



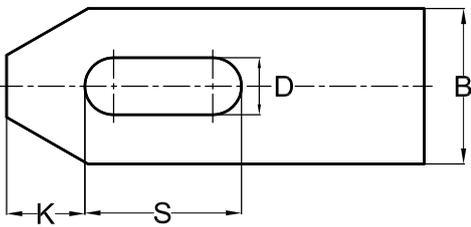
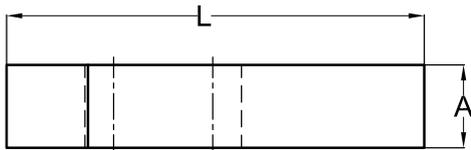
# Tisa Enterprises



**The Clamping Professionals**

## Flat Strap Clamp

**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened



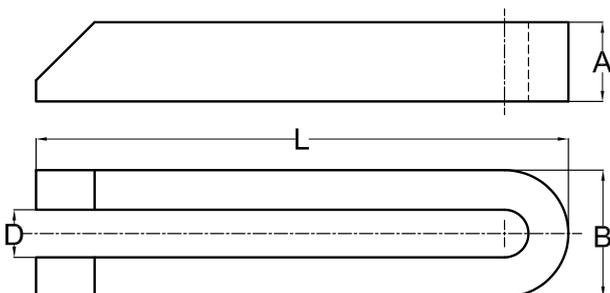
TYPE: T1-FSC						IS: 4292 - 1984	
TYPE	D x L	A	B	K	S	Suitable for thread size	Weight in kg
T1-FSC-960	9 x 60	14	25	13	22	M8	0.15
T1-FSC-1180	11 x 80	16	30	15	30	M10	0.25
T1-FSC-14100	14 x 100	20	40	21	40	M12	0.50
T1-FSC-14125	14 x 125	20	40	21	50	M12	0.65
T1-FSC-18125	18 x 125	25	50	26	45	M16	1.00
T1-FSC-18160	18 x 160	25	50	26	65	M16	1.25
T1-FSC-22160	22 x 160	35	60	30	60	M20	2.10
T1-FSC-22200	22 x 200	35	60	30	80	M20	2.65
T1-FSC-26200	26 x 200	35	70	35	80	M24	3.25
T1-FSC-26250	26 x 250	40	70	35	105	M24	4.15
T1-FSC-33250	33 x 250	39	79	45	100	M30	4.80
T1-FSC-33315	33 x 315	49	79	45	130	M30	7.90
T1-FSC-39315	39 x 315	45	90	48	125	M36	8.35
T1-FSC-39350	39 x 350	55	90	48	150	M36	11.40
T1-FSC-39400	39 x 400	55	90	48	180	M36	13.20

## U Clamp

**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened

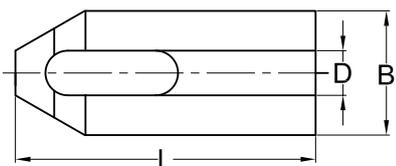
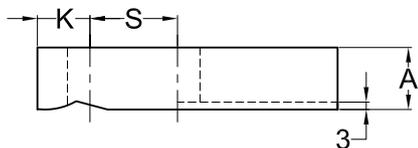
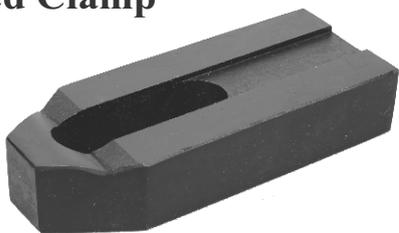
Due to the openness of the slot, clamp can be inserted/ removed without disturbing the clamping system.

All U-Clamps are manufactured from solid flat bars and not made by hot bending/forging of thinner flats.



TYPE: T1-UC					IS: 4293 - 1984	
TYPE	D x L	A	B	Suitable for thread size	Weight in kg	
T1-UC-11100	11 x 100	20	31	M10	0.30	
T1-UC-14125	14 x 125	25	38	M12	0.55	
T1-UC-14160	14 x 160	25	38	M12	0.70	
T1-UC-18160	18 x 160	30	48	M16	1.10	
T1-UC-18200	18 x 200	30	48	M16	1.35	
T1-UC-22200	22 x 200	40	52	M20	1.80	
T1-UC-22250	22 x 250	40	62	M20	3.00	
T1-UC-26200	26 x 200	40	66	M24	2.35	
T1-UC-26250	26 x 250	40	66	M24	2.95	
T1-UC-33250	33 x 250	49	74	M30	3.80	
T1-UC-33315	33 x 315	48	74	M30	4.65	
T1-UC-33400	33 x 400	48	74	M30	6.05	
T1-UC-33500	33 x 500	48	74	M30	7.70	
T1-UC-40400	40 x 400	58	98	M36	10.00	
T1-UC-40500	40 x 500	58	98	M36	12.85	
T1-UC-40600	40 x 600	58	98	M36	15.70	

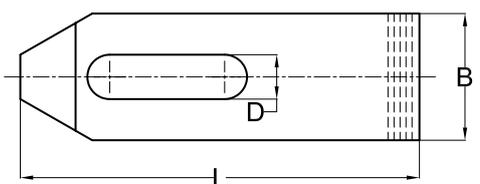
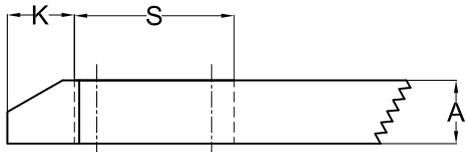
## Slotted Clamp



**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened

TYPE: T1-SC						IS: 6082 - 1985	
TYPE	D x L	A	B	K	S	Suitable for thread size	Weight in kg
T1-SC-1175	11 x 75	16	30	15	20	M10	0.20
T1-SC-1195	11 x 95	16	30	15	30	M10	0.25
T1-SC-14100	14 x 100	20	40	18	30	M12	0.45
T1-SC-14115	14 x 115	20	40	18	38	M12	0.55
T1-SC-18120	18 x 120	25	50	21	35	M16	0.85
T1-SC-18135	18 x 135	25	50	21	42	M16	1.00
T1-SC-22140	22 x 140	30	60	25	40	M20	1.40
T1-SC-22150	22 x 150	30	60	25	50	M20	1.55
T1-SC-26200	26 x 200	35	70	35	55	M24	2.95
T1-SC-26240	26 x 240	35	70	35	75	M24	3.55
T1-SC-33250	33 x 250	39	79	45	70	M30	4.40
T1-SC-33300	33 x 300	39	79	45	95	M30	5.20

## Serrated Strap Clamp



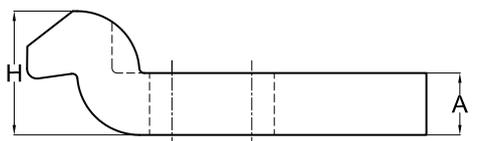
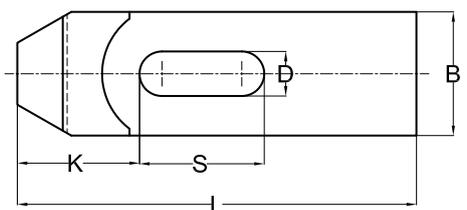
**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened

The gear tooth profile serrations provide composite angles for firm grip and no slippage.

**Applications:** On machines for work holding in combination with Universal Serrated Blocks (Type: T3-USB) for instant height adjustment. Refer page 12 for illustration.

TYPE: T1-SSC						DIN: 6314 S	
TYPE	D x L	A	B	K	S	Suitable for thread size	Weight in kg
T1-SSC-960	9 x 60	12	25	13	22	M8	0.10
T1-SSC-1180	11 x 80	15	30	15	30	M10	0.20
T1-SSC-14100	14 x 100	20	40	21	40	M12	0.45
T1-SSC-14125	14 x 125	20	40	21	50	M12	0.60
T1-SSC-18125	18 x 125	25	50	26	45	M16	0.90
T1-SSC-18160	18 x 160	25	50	26	65	M16	1.20
T1-SSC-22160	22 x 160	30	60	30	60	M20	1.65
T1-SSC-22200	22 x 200	30	60	30	80	M20	2.10
T1-SSC-26200	26 x 200	30	70	35	80	M24	2.40

## Goose Neck Clamp

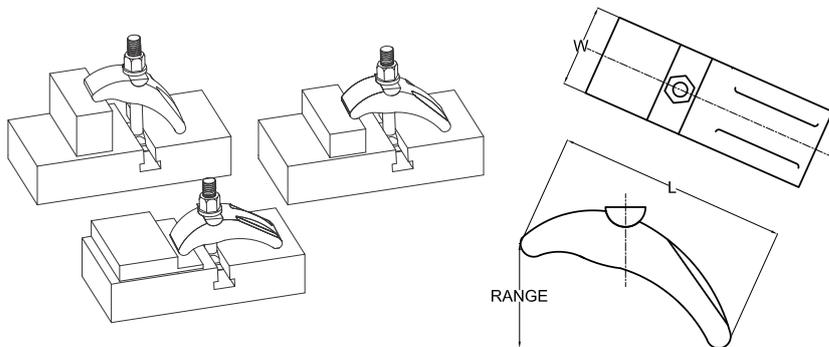


**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened

All Goose Neck Clamps are manufactured from solid flat bars and not forged.

TYPE: T1-GNC							IS: 4279-1975	
TYPE	D x L	A	B	H	K	S	Suitable for thread size	Weight in kg
T1-GNC-11100	11 x 100	15	30	30	32	32	M10	0.30
T1-GNC-14125	14 x 125	20	40	40	40	40	M12	0.75
T1-GNC-18160	18 x 160	25	50	50	49	50	M16	1.45
T1-GNC-22200	22 x 200	30	60	60	55	70	M20	2.50
T1-GNC-26250	26 x 250	35	70	80	72	80	M24	5.00
T1-GNC-33250	33 x 250	40	80	80	91	80	M30	5.70
T1-GNC-33315	33 x 315	50	80	100	91	100	M30	8.90
T1-GNC-39400	39 x 400	60	100	120	105	120	M36	17.0

## Press Tool / Milling Clamp



### Material

**Clamping Pad:** High tensile S.G. Iron, enamelled in flame red colour

**Forged T-Bolt, Hex Hi-Nut:** Medium carbon steel, hardened and tempered to 24-32 HRC, chemically blackened

**Swivel Nut:** Medium carbon steel, chemically blackened

### Applications :

- On Presses for holding tools, dies
- On Machine beds for holding flat components, castings.

NOTE: T1-PTMC is supplied with Clamping Pad, Forged T-Bolt, Hex Hi-Nut and Swivel Nut.

Non-standard T-bolts / Clamping Studs can be provided on request.

TYPE: T1-PTMC						
TYPE	Suitable for T-Slot	Clamp		Range	T-Bolt	Weight in kg (Full Set)
		Width	Length			
T1-PTMC-8	8	30	100	0-40	T2-TB-880	0.45
T1-PTMC-10	10	30	100	0-35	T2-TB-1080	0.45
T1-PTMC-12	12	50	140	0-55	T2-TB-12125	1.45
T1-PTMC-14	14	50	140	0-55	T2-TB-14125	1.45
T1-PTMC-16	16	50	140	0-70	T2-TB-16160	1.60
T1-PTMC-18	18	60	175	0-80	T2-TB-18200	2.60
T1-PTMC-20	20	60	175	0-90	T2-TB-20200	2.85
T1-PTMC-22	22	60	175	0-90	T2-TB-22200	2.90
T1-PTMC-24	24	70	235	0-140	T2-TB-24200	6.00
T1-PTMC-28	28	70	235	0-140	T2-TB-28200	6.10
T1-PTMC-36	36	78	235	0-120	T2-TB-36320	9.00

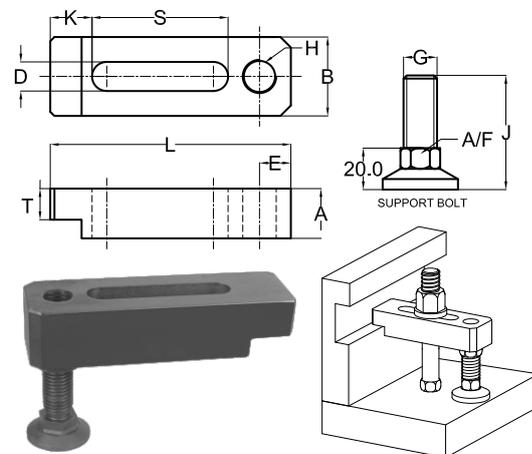
## Mould Clamp with Heavy Support Bolt

Mould Clamp offers counter height adjustment with the help of the heavy duty support bolt with hex, round base and lock nut.

**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened

**Applications :** Plastic / Rubber Moulding machines

**Note:** T1-MCH is supplied with the Clamp, Heavy Support Bolt and Lock Nut. T-Bolt/Stud, Hex Hi-Nut and Washer are optional.



TYPE: T1-MCH												
TYPE	Suitable for thread size	A	B	D x L	S	T	K	H	E	Support Bolt		Weight in kg
										G x J	Hex A/F x Base	
T1-MCH-12115S	M12	24	38	14 x 115	65	15	20	M16	15	M16 x 55L	19 x 35	0.70
T1-MCH-12115L										M16 x 90L		0.75
T1-MCH-16130S	M16	31	48	18 x 130	70	20	25	M20	18	M20 x 60L	24 x 40	1.30
T1-MCH-16130L										M20 x 90L		1.35
T1-MCH-16160S	M16	31	48	18 x 160	90	20	30	M20	20	M20 x 60L	24 x 40	1.55
T1-MCH-16160L										M20 x 90L		1.60
T1-MCH-20140S	M20	38	60	22 x 140	70	25	35	M24	18	M24 x 60L	27 x 50	2.10
T1-MCH-20140L										M24 x 100L		2.20
T1-MCH-20160S	M20	38	60	22 x 160	90	30	35	M24	20	M24 x 60L	27 x 50	2.40
T1-MCH-20160L		45								M24 x 100L		2.90
T1-MCH-20200	M20	45	60	22 x 200	110	30	45	M24	22	M24 x 100L	27 x 50	3.50
T1-MCH-24200	M24	48	78	26 x 200	105	35	45	M27	25	M27 x 100L	30 x 55	5.00

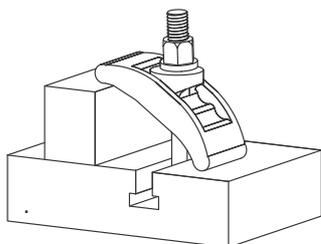
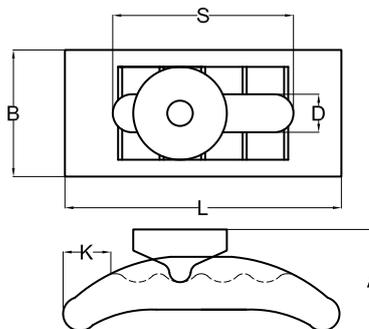
## Quick Clamp

### Material:

**Clamp and Saddle:** High tensile S G Iron, enamelled in flame red colour

**Forged T-Bolt, Flanged Hex Nut:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened.

**Applications :** On Presses, Plastic Moulding machines, Milling Machines, Drilling Machines and CNC Machining Centres.

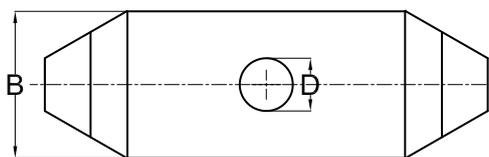
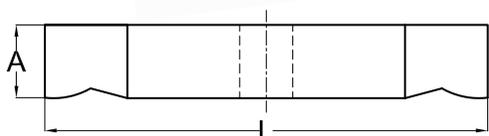


**Note:** T1-QC is supplied with Clamp, Forged T-Bolt, Flanged Hex Nut as standard. Non standard T-Bolt/Stud can be provided on request.

TYPE: T1-QC								
TYPE	Suitable for T-Slot	D x S	L x B	A	K	Clamping Range in mm	T -Bolt	Weight in kg
T1-QC-1/12	12	18 x 85	130 x 60	50	16	0 - 60	T2-TB-12125	1.15
T1-QC-1/14	14						T2-TB-14125	1.15
T1-QC-1/16	16						T2-TB-16125	1.20
T1-QC-2/18	18	22 x 95	160 x 70	57	32	0 - 70	T2-TB-18200	2.00
T1-QC-2/20	20						T2-TB-20200	2.30
T1-QC-2/22	22						T2-TB-22200	2.35
T1-QC-3/24	24	26 x 115	185 x 80	60	36	0 - 80	T2-TB-24200	3.50
T1-QC-3/28	28						T2-TB-28200	3.60

## Double Ended Clamp

**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened

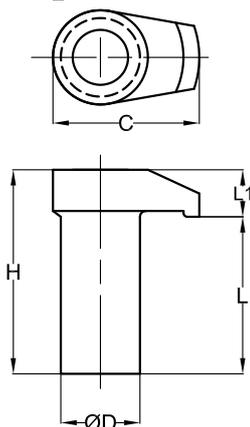


TYPE: T1-DEC				IS: 6080-1985	
TYPE	D x L	A	B	Suitable for thread size	Weight in kg
T1-DEC-1160	11 x 60	16	30	M10	0.15
T1-DEC-1185	11 x 85	16	30	M10	0.25
T1-DEC-14100	14 x 100	20	40	M12	0.50
T1-DEC-14125	14 x 125	20	40	M12	0.65
T1-DEC-18125	18 x 125	25	50	M16	1.00
T1-DEC-18150	18 x 150	25	50	M16	1.20
T1-DEC-22150	22 x 150	30	60	M20	1.70
T1-DEC-22200	22 x 200	30	60	M20	3.10
T1-DEC-26200	26 x 200	35	70	M24	3.20
T1-DEC-26250	26 x 250	35	70	M24	4.00
T1-DEC-33200	33 x 200	39	79	M30	4.20
T1-DEC-33250	33 x 250	39	79	M30	5.00
T1-DEC-33315	33 x 315	39	79	M30	6.40

## Hook Clamp

**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened  
Supplied along with spring and socket head screw.

**Applications:** In jigs and fixtures for holding flat components/ plates/castings, etc.

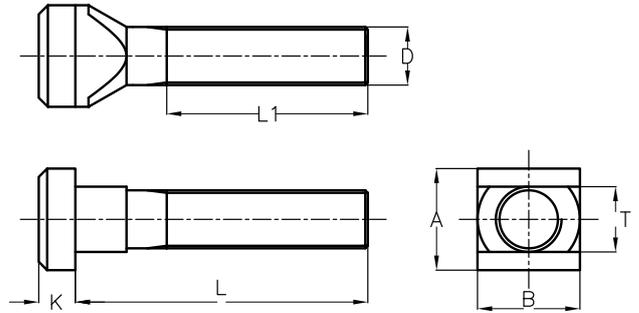


TYPE: T1-HK							
T1-HK	ØD	H	L	L1	C	Socket Head Screw Dia x Length	Weight in kg
T1-HK-1642	16	42	32	10	29	M6 x 50	0.092
T1-HK-2052	20	52	40	12	37	M8 x 60	0.120
T1-HK-2566	25	66	50	16	46	M10 x 70	0.125
T1-HK-3283	32	83	63	20	58	M12 x 90	0.160

## Forged T-Bolt

**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened.

**Note:** We can manufacture non-standard T-Bolts in 8.8, 10.9 and 12.9 Grade as per given drawings on request.



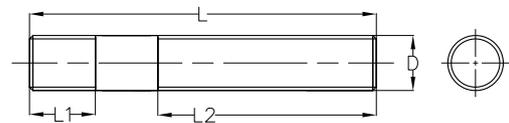
TYPE: T2 - TB		IS: 2014 - 1996					
TYPE	ØD	T-SLOT Size T	L	K	L1	A x B	Wt. kg
T2-TB-832	M8	8	32	6	22	13 x 13	0.020
T2-TB-850	M8	8	50	6	35	13 x 13	0.025
T2-TB-865	M8	8	65	6	35	13 x 13	0.015
T2-TB-880	M8	8	80	6	50	13 x 13	0.035
T2-TB-1040	M10	10	40	6	30	15 x 15	0.030
T2-TB-1065	M10	10	65	6	45	15 x 15	0.045
T2-TB-1080	M10	10	80	6	40	15 x 15	0.055
T2-TB-10100	M10	10	100	6	60	15 x 15	0.065
T2-TB-1250	M12	12	50	7	35	18 x 18	0.060
T2-TB-1265	M12	12	65	7	40	18 x 18	0.070
T2-TB-1280	M12	12	80	7	55	18 x 18	0.080
T2-TB-12100	M12	12	100	7	50	18 x 18	0.10
T2-TB-12125	M12	12	125	7	75	18 x 18	0.15
T2-TB-12160	M12	12	160	7	80	18 x 18	0.15
T2-TB-12200	M12	12	200	7	120	18 x 18	0.20
T2-TB-1450	M12	14	50	8	35	22 x 22	0.10
T2-TB-1465	M12	14	65	8	40	22 x 22	0.10
T2-TB-1480	M12	14	80	8	55	22 x 22	0.10
T2-TB-14100	M12	14	100	8	50	22 x 22	0.12
T2-TB-14125	M12	14	125	8	75	22 x 22	0.15
T2-TB-14160	M12	14	160	8	80	22 x 22	0.16
T2-TB-14200	M12	14	200	8	120	22 x 22	0.20
T2-TB-14250	M12	14	250	8	150	22 x 22	0.25
T2-TB-1665	M16	16	65	9	45	25 x 25	0.15
T2-TB-1680	M16	16	80	9	55	25 x 25	0.15
T2-TB-16100	M16	16	100	9	65	25 x 25	0.20
T2-TB-16125	M16	16	125	9	80	25 x 25	0.25
T2-TB-16160	M16	16	160	9	100	25 x 25	0.27
T2-TB-16200	M16	16	200	9	125	25 x 25	0.30
T2-TB-16250	M16	16	250	9	150	25 x 25	0.40
T2-TB-1865	M16	18	65	10	45	28 x 28	0.15
T2-TB-1880	M16	18	80	10	55	28 x 28	0.20
T2-TB-18100	M16	18	100	10	65	28 x 28	0.25
T2-TB-18125	M16	18	125	10	80	28 x 28	0.25
T2-TB-18160	M16	18	160	10	100	28 x 28	0.30
T2-TB-18200	M16	18	200	10	125	28 x 28	0.35
T2-TB-18250	M16	18	250	10	150	28 x 28	0.45

TYPE: T2 - TB		IS: 2014 - 1996					
TYPE	ØD	T-SLOT Size T	L	K	L1	A x B	Wt. kg
T2-TB-2080	M20	20	80	12	55	32 x 32	0.30
T2-TB-20100	M20	20	100	12	65	32 x 32	0.35
T2-TB-20125	M20	20	125	12	85	32 x 32	0.40
T2-TB-20160	M20	20	160	12	110	32 x 32	0.45
T2-TB-20200	M20	20	200	12	125	32 x 32	0.55
T2-TB-20250	M20	20	250	12	150	32 x 32	0.65
T2-TB-20320	M20	20	320	12	190	32 x 32	0.75
T2-TB-2280	M20	22	80	14	55	35 x 35	0.35
T2-TB-22100	M20	22	100	14	65	35 x 35	0.40
T2-TB-22125	M20	22	125	14	85	35 x 35	0.45
T2-TB-22160	M20	22	160	14	110	35 x 35	0.50
T2-TB-22200	M20	22	200	14	125	35 x 35	0.60
T2-TB-22250	M20	22	250	14	150	35 x 35	0.70
T2-TB-22320	M20	22	320	14	190	35 x 35	0.80
T2-TB-24100	M24	24	100	16	70	40 x 40	0.55
T2-TB-24125	M24	24	125	16	85	40 x 40	0.60
T2-TB-24160	M24	24	160	16	110	40 x 40	0.75
T2-TB-24200	M24	24	200	16	125	40 x 40	0.85
T2-TB-24250	M24	24	250	16	150	40 x 40	1.00
T2-TB-24320	M24	24	320	16	190	40 x 40	1.25
T2-TB-24400	M24	24	400	16	240	40 x 40	1.40
T2-TB-28100	M24	28	100	18	70	44 x 44	0.65
T2-TB-28125	M24	28	125	18	85	44 x 44	0.70
T2-TB-28160	M24	28	160	18	110	44 x 44	0.85
T2-TB-28200	M24	28	200	18	125	44 x 44	0.95
T2-TB-28250	M24	28	250	18	150	44 x 44	1.15
T2-TB-28320	M24	28	320	18	190	44 x 44	1.35
T2-TB-28400	M24	28	400	18	240	44 x 44	1.60
T2-TB-36125	M30	36	125	22	80	54 x 54	1.25
T2-TB-36160	M30	36	160	22	110	54 x 54	1.45
T2-TB-36200	M30	36	200	22	135	54 x 54	1.60
T2-TB-36250	M30	36	250	22	150	54 x 54	1.90
T2-TB-36320	M30	36	320	22	200	54 x 54	2.05
T2-TB-36400	M30	36	400	22	250	54 x 54	2.20
T2-TB-42160	M36	42	160	26	100	65 x 65	2.75
T2-TB-42200	M36	42	200	26	150	65 x 65	2.90
T2-TB-42250	M36	42	250	26	175	65 x 65	3.00
T2-TB-42320	M36	42	320	26	200	65 x 65	3.15
T2-TB-42400	M36	42	400	26	250	65 x 65	3.35

## Clamping Stud

**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened

**Note:** Other sizes/grades/full threaded studs available on request.



TYPE: T2-CS		IS: 13178 - 1991			
TYPE	ØD x L	L1	L2	Weight in kg	
T2-CS-840	M8 x 40	11	20	0.015	
T2-CS-850	M8 x 50	11	25	0.016	
T2-CS-863	M8 x 63	11	40	0.020	
T2-CS-880	M8 x 80	11	50	0.030	
T2-CS-8100	M8 x 100	11	63	0.040	
T2-CS-1050	M10 x 50	13	25	0.025	
T2-CS-1063	M10 x 63	13	40	0.030	
T2-CS-1080	M10 x 80	13	50	0.040	
T2-CS-10100	M10 x 100	13	63	0.050	
T2-CS-10125	M10 x 125	13	75	0.065	
T2-CS-1250	M12 x 50	15	25	0.035	
T2-CS-1263	M12 x 63	15	32	0.050	
T2-CS-1280	M12 x 80	15	50	0.060	
T2-CS-12100	M12 x 100	15	63	0.070	
T2-CS-12125	M12 x 125	15	75	0.095	
T2-CS-12160	M12 x 160	15	100	0.120	
T2-CS-12200	M12 x 200	15	125	0.150	
T2-CS-1663	M16 x 63	19	32	0.085	
T2-CS-1680	M16 x 80	19	50	0.105	
T2-CS-16100	M16 x 100	19	63	0.135	
T2-CS-16125	M16 x 125	19	75	0.170	

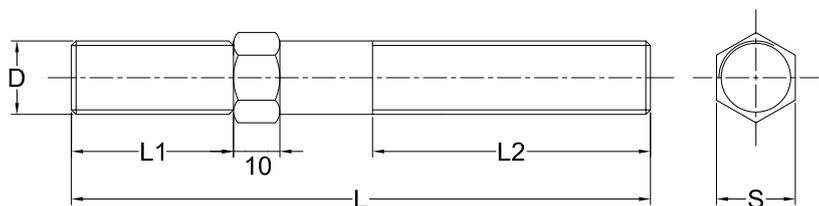
TYPE: T2-CS		IS: 13178 - 1991			
TYPE	ØD x L	L1	L2	Weight in kg	
T2-CS-16160	M16 x 160	19	100	0.220	
T2-CS-16200	M16 x 200	19	125	0.275	
T2-CS-16250	M16 x 250	19	160	0.340	
T2-CS-2080	M20 x 80	27	32	0.170	
T2-CS-20100	M20 x 100	27	63	0.270	
T2-CS-20125	M20 x 125	27	70	0.265	
T2-CS-20160	M20 x 160	27	100	0.340	
T2-CS-20200	M20 x 200	27	125	0.430	
T2-CS-20250	M20 x 250	27	160	0.540	
T2-CS-20315	M20 x 315	27	190	0.680	
T2-CS-20400	M20 x 400	27	250	0.965	
T2-CS-20500	M20 x 500	27	315	1.095	
T2-CS-24100	M24 x 100	35	45	0.310	
T2-CS-24125	M24 x 125	35	70	0.380	
T2-CS-24160	M24 x 160	35	100	0.490	
T2-CS-24200	M24 x 200	35	125	0.615	
T2-CS-24250	M24 x 250	35	160	0.775	
T2-CS-24315	M24 x 315	35	190	0.970	
T2-CS-24400	M24 x 400	35	250	1.230	
T2-CS-24500	M24 x 500	35	315	1.535	

TYPE: T2-CS		IS: 13178 - 1991			
TYPE	ØD x L	L1	L2	Weight in kg	
T2-CS-30125	M30 x 125	43	56	0.480	
T2-CS-30160	M30 x 160	43	100	0.760	
T2-CS-30200	M30 x 200	43	125	0.950	
T2-CS-30250	M30 x 250	43	160	1.210	
T2-CS-30315	M30 x 315	43	190	1.480	
T2-CS-30400	M30 x 400	43	250	1.970	
T2-CS-30500	M30 x 500	43	315	2.455	
T2-CS-30700	M30 x 700	43	400	3.440	
T2-CS-36160	M36 x 160	51	80	0.945	
T2-CS-36200	M36 x 200	51	125	1.180	
T2-CS-36250	M36 x 250	51	160	1.475	
T2-CS-36315	M36 x 315	51	190	1.855	
T2-CS-36400	M36 x 400	51	250	2.360	
T2-CS-36500	M36 x 500	51	315	2.950	
T2-CS-36700	M36 x 700	51	400	4.125	

## Clamping Stud with Hex for Spanner Operation (Plastic Moulding Application)

**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened

The thread length L1 is longer than standard to facilitate full insertion into the thick threaded platen.



TYPE: T2P-CSX						
TYPE	ØD x L	L1	L2	S	Weight in kg	
T2P-CSX-12125	M12 x 125	25	60	13	0.095	
T2P-CSX-12160	M12 x 160	25	90	13	0.115	
T2P-CSX-14125	M14 x 125	25	60	15	0.130	
T2P-CSX-14160	M14 x 160	25	90	15	0.170	
T2P-CSX-16125	M16 x 125	35	60	17	0.170	
T2P-CSX-16160	M16 x 160	35	80	17	0.220	
T2P-CSX-16200	M16 x 200	35	100	17	0.275	
T2P-CSX-20125	M20 x 125	45	60	22	0.265	
T2P-CSX-20160	M20 x 160	45	80	22	0.345	
T2P-CSX-20200	M20 x 200	45	110	22	0.420	
T2P-CSX-24125	M24 x 125	45	55	28	0.400	
T2P-CSX-24160	M24 x 160	55	70	28	0.500	
T2P-CSX-24200	M24 x 200	55	100	28	0.625	

## Clamping Stud with Annular Ring and Spanner Flat (Plastic Moulding Application)

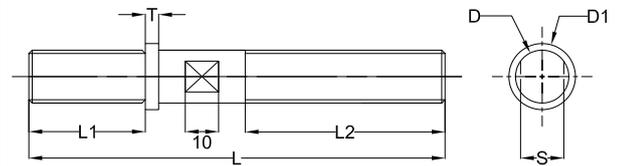
### Material:

For type T2P-C9FR: AISI-4140 (EN-19), hardened and tempered to 10.9 Grade (32-38 HRC), chemically blackened

For type T2P-CSFR: Medium carbon steel, hardened and tempered to 24-32 HRC, chemically blackened

The thread length L1 is longer than standard to facilitate full insertion into the thick threaded platen.

TYPE: T2P-C9FR / T2P-CSFR								
T2-C9FR 10.9 Grade Hardness: 32-38 HRC	T2-CSFR 8.8 Grade Hardness: 24-32 HRC	ØD x L	L1	L2	S	D1	T	Weight in kg
T2P-C9FR-12125	T2P-CSFR-12125	M12 x 125	25	60	10	14	3	0.095
T2P-C9FR-12160	T2P-CSFR-12160	M12 x 160	25	90	10	14	3	0.120
T2P-C9FR-14125	T2P-CSFR-14125	M14 x 125	25	60	11	18	3	0.130
T2P-C9FR-14160	T2P-CSFR-14160	M14 x 160	25	90	11	18	3	0.165
T2P-C9FR-16125	T2P-CSFR-16125	M16 x 125	35	60	13	20	4	0.170
T2P-C9FR-16160	T2P-CSFR-16160	M16 x 160	35	80	13	20	4	0.220
T2P-C9FR-16200	T2P-CSFR-16200	M16 x 200	35	100	13	20	4	0.275
T2P-C9FR-20125	T2P-CSFR-20125	M20 x 125	45	60	17	24	5	0.265
T2P-C9FR-20160	T2P-CSFR-20160	M20 x 160	45	80	17	24	5	0.340
T2P-C9FR-20200	T2P-CSFR-20200	M20 x 200	45	100	17	24	5	0.430
T2P-C9FR-24125	T2P-CSFR-24125	M24 x 125	45	55	22	28	6	0.380
T2P-C9FR-24160	T2P-CSFR-24160	M24 x 160	55	70	22	28	6	0.500
T2P-C9FR-24200	T2P-CSFR-24200	M24 x 200	55	100	22	28	6	0.615



## Clamping Stud with Spanner Flat (Plastic Moulding Application)

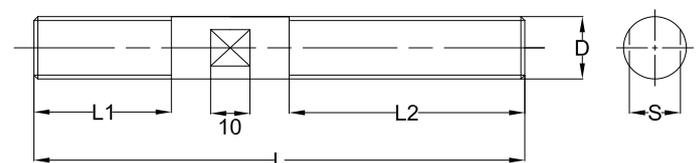
### Material:

For type T2P-C9SF: AISI-4140 (EN-19), hardened and tempered to 10.9 Grade (32-38 HRC), chemically blackened

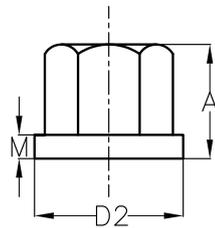
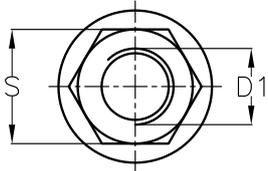
For type T2P-CSAF: Medium carbon steel, hardened and tempered to 24-30 HRC, chemically blackened

The thread length L1 is longer than standard to facilitate full insertion into the thick threaded platen.

TYPE: T2P-C9SF / T2P-CSAF							
T2-C9SF 10.9 Grade Hardness: 32-38 HRC	T2-CSAF 8.8 Grade Hardness: 24-32 HRC	ØD x L	L1	L2	S	Weight in kg	
T2P-C9SF-12125	T2P-CSAF-12125	M12 x 125	25	60	10	0.092	
T2P-C9SF-12160	T2P-CSAF-12160	M12 x 160	25	90	10	0.120	
T2P-C9SF-14125	T2P-CSAF-14125	M14 x 125	25	60	11	0.125	
T2P-C9SF-14160	T2P-CSAF-14160	M14 x 160	25	90	11	0.160	
T2P-C9SF-16125	T2P-CSAF-16125	M16 x 125	35	60	13	0.165	
T2P-C9SF-16160	T2P-CSAF-16160	M16 x 160	35	80	13	0.220	
T2P-C9SF-16200	T2P-CSAF-16200	M16 x 200	35	100	13	0.275	
T2P-C9SF-20125	T2P-CSAF-20125	M20 x 125	45	60	17	0.260	
T2P-C9SF-20160	T2P-CSAF-20160	M20 x 160	45	80	17	0.335	
T2P-C9SF-20200	T2P-CSAF-20200	M20 x 200	45	100	17	0.425	
T2P-C9SF-24125	T2P-CSAF-24125	M24 x 125	45	55	22	0.380	
T2P-C9SF-24160	T2P-CSAF-24160	M24 x 160	55	70	22	0.485	
T2P-C9SF-24200	T2P-CSAF-24200	M24 x 200	55	100	22	0.615	



## Flanged Hex Nut

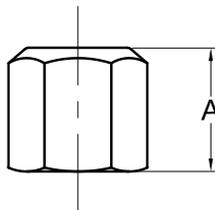
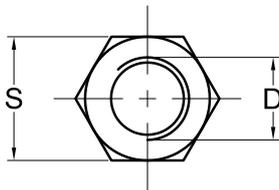


**Material:** Medium carbon steel, Hardened and tempered to 24-32 HRC and chemically blackened

All Flanged Hex Nuts are machined from round bars and not forged.

TYPE: T2-FHN		IS: 7795 - 1975				
TYPE	D1	D2	M	A	S	Weight in kg
T2-FHN-818	M8	18	3.5	12	13	0.010
T2-FHN-1022	M10	22	4	15	17	0.025
T2-FHN-1225	M12	25	4	18	19	0.035
T2-FHN-1631	M16	31	5	24	24	0.070
T2-FHN-2037	M20	37	6	30	30	0.130
T2-FHN-2445	M24	45	6	36	36	0.220
T2-FHN-3058	M30	58	8	45	46	0.470
T2-FHN-3668	M36	68	10	54	55	0.800

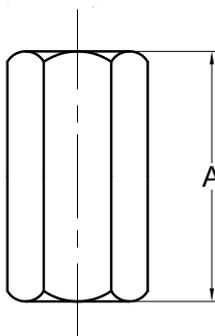
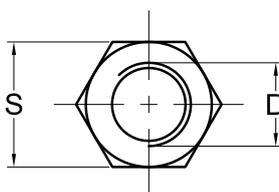
## Hex Hi-Nut



**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened

TYPE: T2-HN		DIN: 6330	
TYPE	ØD x A	S	Weight in kg
T2-HN-812	M8 x 12	13	0.010
T2-HN-1015	M10 x 15	17	0.015
T2-HN-1218	M12 x 18	19	0.025
T2-HN-1624	M16 x 24	24	0.055
T2-HN-2030	M20 x 30	30	0.110
T2-HN-2436	M24 x 36	36	0.195
T2-HN-3045	M30 x 45	46	0.400
T2-HN-3654	M36 x 54	55	0.780

## Extension Nut

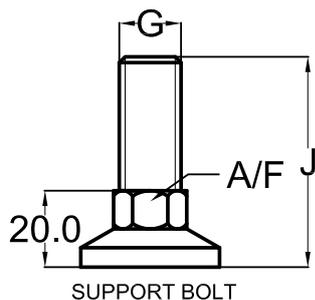


**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened

TYPE: T2-EN		DIN: 6334	
TYPE	ØD x A	S	Weight in kg
T2-EN-824	M8 x 24	13	0.020
T2-EN-1030	M10 x 30	17	0.045
T2-EN-1236	M12 x 36	19	0.060
T2-EN-1648	M16 x 48	24	0.115
T2-EN-2060	M20 x 60	30	0.230
T2-EN-2472	M24 x 72	36	0.400
T2-EN-3090	M30 x 90	46	0.850
T2-EN-36108	M36 x 108	55	1.415

## Heavy Support Bolt with Locknut

**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened

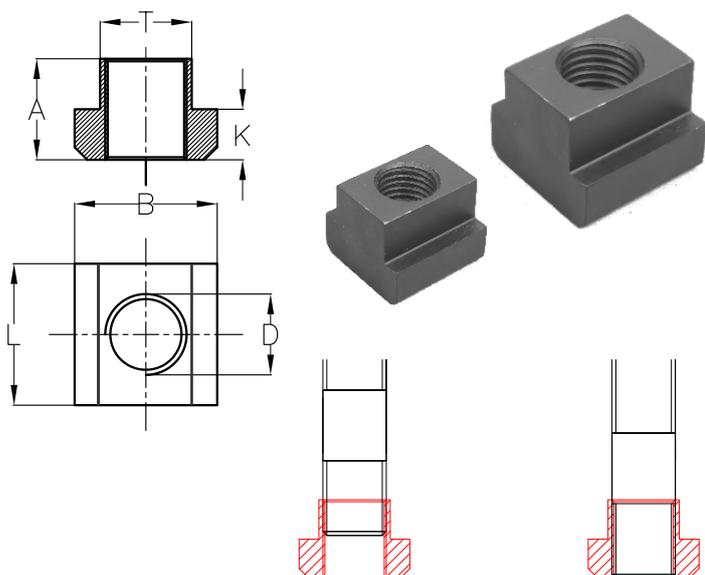


Heavy Support Bolt offers counter height adjustment and locking of set height by the use of Locknut (provided along with the Heavy Support Bolt).

TYPE: T2-SB			
TYPE	G x J	Hex A/F x Base	Weight in kg
T2-SB-1655	M16 x 55L	19 x 35	0.15
T2-SB-1690	M16 x 90L		0.19
T2-SB-2060	M20 x 60L	24 x 40	0.24
T2-SB-2090	M20 x 90L		0.30
T2-SB-2460	M24 x 60L	27 x 50	0.34
T2-SB-24100	M24 x 100L		0.46
T2-SB-27100	M27 x 100L	30 x 55	6.12

## T-Nut

**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened



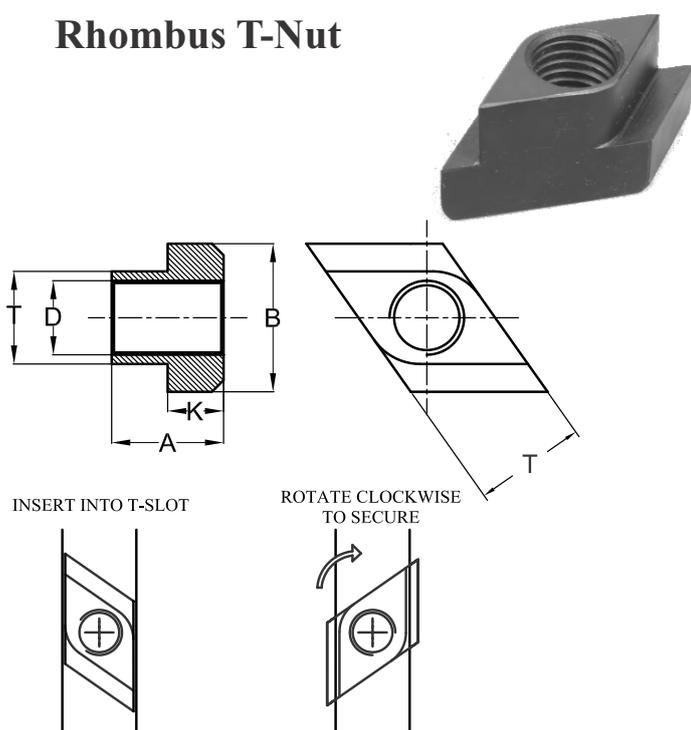
**INCORRECT USAGE**  
Clamping stud partially inserted into the T-Nut

**CORRECT USAGE**  
Clamping stud fully inserted into the T-Nut

TYPE: T2-TN		IS: 2015 - 1977			
TYPE	T x ØD	A	K	B x L	Weight in kg
T2-TN-86	8 x M6	10	6	13 x 13	0.010
T2-TN-108	10 x M8	12	6	15 x 15	0.012
T2-TN-1210	12 x M10	14	7	18 x 18	0.020
T2-TN-1412	14 x M12	16	8	22 x 22	0.035
T2-TN-1612	16 x M12	18	9	25 x 25	0.055
T2-TN-1816	18 x M16	20	10	28 x 28	0.070
T2-TN-2016	20 x M16	24	12	32 x 32	0.115
T2-TN-2018	20 x M18	24	12	32 x 32	0.160
T2-TN-2216	22 x M16	28	14	35 x 35	0.165
T2-TN-2220	22 x M20	28	14	35 x 35	0.145
T2-TN-2420	24 x M20	32	16	40 x 40	0.230
T2-TN-2824	28 x M24	36	18	44 x 44	0.315
T2-TN-3630	36 x M30	44	22	54 x 54	0.600
T2-TN-4236	42 x M36	52	26	65 x 65	1.000

## Rhombus T-Nut

**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened

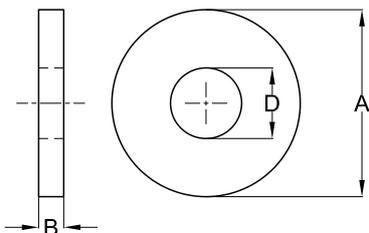


INSERT INTO T-SLOT

ROTATE CLOCKWISE TO SECURE

TYPE: T2-RTN						
TYPE	T	ØD	A	K	B	Weight in kg
T2-RTN-1210	12	M10	14	7	18	0.015
T2-RTN-1412	14	M12	16	8	22	0.025
T2-RTN-1612	16	M12	18	9	25	0.040
T2-RTN-1614	16	M14	18	9	25	0.035
T2-RTN-1816	18	M16	20	10	28	0.050
T2-RTN-2016	20	M16	24	12	32	0.080
T2-RTN-2216	22	M16	28	14	35	0.120
T2-RTN-2220	22	M20	28	14	35	0.105
T2-RTN-2420	24	M20	32	16	40	0.170
T2-RTN-2824	28	M24	36	18	44	0.220
T2-RTN-3630	36	M30	44	22	54	0.455
T2-RTN-4236	42	M36	52	26	65	0.700

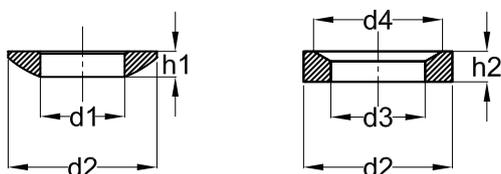
## Plain Washer ( Thick )



**Material:** Low carbon steel, case hardened to 35-42 HRC and chemically blackened

TYPE: T3-PW-DIN				DIN: 6340
TYPE	A	D	B	Weight in kg
T3-PW-DIN-M8	23	8.4	4	0.01
T3-PW-DIN-M10	28	10.5	4	0.02
T3-PW-DIN-M12	35	13	5	0.04
T3-PW-DIN-M14	40	15	5	0.05
T3-PW-DIN-M16	45	17	6	0.06
T3-PW-DIN-M20	50	21	6	0.08
T3-PW-DIN-M24	60	25	8	0.15
T3-PW-DIN-M30	68	31	10	0.25
T3-PW-DIN-M36	80	38	10	0.30

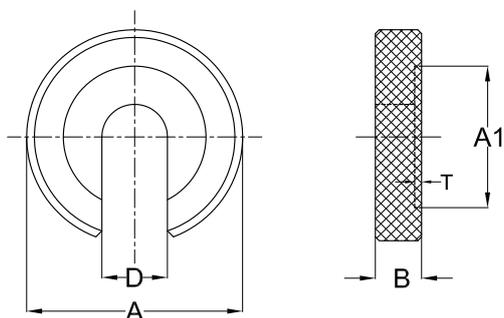
## Spherical Washer with Conical Seat



**Material:** Low carbon steel, case hardened to 35-42 HRC and chemically blackened

TYPE: T3-SWCS		IS: 4297 - 1996						Weight in kg
TYPE	SIZE	d1	d2	h1	d3	d4	h2	
T3-SWCS-8	M8	8.4	17	3.2	9.6	14.5	3.5	0.005
T3-SWCS-10	M10	10.5	21	4.0	12	18.5	4.2	0.010
T3-SWCS-12	M12	13	24	4.6	14.2	20	5.0	0.015
T3-SWCS-16	M16	17	30	5.3	19	26	6.2	0.030
T3-SWCS-20	M20	21	36	6.3	23.2	31	7.5	0.055
T3-SWCS-24	M24	25	44	8.2	28	37	9.5	0.105
T3-SWCS-30	M30	31	56	11.2	35	49	12	0.225
T3-SWCS-36	M36	37	68	14	42	60	15	0.430

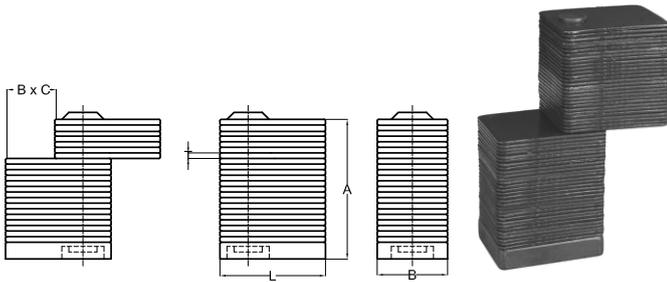
## C Washer



**Material:** Low carbon steel, case hardened to 35-42 HRC and chemically blackened

TYPE: T3-CWN					IS: 4291 - 1996	
TYPE	A	D	B	A1	T	Weight in kg
T3-CWN-M8	28	8.4	7	21	1	0.02
T3-CWN-M10	34	10.5	8	25	1.2	0.04
T3-CWN-M12	40	13	9	30	1.8	0.05
T3-CWN-M16	56	17	12	37	1.8	0.16
T3-CWN-M20	64	21	14	45	2	0.25
T3-CWN-M24	75	25	16	52	2	0.35
T3-CWN-M30	90	31	18	65	2	0.60
T3-CWN-M36	100	37	20	75	2.5	0.80

## Supporting Height Plates



**Material:** Rolled sheet, flattened and chemically blackened

**Applications:** Desired clamp support height can be achieved by swinging of top plates in steps of 2mm/4mm. Blocks of the same group can be stacked one above another to achieve increased height. Precise height adjustment is possible with the help of smooth sliding block (T3-SSB)

**Note:** For higher sizes, the base is broadened for stability.

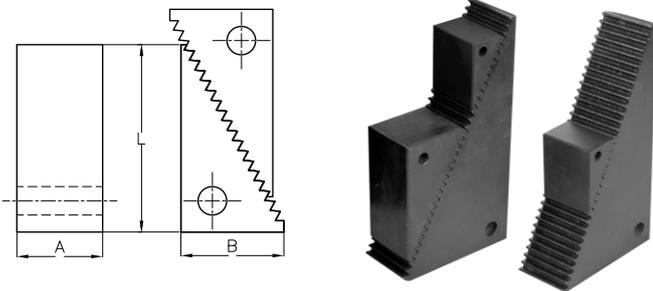
**B x L x T : Plate size**

**B x C : Clamp rest area**

### TYPE: T3-SHP

TYPE	A	B x L	B x C	T	Weight In kg
T3-SHP-425	25	50 x 60	50 x 20	4	0.60
T3-SHP-450	50	50 x 60	50 x 20	4	1.20
T3-SHP-475	75	50 x 60	50 x 20	4	1.75
T3-SHP-4100	100	50 x 75	50 x 35	4	2.90
T3-SHP-4125	125	50 x 75	50 x 35	4	3.50
T3-SHP-4150	150	50 x 75	50 x 35	4	4.30
T3-SHP-4200	200	50 x 75	50 x 35	4	5.90
T3-SHP-225	25	35 x 50	35 x 25	2	0.35
T3-SHP-250	50	35 x 50	35 x 25	2	0.70
T3-SHP-275	75	35 x 50	35 x 25	2	1.00
T3-SHP-2100	100	50 x 60	50 x 35	2	2.35
T3-SHP-2125	125	50 x 60	50 x 35	2	3.00
T3-SHP-2150	150	50 x 60	50 x 35	2	3.45
T3-SHP-W275	75	50 x 75	50 x 50	2	2.10
T3-SHP-W2100	100	50 x 75	50 x 50	2	2.70
T3-SHP-W2125	125	50 x 75	50 x 50	2	3.25
T3-SHP-W2150	150	50 x 75	50 x 50	2	3.80

## Universal Serrated Block



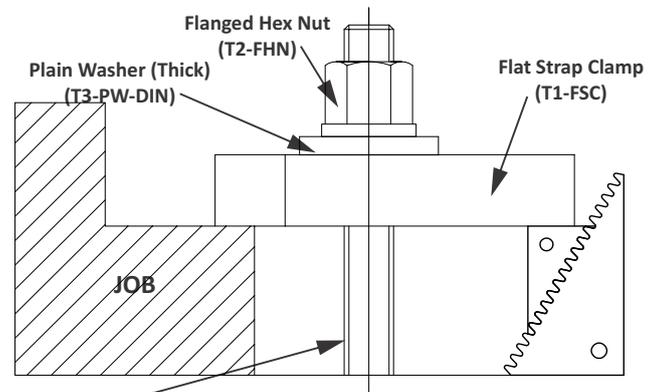
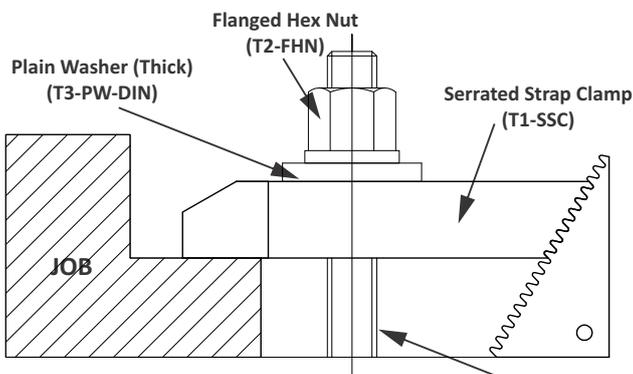
**Applications:** Combinations of 3 sizes in each group offers instant height adjustment for work support. Also recommended for use along with serrated strap clamp (Type: T1-SSC)

**Material:** Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened

The gear tooth profile serrations provide composite angles for firm grip and no slippage.

### TYPE: T3-USB

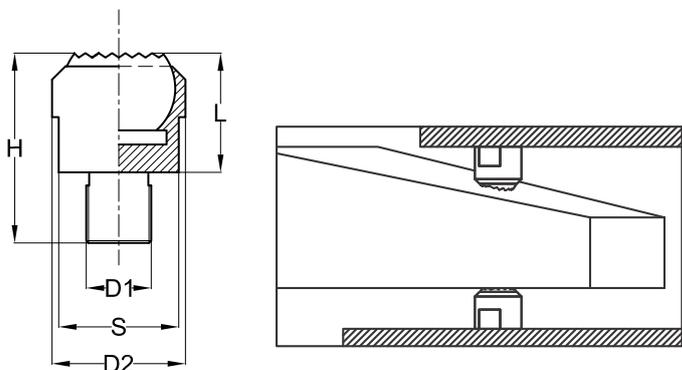
TYPE	A	B x L	Height Adjustment		Weight In kg
			Minimum	Maximum	
T3-USB-001	30	20 x 36	22	50	0.15
T3-USB-002	30	37 x 67	40	107	0.55
T3-USB-003	30	71 x 131	70	208	2.10
T3-USB-004	50	20 x 36	22	50	0.30
T3-USB-005	50	37 x 67	40	107	0.90
T3-USB-006	50	71 x 131	70	208	3.45



Universal Serrated Block (T3-USB) used in conjunction with Serrated Strap Clamp (T1-SSC)

Two different sizes of Universal Serrated Block (T3-USB) used to achieve desired counter support height

## Self Aligning Ball Element



**Material:** Ball: Hardened and tempered steel  
Body: Toughened steel, chemically blackened

**Features:** The self aligning serrated ball set into the socket adjusts to the plane of the working surface while clamping.

**Ball customisation:** Flat face (without serrations), Round ball, Nickel plated ball can be supplied on request.

**Body customisation:** Different stem lengths, stem thread sizes can be supplied on request.

TYPE: T3-SBE							
TYPE	D1	D2	BALL	S	L	H	Weight in kg
T3-SBE-6	M6	13	10	11	13	19	0.01
T3-SBE-8	M8	13	10	11	13	21	0.01
T3-SBE-10	M10	20	16	17	18	28	0.05
T3-SBE-12	M12	20	16	17	18	30	0.05
T3-SBE-16	M16	30	25	27	27	43	0.15
T3-SBE-20	M20	50	40	41	35	55	0.45
T3-SBE-24	M24	50	40	41	35	59	0.50

## Smooth Sliding Block - Levelling Jack

TYPE: T3-SSB-LD / T3-SSB-HD				
TYPE	L x B x H	Height Variation in mm	Load Capacity in Tonnes	Weight In kg (approx)
T3-SSB-LD-02	170 x 140 x 65	0 - 5	2	8.00
T3-SSB-LD-03	170 x 140 x 65	0 - 5	3	9.00
T3-SSB-LD-05	215 x 165 x 112	0 - 5	5	15.00
T3-SSB-LD-10	215 x 165 x 112	0 - 5	10	17.00
T3-SSB-HD-20	315 x 150 x 140	0 - 8	20	45.00

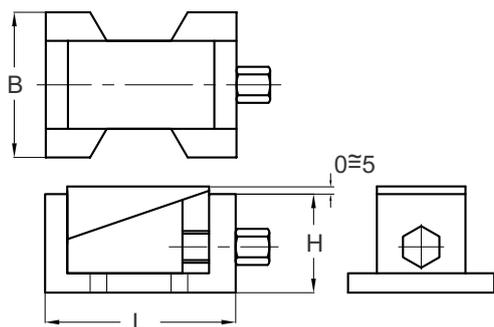
**Material:**

Body and Slides: Hi Tensile S.G. Iron, enamelled in flame red colour  
Operating Screw: Alloy Steel, heat treated to 10.9 Grade

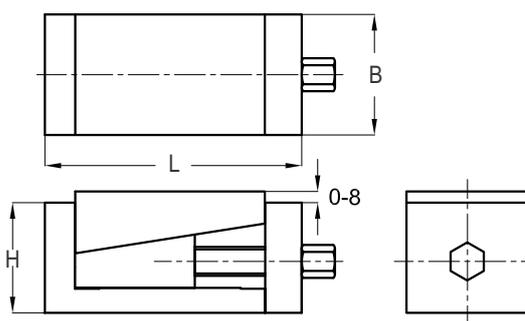
**Applications :** Heavy Work Loading, Precise Height Adjustment

**Note:** Handle provided for easy lifting of the Jack

### Light Duty



### Heavy Duty



## Wall Mountable Clamping Kit - 58 Pieces

TISA Wall Mountable clamping kit (T4-TCKW) is housed in a metal rack enamelled in flame red colour. Wall mounting screws are provided with the kit.



TYPE: T4-TCKW (58 PIECES)							
	T-SLOT x TAPPED HOLE	CLAMPING STUD	T-NUT	FLANGED HEX NUT	EXTENSION NUT	SERRATED STRAP CLAMP	UNIVERSAL SERRATED BLOCK
IS / DIN STANDARD		IS:13178-1991	IS:2015-1977	IS:7795-1975	DIN : 6334	DIN : 6314-S	NA
PRODUCT CODE		T2-CS	T2-TN	T2-FHN	T2-EN	T1-SSC	T3-USB
QUANTITY		4 Nos each	6 Nos	6 Nos	4 Nos	2 Nos each	2 Sets each
T4-TCKW-1412	14 x M12	1263, 1280, 12100, 12125, 12160, 12200	1412	1225	1236	1480 14100 14125	001 002 003
T4-TCKW-1612	16 x M12		1612				
T4-TCKW-1812	18 x M12		1812				
T4-TCKW-1614	16 x M14	1463, 1480, 14100, 14125, 14160, 14200	1614	1428	1442	1480 14100 14125	
T4-TCKW-1814	18 x M14	1814					
T4-TCKW-1816	18 x M16	1663, 1680, 16100, 16125, 16160, 16200	1816	1631	1648	1880 18125 18160	
T4-TCKW-2016	20 x M16	2016					

## CMM Clamping Kit (72 Pieces)

TYPE: T4-CMM (72 PIECES)								
	TAPPED HOLE	FLAT STRAP CLAMP	CLAMPING STUD	HEX HI-NUT	EXTENSION NUT	PLAIN WASHER (PLAIN)	UNIVERSAL SERRATED BLOCK	UNIVERSAL SERRATED BLOCK
IS / DIN STANDARD		IS: 4292 - 1984	IS:13178-1991	IS:7795-1975	DIN : 6334	DIN : 6340	NA	NA
PRODUCT CODE		T1-FSC	T2-CS	T2-HN	T2-EN	T3-PW-DIN	T3-USB	CES-CHSB
QUANTITY		3 Nos each	3 Nos each	15 Nos	15 Nos	15 Nos	3 Sets each	3 Nos each
T4-CMM-M6	M6	760, 780, 7100	640, 663, 680	69	618	M6	001 002 003	55mm - 75mm
T4-CMM-M8	M8	960, 980, 9100	840, 863, 880	812	824	M8		
T4-CMM-M10	M10	1180, 11100, 11125	1063, 1080, 10100	1015	1030	M10		
T4-CMM-M12	M12	1480, 14100, 14125	1263, 1280, 12100	1218	1236	M12		

## Clamping Kit - 70 Pieces



### TYPE: T4-TCK (70 PIECES)

	T-SLOT x TAPPED HOLE	CLAMPING STUD	T-NUT	HEX HI-NUT	EXTENSION NUT	PLAIN WASHER (PLAIN)	SPHERICAL WASHER WITH CONICAL SEAT	SERRATED STRAP CLAMP	UNIVERSAL SERRATED BLOCK
IS / DIN STANDARD		IS:13178-1991	IS:2015-1977	IS:7795-1975	DIN : 6334	DIN : 6340	IS : 4297 - 1996	DIN : 6314-S	NA
PRODUCT CODE		T2-CS	T2-TN	T2-HN	T2-EN	T3-PW-DIN	T3-SWCS	T1-SSC	T3-USB
QUANTITY		4 Nos each	6 Nos	6 Nos	4 Nos	6 Nos	4 Nos	2 Nos each	2 Sets each
T4-TCK-108	10 x M8	832, 840, 850, 863, 880, 8100	108	812	824	M8	M8	960 (4 Nos)	001 002 003
T4-TCK-1210	12 x M10	1050, 1063, 1080, 10100, 10125, 10160	1210	1015	1030	M10	M10	1180 (4 Nos)	
T4-TCK-1412	14 x M12	1263, 1280, 12100, 12125, 12160, 12200	1412	1218	1236	M12	M12	14100 14125	
T4-TCK-1612	16 x M12		1612						
T4-TCK-1812	18 x M12		1812						
T4-TCK-1614	16 x M14	1463, 1480, 14100, 14125, 14160, 14200	1614	1421	1442	M14	M14	14100 14125	
T4-TCK-1814	18 x M14		1814						
T4-TCK-1816	18 x M16	1663, 1680, 16100, 16125, 16160, 16200	1816	1624	1648	M16	M16	18125 18160	
T4-TCK-2016	20 x M16		2016						
T4-TCK-2220	22 x M20	2080, 20100, 20125, 20160, 20200, 20250	2220	2030	2060	M20	M20	22160 22200	

1. The raw material is checked on magnetic crack detector / ultrasonic machine before taking up for production.
2. All products are manufactured out of Medium carbon steel, hardened and tempered to 24-32 HRC and chemically blackened.
3. The products are as per IS standards / DIN standards and undergo an extensive quality checking process for dimensional conformity and finish.
4. All the threaded products are thread rolled on hydraulic rolling machine and gauge checked.
5. All products are machined from flats/round bars and not forged and hence reliability is higher.
6. All products are laser marked for TISA brand and product type number for easy identification.
7. The Serrated Strap Clamp and Universal Serrated Blocks have matching gear tooth serrations which offer firm meshing grip and no slippage.
8. One set of Universal Serrated Block (T1-USB) consists of 2 triangular half pieces.

## How to increase the life of T-Bolts, Clamping Studs, Nuts & Washers

### Clamping Force vs Cutting Force

The clamping force should always be higher than the metal cutting force to avoid the displacement of the job being held during the operations.

### Lubrication aids Clamping

The clamping forces are drastically increased with lubrication of the threads with the same torque applied as compared to non-lubricated Stud-Nut connections. This ensures less wear out at the Stud-Nut connections.

Lubrication of threads reduces the frictional co-efficient and reduces the wear of the threads, imparting higher clamping force for the same torque.

### Insert Stud fully into T-Nut

Always insert the clamping stud fully into the thickness of the T-Nut to ensure longevity of the T-Nut. The upper half of the T-Nut has a thinner wall as compared to the base of the T-Nut.

If the Stud is half inserted into the T-Nut, the T-Nut will crack as it cannot withstand the machining vibrations.

### Use Recommended Sizes

Always use products that are made for the corresponding T-Slot size. Using bigger or smaller products can cause damage to the clamps as well as the T-Slot bed. Avoid correcting slot sizes on bench grinder. This alters the toleranced slot size.

### Torque not to exceed permissible values

Do not use torque more than the recommended values to tighten the nuts.

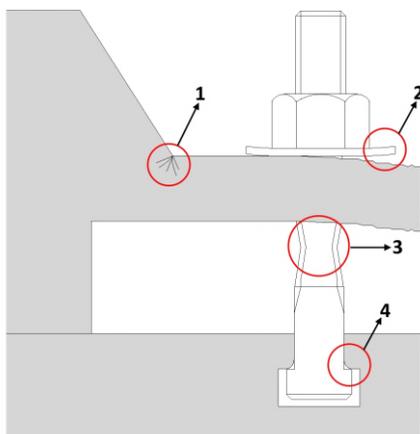
Usage of extra torque by using uncalculated pipe lengths attached to the spanners (over tightening) can cause permanent damage to the T-Slot bed and Clamping Elements (see diagram).

It may be noted that even though the bolts/studs are heat treated, the T-Slotted beds are soft.

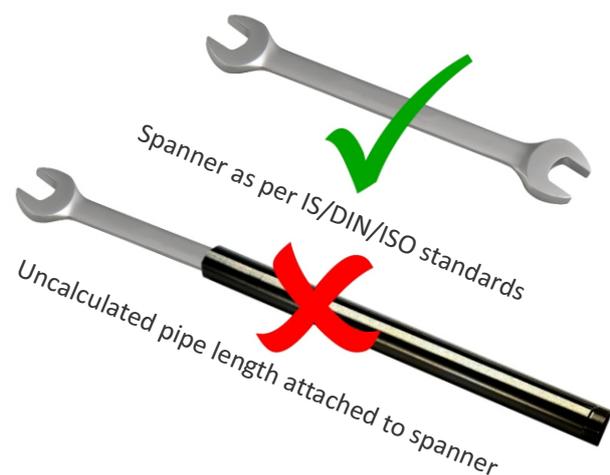
### How to recognise a bolt under stress?

The T-Bolt / Stud, when under excessive torque, first elongates before shearing/breaking. The elongation can be observed by reduced diameter or increase in thread pitch at the point of application of force.

Hence, whenever an excessive elongation is observed, corrective action must be taken to avoid shearing/breakage of the bolt.



1. Cracks in the casting
2. Upward curled Plain Washer
3. Tapered and Elongated Bolt
4. Damaged and Rounded T-Slotted Bed



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