

Hydraulic Cylinder Series SCS

DIN 24554 and ISO 6020/2

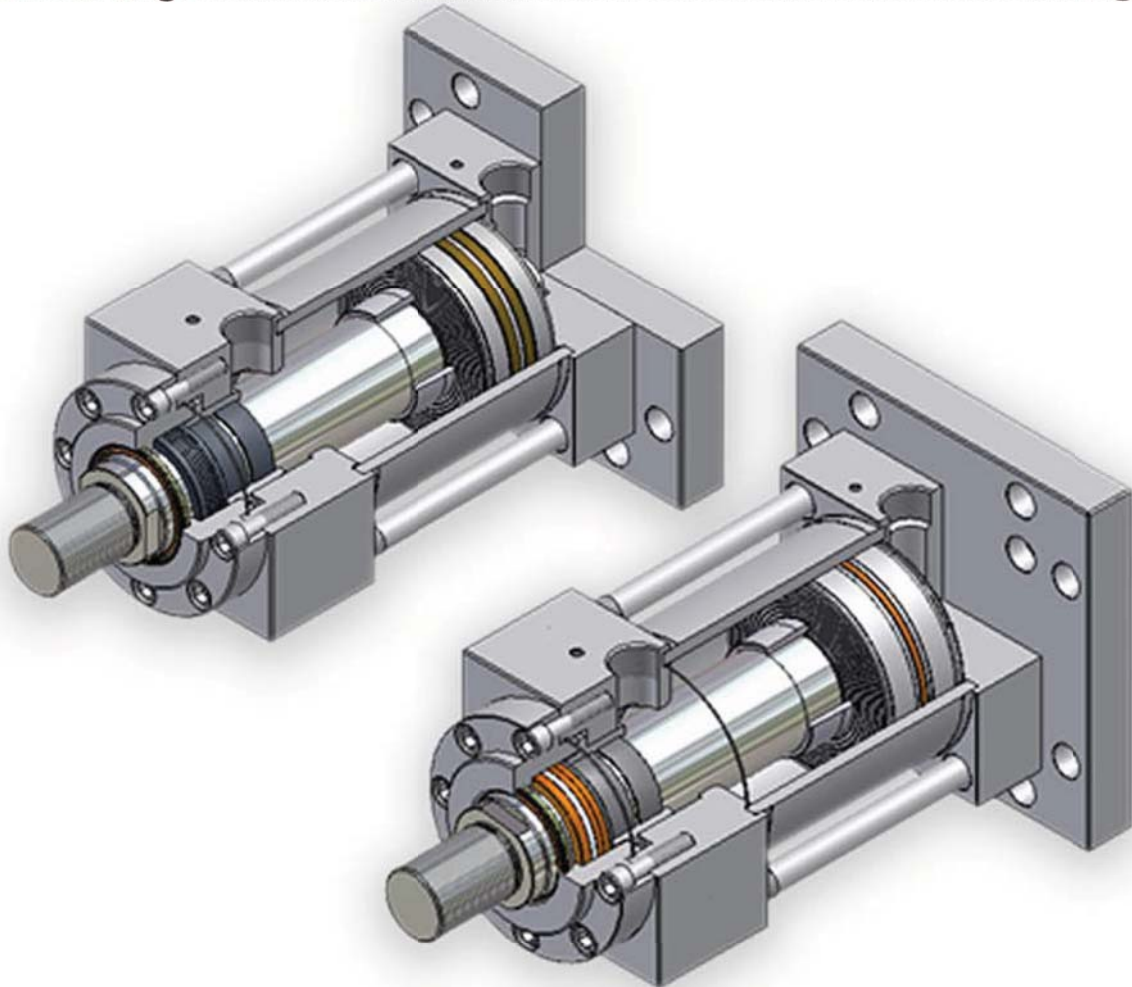
For Working Pressures Up to 210 bar



*High Quality Cylinders
for Heavy Duty Application*

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Hydraulic cylinder

Series SCS

Technical data

Standards:

Installation dimensions of the cylinders and mounting styles meet the requirements of DIN 24554 and ISO 6020/2.

Nominal pressure: 210 bar

Static proof pressure: 350 bar

With extreme shock loads the mounting styles and piston rod threads have to be considered, taking the fatigue limits into account. Maximum operating Pressure up to: 210 bar
Static non-shock: 350 bar

Hydraulic fluid temperature range:

Hydraulic oils HL, HLP: -30°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 +60°C
Higher temperature on request

Viscosity range:

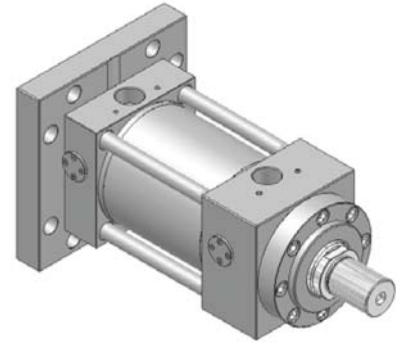
32 to 380 mm²/s

Degree of contamination:

Max. permissible degree of contamination of the pressure fluid is to NAS 1638 class 10.

Stroke speed:

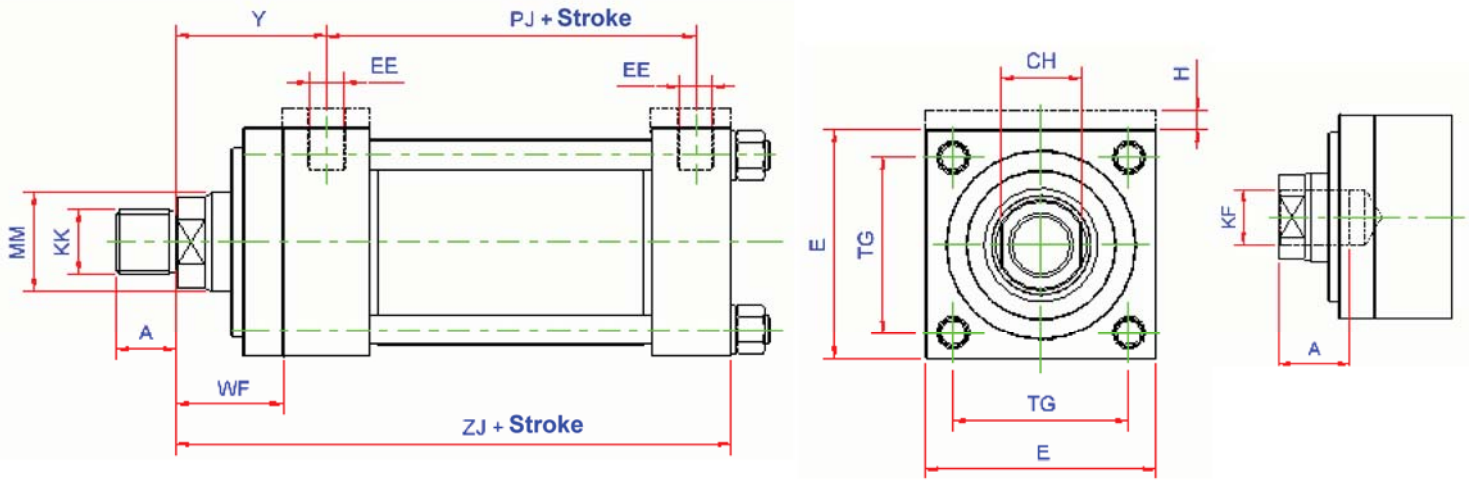
Up to 0.5 m/s (depending on the connection ports), higher stroke velocities on request



Piston- Ø D	Piston rod- Ø mm	Push Force 210 bar (kN)	Pull Force 210 bar (kN)	Piston Areas	Annulus Areas
25	12	7.85	6.04	4.9	3.8
	18		3.78		2.4
32	14	12.87	10.40	8.04	6.5
	18		6.79		5.5
	22				4.2
40	18	20.11	16.03	12.56	10
	22		10.25		8.8
	28				6.4
50	22	31.42	25.33	19.63	15.8
	28		15.13		13.5
	36				9.6
63	28	49.88	40.02	31.17	25
	36		24.43		21
	45				15.3
80	36	80.42	64.14	50.26	40.1
	45		41.02		34.4
	56				25.6
100	45	125.66	100.21	78.54	62.6
	56		64.09		53.9
	70				40.1
125	56	196.35	156.94	122.72	98
	70		94.56		84
	90				59
160	70	321.7	260.12	201.06	163
	90		169.64		137
	110				106
200	90	502.65	400.86	314.16	251
	110		256.35		219
	140				160



Series SCS Dimensions



Piston- ∅ D	Piston rod- ∅ mm	A	CH	KK	KF	MM	E	EE	H	PJ	TG	WF	ZJ	Y
25	12	14	10	M10x1.25	M8x1	11	40	G1/4	5	53	28.3	25	114	50
	18	18	15	M14x1.5	M12x1.25	17								
32	14	16	12	M12x1.25	M10x1.25	13	45	G1/4	5	56	33.2	35	128	60
	18	18	15	M14x1.5	M12x1.25	17								
40	18	18	15	M14x1.5	M12x1.25	17	60	G3/8	-	73	41.7	35	153	62
	22	22	19	M16x1.5	M16x1.5	21								
50	22	22	19	M16x1.5	M16x1.5	21	75	G1/2	-	74	52.3	41	159	67
	28	28	22	M20x1.5	M20x1.5	26								
63	28	28	22	M20x1.5	M20x1.5	26	90	G1/2	-	80	64.3	48	168	71
	36	36	30	M27x2	M27x2	34								
80	36	36	30	M27x2	M27x2	34	115	G3/4	-	93	82.7	51	190	77
	45	45	36	M33x2	M33x2	43								
100	45	45	36	M33x2	M33x2	43	130	G3/4	-	101	96.9	57	203	82
	56	56	46	M42x2	M42x2	54								
125	56	56	46	M42x2	M42x2	54	165	G1	-	117	125.9	57	232	86
	70	63	60	M48x2	M48x2	68								
160	70	63	60	M48x2	M48x2	68	200	G1	-	130	154.9	57	245	86
	90	85	75	M64x3	M64x3	88								
200	90	85	75	M64x3	M64x3	88	245	G1 1/4	-	165	190.2	57	299	98
	110	95	95	M80x3	M80x3	108								
	140	112	120	M100x3	M100x3	140								



Cylinder SCS According to ISO 6020/2 DIN 24554 Standards
Ordering Code

SCS E 100 / 70 — 250 — ME6 — DC — V — SH 63

1 2 3 4 5 6 7 8 9

1 Hydraulic Cylinder Square type according to ISO 6020/2

2 Piston rod End

 I = Internal thread
 E = External thread

3 Piston \varnothing (in mm.)

4 Piston rod \varnothing (in mm.)

5 Stroke length (in mm.)

6 Cylinder Mounting

MS2 = Side lugs
MP5 = Cap fixed eye with spherical bearing
ME5 = Head rectangular flange
ME6 = Cap rectangular flange
MT1 = Head trunnion
MT2 = Cap trunnion
MT4 = Intermediate fixed trunnion

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

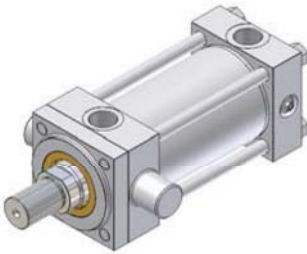
9 Piston rod mounting

SH = Self aligning clevis ISO 6982

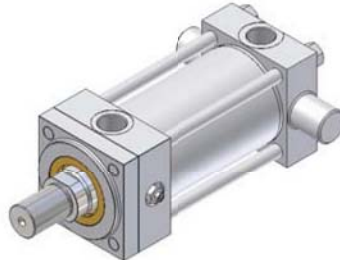


Mounting Type Overview

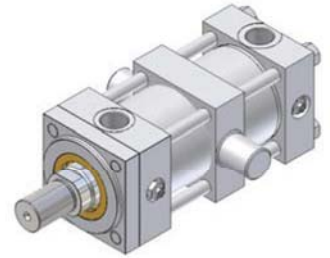
Head Trunnion
(ISO Style MT1)



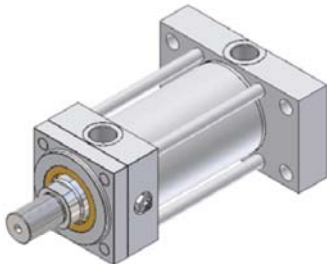
Cap Trunnion
(ISO Style MT2)



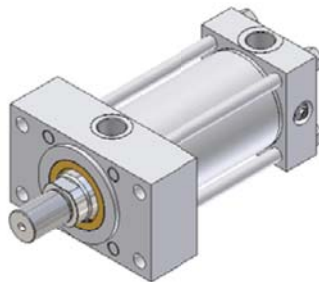
Intermediate
Fixed Trunnion
(ISO Style MT4)



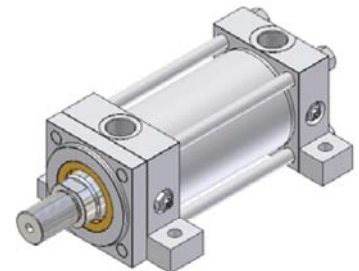
Cap Rectangular
Flange
(ISO Style ME6)



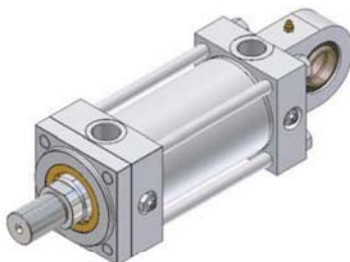
Head Rectangular
Flange
(ISO Style ME5)



Side Lugs
(ISO Style MS2)

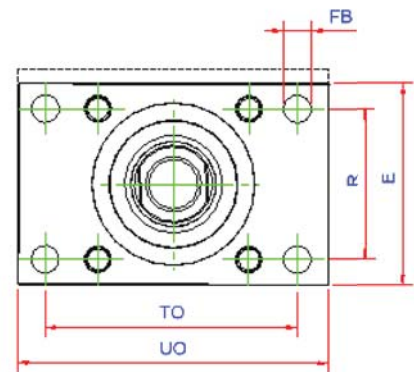
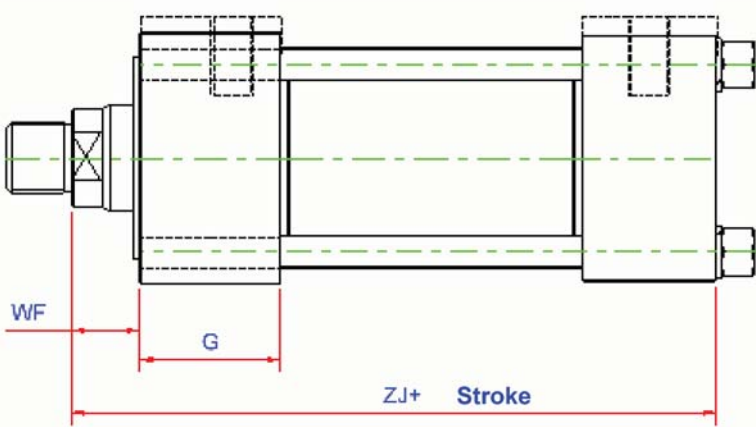
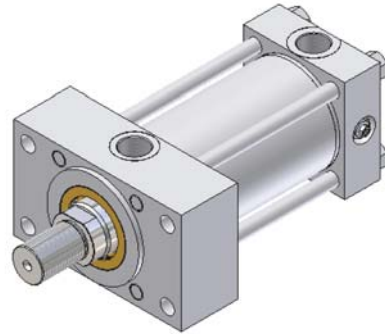


Cap Fixed Eye
with Spherical Bearing
(ISO Style MP5)



Flange & Side Lugs Mountings

Head Rectangular Flange (ISO Style ME5)



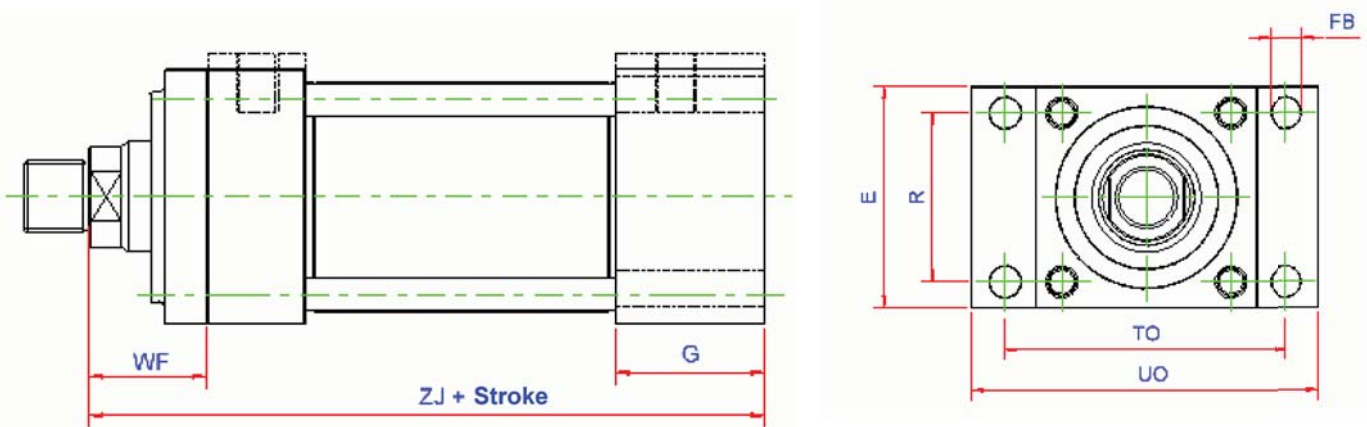
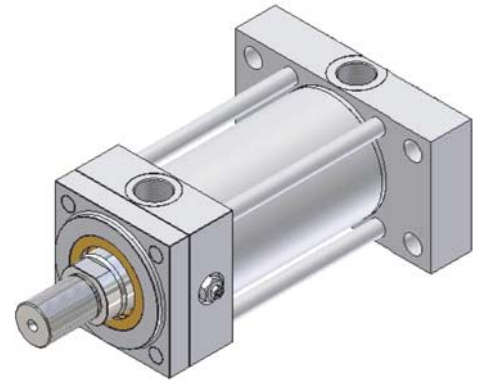
Dimensions ME5 (Nominal Dimensions in mm.)

Piston - Ø	40	50	63	80	100	125	160	200
E	63	75	90	115	130	165	205	245
FB	11	14	14	18	18	22	26	33
G	45	45	45	52	55	65	70	92
R	41	52	65	83	97	126	155	190
TO	87	105	117	149	162	208	253	300
UO	110	130	145	180	200	250	300	360
ZJ	153	159	168	190	203	232	245	299
WF	35	41	48	51	57	57	57	57



Flange & Side Lugs Mountings

Cap Rectangular Flange (ISO Style ME6)



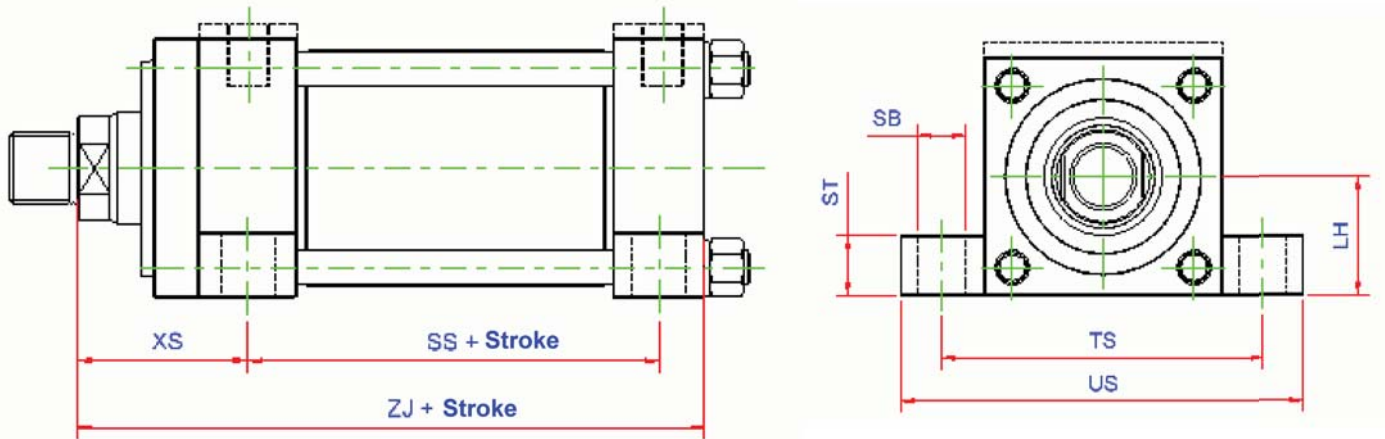
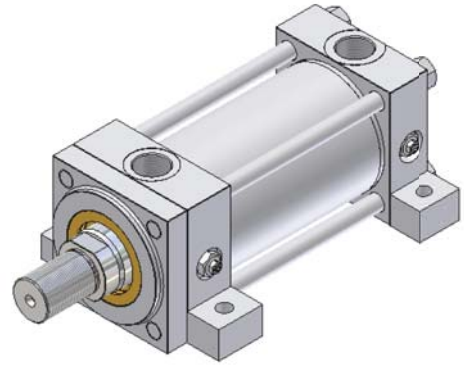
Dimensions ME6 (Nominal Dimensions in mm.)

Piston - Ø	40	50	63	80	100	125	160	200
E	63	75	90	115	130	165	205	245
FB	11	14	14	18	18	22	26	33
G	45	45	45	52	55	65	70	92
R	41	52	65	83	97	126	155	190
TO	87	105	117	149	162	208	253	300
UO	110	130	145	180	200	250	300	360
ZJ	153	159	168	190	203	232	245	299
WF	35	41	48	51	57	57	57	57



Flange & Side Lugs Mountings

Side Lugs (ISO Style MS2)



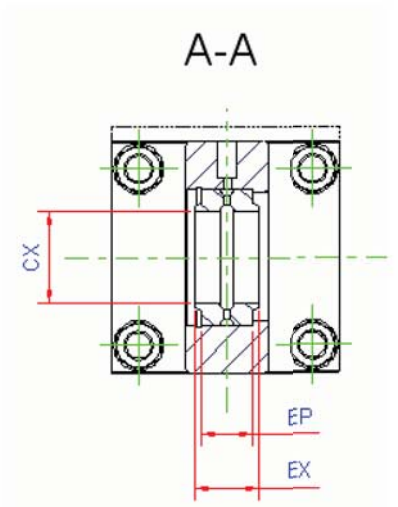
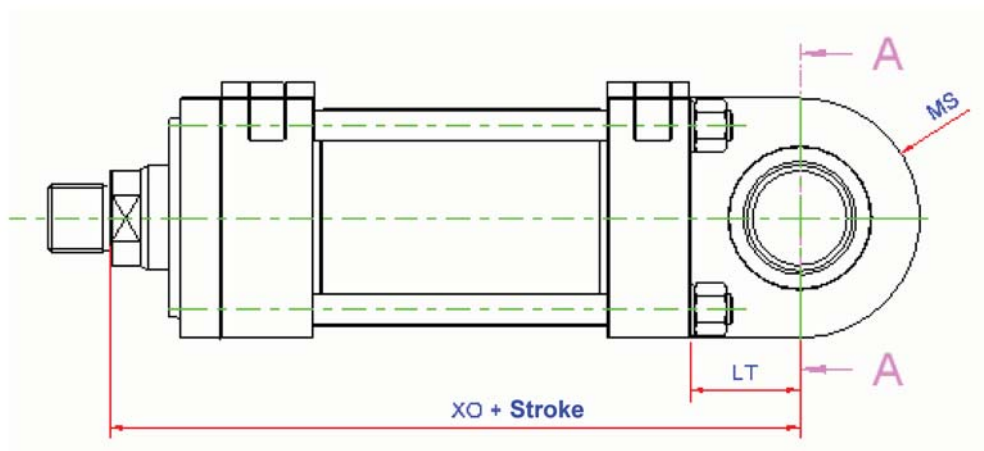
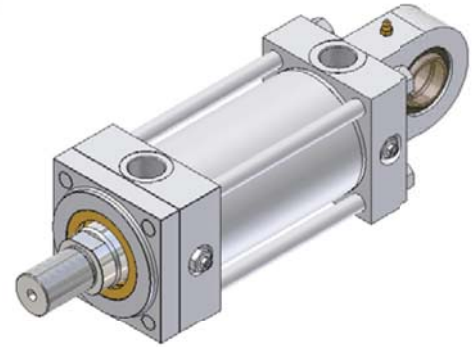
Dimensions MS2 (Nominal Dimensions in mm.)

Piston - Ø	40	50	63	80	100	125	160	200
LH	31	37	44	57	63	82	101	122
SB	11	14	18	18	26	26	33	39
SS	98	92	86	105	102	131	130	172
ST	12.5	19	26	26	32	32	38	44
TS	83	102	124	149	172	210	260	311
US	103	127	161	186	216	254	318	381
XS	45	54	65	68	79	79	86	92
ZJ	153	159	168	190	203	232	245	299



Pivot Mountings

Cap Fixed Eye with Spherical Bearing (ISO Style MP5)



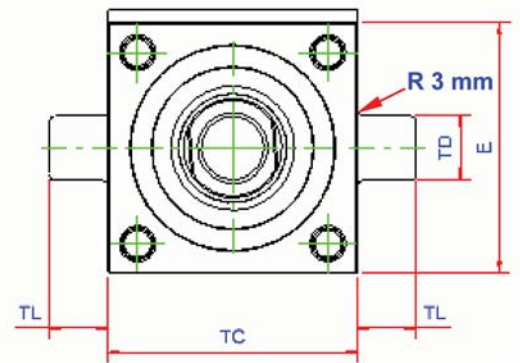
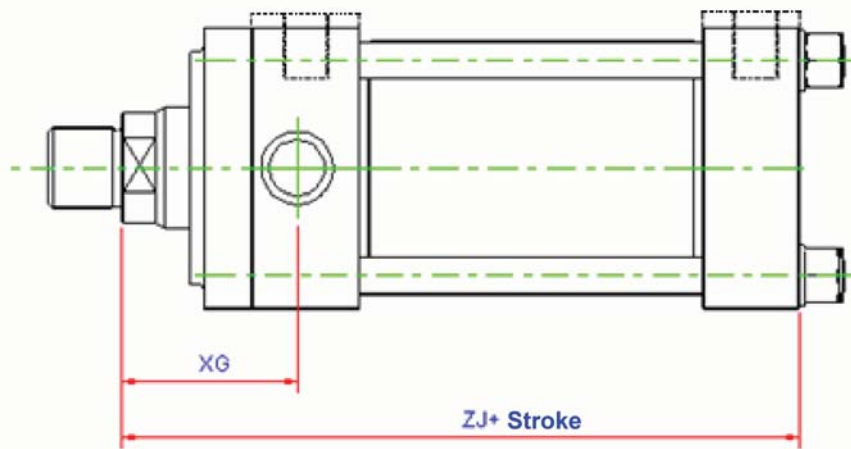
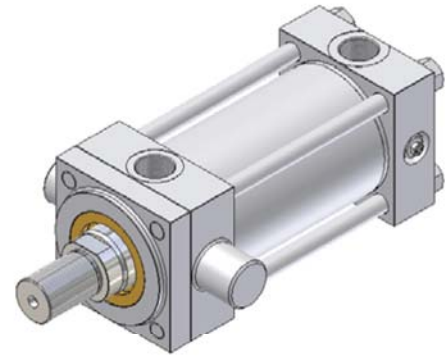
Dimensions MP5 (Nominal Dimensions in mm.)

Piston - Ø	40	50	63	80	100	125	160	200
XO	178	190	206	238	261	304	337	415
LT	25	31	38	48	58	72	92	116
CX	20	25	30	40	50	60	80	100
EP	13	17	19	23	30	38	47	57
EX	16	20	22	28	35	44	55	70
MS max	29	33	40	50	62	80	100	120



Trunnion Mountings

Head Trunnion (ISO Style MT1)



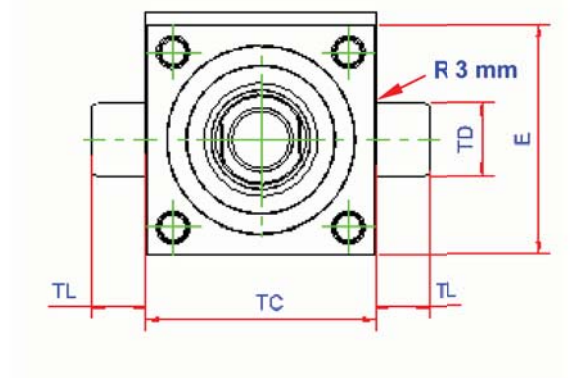
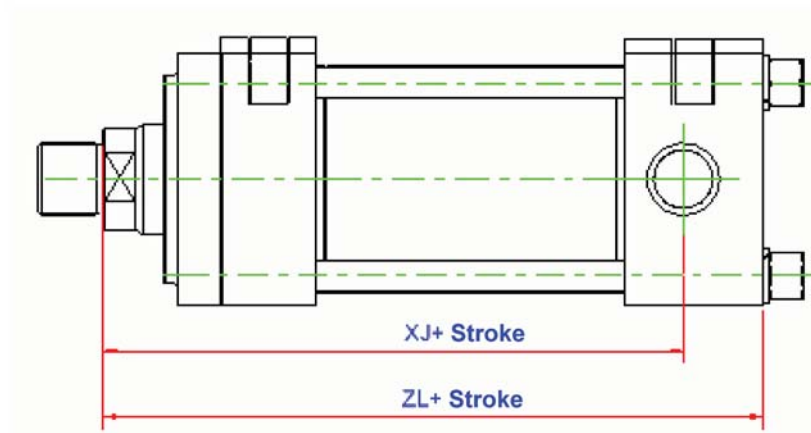
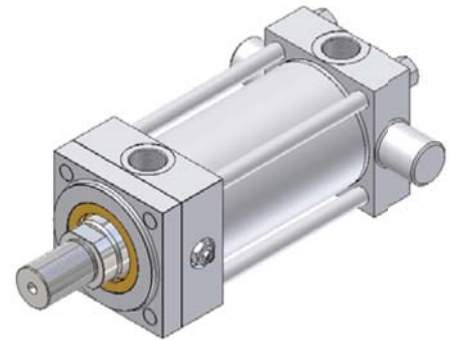
Dimensions MT1 (Nominal Dimensions in mm.)

Piston - Ø	40	50	63	80	100	125	160	200
E	63	76	90	115	130	165	200	245
TD	20	25	32	40	50	63	80	100
TC	63	76	89	114	127	165	203	241
TL	16	20	25	32	40	50	63	80
XG	57	64	70	76	71	75	75	85
ZJ	153	159	168	190	203	232	245	299



Trunnion Mountings

Cap Trunnion (ISO Style MT2)



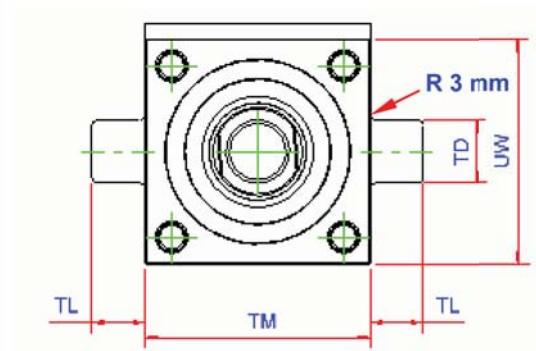
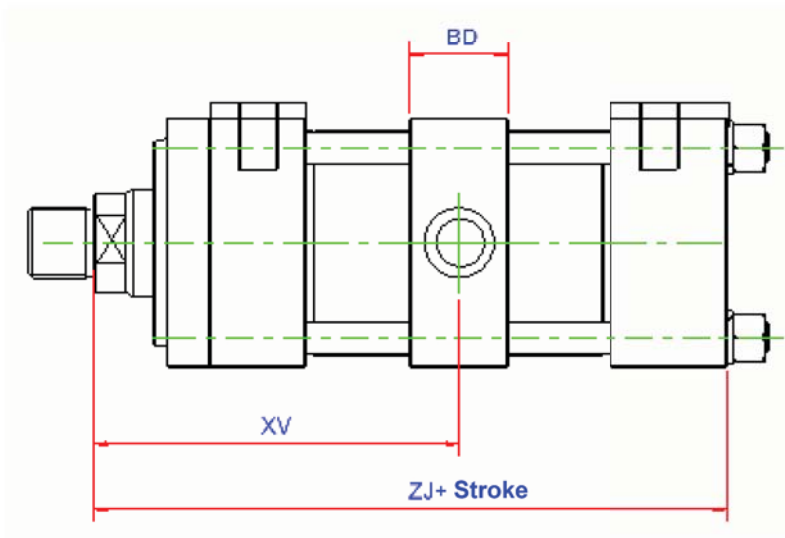
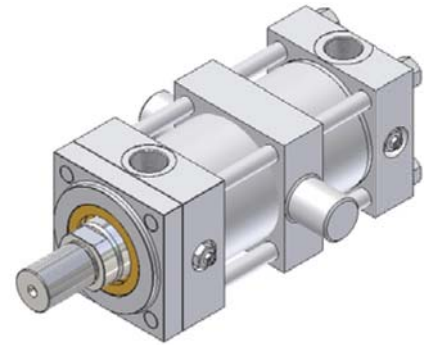
Dimensions MT2 (Nominal Dimensions in mm.)

Piston - Ø	40	50	63	80	100	125	160	200
E	63	76	90	115	130	165	200	245
TD	20	25	32	40	50	63	80	100
TC	63	76	89	114	127	165	203	241
TL	16	20	25	32	40	50	63	80
XJ	134	140	149	168	187	209	230	276
ZL	153	159	168	190	203	232	245	299



Trunnion Mountings

Intermediate Fixed Trunnion (ISO Style MT4)

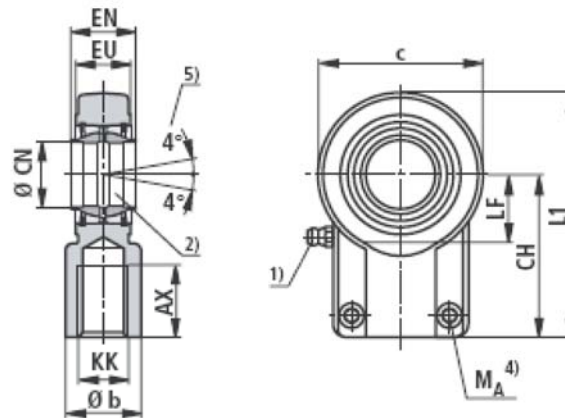


Dimensions MT4 (Nominal Dimensions in mm.)

Piston - Ø	40	50	63	80	100	125	160	200
BD	30	40	40	50	60	73	90	110
TD	20	25	32	40	50	63	80	100
TM	76	89	100	127	140	178	215	279
TL	16	20	25	32	40	50	63	80
UW	76	89	95	127	140	178	216	280
XV min	97	107	114	127	138	153	161	190
ZJ	153	159	168	190	203	232	245	299



Piston rod Mounting

 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)	
SH16	19	22.5	41	44	16	15	M14x1.5	18	64.5	M6	9.5	0.21
SH20	19	25	55	58	16	13	M14x1.5	25	85.5	M8	23	0.40
	23	26.5	50	52	20	19	M16x1.5	21	77.5	M8	23	0.40
SH25	23	30	65	68	20	17	M16x1.5	30	100.5	M8	23	0.68
	17	26.5	58	52	20	23.5	M16x1.5	27	81	M8	23	0.49
	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

* = Special Size Piston Rod Mounting





*High Quality Cylinders
for Heavy Duty Application*

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