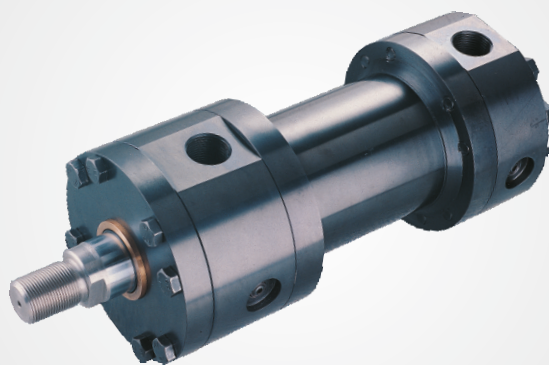


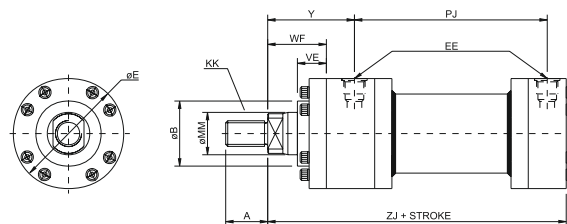


**HR
SERIES
(ISO 6020
Part I)**

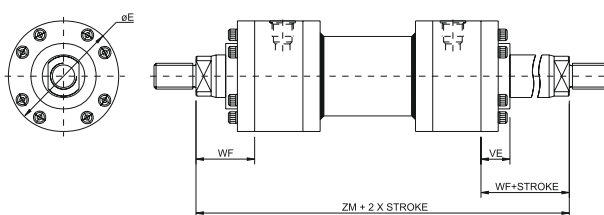
160 BAR, MEDIUM SERIES - HR (ISO 6020)

BASIC DIMENSIONS

Bore	Rod ØMM	KK	A	EE	VE	WF	ØB	ZJ	ØE	Y	PJ	ZM
40	22	M16 X 1.5	22	1/2"	19	32	50	190	76	71	97	239
	28	M20 X 1.5	28									
50	28	M20 X 1.5	28	1/2"	24	38	60	205	94	72	111	270
	36	M27 X 2	36									
63	36	M27 X 2	36	3/4"	29	45	70	224	114	82	117	292
	45	M33 X 2	45									
80	45	M33 X 2	45	3/4"	36	54	85	250	132	91	134	325
	56	M42 X 2	56									
100	56	M42 X 2	56	1"	37	57	106	300	160	108	162	395
	70	M48 X 2	63									
125	70	M48 X 2	63	1"	37	60	132	325	198	121	174	425
	90	M64 X 2	85									
160	90	M64 X 2	85	1 1/4"	41	66	160	370	240	143	191	482
	110	M80 X 3	95									
200	110	M80 X 3	95	1 1/4"	45	75	200	450	296	190	224	619
	140	M100 X 3	112									
250	140	M100 X 3	112	1 1/2"	64	96	250	550	336	205	290	720
	180	M125 X 4	125									
320	180	M125 X 4	125	1 1/2"	71	108	320	660	454	250	358	852
	220	M160 X 4	160									

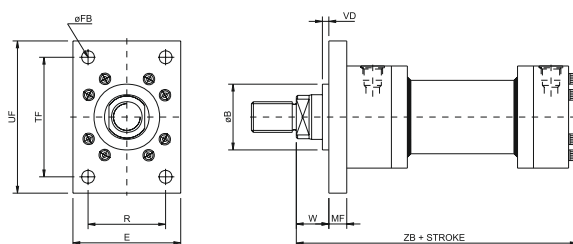


SINGLE ROD END

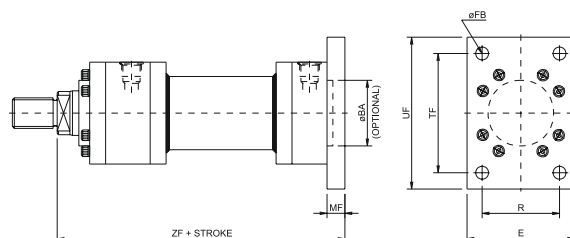


DOUBLE ROD END (NON ISO)

Bore	W	TF Js 13	FB	R Js13	MF	ZB MAX	ZF	ØB/ ØBA	E	UF	VD
40	16	98.0	9.0	40.6	16	198	206	50	77	118	3
50	18	116.4	11.0	48.2	20	213	225	60	95	140	4
63	20	134.0	13.5	55.5	25	234	249	70	115	160	4
80	22	152.5	17.5	63.1	32	260	282	85	133	186	4
100	25	184.8	22.0	76.5	32	310	332	106	161	224	5
125	28	217.1	22.0	90.2	32	355	357	132	200	258	5



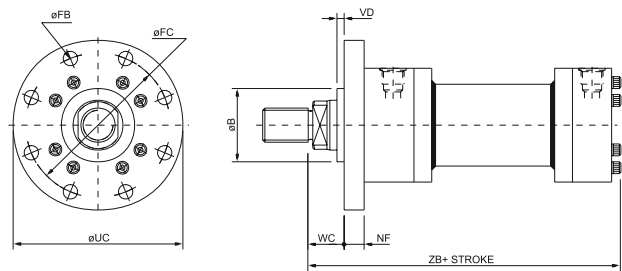
MF1 : HEAD END RECTANGULAR FLANGE MOUNTING



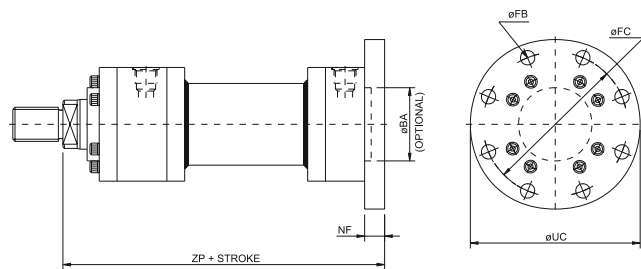
MF2 : CAP END RECTANGULAR FLANGE MOUNTING

All Unspecified Dimensions are in MM

Bore	VD MIN	WC	FB	FC Js13	NF	ØB/ ØBA	ØUC	ZP	ZB MAX
40	3	16	8 X Ø 9	106	16	50	125	206	198
50	4	18	8 X Ø 11	126	20	60	150	225	213
63	4	20	8 X Ø 13.5	145	25	70	175	249	234
80	4	22	8 X Ø 17.5	165	32	85	200	282	260
100	5	25	8 X Ø 22	200	32	106	245	332	310
125	5	28	8 X Ø 22	235	32	132	280	357	335
160	5	30	8 X Ø 22	280	36	160	330	406	380
200	5	35	8 X Ø 26	340	40	200	390	490	480
250	8	40	8 X Ø 33	420	56	250	480	606	580
320	8	45	8 X Ø 39	520	63	320	590	723	710

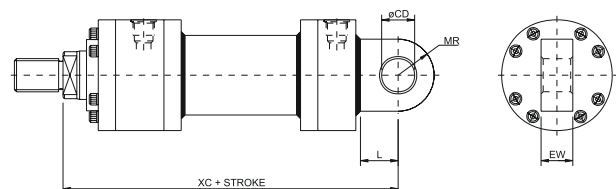


MF3 : HEAD END CIRCULAR FLANGE MOUNTING

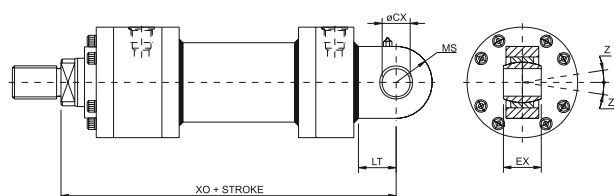


MF4 : CAP END CIRCULAR FLANGE MOUNTING

Bore	CD H9	CX H7	EX/EW h12	L/LT MIN	MR/MS MAX	XC/ XO	Tilting Angle Z
40	20	20	20	25	25	231	40°
50	25	25	25	32	32	257	
63	32	32	32	40	40	289	
80	40	40	40	50	50	332	
100	50	50	50	63	63	395	
125	63	63	63	71	71	428	
160	80	80	80	90	90	505	
200	100	100	100	112	112	615	
250	125	125	125	160	160	773	40°
320	160	160	160	200	200	930	



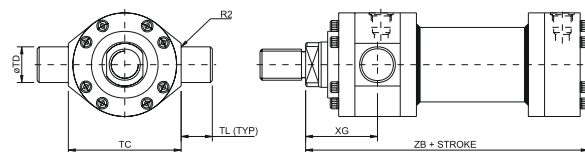
MP3 : CAP FIXED EYE MOUNTING



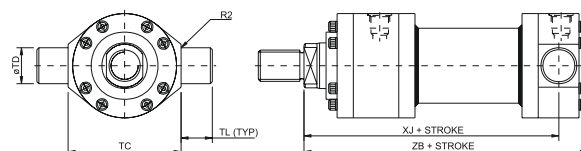
MP5 : CAP FIXED EYE WITH
SPHERICAL PLAIN BEARING MOUNTING

All Unspecified Dimensions are in MM

Bore	TD f8	TL J16	TC h12	XG	XJ	ZB MAX
40	20	16	90	57	174	198
50	25	20	105	68	189	213
63	30	25	120	77	204	234
80	35	32	135	85	233	260
100	40	40	160	101	278	310
125	50	50	195	105	310	335
160	60	63	240	119	353	380
200	75	80	295	152	443	480
250	95	100	370	173	536	580
320	120	125	470	190	664	710

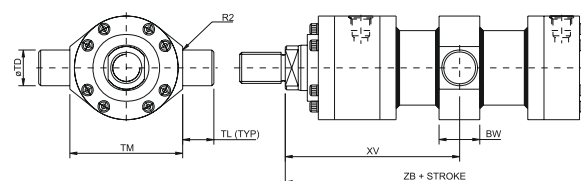


MT1 : HEAD END TRUNNION MOUNTING



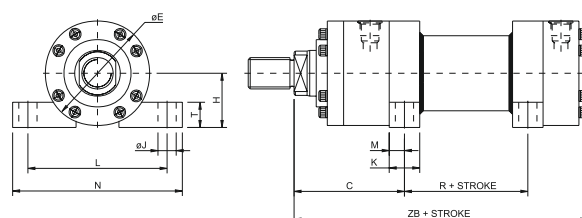
MT2 : CAP END TRUNNION MOUNTING

Bore	TD f8	TL h16	TM h12	XV		BW	ZB MAX	STROKE MIN
				MIN	MAX+			
40	20	16	90	134	106	25	198	28
50	25	20	105	152	118	30	213	34
63	30	25	120	171	120	37	234	51
80	35	32	135	188	137	45	260	51
100	40	40	160	230	165	60	310	65
125	50	50	195	252	174	73	335	78
160	60	63	240	292	190	90	380	102
200	75	80	295	366	252	115	480	114
250	95	100	370	430	290	140	580	140
320	120	125	470	500	355	175	710	145



MT4 : INTERMEDIATE TRUNNION MOUNTING

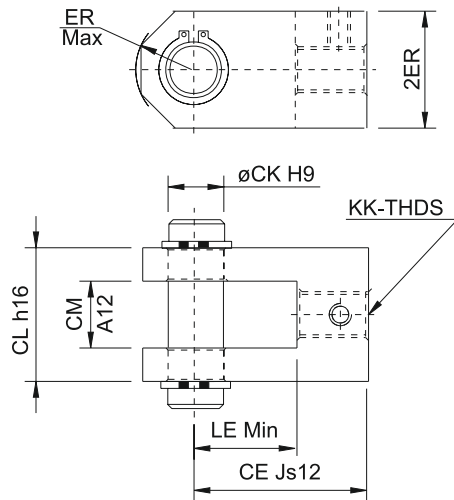
Bore	H	T	J	L	N	M	K	ØE	C	R	ZB MAX
40	40	20	11	96	116	12.5	25	76	93.5	52	198
50	49	25	14	120	146	15	30	94	112.0	46	213
63	60	30	18	148	184	20	40	114	128.0	36	234
80	68	35	18	166	204	20	40	132	135.0	55	260
100	83	40	26	204	248	30	60	160	175.0	45	310
125	103	50	26	246	290	30	60	198	180.0	65	335
160	124	60	33	298	356	37.5	75	240	209.5	63	380
200	152	75	39	632	432	45	90	296	274.0	71	480
250	190	95	52	458	558	50	100	366	300.0	120	580
320	235	120	62	562	680	60	120	454	332.0	188	710



MS2 : SIDE LUG MOUNTING
(NON-ISO MOUNTING)

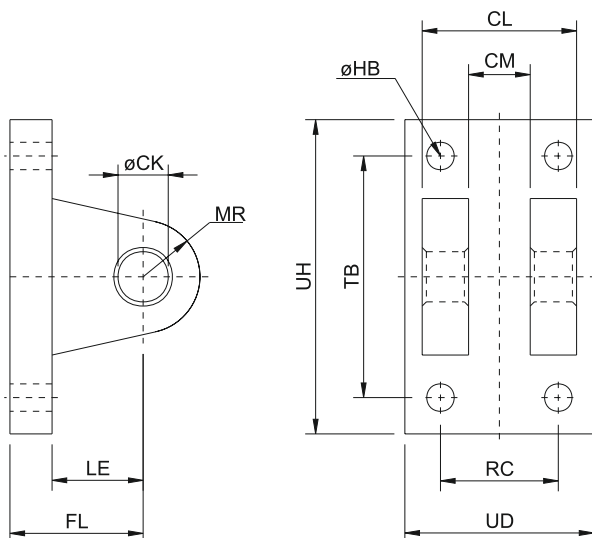
All Unspecified Dimensions are in MM

160 BAR SERIES-HR



TYPE	FORCE NEWTONS	KK-THDS	CL	CE	CK	C,	LE	ER
20	20,000	M16 X 1.5	45	52	20	20	27	25
25	32,000	M20 X 1.5	56	65	25	25	34	32
32	50,000	M27 X 2	70	80	32	32	42	40
40	80,000	M33 X 2	90	97	40	40	52	50
50	125,000	M42 X 2	110	120	50	50	64	63
63	200,000	M48 X 2	140	140	63	63	75	71
80	320,000	M64 X 3	170	180	80	80	94	90

ROD CLEVIS (WITH PIVOT PIN) (ISO : 8132-1986)

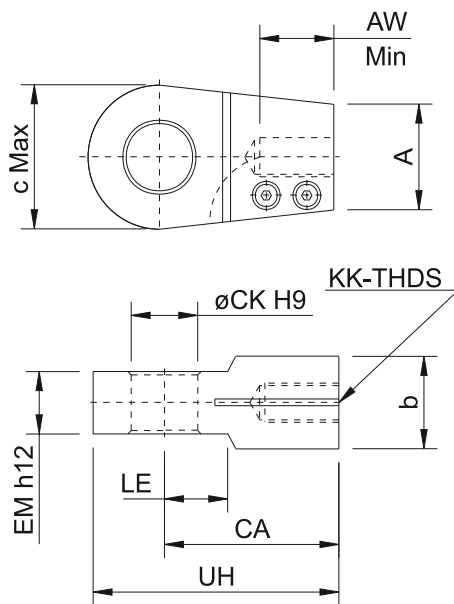


TYPE	NORMAL FORCE NEWTONS	CK H9	FL Js12	LE MIN	HB H13	MR MAX	CM A12	TB Js14	CL h16	RC Js14	UD MAX	UH MAX
20	20,000	20	45	30	11	20	20	75	45	32	58	98
25	32,000	25	55	37	13.5	25	25	85	56	40	70	113
32	50,000	32	65	43	17.5	32	32	110	70	50	85	143
40	80,000	40	76	52	22	40	40	130	90	65	108	170
50	125,000	50	95	65	26	50	50	170	110	80	130	220
63	200,000	63	112	75	33	63	63	210	140	100	160	280
80	320,000	80	140	95	39	80	80	250	170	125	210	320

CLEVIS BRACKET (ISO : 8132-1986)

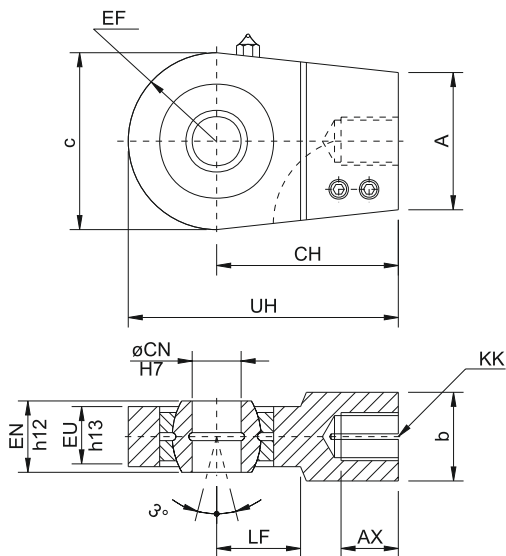
Note : These dimensions are valid for operation at 160 bar of cylinders with bore size of 40 mm (type 20) upto and including 160 mm (type 80); they are also valid for operation at 250 bar of cylinders with bore size of 50 mm (type 32) upto and including 125 mm (type 80).

All Unspecified Dimensions are in MM



ROD EYE
(ISO : 6981-1992)

TYPE	FORCE NEWTONS	KK-THDS	AW	CA	CK	EM	c	b	A	UH	LE
20	20,000	M16 X 1.5	23	52	20	20	50	25	48	77	22
25	32,000	M20 X 1.5	29	65	25	25	62	30	54	97	27
32	50,000	M27 X 2	37	80	32	32	76	38	66	120	32
40	80,000	M33 X 2	46	97	40	40	97	47	80	147	41
50	125,000	M42 X 2	57	120	50	50	118	58	96	183	50
63	200,000	M48 X 2	64	140	63	63	142	70	114	211	62
80	320,000	M64 X 3	86	180	80	80	180	90	148	270	78
100	500,000	M80 X 3	96	210	100	100	224	110	178	322	98
125	800,000	M100 X 3	113	260	125	125	290	135	200	420	120
160	1250,000	M125 X 4	126	310	160	160	346	165	250	510	150
200	2000,000	M160 X 4	161	390	200	200	460	215	320	640	195



ROD EYE WITH SPHERICAL BEARING
(ISO : 6982-1992)

TYPE	SOC.HD CAP SCREW	NORMAL FORCE NEWTONS	CN H7	KK	AX MIN	EN h12	CH	LF	b	A	EU	EF	c MAX	UH
20	M8	20,000	20	M16 X 1.5	23	20	52	22	25	48	17	25	50	77
25	M8	32,000	25	M20 X 1.5	29	25	65	27	30	54	21	32	62	97
32	M10	50,000	32	M27 X 2	37	32	80	32	38	66	27	40	76	120
40	M10	80,000	40	M33 X 2	46	40	97	41	47	80	32	50	97	147
50	M12	125,000	50	M42 X 2	57	50	120	50	58	96	40	63	118	183
63	M12	200,000	63	M48 X 2	64	63	140	62	70	114	52	71	142	211
80	M16	320,000	80	M64 X 3	86	80	180	78	90	148	66	90	180	270
100	M20	500,000	100	M80 X 3	96	100	210	98	110	178	84	112	224	322
125	M20	800,000	125	M100 X 3	113	125	260	120	135	200	102	160	290	420
160	M24	1250,000	160	M125 X 4	126	160	310	150	165	250	130	200	346	510
200	M30	2000,000	200	M160 X 4	161	200	390	195	215	320	162	250	460	640

All Unspecified Dimensions are in MM