

# ***HYSTAT***

## **Heavy Duty Flanged Hydraulic Cylinders**



**Series HDF 250 bar**

**Bore range 50mm – 500mm**

**Dimensions to CETOP R 73 H**

**ISO 6022**

**BS 6331: Part 3: 1983**

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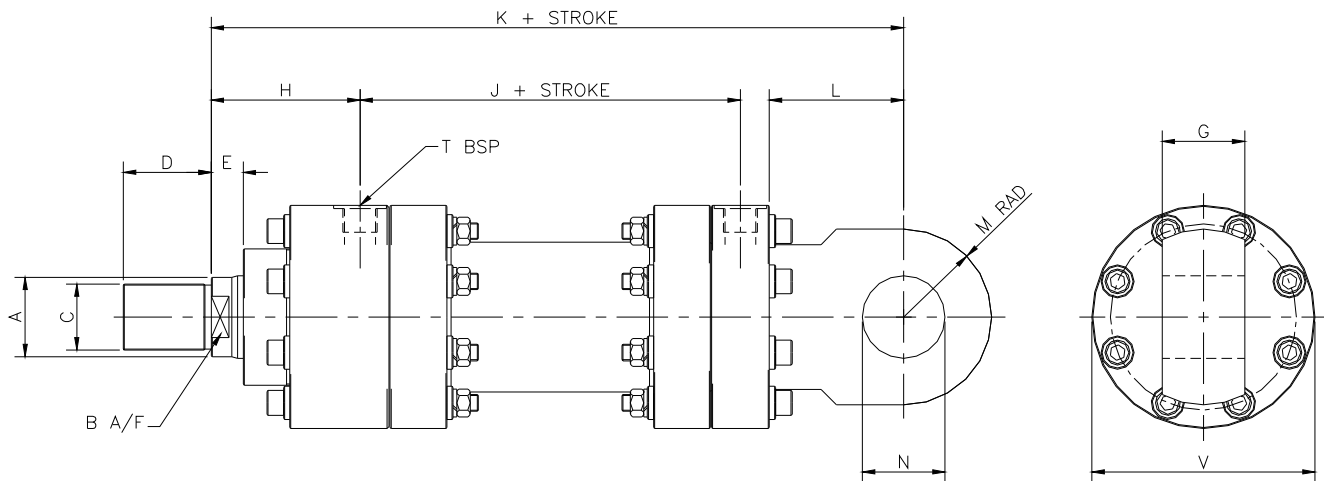
Brochure HDF-08

## **HDF Series 250 bar Hydraulic Cylinders**

- ❑ ***HYSTAT*** range of Heavy Duty Cylinders are of flanged construction with high tensile steel bolts, and washers to facilitate maintenance.
- ❑ All bore and rod sizes, and mounting dimensions are in accordance with the following standards:  
CETOP R73H, ISO 6022, BS 6331: Part 3: 1983
- ❑ Working Pressure 250 bar, Test Pressure 375 bar.
- ❑ Each bore size has an option of three rod diameters, but the smallest and largest are preferred.
- ❑ Normal temperature range -20°C to 100°C.
- ❑ Normal maximum speed 500 mm/sec.
- ❑ Normal fluid compatibility; Mineral oil, Water glycol, Invert emulsions.
- ❑ Air bleeds are standard, both ends – Specify position.
- ❑ Cushioning available either or both ends – Specify position.
- ❑ Cylinder barrel – Steel – honed bore.
- ❑ Rods – High tensile alloy steel – ground, hard chrome plated.
- ❑ Gland seal – High performance Polyurethane.
- ❑ Piston seal – Two multi lip vee type.
- ❑ Piston Bearing – Bronze.
- ❑ Gland seal and rod wiper in removable housing.
- ❑ Piston positively locked to rod.
- ❑ Design changes upon request to allow excessive speed and/or temperature, low friction, and compatibility with other fluids.
- ❑ Alternative rod material, e.g. stainless steel and special rod plating, are available for marine or hostile environment.
- ❑ Note provision of a rod protective bellows requires a rod extension. **HDF Standards 08**  
(10% of stroke plus 15mm for clip)

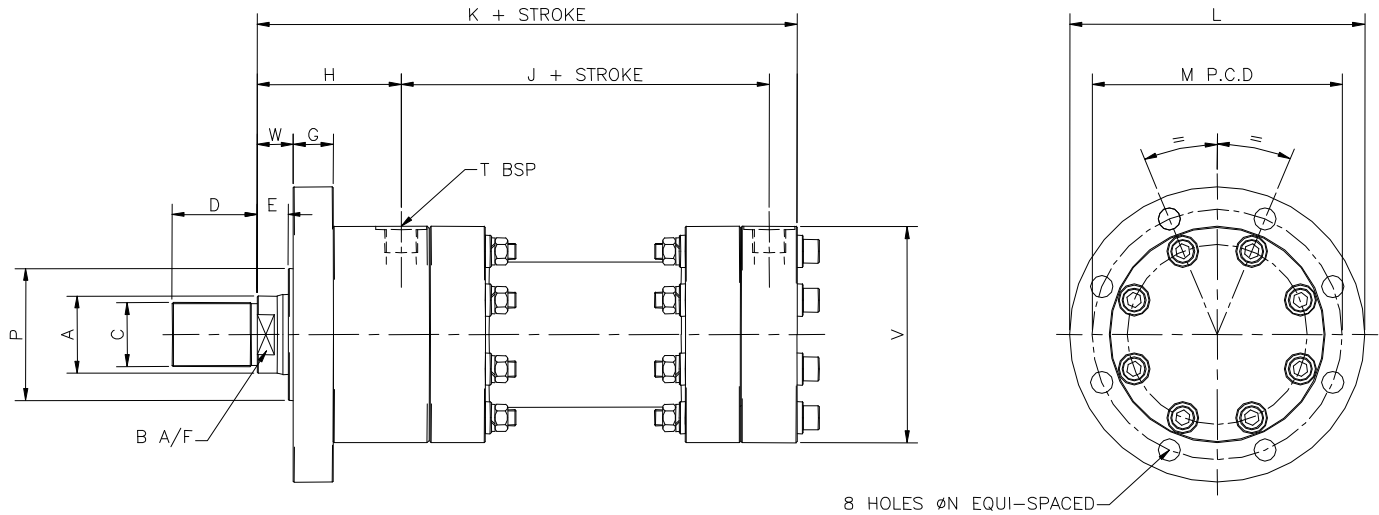
# HDF Style 1

## Rear Eye Mounting - Plain



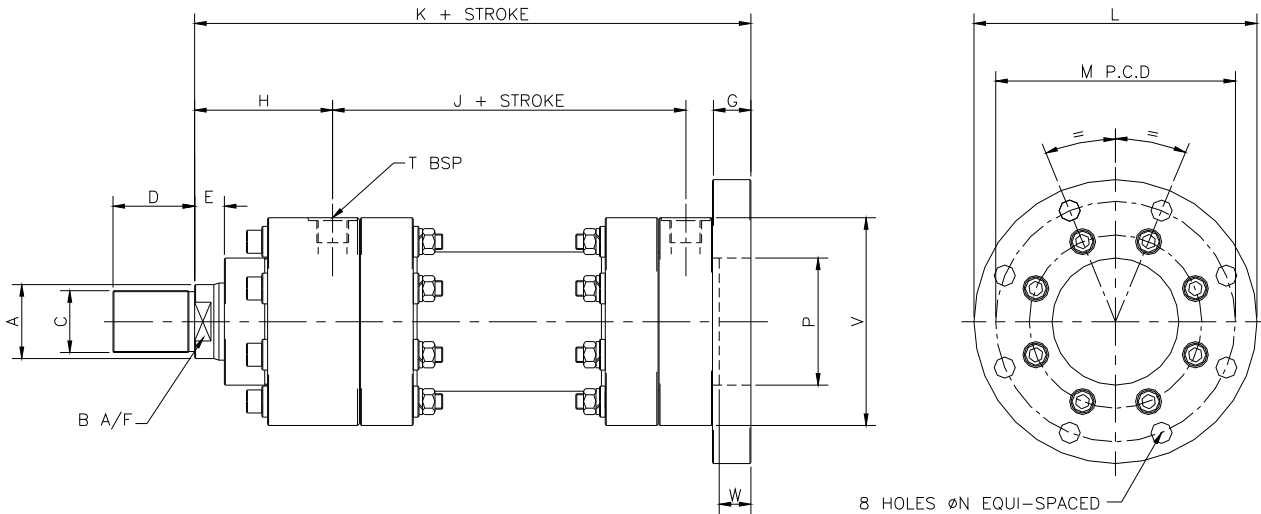
Bore Dia	Rod Dia	B	C	D	E	G	H	J	K	L	M max	N H9	T	V
50	28	24	M20x1.5P	28	14	32	88	124	305	65	40	32	½	96
	32	27	M27x2P	36										
	36	30	M27x2P	36										
63	36	30	M27x2P	36	24	40	101	146	348	78	50	40	¾	110
	40	34	M33x2P	45										
	45	38	M33x2P	45										
80	45	38	M33x2P	45	24	50	114	164	395	95	63	50	¾	130
	50	43	M42x2P	56										
	56	48	M42x2P	56										
100	56	48	M42x2P	56	31	63	125	182	442	107	71	63	1	163
	63	54	M48x2P	63										
	70	60	M48x2P	63										
125	70	60	M48x2P	63	31	80	145	219	520	130	90	80	1	190
	80	70	M64x3P	85										
	90	80	M64x3P	85										
160	90	80	M64x3P	85	53	100	174	251	617	157	112	100	1¼	256
	100	90	M80x3P	95										
	110	95	M80x3P	95										
200	110	95	M80x3P	95	40	125	215	290	756	216	160	125	1¼	330 max
	125	115	M100x3P	112										
	140	125	M100x3P	112										
250	140	125	M100x3P	112	42	160	250	350	903	263	200	160	1½	415 max
	160	145	M125x4P	125										
	180	165	M125x4P	125										
320	180	165	M125x4P	125	48	200	330	380	1080	330	250	200	1½	530 max
	200	180	M160x4P	160										
	220	200	M160x4P	160										
400	220	200	M160x4P	160	53	250	330	380	1075	320	320	250	2	630 max
	250	230	M200x4P	200										
	280	260	M200x4P	200										
500	280	260	M200x4P	200	60	320	360	495	1275	375	375	320	2	750 max
	320	300	M250x6P	250										
	360	340	M250x6P	250										

# HDF Style 2 Front Flange Mounting - Round



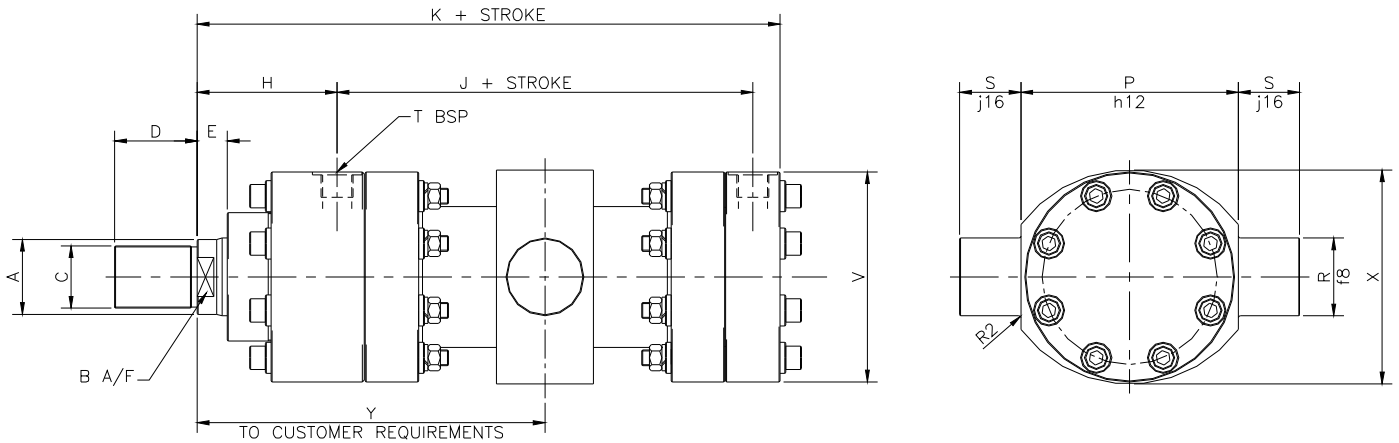
Bore Dia	Rod Dia	B	C	D	E	G	H	J	K	L max	M	N	P	T	V	W
50	28	24	M20x1.5P	28	18	25	88	124	240	160	132	14	63	1/2	96	22
	32	27	M27x2P	36												
	36	30	M27x2P	36												
63	36	30	M27x2P	36	21	28	101	146	270	180	150	14	75	3/4	110	25
	40	34	M33x2P	45												
	45	38	M33x2P	45												
80	45	38	M33x2P	45	24	32	114	164	300	215	180	18	90	3/4	130	28
	50	43	M42x2P	56												
	56	48	M42x2P	56												
100	56	48	M42x2P	56	27	36	125	182	335	255	212	22	110	1	163	32
	63	54	M48x2P	63												
	70	60	M48x2P	63												
125	70	60	M48x2P	63	31	40	145	219	390	295	250	22	132	1	190	36
	80	70	M64x3P	85												
	90	80	M64x3P	85												
160	90	80	M64x3P	85	35	45	174	251	460	365	315	26	160	1 1/4	256	40
	100	90	M80x3P	95												
	110	95	M80x3P	95												
200	110	95	M80x3P	95	40	56	215	290	540	445	385	33	200	1 1/4	330 max	45
	125	115	M100x3P	112												
	140	125	M100x3P	112												
250	140	125	M100x3P	112	42	63	250	350	640	545	475	39	250	1 1/2	415 max	50
	160	145	M125x4P	125												
	180	165	M125x4P	125												
320	180	165	M125x4P	125	48	80	330	380	750	680	600	45	320	1 1/2	530 max	56
	200	180	M160x4P	160												
	220	200	M160x4P	160												
400	220	200	M160x4P	160	53	100	330	380	755	810	720	12 x 45	400	2	630 max	63
	250	230	M200x4P	200												
	280	260	M200x4P	200												
500	280	260	M200x4P	200	60	125	360	495	900	940	840	12 x 52	500	2	750 max	70
	320	300	M250x6P	250												
	360	340	M250x6P	250												

## HDF Style 3 Rear Flange Mounting - Round



Bore Dia	Rod Dia	B	C	D	E	G	H	J	K	L <sub>max</sub>	M	N	P	T	V	W
50	28	24	M20x1.5P	28	14	25	88	124	265	160	132	14	63	½	96	20
	32	27	M27x2P	36												
	36	30	M27x2P	36												
63	36	30	M27x2P	36	24	28	101	146	298	180	150	14	75	¾	110	23
	40	34	M33x2P	45												
80	45	38	M33x2P	45	24	32	114	164	332	215	180	18	90	¾	130	27
	50	43	M42x2P	56												
	56	48	M42x2P	56												
100	56	48	M42x2P	56	31	36	125	182	371	255	212	22	110	1	163	31
	63	54	M48x2P	63												
	70	60	M48x2P	63												
125	70	60	M48x2P	63	31	40	145	219	430	295	250	22	132	1	190	33
	80	70	M64x3P	85												
160	90	80	M64x3P	85	53	45	174	251	505	365	315	26	160	1¼	256	38
	100	90	M80x3P	95												
	110	95	M80x3P	95												
200	110	95	M80x3P	95	40	56	215	290	596	445	385	33	200 max	1¼	330	46
	125	115	M100x3P	112												
	140	125	M100x3P	112												
250	140	125	M100x3P	112	42	63	250	350	703	545	475	39	250 max	1½	415	53
	160	145	M125x4P	125												
320	180	165	M125x4P	125	48	80	330	380	830	680	600	45	320 max	1½	530	70
	200	180	M160x4P	160												
	220	200	M160x4P	160												
400	220	200	M160x4P	160	53	100	330	380	855	810	720	12 x 45	400 max	2	630	80
	250	230	M200x4P	200												
	280	260	M200x4P	200												
500	280	260	M200x4P	200	60	125	360	495	1025	940	840	12 x 52	500 max	2	750	100
	320	300	M250x6P	250												
	360	340	M250x6P	250												

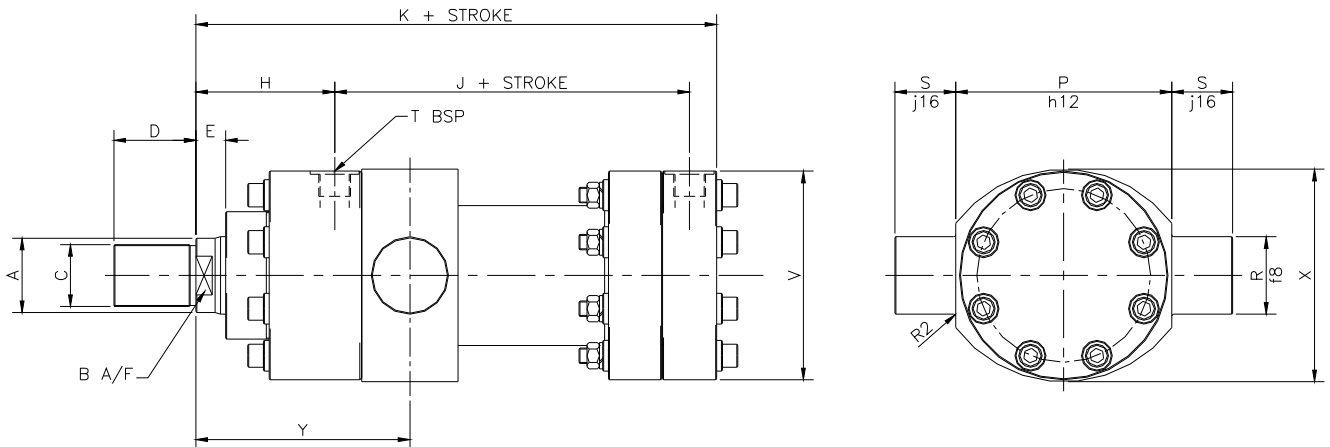
# HDF Style 6 Trunnion Mounting



Bore Dia	Rod Dia	B	C	D	E	H	J	K	P	R	S	T	V	X max	Y max
50	28	24	M20x1.5P	28	14	88	124	240	112	32	25	½	96	112	190
	32	27	M27x2P	36											
	36	30	M27x2P	36											
63	36	30	M27x2P	36	24	101	146	270	125	40	32	¾	110	128	220
	40	34	M33x2P	45											
	45	38	M33x2P	45											
80	45	38	M33x2P	45	24	114	164	300	150	50	40	¾	130	150	245
	50	43	M42x2P	56											
	56	48	M42x2P	56											
100	56	48	M42x2P	56	31	125	182	335	180	63	50	1	163	180	280
	63	54	M48x2P	63											
	70	60	M48x2P	63											
125	70	60	M48x2P	63	31	145	219	390	224	80	63	1	190	224	330
	80	70	M64x3P	85											
	90	80	M64x3P	85											
160	90	80	M64x3P	85	53	174	251	460	280	100	80	1¼	256	280	405
	100	90	M80x3P	95											
	110	95	M80x3P	95											
200	110	95	M80x3P	95	40	215	290	540	335	125	100	1¼	330 max	330	480
	125	115	M100x3P	112											
	140	125	M100x3P	112											
250	140	125	M100x3P	112	42	250	350	640	425	160	125	1½	415 max	420	570
	160	145	M125x4P	125											
	180	165	M125x4P	125											
320	180	165	M125x4P	125	48	330	380	750	530	200	160	1½	530 max	530	700
	200	180	M160x4P	160											
	220	200	M160x4P	160											
400	220	200	M160x4P	160	53	330	380	755	630	250	200	2	630 max	630	730
	250	230	M200x4P	200											
	280	260	M200x4P	200											
500	280	260	M200x4P	200	60	360	495	900	760	320	250	2	750 max	750	820
	320	300	M250x6P	250											
	360	340	M250x6P	250											

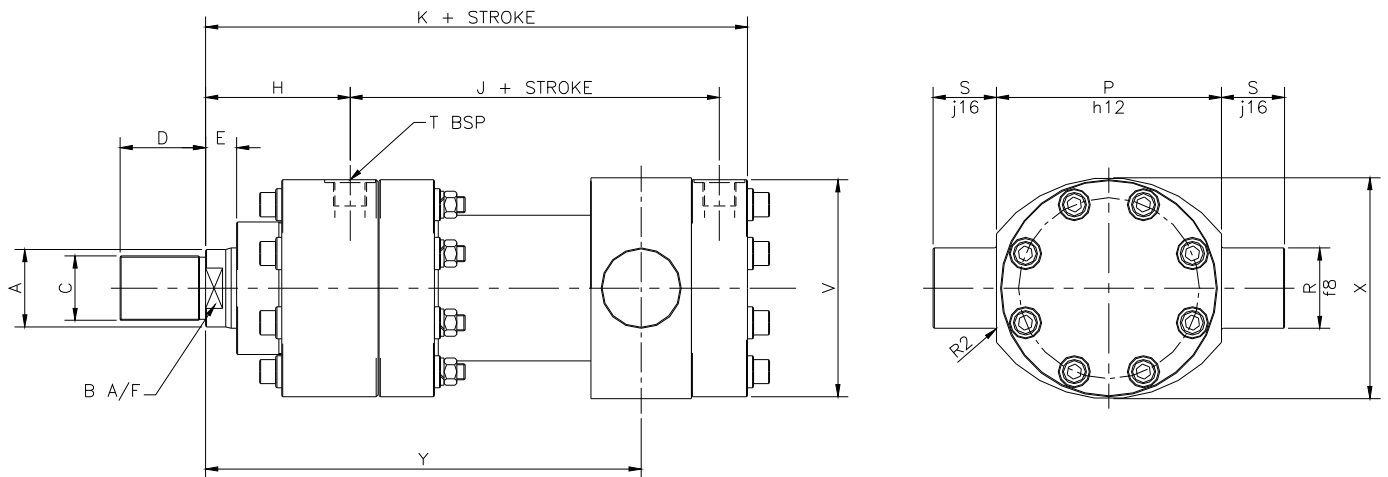
# HDF Style 6F

## Front Trunnion Mounting



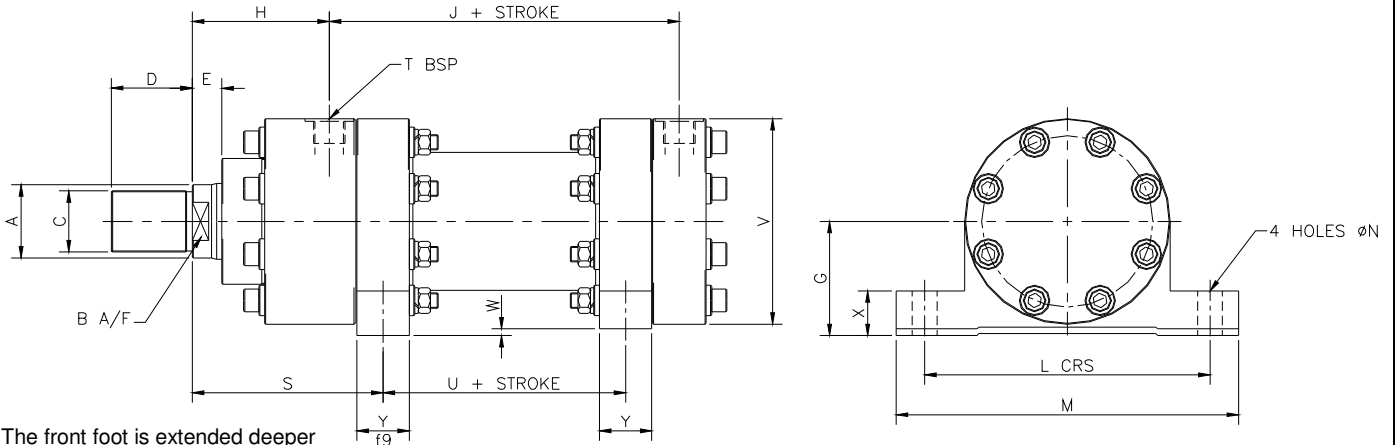
Bore Dia	Rod Dia	B	C	D	E	H	J	K	P	R	S	T	V	X max	Y
50	28	24	M20x1.5P	28	14	88	124	240	112	32	25	½	96	112	127
	32	27	M27x2P	36											
	36	30	M27x2P	36											
63	36	30	M27x2P	36	24	101	146	270	125	40	32	¾	110	128	150
	40	34	M33x2P	45											
	45	38	M33x2P	45											
80	45	38	M33x2P	45	24	114	164	300	150	50	40	¾	130	150	167
	50	43	M42x2P	56											
	56	48	M42x2P	56											
100	56	48	M42x2P	56	31	125	182	335	180	63	50	1	163	180	192
	63	54	M48x2P	63											
	70	60	M48x2P	63											
125	70	60	M48x2P	63	31	145	219	390	224	80	63	1	190	224	222
	80	70	M64x3P	85											
	90	80	M64x3P	85											
160	90	80	M64x3P	85	53	174	251	460	280	100	80	1¼	256	280	277
	100	90	M80x3P	95											
	110	95	M80x3P	95											
200	110	95	M80x3P	95	40	215	290	540	335	125	100	1¼	330 max	330	332
	125	115	M100x3P	112											
	140	125	M100x3P	112											
250	140	125	M100x3P	112	42	250	350	640	425	160	125	1½	415 max	420	397
	160	145	M125x4P	125											
	180	165	M125x4P	125											
320	180	165	M125x4P	125	48	330	380	750	530	200	160	1½	530 max	530	505
	200	180	M160x4P	160											
	220	200	M160x4P	160											
400	220	200	M160x4P	160	53	330	380	755	630	250	200	2	630 max	630	510
	250	230	M200x4P	200											
	280	260	M200x4P	200											
500	280	260	M200x4P	200	60	360	495	900	760	320	250	2	750 max	750	570
	320	300	M250x6P	250											
	360	340	M250x6P	250											

# HDF Style 6R Rear Trunnion Mounting



Bore Dia	Rod Dia	B	C	D	E	H	J	K	P	R	S	T	V	X max	Y
50	28	24	M20x1.5P	28	14	88	124	240	112	32	25	½	96	112	184
	32	27	M27x2P	36											
	36	30	M27x2P	36											
63	36	30	M27x2P	36	24	101	146	270	125	40	32	¾	110	128	199
	40	34	M33x2P	45											
	45	38	M33x2P	45											
80	45	38	M33x2P	45	24	114	164	300	150	50	40	¾	130	150	224
	50	43	M42x2P	56											
	56	48	M42x2P	56											
100	56	48	M42x2P	56	31	125	182	335	180	63	50	1	163	180	239
	63	54	M48x2P	63											
	70	60	M48x2P	63											
125	70	60	M48x2P	63	31	145	219	390	224	80	63	1	190	224	284
	80	70	M64x3P	85											
	90	80	M64x3P	85											
160	90	80	M64x3P	85	53	174	251	460	280	100	80	1¼	256	280	325
	100	90	M80x3P	95											
	110	95	M80x3P	95											
200	110	95	M80x3P	95	40	215	290	540	335	125	100	1¼	330 max	330	390
	125	115	M100x3P	112											
	140	125	M100x3P	112											
250	140	125	M100x3P	112	42	250	350	640	425	160	125	1½	415 max	420	460
	160	145	M125x4P	125											
	180	165	M125x4P	125											
320	180	165	M125x4P	125	48	330	380	750	530	200	160	1½	530 max	530	545
	200	180	M160x4P	160											
	220	200	M160x4P	160											
400	220	200	M160x4P	160	53	330	380	755	630	250	200	2	630 max	630	525
	250	230	M200x4P	200											
	280	260	M200x4P	200											
500	280	260	M200x4P	200	60	360	495	900	760	320	250	2	750 max	750	640
	320	300	M250x6P	250											
	360	340	M250x6P	250											

# HDF Style 7 Foot Mounting

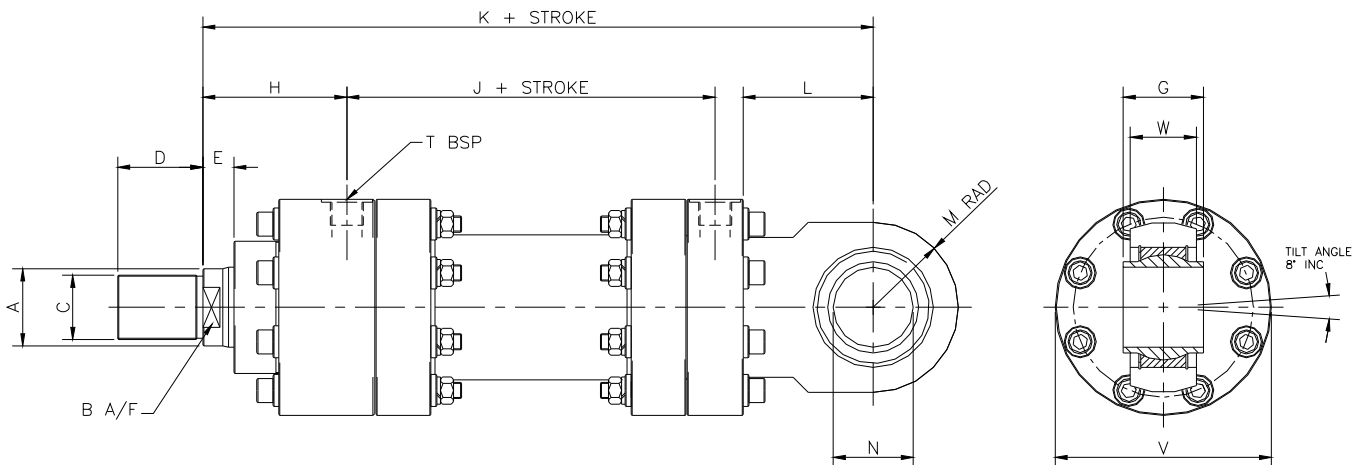


N.B The front foot is extended deeper than the rear foot and finished machined on width to act as a thrust key.

Bore Dia	Rod Dia	B	C	D	E	G	H	J	K	L	M	N	S	T	U	V	W	X	Y
50	28	24	M20x1.5P	28	14	60/67	88	124	240	150	180	11	25	½	67	96	7	20/27	30
	32	27	M27x2P	36															
	36	30	M27x2P	36															
63	36	30	M27x2P	36	24	69/76	101	146	270	172	208	14	32	¾	64	110	7	25/32	35
	40	34	M33x2P	45															
	45	38	M33x2P	45															
80	45	38	M33x2P	45	24	81/88	114	164	300	208	255	18	40	¾	77	130	7	30/37	40
	50	43	M42x2P	56															
	56	48	M42x2P	56															
100	56	48	M42x2P	56	31	94/101	125	182	335	245	305	22	50	1	82	163	7	35/42	45
	63	54	M48x2P	63															
	70	60	M48x2P	63															
125	70	60	M48x2P	63	31	113/120	145	219	390	300	360	26	63	1	107	190	7	40/47	55
	80	70	M64x3P	85															
	90	80	M64x3P	85															
160	90	80	M64x3P	85	53	143/150	174	251	460	370	440	33	80	1¼	113	256	7	50/57	65
	100	90	M80x3P	95															
	110	95	M80x3P	95															
200	110	95	M80x3P	95	40	173/180	215	290	540	445	515	38	100	1¼	143	330 max	7	55/62	75
	125	115	M100x3P	112															
	140	125	M100x3P	112															
250	140	125	M100x3P	112	42	213/220	250	350	640	530	610	45	125	1½	173	415 max	7	70/77	90
	160	145	M125x4P	125															
	180	165	M125x4P	125															
320	180	165	M125x4P	125	48	275/285	330	380	750	660	760	52	160	1½	190	530 max	10	90/100	100
	200	180	M160x4P	160															
	220	200	M160x4P	160															
400	220	200	M160x4P	160	53	350/370	330	380	755	800	915	70	200	2	175	630 max	20	110/130	120
	250	230	M200x4P	200															
	280	260	M200x4P	200															
500	280	260	M200x4P	200	60	380/400	360	495	900	920	1060	80	250	2	270	750 max	20	130/150	140
	320	300	M250x6P	250															
	360	340	M250x6P	250															

# HDF Style 8

## Rear Eye Mounting - Spherical



Bore Dia	Rod Dia	B	C	D	E	G	H	J	K	L	M max	N H9	T	V	W
50	28	24	M20x1.5P	28	14	32	88	124	305	65	40	32	½	96	27
	32	27	M27x2P	36											
	36	30	M27x2P	36											
63	36	30	M27x2P	36	24	40	101	146	348	78	50	40	¾	110	32
	40	34	M33x2P	45											
	45	38	M33x2P	45											
80	45	38	M33x2P	45	24	50	114	164	395	95	63	50	¾	130	40
	50	43	M42x2P	56											
	56	48	M42x2P	56											
100	56	48	M42x2P	56	31	63	125	182	442	107	71	63	1	163	52
	63	54	M48x2P	63											
	70	60	M48x2P	63											
125	70	60	M48x2P	63	31	80	145	219	520	130	90	80	1	190	66
	80	70	M64x3P	85											
	90	80	M64x3P	85											
160	90	80	M64x3P	85	53	100	174	251	617	157	112	100	1¼	256	84
	100	90	M80x3P	95											
	110	95	M80x3P	95											
200	110	95	M80x3P	95	40	125	215	290	756	216	160	125	1¼	330 max	115
	125	115	M100x3P	112											
	140	125	M100x3P	112											
250	140	125	M100x3P	112	42	160	250	350	903	263	200	160	1½	415 max	145
	160	145	M125x4P	125											
	180	165	M125x4P	125											
320	180	165	M125x4P	125	48	200	330	380	1080	330	250	200	1½	530 max	180
	200	180	M160x4P	160											
	220	200	M160x4P	160											
400	220	200	M160x4P	160	53	250	330	380	1075	320	320	250	2	630 max	220
	250	230	M200x4P	200											
	280	260	M200x4P	200											
500	280	260	M200x4P	200	60	320	360	495	1275	375	375	320	2	750 max	280
	320	300	M250x6P	250											
	360	340	M250x6P	250											