

# ***HYSTAT***

## **Arduous Duty Flanged Hydraulic Cylinders**



**Series ADF 160 bar**

**Bore range 40mm – 320mm**

**Dimensions to CETOP R 58 H  
ISO 6020  
BS 6331: Part 1: 1983**

### ***HYSTAT* SYSTEMS LTD.**

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Huddersfield  
HD7 5BB

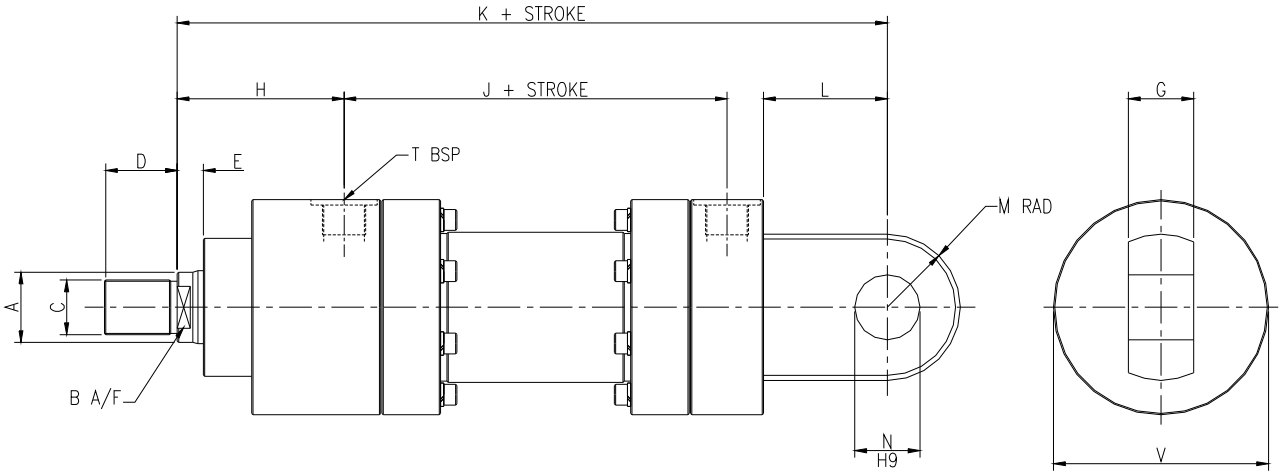
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Brochure ADF 08

## ADF Series 160 bar Hydraulic Cylinders

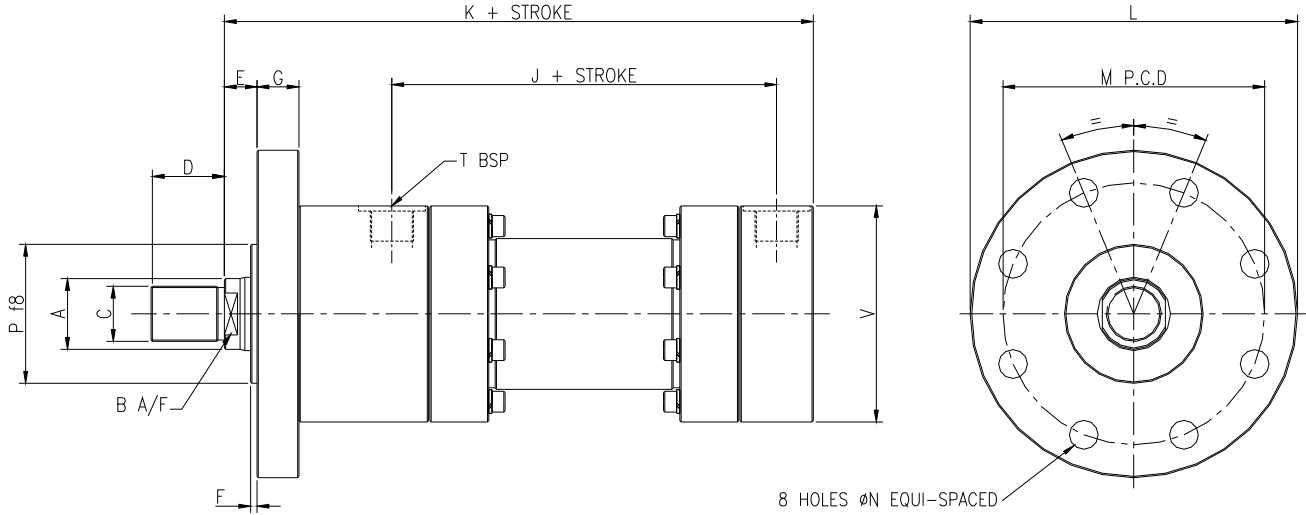
- ❑ **Hystat** range of Arduous Duty Cylinders are of flanged construction with cap screws and washers, of high tensile steel to facilitate maintenance.
- ❑ All bore and rod sizes, and mounting dimensions are in accordance with the following standards:  
CETOP R58H, ISO 6020, BS 6331: Part 1: 1983
- ❑ Working Pressure 160 bar, Test Pressure 240 bar.
- ❑ 210 bar for units with 2:1 ratio.
- ❑ Each bore size has two alternative rod diameters.
- ❑ 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 optional both ends – Specify position.
- ❑ Cylinder barrel – Steel – honed bore.
- ❑ Rods – carbon steel – ground, hard chrome plated.
- ❑ Gland seal – Nitrile/fabric fluid seal.
- ❑ Piston seal – five element Nitrile/Acetyl Resin.
- ❑ Rod Bearing – Spheriodal Graphite Iron.
- ❑ 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.  
(10% of stroke plus 15mm for clip)

# ADF Style 1 Rear Eye Mounting - Plain



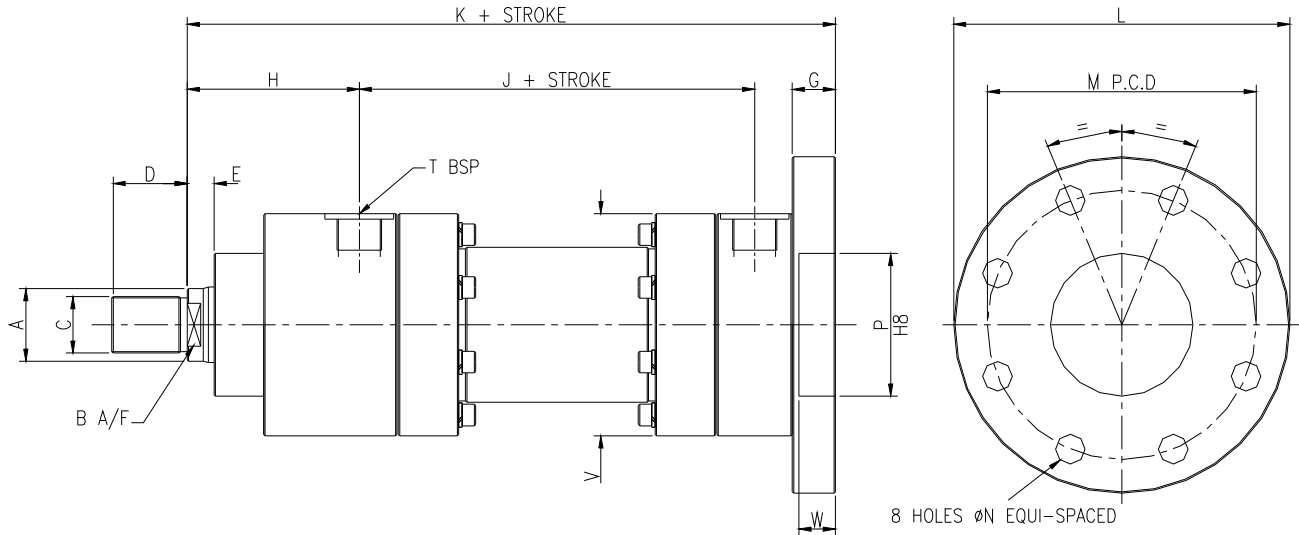
Bore Dia	Rod Dia	B	C	D	E	G	H	J	K	L	M	N	T	V
40	22	18	M16 x 1.5 P	22	13	20	80	92	231	41	25	20	½"	86
	28	24	M20 x 1.5 P	28										
50	28	24	M20 x 1.5 P	28	14	25	88	98	257	52	30	25	½"	96
	36	30	M27 x 2 P	36										
63	36	30	M27 x 2 P	36	16	32	93	108	289	65	40	32	¾"	110
	45	38	M33 x 2 P	45										
80	45	38	M33 x 2 P	45	18	40	108	118	332	82	47	40	¾"	130
	56	48	M42 x 2 P	56										
100	56	48	M42 x 2 P	56	35	50	128	144	395	95	58	50	1"	163
	70	60	M48 x 2 P	63										
125	70	60	M48 x 2 P	63	24	63	138	160	428	103	71	63	1"	190
	90	80	M64 x 3 P	85										
160	90	80	M64 x 3 P	85	25	80	146	189	505	135	90	80	1¼"	256
	110	95	M80 x 3 P	95										
200	110	95	M80 x 3 P	95	30	100	173	242	615	165	110	100	1¼"	290
	140	125	M100 x 3 P	112										
250	140	125	M100 x 3 P	112	35	125	235	270	773	223	160	125	1½"	360
	180	165	M125 x 4 P	125										
320	180	165	M125 x 4 P	125	37	160	250	371	930	270	200	160	1½"	450
	220	200	M160 x 4 P	160										

## ADF Style 2 Front Flange Mounting - Round



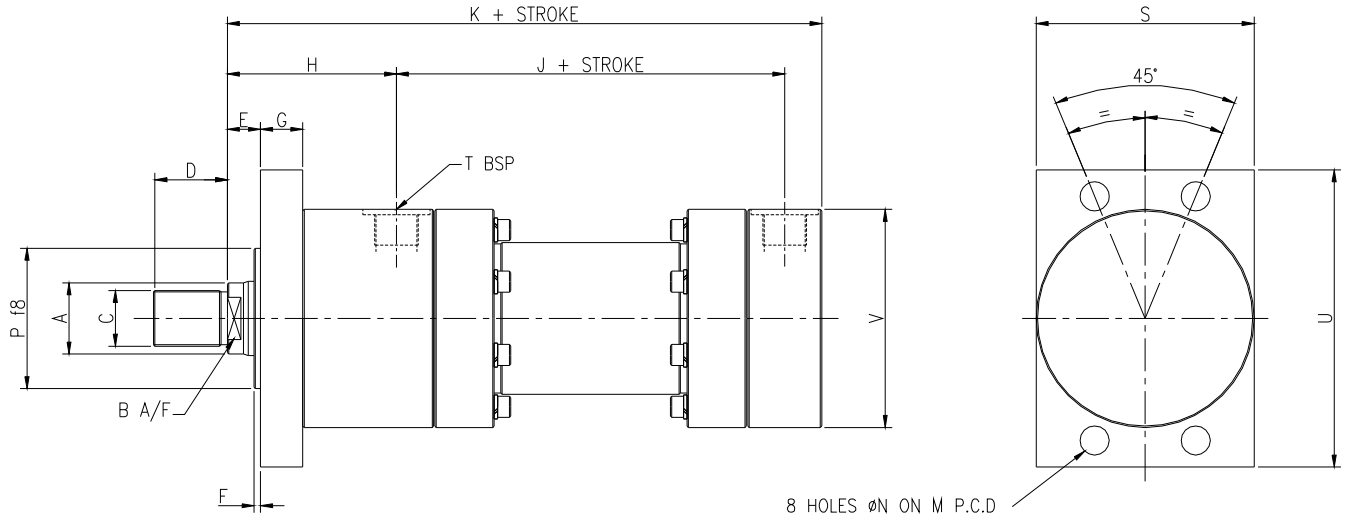
Bore Dia	Rod Dia	B	C	D	E	F	G	H	J	K	L	M	N	P	T	V
40	22	18	M16 x 1.5 P	22	16	3	16	80	92	190	130	106	9	50	½"	86
	28	24	M20 x 1.5 P	28												
50	28	24	M20 x 1.5 P	28	18	4	20	88	98	205	150	126	11	60	½"	96
	36	30	M27 x 2 P	36												
63	36	30	M27 x 2 P	36	20	4	25	93	108	224	180	145	14	70	¾"	110
	45	38	M33 x 2 P	45												
80	45	38	M33 x 2 P	45	22	4	32	108	118	250	200	165	18	85	¾"	130
	56	48	M42 x 2 P	56												
100	56	48	M42 x 2 P	56	25	5	32	128	144	300	250	200	22	106	1"	163
	70	60	M48 x 2 P	63												
125	70	60	M48 x 2 P	63	28	5	32	138	160	325	280	235	22	132	1"	190
	90	80	M64 x 3 P	85												
160	90	80	M64 x 3 P	85	30	5	36	146	189	370	330	280	22	160	1¼"	256
	110	95	M80 x 3 P	95												
200	110	95	M80 x 3 P	95	35	5	40	173	242	450	400	340	26	200	1¼"	290
	140	125	M100 x 3 P	112												
250	140	125	M100 x 3 P	112	40	5	56	235	270	550	500	420	33	250	1½"	360
	180	165	M125 x 4 P	125												
320	180	165	M125 x 4 P	125	45	8	63	250	371	660	620	520	39	320	1½"	450
	220	200	M160 x 4 P	160												

## ADF Style 3 Rear Flange Mounting - Round



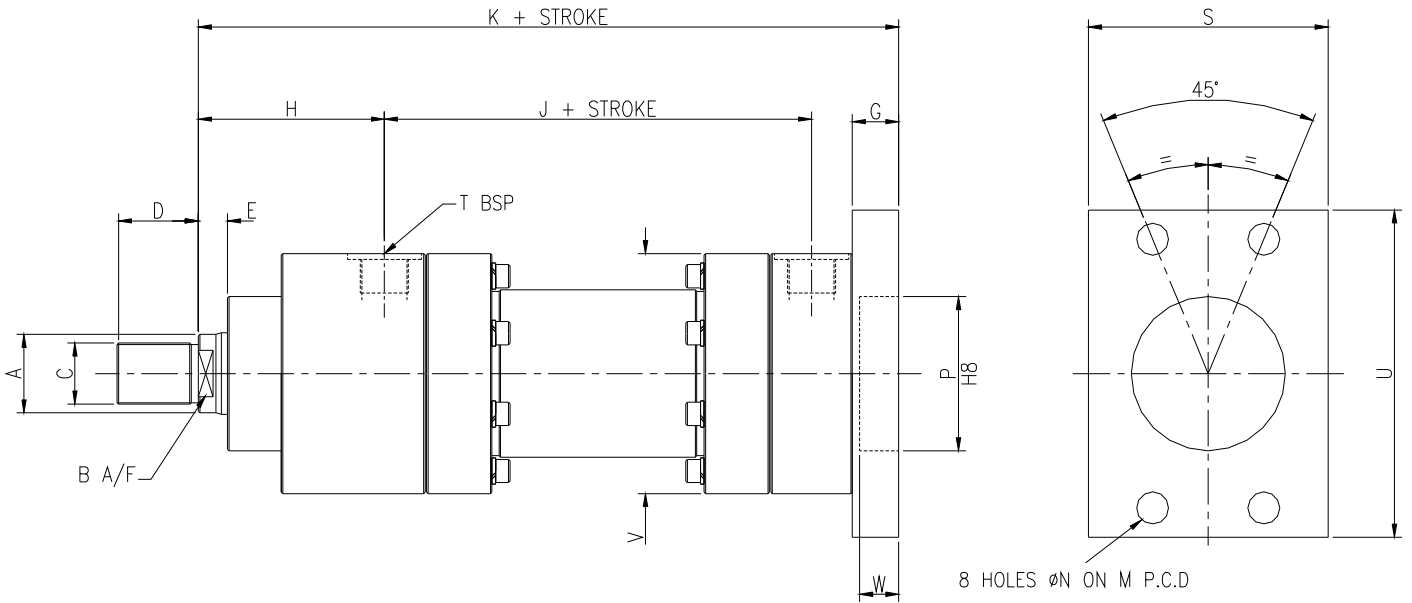
Bore Dia	Rod Dia	B	C	D	E	G	H	J	K	L	M	N	P	T	V	W
40	22	18	M16 x 1.5 P	22	13	16	80	92	206	130	106	9	50	½"	86	13
	28	24	M20 x 1.5 P	28												
50	28	24	M20 x 1.5 P	28	14	20	88	98	225	150	126	11	60	½"	96	16
	36	30	M27 x 2 P	36												
63	36	30	M27 x 2 P	36	16	25	93	108	249	180	145	14	70	¾"	110	20
	45	38	M33 x 2 P	45												
80	45	38	M33 x 2 P	45	18	32	108	118	282	200	165	18	85	¾"	130	27
	56	48	M42 x 2 P	56												
100	56	48	M42 x 2 P	56	35	32	128	144	332	250	200	22	106	1"	163	27
	70	60	M48 x 2 P	63												
125	70	60	M48 x 2 P	63	24	32	138	160	357	280	235	22	132	1"	190	27
	90	80	M64 x 3 P	85												
160	90	80	M64 x 3 P	85	25	36	146	189	406	330	280	22	160	1¼"	256	31
	110	95	M80 x 3 P	95												
200	110	95	M80 x 3 P	95	30	40	173	242	490	400	340	26	200	1¼"	290	35
	140	125	M100 x 3 P	112												
250	140	125	M100 x 3 P	112	35	56	235	270	606	500	420	33	250	1½"	360	45
	180	165	M125 x 4 P	125												
320	180	165	M125 x 4 P	125	37	63	250	371	723	620	520	39	320	1½"	450	58
	220	200	M160 x 4 P	160												

# ADF Style 4 Front Flange Mounting - Rectangular



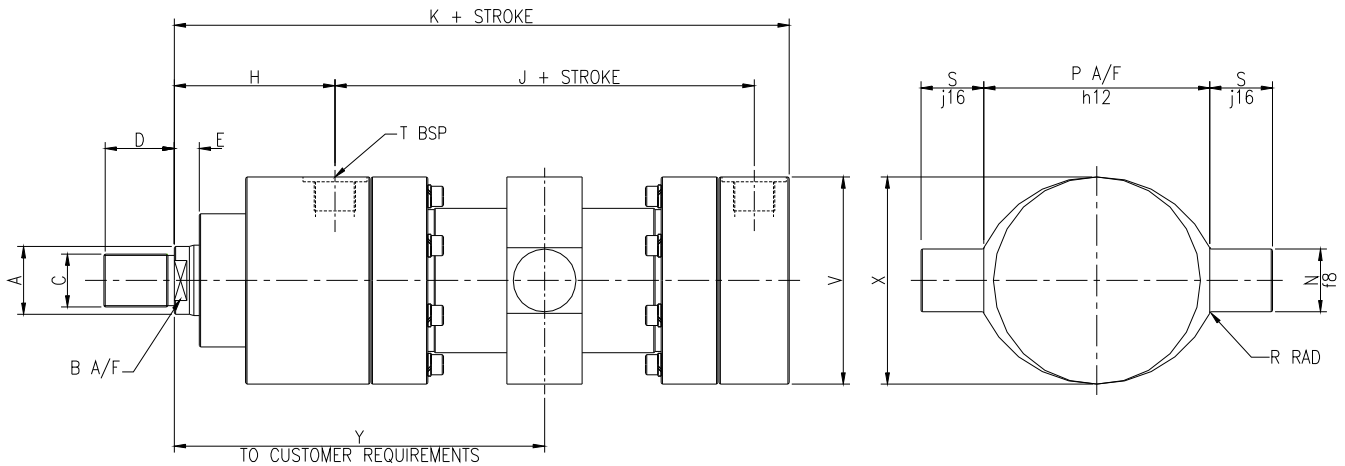
Bore Dia	Rod Dia	B	C	D	E	F	G	H	J	K	M	N	P	S	T	U	V
40	22	18	M16 x 1.5 P	22	16	3	16	80	92	190	106	9	50	86	½"	115	86
	28	24	M20 x 1.5 P	28													
50	28	24	M20 x 1.5 P	28	18	4	20	88	98	205	126	11	60	100	½"	140	96
	36	30	M27 x 2 P	36													
63	36	30	M27 x 2 P	36	20	4	25	93	108	224	145	14	70	110	¾"	160	110
	45	38	M33 x 2 P	45													
80	45	38	M33 x 2 P	45	22	4	32	108	118	250	165	18	85	130	¾"	185	130
	56	48	M42 x 2 P	56													
100	56	48	M42 x 2 P	56	25	5	32	128	144	300	200	22	106	165	1"	225	163
	70	60	M48 x 2 P	63													
125	70	60	M48 x 2 P	63	28	5	32	138	160	325	235	22	132	190	1"	255	190
	90	80	M64 x 3 P	85													
160	90	80	M64 x 3 P	85	30	5	36	146	189	370	280	22	160	260	1¼"	370	256
	110	95	M80 x 3 P	95													
200	110	95	M80 x 3 P	95	35	5	40	173	242	450	340	26	200	310	1¼"	400	290
	140	125	M100 x 3 P	112													
250	140	125	M100 x 3 P	112	40	5	56	235	270	550	420	33	250	360	1½"	480	360
	180	165	M125 x 4 P	125													
320	180	165	M125 x 4 P	125	45	8	63	250	371	660	520	39	320	450	1½"	600	450
	220	200	M160 x 4 P	160													

# ADF Style 5 Rear Flange Mounting - Rectangular



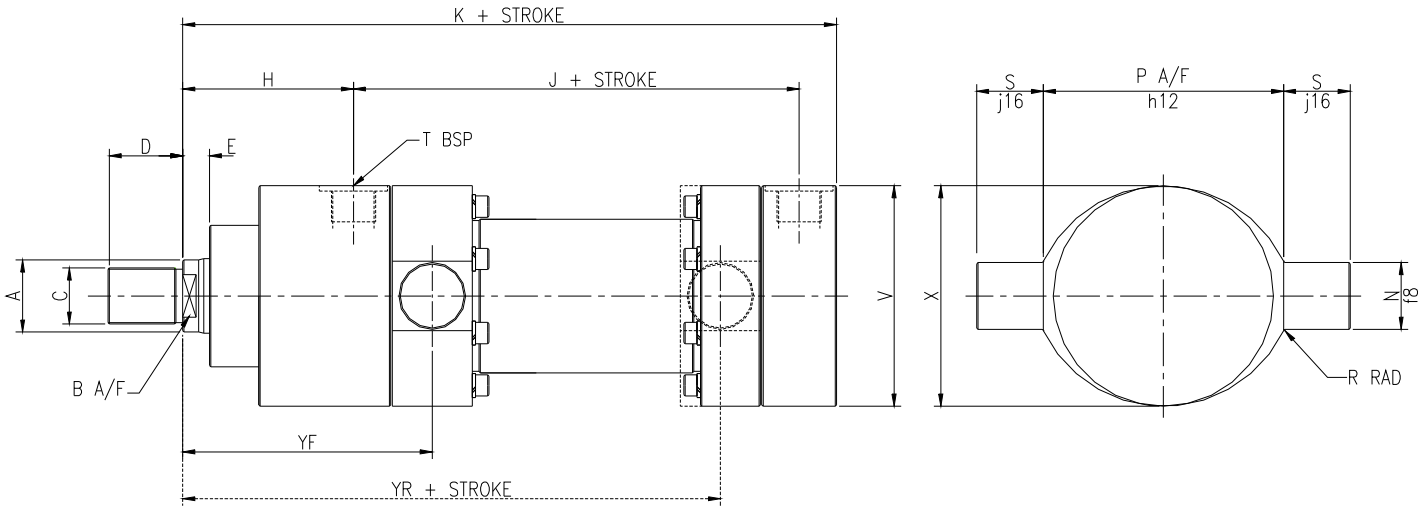
Bore Dia	Rod Dia	B	C	D	E	G	H	J	K	M	N	P	S	T	U	V	W
40	22	18	M16 x 1.5 P	22	13	16	80	92	206	106	9	50	86	½"	115	86	13
	28	24	M20 x 1.5 P	28													
50	28	24	M20 x 1.5 P	28	14	20	88	98	225	126	11	60	100	½"	140	96	16
	36	30	M27 x 2 P	36													
63	36	30	M27 x 2 P	36	16	25	93	108	249	145	14	70	110	¾"	160	110	20
	45	38	M33 x 2 P	45													
80	45	38	M33 x 2 P	45	18	32	108	118	282	165	18	85	130	¾"	185	130	27
	56	48	M42 x 2 P	56													
100	56	48	M42 x 2 P	56	35	32	128	144	332	200	22	106	165	1"	225	163	27
	70	60	M48 x 2 P	63													
125	70	60	M48 x 2 P	63	24	32	138	160	357	235	22	132	190	1"	255	190	27
	90	80	M64 x 3 P	85													
160	90	80	M64 x 3 P	85	25	36	146	189	406	280	22	160	260	1¼"	370	256	31
	110	95	M80 x 3 P	95													
200	110	95	M80 x 3 P	95	30	40	173	242	490	340	26	200	310	1¼"	400	290	35
	140	125	M100 x 3 P	112													
250	140	125	M100 x 3 P	112	35	56	235	270	606	420	33	250	360	1½"	480	360	45
	180	165	M125 x 4 P	125													
320	180	165	M125 x 4 P	125	37	63	250	371	723	520	39	320	450	1½"	600	450	58
	220	200	M160 x 4 P	160													

# ADF Style 6 Trunnion Mounting



Bore Dia	Rod Dia	B	C	D	E	H	J	K	N	P	R	S	T	V	X Max	Y Min
40	22	18	M16 x 1.5 P	22	13	80	92	190	20	90	1	16	½"	86	86	190
	28	24	M20 x 1.5 P	28												
50	28	24	M20 x 1.5 P	28	14	88	98	205	25	105	1	20	½"	96	100	220
	36	30	M27 x 2 P	36												
63	36	30	M27 x 2 P	36	16	93	108	224	32	120	1	25	¾"	110	110	250
	45	38	M33 x 2 P	45												
80	45	38	M33 x 2 P	45	18	108	118	250	40	135	2	32	¾"	130	130	280
	56	48	M42 x 2 P	56												
100	56	48	M42 x 2 P	56	35	128	144	300	50	160	2	40	1"	163	165	320
	70	60	M48 x 2 P	63												
125	70	60	M48 x 2 P	63	24	138	160	325	63	195	2	50	1"	190	190	360
	90	80	M64 x 3 P	85												
160	90	80	M64 x 3 P	85	25	146	189	370	80	240	3	63	1¼"	256	260	400
	110	95	M80 x 3 P	95												
200	110	95	M80 x 3 P	95	30	173	242	450	100	295	3	80	1¼"	290	290	460
	140	125	M100 x 3 P	112												
250	140	125	M100 x 3 P	112	35	235	270	550	125	370	3	100	1½"	360	360	600
	180	165	M125 x 4 P	125												
320	180	165	M125 x 4 P	125	37	250	371	660	160	470	4	125	1½"	450	450	700
	220	200	M160 x 4 P	160												

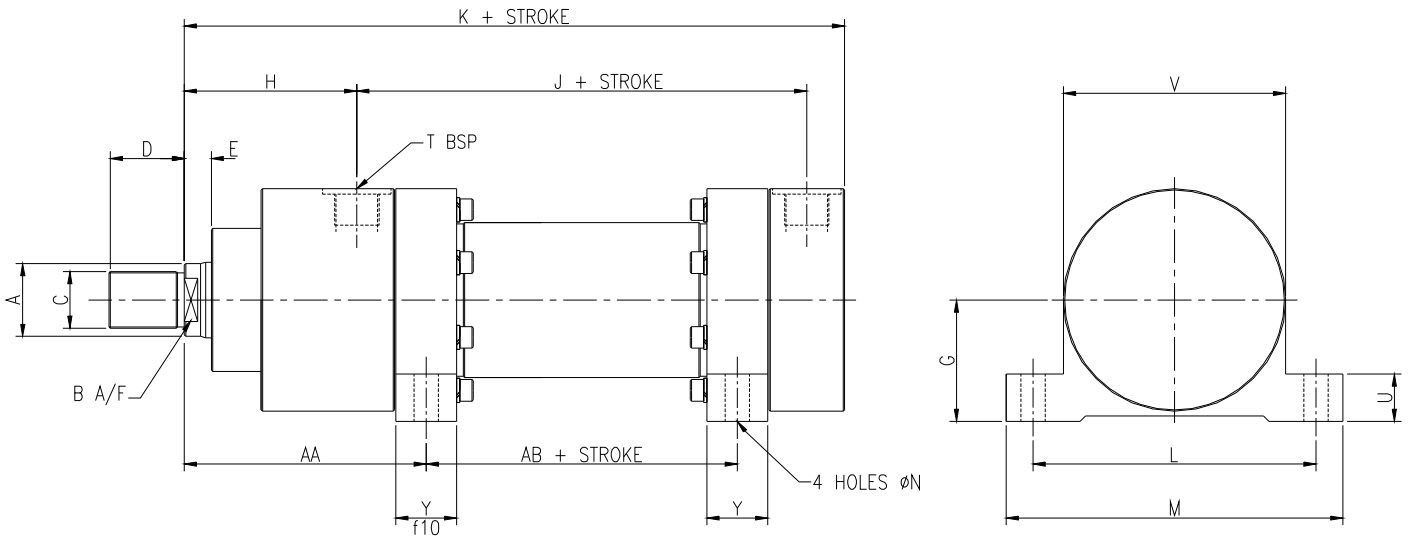
# ADF Style 6F – Front Trunnion Mounting ADF Style 6R – Rear Trunnion Mounting



Bore Dia	Rod Dia	B	C	D	E	H	J	K	N	P	R	S	T	V	X	YF	YR
40	22	18	M16 x 1.5 P	22	13	80	92	190	20	90	1	16	½"	86	86	112	140
	28	24	M20 x 1.5 P	28													
50	28	24	M20 x 1.5 P	28	14	88	98	205	25	105	1	20	½"	96	96	125	150
	36	30	M27 x 2 P	36													
63	36	30	M27 x 2 P	36	16	93	108	224	32	120	1	25	¾"	110	110	136	158
	45	38	M33 x 2 P	45													
80	45	38	M33 x 2 P	45	18	108	118	250	40	135	2	32	¾"	130	130	156	178
	56	48	M42 x 2 P	56													
*100	56	48	M42 x 2 P	56	35	128	144	300	50	160	2	40	1"	163	163	188	212
	70	60	M48 x 2 P	63													
125	70	60	M48 x 2 P	63	24	138	160	325	63	195	2	50	1"	190	190	202	234
	90	80	M64 x 3 P	85													
*160	90	80	M64 x 3 P	85	25	146	189	370	80	240	3	63	1¼"	256	256	228	255
	110	95	M80 x 3 P	95													
200	110	95	M80 x 3 P	95	30	173	242	450	100	295	3	80	1¼"	290	290	268	322
	140	125	M100 x 3 P	112													
250	140	125	M100 x 3 P	112	35	235	270	550	125	370	3	100	1½"	360	360	348	392
	180	165	M125 x 4 P	125													
320	180	165	M125 x 4 P	125	37	250	371	660	160	470	4	125	1½"	450	450	385	486
	220	200	M160 x 4 P	160													

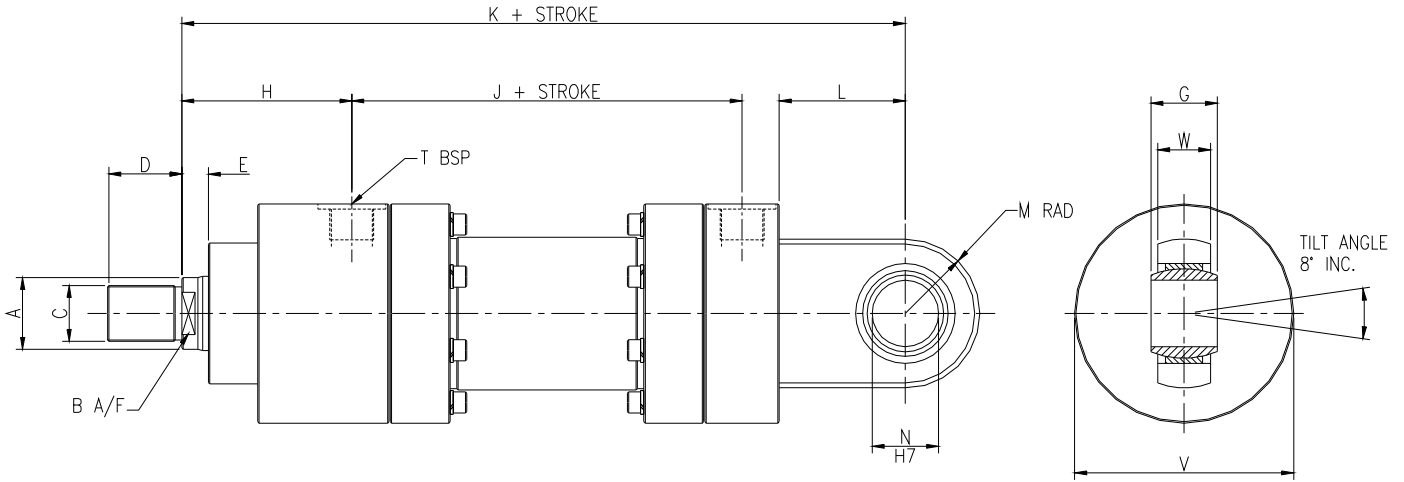
\*Additional Flats On Rear Or Front Cover For Trunnion Flats

# ADF Style 7 Foot Mounting



Bore Dia	Rod Dia	B	C	D	E	G	H	J	K	L	M	N	T	U	V	Y	AA	AB
40	22	18	M16 x 1.5 P	22	13	45	80	92	190	120	150	11	½"	20	86	25	111	30
	28	24	M20 x 1.5 P	28														
50	28	24	M20 x 1.5 P	28	14	53	88	98	205	130	160	11	½"	25	96	30	122	30
	36	30	M27 x 2 P	36														
63	36	30	M27 x 2 P	36	16	60	93	108	224	160	190	14	¾"	25	110	35	134	26
	45	38	M33 x 2 P	45														
80	45	38	M33 x 2 P	45	18	70	108	118	250	190	230	18	¾"	30	130	40	151	31
	56	48	M42 x 2 P	56														
100	56	48	M42 x 2 P	56	35	90	128	144	300	210	250	18	1"	35	163	45	179	43
	70	60	M48 x 2 P	63														
125	70	60	M48 x 2 P	63	24	105	138	160	325	260	320	22	1"	40	190	50	192	52
	90	80	M64 x 3 P	85														
160	90	80	M64 x 3 P	85	25	142	146	189	370	320	400	30	1¼"	45	256	55	211	61
	110	95	M80 x 3 P	95														
200	110	95	M80 x 3 P	95	30	170	173	242	450	400	500	36	1¼"	50	290	60	240	109
	140	125	M100 x 3 P	112														
250	140	125	M100 x 3 P	112	35	195	235	270	550	480	570	45	1½"	60	360	70	310	119
	180	165	M125 x 4 P	125														
320	180	165	M125 x 4 P	125	37	245	250	371	660	580	680	52	1½"	70	450	80	330	210
	220	200	M160 x 4 P	160														

# ADF Style 8 Rear Eye Mounting - Spherical



Bore Dia	Rod Dia	B	C	D	E	G	H	J	K	L	M	N	T	V	W
40	22	18	M16 x 1.5 P	22	13	20	80	92	231	41	25	20	½"	86	17
	28	24	M20 x 1.5 P	28											
50	28	24	M20 x 1.5 P	28	14	25	88	98	257	52	30	25	½"	96	21
	36	30	M27 x 2 P	36											
63	36	30	M27 x 2 P	36	16	32	93	108	289	65	40	32	¾"	110	27
	45	38	M33 x 2 P	45											
80	45	38	M33 x 2 P	45	18	40	108	118	332	82	47	40	¾"	130	32
	56	48	M42 x 2 P	56											
100	56	48	M42 x 2 P	56	35	50	128	144	395	95	58	50	1"	163	40
	70	60	M48 x 2 P	63											
125	70	60	M48 x 2 P	63	24	63	138	160	428	103	71	63	1"	190	52
	90	80	M64 x 3 P	85											
160	90	80	M64 x 3 P	85	25	80	146	189	505	135	90	80	1¼"	256	66
	110	95	M80 x 3 P	95											
200	110	95	M80 x 3 P	95	30	100	173	242	615	165	110	100	1¼"	290	84
	140	125	M100 x 3 P	112											
250	140	125	M100 x 3 P	112	35	125	235	270	773	223	160	125	1½"	360	115
	180	165	M125 x 4 P	125											
320	180	165	M125 x 4 P	125	37	160	250	371	930	270	200	160	1½"	450	145
	220	200	M160 x 4 P	160											