLAMP KITS (SIDE CLAMPING)

The original MITEE-BITE T-Slot Clamp combines our unique cam action clamping element with a T-nut.

- ☐ **Locks in machine T-slot for low profile clamping**
- ☐ **Makes fast set-ups possible right on the machine table**
- ☐ **Brass hex follows contour of unusual shaped parts**
- ☐ **Packaged in pair or complete kits**

The Mitee-Bite Kit Contains: 4 Mitee-Bite T-Nuts
6 Mitee-Bite Fixture Clamps
2 Hex Keys



PART NUMBER	CAM SCREW	T-SLOT SIZE	B	C	D	E	F	G	H	I	HOLDING FORCE(N.)
50642	M6 x 1.00	8mm	5mm	1.01	15.86	4.75	8	23.2	12.7	9.5	3558
50644	M6 x 1.00	10mm	5mm	1.01	15.86	4.75	10	23.2	14.2	14.2	3558
50646	M8 x 1.25	12mm	5mm	1.01	20.62	4.75	12	27.9	15.9	15.9	3355
50648	M10 x 1.50	14mm	7mm	1.52	20.62	6.35	14	30.5	22.4	22.2	8900
50650	M12 x 1.75	16mm	8mm	2.03	25.40	9.53	16	30.9	25.4	22.2	13340
50652	M12 x 1.75	18mm	8mm	2.03	25.40	9.53	18	34.7	28.6	28.6	13340
50654	M16 x 2.00	20mm	12mm	2.54	30.15	12.70	20	39.2	31.8	31.8	26700
50656	M16 x 2.00	22mm	12mm	2.54	30.15	12.70	22	44.3	34.9	41.3	26700

TOOLFAST

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