

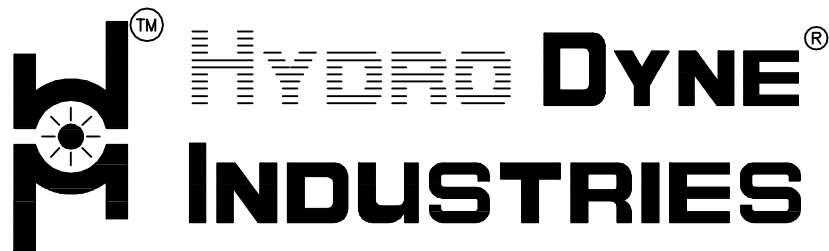
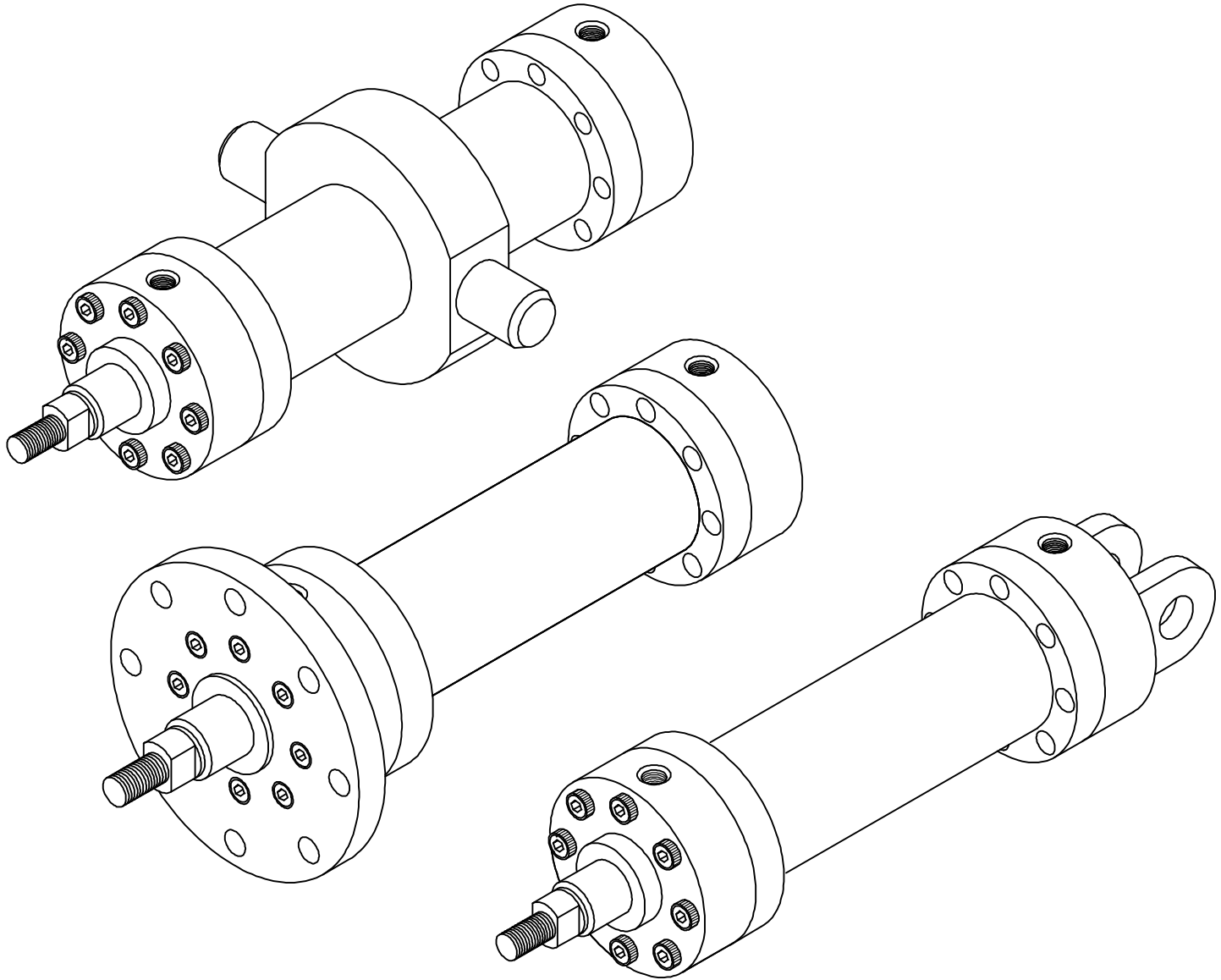
Hydraulic Cylinders

MD Series as per ISO-6022

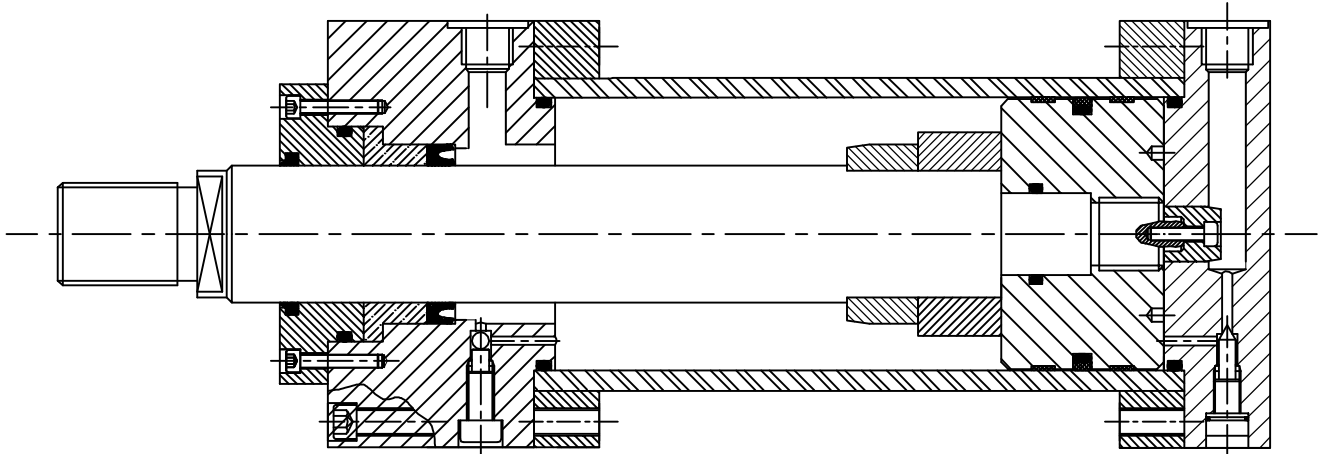
Working Pressure upto 250 bars



Mill duty high pressure welded Flange Construction



Total Fluidpower Performance
An ISO 9001:2015 certified co.



Hydrodyne WCF series WELDED FLANGE CYLINDERS are designed for service in steel mills and in other applications where a rugged, dependable cylinders is required. In addition to the standard cylinders featured in this catalogue, WCF cylinders can be designed and manufactured to suit individual customer requirements. Our engineers will be pleased to discuss and advise on unique design to suit specific application.

THE HDI GLAND COVER

Rod Gland Cover can be externally removed without dismantling of the cylinder.

Gland Cover seals consists of :

Secondary seal – Hydro dyne wiper seal performs a double service by wiping clean any oil film adhering to the rod on the advance stroke, and cleaning the dirt off the rod on return stroke.

THE PISTON ROD

Piston rod are made from high tensile , medium carbon steel ground and hard chrome plated to thickness of 25 microns and surface finish to 0.5um or better in special case (with prior acceptance) the rod are induction hardened for long life dent resistance surface .

THE HEAD AND CAP END FLANGE

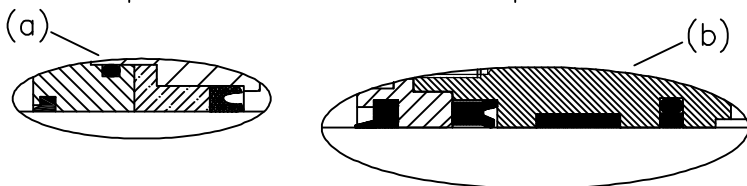
The head and cap end flange is attached to the cylinder body flange with high tensile and hardened bolts/studs.

ROD BEARING

Made from gun metal or cast iron for high resistance, the bearing is located inboard of the seal assuring lubrication from within the cylinder. The surface and spread of the long bearing give a reduced bearing stress, increasing both cylinder and seal life.

ROD SEAL

They are located in screw or bolted housing, and comprise a polyurethane 'U' seal which provides efficient retention of pressurised fluid.



AIR BLEED

Air bleed screw are provided at both the ends to exhaust the entrapped air to ensure jerk free movements of the piston rod.

CUSHIONING

The needle valve and check valve flush with rod end and cap end. Needle valve provide fine cushioning adjustment and the ball check valve allows fast and full force for the return stroke of the piston.

THE CYLINDER BODY

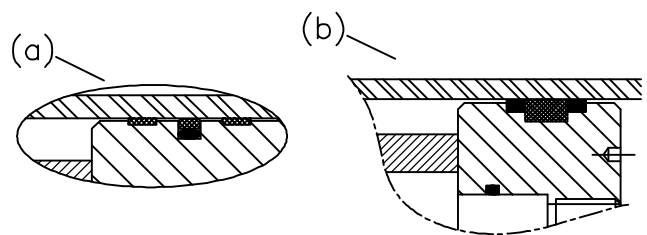
The cylinder body is made from heavy wall seamless pipe, micro honed to a surface finish of 0.5 microns or better. The pipe is welded with flanges at both ends for attaching the rod end and cap end with the cylinder body. The welding is done prior to honing of the pipe bore to avoid distortion in the pipe.

THE HEAD AND CAP END

The head and cap end is machined from cold rolled steel and located into the cylinders body's internal diameter for added strength and alignment. both the head and cap are sealed by 'O' rings which are turn protected by anti-extrusion rings.

THE PISTON AND PISTON SEAL

The piston is of one piece construction manufactured from fine grain cast iron or steel. The use of heavy duty wear rings prevents metal contact with the cylinder bore. The wear ring are made from BFT. The piston seal consists of a bronze filled PTFE outer ring which is preloaded by a rubber inner ring and give extrusion free. The wear ring also protect the piston seals from contaminations.

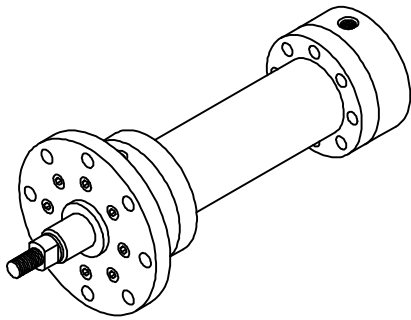


MD SERIES HIGH PRESSURE WELDED FLANGE TYPE HYDRAULIC CYLINDER

SPECIFICATIONS

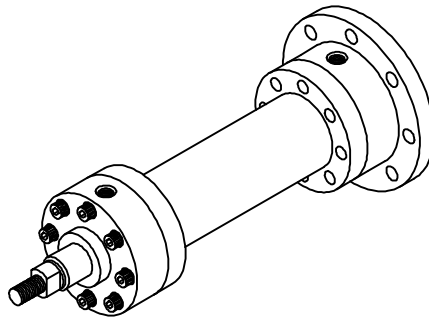
1. MAX. OPERATING PRESSURE --> 250 BAR
2. TEMPERATURE --> -20°C to +80°C with standard nitrile/polyurethane seals.
Higher temperature with viton/teflon seals.
3. MEDIUM --> Mineral oil
Cylinders to operate with water based fluids available on request.

Front Flange Mounting
HDI Model FF



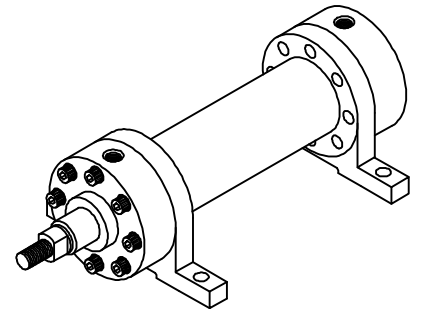
FF

Rear Flange Mounting
HDI Model FR



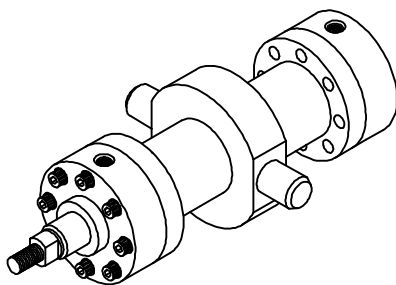
FR

Foot Lug Mounting
HDI Model LE



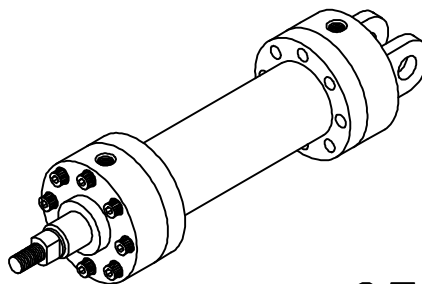
LE

Intermediate Trunnion Mounting
HDI Model UM



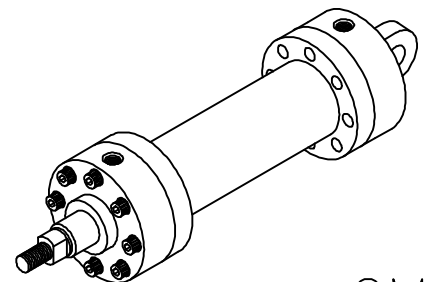
UM

Female Clevis Mounting
HDI Model CF



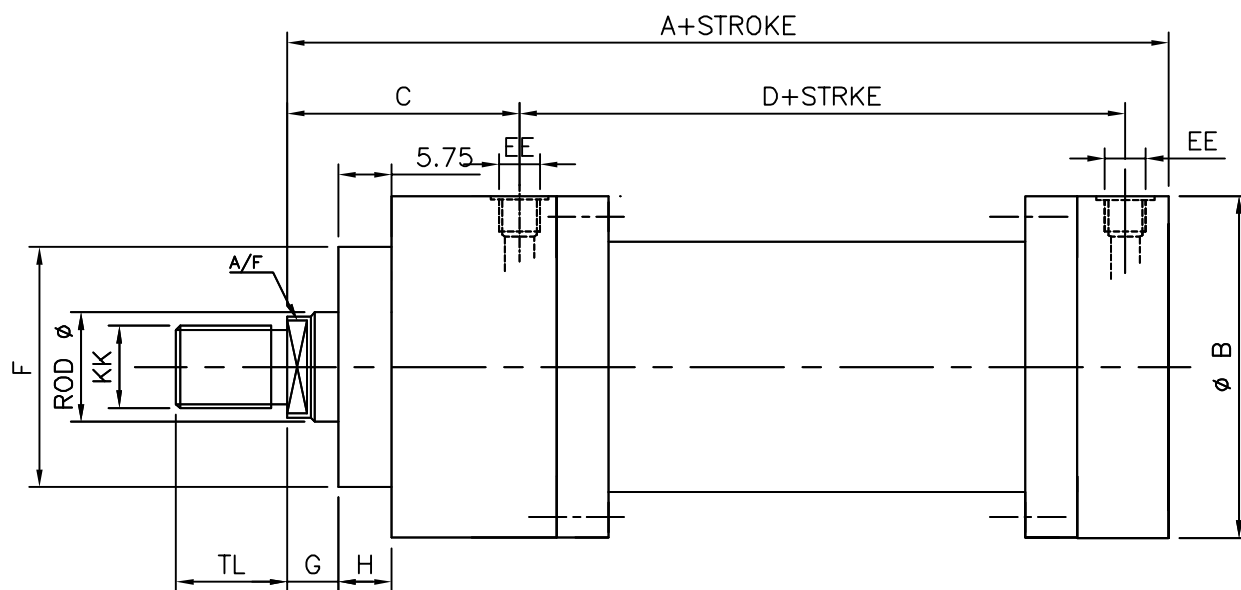
CF

Male Clevis Mounting
HDI Model CM



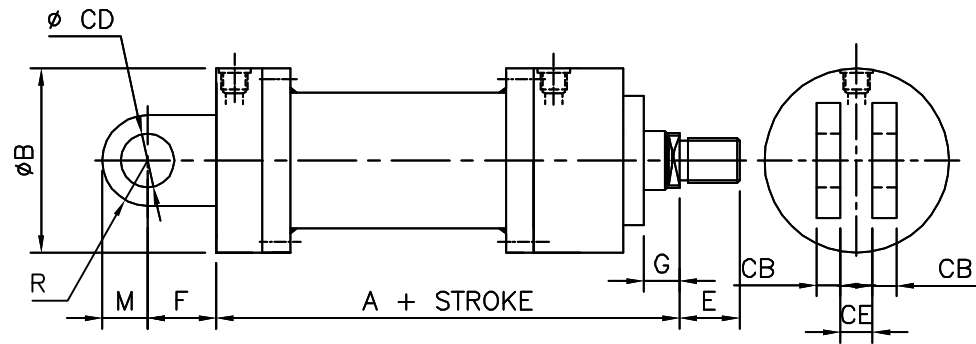
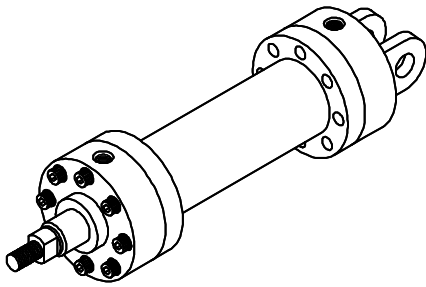
CM

MD FLANGE TYPE MILL DUTY CYLINDER (MD)
BASIC CYLINDER DIMENSION

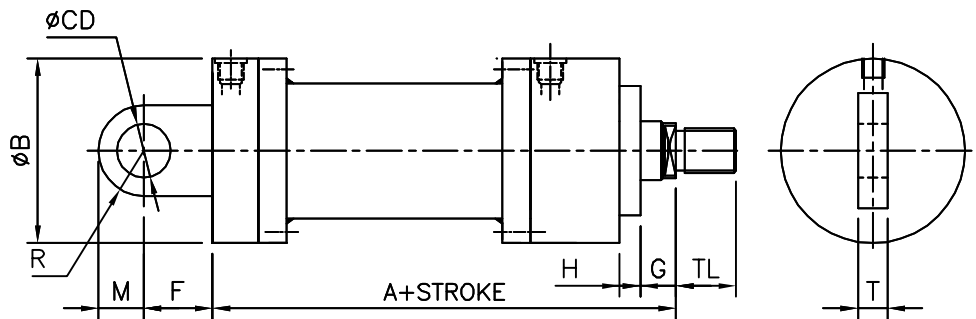
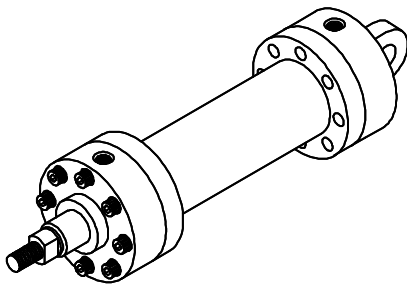


BORE	STANDARD	ROD ϕ	A	ϕB	C	D	EE.BSP	F	A/F	G	H	KK	TL
40.0	STD 1	25	229	88	83	120	1/2"	52	19	18	29	M20x1.5	28
	STD 2	28							22				
50.0	STD 1	32	244	102	98	120	1/2"	63	27	18	29	M27x2	36
	STD 2	36							30				
63.0	STD 1	40	274	120	112	133	3/4"	75	32	21	32	M33x2	45
	STD 2	45							36				
80.0	STD 1	50	305	145	120	155	3/4"	90	41	24	36	M42x2	56
	STD 2	56							46				
100.0	STD 1	63	340	170	134	171	1"	110	50	27	41	M48x2	63
	STD 2	70							60				
125.0	STD 1	80	396	206	153	205	1"	132	65	31	45	M64x3	85
	STD 2	90							75				
160.0	STD 1	100	467	265	185	235	1 1/4"	160	85	35	50	M80x3	95
	STD 2	110							95				
200.0	STD 1	125	550	306	220	278	1 1/4"	200	110	40	61	M100x3	112
	STD 2	140							120				
250.0	STD 1	160	650	395	257	326	1 1/2"	250	140	42	71	M125x4	125
	STD 2	180							160				

Female Clevis Mounting
HDI Model CF



Male Clevis Mounting
HDI Model CM

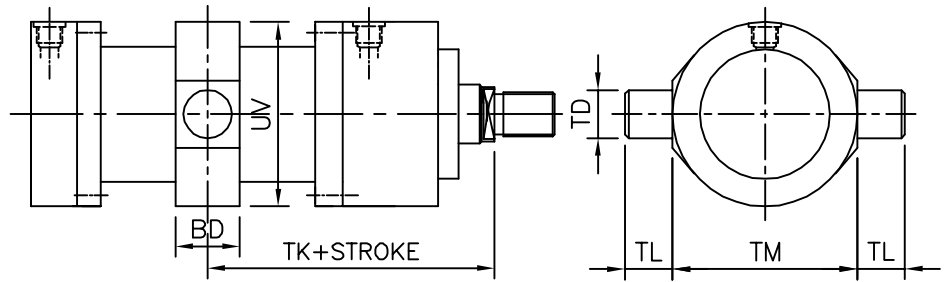
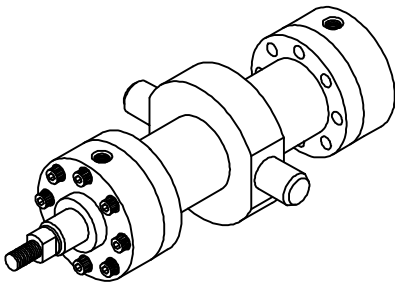


Dimensions—CM & CF

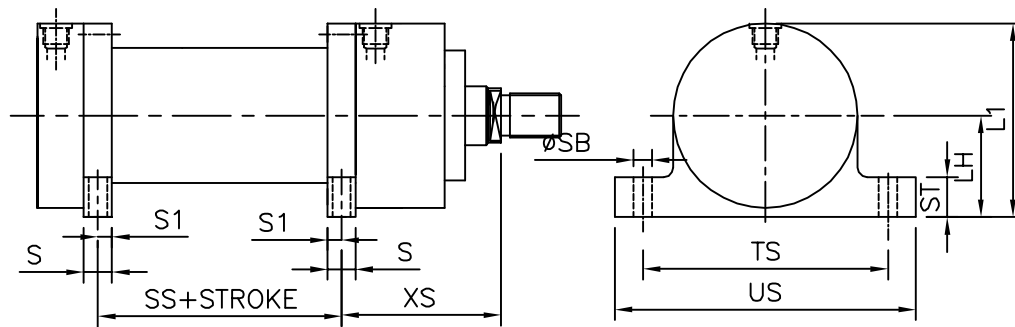
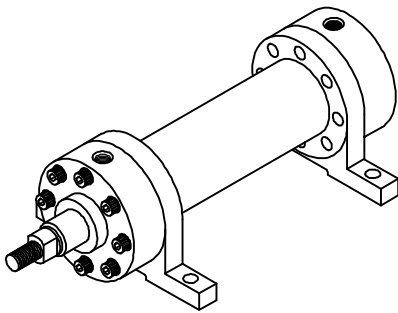
BORE	CF / CM						
	CB	CD	CE	F	M	R	T
40	12	25	26.5	53	32	32	25
50	14	32	33.5	61	40	40	32
63	18	40	42	74	50	50	40
80	20	50	52	90	63	63	50
100	25	63	65	102	71	71	63
125	32	80	82	124	90	90	80
160	40	100	102	150	112	112	100
200	50	125	127	206	145	145	125
250	63	160	162	253	178	178	160

All dimensions are in millimetres unless otherwise stated.

Intermediate Trunnion Mounting
HDI Model UM



Foot Lug Mounting
HDI Model LE



Dimensions—UM & LE

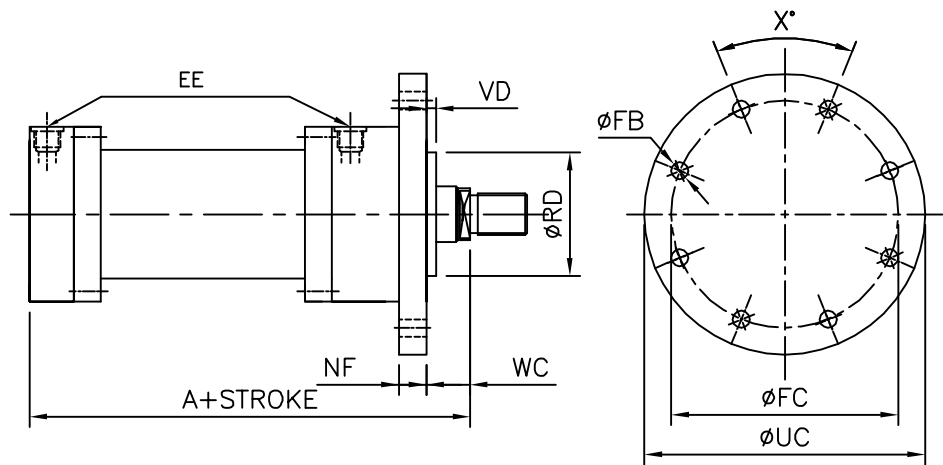
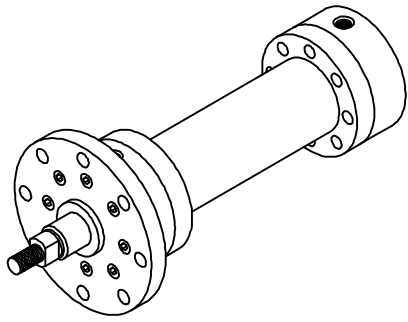
BORE	LE										UM					
	SS	XS	S	S1	US	TS	ST	øSB	LH	L1	TD	TL	TM	TK	BD	UV
ø40	50	118	30	15	135	110	32	11	45	89	25	20	95	140	38	88
ø50	45	135.5	35	17.5	155	130	37	11	55	106	32	25	112	151	38	102
ø63	49	154	40	20	180	150	42	13.5	65	125	40	32	125	167	48	120
ø80	52	171.5	50	25	220	180	47	17.5	75	147.5	50	40	150	180.5	58	150
ø100	61	189	60	30	255	210	57	22	90	175	63	50	180	195	78	175
ø125	75	218	70	35	305	255	67	26	105	208	80	63	224	225	98	220
ø160	65	270	105	52.5	400	330	77	33	135	267.5	100	80	280	251.5	128	270
ø200	73	322.5	125	62.5	465	385	97	40	160	313	125	100	335	277	178	320
ø250	75	382.5	155	77.5	600	500	112	52	205	402.5	160	125	425	315	180	410

All dimensions are in millimetres unless otherwise stated.

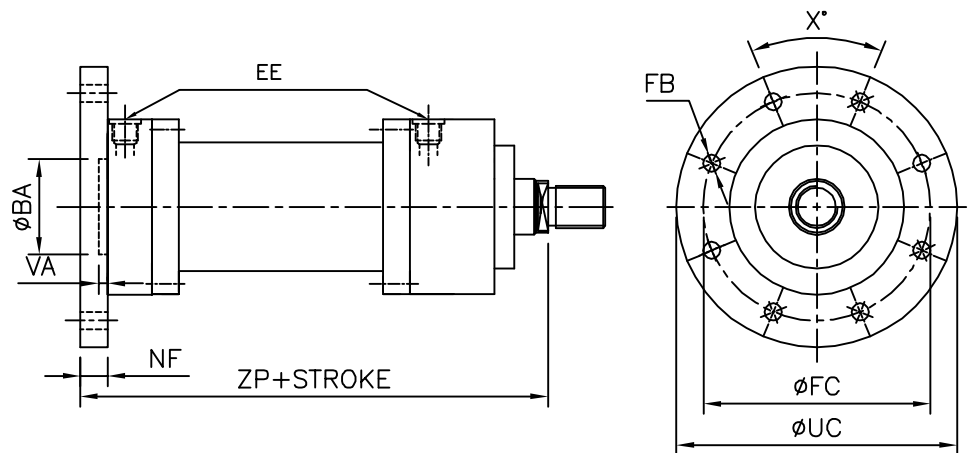
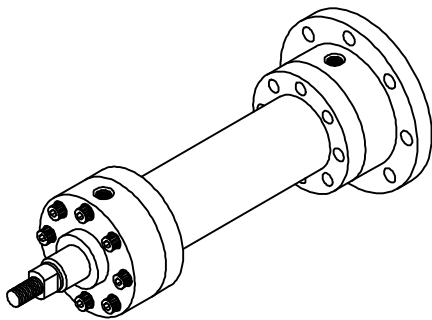
Flange Mounting

MD SERIES

Front Flange Mounting
HDI Model FF



Rear Flange Mounting
HDI Model FR



Dimensions—FF & FR

BORE	FF / FR									
	RD	WC	VD	VA	ZP	NF	øFB	øFC	øUC	X
ø40	52	22	4	5	250	25	11	115	138	45°
ø50	63	22	4	4	265	25	13.5	132	155	45°
ø63	75	25	4	4	298	28	13.5	150	175	45°
ø80	90	28	4	5	332	32	17.5	180	210	45°
ø100	110	32	5	5	371	36	22	212	250	45°
ø125	132	36	5	6	430	40	22	250	290	45°
ø160	160	40	5	7	505	45	26	315	360	45°
ø200	200	45	5	10	596	56	33	385	440	45°
ø250	250	50	8	10	703	63	39	475	555	45°

All dimensions are in millimetres unless otherwise stated.

MODEL NUMBER

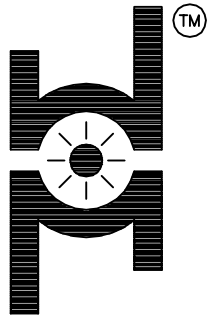
Each HDI Series MD Cylinder is assigned a model number. Consisting of coded symbols, the model number can be used by customers, sales representatives & factory personnel as a complete & accurate description of the cylinder.

symbols that represents the cylinder features you wants, & put them down in sequence indicated by the example below. This example make use all of the 6 diff model number symbols group, although many model numbers will not require all, as in case where cushioning is not required, or where a double rod cylinder is not required, or where there are no special modifications, etc.

To develop a model number for a HDI cylinder, select those

Feature	Description	Page	Symbol	Example
				HDI CYL : 50.0 - * -SR - UM - MD - 10 - R - C - 32 - S
Specification	Hydrodyne Industries cylinder	—	HDI CYL	
Bore	Specify in mm	—	—	
Cushioned-Head	non cushioned		*	
ROD	Use if single rod cylinder Use if double rod cylinder	4	SR DR	
Mounting Style	Front Flange	5	FF	
	Rear Flange	5	FR	
	Foot Lug	6	LE	
	Intermediate Trunnion	6	UM	
	Male Clevis	7	CM	
	Female Clevis	7	CF	
Series	Used in all MD Model nos.		MD	
Piston Rod No	. Number as shown "Rod End Dimensions" STD1: 10 STD2: 20	4	10 20	
Ports	BSP (parallel thread) Flange Ports Metric		R P M	
Cushion-Cap	Used only if cushion required		C	
Stroke	Specify in mm		—	
Special Features	*Air Bleeds *Over Size Ports *Rod End Bellows *Special Seals *Stop Tube *Stroke Adjuster *Tie Rod Supports *Rod end accesories		S	





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