Hercus

Gear Your Future

2015 ENGINEERING CATALOGUE

Dynamic Solutions from concept to manufacture

www.hercus.com.au


HART
Sydney
Adelaide
C-200C
WARNING
Keep hands, clothing and body clear of tool/spindle rotation. Machine starts and moves automatically.
WARNING
Keep hands clear of tool changer. Tool changer rotates automatically. Can cause severe injury. Turn off and lock out power at electrical panel before servicing.
WARNING
Before using the following cutting conditions:
SAFETY INSTRUCTIONS
1. Read and understand the MAZAK Operator's Manual and all warnings on the machine before operating. Failure to follow these instructions and warnings can result in serious injury or death.
2. This machine starts and moves automatically. Never place any part of your body near or on moving parts of this machine.
3. Always stop the spindle completely before touching the work piece, tool or spindle.
4. Do not operate this machine unless all guards, interlocks and other safety devices are in place and functioning.
5. Always clamp work piece and cutting tool securely.
6. Avoid excessive feeds and spindle speeds.
7. Remove rings, watches, jewelry and loose fitting clothing. Keep your hair away from moving parts of the machine.
8. Always wear safety glasses, safety shoes and hearing protection when operating this machine.
Service or installation of this machine must be performed by qualified personnel only, following procedures described in the MAZAK Maintenance Manual. Turn off and lock out power at main electrical panel before servicing.
It is the responsibility of the user to be sure that this machine is in safe operating condition at all times and that the operator follows the safe operating procedures described in the MAZAK Operator and Maintenance Manuals and all signs attached to this machine. If you have any questions concerning the safe operation of this machine, contact your supervisor or nearest MAZAK Distributor.
Please do not remove or disfigure this sign.
Hercus
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2015 ENGINEERING CATALOGUE

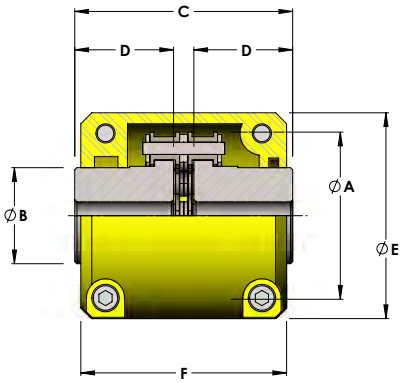
Contents

This catalogue contains a comprehensive range of standardised stock components, designed for use as building blocks in the construction of all types of industrial machinery. The use of stock components in lieu of custom-made items can bring many advantages to both builder and user of the equipment in which they are incorporated. Costs may be lowered by bringing the economies of high volume production to areas where these could not otherwise have been attained. The use of standard, "off the shelf" items can significantly reduce both inventories and lead times. Repair and maintenance can be greatly simplified through the ready availability of interchangeable replacement parts.

TQCSI ISO 9001:2008 Quality Certified AU1194-QC

CHAIN SHAFT COUPLINGS

Chain couplings are ideal where high static or starting loads apply. They are easily disconnected and are composed of two hardened steel sprockets connected by duplex roller chain. Each coupling is supplied complete with an aluminium alloy casing.



Chain Coupling

Imperial	Bore		Dimensions				Weight	Dimensions		Weight
	Inches		Inches				Pounds	Inches		Pounds
Metric	mm		mm				kg	mm		kg
Cat. No.	Min.	Max.	A	B	C	D		E	F	
4012	0.433”	0.866”	2.40”	1.38”	3.126”	1.42”	1.76	2.95”	2.95”	0.66
	11	22	61	35	79.4	36	0.8	75	75	0.3
4016	0.591”	1.181”	3.03”	1.97”	3.126”	1.42”	3.09	3.62”	2.95”	0.88
	15	30	77	50	79.4	36	1.4	92	75	0.4
5016	0.591”	1.496”	3.78”	2.36”	3.925”	1.77”	5.73	4.37”	3.35”	1.32
	15	38	96	60	99.7	45	2.6	111	85	0.6
5018	0.748”	1.772”	4.17”	2.76”	3.925”	1.77”	7.72	4.80”	3.35”	1.76
	19	45	106	70	99.7	45	3.5	122	85	0.8
6018	0.866”	2.165”	5.00”	3.35”	4.705”	2.13”	13.23	5.59”	4.17”	2.65
	22	55	127	85	119.5	54	6.0	142	106	1.2
6022	0.984”	2.953”	5.95”	4.33”	4.705”	2.13”	20.94	6.58”	4.17”	3.53
	25	75	151	110	119.5	54	9.5	167	106	1.6
8018	1.181”	3.071”	6.26”	4.53”	5.874”	2.64”	30.87	7.32”	5.12”	5.51
	30	78	159	115	149.2	67	14.0	186	130	2.5
8022	1.378”	3.740”	7.95”	5.51”	5.874”	2.64”	44.09	8.66”	5.12”	5.95
	35	95	202	140	149.2	67	20.0	220	130	2.7
10020	1.496”	4.331”	9.13”	6.30”	7.906”	3.58”	74.96	9.76”	5.67	6.61
	38	110	232	160	200.8	91	34.0	248	144	3.0

Dimensions in Inches and mm.

Transmission Capacity (Kw)

Cat. No.	Shaft Dia.	Revolutions per Minute (RPM)																					
		10	25	50	100	200	300	400	500	600	800	1000	1200	1500	1800	2000	2500	3000	3600	4000	4800	5200	6000
4012	22	0.22	0.58	1.15	1.73	2.63	3.46	4.15	4.96	5.67	7.01	8.53	9.68	11.6	13.7	14.8	17.9	20.7	24.1	26.3	30.8		
4016	30	0.41	1.03	2.06	3.09	4.69	6.17	7.41	8.85	10.1	12.5	15.3	17.3	21.0	24.4	26.3	31.9	37.0	43.0	46.9	54.9		
5016	38	0.78	1.95	3.91	5.86	8.92	11.7	14.1	16.8	19.2	23.8	28.9	32.9	39.9	46.4	50.0	60.6	70.4	81.6				
5018	45	0.99	2.48	4.95	7.43	11.3	14.9	17.8	21.3	24.4	30.1	36.6	41.6	50.5	58.8	63.4	76.8	89.2					
6018	55	1.87	4.67	9.33	14.0	21.3	28.0	33.6	40.1	45.9	56.8	69.1	78.4	95.2	111	120	145						
6022	75	2.51	6.31	12.5	18.8	28.6	37.7	45.3	54.1	61.9	76.5	93.1	105	128	149	161	195						
8018	78	4.14	10.3	20.7	31.0	47.2	62.1	74.5	89.0	101	126	153	174	211	246	265							
8022	95	5.93	14.8	29.6	44.5	67.2	89.0	106	127	146	180	219	249	302	352	379							
10020	110	9.33	23.3	46.6	70.0	106	140	168	200	229	283	345	392	476	554								

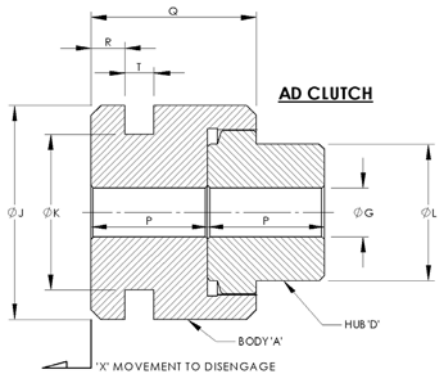
SPLINE CLUTCHES

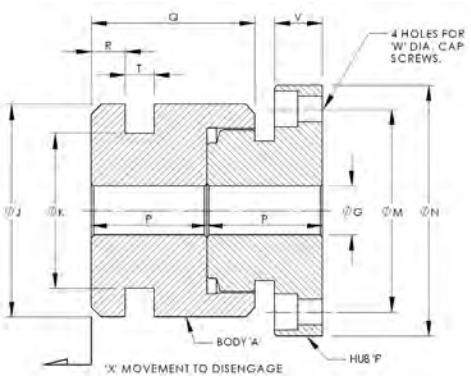
These consist of two mating components with internal and external involute splines for clutch engagement. The leading edge of each spline is pointed to assist in the engagement, which should occur when the unit is stationary or rotating very slowly.

The sliding component is the Body ‘A’ which has an operating groove in the outside diameter. This can be used with either a Plain Hub ‘D’ or Flanged Hub ‘F’.

The clutches are made from mild steel and for more severe applications may be case hardened and tempered at 220ºC.

The maximum torque, which can be transmitted by the clutch, is generally limited by the size of shaft and key used to drive it and the selection of clutch should normally be made on this basis.





Cat. No.	Max. Bore	G	J	K	L	M	N	P	Q	R	T	V	W	X
SH 15	0.750”	0.375”	2.1/4”	1.5/8”	1.1/4”	2”	2.500”	1.1/4”	1.3/4”	3/8”	5/16”	1/2”	1/4”	3/8”
	19	9.53	57.2	41.3	31.7	50.8	63.50	31.7	44.4	9.5	7.9	12.7	6.3	9.5
SH 20	1.062”	0.625”	2.3/4”	2”	1.3/4”	2.5/8”	3.250”	1.1/2”	2.1/8”	7/16”	3/8”	5/8”	5/16”	1/2”
	27	15.88	59.9	50.8	44.4	66.7	82.55	38.1	54.0	11.1	9.5	15.9	7.9	12.7
SH 25	1.375”	0.750”	3.1/4”	2.1/2”	2.1/4”	3.1/4”	4.000”	1.3/4”	2.1/2”	1/2”	7/16”	3/4”	3/8”	5/8”
	35	19.05	82.6	63.5	57.1	82.5	101.60	44.4	63.5	12.7	11.1	19.0	9.5	15.9
SH 30	1.750”	1.000”	3.3/4”	3”	2.3/4”	3.3/4”	4.625”	2”	2.7/8”	9/16”	7/16”	7/8”	7/16”	3/4”
	45	25.40	95.3	76.2	69.8	95.2	117.48	50.8	73.0	14.3	11.1	22.2	11.1	19.0
SH 40	2.375”	1.250”	5”	4.1/4”	3.3/4”	5”	6”	2.3/4”	3.7/8”	5/8”	1/2”	1”	1/2”	7/8”
	60	31.75	127	108	95	127	152.40	69.9	98.4	15.9	12.7	25.4	12.7	22.2

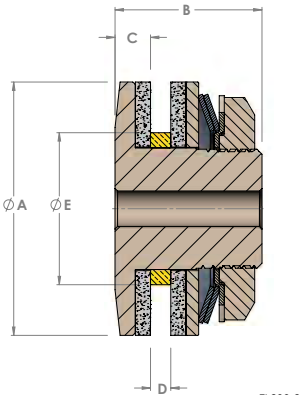
Dimensions in Inches and mm.

An adjustable friction type overload protection device which can be set to slip at a pre-determined torque loading and will automatically re-engage when the torque is reduced to the appropriate level.

The selected driving plate (i.e. Sprocket, Gear etc.) is mounted on a self lubricating bronze bushing which is carried on the cast iron hub and held between two friction discs. Loading is applied to the pressure plate through the disc spring or springs.

T L 2 5 0 – 1

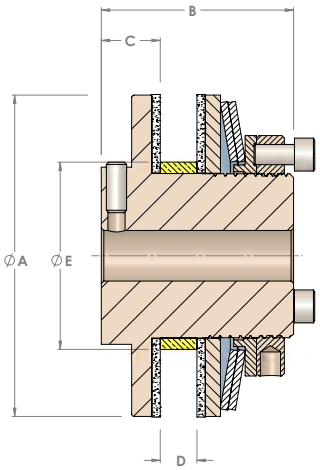
		-------No. of Disc Springs
	----------	Size
----------		Torque Limiter



TL200-2 Assembly

TORQUE LIMITER

DIMENSIONS FOR
TL200
TL250
TL350



TL500-2 Assembly

TORQUE LIMITER

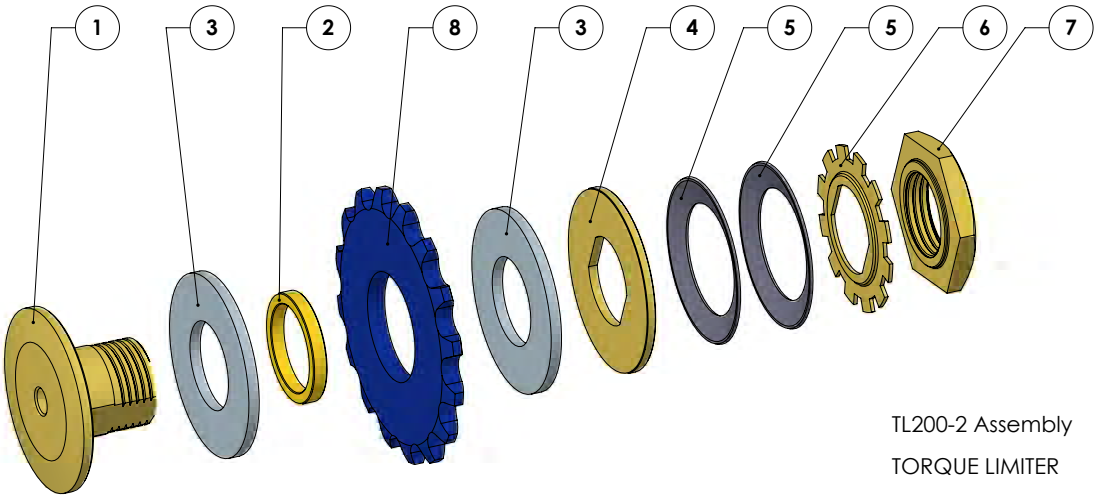
DIMENSIONS FOR
TL500
TL700

DIMENSIONS AND CAPACITIES FOR TL200-1 TO TL700-2

Model	Torque Range (Nm)	Plain Bore	Max. Bore	'A'	'B'	'C'	'D' Max	'E'	Std. Bush Length	Weight (kg)
TL200-1 TL200-2	3 - 10 7 - 20	7	14	50	29	6.5	7	30.00	3.8	0.2
TL250-1 TL250-2	7 – 27 14 – 54	10	22	65	48	16	9	41.00	4.5	0.5
TL350-1 TL350-2	20 – 75 35 - 150	17	25	89	62	19	16	49.00	6.5	1.2
TL500-1 TL500-2	47 – 210 88 - 420	20	42	127	76	22	16	74.00	6.5	3
TL700-1 TL700-2	116 – 570 224 - 1085	30	64	178	98	24	29	105.00	9.5	6.7

Dimensions in mm.

Maximum bore sizes listed above are for standard parallel keyways placed at 90° to flats on Hub.
Driving plates should be bored to Size 'E' -0.00 / +0.05mm.



TL200-2 Assembly

TORQUE LIMITER

Parts Lists for TL200-1 and TL200-2
Parts Lists for TL250-1 and TL250-2
Parts Lists for TL350-1 and TL350-2

PARTS LIST FOR TL200-1 TO TL350-2

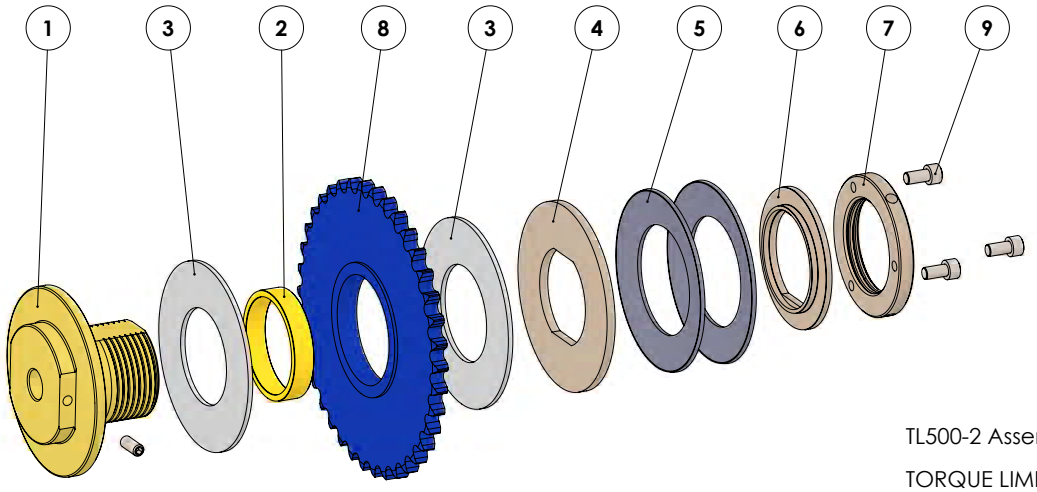
KEY No.	DESCRIPTION	QTY	TL200	TL250	TL350
1	HUB	1	25S8611	25S8411	25S8461
2	BUSH	1	25S8621	25S8421	25S8472
3	FACING	2	25S8631	25S8431	25S8481
4	PRESSURE PLATE	1	25S8632	25S8432	25S8482
5	DISC SPRING	1 or 2	25S8633	25S8433	25S8483
6	LOCK WASHER	1	25S8635	25S8435	25S8485
7	ADJUSTMENT NUT	1	25S8636	25S8436	25S8486
8	Customer Supplied	1			

The customer selected driving plate (i.e. Sprocket, Gear etc.) is mounted on a self lubricating bronze bush which in turn is carried on the cast iron hub and held between two friction discs. Loading is applied to the pressure plate through the disc springs.

For TL200 to TL350 Torque Limiters this is achieved by tightening the hexagon adjusting nut by hand until the disc spring makes contact with the plate, then tighten the nut by approximately 60 degrees, secure the nut in place by the use of the tab washer. Final setting of the torque limiter should be done after a run in period of approximately 500 revolutions at 50 – 70 rpm.

The torque ratings for the TL200 to TL350 are:-

One disc spring (item 5)	TL200	3 – 10Nm	TL250	7 – 27Nm	TL350	20 – 75Nm
Two disc springs (item 5)		7 – 20Nm		14 – 54Nm		35 – 150Nm



TL500-2 Assembly

TORQUE LIMITER

Parts Lists for TL500-1 and TL500-2
Parts Lists for TL700-1 and TL700-2

PARTS LIST FOR TL500-1 TO TL700-2

KEY No.	DESCRIPTION	QTY	TL500	TL700	
1	HUB	1	25S8511	25S8561	
2	BUSH	1	25S8522	25S8573	
3	FACING	2	25S8531	25S8581	
4	PRESSURE PLATE	1	25S8532	25S8582	
5	DISC SPRING	1 or 2	25S8533	25S8583	
6	SPRING PLATE	1	25S8534	25S8584	
7	ADJUSTMENT NUT	1	25S8536	25S8586	
8	Customer Supplied	1			
9	LOCK SCREW	3	25S8537	25S8587	

The customer selected driving plate (i.e. Sprocket, Gear etc.) is mounted on a self lubricating bronze bush which in turn is carried on the cast iron hub and held between two friction discs. Loading is applied to the pressure plate through the disc springs.

For the TL500 and TL700 Torque Limiters the adjustment nut is positioned and the three loading screws are tightened on to the spring plate until their heads lock on the adjustment nut.
Final setting of the torque limiter should be done after a run in period off approximately 500 revolutions at 50 – 70 rpm.

The torque ratings for the TL500 and TL700 are:-

One disc spring (item 5)	TL500	47 – 210Nm	TL700	116 – 570Nm
Two disc springs (item 5)		88 – 420Nm		224 – 1085Nm

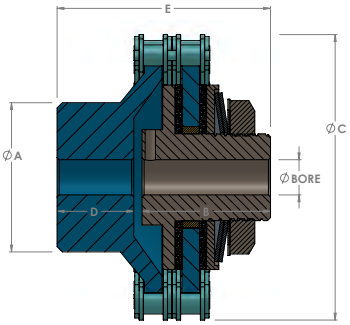
TORQUE LIMITER COUPLINGS

These couplings combine the flexibility of a chain coupling with the overload protection features of the torque limiter.

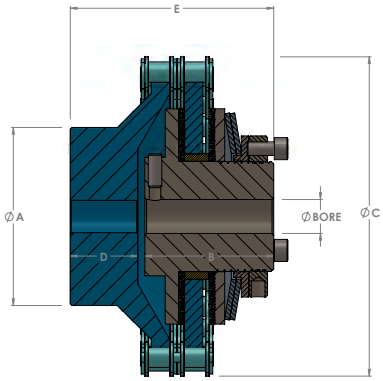
They are made up from a torque limiter fitted with a plate sprocket and a mating hub sprocket, hollowed out to clear the head of the torque limiter. The two sprockets are connected by duplex chain to form the coupling.

T L 2 5 0 – 1 C

__ ____ __ __
| | | |
| | | ---Coupling Type
| | -------No. of Disc Springs
| - ----------Size
----------Torque Limiter



TL350-2C Assembly
TORQUE LIMITER COUPLINGS
DIMENSIONS FOR
TL200
TL250
TL350



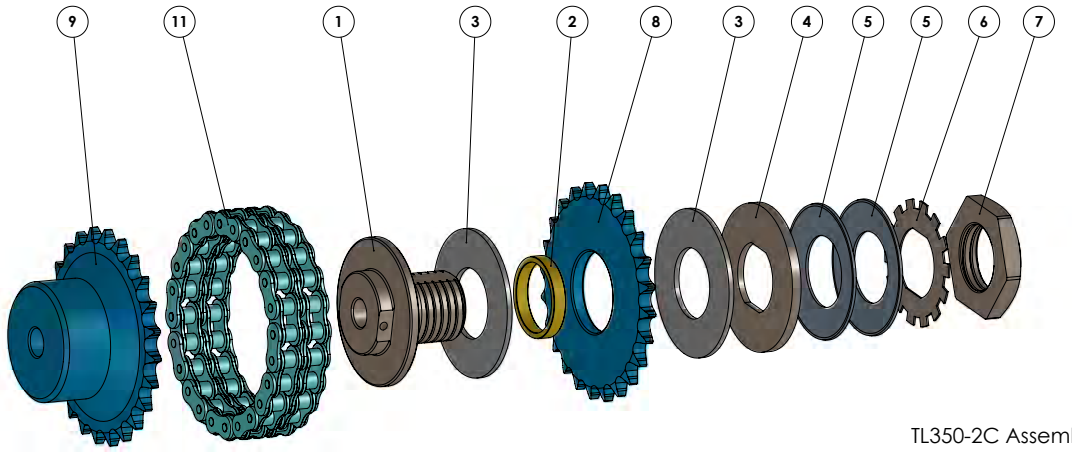
TL500-2C Assembly
TORQUE LIMITER COUPLINGS
DIMENSIONS FOR
TL500
TL700

DIMENSIONS AND CAPACITIES FOR TL200-1C TO TL700-2C

Model	Torque Range (Nm)	Max. Running Speed (RPM)	Plain Bore		Max. Bore		Sprocket	'A'	'B'	'C'	'D'	'E'	Weight (kg)
			Coupling Half	TL Half	Coupling Half	TL Half							
TL200-1C	3 – 10	1200	8	7	31	14	RS-40-16T	50	29	76	24	55	1.0
TL200-2C	7 – 20												
TL250-1C	7 – 27	1000	13	10	38	22	RS-40-22T	56	48	102	25	76	2.0
TL250-2C	14 – 54												
TL350-1C	20 – 75	800	13	17	45	25	RS-50-24T	72	62	137	37	103	5.2
TL350-2C	35 – 150												
TL500-1C	47 – 210	500	18	20	65	42	RS-60-28T	105	76	188	40	120	12.3
TL500-2C	88 – 420												
TL700-1C	116 – 570	400	23	30	90	64	RS-80-28T	150	98	251	66	168	31.0
TL700-2C	224 - 1085												

Dimensions in mm.

Maximum bore sizes listed above are for standard parallel keyways placed at 90° to flats on Hub.



TL350-2C Assembly

TORQUE LIMITER COUPLINGS

Parts List for TL200-1C and TL200-2C
Parts List for TL250-1C and TL250-2C
Parts List for TL350-1C and TL350-3C

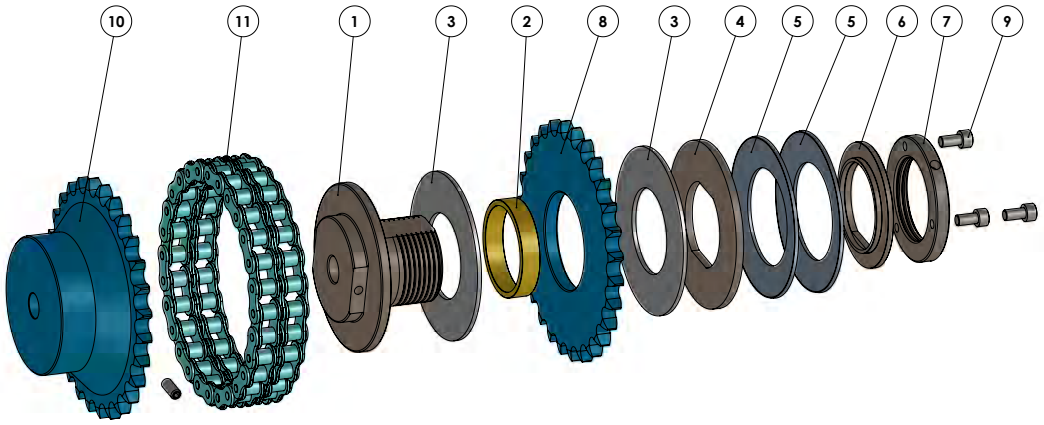
PARTS LIST FOR TL200-1C TO TL350-2C

KEY No.	DESCRIPTION	QTY	TL200	TL250	TL350
1	HUB	1	25S8611	25S8411	25S8461
2	BUSH	1	25S8621	25S8421	25S8472
3	FACING	2	25S8631	25S8431	25S8481
4	PRESSURE PLATE	1	25S8632	25S8432	25S8482
5	DISC SPRING	1 or 2	25S8633	25S8433	25S8483
6	LOCK WASHER	1	25S8635	25S8435	25S8485
7	ADJUSTMENT NUT	1	25S8636	25S8436	25S8486
8	PLATE WHEEL	1	25S8641	25S8441	25S8491
9	SPROCKET	1	25S8642	25S8442	25S8492
-	DUPLEX CHAIN	1	25S8643	25S8443	25S8493
-	LINK	1	25S8644	25S8444	25S8494

The torque setting of the unit is achieved in the same way as for the torque limiter.
For TL200 to TL350 Torque Limiters this is achieved by tightening the hexagon adjusting nut by hand until the disc spring makes contact with the plate, then tighten the nut by approximately 60 degrees, secure the nut in place by the use of the tab washer. Final setting of the torque limiter should be done after a run in period of approximately 500 revolutions at 50 – 70 rpm.

The torque ratings for the TL200 to TL350 are:-

One disc spring (item 5)	TL200	3 – 10Nm	TL250	7 – 27Nm	TL350	20 – 75Nm
Two disc springs (item 5)		7 – 20Nm		14 – 54Nm		35 – 150Nm



TL500-2C Assembly

TL500-2C Assembly

TORQUE LIMITER COUPLINGS

Parts List for TL500-1C and TL500-2C
parts list for TL700-1C and TL700-2C

PARTS LIST FOR TL500-1C TO TL700-2C

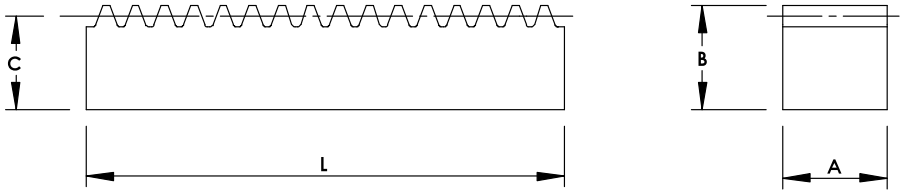
KEY No.	DESCRIPTION	QTY	TL500	TL700	
1	HUB	1	25S8511	25S8561	
2	BUSH	1	25S8522	25S8573	
3	FACING	2	25S8531	25S8581	
4	PRESSURE PLATE	1	25S8532	25S8582	
5	DISC SPRING	1 or 2	25S8533	25S8583	
6	SPRING PLATE	1	25S8534	25S8584	
7	ADJUSTMENT NUT	1	25S8536	25S8586	
8	PLATE WHEEL	1	25S8541	25S8591	
9	LOCK SCREW	3	25S8537	25S8587	
10	SPROCKET	1	25S8542	25S8592	
-	DUPLEX CHAIN	1	25S8543	25S8593	
-	LINK	1	25S8544	25S8594	

The torque setting of the unit is achieved in the same way as for the torque limiter.
For the TL500 and TL700 Torque Limiters the adjustment nut is positioned and the three loading screws are tightened on to the spring plate until their heads lock on the adjustment nut.
Final setting of the torque limiter should be done after a run in period off approximately 500 revolutions at 50 – 70 rpm.

The torque ratings for the TL500 and TL700 are:-

One disc spring (item 5)	TL500	47 – 210Nm	TL700	116 – 570Nm
Two disc springs (item 5)		88 – 420Nm		224 – 1085Nm

PITCH 16DP - 5DP

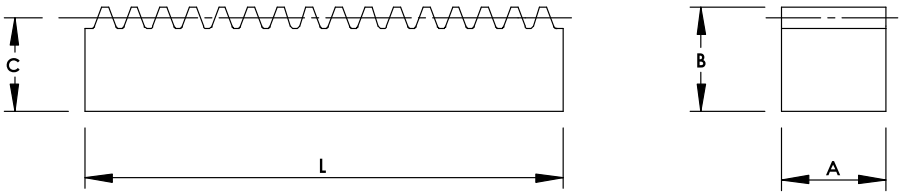


Dimension A is –0.010” to –0.015”
on Nominal Size.

Dimension L is –0 to +1/8”
on Nominal Size

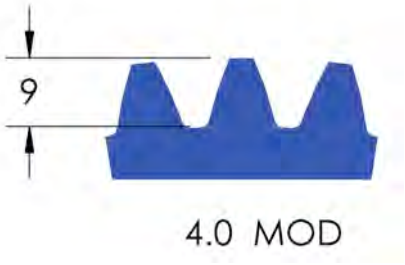
Catalogue No.	No. Teeth	Pitch in DP	L	A	B	C
12F16R	63	16	12.3/8”	1/2”	1/2”	0.430”
24F16R	124	16	24.3/8”	1/2”	1/2”	0.430”
12F14R	55	14	12.1/4”	5/8”	5/8”	0.545”
24F14R	108	14	24.1/8”	5/8”	5/8”	0.545”
12F12R	48	12	12.5/8”	7/8”	7/8”	0.783”
24F12R	93	12	24.1/4”	7/8”	7/8”	0.783”
48F12R	185	12	48.3/8”	7/8”	7/8”	0.783”
24F10R	78	10	24.1/2”	1.1/8”	1.1/8”	1.016”
48F10R	154	10	48.3/8”	1.1/8”	1.1/8”	1.016”
24F8R	62	8	24.1/4”	1.1/2”	1.1/2”	1.365”
48F8R	123	8	48.1/4”	1.1/2”	1.1/2”	1.365”
24F6R	46	6	24.1/8”	2”	1.1/2”	1.323”
48F6R	92	6	48.1/4”	2”	1.1/2”	1.323”
24F5R	39	5	24.1/2”	2.1/2”	1.1/2”	1.290”
48F5R	77	5	48.3/8”	2.1/2”	1.1/2”	1.290”

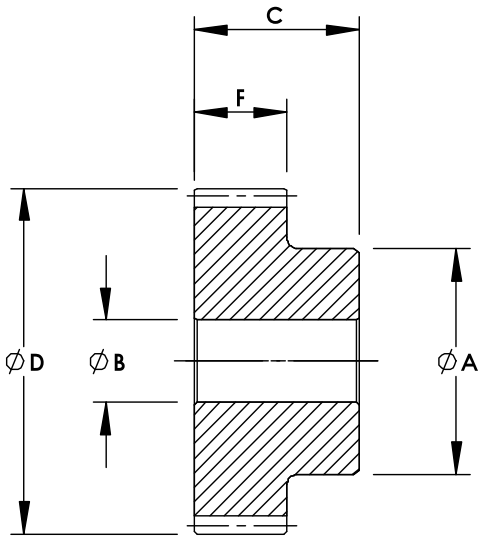
PITCH 1.5 MOD - 5 MOD



Catalogue No.	No. Teeth	Module Pitch	L	A	B	C
0.5M1.5R	106	1.5	500	15.88 15.50	15.88 15.68	14.19
1.0M1.5R	212	1.5	1000	15.88 15.50	15.88 15.68	14.19
0.5M2.0R	79	2.0	500	22.23 21.85	22.23 22.02	20.01
1.0M2.0R	159	2.0	1000	22.23 21.85	22.23 22.02	20.01
1.5M2.0R	238	2.0	1500	22.23 21.85	22.23 22.02	20.01
0.5M2.5R	64	2.5	500	25.40 25.02	25.40 25.17	22.66
1.0M2.5R	127	2.5	1000	25.40 25.02	25.40 25.17	22.66
1.5M2.5R	191	2.5	1500	25.40 25.02	25.40 25.17	22.66
1.0M3.0R	106	3.0	1000	31.75 31.37	31.75 31.54	28.49
1.5M3.0R	159	3.0	1500	31.75 31.37	31.75 31.54	28.49
1.0M4.0R	80	4.0	1000	44.45 44.05	44.45 44.21	40.16
1.5M4.0R	119	4.0	1500	44.45 44.05	44.45 44.21	40.16
1.0M5.0R	64	5.0	1000	50.80 50.40	50.80 50.56	45.46
1.5M5.0R	96	5.0	1500	50.80 50.40	50.80 50.56	45.46

PITCH - 4.0 MOD





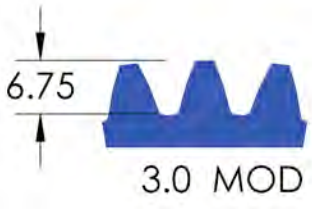
Face Width – 'F' = 40mm.
Material - S1045 Steel
Tooth Pressure Angle - 20º
Gear Accuracy Conforms To AGMA Class 8

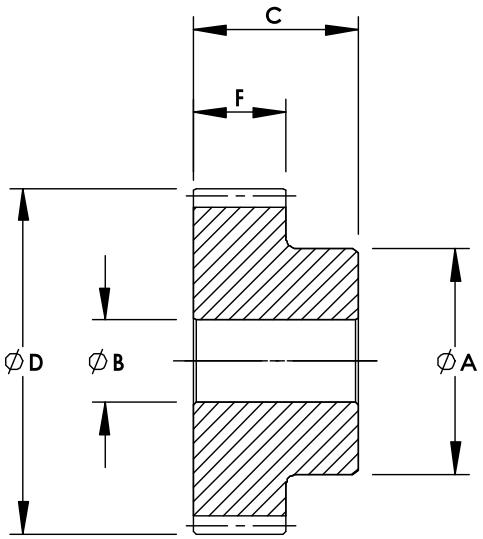
Catalogue No.	No. Teeth	Pitch Dia.	A	B	C	D
12M4.0S	12	52.00	35.0	20.00	60.0	60.00
14M4.0S	14	60.00	40.0	20.00	60.0	68.00
15M4.0S	15	64.00	45.0	20.00	60.0	72.00
16M4.0S	16	68.00	50.0	20.00	60.0	76.00
18M4.0S	18	72.00	55.0	20.00	60.0	80.00
19M4.0S	19	76.00	60.0	20.00	60.0	84.00
20M4.0S	20	80.00	65.0	20.00	60.0	88.00
24M4.0S	24	96.00	80.0	20.00	60.0	104.00
30M4.0S	30	120.00	100.0	20.00	60.0	128.00
36M4.0S	36	144.00	100.0	22.00	56.0	152.00
40M4.0S	40	160.00	100.0	25.00	56.0	168.00
44M4.0S	44	176.00	100.0	25.00	56.0	184.00
45M4.0S	45	180.00	100.0	25.00	56.0	188.00
48M4.0S	48	192.00	100.0	25.00	56.0	200.00
54M4.0S	54	216.00	100.0	30.00	56.0	224.00
60M4.0S	60	240.00	110.0	30.00	56.0	248.00

Dimensions in mm.

Note:- To give added strength and improved tooth action all pinions having 16 teeth or less have had their effective meshing pitch diameter increased by one addendum. Centre distance for any two gears is the sum of their pitch diameters as shown in the table, divided by two.

PITCH - 3.0 MOD





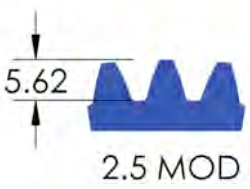
Face Width – 'F' = 30mm.
Material - S1045 Steel
Tooth Pressure Angle - 20º
Gear Accuracy Conforms To AGMA Class 8

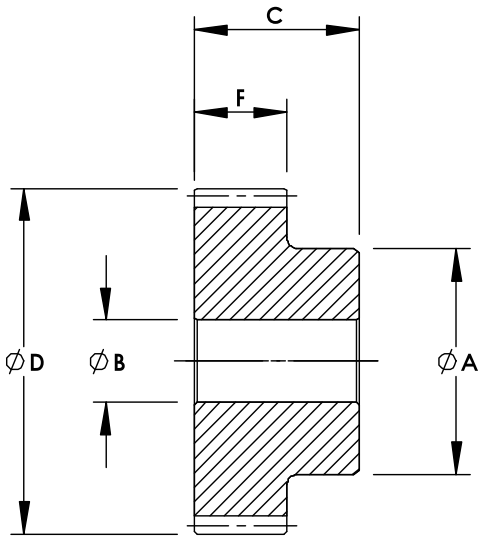
Catalogue No.	No. Teeth	Pitch Dia.	A	B	C	D
12M3.0S	12	39.00	28.0	15.00	45.0	45.00
14M3.0S	14	45.00	36.0	15.00	45.0	51.00
15M3.0S	15	48.00	38.0	15.00	45.0	54.00
16M3.0S	16	51.00	39.0	15.00	45.0	57.00
18M3.0S	18	54.00	40.0	15.00	45.0	60.00
20M3.0S	20	60.00	50.0	15.00	45.0	66.00
24M3.0S	24	72.00	58.0	15.00	45.0	78.00
28M3.0S	28	84.00	70.0	20.00	45.0	90.00
30M3.0S	30	90.00	75.0	20.00	45.0	96.00
32M3.0S	32	96.00	75.0	20.00	45.0	102.00
36M3.0S	36	108.00	80.0	20.00	45.0	114.00
40M3.0S	40	120.00	80.0	25.00	45.0	126.00
44M3.0S	44	132.00	80.0	25.00	45.0	138.00
45M3.0S	45	135.00	80.0	25.00	45.0	141.00
48M3.0S	48	144.00	80.0	25.00	45.0	150.00
54M3.0S	54	162.00	80.0	25.00	45.0	168.00
56M3.0S	56	168.00	80.0	25.00	45.0	174.00
60M3.0S	60	180.00	80.0	25.00	45.0	186.00
64M3.0S	64	192.00	80.0	25.00	45.0	198.00
72M3.0S	72	216.00	90.0	25.00	45.0	222.00

Dimensions in mm.

Note:- To give added strength and improved tooth action all pinions having 16 teeth or less have had their effective meshing pitch diameter increased by one addendum. Centre distance for any two gears is the sum of their pitch diameters as shown in the table, divided by two.

PITCH - 2.5 MOD





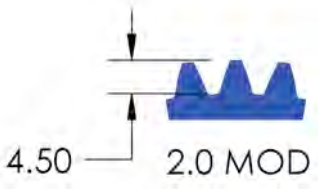
Face Width – 'F' = 25mm.
Material - S1045 Steel
Tooth Pressure Angle - 20º
Gear Accuracy Conforms To AGMA Class 8

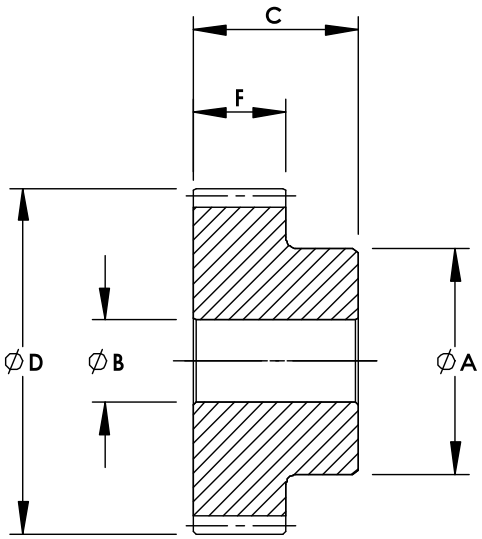
Catalogue No.	No. Teeth	Pitch Dia.	A	B	C	D
12M2.5S	12	32.50	25.0	12.00	37.0	37.50
14M2.5S	14	37.50	30.0	12.00	37.0	42.50
15M2.5S	15	40.00	32.0	15.00	37.0	45.00
16M2.5S	16	42.50	35.0	15.00	37.0	47.50
18M2.5S	18	45.00	38.0	15.00	37.0	50.00
20M2.5S	20	50.00	40.0	15.00	37.0	55.00
24M2.5S	24	60.00	48.0	15.00	37.0	65.00
25M2.5S	25	62.50	50.0	15.00	37.0	67.50
28M2.5S	28	70.00	60.0	15.00	37.0	75.00
30M2.5S	30	75.00	65.0	15.00	37.0	80.00
35M2.5S	35	87.50	70.0	15.00	37.0	92.50
36M2.5S	36	90.00	70.0	15.00	37.0	95.00
40M2.5S	40	100.00	70.0	20.00	37.0	105.00
45M2.5S	45	112.50	70.0	20.00	37.0	117.50
48M2.5S	48	120.00	70.0	20.00	37.0	125.00
50M2.5S	50	125.00	70.0	20.00	37.0	130.00
54M2.5S	54	135.00	70.0	20.00	37.0	140.00
55M2.5S	55	137.50	70.0	20.00	37.0	142.50
60M2.5S	60	150.00	70.0	25.00	37.0	155.00
70M2.5S	70	175.00	80.0	25.00	37.0	180.00

Dimensions in mm.

Note:- To give added strength and improved tooth action all pinions having 16 teeth or less have had their effective meshing pitch diameter increased by one addendum. Centre distance for any two gears is the sum of their pitch diameters as shown in the table, divided by two.

PITCH - 2.0 MOD





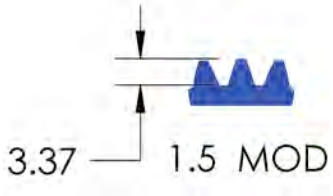
Face Width – 'F' = 20mm.
Material - S1045 Steel
Tooth Pressure Angle - 20º
Gear Accuracy Conforms To AGMA Class 8

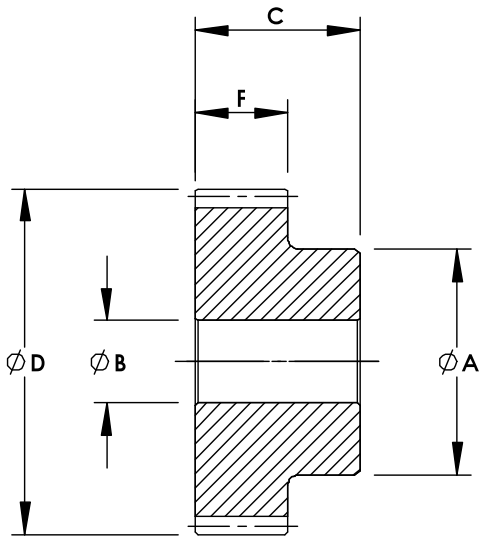
Catalogue No.	No. Teeth	Pitch Dia.	A	B	C	D
12M2.0S	12	26.00	20.0	10.00	30.0	30.00
13M2.0S	13	28.00	20.0	10.00	30.0	32.00
14M2.0S	14	30.00	24.0	10.00	30.0	34.00
15M2.0S	15	32.00	26.0	12.00	30.0	36.00
16M2.0S	16	34.00	28.0	12.00	30.0	38.00
18M2.0S	18	36.00	30.0	12.00	30.0	40.00
20M2.0S	20	40.00	32.0	12.00	30.0	44.00
21M2.0S	21	42.00	34.0	12.00	30.0	46.00
24M2.0S	24	48.00	38.0	12.00	30.0	52.00
28M2.0S	28	56.00	45.0	12.00	30.0	60.00
30M2.0S	30	60.00	50.0	12.00	30.0	64.00
36M2.0S	36	72.00	55.0	12.00	30.0	76.00
40M2.0S	40	80.00	55.0	15.00	30.0	84.00
42M2.0S	42	84.00	55.0	15.00	30.0	88.00
45M2.0S	45	90.00	55.0	15.00	30.0	94.00
48M2.0S	48	96.00	55.0	15.00	30.0	100.00
54M2.0S	54	108.00	55.0	15.00	30.0	112.00
60M2.0S	60	120.00	60.0	15.00	30.0	124.00
72M2.0S	72	144.00	60.0	15.00	30.0	148.00

Dimensions in mm.

Note:- To give added strength and improved tooth action all pinions having 16 teeth or less have had their effective meshing pitch diameter increased by one addendum. Centre distance for any two gears is the sum of their pitch diameters as shown in the table, divided by two.

PITCH - 1.5 MOD





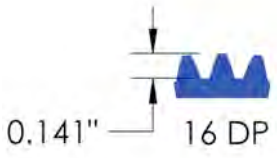
Face Width – 'F' = 15mm.
Material - S1045 Steel
Tooth Pressure Angle - 20º
Gear Accuracy Conforms To AGMA Class 8

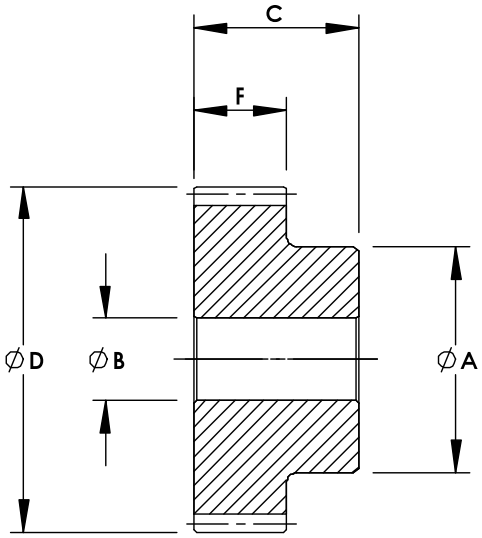
Catalogue No.	No. Teeth	Pitch Dia.	A	B	C	D
12M1.5S	12	19.50	14.0	8.00	25.0	22.50
14M1.5S	14	22.50	16.0	8.00	25.0	25.50
15M1.5S	15	24.00	20.0	8.00	25.0	27.00
16M1.5S	16	25.50	21.0	8.00	25.0	28.50
20M1.5S	20	30.00	24.0	8.00	25.0	33.00
24M1.5S	24	36.00	28.0	8.00	25.0	39.00
28M1.5S	28	42.00	36.0	10.00	25.0	45.00
30M1.5S	30	45.00	38.0	10.00	25.0	48.00
32M1.5S	32	48.00	40.0	10.00	25.0	51.00
36M1.5S	36	54.00	45.0	10.00	25.0	57.00
40M1.5S	40	60.00	45.0	12.00	25.0	63.00
45M1.5S	45	67.50	45.0	12.00	25.0	70.50
48M1.5S	48	72.00	45.0	12.00	25.0	75.00
54M1.5S	54	81.00	50.0	15.00	25.0	84.00
56M1.5S	56	84.00	50.0	15.00	25.0	87.00
60M1.5S	60	90.00	50.0	15.00	25.0	93.00
64M1.5S	64	96.00	55.0	15.00	25.0	99.00
72M1.5S	72	108.00	55.0	15.00	25.0	111.00

Dimensions in mm.

Note:- To give added strength and improved tooth action all pinions having 16 teeth or less have had their effective meshing pitch diameter increased by one addendum. Centre distance for any two gears is the sum of their pitch diameters as shown in the table, divided by two.

PITCH - 16 DP





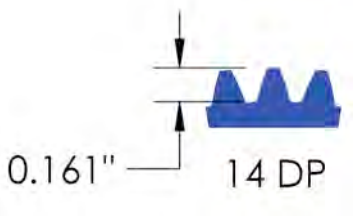
Face Width – 'F' = 1/2"
Material - S1045 Steel
Tooth Pressure Angle - 20º

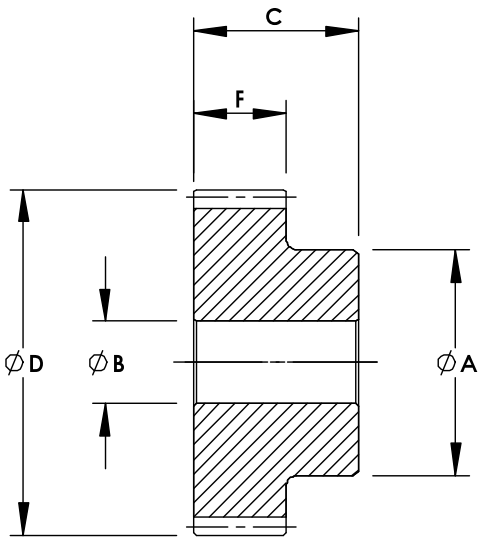
Catalogue No.	No. Teeth	Pitch Dia.	A	B	C	D
12D16S	12	0.812"	0.65"	0.3125"	15/16"	0.937"
14D16S	14	0.937"	0.75"	0.3125"	15/16"	1.062"
15D16S	15	1.000"	0.83"	0.3125"	15/16"	1.125"
16D16S	16	1.062"	0.88"	0.375"	15/16"	1.187"
20D16S	20	1.250"	1.06"	0.375"	15/16"	1.375"
24D16S	24	1.500"	1.1/4"	0.500"	15/16"	1.625"
28D16S	28	1.750"	1.1/2"	0.500"	15/16"	1.875"
32D16S	32	2.000"	1.3/4"	0.500"	15/16"	2.125"
36D16S	36	2.250"	1.3/4"	0.500"	15/16"	2.375"
40D16S	40	2.500"	1.3/4"	0.500"	1"	2.625"
48D16S	48	3.000"	2"	0.500"	1"	3.125"
56D16S	56	3.500"	2.1/4"	0.500"	1"	3.625"
64D16S	64	4.000"	2.1/2"	0.500"	1"	4.125"
72D16S	72	4.500"	2.1/2"	0.500"	1"	4.625"

Dimensions in Inches.

Note:- To give added strength and improved tooth action all pinions having 16 teeth or less have had their effective meshing pitch diameter increased by one addendum. Centre distance for any two gears is the sum of their pitch diameters as shown in the table, divided by two.

PITCH - 14 DP





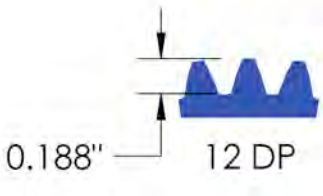
Face Width – 'F' = 5/8"
Material - S1045 Steel
Tooth Pressure Angle - 20º

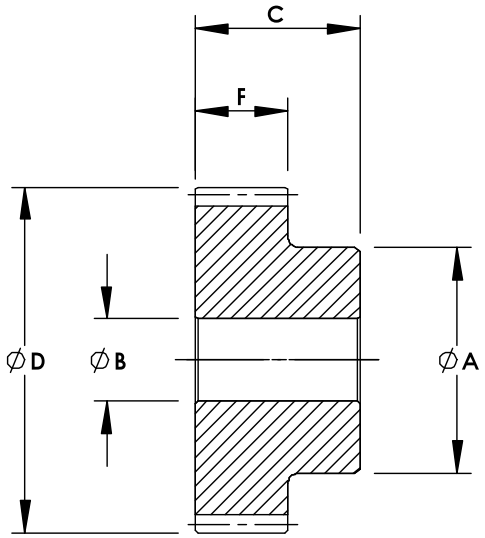
Catalogue No.	No. Teeth	Pitch Dia.	A	B	C	D
12D14S	12	0.929"	0.70"	0.375"	1.1/8"	1.071"
13D14S	13	1.000"	0.81"	0.375"	1.1/8"	1.143"
14D14S	14	1.071"	0.85"	0.375"	1.1/8"	1.214"
15D14S	15	1.143"	0.92"	0.375"	1.1/8"	1.286"
16D14S	16	1.214"	1.00"	0.375"	1.1/8"	1.357"
20D14S	20	1.429"	1.20"	0.500"	1.1/8"	1.571"
21D14S	21	1.500"	1.30"	0.500"	1.1/8"	1.643"
24D14S	24	1.714"	1.50"	0.500"	1.1/8"	1.857"
28D14S	28	2.000"	1.3/4"	0.500"	1.1/8"	2.143"
30D14S	30	2.143"	1.3/4"	0.625"	1.1/8"	2.286"
35D14S	35	2.500"	2"	0.625"	1.1/8"	2.643"
42D14S	42	3.000"	2"	0.625"	1.1/8"	3.143"
49D14S	49	3.500"	2.1/2"	0.625"	1.1/8"	3.643"
56D14S	56	4.000"	2.1/2"	0.625"	1.1/8"	4.143"
63D14S	63	4.500"	3"	0.625"	1.1/4"	4.643"
70D14S	70	5.000"	3"	0.625"	1.1/4"	5.143"

Dimensions in Inches.

Note:- To give added strength and improved tooth action all pinions having 16 teeth or less have had their effective meshing pitch diameter increased by one addendum. Centre distance for any two gears is the sum of their pitch diameters as shown in the table, divided by two.

PITCH - 12 DP





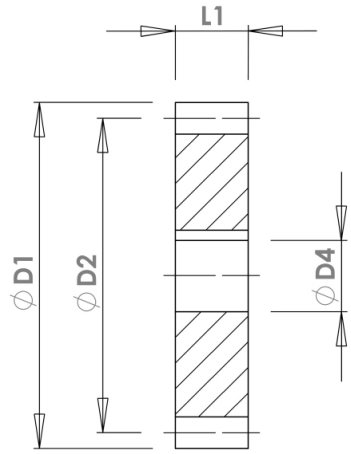
Face Width – 'F' = 7/8"
Material - S1045 Steel
Tooth Pressure Angle - 20º

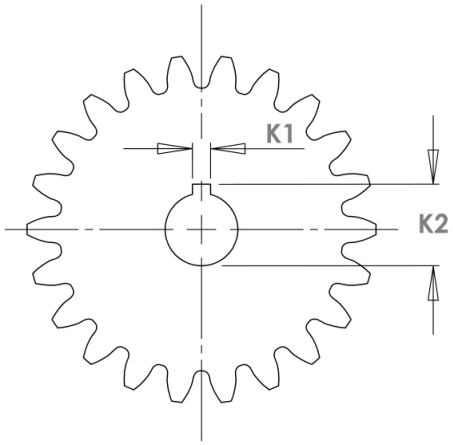
Catalogue No.	No. Teeth	Pitch Dia.	A	B	C	D
12D12S	12	1.083"	0.85"	0.500"	1.1/2"	1.250"
13D12S	13	1.167"	0.93"	0.500"	1.1/2"	1.333"
14D12S	14	1.250"	1.00"	0.500"	1.1/2"	1.417"
15D12S	15	1.333"	1.10"	0.500"	1.1/2"	1.500"
16D12S	16	1.417"	1.3/16"	0.500"	1.1/2"	1.583"
18D12S	18	1.500"	1.1/4"	0.625"	1.1/2"	1.667"
20D12S	20	1.667"	1.7/16"	0.625"	1.1/2"	1.833"
21D12S	21	1.750"	1.1/2"	0.625"	1.1/2"	1.917"
24D12S	24	2.000"	1.3/4"	0.625"	1.1/2"	2.167"
27D12S	27	2.250"	2"	0.750"	1.1/2"	2.417"
30D12S	30	2.500"	2.1/4"	0.750"	1.1/2"	2.667"
36D12S	36	3.000"	2.1/4"	0.750"	1.1/2"	3.167"
40D12S	40	3.333"	2.1/2"	0.750"	1.1/2"	3.500"
42D12S	42	3.500"	2.1/2"	0.750"	1.1/2"	3.667"
45D12S	45	3.750"	3"	0.875"	1.5/8"	3.917"
48D12S	48	4.000"	3"	0.875"	1.5/8"	4.167"
54D12S	54	4.500"	3.1/2"	0.875"	1.5/8"	4.667"
60D12S	60	5.000"	3.3/4"	0.875"	1.5/8"	5.167"
72D12S	72	6.000"	4.1/2"	0.875"	1.5/8"	6.167"

Dimensions in Inches.

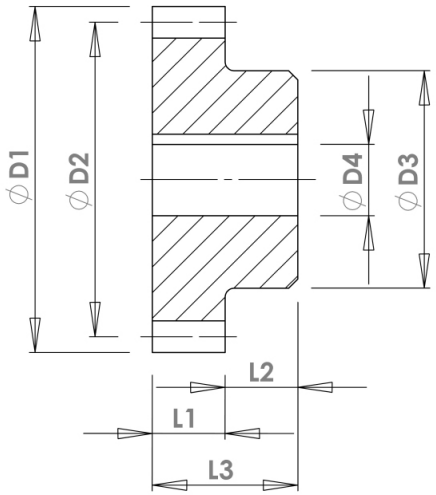
Note:- To give added strength and improved tooth action all pinions having 16 teeth or less have had their effective meshing pitch diameter increased by one addendum. Centre distance for any two gears is the sum of their pitch diameters as shown in the table, divided by two.

TYPE A (FLUSH)





TYPE B (BOSS)



Gear Details			
No. Teeth			
Pitch			
Pressure Angle			o
Helix Angle			o
Handing (if Helical)		LH ☐	RH ☐
Tooth Finish		Machine ☐	Ground ☐
Material			
Gear Type		Type A ☐	Type B ☐
Outside Dia.	D1		
Pitch Circle Dia.	D2		
Boss Dia. (Type B)	D3		
Bore Dia.	D4		
Face Width	L1		
Boss Length (Type B)	L2		
Overall Length (L1 or L3)	L3		
Keyway Details			
Keyway Width	K1		
Keyway Depth	K2		
No. of Keyways			
Tapped Hole Details			
Tapping Size			
Position			
No. of Holes			
Customer Reference			
Customer Name			
Customer Contact			
Customer Order Reference			
Date			
Customer Confirmation		sign below for Job to proceed	
Approved for Manufacture			
Hercus Use Only			
Hercus Quote No.			
Hercus Part No.			
Hercus Job No.			

TOOTH SIZE REFERENCE CHART

24 DP

16 DP

1.0 MOD

1.5 MOD

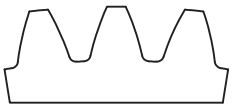
14 DP

12 DP

2.0 MOD

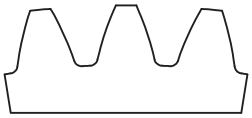
2.5 MOD

10 DP

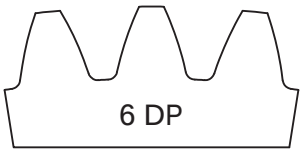


8 DP

3.0 MOD

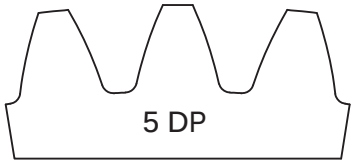


3.5 MOD

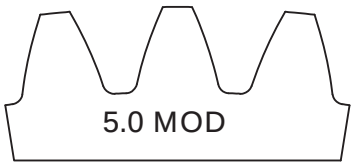


6 DP

4.0 MOD

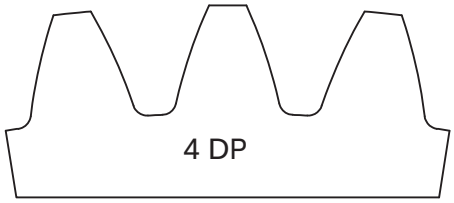


5 DP

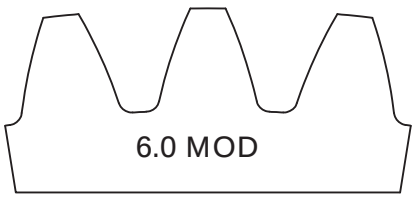


5.0 MOD

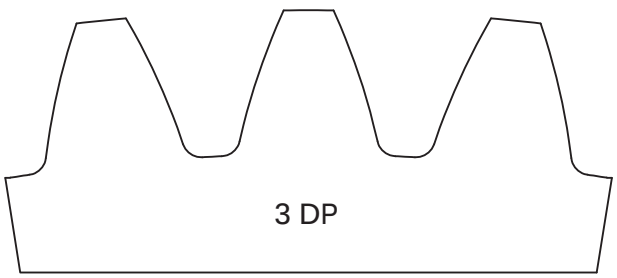
Full Size Teeth of 20^0 Pressure Angle in Inch and Metric Sizes



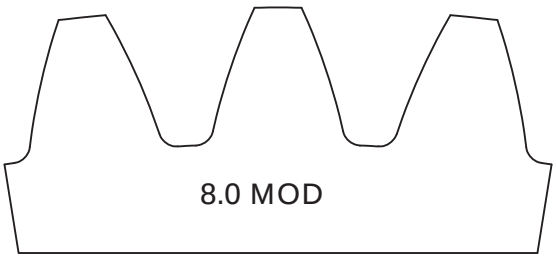
4 DP



6.0 MOD

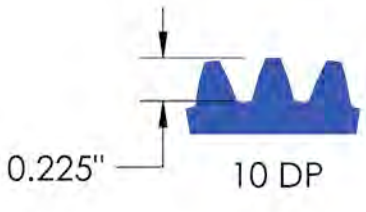


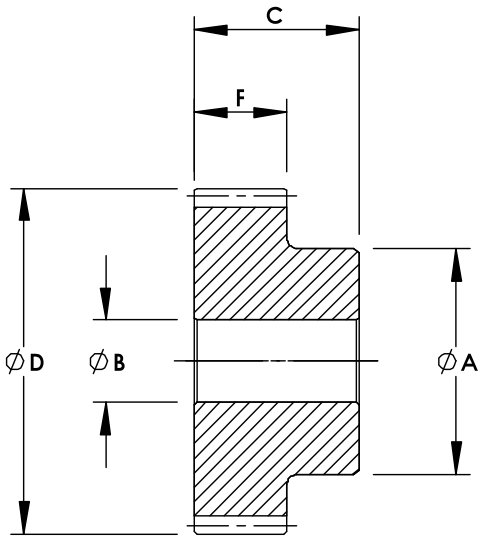
3 DP



8.0 MOD

PITCH - 10 DP



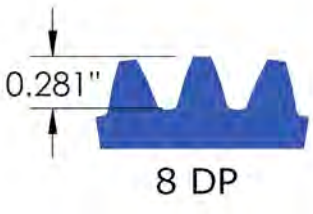


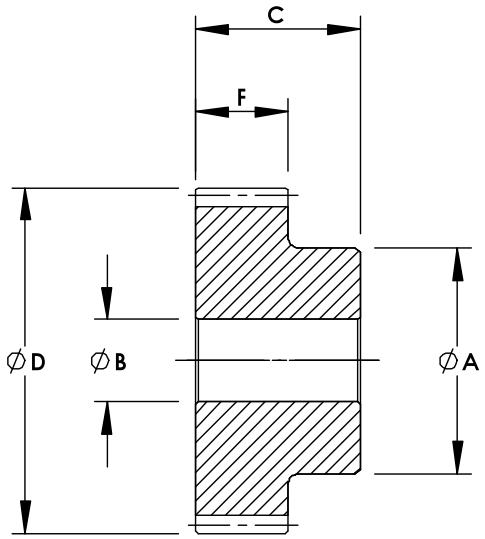
Face Width – 'F' = 1.1/8"
Material - S1045 Steel
Tooth Pressure Angle - 20º

Catalogue No.	No. Teeth	Pitch Dia.	A	B	C	D
12D10S	12	1.300"	1.00"	0.625"	1.3/4"	1.500"
14D10S	14	1.500"	1.20"	0.625"	1.3/4"	1.700"
15D10S	15	1.600"	1.30"	0.625"	1.3/4"	1.800"
16D10S	16	1.700"	1.40"	0.625"	1.3/4"	1.900"
18D10S	18	1.800"	1.1/2"	0.750"	1.3/4"	2.000"
20D10S	20	2.000"	1.70"	0.750"	1.3/4"	2.200"
24D10S	24	2.400"	2.1/8"	0.750"	1.3/4"	2.600"
25D10S	25	2.500"	2.1/8"	0.875"	1.3/4"	2.700"
30D10S	30	3.000"	2.1/2"	0.875"	1.7/8"	3.200"
35D10S	35	3.500"	2.5/8"	0.875"	1.7/8"	3.700"
36D10S	36	3.600"	2.5/8"	0.875"	1.7/8"	3.800"
40D10S	40	4.000"	2.3/4"	1.000"	2"	4.200"
45D10S	45	4.500"	3.1/2"	1.000"	2"	4.700"
50D10S	50	5.000"	4"	1.000"	2"	5.200"
55D10S	55	5.500"	4.1/4"	1.000"	2"	5.700"
60D10S	60	6.000"	4.1/2"	1.000"	2"	6.200"
70D10S	70	7.000"	5"	1.000"	2"	7.200"

Dimensions in Inches.

Note:- To give added strength and improved tooth action all pinions having 16 teeth or less have had their effective meshing pitch diameter increased by one addendum. Centre distance for any two gears is the sum of their pitch diameters as shown in the table, divided by two.





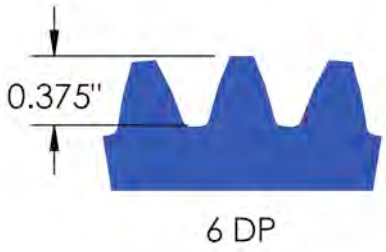
Face Width – 'F' = 1.1/2"
Material - S1045 Steel
Tooth Pressure Angle - 20º

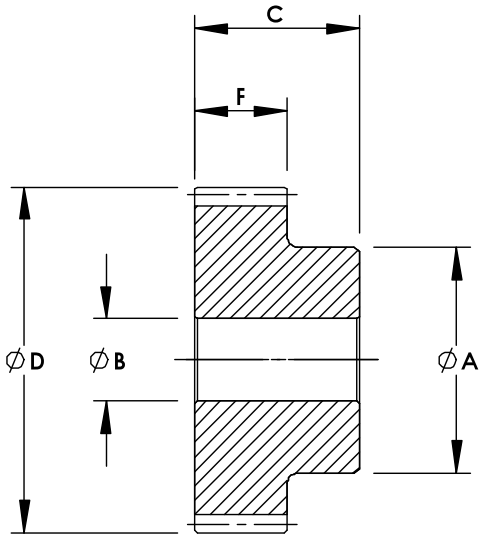
Catalogue No.	No. Teeth	Pitch Dia.	A	B	C	D
12D8S	12	1.625"	1.1/4"	0.750"	2.1/4"	1.875"
14D8S	14	1.875"	1.1/2"	0.750"	2.1/4"	2.125"
15D8S	15	2.000"	1.5/8"	0.750"	2.1/4"	2.250"
16D8S	16	2.125"	1.3/4"	0.750"	2.1/4"	2.375"
18D8S	18	2.250"	1.7/8"	0.875"	2.1/4"	2.500"
20D8S	20	2.500"	2.1/8"	0.875"	2.3/8"	2.750"
24D8S	24	3.000"	2.5/8"	0.875"	2.3/8"	3.250"
28D8S	28	3.500"	3"	0.875"	2.3/8"	3.750"
30D8S	30	3.750"	3"	1.000"	2.3/8"	4.000"
32D8S	32	4.000"	3"	1.000"	2.3/8"	4.250"
36D8S	36	4.500"	3.1/4"	1.000"	2.3/8"	4.750"
40D8S	40	5.000"	4"	1.000"	2.1/2"	5.250"
44D8S	44	5.500"	4.1/4"	1.125"	2.1/2"	5.750"
48D8S	48	6.000"	4.1/2"	1.125"	2.1/2"	6.250"
56D8S	56	7.000"	5"	1.125"	2.1/2"	7.250"
60D8S	60	7.500"	5.1/2"	1.125"	2.1/2"	7.750"
64D8S	64	8.000"	6"	1.125"	2.1/2"	8.250"
72D8S	72	9.000"	6.1/2"	1.125"	2.1/2"	9.250"

Dimensions in Inches.

Note:- To give added strength and improved tooth action all pinions having 16 teeth or less have had their effective meshing pitch diameter increased by one addendum. Centre distance for any two gears is the sum of their pitch diameters as shown in the table, divided by two.

PITCH - 6 DP





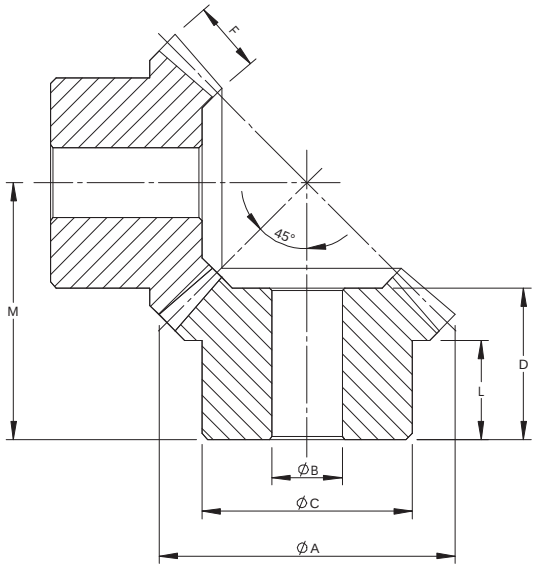
Face Width – 'F' = 2"
Material - S1045 Steel
Tooth Pressure Angle - 20º

Catalogue No.	No. Teeth	Pitch Dia.	A	B	C	D
12D6S	12	2.167"	1.3/4"	0.875"	2.7/8"	2.500"
14D6S	14	2.500"	2"	0.875"	2.7/8"	2.833"
15D6S	15	2.667"	2.1/4"	1.000"	2.7/8"	3.000"
16D6S	16	2.833"	2.3/8"	1.000"	2.7/8"	3.167"
18D6S	18	3.000"	2.1/2"	1.000"	2.7/8"	3.333"
19D6S	19	3.166"	2.5/8"	1.000"	2.7/8"	3.500"
20D6S	20	3.333"	2.3/4"	1.000"	2.7/8"	3.667"
24D6S	24	4.000"	3.1/4"	1.125"	2.7/8"	4.333"
30D6S	30	5.000"	3.3/4"	1.125"	2.7/8"	5.333"
36D6S	36	6.000"	4.3/4"	1.250"	3.1/4"	6.333"
40D6S	40	6.667"	5.1/4"	1.250"	3.1/4"	7.000"
44D6S	44	7.333"	5.1/2"	1.250"	3.1/4"	7.667"
45D6S	45	7.500"	6"	1.250"	3.1/4"	7.833"
48D6S	48	8.000"	6"	1.250"	3.1/2"	8.333"
54D6S	54	9.000"	6.3/4"	1.250"	3.1/2"	9.333"
60D6S	60	10.000"	7.1/2"	1.250"	3.1/2"	10.333"

Dimensions in Inches.

Note:- To give added strength and improved tooth action all pinions having 16 teeth or less have had their effective meshing pitch diameter increased by one addendum. Centre distance for any two gears is the sum of their pitch diameters as shown in the table, divided by two.

PITCH 1.5 MOD - 4 MOD



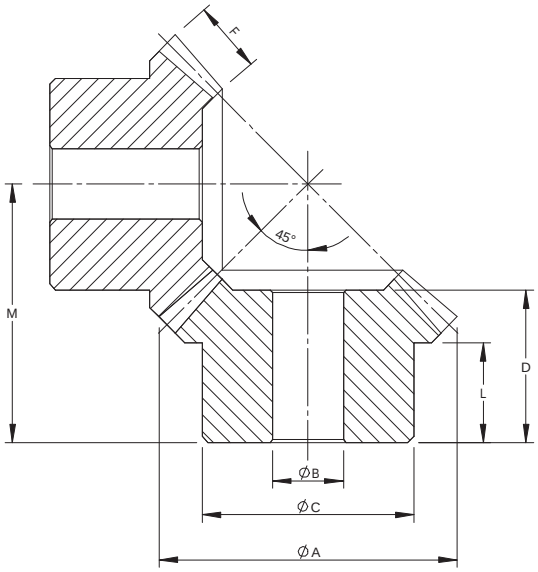
Material - S1045 Steel
Tooth Pressure Angle - 20º

Catalogue No.	No. Teeth	Pitch MOD	Pitch Dia.	A	B	C	D	F	L	M
16M1.5M	16	1.5	24	26.1	8	20.3		6	12	26
20M1.5M	20	1.5	30	32.1	10	22	18	10	8.5	27.4
16M2.0M	16	2	32	34.8	10	25.3		8	14	33
20M2.0M	20	2	40	42.8	10	32	22	12	12	35.78
25M2.0M	25	2	50	52.8	12	40	25	14	12.3	42.28
20M2.5M	20	2.5	50	53.5	12	40	27	12	16	45.93
25M2.5M	25	2.5	62.5	66	15	50	30	15	16	52.98
20M3.0M	20	3	60	64.2	15	45	31	18	13.6	51
25M3.0M	25	3	75	79.2	15	55	34	20	16	60
30M3.0M	30	3	90	94.2	20	60	36	22	17	68
30M3.5M	30	3.5	105	109.9	20	70	43.5	30	19	78.02
25M4.0M	25	4	100	105.6	20	70	40	28	18	73.50
30M4.0M	30	4	120	125.6	25	80	43	32	16	83.67

Dimensions in MM

PITCH - 32DP TO 3DP

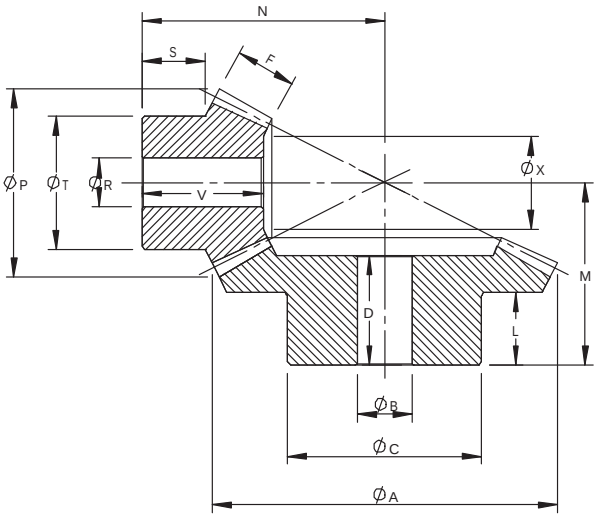
Material - S1045 Steel
Tooth Pressure Angle - 20º



Catalogue No.	No. Teeth	Pitch in DP	Pitch Dia.	A	B	C	D	F	L	M
24D32M	24	32	0.750”	0.794”	0.250”	1/2”	0.35”	5/32”	0.20”	0.650”
24D24M	24	24	1.000”	1.059”	0.375”	3/4”	1/2”	1/4”	9/32”	0.875”
20D16M	20	16	1.250”	1.338”	0.438”	1”	3/4”	5/16”	1/2”	1.250”
15D12M	15	12	1.250”	1.368”	0.438”	1”	3/4”	5/16”	1/2”	1.250”
18D12M	18	12	1.500”	1.618”	0.500”	1.1/4”	1”	7/16”	5/8”	1.500”
21D12M	21	12	1.750”	1.867”	0.500”	1.3/8”	1.1/16”	7/16”	11/16”	1.750”
24D12M	24	12	2.000”	2.118”	0.625”	1.5/8”	1.1/4”	1/2”	13/16”	2.000
20D10M	20	10	2.000”	2.141”	0.625”	1.5/8”	1.1/4”	1/2”	13/16”	2.000”
25D10M	25	10	2.500”	2.641”	0.750”	2”	1.1/2”	5/8”	15/16”	2.437”
24D8M	24	8	3.000”	3.176”	0.750”	2.1/4”	1.5/8”	3/4”	1.1/16”	2.750”
24D8MX	24	8	3.000”	3.176”	1.000”	2.1/4”	1.5/8”	3/4”	1.1/16”	2.750”
28D8M	28	8	3.500”	3.676”	1.000”	2.1/2”	2”	7/8”	1.1/8”	3.250”
32D8M	32	8	4.000”	4.176”	1.000”	3”	2.3/16”	1”	1.5/16”	3.625”
24D6M	24	6	4.000”	4.235”	1.000”	3”	2.3/16”	1”	1.5/16”	3.625”
25D5M	25	5	5.000”	5.283”	1.125”	3.3/4”	2.3/4”	1.1/4”	1.5/8”	4.500”
24D4M	24	4	6.000”	6.353”	1.250”	4.1/2”	3.1/8”	1.1/2”	1.3/4”	5.250”
21D3M	21	3	7.000”	7.471”	2.000”	5.1/2”	3.1/2”	1.3/4”	2”	6.000”

Dimensions in Inches

RATIO 1:2, 1.5 MOD - 4 MOD



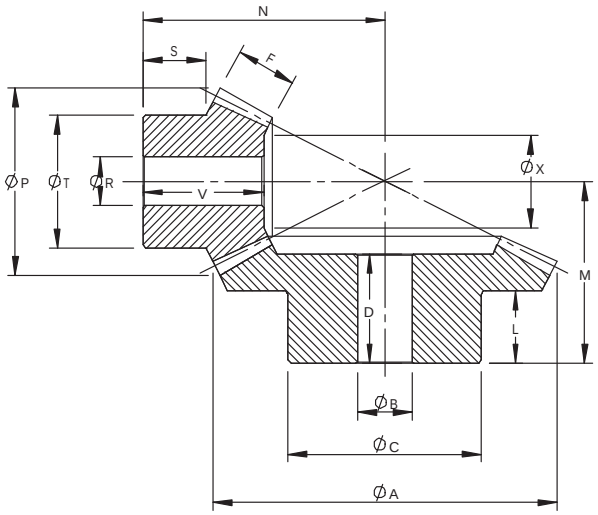
Material - S1045 Steel
Tooth Pressure Angle - 20º

Ratio 1 : 2

Cat No.	No. Teeth	Pitch MOD	Pitch Dia.	A	B	C	D	F	L	M	N	P	R	S	T	V
32M1.5P16	16 32	1.5	24 48	49.3	12	32	17	8 8	10	27.45	35.83	26.7	10	11.3	21	18
32M2.0P16	16 32	2.0	32 64	65.8	12	40	21	10 10	10	35.21	45.41	35.6	10	12.2	26	21
32M2.5P16	16 32	2.5	40 80	82.2	15	50	20	12 12	10	39.10	55.88	44.4	12	14.4	34	25
32M3.0P16	16 32	3.0	48 96	98.7	15	60	24	15 15	10	45.31	61.64	53.4	15	11.6	40	25
32M3.5P16	16 32	3.5	56 112	115.1	20	70	24	18 18	10	38.77	72.33	62.3	15	14.4	48	30
32M4.0P16	16 32	4.0	64 128	131.6	20	80	24	20 20	10	52.42	80.81	71.1	20	13.4	50	32

Dimensions in MM.

RATIO 1:3 - 1:4, 1.5 MOD - 4 MOD



Material - S1045 Steel
Tooth Pressure Angle - 20º

Ratio 1 : 3

Cat No.	No. Teeth	Pitch in DP	Pitch Dia.	A	B	C	D	F	L	M	N	P	R	S	T	V
48M1.5P16	16 48	1.5	24 72	72.9	15	50	17	12 12	10	27.27	46.44	26.9	10	11.7	20	23
48M2.0P16	16 48	2.0	32 96	97.3	15	60	19	15 15	10	32.9	61.76	35.8	12	12.4	26	27
48M2.5P16	16 48	2.5	40 120	121.6	20	70	21	18 18	10	39.23	74.41	44.7	12	13	32	30
48M3.0P16	16 48	3.0	48 144	145.9	20	80	23	18 18	10	45.2	86.25	53.7	15	12.1	40	30
48M3.5P16	16 48	3.5	56 168	170.2	20	90	24	22 22	10	49.48	100.29	62.6	15	15	48	35.5
48M4.0P16	16 48	4.0	64 192	194.5	22	100	25	25 25	10	54.2	112.73	71.6	20	15.2	55	38.5

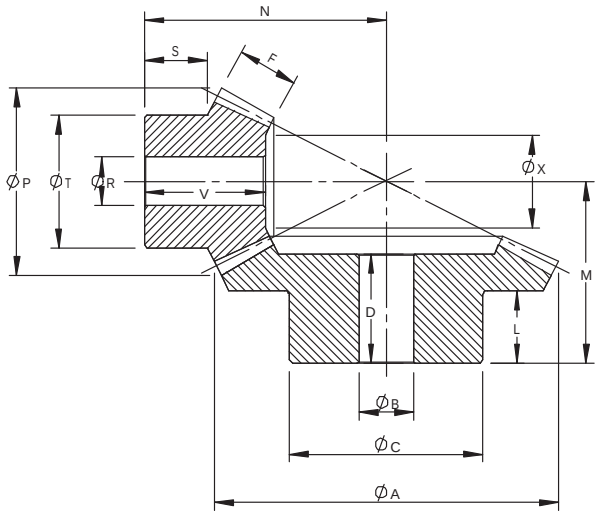
Dimensions in MM.

Ratio 1 : 4

Cat No.	No. Teeth	Pitch in DP	Pitch Dia.	A	B	C	D	F	L	M	N	P	R	S	T	V
64M1.5P16	16 64	1.5	24 96	96.7	15	70	19	12 12	10	30.53	61.02	26.9	10	12.2	18	24
64M2.0P16	16 64	2.0	32 128	129	20	80	20	15 15	10	35.79	73.07	35.9	12	8.2	25	23
64M2.5P16	16 64	2.5	40 160	161.2	20	90	24	18 18	10	42.77	92.49	44.9	15	8.2	30	26
64M3.0P16	16 64	3.0	48 192	193.5	20	100	24	22 22	10	46.41	108.05	53.8	15	11	40	32
64M3.5P16	16 64	3.5	56 224	225.7	25	100	43	25 25	22	69.32	132.13	62.8	15	19.1	48	43
64M4.0P16	16 64	4.0	64 256	257.9	28	120	42	30 30	20	71.72	148.21	71.7	20	18.5	50	48

Dimensions in MM.

RATIO 1:2 - 2:3, 6DP TO 12DP



Material - S1045 Steel
Tooth Pressure Angle - 20º

Ratio 1 : 2

Cat No.	No. Teeth	Pitch in DP	Pitch Dia.	A	B	C	D	F	L	M	N	P	R	S	T	V	X
36D12P18	18	12	1.500"					9/16"			2.125"	1.694"	0.500"	9/16"	1.1/4"	1.1/16"	7/8"
	36	12	3.000"	3.052"	0.625"	2.1/4"	1"	9/16"	1/2"	1.625"							
48D12P24	24	12	2.000"					3/4"			2.875"	2.193"	0.500"	11/16"	1.1/2"	1.7/16"	1.3/16"
	48	12	4.000"	4.052"	0.625"	2.3/4"	1.3/16"	3/4"	5/8"	2.000"							
40D10P20	20	10	2.000"					3/4"			3.000"	2.233"	0.625"	15/16"	1.3/4"	1.5/8"	1.3/16"
	40	10	4.000"	4.062"	0.750"	2.1/2"	1.1/2"	3/4"	3/4"	2.250"							
50D10P25	25	10	2.500"					1"			3.500"	2.733"	0.750"	7/8"	2"	1.13/16 "	1.7/16"
	50	10	5.000"	5.062"	0.875"	3.1/4"	1.11/16 "	1"	1"	2.625"							
32D8P16	16	8	2.000"					3/4"			3.000"	2.291"	0.750"	7/8"	1.3/4"	1.5/8"	1.3/16"
	32	8	4.000"	4.078"	0.875"	2.3/4"	1.5/8"	3/4"	1"	2.500"							
40D8P20	20	8	2.500"			]		1"			3.750"	2.791"	0.750"	1.1/8"	2.1/8"	2.1/16"	1.7/16"
	40	8	5.000"	5.078"	1.000"	3.1/2"	1.15/16 "	1"	1.1/4"	2.875"							
36D6P18	18	6	3.000"					1.1/8"			4.375"	3.387"	1.000"	1.1/4"	2.1/2"	2.1/4"	1.13/16 "
	36	6	6.000"	6.104"	1.125"	4"	2.1/4"	1.1/8"	1.1/2"	3.500"							
42D6P21	21	6	3.500"					1.1/4"			5.000"	3.887"	1.000"	1.5/16"	2.3/4"	2.1/2"	2.1/8"
	42	6	7.000"	7.104"	1.125"	4"	2.1/4"	1.1/4"	1.1/2"	3.750"							

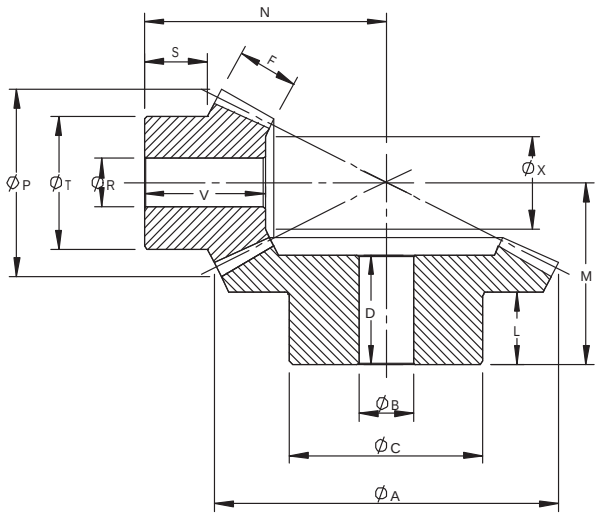
Dimensions in Inches.

Ratio 2 : 3

Cat No.	No. Teeth	Pitch in DP	Pitch Dia.	A	B	C	D	F	L	M	N	P	R	S	T	V	X
27D12P18	18	12	1.500"					1/2"			1.875"	1.669"	0.500"	5/8"	1.1/4"	1.1/8"	13/16"
	27	12	2.250"	2.322"	0.625"	1.5/8"	1.3/16"	1/2"	3/4"	1.750"							
30D10P20	20	10	2.000"					5/8"			2.500"	2.203"	0.625"	7/8"	1.3/4"	1.7/16"	1.3/16"
	30	10	3.000"	3.086"	0.625"	2.1/4"	1.1/2"	5/8"	1"	2.250"							
30D8P20	20	8	2.500"					3/4"			3.000	2.754"	0.750"	15/16"	2"	1.5/8"	1.1/2"
	30	8	3.750"	3.858"	0.875"	2.3/4"	1.5/8"	3/4"	1"	2.625"							

Dimensions in Inches.

RATIO 1:3 - 1:4 - 1:6, 6DP TO 12DP



Material - S1045 Steel
Tooth Pressure Angle - 20º

Ratio 1 : 3

Cat No.	No. Teeth	Pitch in DP	Pitch Dia.	A	B	C	D	F	L	M	N	P	R	S	T	V	X
45D12P15	15	12	1.250”					5/8”			2.500”	1.464”	0.375”	9/16”	1”	1.3/16”	3/4”
	45	12	3.750”	3.784”	0.625”	2.1/4”	1.1/16”	5/8”	5/8”	1.625”							
45D10P15	15	10	1.500”					3/4”			3.000”	1.756”	0.500”	5/8”	1.1/4”	1.3/8”	7/8”
	45	10	4.500”	4.540”	0.750”	2.3/4”	1.5/16”	3/4”	3/4”	2.000”							
48D8P16	16	8	2.000”					1”			4.000”	2.322”	0.625”	15/16”	1.5/8”	1.7/8”	1.3/16”
	48	8	6.000”	6.051”	0.750”	3.3/4”	1.5/8”	1”	1”	2.500”							
45D6P15	15	6	2.500”					1.1/4”			5.250”	2.930”	0.875”	1.3/8”	2.1/8”	2.5/8”	1.7/16”
	45	6	7.500”	7.568”	1.125”	4.1/2”	2”	1.1/4”	1.1/4”	3.125”							

Dimensions in Inches.

Ratio 1 : 4

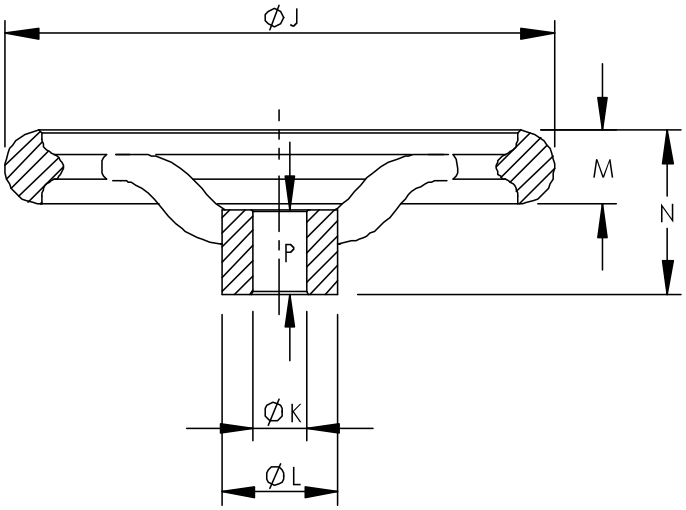
Cat No.	No. Teeth	Pitch in DP	Pitch Dia.	A	B	C	D	F	L	M	N	P	R	S	T	V	X
60D12P15	15	12	1.250”					3/4”			3.125”	1.472”	0.375”	9/16”	1”	1.3/8”	3/4”
	60	12	5.000”	5.025”	0.625”	3”	1.1/8”	3/4”	3/4”	1.750”							
60D10P15	15	10	1.500”					3/4”			3.875”	1.767”	0.500”	13/16”	1.1/4”	1.5/8”	15/16”
	60	10	6.000”	6.030”	0.750”	3.1/2”	1.1/2”	3/4”	7/8”	2.250”							
64D8P16	16	8	2.000”					1”			5.250”	2.333”	0.625”	1.3/16”	1.5/8”	2.1/4”	1.5/16”
	64	8	8.000”	8.038”	0.875”	4.1/2”	1.3/4”	1”	15/16”	2.750”							
60D6P15	15	6	2.500”					1.3/8”			6.750”	2.945”	0.750”	1.5/8”	2”	3.1/16”	1.9/16”
	60	6	10.000”	10.051”	1.000”	4.1/2”	2.1/16”	1.3/8”	1.3/16”	3.250”							

Dimensions in Inches.

Ratio 1 : 6

Cat No.	No. Teeth	Pitch in DP	Pitch Dia.	A	B	C	D	F	L	M	N	P	R	S	T	V	X
90D12P15	15	12	1.250”					7/8”			4.375”	1.478”	0.375”	9/16”	1.1/8”	1.1/2”	7/8”
	90	12	7.500”	7.517”	0.750”	4.1/2”	1.1/4”	7/8”	5/8”	1.875”							
90D10P15	15	10	1.500”					1”			5.250”	1.774”	0.500”	11/16”	1.1/4”	1.3/4”	1”
	90	10	9.000”	9.020”	0.875”	5”	1.1/2”	1”	3/4”	2.250”							

Dimensions in Inches.



Material: Mild Steel – Chrome Plated.

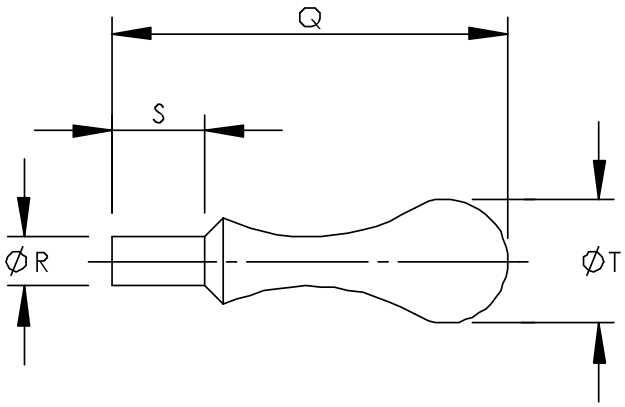
Cat. No.	J	K	L	M	N	P	Handle
HWCI / 0080	80	10	27	14	35	24	M6
HWCI / 0100	100	10	29	15	38	26	M6
HWCI / 0125	125	10	33	16	41	28	M6
HWCI / 0150	150	15	35	17	44	30	M8
HWCI / 0200	200	15	43	22	58	38	M10
HWCI / 0250	250	20	50	26	63	42	M10
HWCI / 0300	300	20	55	26	66	45	M12
HWCI / 0350	350	25	65	30	76	50	M16
HWCI / 0400	400	25	75	34	83	50	M16
HWCI / 0500	500	25	83	34	88	60	M16

Dimensions in mm

Material: Mild Steel – Chrome Plated.

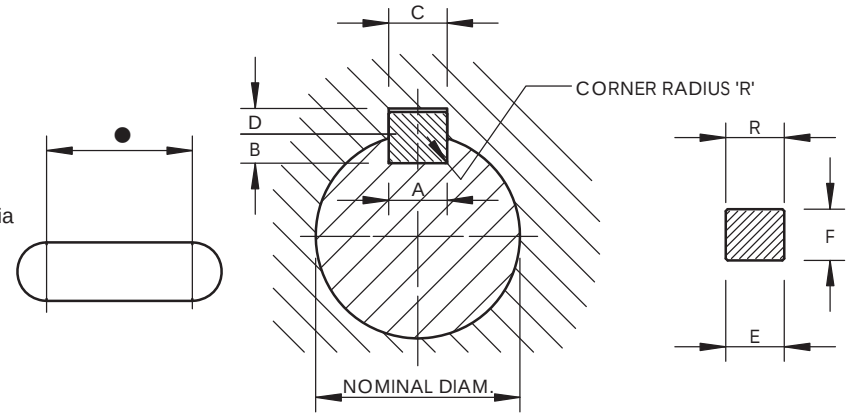
Cat. No.	Q	R	S	T
GRIP / 0006	60	M6	10	16
GRIP / 0008	75	M8	12	20
GRIP / 0010	98	M10	18	25
GRIP / 0012	125	M12	25	32
GRIP / 0016	137	M16	25	36

Dimensions in mm



KEYWAY STANDARDS

IMPERIAL
(BS 46 : PART 1 : 1958)



Safe working loads on keys.

Torque inch/pounds = 9000 x length x F x shaft dia (inches)

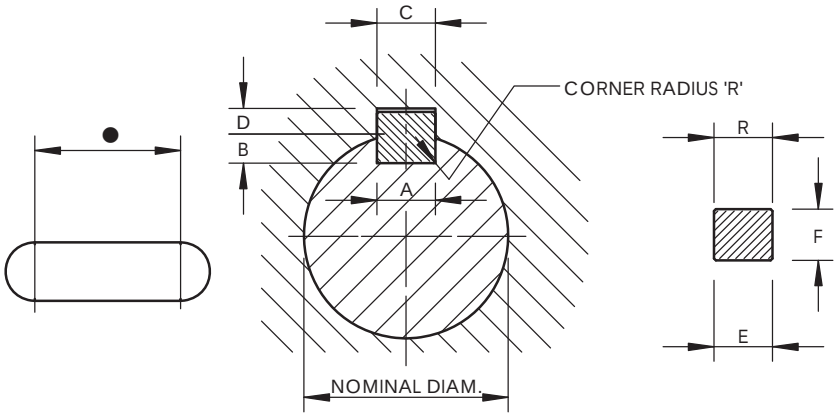
$$HP = \frac{\text{Torque(inch/pounds) x RPM}}{63025}$$

Square Keys:

	NOMINAL SHAFT DIAM.		KEY SIZE	DIMENSIONS (INCHES)						
	OVER	TO (Incl.)		A	B	C	D	E	F	R
	1/4”	1/2”	1/8” x 1/8”	0.124 0.125	0.072 0.078	0.125 0.126	0.060 0.066	0.127 0.125		0.010
	1/2”	3/4”	3/16” x 3/16”	0.187 0.188	0.107 0.113	0.188 0.189	0.088 0.094	0.190 0.188		0.010
	3/4”	1”	1/4” x 1/4”	0.249 0.250	0.142 0.148	0.250 0.251	0.115 0.121	0.252 0.250		0.010
	1”	1.1/4”	5/16” x 5/16”	0.311 0.312	0.177 0.183	0.312 0.313	0.142 0.148	0.314 0.312		0.010
	1.1/4”	1.1/2”	3/8” x 3/8”	0.374 0.375	0.213 0.219	0.375 0.376	0.169 0.175	0.377 0.375		0.010
	1.1/2”	1.3/4”	7/16” x 7/16”	0.437 0.438	0.248 0.254	0.438 0.439	0.197 0.203	0.440 0.438		0.020
	1.3/4”	2”	1/2” x 1/2”	0.499 0.500	0.283 0.289	0.500 0.501	0.224 0.230	0.502 0.500		0.020
*	2”	2.1/4”	9/16” x 9/16”	0.562 0.563	0.321 0.327	0.563 0.564	0.245 0.251	0.565 0.563		0.020
	2”	2.1/2”	5/8” x 5/8”	0.624 0.625	0.354 0.360	0.625 0.626	0.278 0.284	0.627 0.625		0.020
	2.1/2”	3”	3/4” x 3/4”	0.749 0.750	0.424 0.430	0.750 0.751	0.333 0.339	0.752 0.750		0.020
	3”	3.1/2”	7/8” x 7/8”	0.874 0.875	0.495 0.501	0.875 0.876	0.387 0.393	0.877 0.875		0.062
	3.1/2”	4”	1” x 1”	0.999 1.000	0.566 0.572	1.000 1.001	0.442 0.448	1.003 1.000		0.062
*	4”	4.1/2”	1.1/8” x 1.1/8”	1.123 1.125	0.640 0.646	1.125 1.127	0.489 0.495	1.128 1.125		0.062
	4”	5”	1.1/4” x 1.1/4”	1.248 1.250	0.707 0.713	1.250 1.252	0.551 0.557	1.253 1.250		0.062
*	5”	5.1/2”	1.3/8” x 1.3/8”	1.373 1.375	0.782 0.788	1.375 1.377	0.598 0.604	1.378 1.375		0.062
	5”	6”	1.1/2” x 1.1/2”	1.498 1.500	0.848 0.854	1.500 1.502	0.661 0.667	1.504 1.500		0.062
*	6.1/2”	7”	1.3/4” x 1.3/4”	1.748 1.750	0.993 0.999	1.750 1.752	0.762 0.768	1.754 1.750		0.062
*	7.1/2”	8”	2” x 2”	1.998 2.000	1.134 1.140	2.000 2.002	0.872 0.878	2.004 2.000		0.062

* :- Indicates Non Standard Key.

IMPERIAL
(BS.46 : PART 1 : 1958)



Safe working loads on keys.

Torque inch/pounds = 9000 x length x F x shaft dia (inches)

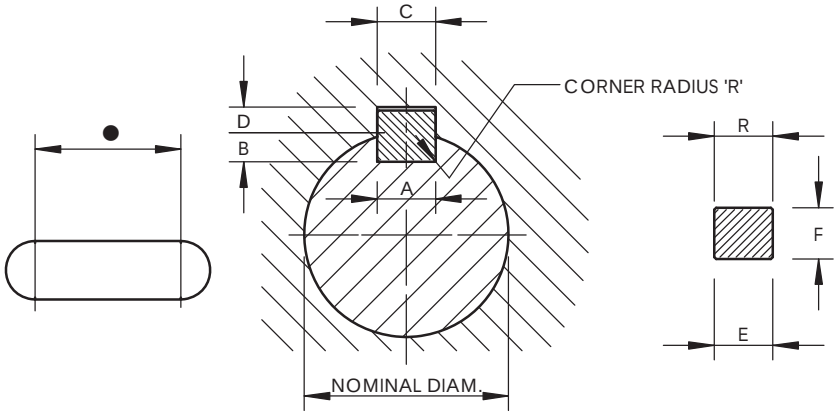
$$HP = \frac{\text{Torque(inch/pounds)} \times \text{RPM}}{63025}$$

Rectangular Keys:

	NOMINAL SHAFT DIAM.		KEY SIZE	DIMENSIONS (INCHES)						
	OVER	TO (Incl.)		A	B	C	D	E	F	R
	1”	1.1/4”	5/16” x 1/4”	0.311 0.312	0.146 0.152	0.312 0.313	0.112 0.118	0.314 0.312	0.253 0.250	0.010
	1.1/4”	1.1/2”	3/8” x 1/4”	0.374 0.375	0.150 0.156	0.375 0.376	0.108 0.114	0.377 0.375	0.253 0.250	0.010
*			3/8” x 5/16”	0.374 0.375	0.182 0.188	0.375 0.376	0.139 0.145	0.377 0.375	0.315 0.312	0.010
*			7/16” x 1/4”	0.437 0.438	0.154 0.160	0.438 0.439	0.104 0.110	0.440 0.438	0.253 0.250	0.020
	1.1/2”	1.3/4”	7/16” x 5/16”	0.437 0.438	0.186 0.192	0.438 0.439	0.135 0.141	0.440 0.438	0.315 0.312	0.020
	1.3/4”	2”	1/2” x 5/16”	0.499 0.500	0.190 0.196	0.500 0.501	0.131 0.137	0.502 0.500	0.315 0.312	0.020
*			1/2” x 7/16”	0.499 0.500	0.256 0.262	0.500 0.501	0.189 0.195	0.502 0.500	0.440 0.438	0.020
	2”	2.1/2”	5/8” x 7/16”	0.624 0.625	0.260 0.266	0.625 0.626	0.185 0.191	0.627 0.625	0.441 0.438	0.020
*			5/8” x 1/2”	0.624 0.625	0.295 0.301	0.625 0.626	0.213 0.219	0.627 0.625	0.502 0.500	0.020
	2.1/2”	3”	3/4” x 1/2”	0.749 0.750	0.299 0.305	0.750 0.751	0.209 0.215	0.752 0.750	0.503 0.500	0.020
*			3/4” x 5/8”	0.749 0.750	0.366 0.372	0.750 0.751	0.274 0.280	0.752 0.750	0.629 0.625	0.020
	3”	3.1/2”	7/8” x 5/8”	0.874 0.875	0.370 0.376	0.875 0.876	0.264 0.270	0.877 0.875	0.629 0.625	0.062
*			1” x 5/8”	0.999 1.000	0.374 0.380	1.000 1.001	0.260 0.266	1.003 1.000	0.629 0.625	0.062
	3.1/2”	4”	1” x 3/4”	0.999 1.000	0.441 0.447	1.000 1.001	0.318 0.324	1.003 1.000	0.754 0.750	0.062
	4”	5”	1.1/4” x 7/8”	1.248 1.250	0.518 0.524	1.250 1.251	0.366 0.372	1.253 1.250	0.879 0.875	0.062
	5”	6”	1.1/2” x 1”	1.498 1.500	0.599 0.605	1.500 1.501	0.412 0.418	1.504 1.500	1.006 1.000	0.062

* :- Indicates Non Standard Key.

METRIC (Normal)
(BS.4235 : PART 1 : 1972)



Safe working loads on keys.

Torque Nm = 0.065 x length x F x shaft dia (mm)

$$kW = \frac{\text{Torque(Nm)} \times \text{RPM}}{9550}$$

	NOMINAL SHAFT DIAM.		KEY SIZE	DIMENSIONS (mm)						
	OVER	TO (Incl.)		A	B	C	D	E	F	R
	8	10	3 x 3	2.970 3.000	1.8 1.9	2.985 3.015	1.4 1.5	3.030 2.970		0.16
	10	12	4 x 4	3.970 4.000	2.5 2.6	3.985 4.015	1.8 1.9	4.030 3.970		0.16
	12	17	5 x 5	4.970 5.000	3.0 3.1	4.985 5.015	2.3 2.4	5.030 4.970		0.25
	17	22	6 x 6	5.970 6.000	3.5 3.6	5.985 6.015	2.8 2.9	6.030 5.970		0.25
*			8 x 8	7.964 8.000	5.0 5.2	7.982 8.018	3.3 3.5	8.000 7.970		0.25
*			10 x 10	9.964 10.000	6.0 6.2	9.982 10.018	4.3 4.5	10.000 9.964		0.40
*			12 x 12	11.957 12.000	7.5 7.7	11.979 12.021	4.9 5.1	12.000 11.957		0.40
*			16 x 16	15.957 16.000	10.0 10.2	15.979 16.021	6.4 6.6	16.000 15.957		0.40
*			20 x 20	19.948 20.000	12.0 12.3	19.974 20.026	8.4 8.7	20.000 19.957		0.60
*			22 x 22	21.948 22.000	13.0 13.3	21.974 22.026	9.4 9.7	22.000 21.948		0.60
	22	30	8 x 7	7.964 8.000	4.0 4.2	7.982 8.018	3.3 3.5	8.000 7.964	7.000 6.910	0.25
	30	38	10 x 8	9.964 10.000	5.0 5.2	9.982 10.018	3.3 3.5	10.000 9.964	8.000 7.910	0.40
	38	44	12 x 8	11.957 12.000	5.0 5.2	11.979 12.021	3.3 3.5	12.000 11.957	8.000 7.910	0.40
*			12 x 10	11.957 12.000	6.0 6.2	11.979 12.021	4.3 4.5	12.000 11.957	10.000 9.964	0.40
	44	50	14 x 9	13.957 14.000	5.5 5.7	13.979 14.021	3.8 4.0	14.000 13.957	9.000 8.910	0.40
	50	58	16 x 10	15.957 16.000	6.0 6.2	15.979 16.021	4.3 4.5	16.000 15.957	10.000 9.910	0.40
	58	65	18 x 11	17.957 18.000	7.0 7.2	17.979 18.021	4.4 4.6	18.000 17.957	11.000 10.890	0.40
	65	75	20 x 12	19.948 20.000	7.5 7.7	19.974 20.026	4.9 5.1	20.000 19.948	12.000 11.890	0.60
	75	85	22 x 14	21.948 22.000	9.0 9.2	21.974 22.026	5.4 5.6	22.000 21.948	14.000 13.890	0.60

* :- Indicates Non Standard Key.

Continued

METRIC (Normal)
(BS.4235 : PART 1 : 1972)

Continued

NOMINAL SHAFT DIAM.		KEY SIZE	DIMENSIONS (mm)						
OVER	TO (Incl.)		A	B	C	D	E	F	R
85	95	25 x 14	24.948 25.000	9.0 9.2	24.974 25.026	5.4 5.6	25.000 24.948	14.000 13.890	0.60
95	110	28 x 16	27.948 28.000	10.0 10.2	27.974 28.026	6.4 6.6	28.000 27.948	16.000 15.890	0.60
110	130	32 x 18	31.938 32.000	11.0 11.2	31.969 32.031	7.4 7.6	32.000 31.938	18.000 17.890	0.60
130	150	36 x 20	35.938 36.000	12.0 12.3	35.969 36.031	8.4 8.7	36.000 35.938	20.000 19.870	1.00
150	170	40 x 22	39.938 40.000	13.0 13.3	39.969 40.031	9.4 9.7	40.000 39.938	22.000 21.870	1.00
170	200	45 x 25	44.938 45.000	15.0 15.3	44.969 45.031	10.4 10.7	45.000 44.938	25.000 24.870	1.00
200	230	50 x 28	49.938 50.000	17.0 17.3	49.969 50.031	11.4 11.7	50.000 49.938	28.000 27.870	1.00

* :- Indicates Non Standard Key.

Hercus "HERKEY"

IS A BRIGHT DRAWN CARBON KEY STOCK SUITABLE FOR THE MANUFACTURE OF KEYS TO THE FOLLOWING STANDARDS:-

IMPERIAL - BS 46 : PART 1 : 1958 METRIC -BS 4235 : PART 1 : 1972
STRENGTH U.T.S. – 35 to 45 TONS/SQ.INCH (540 to 700 MPa)
ELONGATION - 12% MIN.
MATERIAL - EN6 (0.40 Max. Carbon – 0.5 to 0.9 Manganese)
STOCKED IN LENGTHS UP TO 3.0 Metres.

IMPERIAL (Inches)				
Cat. No.	Size	Tolerance -0.000"		
		Width	Thickness	
ATK009	1/16" x 1/16"	+ 0.0020	+ 0.0020	*
ATK100	3/32" x 3/32"	+ 0.0020	+ 0.0020	*
ATK101	1/8" x 1/8"	+ 0.0020	+ 0.0020	
ATK219	5/32" x 5/32"	+ 0.0025	+ 0.0020	*
ATK102	3/16" x 3/16"	+ 0.0025	+ 0.0025	
ATK220	7/32" x 7/32"	+ 0.0025	+ 0.0025	*
ATK103	1/4" x 1/4"	+ 0.0025	+ 0.0025	
ATK221	9/32" x 9/32"	+ 0.0025	+ 0.0025	*
ATK104	5/16" x 5/16"	+ 0.0025	+ 0.0025	
ATK222	11/32" x 11/32"	+ 0.0025	+ 0.0025	*
ATK105	3/8" x 3/8"	+ 0.0025	+ 0.0025	
ATK106	7/16" x 7/16"	+ 0.0025	+ 0.0025	
ATK107	1/2" x 1/2"	+ 0.0025	+ 0.0025	
ATK108	9/16" x 9/16"	+ 0.0025	+ 0.0025	
ATK109	5/8" x 5/8"	+ 0.0025	+ 0.0025	
ATK223	11/16" x 11/16"	+ 0.0025	+ 0.0025	*
ATK110	3/4" x 3/4"	+ 0.0025	+ 0.0025	
ATK224	13/16" x 13/16"	+ 0.0025	+ 0.0025	*
ATK111	7/8" x 7/8"	+ 0.0025	+ 0.0025	
ATK225	15/16" x 15/16"	+ 0.0030	+ 0.0030	*
ATK112	1" x 1"	+ 0.0030	+ 0.0030	
ATK116	1.1/8" x 1.1/8"	+ 0.0030	+ 0.0030	
ATK227	1.3/16" x 1.3/16"	+ 0.0030	+ 0.0030	*
ATK113	1.1/4" x 1.1/4"	+ 0.0030	+ 0.0030	
ATK118	1.3/8" x 1.3/8"	+ 0.0030	+ 0.0030	
ATK114	1.1/2" x 1.1/2"	+ 0.0040	+ 0.0040	
ATK119	1.5/8" x 1.5/8"	+ 0.0040	+ 0.0040	*
ATK115	1.3/4" x 1.3/4"	+ 0.0040	+ 0.0040	
ATK228	1.7/8" x 1.7/8"	+ 0.0040	+ 0.0040	*
ATK117	2" x 2"	+ 0.0040	+ 0.0040	

ATK300	3/32" x 1/8"	+ 0.0020	+ 0.0020	*
ATK301	3/16" x 1/8"	+ 0.0025	+ 0.0020	*
ATK302	1/4" x 1/8"	+ 0.0025	+ 0.0020	*
ATK303	1/4" x 3/16"	+ 0.0025	+ 0.0025	*
ATK304	5/16" x 3/16"	+ 0.0025	+ 0.0025	*
ATK201	5/16" x 1/4"	+ 0.0025	+ 0.0025	
ATK305	3/8" x 3/16"	+ 0.0025	+ 0.0025	*
ATK202	3/8" x 1/4"	+ 0.0025	+ 0.0025	
ATK213	3/8" x 5/16"	+ 0.0025	+ 0.0025	
ATK214	7/16" x 1/4"	+ 0.0025	+ 0.0025	*

IMPERIAL (Inches)				
Cat. No.	Size	Tolerance -0.000"		
		Width	Thickness	
ATK203	7/16" x 5/16"	+ 0.0025	+ 0.0025	*
ATK332	7/16" x 3/8"	+ 0.0025	+ 0.0025	
ATK306	1/2" x 3/16"	+ 0.0025	+ 0.0025	*
ATK307	1/2" x 1/4"	+ 0.0025	+ 0.0025	*
ATK204	1/2" x 5/16"	+ 0.0025	+ 0.0025	
ATK310	1/2" x 3/8"	+ 0.0025	+ 0.0025	*
ATK215	1/2" x 7/16"	+ 0.0025	+ 0.0025	
ATK308	9/16" x 5/16"	+ 0.0025	+ 0.0025	*
ATK314	9/16" x 1/2"	+ 0.0025	+ 0.0025	*
ATK309	5/8" x 5/16"	+ 0.0025	+ 0.0025	*
ATK311	5/8" x 3/8"	+ 0.0025	+ 0.0025	*
ATK205	5/8" x 7/16"	+ 0.0025	+ 0.0025	
ATK216	5/8" x 1/2"	+ 0.0025	+ 0.0025	
ATK317	5/8" x 9/16"	+ 0.0025	+ 0.0025	*
ATK312	3/4" x 3/8"	+ 0.0025	+ 0.0025	*
ATK313	3/4" x 7/16"	+ 0.0025	+ 0.0025	*
ATK206	3/4" x 1/2"	+ 0.0025	+ 0.0025	
ATK217	3/4" x 5/8"	+ 0.0025	+ 0.0025	
ATK322	3/4" x 11/16"	+ 0.0025	+ 0.0025	*
ATK315	11/16" x 1/2"	+ 0.0025	+ 0.0025	*
ATK320	11/16" x 5/8"	+ 0.0025	+ 0.0025	*
ATK316	7/8" x 1/2"	+ 0.0025	+ 0.0025	*
ATK207	7/8" x 5/8"	+ 0.0025	+ 0.0025	
ATK323	7/8" x 11/16"	+ 0.0025	+ 0.0025	*
ATK325	7/8" x 3/4"	+ 0.0025	+ 0.0025	*
ATK218	1" x 5/8"	+ 0.0030	+ 0.0025	
ATK318	1" x 9/16"	+ 0.0030	+ 0.0025	*
ATK324	1" x 11/16"	+ 0.0030	+ 0.0025	*
ATK208	1" x 3/4"	+ 0.0030	+ 0.0025	
ATK329	1" x 7/8"	+ 0.0030	+ 0.0025	*
ATK326	1.1/8" x 3/4"	+ 0.0030	+ 0.0025	*
ATK330	1.1/8" x 7/8"	+ 0.0030	+ 0.0025	*
ATK319	1.1/4" x 9/16"	+ 0.0030	+ 0.0025	*
ATK321	1.1/4" x 5/8"	+ 0.0030	+ 0.0025	*
ATK327	1.1/4" x 3/4"	+ 0.0030	+ 0.0025	*
ATK209	1.1/4" x 7/8"	+ 0.0030	+ 0.0025	
ATK331	1.1/4" x 1"	+ 0.0030	+ 0.0030	*
ATK328	1.1/2" x 3/4"	+ 0.0040	+ 0.0025	*
ATK210	1.1/2" x 1"	+ 0.0040	+ 0.0030	
ATK211	2.1/4" x 1.1/2"	+ 0.0040	+ 0.0040	*
ATK212	2.3/4" x 1.7/8"	+ 0.0040	+ 0.0040	*

* :- Indicates Non Standard Key.

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IMPERIAL - BS 46 : PART 1 : 1958 METRIC -BS 4235 : PART 1 : 1972
STRENGTH U.T.S. – 35 to 45 TONS/SQ.INCH (540 to 700 MPa)
ELONGATION - 12% MIN.
MATERIAL - EN6 (0.40 Max. Carbon – 0.5 to 0.9 Manganese)
STOCKED IN LENGTHS UP TO 3.0 Metres.

METRIC (mm)					METRIC (mm)				
Cat. No.	Size	Tolerance +0.000mm			Cat. No.	Size	Tolerance +0.000mm		
		Width	Thickness				Width	Thickness	
ATK500	3mm x 3mm	-0.030	-0.030						
ATK501	4mm x 4mm	-0.030	-0.030		ATK617	12mm x 10mm	-0.043	-0.090	
ATK502	5mm x 5mm	-0.030	-0.030		ATK628	14mm x 6mm	-0.043	-0.090	*
ATK503	6mm x 6mm	-0.030	-0.030		ATK604	14mm x 9mm	-0.043	-0.090	
ATK629	7mm x 7mm	-0.030	-0.030	*	ATK630	16mm x 7mm	-0.043	-0.090	*
ATK504	8mm x 8mm	-0.030	-0.030		ATK605	16mm x 10mm	-0.043	-0.090	
ATK505	10mm x 10mm	-0.036	-0.036		ATK631	18mm x 7mm	-0.043	-0.090	*
ATK506	12mm x 12mm	-0.043	-0.043		ATK606	18mm x 11mm	-0.043	-0.110	
ATK621	14mm x 14mm	-0.043	-0.043	*	ATK632	20mm x 8mm	-0.043	-0.090	*
ATK507	16mm x 16mm	-0.043	-0.043		ATK607	20mm x 12mm	-0.043	-0.110	
ATK625	18mm x 18mm	-0.043	-0.043	*	ATK633	22mm x 9mm	-0.052	-0.090	*
ATK616	20mm x 20mm	-0.043	-0.043		ATK608	22mm x 14mm	-0.052	-0.110	
ATK508	22mm x 22mm	-0.052	-0.052		ATK609	25mm x 14mm	-0.052	-0.110	
ATK509	25mm x 25mm	-0.052	-0.052	*	ATK600	25mm x 22mm	-0.052	-0.110	*
					ATK610	28mm x 16mm	-0.052	-0.110	
ATK626	8mm x 5mm	-0.030	-0.090	*	ATK634	28mm x 25mm	-0.052	-0.110	*
ATK601	8mm x 7mm	-0.030	-0.090		ATK611	32mm x 18mm	-0.062	-0.110	
ATK627	10mm x 6mm	-0.036	-0.090	*	ATK612	36mm x 20mm	-0.062	-0.130	
ATK602	10mm x 8mm	-0.036	-0.090		ATK613	40mm x 22mm	-0.062	-0.130	
ATK618	12mm x 6mm	-0.043	-0.090	*	ATK614	45mm x 25mm	-0.062	-0.130	
ATK603	12mm x 8mm	-0.043	-0.090		ATK615	50mm x 28mm	-0.062	-0.130	

* :- Indicates Non Standard Key.

HERKEY is a quality keysteel manufactured for Hercus and is available in Metric and Imperial sizes, HERKEY is sold in standard lengths of 75mm, 300mm and 3000mm full length bars.

HERKEY is accurately rolled from EN6 steel and the 300mm lengths are Zinc Plated. Some sizes are also available in 316 Stainless Steel.

Utilise Stainless Steel HERKEY for those applications where OHWS dictate or where corrosion may occur.

A HERKEY KIT of selected sizes in Metric or Imperial are available in 75mm lengths and is a great investment to have on the shelf, just right for that unexpected breakdown.

A HERKEY Cube of selected sizes in Metric or Imperial are in 300mm lengths which are zinc coated, the cube is ideal for industrial transmission resellers or maintenance engineers.

HERKEY in 3000mm lengths is available for the Steel Stockists and are also utilised by engineering companies wishing to make their own special keys.

Please contact your nearest stockist for pricing and availability.

The HK Series of Worm Jacks are designed for applications involving linear movement of the load and may be motorised or hand operated. These jacks are self-locking and will not creep under load.

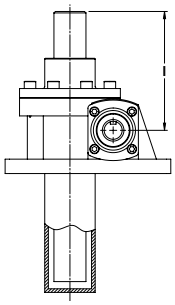
Types of HK Series Jacks available include clevis, plain, flanged and threaded lifting screw ends with either upright or inverted assembly. Standard screw lifts which can be supplied are in increments of 100mm starting at 100mm raise.

Allowable Value of Buckling Load.

The jack size shall be selected out of the table below in accordance with mounting conditions on jack size and shaft end side.

Method of calculation:

$$\mathbf{Pcr = n \cdot \pi^2 \cdot E\,(k/\ell)^2 \cdot A \cdot \alpha}$$



n: Shaft end supporting factor.

E: Modulus of longitudinal elasticity.

2.1×10^4 kgf/mm²

k: Minimum secondary radius.

$$k = \frac{d_1}{4}$$

ℓ: Supporting length of shaft.

A: Section area of lifting screw at minor diameter part.

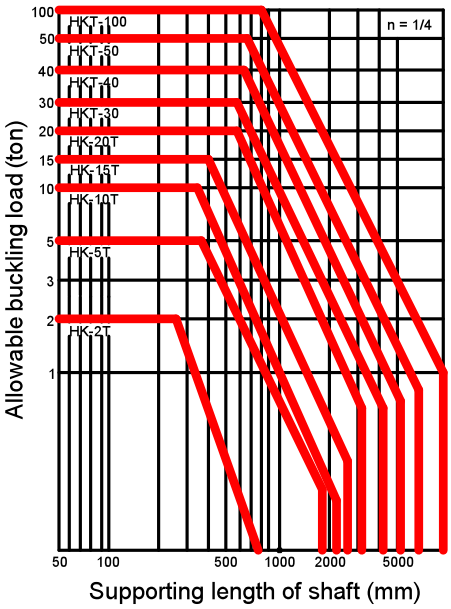
$$A = \frac{\pi(d_1)^2}{4}$$

α: Safety factor.

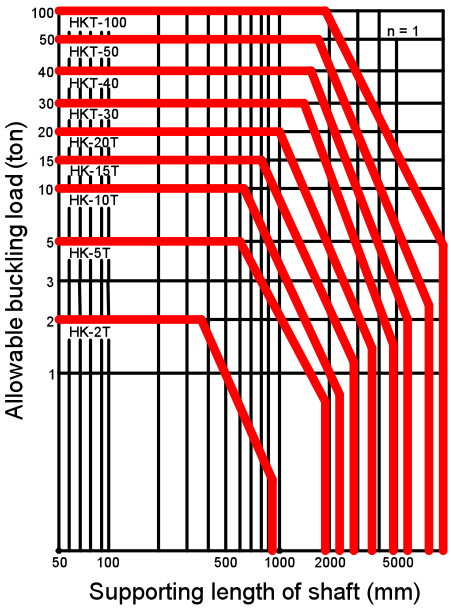
$\alpha = 0.25$

Minor diameter of screw (d_1) (mm).

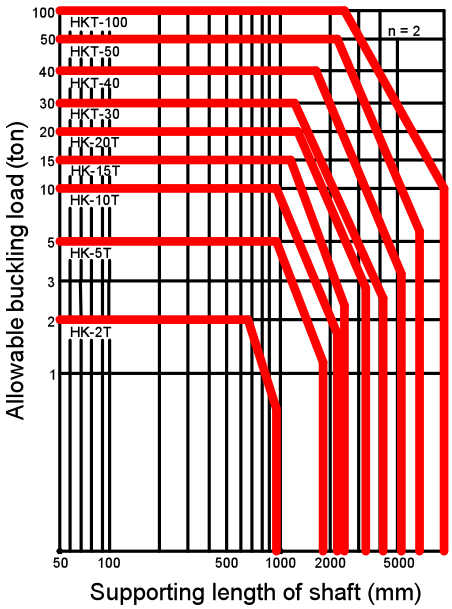
HK- 2T (19.9),
5T (31.5), 10T (35.9),
15T (42.3), 20T (53.0),
30T (61.5), 40T (66.5),
50T (74.0), 100T (82.0)



Jack fixed - shaft end free



Jack supported - shaft end supported (Clevis)

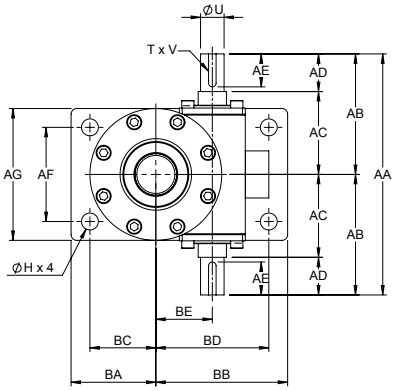


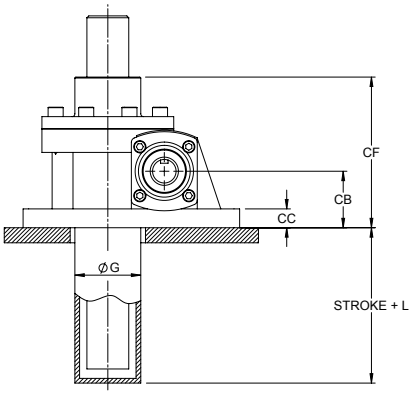
Jack fixed - shaft end supported (Clevis, Flanged end)

Model	HK - 2T	HK - 5T	HK - 10T	HK - 15T	HK - 20T	HKT - 30	HKT - 40	HKT - 50	HKT - 100
ACME Thread Dia. & Pitch of Lifting Screw	1" ACME P = 5mm	1½" ACME P = 6mm	1¾" ACME P = 8mm	2" ACME P = 8mm	2½" ACME P = 10mm	75mm ACME P = 12mm	80mm ACME P = 12mm	90mm ACME P = 14mm	100mm ACME P = 16mm
Worm Gear Ratio	5:1, 10:1, 20:1	6:1, 12:1, 24:1	8:1, 16:1, 32:1	8:1, 16:1, 32:1	10:1, 20:1, 40:1	12:1, 18:1, 36:1	12:1, 18:1, 36:1	7:1, 14:1, 28:1	8:1, 16:1, 32:1
AA	170	220	256	264	316	390	420	480	550
AB	85	110	128	132	158	195	210	240	275
AC	55	70	88	92	108	130	145	170	180
AD	30	40	40	40	50	65	65	70	95
AE	25	35	35	35	45	60	60	65	90
AF	66	90	100	110	140	190	210	240	250
AG	90	120	140	150	180	230	260	300	320
AH		80	100	100	120	150	165	194	218
BA	50	60	90	90	95	110	130	160	170
BB	85	110	140	140	155	200	225	255	285
BC	38	45	70	70	75	85	105	130	135
BD	73	95	120	120	135	175	200	225	250
BE	35	50	60	60	70	100	120	130	150
CB	40	50	60	60	70	85	100	120	125
CC	15	18	20	20	25	30	30	30	35
CF	110	130	160	160	180	220	260	315	345
Gø	44.5	63.5	70	82.6	95.3				
U	ø15	ø18	ø25	ø25	ø28	ø32	ø35	ø45	ø50
T x V	5 x 3	6 x 3.5	8 x 4	8 x 4	8 x 4	10 x 5	10 x 5	14 x 5.5	14 x 5.5
(T x V)	(5 x 3)	(5 x 3)	(7 x 4)	(7 x 4)	(7 x 4)				
L	Stroke + 55	Stroke + 60	Stroke + 65	Stroke + 65	Stroke + 75				
LA		130	165	165	165	215	215	265	265
LB		110	130	130	130	180	180	230	230
LC		160	200	200	200	250	250	300	300
LZ		M8 P1.25	M10 P1.5	M10 P1.5	M10 P1.5	M12 P1.75	M12 P1.75	M16 P2.0	M16 P2.0
dø W x Y Direct Drive HP		ø14 5 x 2.3 1/2HP	ø19 6 x 2.8 1HP	ø19 6 x 2.8 1HP	ø24 8 x 3.3 2HP	ø28 8 x 3.3 3HP	ø28 8 x 3.3 5HP	ø38 10 x 3.3 7½HP	ø38 10 x 3.3 10HP
dø W x Y Direct Drive HP			ø24 8 x 3.3 2HP	ø24 8 x 3.3 2HP					
Hø	12	14	18	18	18	22	22	22	27

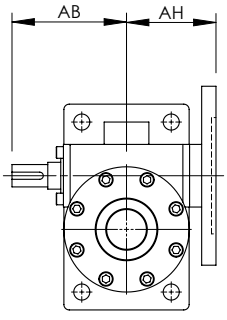
Dimensions in mm.
The dimensions in ( ) are old dimensions.
The dimensions are subject to change without notice.

DOUBLE - INPUT STANDARD

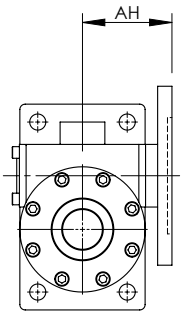


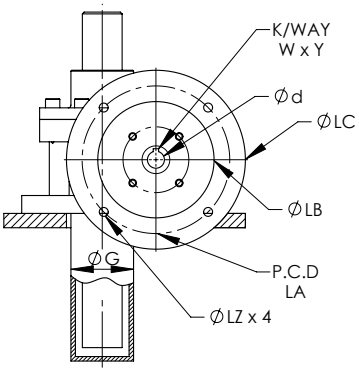


Direct Drive
Double Input



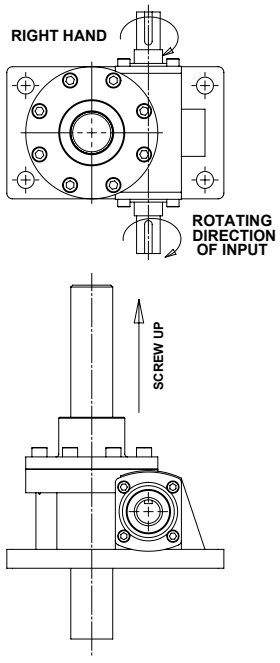
Direct Drive
Single Input





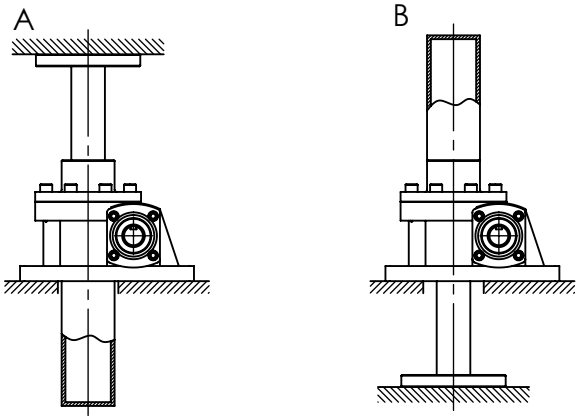
Note: The dimensions are subject to change without notice.

Relationship between the rotating direction of input and up-down movement of screw: Standard Style



Installation Modes:

Lifting Screw to be attached to lifting member which must be prevented from rotation.



Upright mode

Inverted mode

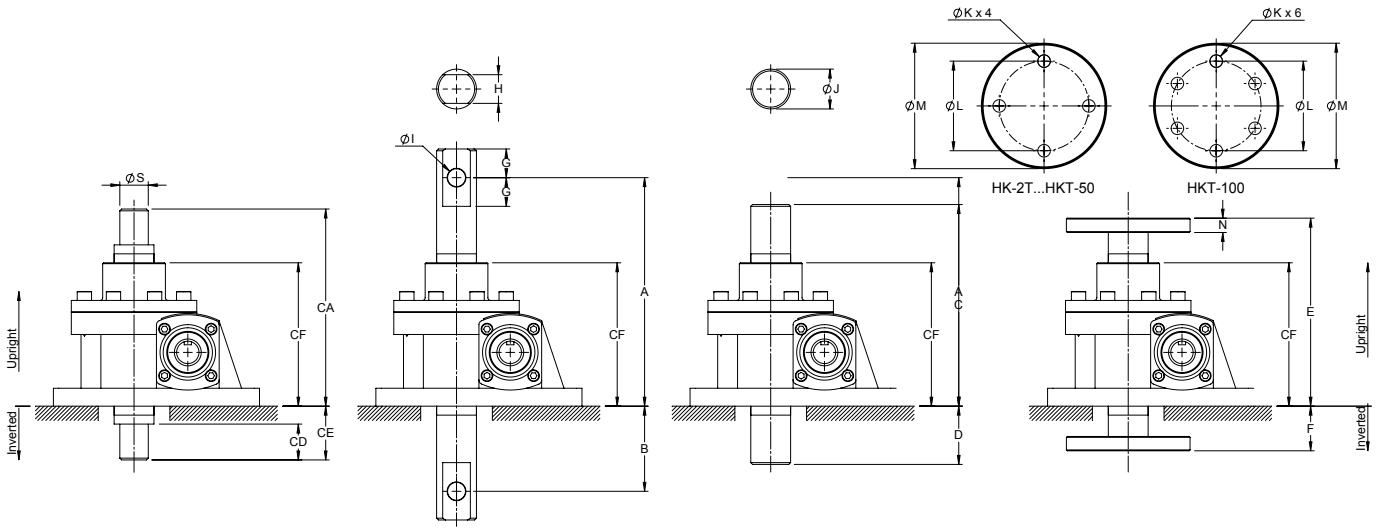
Types of Screw Ends:

Type S (Threaded End)

Type H (Clevis End)

Type R (Plain End)

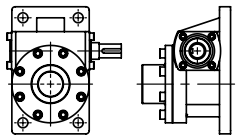
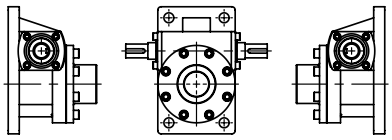
Type T (Flanged End)



Worm Jack	CA	CD	CE	S	A	B	C	D	E	F	G	H	I	J	K	L	M	N
HK - 2T	150	28	40	5/8" - 18 NF	165	55	165	55	135	25	20	16	12	1"	10	70	88	10
HK - 5T	180	35	50	1.1/8" - 12 NF	195	65	195	65	160	30	25	25	16	1½"	12	90	114	13
HK - 10T	220	40	60	1.1/4" - 12 NF	255	95	225	65	200	40	32	32	20	1¾"	14	100	138	16
HK - 15T	220	45	60	1.1/2" - 12 NF	255	95	225	65	210	50	32	36	24	2"	18	110	148	20
HK - 20T	260	55	80	1.3/4" - 12 NF	294	114	250	70	235	55	35	44	26	2½"	21	125	178	25
HKT - 30	300	65	80	2.1/4" - 12 NF	355	135	295	75	285	65	44	56	35	75mm	21	140	188	28
HKT - 40	360	70	100	2.1/2" - 12 NF	410	150	355	95	330	70	54	60	38	80mm	25	170	218	30
HKT - 50	435	75	120	3" - 12 NF	480	165	429	114	390	75	64	70	45	90mm	27	200	248	32
HKT - 100	495	100	150	3.1/2" - 12 NF	545	200	485	140	445	100	70	80	55	100mm	27	280	358	35

Dimensions in mm.
The dimensions are subject to change without notice.

Types of Input:

<table>
<tr><td colspan="2">SA - Single Input</td><td colspan="2">SB - Double Input</td></tr>
<tr><td>R
Shaft Right Side</td><td>L
Shaft Left Side</td><td colspan="2"></td></tr>
<tr><td colspan="2">  </td><td colspan="2">  </td></tr>
<tr><td colspan="2">MC - Direct Drive Single Input</td><td colspan="2">MD - Direct Drive Double Input</td></tr>
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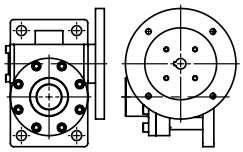
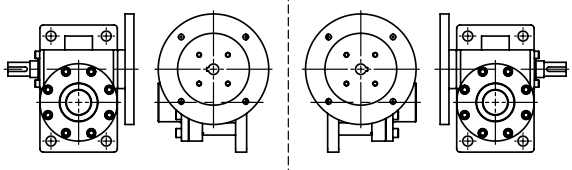
Flanged Right Side</td><td>L
Flanged Left Side</td></tr>
<tr><td colspan="2">  </td><td colspan="2">  </td></tr>
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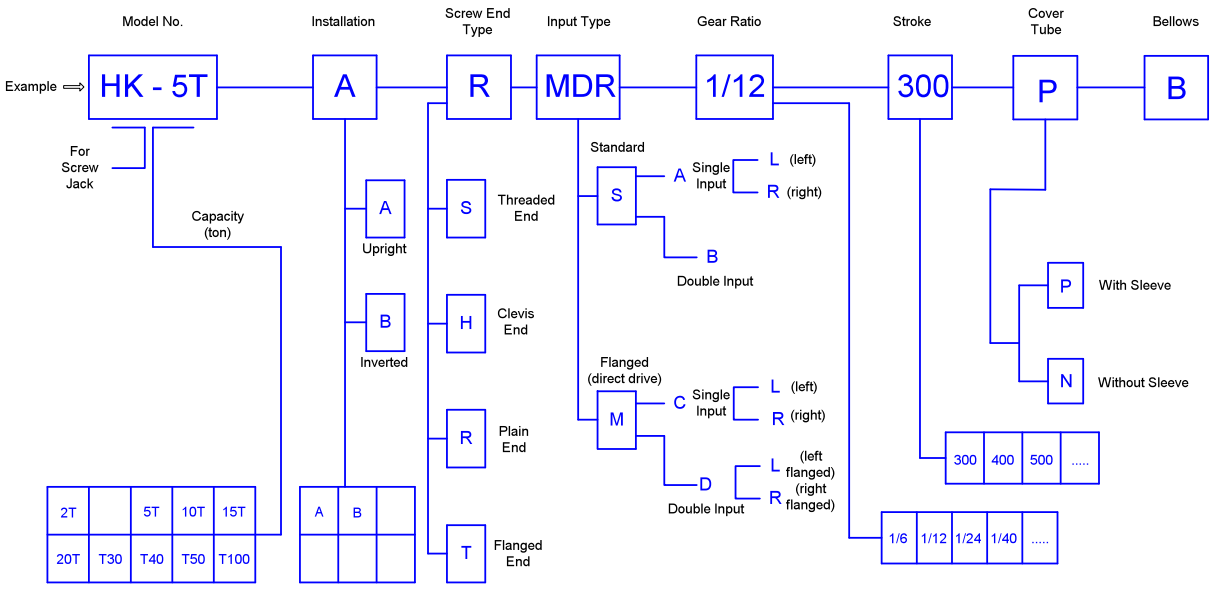

Relationship between H.P. of input load capacity and speed of screw up and down:

Model No. Capacity	ACME Thread & Dia.	Worm Gear Ratio	1800 RPM of Input			1500 RPM of Input			1200 RPM of Input			900 RPM of Input			600 RPM of Input			300 RPM of Input		
			(H.P)	(KG)	(mm/min)	(H.P)	(KG)	(mm/min)	(H.P)	(KG)	(mm/min)	(H.P)	(KG)	(mm/min)	(H.P)	(KG)	(mm/min)	(H.P)	(KG)	(mm/min)
HK - 2T	ø1"	1/5	0.93	500	1800	0.86	550	1500	0.87	700	1200	0.84	900	900	0.62	1000	600	0.50	1000	300
	ACME	1/10	0.50	500	900	0.50	550	750	0.50	700	600	0.50	750	450	0.50	1000	300	0.25	1350	150
	P = 5	1/20	0.50	600	450	0.50	700	375	0.50	900	300	0.50	1200	225	0.25	1350	150	0.25	1350	75
HK - 5T	ø1.1/2"	1/6	1.86	900	1800	1.72	1000	1500	1.66	1200	1200	1.55	1500	900	1.17	1700	600	0.72	2100	300
	ACME	1/12	1.47	1350	900	1.36	1500	750	1.31	1800	600	1.17	2150	450	0.78	2150	300	0.50	2500	150
	P = 6	1/24	1.04	1800	450	0.96	2000	375	0.92	2400	300	0.73	2550	225	0.56	2900	150	0.50	2850	75
HK - 10T	ø1.3/4"	1/8	2.84	1300	1800	2.64	1450	1500	2.48	1700	1200	2.30	2100	900	2.22	3050	600	1.75	4800	300
	ACME	1/16	1.50	1300	900	1.40	1450	750	1.31	1700	600	1.27	2200	450	1.17	3050	300	0.92	4800	150
	P = 8	1/32	1.07	1750	450	1.00	1950	375	0.92	2250	300	0.86	2800	225	0.84	4100	150	0.65	6400	75
HK - 15T	ø2"	1/8	2.69	1300	1800	2.50	1450	1500	2.35	1700	1200	2.17	2100	900	2.11	3050	600	1.66	4800	300
	ACME	1/16	1.42	1300	900	1.32	1450	750	1.24	1700	600	1.20	2200	450	1.11	3050	300	0.87	4800	150
	P = 8	1/32	1.01	1750	450	0.94	1950	375	0.87	2250	300	0.81	2800	225	0.79	4100	150	0.61	6400	75
HK - 20T	ø2.1/2"	1/10	3.57	1400	1800	3.24	1850	1500	3.01	1950	1200	2.84	2450	900	2.59	3350	600	1.89	4900	300
	ACME	1/20	1.90	1600	900	1.97	1850	750	1.84	2250	600	1.72	2800	450	1.58	3850	300	1.15	5600	150
	P = 10	1/40	1.53	2400	450	1.57	2800	375	1.46	3350	300	1.44	4400	225	1.25	5750	150	0.92	8400	75
HKT - 30	ø75mm	1/12	4.86	1850	1800	4.71	2150	1500	4.55	2600	1200	4.27	3250	900	3.94	4500	600	2.80	6400	300
	ACME	1/18	3.56	1900	1200	3.59	2300	1000	3.44	2750	800	3.28	3500	600	2.94	4700	400	2.09	6700	200
	P = 12	1/36	2.22	2200	600	2.19	2600	500	2.15	3200	400	1.97	3900	300	1.82	5400	200	1.61	9600	100
HKT - 40	ø80mm	1/12	5.56	1975	1800	5.39	2300	1500	5.11	2725	1200	5.10	3625	900	4.67	4975	600	3.32	7050	300
	ACME	1/18	4.29	2125	1200	4.29	2550	1000	4.07	3025	800	4.07	4025	600	3.67	5450	400	2.60	7725	200
	P = 12	1/36	2.87	2625	600	2.78	3050	500	2.66	3650	400	2.67	4875	300	2.41	6600	200	1.88	10300	100
HKT - 50	ø90mm	1/7	12.7	2100	3600	12.3	2450	3000	12.1	2850	2400	11.5	4000	1800	11.0	5450	1200	7.83	7750	600
	ACME	1/14	7.72	2350	1800	7.66	2800	1500	1.47	3300	1200	7.23	4550	900	6.79	6200	600	4.79	8750	300
	P = 14	1/28	5.46	3050	900	5.22	3500	750	5.24	4100	600	4.90	5850	450	4.66	7800	300	3.28	11000	150
HKT - 100	ø100mm	1/8	21.8	3500	3600	21.5	4000	3000	21.2	5400	2400	20.2	7100	1800	19.9	9850	1200	13.0	12950	600
	ACME	1/16	15.7	4300	1800	15.5	5400	1500	14.1	7200	1200	14.7	9450	900	12.9	11800	600	9.50	17350	300
	P = 16	1/32	11.6	5500	900	12.8	6800	750	9.86	10000	600	10.1	14300	450	9.41	15750	300	7.78	26050	150

Calculation for screw rod stroke and screw rod length (under different types of screw ends):
The following calculation table is based on stroke = 300mm.

Model No.	Dia.	Pitch	Stroke	Type S end		Type H end		Type R end		Type T end	
			Sleeve Length	Body Height + CE + Stroke = Total Screw Length	Total Screw Length - CE = Thread Length	Body Height + B + G + Stroke = Total Screw Length	Total Screw Length - B - G = Thread Length	Body Height + D + Stroke = Total Screw Length	Total Screw Length - D = Thread Length	Body Height + T + Stroke = Total Screw Length	Total Screw Length - T = Thread Length
HK - 2T	1"	P=5	300+55= 355	110+40+300= 450	450-40= 410	110+55+20+300= 485	485-55-20= 410	110+55+300= 465	465-55= 410	110+25+300= 435	435-25= 410
HK - 5T	1.1/2"	P=6	300+60= 360	130+50+300= 480	480-50= 430	130+65+25+300= 520	520-65-25= 430	130+65+300= 495	495-65= 430	130+30+300= 460	460-30= 430
HK - 10T	1.3/4"	P=8	300+65= 365	160+60+300= 520	520-60= 460	160+95+32+300= 587	587-95-32= 460	160+65+300= 525	525-65= 460	160+40+300= 500	500-40= 460
HK - 15T	2"	P=8	300+65= 365	160+60+300= 520	520-60= 460	160+95+32+300= 587	587-95-32= 460	160+65+300= 525	525-65= 460	160+50+300= 510	510-50= 460
HK - 20T	2.1/2"	P=10	300+75= 375	180+80+300= 560	560-80= 480	180+114+35+300= 629	629-114-35= 480	180+70+300= 550	550-70= 480	180+55+300= 535	535-55= 480
HKT - 30	75mm	P=12		220+80+300= 600	600-80= 520	220+135+44+300= 699	699-135-44= 520	220+75+300= 595	595-75= 520	220+65+300= 585	585-65= 520
HKT - 40	80mm	P=12		260+100+300= 660	660-100= 560	260+150+54+300= 764	764-150-54= 560	260+95+300= 655	655-95= 560	260+70+300= 630	630-70= 560
HKT - 50	90mm	P=14		315+120+300= 735	735-120= 615	315+165+64+300= 844	844-165-64= 615	315+114+300= 729	729-114= 615	315+75+300= 690	690-75= 615
HKT - 100	100mm	P=16		345+150+300= 795	795-150= 645	345+200+70+300= 915	915-200-70= 645	345+140+300= 785	785-140= 645	345+100+300= 745	745-100= 645

For customer's own special sizes, they could be made to drawings.

KV5 INPUT STOP

The KV5 Input Stop is designed to provide stop to rotational movement at the input end of high reduction drives such as large valve operating gearbox.
This enables the stop to engage where the torque is low and prevent possible damage at the output end where torque is high. This unit is designed to stop an input torque of 500 Nm.

The unit provides a positive stop in both directions the position of each being adjustable to cover a range of 8 to 190 revolutions or with a simple gear change up to 900 revolutions. A repeat accuracy, at input, of 20° is normally achievable on the lower ratio and 40° on the higher ratio.

Input is through a stainless steel shaft. Output is designed to fit an F10 flange and incorporates a splined drive nut, which can be bored and key wayed to suit requirements up to a maximum of 35mm.

Setting of stops is a simple and straight forward process requiring only a few minutes.