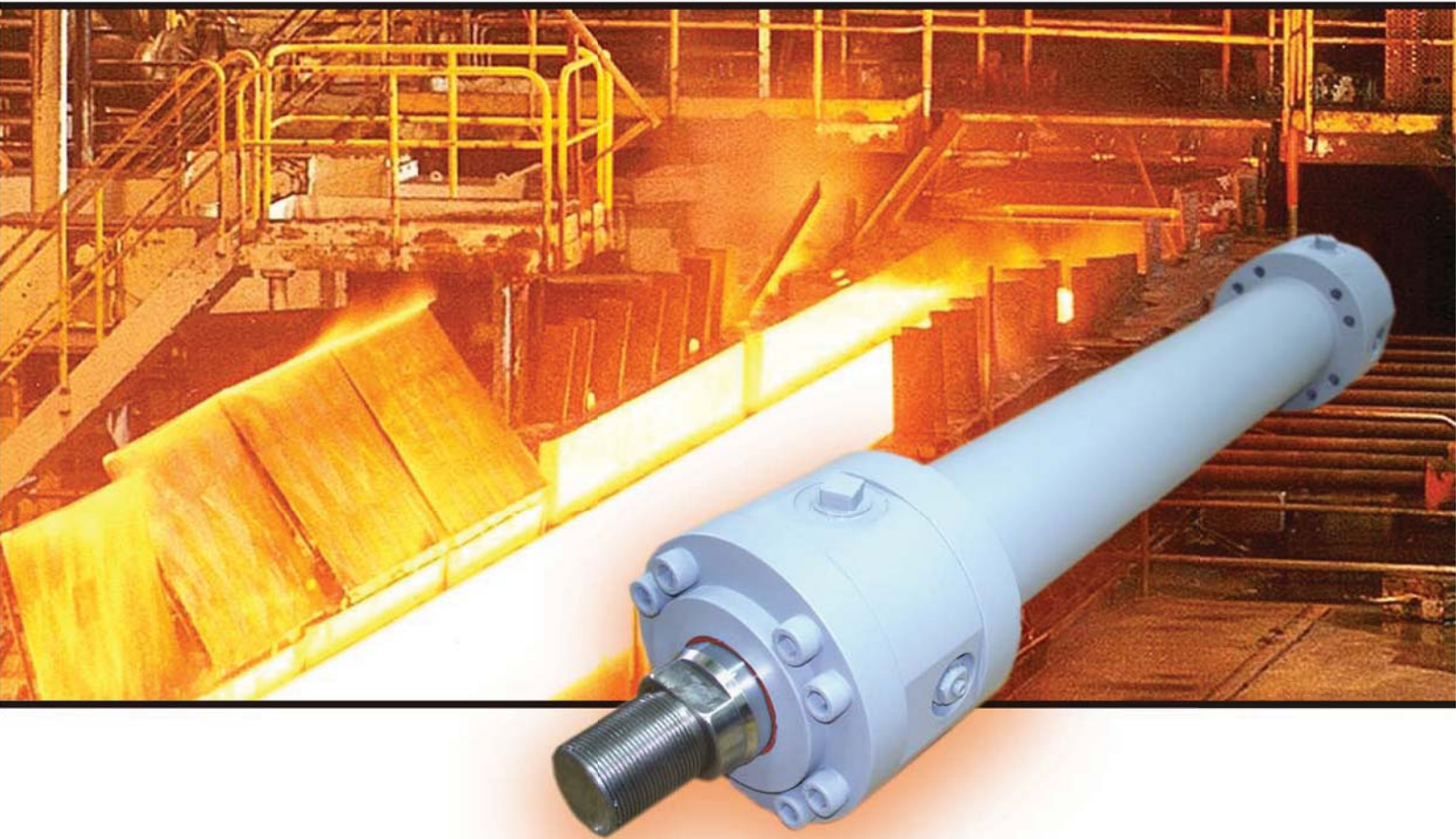


Hydraulic Cylinder Series SCM

DIN 24333 and ISO 6022

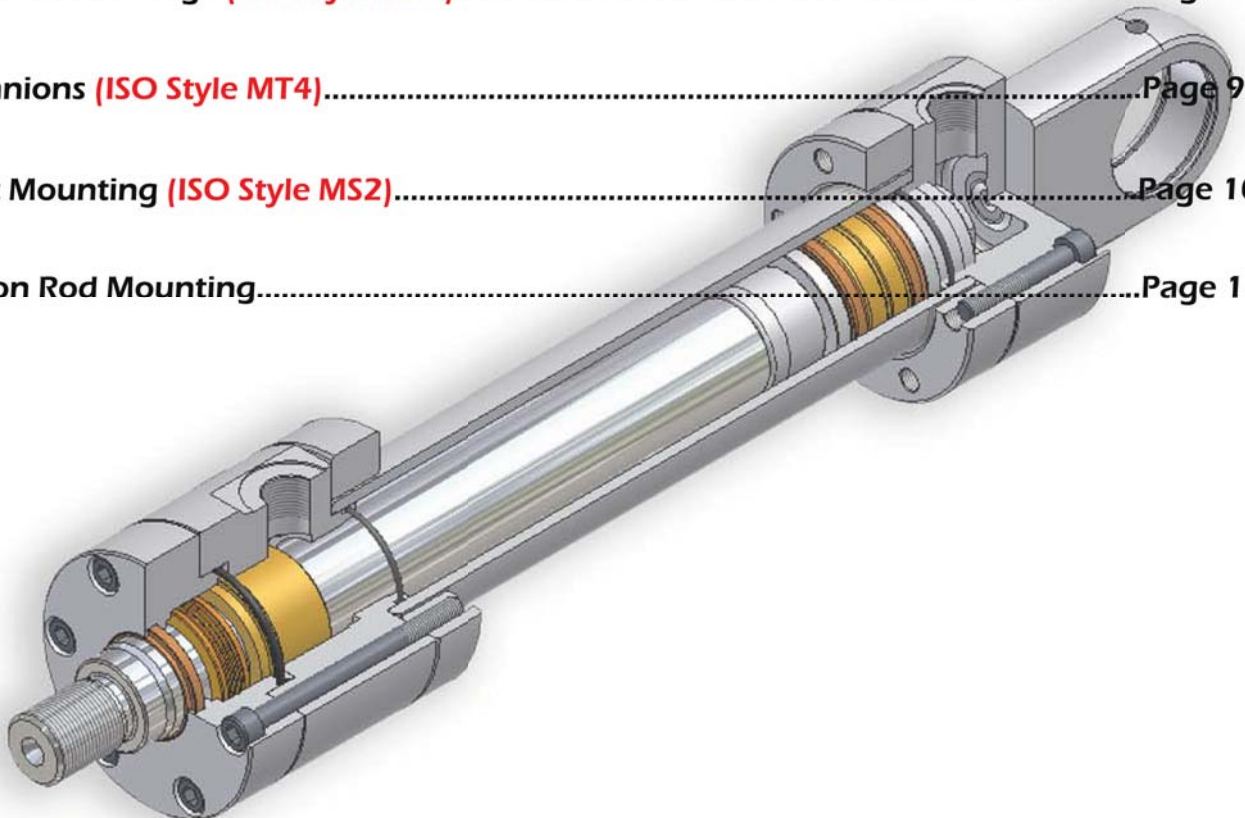
For Working Pressures Up to 250 bar



*High Quality Cylinders
for Heavy Duty Application*

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Hydraulic cylinder Series SCM

Technical data

Standards:

Installation dimensions of the cylinders and mounting styles meet the requirements of DIN 24333 and ISO 6022.

Nominal pressure: 250 bar

Static proof pressure: 375 bar

The specified operating pressures are only valid for applications with shock-free operation. If extreme loads occur, e.g. as happens in high sequence cycles, the fixings and Piston rod thread connections need to be designed for durability.

Pressure fluid temperature range:

Hydraulic oils HL, HLP: -30 °C to +100 °C

HFA, HFB fluids: +5 °C to +60 °C

HFC fluids: -30 °C to +60 °C

Water: +5 °C to +100 °C

HETG (rapeseed oil): -30 °C to +80 °C

HEES (synthetic ester): -30 °C to +80 °C

HEPG (glycol): -30 °C to +80 °C

Higher temperature on request

Viscosity range:

2.8 to 380 mm²/s

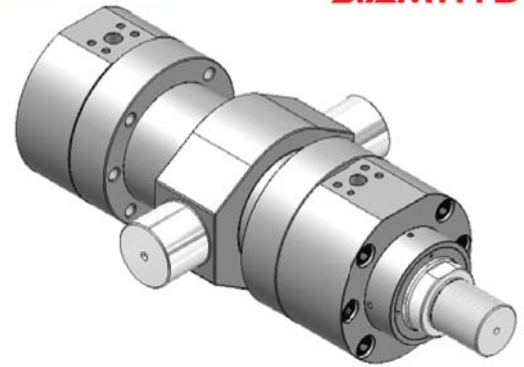
ISO cleanliness class

Maximum permissible degree of pressure fluid contamination is

to ISO 4406 (c) class 20/18/15.

Stroke velocity:

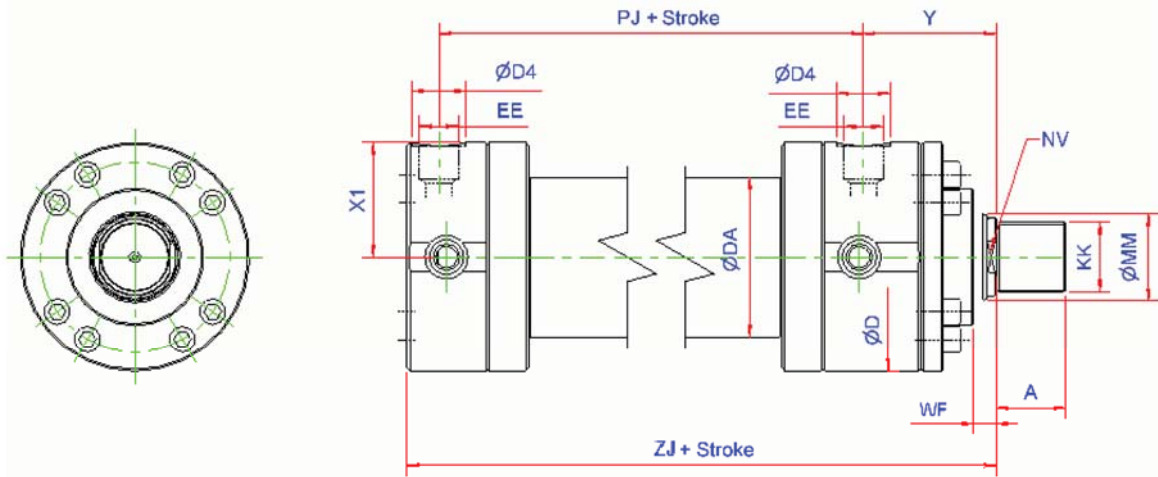
Up to 0.5 m/s (depending on the connection ports), higher stroke velocities on request



Piston Ø	Piston Rod Ø- mm.	Push Force 250 bar(kN)	Pull Force 250 bar(kN)	Piston Areas cm ²	Annulus Areas cm ²
40	25	31.4	19.12	12.56	7.65
	28		160		6.40
50	32	49.10	28.98	19.63	11.59
	36		23.65		9.45
63	40	77.90	46.52	31.17	18.61
	45		38.15		15.27
80	50	125.65	76.58	350.26	30.63
	56		64.10		25.63
100	63	196.35	118.42	78.54	47.38
	70		100.15		40.06
125	80	306.75	181.13	122.72	72.48
	90		147.70		59.10
140	90	384.75	225.70	153.94	90.32
	100		188.40		75.40
160	100	502.50	306.15	201.06	122.5
	110		264.85		106.00
180	110	636.17	398.52	254.47	159.43
	125		329.37		131.75
200	125	785.25	478.45	314.16	191.44
	140		400.35		160.20
220	140	950.3	565.5	380.1	226.2
	160		447.7		179.1
250	160	1227.2	724.5	499.8	289.8
	180		590.0		236.4
280	180	1539.4	903.2	615.7	361.3
	200		753.9		301.6
320	200	2010.6	1225.2	804.2	490.1
	220		1060.3		424.2



Series SCM Dimensions



Piston Ø	Piston Rod Ø- mm.	KK	A	NV	D	DA	D4	EE	Y	PJ	X1	WF	ZJ max
40	25	M20x1.5	28	19	88	50	34	G1/2	83	120	41	18	230
	28			22									
50	32	M27x2	36	27	102	60	34	G1/2	98	120	48.5	18	244
	36			30									
63	40	M33x2	45	32	120	78	42	G3/4	112	133	56.5	21	274
	45			36									
80	50	M42x2	56	41	145	95	42	G3/4	120	155	69.5	24	305
	56			46									
100	63	M48x2	63	50	170	125	47	G1	134	171	82	27	340
	70			60									
125	80	M64x3	85	65	206	150	47	G1	153	205	101	31	396
	90			75									
140	90	M72x3	90	75	226	170	58	G1 1/4	166	219	110	31	430
	100			85									
160	100	M80x3	95	85	265	190	58	G1 1/4	185	235	130	35	467
	110			95									
180	110	M90x3	105	95	292	210	58	G1 1/4	194	264	144	40	510
	125			110									
200	125	M100x3	112	110	306	235	58	G1 1/4	220	278	151	40	550
	140			120									
220	140	M125x4	125	120	355	270	65	G1 1/2	244	326	174	42	637
	160			140									
250	160	M125x4	125	140	395	305	65	G1 1/2	257	326	194	42	650
	180			160									
280	180	M160x4	160	160	4456	3473	65	G1 1/2	290	375	221	48	752
	200			180									
320	200	M160x4	160	180	490	394	65	G1 1/2	282	375	243	48	760
	220			200									



Cylinder SCM According to ISO 6022 DIN 24333 Standards
Ordering Code

SCM E 100 / 70 — 250 — MF4 — DC — V — SH 63

1 2 3 4 5 6 7 8 9

1 **Hydraulic Cylinder Mill type according to ISO 6022**

2 **Piston rod End**

 I = Internal thread

 E = External thread

3 **Piston Ø (in mm.)**

4 **Piston rod Ø (in mm.)**

5 **Stroke length (in mm.)**

6 **Cylinder Mounting**

 MP3 = Base Plain Clevis

 MP5 = Base Self-Aligning Clevis

 MF3 = Head Round Flange

 MF4 = Base Round Flange

 MT4 = Trunnions

 MS2 = Foot Mounting

7 **End position cushioning**

 EC = Cushion adjustable at rear

 FC = Cushion adjustable at front

 DC = Cushion adjustable both end

8 **Seal version**

 N = Standard

 V = High temperature

9 **Piston rod mounting**

 SH = Self aligning clevis ISO 6982



Mounting Type Overview

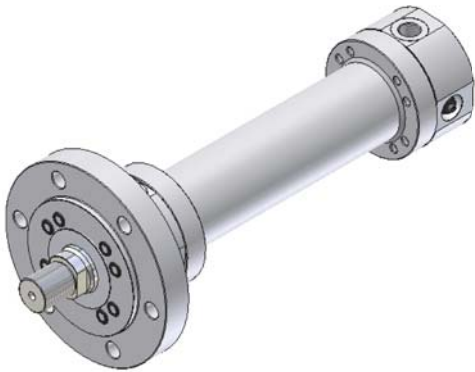
Base Plain Clevis
(ISO Style MP3)



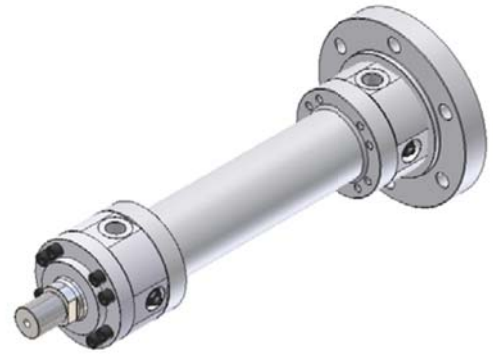
Base Self-Aligning Clevis
(ISO Style MP5)



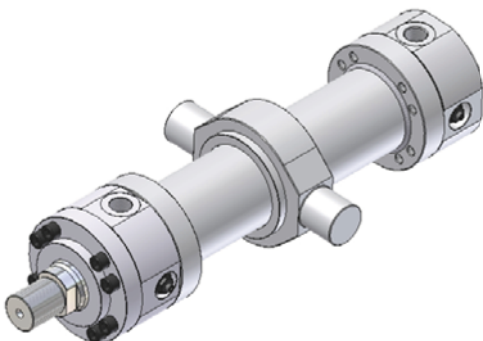
Head Round Flange
(ISO Style MF3)



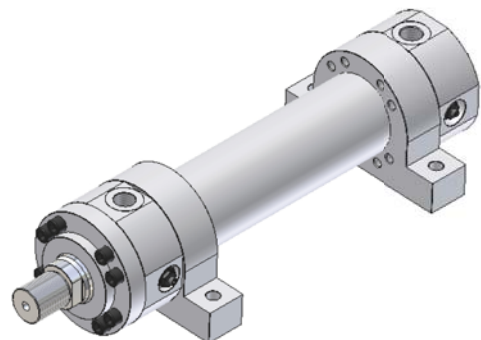
Base Round Flange
(ISO Style MF4)



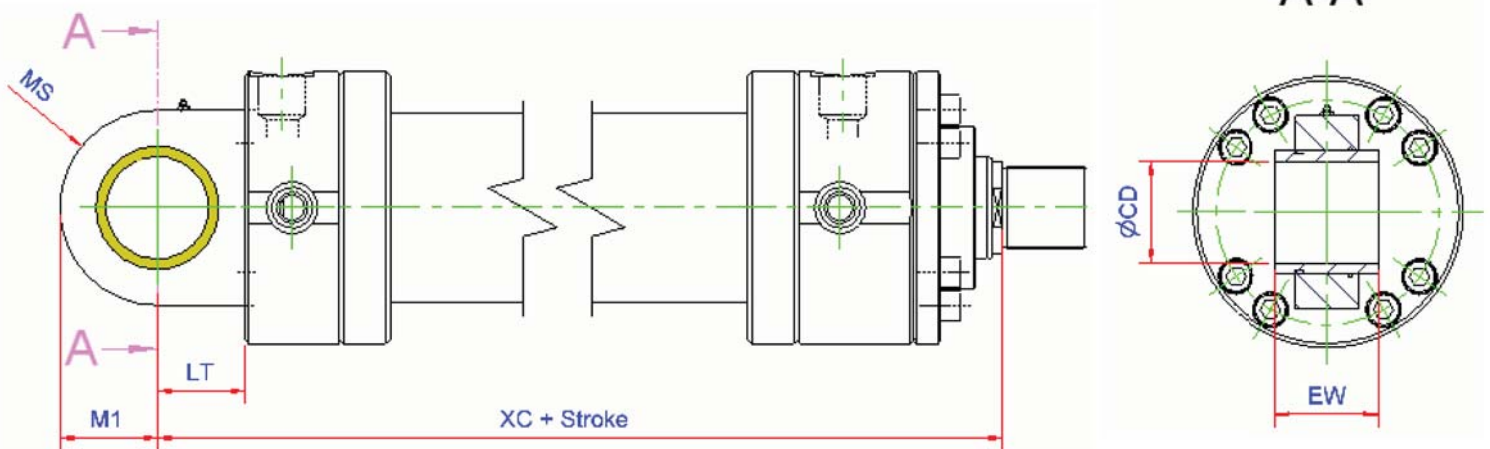
Trunnions
(ISO Style MT4)



Foot Mounting
(ISO Style MS2)



Base Plain Clevis (ISO Style MP3)

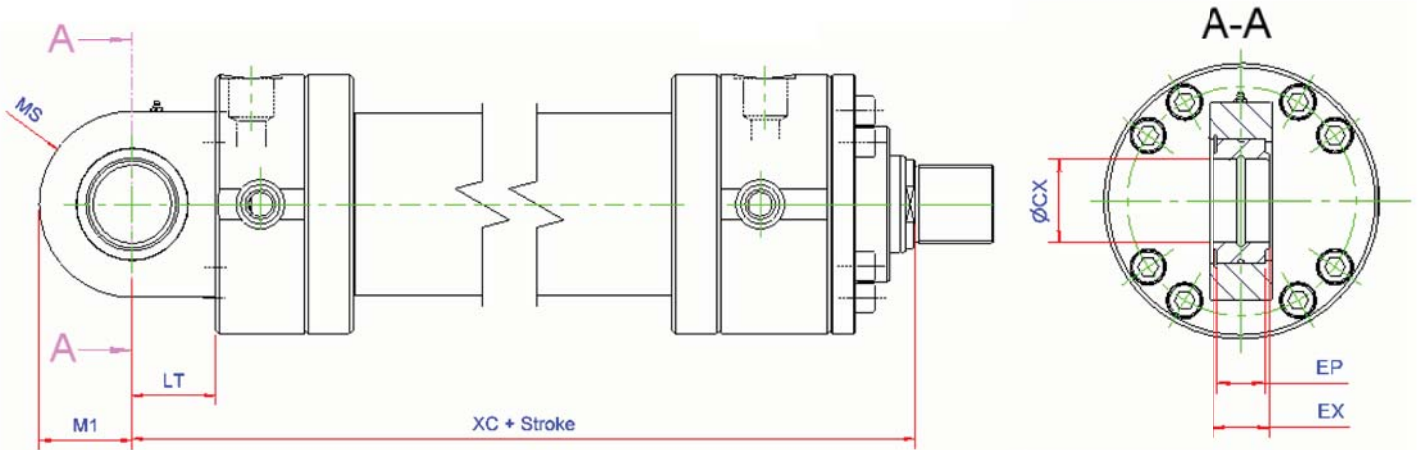


Dimensions MP3 (Nominal Dimensions in mm.)

Piston- Ø	40	50	63	80	100	125	140	160	180	200	220	250	280	320
CD	25	32	40	50	63	80	90	100	110	125	160	160	200	200
EW	25	32	40	50	63	80	90	100	110	125	160	160	200	200
LT	53	61	74	90	102	124	149	150	180	206	253	253	320	320
MS	32	40	50	63	71	90	100	112	129	145	170	170	220	220
M1	32	40	50	63	71	90	100	112	129	145	178	178	230	230
XC	282	305	348	395	442	520	580	617	690	756	890	903	1072	1080



Base Self-Aligning Clevis (ISO Style MP5)

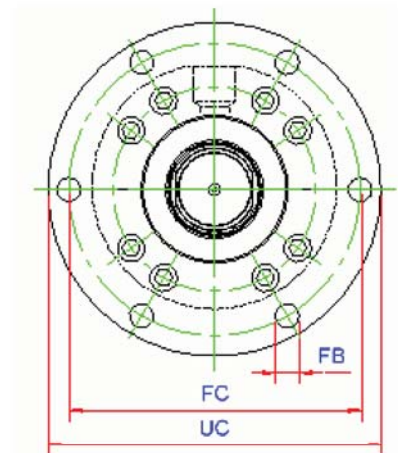
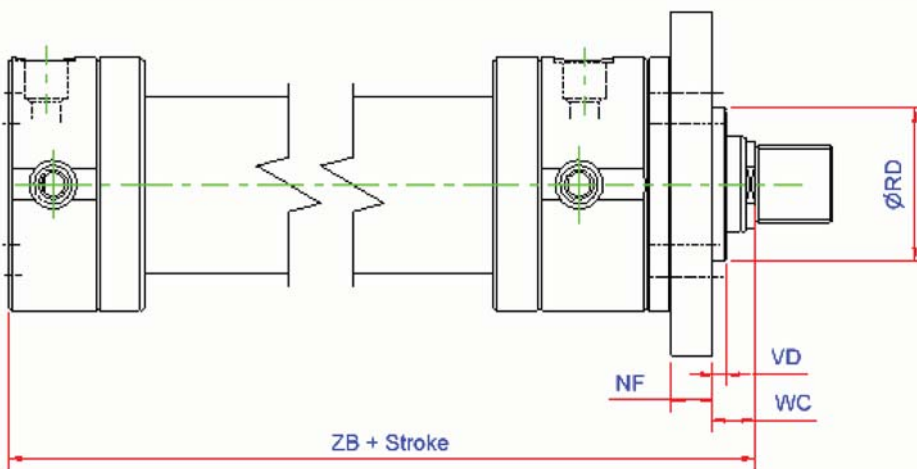
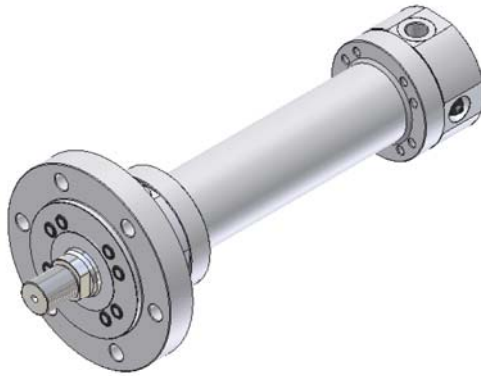


Dimensions MP5 (Nominal Dimensions in mm.)

Piston- ϕ	40	50	63	80	100	125	140	160	180	200	220	250	280	320
CX	25	32	40	50	63	80	90	100	110	125	160	160	200	200
EP	23	27	32	40	52	66	72	84	88	102	130	130	138	162
EX	25	32	40	50	63	80	90	100	110	125	160	160	200	200
LT	53	61	74	90	102	124	149	150	180	206	253	253	320	320
MS	32	40	50	63	71	90	100	112	129	145	170	170	220	220
M1	32	40	50	63	71	90	100	112	129	145	178	178	230	230
XC	282	305	348	395	442	520	580	617	690	756	890	903	1072	1080



Head Round Flange (ISO Style MF3)

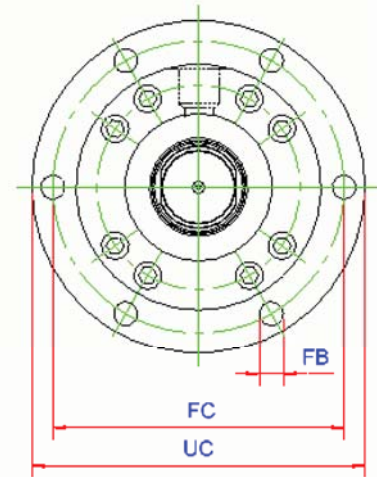
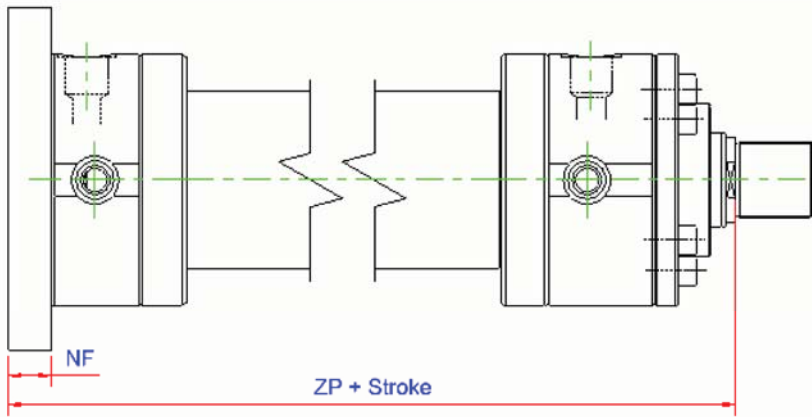
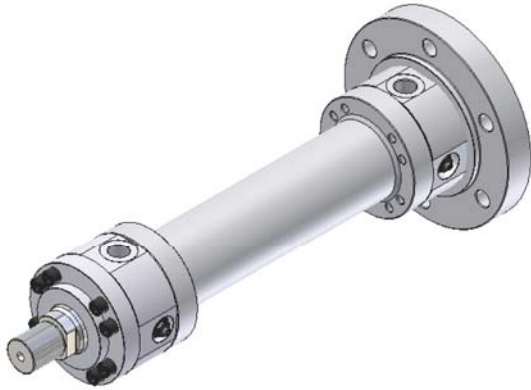


Dimensions MF3 (Nominal Dimensions in mm.)

Piston Ø	40	50	63	80	100	125	140	160	180	200	220	250	280	320
RD	52	63	75	90	110	132	145	160	158	200	235	250	295	320
FB	11	13.5	13.5	17.5	22	22	26	26	33	33	39	39	45	45
FC	155	132	150	180	212	250	280	315	350	385	435	475	555	600
NF	25	25	28	32	36	40	40	45	50	56	63	63	80	80
UC	138	155	175	210	250	290	325	360	405	440	500	540	630	675
VD	4	4	4	4	5	5	5	5	5	5	8	8	8	8
WC	22	22	25	28	32	36	36	40	45	45	50	50	56	56
ZB	230	244	274	305	340	396	431	467	510	550	637	650	752	760

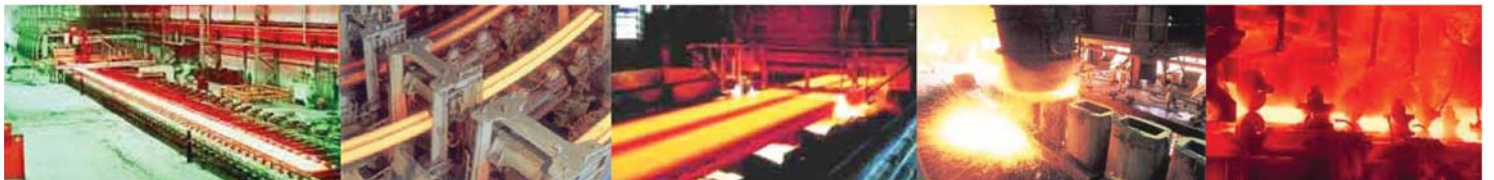


Base Round Flange (ISO Style MF4)

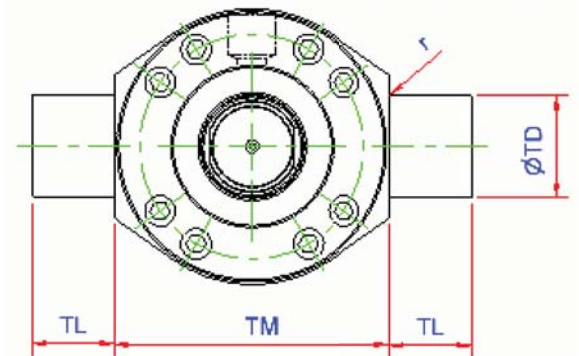
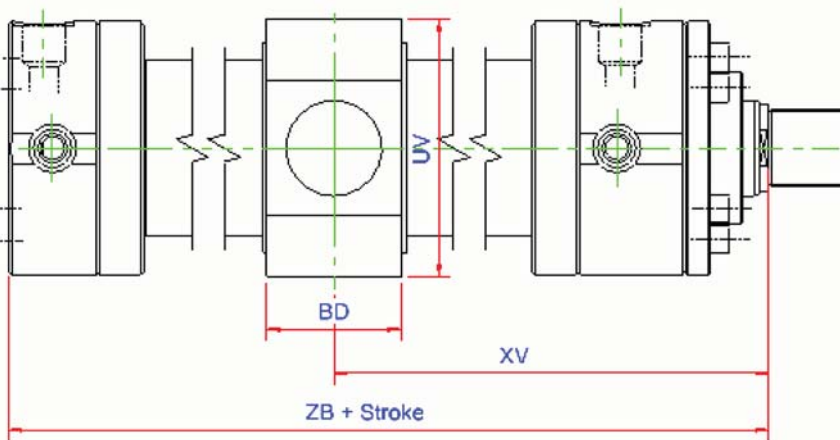
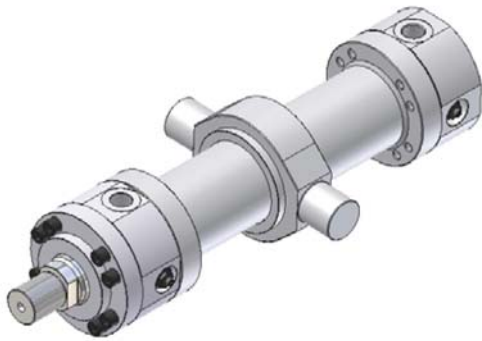


Dimensions MF4 (Nominal Dimensions in mm.)

Piston Ø	40	50	63	80	100	125	140	160	180	200	220	250	280	320
FB	11	13.5	13.5	17.5	22	22	26	26	33	33	39	39	45	45
FC	155	132	150	180	212	250	280	315	350	385	435	475	555	600
NF	25	25	28	32	36	40	40	45	50	56	63	63	80	80
UC	138	155	175	210	250	290	325	360	405	440	500	540	630	675
ZP	250	265	298	332	371	430	465	505	550	596	690	703	822	830



Trunnions (ISO Style MT4)

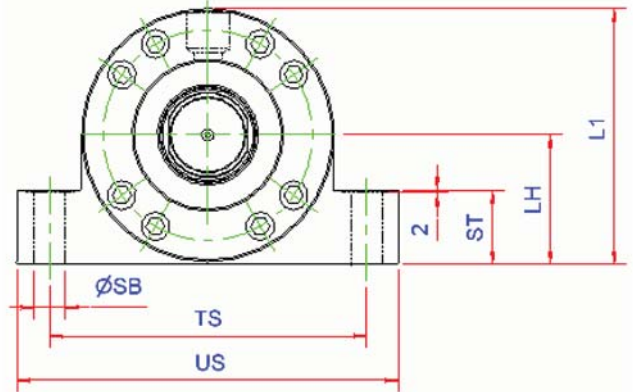
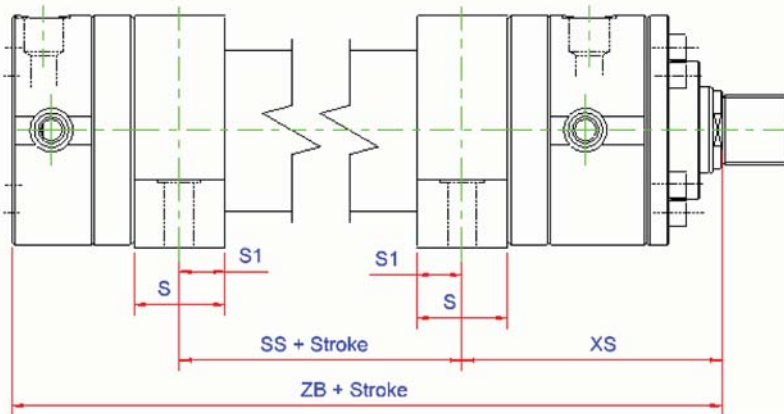
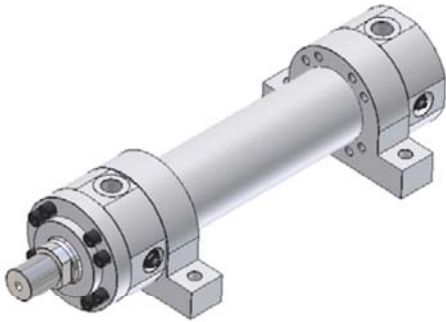


Dimensions MT4 (Nominal Dimensions in mm.)

Piston Ø	40	50	63	80	100	125	140	160	180	200	220	250	280	320
BD	38	38	48	58	78	98	118	128	138	178	180	180	220	220
r	0.8	0.8	1	1	1.2	1.2	1.5	1.5	1.5	1.5	1.5	1.5	2	2
TD	25	32	40	50	63	80	90	100	110	125	160	160	200	200
TL	20	25	32	40	50	63	70	80	90	100	125	125	160	160
TM	95	112	125	150	180	224	265	180	320	335	385	480	480	530
UV	88	105	120	150	175	220	240	270	310	320	370	410	460	510
XV min	154	174	202	227	259	301	336	374	405	461	507	525	598	600
XV max	140	151	167	180	195	225	230	252	267	277	307	315	357	355
ZB	230	244	274	305	340	396	431	467	510	550	637	650	752	760



Foot Mounting (ISO Style MS2)



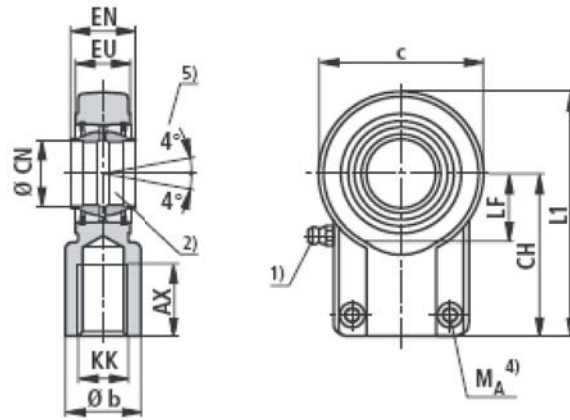
Dimensions MS2 (Nominal Dimensions in mm.)

Piston Ø	40	50	63	80	100	125	140	160	180	200	220	250	280	320
LH	45	55	65	75	90	105	115	135	150	160	185	205	235	255
L1	89	106	125	147.5	175	208	228	267.5	296	313	362.5	402.5	457.5	500
S	30	35	40	50	60	70	85	105	115	125	155	155	155	190
S1	15	17.5	20	25	30	35	42.5	52.5	57.5	62.5	77.5	77.5	77.5	95
SB	11	11	13.5	17.5	22	26	30	33	40	40	45	52	52	62
SS	50	45	49	52	61	75	70	65	6.9	73	75	75	124	85
ST	32	37	42	47	57	367	72	77	92	97	102	112	142	142
TS	110	130	150	180	210	255	290	330	360	385	445	500	550	610
US	135	155	180	220	255	305	350	400	440	465	530	600	650	730
XS	118	135.5	154	171.5	189	218	240.5	270	292	322.5	369.5	382.5	415.5	435
ZB	230	244	274	305	340	396	431	467	510	550	637	650	752	760



Piston rod Mounting

SH Self-Aligning Clevis ISO 6982



CN H7	AX min	b	c max.	CH js16	EN h12	EU	KK	LF	L1	Internal Hexagon		Mass kg
										Size	Torque(Nm)	
SH25	19	32	62	65	25	23	M20x1.5	26	97	M8	23	0.66
SH30	29	36	80	85	22	19	M20x1.5	35	125	M10	46	1.35
SH32	37	40	76	80	32	29	M27x2	31	120	M10	46	1.20
SH40	37	45	100	105	28	23	M27x2	45	155	M10	46	2.40
	46	49	97	97	40	34	M33x2	40	147	M10	46	2.00
SH50	46	55	122	130	35	30	M33x2	58	192.5	M12	79	3.80
	57	60.5	118	120	50	42	M42x2	49	181	M12	79	3.50
SH60	57	68	160	150	44	38	M42x2	68	230	M16	195	8.50
SH63	64	72.5	142	140	63	55	M48x2	61	213	M16	195	6.80
SH80	64	90	205	185	55	47	M48x2	92	287.5	M20	390	14.50
	86	93	180	180	80	69	M64x3	77	272	M20	390	14.50
* SH90	91	100	185	195	90	72	M72x3	85	296	M16	195	17.00
SH100	86	110	240	240	70	57	M64x3	116	360	M24	670	29.50
	96	114	224	210	100	87	M80x3	97	324	M24	670	28.00
* SH110	106	125	235	235	110	88	M90x3	105	264	M20	385	32.00
SH125	113	139	290	260	125	105	M100x3	118	407	M24	670	43.00
SH160	126	170	346	310	160	132	M125x4	148	490	M24	670	80.00
SH200	161	221	460	390	200	164	M160x4	193	623	M30	1350	165.0

* = Special Size Piston Rod Mounting





*High Quality Cylinders
for Heavy Duty Application*

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