



GANI MARKETING

CLAMPING ELEMENTS

STANDARD, SPECIAL VARIABLE HYDRAULIC CYLINDER
MANUFACTURING TECHNOLOGY



ISO 9001:2015
STD Product



GANI

WORK
CLAMPING
SOLUTION










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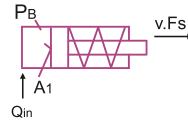
➤ Points to be remember

Formulas & description






-  $Q = V / t$
-  $V = A \cdot s$
-  $F = p \cdot A$
-  $P = F / A$
-  $Q = A \cdot v$
-  $M = V \cdot p / 2\pi$
-  $v = s / t$

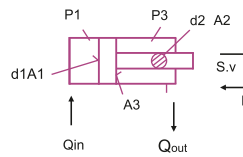
where,

- F: force
- p: pressure
- A: area
- Q: flow
- v: speed
- V: volume
- t: time



Single acting hydraulic cylinder







-  $V [m^3/s] = s [m/s] / 1000 t [s]$
-  $A [m^2] = \pi d^2 / 4 [mm]$
-  $F_s [N] = -0.1 \cdot p_B [bar] \cdot A [m^2]$
-  $P_B [bar] = -10 F_s [N] / A_1 [m^2]$
-  $Q_{in} [lpm] = 0.06 \cdot A [m^2] \cdot v [m/s]$

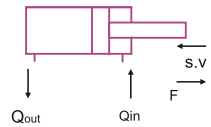


- s: travel(stroke)
- d: piston diameter
- F_s: force
- Q_{in}: inflow
- P_B: operating pressure
- v: piston speed

Double acting hydraulic cylinder

Extending

-  $A_1 = \pi d_1^2 / 4 = 0.78 d_1^2$
-  $A_3 = \pi (d_1^2 - d_2^2) / 4$
-  $P_1 \cdot A_1 = P_3 \cdot A_3 - F$
-  $P_1 = (P_3 \cdot A_3 - F) / A_1$
-  $Q_{in} = A_1 \cdot v$
-  $Q_{out} = A_3 \cdot v$
- P_3 : result back of pressure from pipes & valves for Q_{out}







- A₁: piston area
- d₁: piston
- A₃: rod area
- d₂: rod
- F: force
- P₁: pressure, piston side

simplified

$$P_1 [bar] = \frac{P_3 [bar] \cdot A_3 [m^2] - 10 F [N]}{A_1 [m^2]} \quad F [N] = \frac{-P_1 [bar] \cdot A_1 [m^2] + P_3 [bar] \cdot A_3 [m^2]}{10}$$

Retracting

-  $Q_{out} = A_1 \cdot v$
-  $Q_{in} = A_3 \cdot v$
-  $P_1 \cdot A_1 = P_3 \cdot A_3 + F$
-  $P_3 = (P_1 \cdot A_1 + F) / A_3$
- P_1 : result back of pressure from pipes & valves for Q_{out}

- A₁: piston area
- d₁: piston
- A₃: rod area
- d₂: rod
- F: force
- P₁: pressure, piston side

simplified

$$P_1 [bar] = \frac{P_3 [bar] \cdot A_3 [m^2] - 10 F [N]}{A_1 [m^2]} \quad F [N] = \frac{P_1 [bar] \cdot A_1 [m^2] - P_3 [bar] \cdot A_3 [m^2]}{10}$$

Nomenclature	Codings	Unit	Factor	Unit
Pressure	P	1 N/mm ²	10	bar
		1 MPa	10	
		1 kgf/cm ²	1	
Force	F	1 psi	0.07	N
		1 kg.m/s ²	1	
		1 lbf	4.45	

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Toggle Clamp Cylinder

Double Acting, Hydraulic

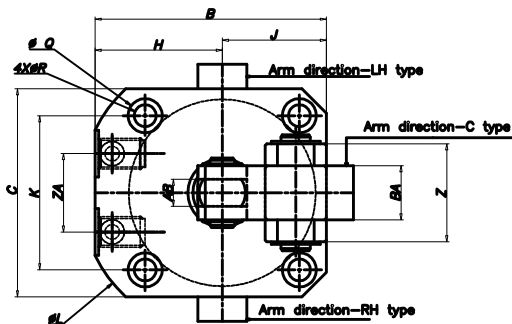
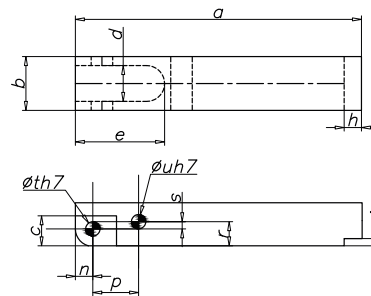
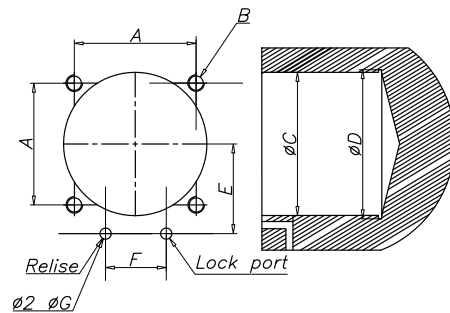
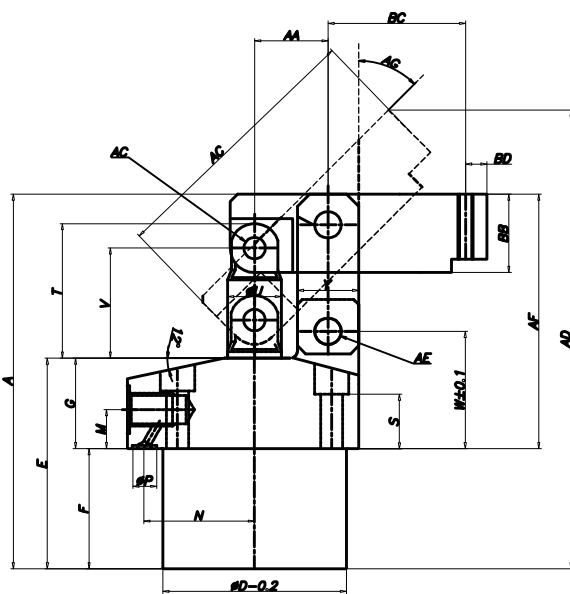


Features:

- This is a double acting cylinder with link clamp.
- It is a Chromium plated piston rod with alloy steel body.
- It is hydraulic & centre port configuration.
- These cylinders can be used for clamping of clock wise (RH) & counter clock wise direction (LH).
- It can be used in the range of 1 MPa (minimum operating pressure)
15 MPa (maximum operating pressure)
70 bar N (pushing force)

Outline Dimension:

Application Sample:



Clamp Lever Dimension Standard

MODEL No	RH	361	401	481	551	651	751	901	1051
	LH	362	402	482	552	652	752	902	1052
a		70	75	85	90	105	110	150	200
b-01		10	12	12	16	19	22	25	32
c		13	14	16	20	25	32	38	45
d		5	6	6	8	10	11	13	16
e		13	14.5	16	17	22	26	31	36
g		10	12	13	17	18	22	26	31
h		10.5	13	13	17	22	25	31	38
j		3	3	3	4	5	5	6	6
N		4.5	5.5	6	6	8	10	11	13
p		14.5	16	18.5	21	24.5	30	36	44
r		4.5	5.5	6	6	8	10	11	13
s		2.5	28	3.5	6	7.5	9.5	13	16
t H7		5	6	6	6	8	10	12	15
u H7		5	8	6	8	10	12	15	18

External Dimension Table:

All dimensions in mm

MODEL No	C	TC01-360-C	TC01-400-C
		Ø22	Ø25
	RH	TC01-361-R	TC01-401-R
	LH	TC01-362-L	TC01-402-L
	A	79	87.5
	B	51	55
	C	42	46
	D	36	40
	E	54	54
	F	29	31
	G	25	25
	H	30	32
	J	21	23
	K	31.5	34
	L	70	74
	M	11	11
	N	23.5	26
	P	3	3
	Q	7.5	9.5
	ØR	4.5	5.6
	S	18	15
	T	27	30.5
	U	10	12
	V	22.5	25
	W	30	30.5
	X	20	22
	Y	10	32
	Z	19	21
	ZA	16	18
	Hvd.port	G1/8"	G1/8"
	AA	14.5	16
	AB	5	6
	ØAC	5	6
	AD		
	ØAE	5	6
	AF	43	44.5
	AG	19.6	20.2
	AH	5	6
	AJ	AJ	AJ
	BA	10	12
	BB	12.5	14
	BC	BC	BC
	BD	BD	BD

Specification Table :

Lock cyl.area (cm)	3.8	4.9
full stroke mm	18.5	20
locking stroke mm	15.5	17
Extra stroke mm	3	3
cyl.volume lock cm3	5.9	8.33
Release cm3	4.7	6.4
Max.operating pressure (Mpa)	7	
Min.operating pressure (Mpa)	0.5	
design pressure (Mpa)	10.5	
Temperature (0C)	0.7	
weight (kg)	0.72	1.15

Machining Dimension Table For Mounting Clamp :

Model No	RH	TC01-361	TC01- 401
	LH	TC01-362	TC01- 402
	A	31.4	34
	B	M4	M5
	C+0.2	36	40
	D	30	35
	E	23.5	26
	F	16	18
	G	2.5	2.5

Toggle Clamp Cylinder

Double Acting

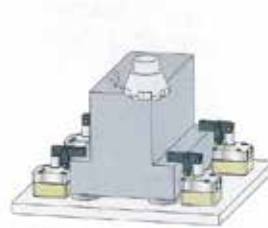
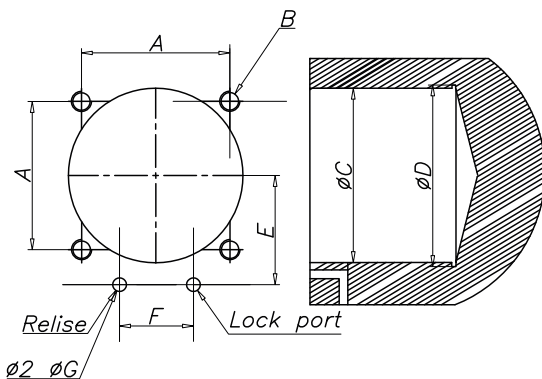
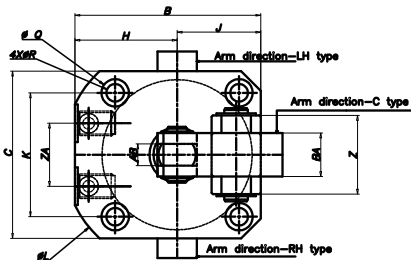
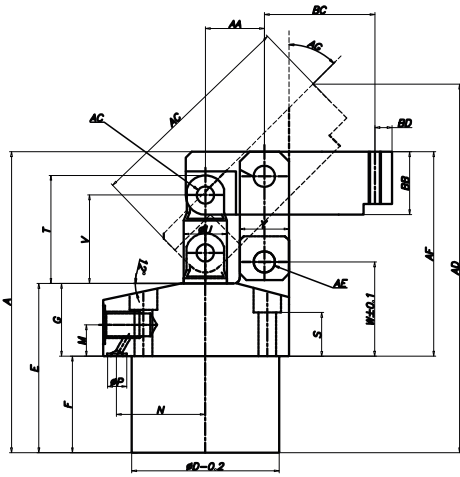


Features:

- This is a double acting cylinder with link clamp.
- It is a Chromium plated piston rod with alloy steel body.
- It is hydraulic & centre port configuration.
- These cylinders can be used for clamping of clock wise (RH) & counter clock wise direction (LH).
- It can be used in the range of 1 MPa (minimum operating pressure)
15 MPa (maximum operating pressure)
70 bar N (pushing force)

Outline Dimension:

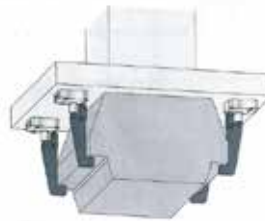
Application Sample:



<For the machining process>



<in the press fit process>



<For transportation and gantry loader>



<After clamping the work, prevent stretching with workpiece clamp>

Machining Dimensions For Cylinder Mounting

MODELNo	RH	481	551	651	751	901	1051
	LH	482	552	652	752	902	1052
A		40	47	55	63	75	88
B		M5	M6	M6	M8	M10	M12
C+0.2		48	55	65	75	90	105
D		45	50	60	70	85	100
E		30	33.5	39.5	45	52.5	60
F		22	24	30	32	37	45
G		3	3	3	3	3	4

External Dimension Table: _____

All dimensions in mm

MODEL No	C	TC01-480-C	TC01-550-C	TC01-650-C	TC01-750-C	TC01-900-C	TC01-1050-C
	RH	TC01-481-R	TC01-551-R	TC01-651-R	TC01-751-R	TC01-901-R	TC01-1051-R
	LH	TC01-482-L	TC01-552-L	TC01-652-L	TC01-752-L	TC01-902-L	TC01-1052-L
BORE-DIA		Ø30	Ø35	Ø45	Ø55	Ø65	Ø85
A		101	112.5	129.5	153	182	211
B		61	69	81	94.5	111	127
C		51	60	70	85	100	120
D		48	55	65	75	90	105
E		62	67	75.5	86	103	117
F		34	39	45.5	49	63	67
G		28	28	30	37	40	50
H		35.5	39	46	52	61	67
J		25.5	30	35	42.5	50	60
K		40	47	55	63	75	88
L		83	88	106	116	136	152
M		11	11	12	15	16	15
N		30	33.5	39.5	45	52.5	60
P		3	3	3	3	3	4
Q		9.5	11	11	14	17.5	20
R		5.5	6.8	6.8	9	11	14
S		19	18	20	22	22	26
T		35	37.5	45	55	65.5	77
U		14	16	18	22	28	35.5
V		29	31.5	37	45	52	62
W		34.5	35.5	39	48	52.5	64
X		26	30	35.5	43.5	52.5	64
Y		13	16	19	25	28	32
Z		21	28	37	40	49	64
ZA		22	24	30	32	37	45
Hvd.port		G1/8"	G1/8"	G1/4"	G1/4"	G1/4"	G3/8"
AA		18.5	21	24.5	30	36	44
AB		6	8	10	11	13	16
ØAC		6	6	8	10	12	15
ØAE		6	8	10	12	15	18
AD		92.4	101.9	111.4	130.8	146.5	173.6
AF		51	53.5	59	72	81	98
AG		18.9	19.9	20.5	21.4	22.4	23.1
AH		4.3	4.7	4.3	4.5	5	4.1
AJ		61.2	71.7	78.7	90.8	104.6	122.5
BA		12	16	19	22	25	32
BB		16	20	25	32	38	45
BC		23.5	29	32	37.5	41.5	21
BD		6	8	10	11	14	17

Specification Table: _____

Lock cyl.area (cm)	7.07	9.62	15.9	23.7	33.2	44.2	
full stroke mm	23.5	26	29.5	35	41	49	
locking stroke mm	20.5	23	26.5	32	38	46	
Extra stroke mm	3	3	3	3	3	3	
Cyl.volume	lock	14.5	22.13	42.14	75.85	126.2	203.35
	Release	11.33	175	35.4	63.8	102.6	157.7
max.pressure mpa	7						
min .pressure mpa	0.5						
design pressure (Mpa)	10.5						
Temperature (OC)	0.7						
weight (kg)	1.5	1.8	2.5	4.2	6.5	10.2	

Swing Cylinder (Top Mounting)

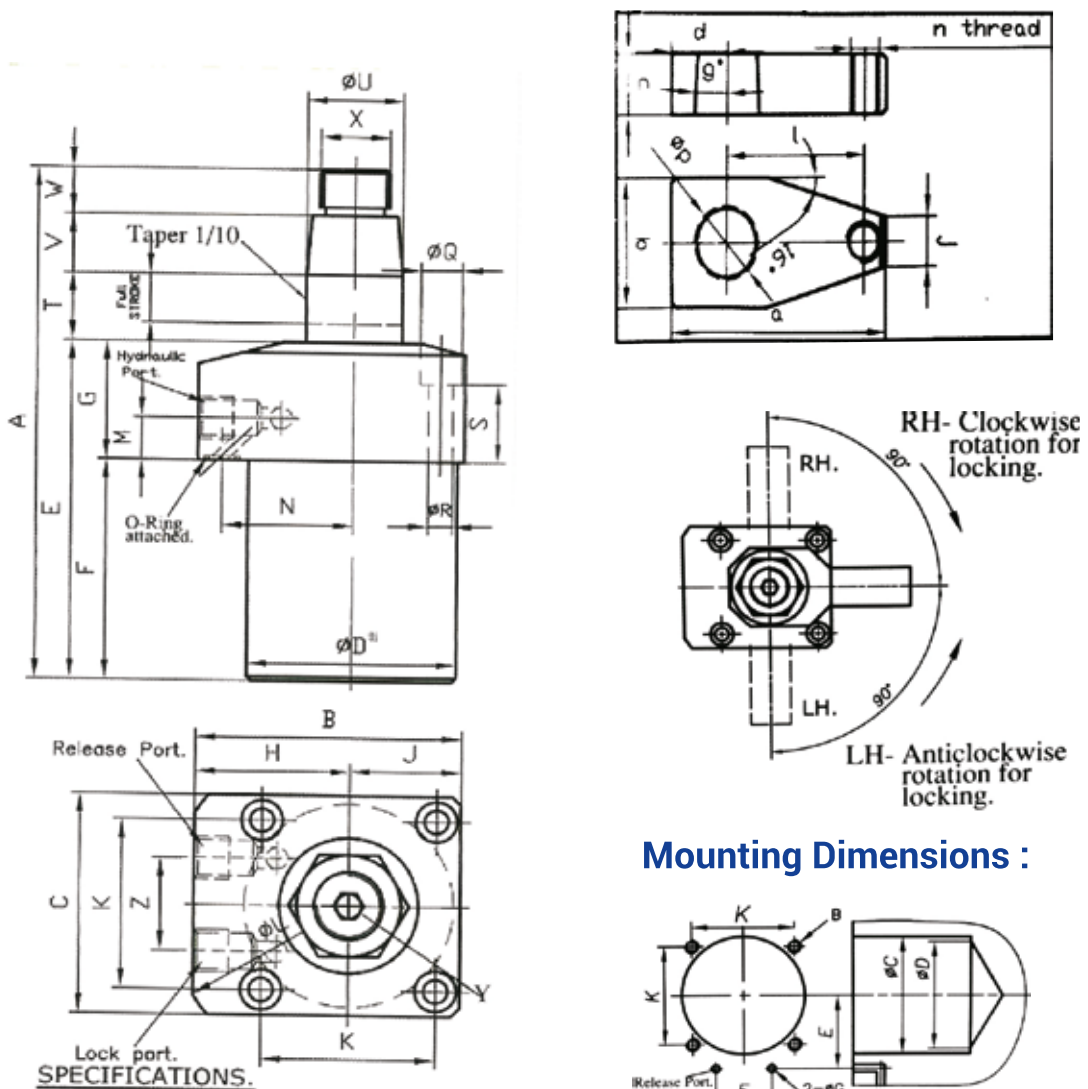
Double Acting



Features:

- This is a double acting cylinder with swing clamp.
- It is a Chromium plated piston rod with alloy steel body.
- It can be used with the rotation of 90°.
- These cylinders can be used for clamping of clock wise (RH) & counter clock wise direction (LH).
- It can be used in the range of 1 MPa (minimum operating pressure)
150 MPa (maximum operating pressure)
70 bar N (pushing force)

Outline Dimension:



External Dimension Table:

All dimensions in mm

MODEL	90° RH	SC02-361-R	SC02-401-R
	90° LH	SC02-362-L	SC02-402-L
BORE-DIA		∅22	∅25
A		114	128
B		50	55
C		41	46
D	-0.2	36	40
E		72	78
F		45	53
G		27	25
H		29.5	32
J		20.5	23
K		31.5	34
L		69	74
M		14	11.5
N		23.5	26
P		3	3
Q		7.5	9.5
R		4.5	5.5
S		18	17
T		21	22
U		14	16
V		9	12
W		12	15
X		M10	M12
Y(HEX Xdepth)		5X4	6X5
Z		16	18
Hvd.port		G1/8"	G1/8"
Taper angle		6°	6°

Specification

Lock cyl.area (cm)	203	2.36
full stroke(90 rotation) mm	18	20
swing stroke(90 rotation) mm	10	12
locking stroke mm		
Cyl.volume	lock cm3	26
	Release cm3	4.9
pressure (mpa)	7	
max.operating pressure. (mpa)	1.5	
Design pressure (mpa)	10.5	
Temperature (OC)	0.7	
weight (kg)	0.8	1

Machining Dimensions For Cylinder Mounting

MODEL No	RH	SC02-361	SC02-401
	LH	SC02-362	SC02-402
K		31.5	34
B		M4	M5
C+0.2		36	40
D		31	35
E		23.5	26
F		16	18
G		3	3

Clamp Lever Dimension (Without Sleeve)

MODEL No	RH	361	401	481	551	651	751	901	1051
	LH	362	402	482	552	652	752	902	1052
a		50	56.5	65.5	77	91.5	105	127	152
b		26	28	35	38	50	58	75	90
c		11	13	16	22	22	28	34	40
d		13	14	17.5	19	25	29	38	45
g		3	3	3	3	3	5.5	5.5	5.5
i		32	36.5	42	50	56.5	65	75	90
j		10	12	12	17	19	22	27	32
n		M5	M6	M6	M8	M10	M16	M16	M20
p		15	18	22	25	30	40	45	55

Swing Cylinder (Top Mounting)

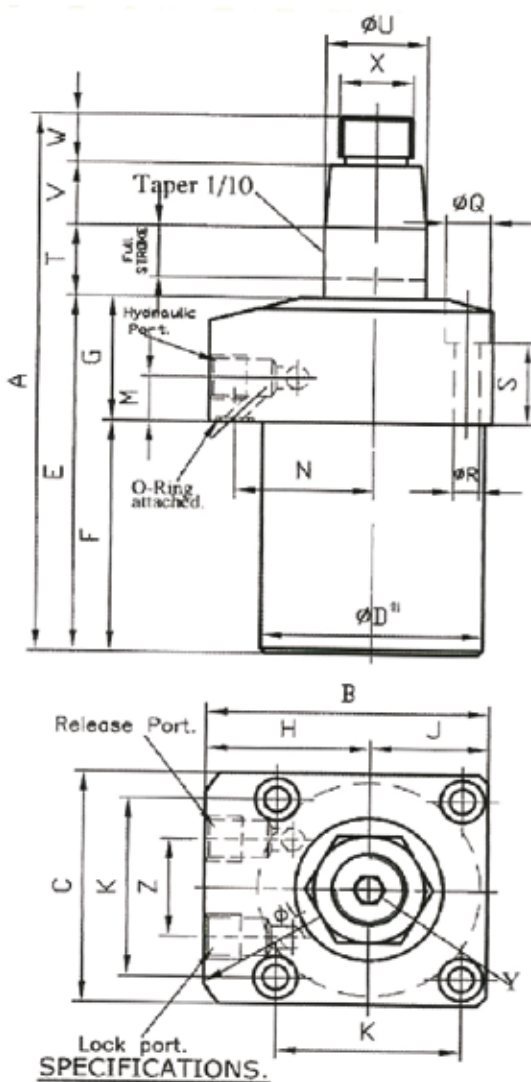
Double Acting



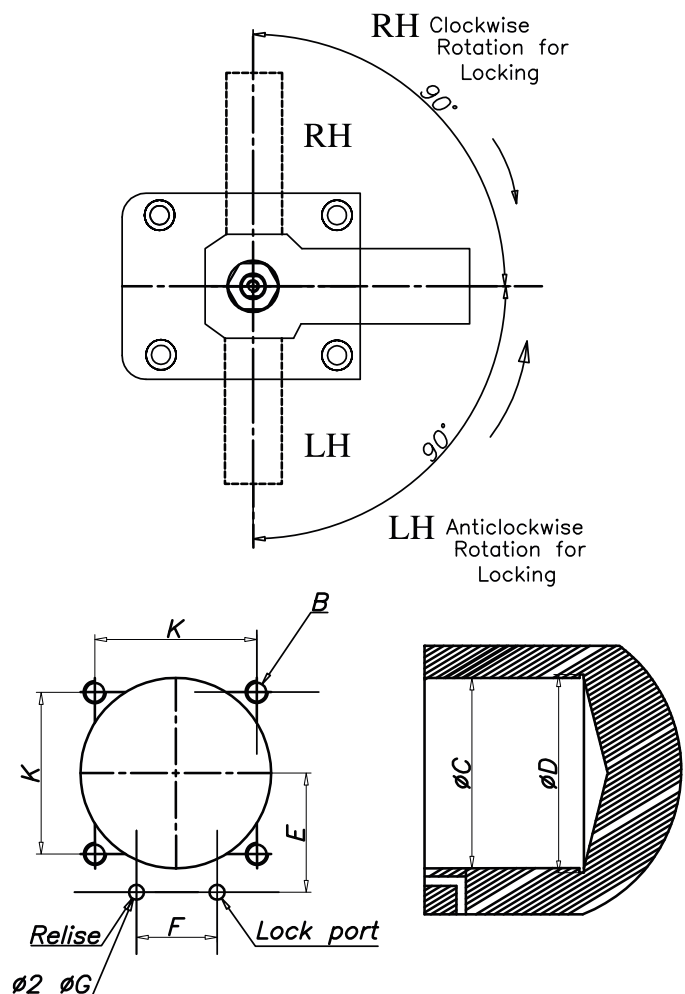
Features:

- This is a double acting cylinder with swing clamp.
- It is a Chromium plated piston rod with alloy steel body.
- It can be used with the rotation of 90°.
- These cylinders can be used for clamping of clock wise (RH) & counter clock wise direction (LH).
- It can be used in the range of 1 MPa (minimum operating pressure) 150 MPa (maximum operating pressure) 70 bar N (pushing force)

Outline Dimension:



Application Sample:



External Dimension Table:

All dimensions in mm

MODEL NO	90° RH	SC02-481R	SC02-551R	SC02-651R	SC02-751R	SC02-901R	SC02-1051R
	90° LH	SC02-482L	SC02-552L	SC02-652L	SC02-7552L	SC02-902L	SC02-1052L
Bore Dia		Ø35	Ø40	Ø50	Ø55	Ø75	Ø85
A		141	159	163	195	215	263
B		61	69	81	92	107	127
C		52	60	70	80	95	120
D		48	55	65	75	90	105
E		87	96	97	115	125	153
F		58	68	67	78	85	102
G		28	30	30	37	40	51
H		35	39	46	52	59.5	67
J		26	30	35	40	47.5	60
K		40	47	55	63	75	88
L		83	88	106	116	136	152
M		12.5	11	12	15	18	17
N		30	33.5	39.5	45	52.5	60
P		3	3	3	3	3	4
Q		9.5	11	11	14.5	17.5	20
R		5.5	6.6	6.6	9	11	14
S		18.5	18	20	22	22	26
T		25.6	23	28	36	36	47
U		22	25	30	36	45	55
V		14	20	20	26	32	38
W		15	15	18	18	22	25
X		M16X15	M16X15	M20X1.5	M30X1.5	M36X1.5	M45x1.5
Y(hex Xdepth)		6X6	8X6	10X8	10X10	10X10	12X10
Z		22	24	30	32	37	45
Hvd.port		G1/8"	G1/8"	G1/8"	G1/4"	G1/4"	G3/8"
Taper angle		6°	6°	6°	6°	11°	11°

Specification Table :

Lock cvl.Area cm	5	8	14	19.7	31.2	40.7
Full strocke mm	22	24	24	31	32	42
(90'rotation) mm (90'rotion)	12	14	14	19	20	26
locking stroke mm	10	10	10	12	12	16
cyl.volume	lock cm3	7	13.2	25.2	42.3	102.6
	Release cm3	12.5	20.9	37.1	68.7	199.5
Max. pressure (Mpa)	7					
Min. pressure (Mpa)	1.5					
design pressure (Mpa)	10.5					
Temperature (OC)	0.7					
weight (kg)	1.3	1.8	2.7	4.2	5.5	9

Machining Dimension Table For Mounting Clamp :

MODEL No	RH	481	551	651	751	901	1051
	LH	482	552	652	752	902	1052
K		40	47	55	63	75	88
B		M5	M6	M6	M8	M10	M12
C+0.2		48	55	65	75	90	105
D		45	50	60	70	85	100
E		30	33.5	39.5	45	52.5	60
F		22	24	30	32	37	45
G		3	3	3	3	3	4

Swing Cylinder (Top Mounting P Type)

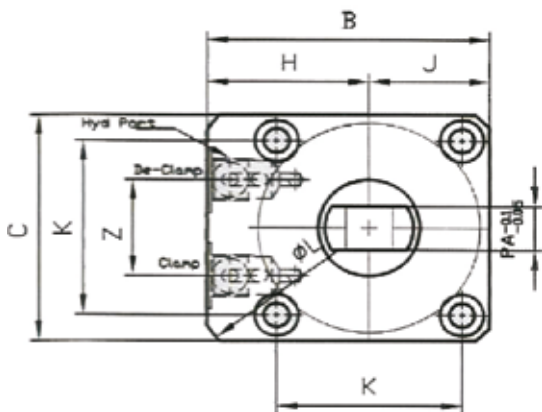
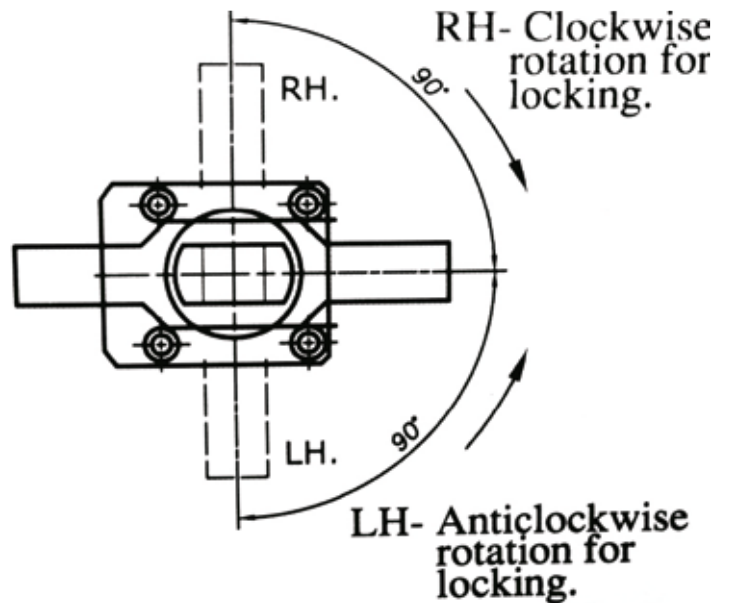
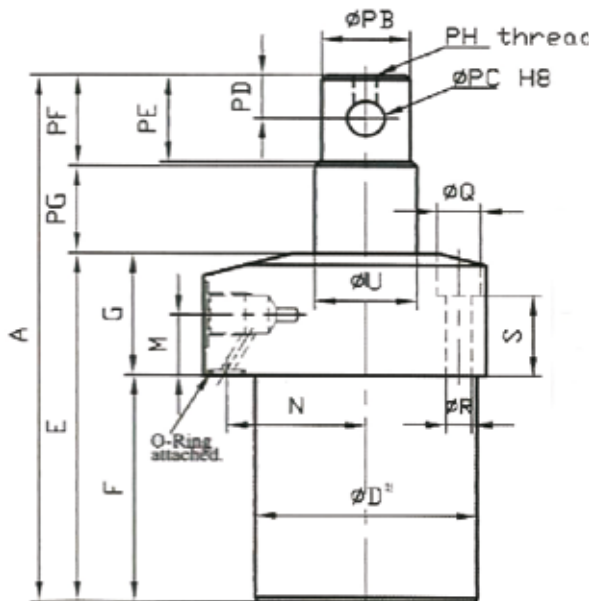
Double Acting



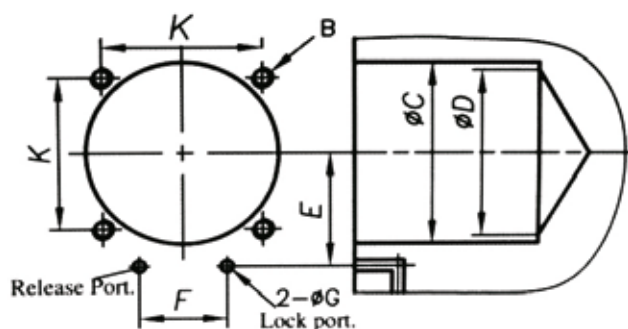
Features:

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- It can be used in the range of 1 MPa (minimum operating pressure)
150 MPa (maximum operating pressure)
70 bar N (pushing force)

Outline Dimension:



Mounting Dimensions:



External Dimension Table:

All dimensions in mm

MODEL NO	90° RH	SC02 361-RP	SC02 401-RP	SC02 481-RP	SC02 551-RP	SC02 651-RP	SC02 751-RP	SC02 901-RP	SC02 1051-RP
	90° LH	SC02 362-LP	SC02 402-LP	SC02 482-LP	SC02 552-LP	SC02 652-LP	SC02 752-LP	SC02 902-LP	SC02 1052-LP
BORE-DIA		Ø22	Ø25	Ø35	Ø40	Ø50	Ø55	Ø75	Ø85
A		110	119	136	141.5	156	189	205.5	254
B		50	55	61	69	81	92	107	127
C		41	46	52	60	70	80	95	120
ØD		36	40	48	55	65	75	90	105
E		72	78	87	96	97	114.5	125	153
F		53	53	58.5	67	68	77.5	84	100
G		27	25	28	30	30	37	40	53
H		29.5	32	35	39	46	52	59.5	67
J		20.5	23	26	30	35	40	47.5	60
K		31.4	34	40	47	55	63	75	88
ØL		69	74	83	88	106	116	136	152
M		14	12	12.5	18	18	24	24	31
N		23.5	26	30	33.5	39.5	45	52.5	60
P		3	3	3	3	3	3	3	4
Q		7.5	9	9.5	11	11	14.5	17.5	20
R		4.5	5.5	5.5	6.6	6.6	9	11	14
S		16	19	18.5	17	18	22	22	24.5
U		14	16	22	25	30	36	45	55
PG		21	21	24	29	28	32	33.5	44.5
PF		17	20	25	30.5	32	41.5	46	56.5
PE		16	18	23.5	29	30.5	38.5	44.5	53.5
PH thread		M3	M3	M4	M5	M6	M6	M8	M8
PD		7	9	10	12	15	16.5	20	24
ØPB		13	14.5	20	23	28	34	43	53
ØPC H8		6H8	6H8	8	10	12	12	16	20
PA		7	8	10	12	14	16	22	26
z		16	18	22	24	30	32	37	45
Hyd-port		G1/8"	G1/8"	G1/8"	G1/8"	G1/4"	G1/4"	G1/4"	G3/8"

Specification Table :

Lock cvl.Area cm	2.6	3.07	5	8	14	19.7	31.2	40.7	
Full strocke mm	18	20	22	24	24	31	32	42	
(90°rotation) mm (90°rotion)	10	12	12	14	14	19	20	26	
locking stroke mm	8	8	10	10	10	17	12	16	
cyl.volume	lock cm3	4.8	7.3	7	13.2	25.2	42.3	102.6	151
	Release cm3	7.2	10.9	12.5	20.9	37.1	68.7	127.8	199.5
Max. pressure (Mpa)	7								
Min. pressure (Mpa)	1.5								
design pressure (Mpa)	10.5								
Temperature (OC)	0-70								
weight (kg)	0.7	0.9	1.3	1.8	2.7	4.2	5.5	9	

Machining Dimension Table For Mounting Clamp :

MODEL NO	90° RH	SC02 361-RP	SC02 401-RP	481-RP	551-RP	651-RP	751-RP	901-RP	1051-RP
	90° LH	SC02 362-LP	SC02 402-LP	482-LP	552-LP	652-LP	752-LP	902-LP	1052-LP
K		31.5	34	40	47	55	63	75	88
B		M4	M5	M5	M6	M6	M8	M10	M12
C+0.2		36	40	48	55	65	75	90	105
D		31	35	45	50	60	70	85	100
E		23.5	26	30	33.5	39.5	45	52.5	60
F		16	18	22	24	30	32	37	45
G		3	3	3	3	3	3	3	4

Swing Cylinder (Bottom Mounting)

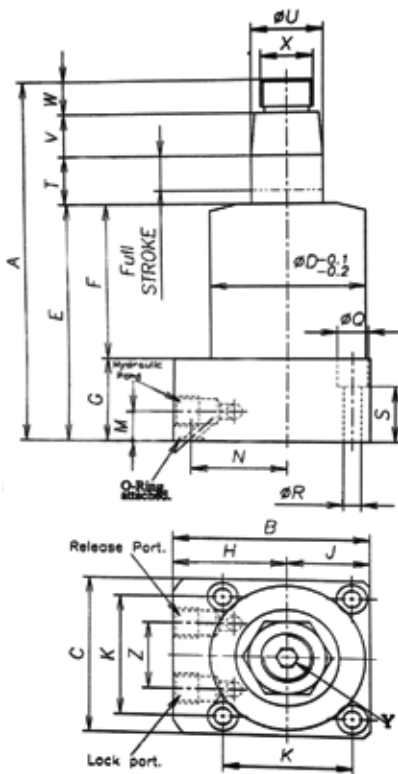
Double Acting



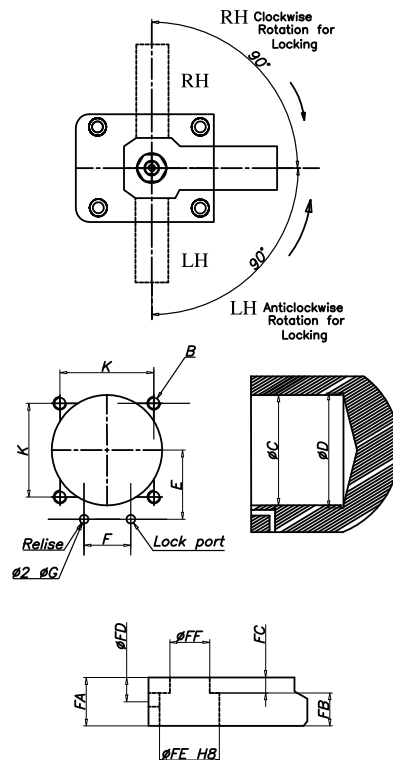
Features:

- This is a double acting cylinder with swing clamp.
- It is a Chromium plated piston rod with alloy steel body.
- It can be used with the rotation of 90°.
- These cylinders can be used for clamping of clock wise (RH) & counter clock wise direction (LH).
- It can be used in the range of 1 MPa (minimum operating pressure)
150 MPa (maximum operating pressure)
70 bar N (pushing force)

Outline Dimension:



Application Sample:



Clamp lever dimension table (with sleeve):

MODEL No	361	401	481	551	651	751	901	1051
	362	402	482	552	652	752	902	1052
FA	12	16	19	25	25	32	38	45
FB	10	12	16	18.5	20.8	26	32	38
FC	2.5	3	4	4	4	5	5	6
FD	4.3	5.3	6.3	6.3	7.5	8.5	9.5	10.5
FE	17	20	25	28	34	40	49	60
FF	13.9	16.7	20.6	23	28	32.9	41.8	51.2
FG	4	5	5	5	6	6	6	8

External Dimension Table: _____

All dimensions in mm

MODEL NO	90° RH	SB03-361-R	SB03-401--R
	90° LH	SB03-362-L	SB03-402--L
Bore Dia		Ø22	Ø25
A		116	127
B		50	55
C		41	46
D		36	40
E		72	78
F		48.5	50
G		25	28
H		29.5	32
J		20.5	23
K		31.5	34
ØL		69	74
M		14	19
N		23.5	26
P		3	3
Q		7.5	9.5
R		4.5	5.5
S		18	17
T		22.5	22
ØU		14	16
V		9	12
W		7	15
X		M10	M12
Y(hex Xdepth)		4X5	4X5
Z		16	18
Hvd.port		G1/8"	G1/8"
Taper angle		6°	6°

Specification Table : _____

Lock cyl.area (cm)	2.03	2.36	
full stroke (90 rotation) mm	18	20	
swine stroke (90 rotation) mm	10	12	
locking stroke mm	8	8	
cyl.volume	lock cm3	2.6	3.07
	Release cm3	4.9	6.38
Max.operating pressure (Mpa)	7		
Min.operating pressure (Mpa)	1.5		
design pressure (Mpa)	10.5		
Temperature (OC)	0-70		
weight (kg)	0.8	1	

Machining Dimension Table For Mounting Clamp : _____

MODEL	90° RH	SB03-361-R	SB03-401-R
	90° LH	SB03-362-L	SB03-402-L
K		31.5	34
B		M4	M5
C+0.2		36	40
D		31	35
E		23.5	26
F		16	18
G		3	3

Swing Cylinder (Bottom Mounting)

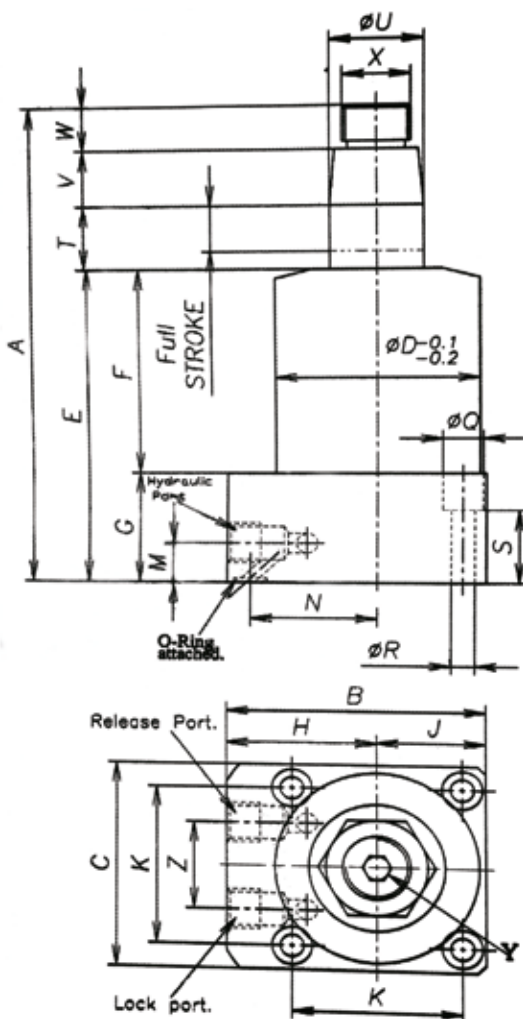
Double Acting



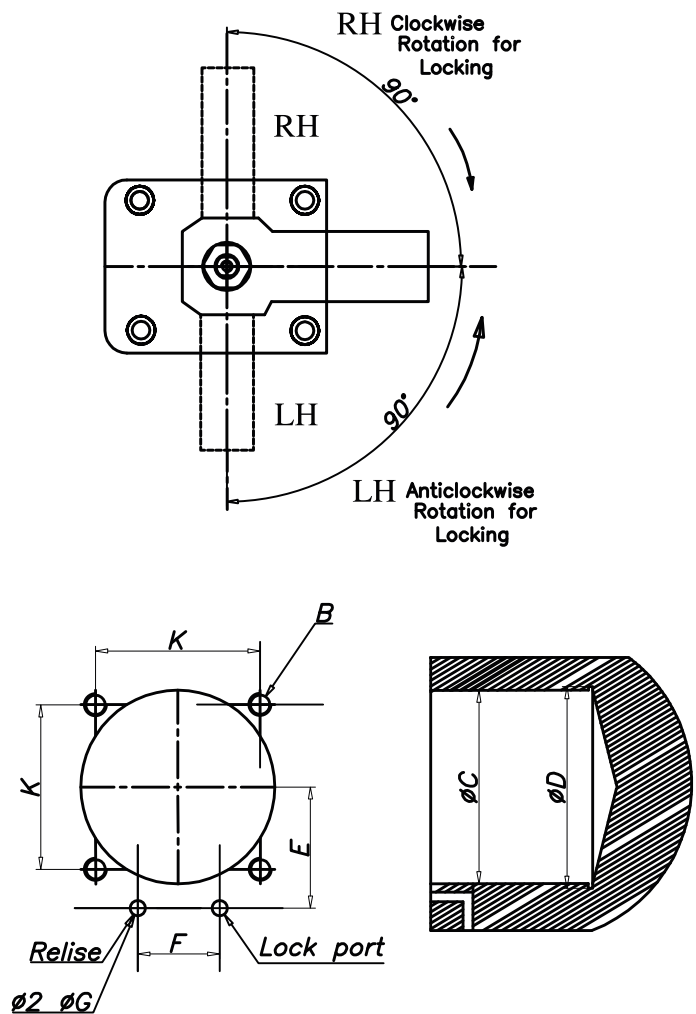
Features:

- This is a double acting cylinder with swing clamp.
- It is a Chromium plated piston rod with alloy steel body.
- It can be used with the rotation of 90°.
- These cylinders can be used for clamping of clock wise (RH) & counter clock wise direction (LH).
- It can be used in the range of 1 MPa (minimum operating pressure) 150 MPa (maximum operating pressure) 70 bar N (pushing force)

Outline Dimension:



Application Sample:



External Dimension Table:

All dimensions in mm

MODEL NO	90° RH	SB03-481-R	SB03-551-R	SB03-651-R	SB03-751-R	SB03-901-R	SB03-1051-R
	90° LH	SB03-482-L	SB03-552-L	SB03-652-L	SB03-752-L	SB03-902-L	SB03-1052-L
BORE-DIA		Ø35	Ø40	Ø50	Ø55	Ø75	Ø85
A		136	159	163	194.5	215	262
B		61	69	81	92	107	127
C		52	60	70	80	95	120
D		48	55	65	75	90	105
E		86.5	96	97.5	114.5	125	153
F		58.5	67	68	77.5	84	100
G		28	30	30	37	40	53
H		35	39	46	52	59.5	67
J		26	30	35	40	47.5	60
K		40	47	55	63	75	88
L		83	88	106	116	136	152
M		16	18	18	15	24	31
N		30	33.5	39.5	45	52.5	60
P		3	3	3	3	3	4
Q		9.5	11	11	14.5	17.5	20
R		5.5	6.6	6.6	9	11	14
S		18.5	17	18	22	22	24.5
T		25	29	28	36	36	46
U		22	25	30	36	45	55
V		14	20	20	26	32	38
W		15	15	18	18	22	25
X		M16X15	M16X15	M20X1.5	M30X1.5	M36X1.5	M45x1.5
Y (hex Xdepth)		5X6	5X8	6X8	6X10	8X10	10X10
Z		22	24	30	32	37	45
Hvd.port		G1/8"	G1/8"	G1/8"	G1/4"	G1/4"	G3/8"
Taper angle		6°	6°	6°	6°	11°	11°

Specification Table :

Lock cvl.Area cm	5	8	14	19.7	31.2	40.7	
Full strocke mm	22	24	24	31	32	42	
(90'rotation) mm (90'rotion)	12	14	14	19	20	26	
locking stroke mm	10	10	10	12	12	16	
cyl.volume	lock cm3	7	13.2	25.2	42.3	102.6	151
	Release cm3	12.5	20.9	37.1	68.7	127.8	199.5
Max. pressure (Mpa)	7						
Min. pressure (Mpa)	1.5						
design pressure (Mpa)	10.5						
Temperature (OC)	0.7						
weight (kg)	1.3	1.8	2.7	4.2	5.5	9	

Machining Dimension Table For Mounting Clamp :

MODEL NO	90° RH	481-R	551-R	351-R	751-R	901-R	1051-R
	90° LH	482-L	552-L	652-L	752-L	902-L	1052-L
K		40	47	55	63	75	88
B		M5	M6	M6	M8	M10	M12
C+0.2		48	55	65	75	90	105
D		45	50	60	70	85	100
E		30	33.5	39.5	45	52.5	60
F		22	24	30	32	37	45
G		3	3	3	3	3	4

Swing Cylinder (Bottom Mounting P Type)

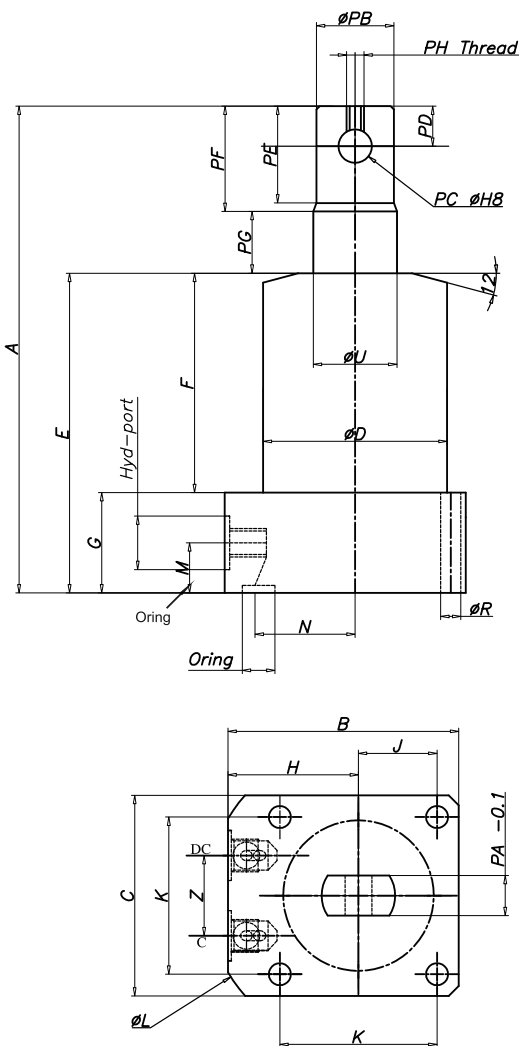
Double Acting



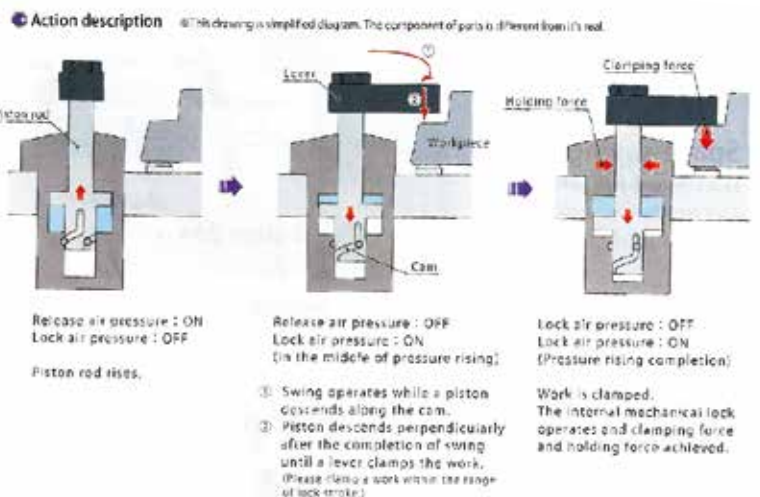
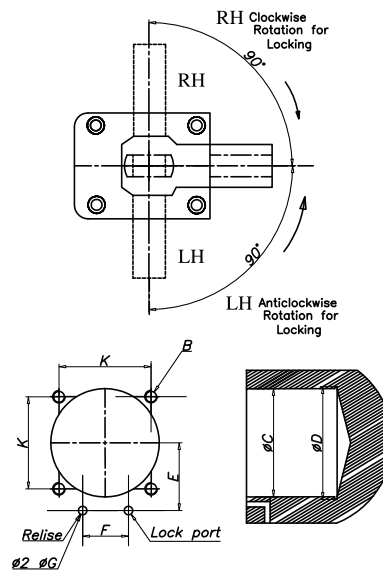
Features:

- This is a double acting cylinder with swing clamp.
- It is a Chromium plated piston rod with alloy steel body.
- It can be used with the rotation of 90°.
- These cylinders can be used for clamping of clock wise (RH) & counter clock wise direction (LH).
- It can be used in the range of 1 MPa (minimum operating pressure)
150 MPa (maximum operating pressure)
70 bar N (pushing force)

Outline Dimension:



Application Sample:



External Dimension Table:

All dimensions in mm

MODEL NO	90° RH	SB03 361-RP	SB03 401-RP	SB03 481-RP	SB03 551-RP	SB03 651-RP	SB03751-RP	SB03901-RP	SB03 1051-RP
	90° LH	SB03 362-LP	SB03 422-LP	SB03 482-LP	SB03 552-LP	SB03-652-LP	SB03 752-LP	SB03-902-LP	SB03 1052-LP
BORE-DIA		Ø22	Ø25	Ø35	Ø40	Ø50	Ø55	Ø75	Ø85
A		112	119	126	141.5	156	189	205.5	254
B		50	55	61	69	81	92	107	127
C		41	46	52	60	70	80	95	120
ØD		36	40	48	55	65	75	90	105
E		73.5	78	86.5	96	97	114.5	125	153
F		48.5	50	58.5	67	68	77.5	84	100
G		25	25	28	30	30	37	40	53
H		29.5	32	35	39	46	52	59.5	67
J		20.5	23	26	30	35	40	47.5	60
K		31.4	34	40	47	55	63	75	88
ØL		69	74	83	88	106	116	136	152
M		14.5	19	16	18	18	24	24	31
N		23.5	26	30	33.5	39.5	45	52.5	60
P		3	3	3	3	3	3	3	4
Q		7.5	9	9.5	11	11	14.5	17.5	20
R		4.5	5.5	5.5	6.6	6.6	9	11	14
S		16	15	18.5	17	18	22	22	24.5
U		14	16	22	25	30	36	45	55
PG		21	21	25	29	28	32	33.5	46
PF		17	20	25	30.5	32	41.5	46	56.5
PE		16	18	23.5	29	30.5	38.5	44.5	53.5
PH thresd		M3	M3	M4	M5	M6	M6	M8	M8
PD		7	9	10	12	15	16.5	20	24
ØPB		13	14.5	20	23	28	34	43	53
Ø PC H8		6H8	6H8	8	10	12	12	16	20
PA		7	8	10	12	14	16	22	26
Z		16	18	22	24	30	32	37	45
Hyd-port		G1/8"	G1/8"	G1/8"	G1/8"	G1/4"	G1/4"	G1/4"	G3/8"

Dimension Specification Table:

Lock cvl.Area cm		2.6	3.07	5	8	14	19.7	31.2	40.7
Full stroke mm		18	20	22	24	24	31	32	42
(90°rotation) mm		10	12	12	14	14	19	20	26
(90°rotation)									
locking stroke mm		8	8	10	10	10	17	12	16
cyl.volume	lock cm3	4.8	7.3	7	13.2	25.2	42.3	102.6	151
	Release cm3	7.2	10.9	12.5	20.9	37.1	68.7	127.8	199.5
mpa							7		
Min. pressure Mpa							1.5		
design pressure Mpa							10.5		
Temperature OC							0-70		
weight kg		0.7	0.9	1.3	1.8	2.7	4.2	5.5	9

Machining Dimension Table For Mounting Clamp:

MODEL No	90° RH	361-RP	401-RP	481-RP	551-RP	651-RP	751-RP	901-RP	1051-RP
	90° LH	362-LP	402-LP	482-LP	552-LP	652-LP	752-LP	902-LP	1052-LP
K		31.5	34	40	47	55	63	75	88
B		M4	M5	M5	M6	M6	M8	M10	M12
C+0.2		36	40	48	55	65	75	90	105
D		31	35	45	50	60	70	85	100
E		23.5	26	30	33.5	39.5	45	52.5	60
F		16	18	22	24	30	32	37	45
G		3	3	3	3	3	3	3	4

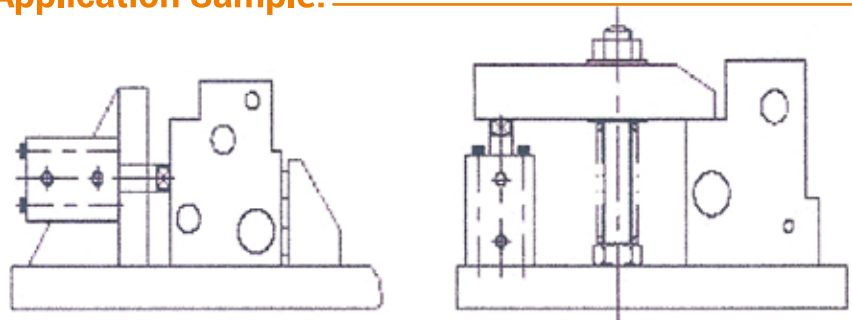
Block Cylinder



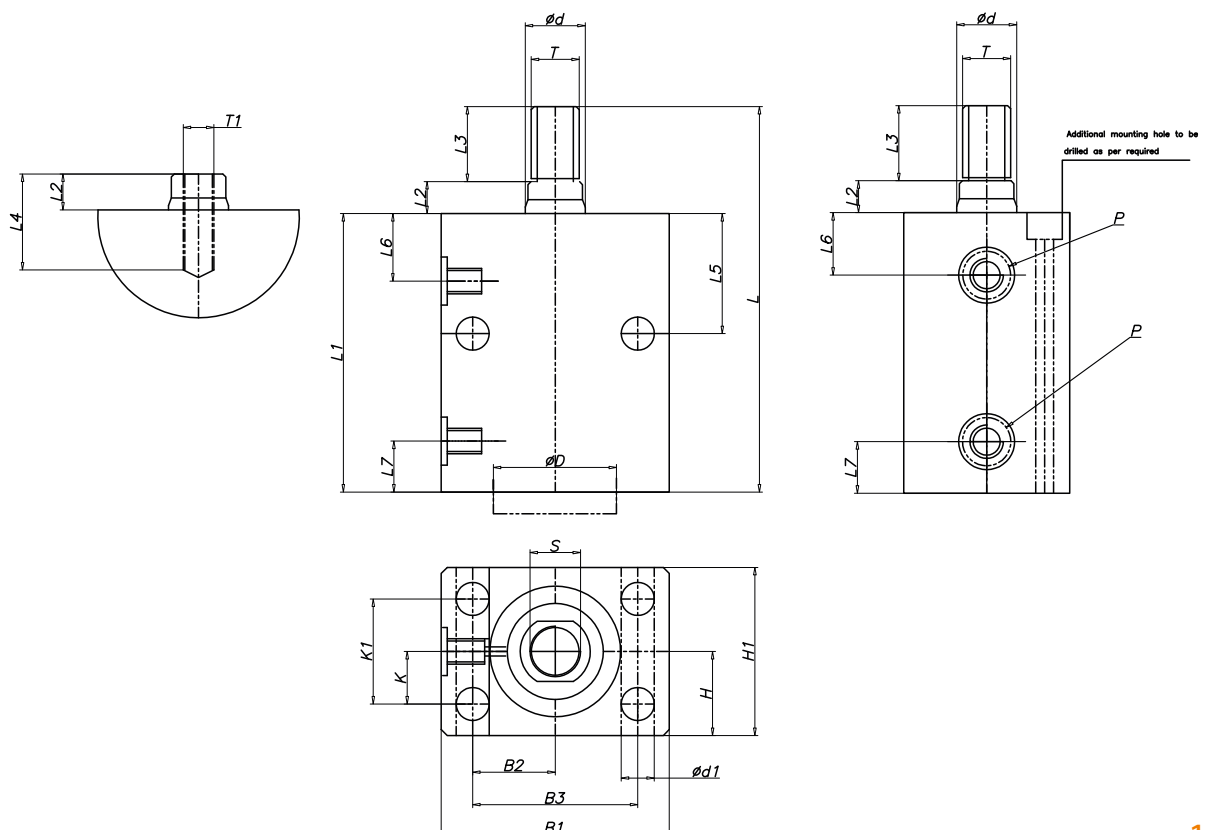
Features:

- This is a double acting cylinder with universal mounting.
- It is a Chromium plated piston alloy steel body with male & female threaded piston ends.
- It can be used with the stroke range : 10 /16 /25 /50 /75 /100
- It can be used in the range of 1 MPa (minimum operating pressure)
15 MPa (maximum operating pressure)
70 bar N (pushing force)

Application Sample:



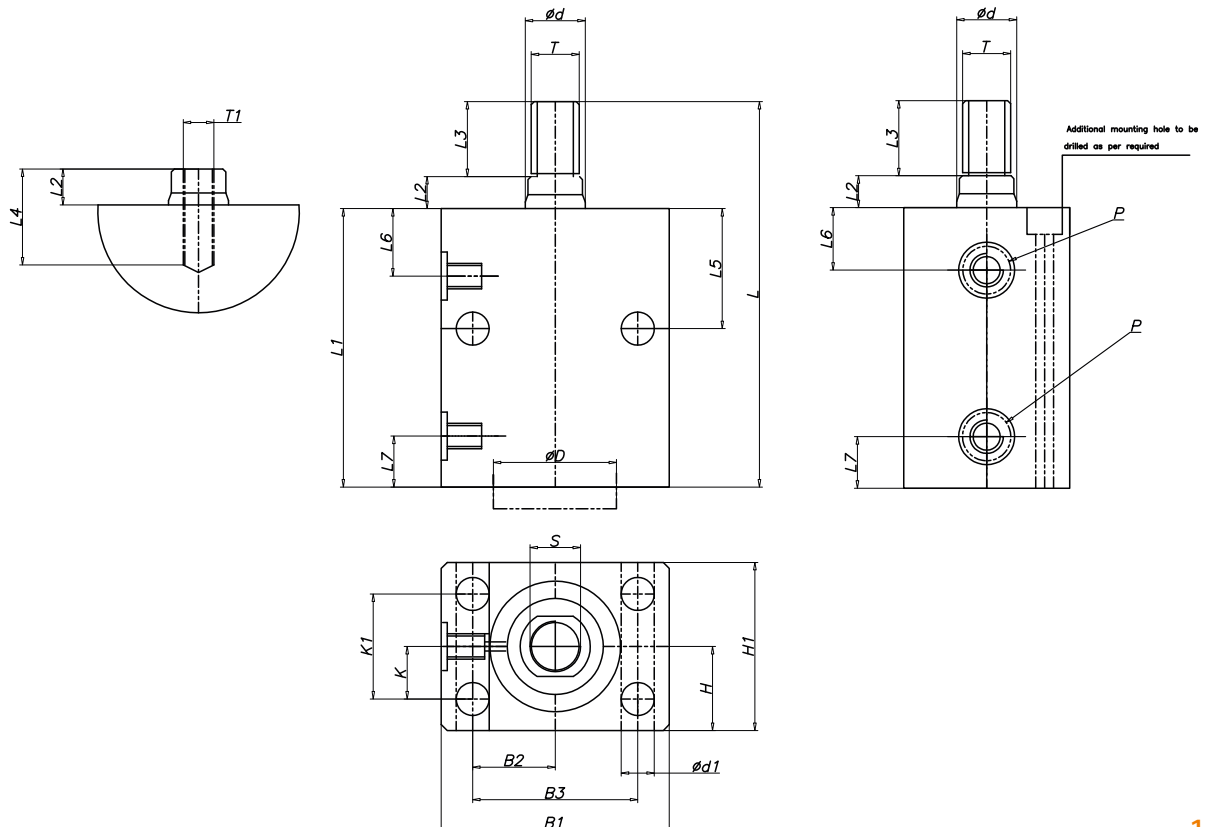
Outline Dimension :



Dimension Tabale :

All dimensions in mm

Model No	Male thread	BC04 16-16M	BC04 16-25M	BC04 16-50M	BC04 20-16M	BC04 20-25M	BC04 20-50M	BC04 25-16M	BC04 25-25M	BC04 25-50M	BC04 32-25M	BC04 32-50M	BC04 32-75M	BC04 40-25M	BC04 40-50M	BC04 40-75M	BC04 50-25M	BC04 50-50M	BC04 50-75M	BC04 50-100M
	Female thread	BC04 16-16F	BC04 16-25F	BC04 16-50F	BC04 20-16F	BC04 20-25F	BC04 20-50F	BC04 25-16F	BC04 25-25F	BC04 25-50F	BC04 32-25F	BC04 32-50F	BC04 32-75F	BC04 40-25F	BC04 40-50F	BC04 40-75F	BC04 50-25F	BC04 50-50F	BC04 50-75F	BC04 50-100F
PistonØD		16			20			25			32			40			50			
RecØd		10			12			16			20			25			32			
Ød1		7			9			9			11			11			13			
Stroke, s		16	25	50	16	25	50	16	25	50	25	50	75	25	50	75	25	50	75	100
L1		60	69	94	66	75	100	66	75	100	80	105	130	80	105	130	95	120	145	170
L2		8			10			10			12			12			14			
L3		15			16			18			22			28			36			
L4		16			16			19			21			25			25			
L5		30			35			35			40			40			50			
L6		16			19			19			22.5			22.5			30.5			
L7		14			16.5			16.5			17			17			17			
B1		51			61			66			76			86			101			
B2		18			22.5			25			27.5			31.5			38			
B3		36			45			50			55			63			76			
H		17.5			20			22.5			27.5			31.5			38			
H1		36			41			46			56			64			77			
k		18			12.5			15			17.5			31.5			22.5			
k1		23			25			30			35			43			45			
P.hvdort		G1/8"			G1/8"			G1/8"			G1/8"			G1/4"			G1/4"			
A/F		8			10			13			17			23			26			
T		M8x1.5			M10x1.5			M14x1.5			M16x1.5			M20x1.5			M24x1.5			
T1		M6			M6			M10			M12			M16			M20			
Pushing force		2			2.2			3.43			5.63			8.79			13.74			
70 bar	KN																			
Puling force		1.00			1.41			2.03			3.43			5.63			8.12			
70 bar	KN																			



Block Cylinder

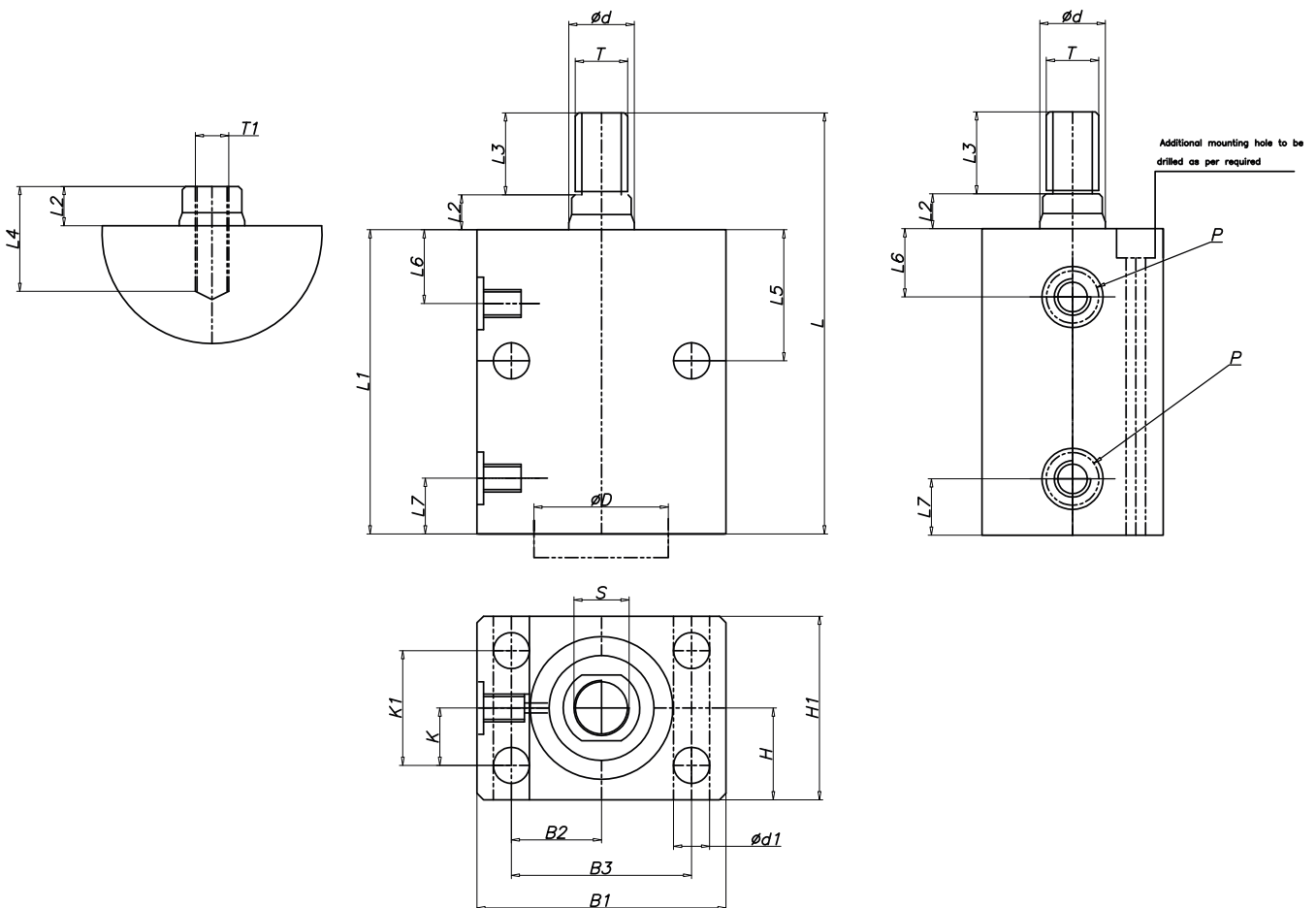
Double Acting



Features:

- This is a double acting cylinder with universal mounting.
- It is a Chromium plated Piston alloy steel body with male & female threaded piston ends.
- It can be used with the stroke range : 25 /50 /75 /100
- These cylinders can be used for direct clamping as well as positioning & support
- It can be used in the range of 1 MPa (minimum operating pressure)
15 MPa (maximum operating pressure)
70 bar N (pushing force)

Outline Dimension:

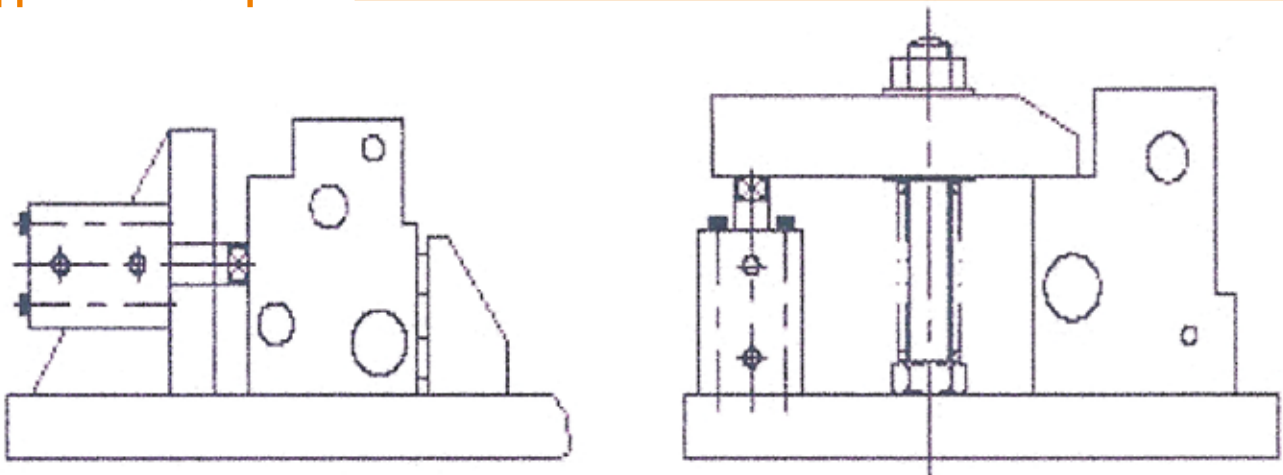


Dimension Tabale :

All dimensions in mm

Model No	Male thread	BC04 65-25M	BC04 65-50M	BC04 65-75M	BC04 65-100M	BC04 75-25M	BC04 75-50M	BC04 75-75M	BC04 75-100M	BC04 80-25M	BC04 80-50M	BC04 80-75M	BC04 80-100M	BC04 100-25M	BC04 100-50M	BC04 100-75M	BC04 100-100M
	Female thread	BC04 65-25F	BC04 65-50F	BC04 65-75F	BC04 65-100F	BC04 75-25F	BC04 75-50F	BC04 75-75F	BC04 75-100F	BC04 80-25F	BC04 80-50F	BC04 80-75F	BC04 80-100F	BC04 100-25F	BC04 100-50F	BC04 100-75F	BC04 100-100F
Piston Ø D	65				75				80				100				
Rod Ød	40				45				50				60				
Ød1	13				17				22				22				
Stroke, S	25	50	75	100	25	50	75	100	25	50	75	100	25	50	75	100	
L1	100	125	150	175	100	125	150	175	105	130	155	180	105	130	155	180	
L2	15				15				16				16				
L3	36				36				40				40				
L4	28				28				40				42				
L5	50				50				60				65				
L6	31.5				30				37				37				
L7	20				20				23				23				
B1	126				146				141				161				
B2	50				55				55				65				
B3	100				110				110				130				
H	44				54				60				70				
H1	89				109				121				141				
k	30				30				40				50				
k1	60				60				80				100				
P.hvdoort	G1/4				G3/8				G1/2				G1/2				
A/F	36				41				45				55				
T	M30x1.5				M36x1.5				M40x1.5				M45x1.5				
T1	M24				M30x1.5				M36x1.5				M40x1.5				
Pushing force	21.48				28.5				35.19				54.98				
70 bar KN	12.68				17.37				21.44				35.19				
Puling force	12.68				17.37				21.44				35.19				
70 bar KN	12.68				17.37				21.44				35.19				

Application Sample:



Compact Cylinder

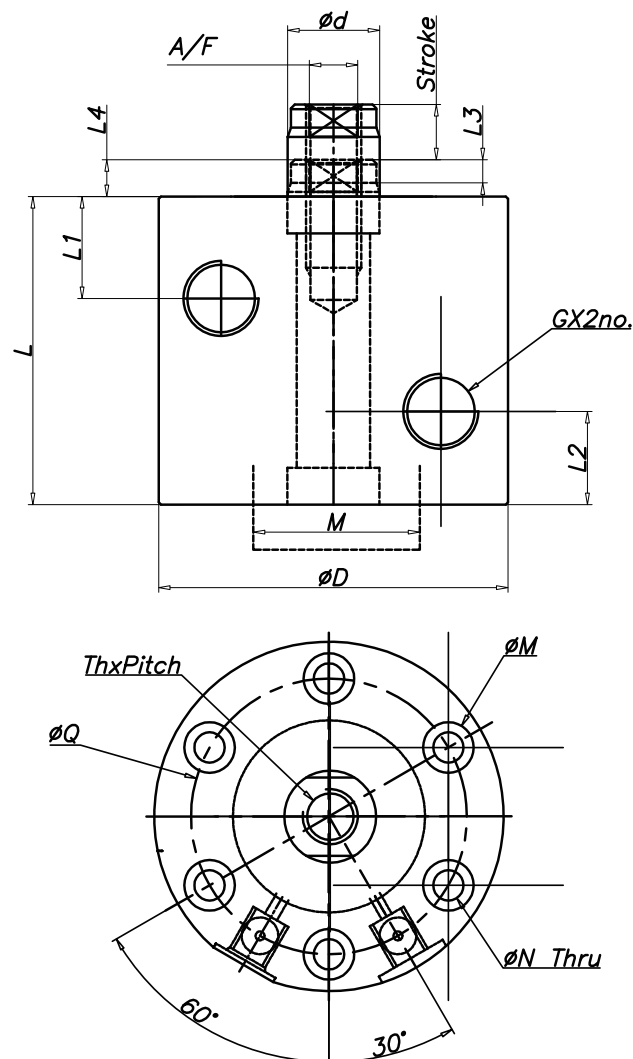
Double Acting



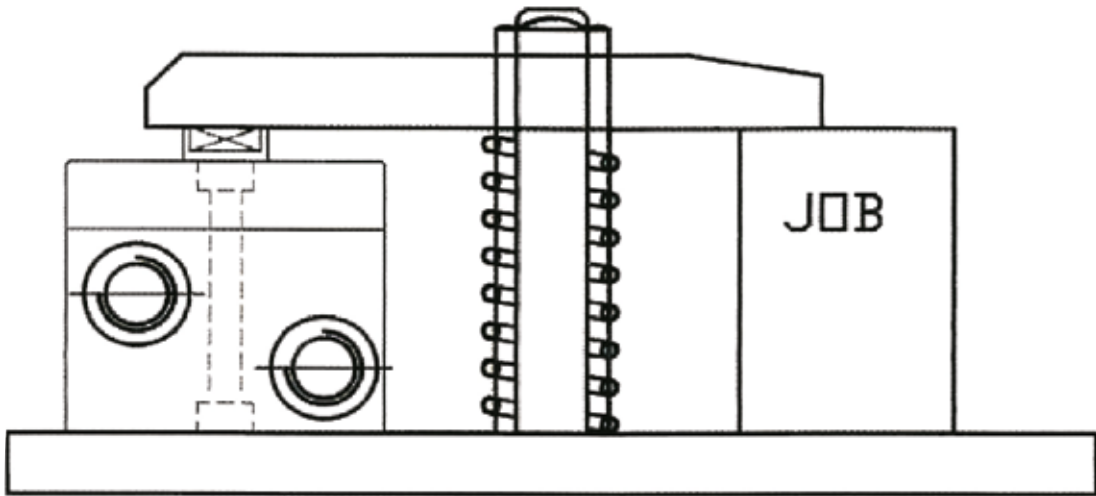
Features:

- This is a manifold mounting cylinder with compact design.
- It is a space saving & easy mounting with male & female threaded piston ends.
- These cylinders are provided with universal mounting.
- These cylinders are threaded directly into manifold, clamping, pushing, pulling, ejection & riverting operations.
- It can be used in the range of 1 MPa (minimum operating pressure) 15 MPa (maximum operating pressure) 70 bar N (pushing force)

Outline Dimension:



Application Sample: _____



Dimension Table : _____

All dimensions in mm

Model No	CC05 4525	CC05 6525	CC05 7625	CC05 9525
Bore \varnothing M	$\varnothing 22$	$\varnothing 32$	$\varnothing 40$	$\varnothing 50$
Pushing force KN	3.8	8	12.5	19.63
Pulling force KN	0.8	2.1	3.1	5.3
Threadxpitch	M6x10 deep	M10x18 deep	M12x20 deep	M16x25 deep
L 4	7	7	8	9
d	12	16	20	25
D	45	65	76	95
G	1/8"	1/8"	1/8"	1/4"
A/F	10	14	17	22
L 1	16.5	16.5	17.5	22.5
L 2	12	12	12	12
L 3	4	4	4	4
\varnothing N	4.5	6.6	6.6	9
\varnothing Mxdeep	8x5.0	11x7.0	11x7.0	14.5x9.0
\varnothing Q (PCD)	35	50	60	75
Stroke	25	25	25	25
L	63	63	67	73
Oil volume pushing CC	8cc	20cc	31cc	49cc
Oil volume pulling CC	5cc	15cc	24cc	37cc

Threaded Body Cylinder

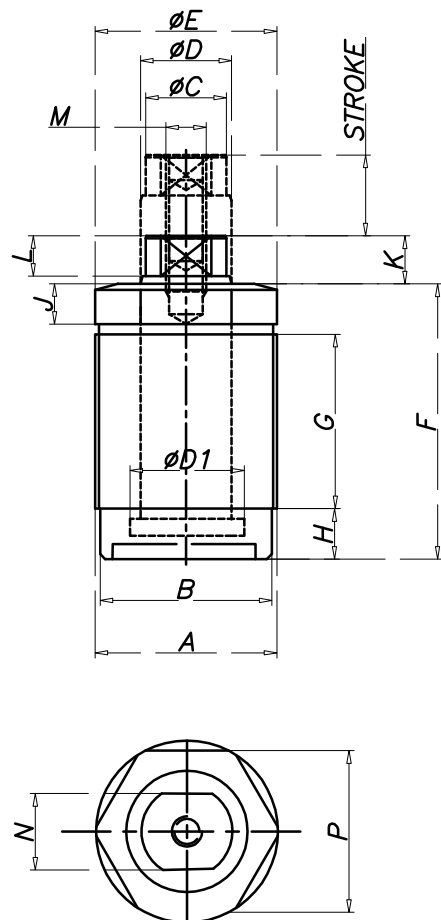
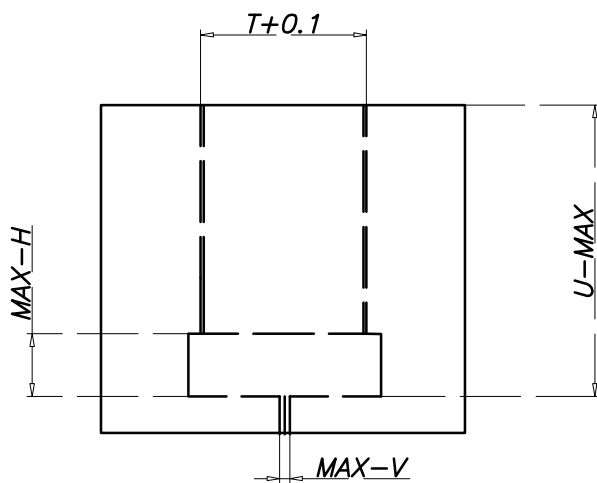
Single Acting



Features:

- It is a manifold mounting spring return type cylinder with compact design.
- It is a space saving mounting with male & female threaded piston ends.
- These cylinders are threaded directly into manifold, pushing, pulling, ejection & reverting operations.
- It can be used for direct clamping as well as positioning & support.
- The range of use 0.5 MPa (minimum operating pressure)
7 MPa (maximum operating pressure)
70 bar N (pushing force)

Application Sample:



Dimension Tabal:

All dimensions in mm

Model No	TC06 M16			TC06 M22			TC06 M24			TC06 M30			TC06 M36			TC06 M45			TC06 M55			TC06 M65			TC06 M80				
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M
A (Nominal x Pitch)	M16X1.5			M22X1.5			M24X1.5			M30X1.5			M36X1.5			M45X1.5			M55X2			M65X2			M80X2				
B	14.3			20.3			22.3			28.3			34.3			43.3			52.6			62.6			77.6				
C	7.5			11.2			13			17			19			28			34.5			42			52				
D	7			12			14			18			22.4			30			35.5			45			55				
D1Ø	11	11	11	15	15	15	16	16	16	20	20	20	25	25	25	33	33	33	35	35	35	45	45	45	50	50	50		
E	16			21.2			24.5			30			35.5			45			55			66			80				
F	35	39	45	28	36	49	32.5	40	56.5	35	44	63.5	41.5	62.5	75.5	47	60	82.5	52	67	89	62	78	113	69	87	118		
G	24	28	34	13	21	34	17.5	25	41.5	18	27	46.5	23.5	36.5	57.5	23	36	58.5	27	43	65	35	51	80.5	42	60	91		
H	6			8			8			9			10			12			12			13			13				
J	5			7			7			8			8			12			12			14			14				
K	6			7			7			8.5			9.5			12			13			16			19				
L	4			5.5			5.5			7			8			10			11			13			16				
M (Nominal x depth)	M5X8			M6X7			M6X7			M8X10			M8X10			M10X11			M12X12			M16X16			M20X20				
N	7			10			10			14			17			24			30			36			41				
P	16			22			24			30			36			41			50			60							
T	14.5			20.5			22.5			28.5			34.5			43.5			53			63			78				
MIN.U	12			14			14			15			16			18			20			25			25				
MIN.U	23	29	38	20	28	41	24	32	48	26	65	54	32	45	66	34	47	69	38	53	76	47	63	92	54	72	103		
MAX.V	3			3			3			6			6			8			8			8			8				

Stroke & Load Details:

Model No	TC06-M16			TC06-M22			TC06-M24			TC06-M30			TC06-M36			TC06-M45			TC06-M55			TC06-M65			TC06-M80				
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M
stroke mm	6	10	16	6	10	16	8	12	20	8	12	20	10	16	25	10	16	25	10	20	32	16	25	40	16	25	40		
Cylinder area cm ²	0.95			1.1			1.5			2.5			3.9			7.1			9.9			15.9			23.8				
Cylinder volume cm ³	0.6	1	1.5	0.7	1.1	1.8	1.2	1.8	3.1	2	3.1	5.1	3.9	6.3	9.9	7.1	11	17.7	12	20	31.7	25	40	63.6	38	59.4	95		
Release spring force (N)	12.4-24.0			26.0-24.0			33.0-61.0			50.0-99.0			79.0-150			157-319			236-452			353-657			564-1040				
supply pressure; (7Mpa) force in KN	0.665			0.75			1.01			1.66			2.59			4.6			6.44			10.4			15.5				
Calculation formula - KN	(0.01 p)-0.024			(0.11 3p)-0.041			(0.154p)-0.060			(0.254p)-0.099			(0.394p)-0.150			(0.707p)-0.319			(0.990p)-0.452			(1.59p)-0.657			(2.38p)-1.04				
Max.operating pressure (Mpa)	15																												
Min.operating pressure (Mpa)	0.8																												

Threaded Body Cylinder (Hexgaon Manifold Mount)

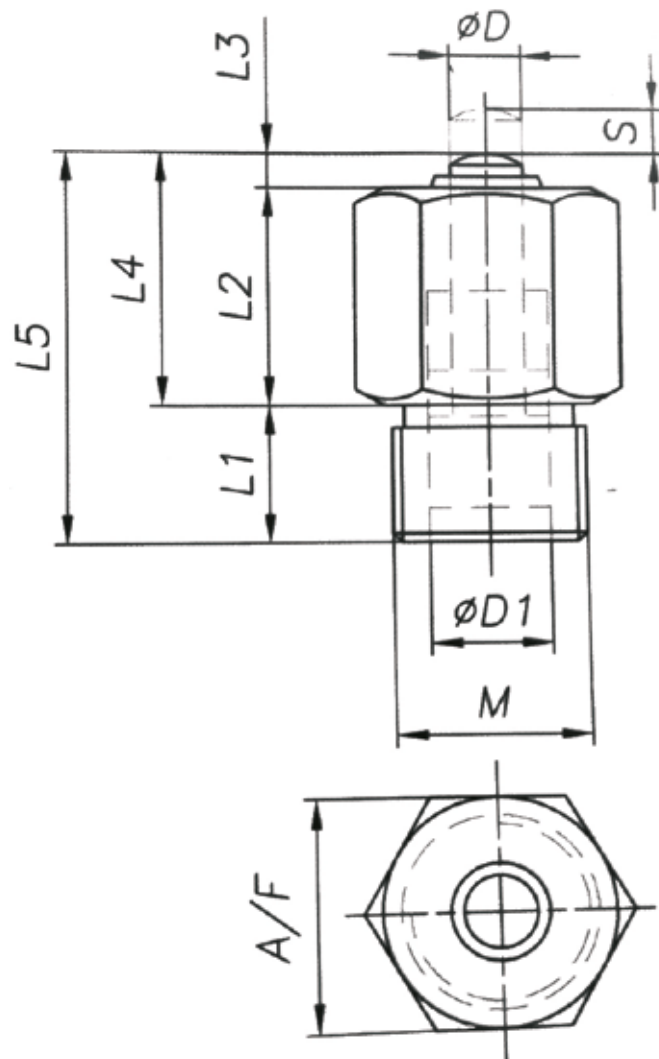
Single Acting



Features:

- This is a manifold mounting cylinder with compact design.
- It is a space saving mounting with male & female threaded plunger ends.
- These cylinders are threaded directly into manifold, pushing, pulling, ejection & riverting operations.
- It can be used in the range of 0.5 MPa (minimum operating pressure)
7 MPa (maximum operating pressure)
70 bar N (pushing force)

Outline Dimension:

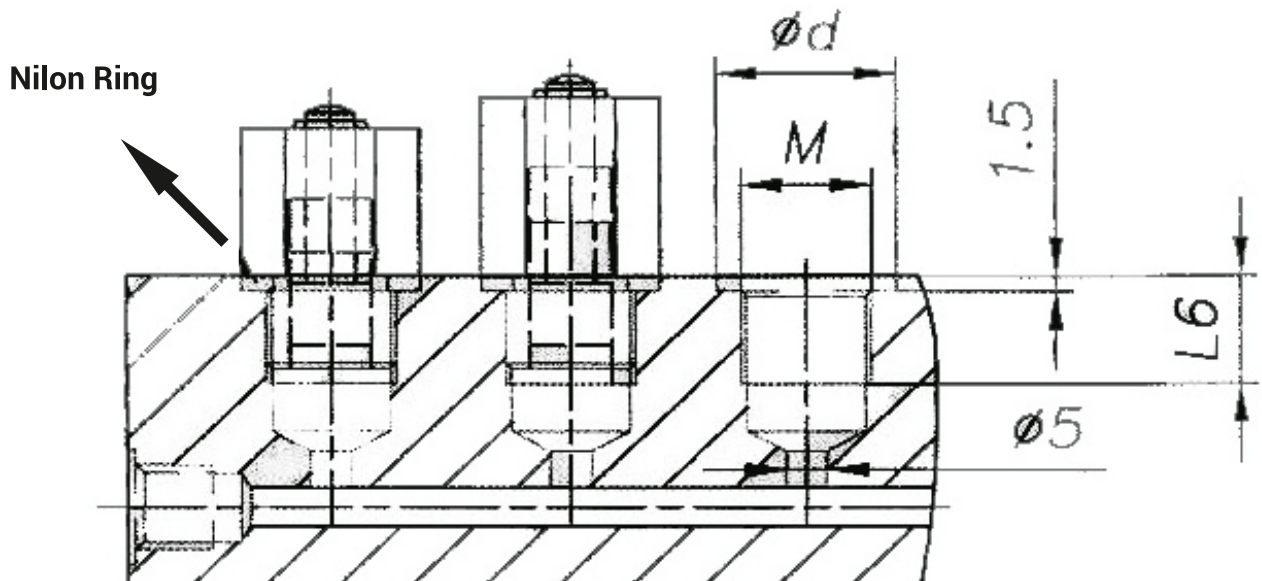


Dimension Tabale : _____

All dimensions in mm

Model No	TMC07 M16-S	TMC07 M16-M	TMC07 M20-S	TMC07 M20-M	TMC07 M24-S	TMC07 M24-M	TMC07 M30-S	TMC07 M30-M	TMC07 M36-S	TMC07 M36-M
Rod \varnothing D	6		8		10		12		16	
Piston \varnothing D1	10		12		16		20		25	
Stroke - S	4	8	4	8	6	10	8	12	12	16
M	M16X1.5		M20X1.5		M24X1.5		M30X1.5		M36X1.5	
L1	12		12		14		18		21	
L2	19	23	19	23	21	25	27	31	33	37
L3	4	4	4	4	4	4	4	4	4	4
L4	22	26	22	26	24	28	30	34	36	40
L5	34	38	34	38	38	42	48	52	57	61
L6	14		14		16		23		23	
A/F	19		24		27		36		41	
\varnothing d	22		28		32		42		48	

Typical Mounting: _____



Work Support (Threaded Body)

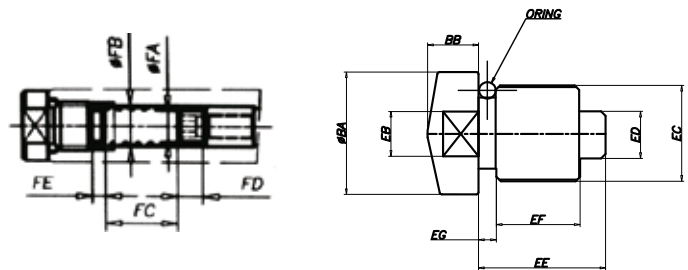
Single Acting



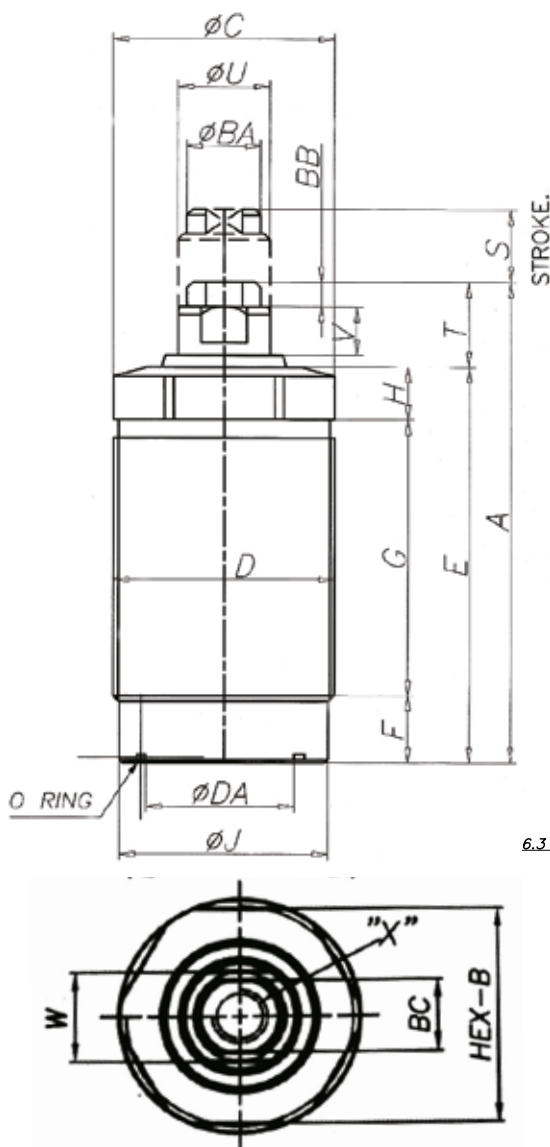
Features:

- This is a threaded body with compact design of single acting.
- It is a wide operating pressure range.
- This work support is a hydraulic advance with manifold mounting & also, spring advance
- It can be used in the range of 7 Mpa
- Maximam operating pressure 70bar Max

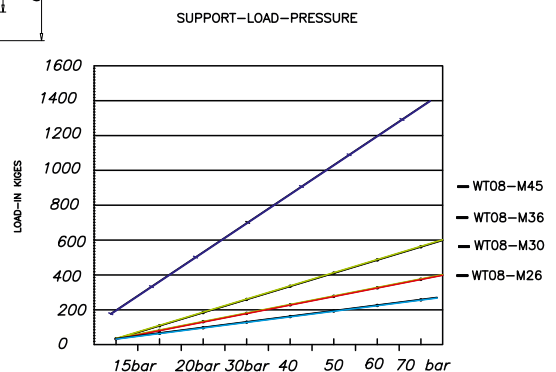
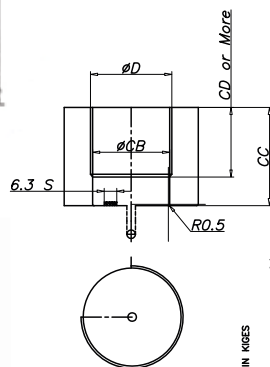
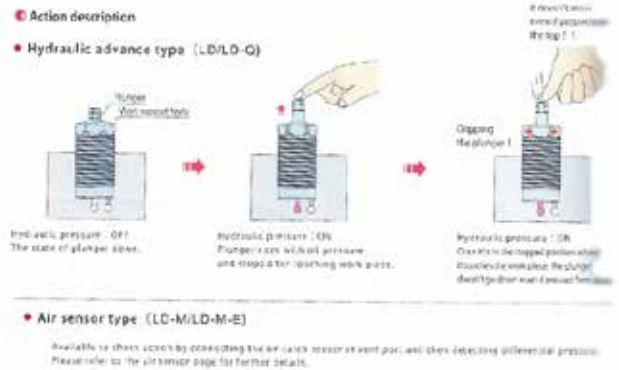
Plunger Spring & Contact Bolt Dimensions:



Outline Dimension:



Application Sample:



External Dimension Table:

All dimensions in mm

Model NO	WT08-M26	WT08-M30	WT08-M36	WT08-M45
Support force 7Mpa (KN)	3	3.8	4.5	9.5
Support force formula Mpa	0.53XP-0.68	0.67XP-0.91	0.825XP-1.25	1.7XP-2.28
Plunger stroke.s (mm)	6	8	8	10
Plunger rising force.I (N)	2.8~4.1	3.6~5.7	4.7~7.8	5.8~9.7
Plunger rising force. H (N)	3.8~5.9	4.9~8	6.2~11	7.9~13.6
cylinder volume (cm)	0.6	0.9	1.3	2
Min.pressure	2.0Mpa			
Max. pressure	7.0Mpa			
weight (k g)	0.2	0.25	0.35	0.75
A	66	74	80	80
B	24	27	32	41
C	26	30	36	45
D	M26x1.5	M30x1.5	M36x1.5	M45x1.5
E	54.5	65	68	69
F	7	8	9	10
G	40	44	50	49
H	8	9	9	10
ØJ	24.6	28.4	34	43
T	9.5	9.5	12.5	11.5
ØU	10	12	15	16
V	5	5	5.5	6
W	8	10	13	14
X	M6	M8	M10	M10
ØCB	9.5	11.5	12.5	12.5
BB	4	4	4	4
BC	8	10	12	13
ØCB	24.5	28.5	34.5	43.5
CC	16~47	17~50	18~48	21~58
CD	CC-7	CC-7	CC-8	CC-8
ØDAx thick	012X2	014X2	014X2	020X2

Pad Dimensions:

ØEB	4.9	6	8.2	10
EC	M6	M8	M10	M10
ØED	2.5	5	5	5.5
EE	9	10	10	10
EG	2	2	2	2
O-RING	5X1.5	4X2	8X1.5	8X1.5
ØFA	2.6	5	5.8	5.8
ØFB	3.6	6	8.5	8.5
FC	11.5	13	10	12
FD	4	4	8	8
FE	2	2	2	2
Mounting torque (Nm)	31.5	50	63	80

Work Support (Flange Body)

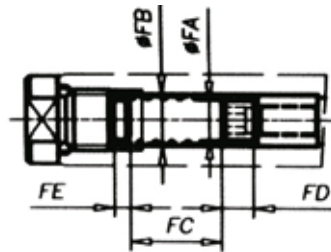
Single Acting



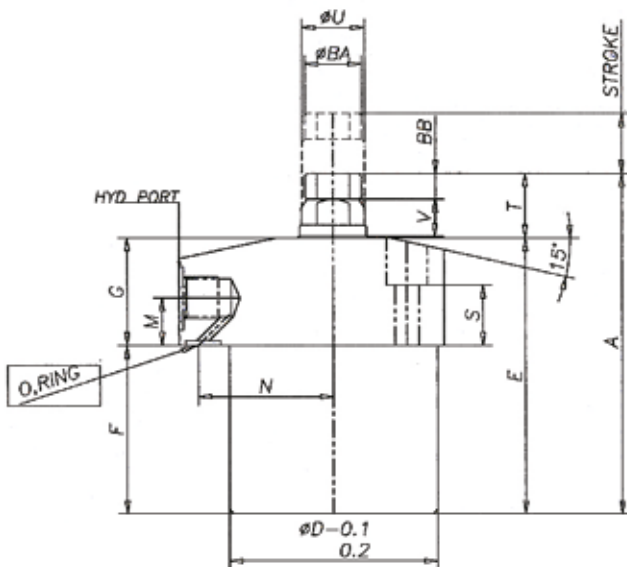
Features:

- This is a flange body with compact design of single acting.
- It is a low operating pressure range.
- This work support is a hydraulic advance with flange mounting & With Spring Advance
- It can be used in the range of 7 Mpa
- Maximam operating pressure 70bar Max

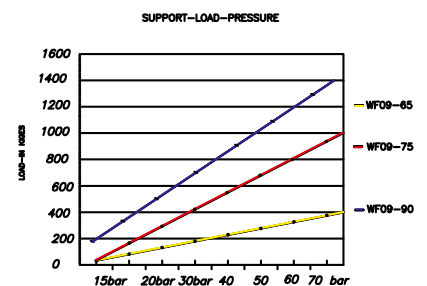
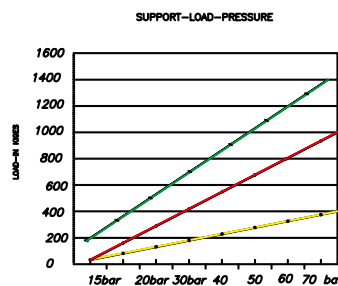
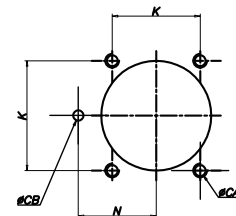
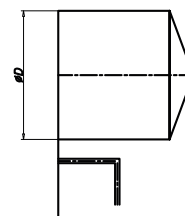
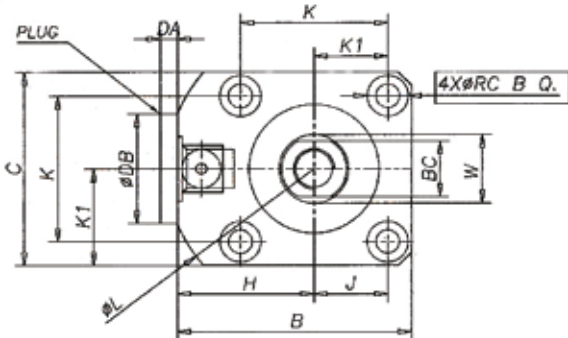
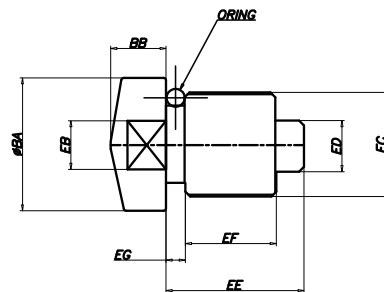
Plunger Spring & Contact Bolt Dimensions:



Outline Dimension:



Application Sample:



External Dimension Table:

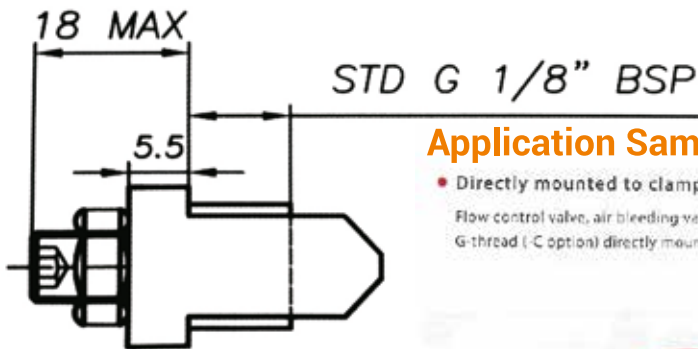
All dimensions in mm

Model NO		WF09-40	WF09-48	WF09-55	WF09-65	WF09-75	WF09-90
Support force 7Mpa (KN) 10		4.5	9.5	14	21	33	45
Support force formula Mpa (KN)		0.825XP-1.25	1.55XP-1.25	2.36XP-2.28	3.83XP-5.7	5.60XP-6.13	7.5XP-6.87
plunger stroke, ST (mm)		8	10	12	14	16	20
cylinder volume (cm)		12	2	3.3	4.8	8.9	13.1
plunger spring force	L N	2.8~4.1	3.6~5.7	4.7~7.8	9.8~14.6	124~18.8	14.6~210
	H N	3.8~5.9	4.9~8.0	6.2~11	16.8~22.0	18.7~31.9	214~34.2
Max. pressure (Mpa)		7					
Min. pressure (Mpa)		2					
design pressure Mpa		10.5					
Temperature 0C		0.7					
weight	kg	0.6	0.8	14	2.2	3.6	6
A		78	77	103	101	126	140
B		54	61	69	81	92	107
C		45	51	60	70	80	95
ØD		40	48	55	65	75	90
E		64	64	73	85	107	128
F		39	39	48	56	72	88
G		25	25	30	29	35	40
H		31.5	35.5	39	46	52	59.5
J		22.5	25.5	30	35	40	47.5
K		34	40	47	55	63	75
K1		17	20	23.5	27.5	31.5	37.5
ØL		68	73	83	94	106	126
M		11	11	11	11	13	13
N		26	30	33.5	39.5	45	52.5
O		9.5	9.5	11	11	14.5	17.5
R		5.5	5.5	6.6	6.6	9	11
S		15	15	17	17	17	18
T		14	12	16	16	19	22
ØU		15	16	20	22	25	32
V		6	6	8	9	9	10
w		13	14	18	19	22	24
X		M10	M10	M12	M12	M16	M16
Hyd-port		G1/8"	G1/8"	G1/8"	G1/8"	G1/4"	G1/4"
o-ring		4X2	4X2	4X2	6X2	6X2	6X2
Contact bolt	ØBA	12.5	12.5	16.5	16.5	21.5	30
	BB	4	4	6	6	9	9
	BC		1111	14	15	20	28
	ØEB	7.5	7.5	10	10	13.5	13.5
	EC	M10	M10	M12	M12	M16	M16
	ØED	5.5	6.5	6	6	9	10
	EE	11	10	10	13	16	16
	EF	2	2	2.5	2	3	3
Mounting dimension	CA	M5	M5	M6	M6	M8	M10
	ØCB	2	2.5	2.5	3	5	5
with plug	DA	3.5			3.5	4.5	4.5
	ØDB	14			14	18	18
Plunger spring housing dimension	ØFA	5.8	5.8	6	6.4	10	10
	ØFB	8.5	8.5	10.2	10.2	14	14
	FC	9.5	10	12	21	16	44
	FD	8	6	6	6	12	12
	FE	2	2	2	2	2	2
	FF	19.5	7.5	20	29.5	30	38.5



Features:

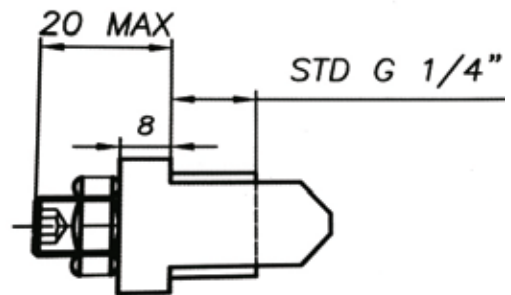
- This is a alloy steel body type with compact design.
- It can be directly mounted on to individual elements like cylinders or work supports.
- It is hydraulic & internal mounting.
- These valves do not required external speed control.
- It can be individual adjustment & very easy.
- It is available in G1/8, G1/4, sizes. & 101pm (maximum flow allowed)



Application Sample

- Directly mounted to clamps
- Flow control valve, air bleeding valve, G-thread plug for G-thread (C option) directly mounted.

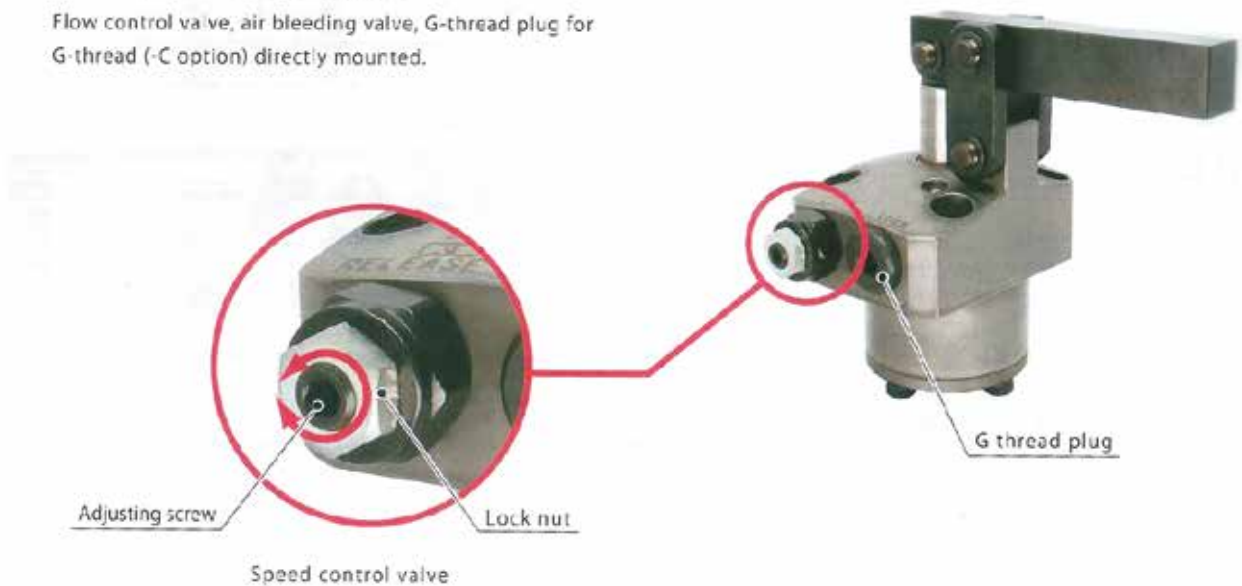




Application Sample

- Directly mounted to clamps

Flow control valve, air bleeding valve, G-thread plug for G-thread (-C option) directly mounted.



Speed control valve

Model

Model



Speed control valve

Model



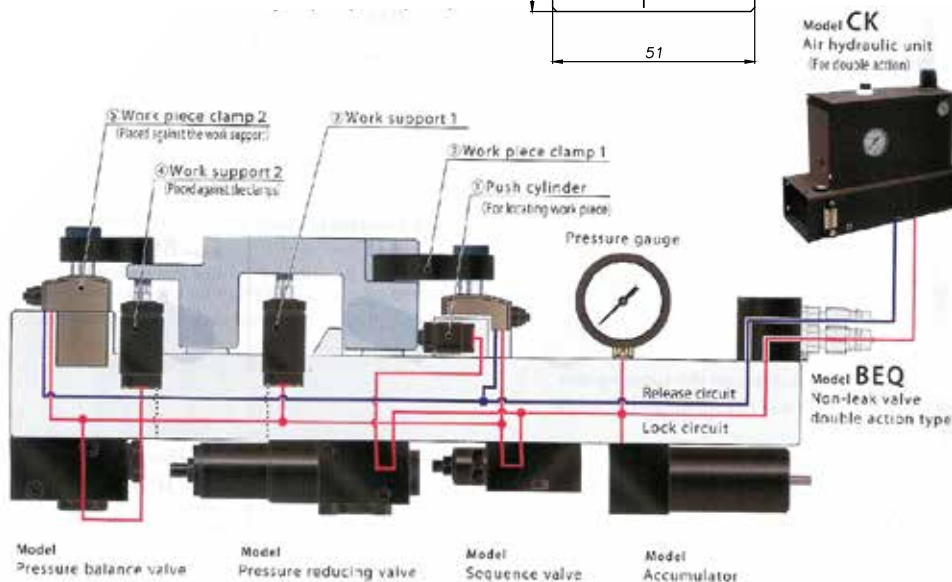
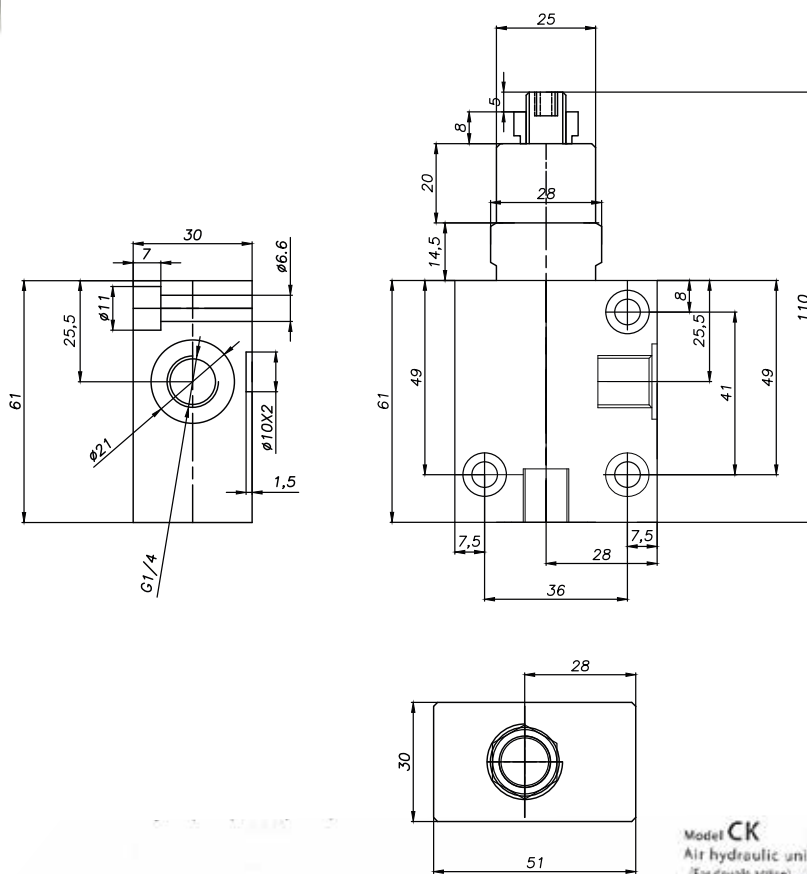
G thread plug

Model



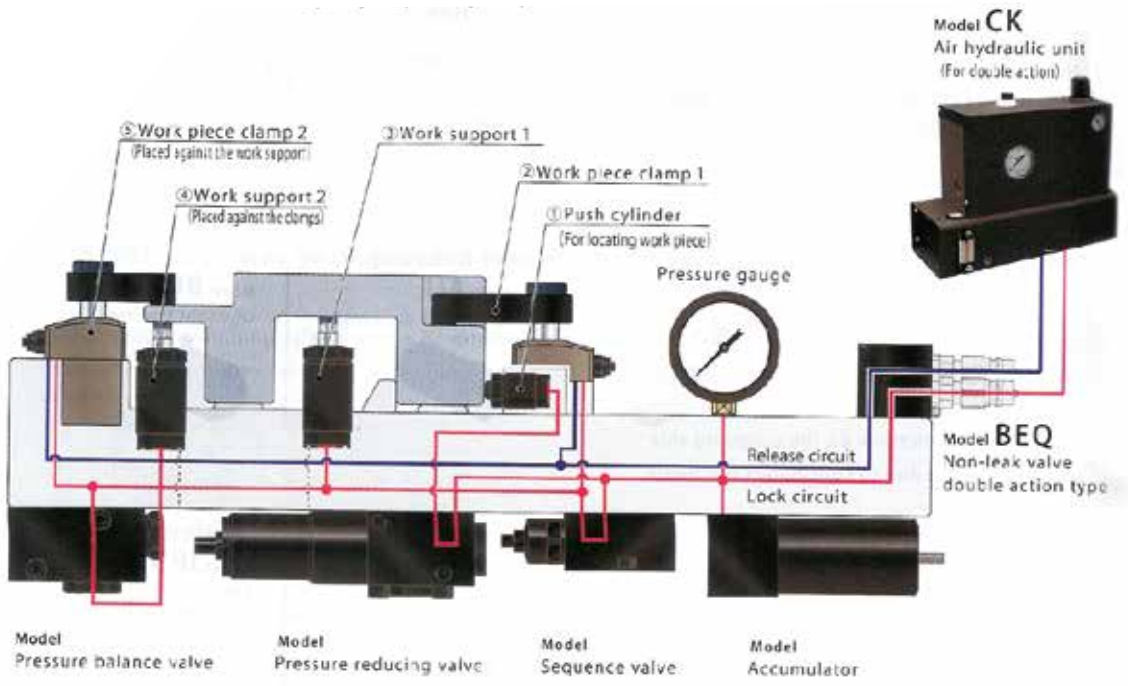
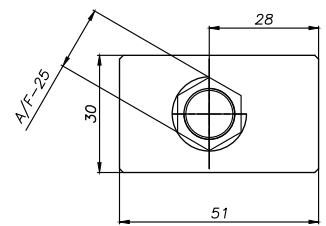
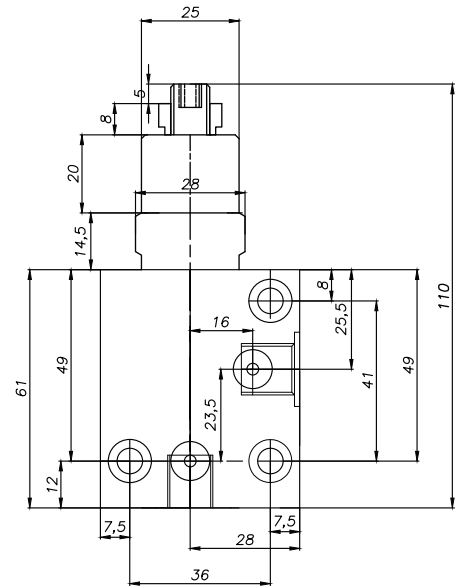
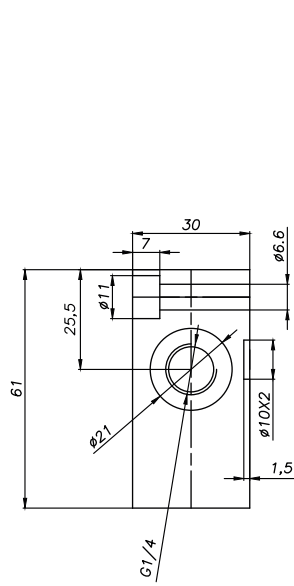
Features:

- This is a cartridge type with compact design.
- It is a G1/4 port with alloy steel body.
- It is hydraulic & space saving mounting.
- These valves can be used for external piping option.
- It can be used in the range of 1 MPa (minimum operating pressure)
10 Mpa (maximum operating pressure)
70 bar N (pushing force)



Sequence Valve

Product Code: SV11- IN03



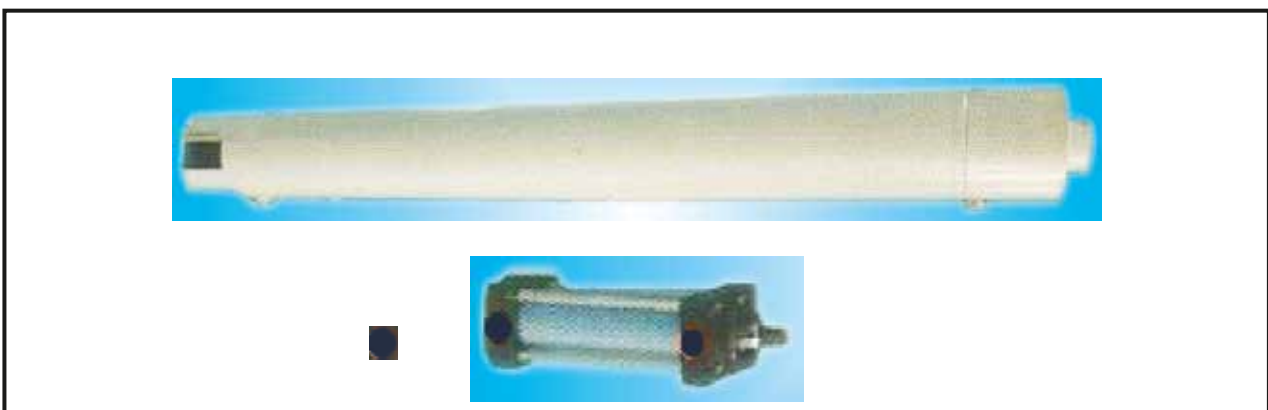
Tie Rod Cylinder

Basic Cylinder

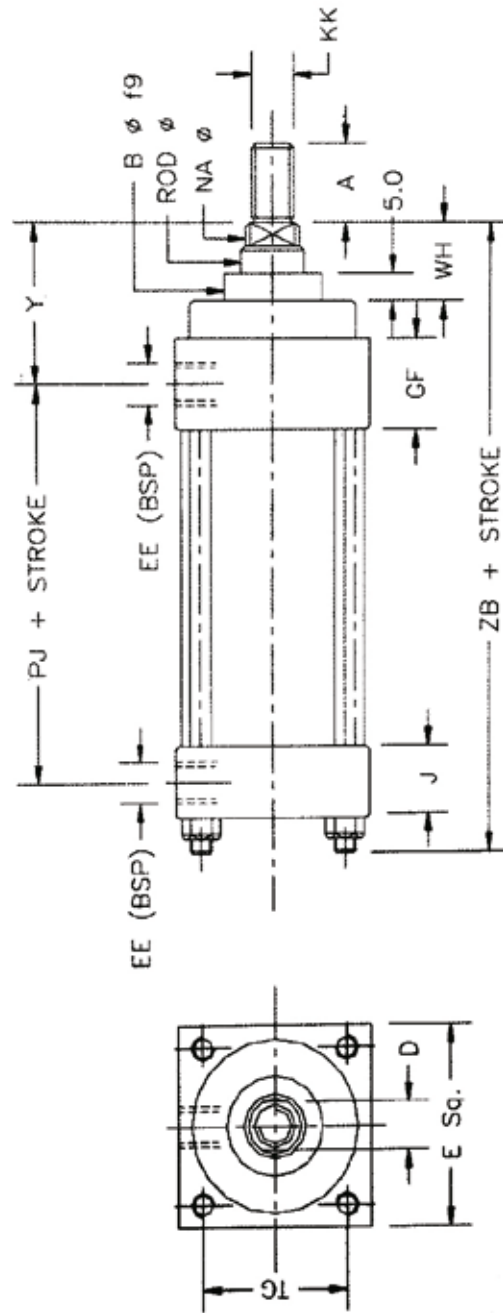


Features:

- This is hydraulic basic cylinder with cushioning from 63 mm bore onwards.
- It is used for bronze filled telfon seals with minimum speed & without stick-slip (5mm/min).
- It can be used in the range of 160 bar (maximum operating pressure)
 - 12 m/min (maximum reciprocating speed)
 - 3-5 bar (break away pressure)
 - 20mm (standard cushioning length)
 - 400mm/min or less(minimum cushioning speed)



Out line Dimension :



External Dimension Table:

All dimensions in mm

Bore	ROD	A	B	D	E	EE	GF	J	KK	NA	PJ	TG	WH	Y	ZB						
25	12	14	24	10	40	1/4"	35	20	M10X1.25	11	53	28.3	15	50	121						
40	18	28	18	28	30	42	15	22	63	3/8"	39	30	M14X1.5	M20X1.5	17	26	73	41.7	25	62	166
50	22	36	22	36	34	50	18	30	75	1/2"	40	32	M16X1.5	M27X2	21	34	74	52.3	25	67	176
63	28	45	28	45	42	60	22	36	90	1/2"	37	32	M20X1.5	M33X2	26	43	80	64.3	32	71	185
80	36	56	36	56	50	72	30	46	115	3/4"	44	38	M27X2	M42X2	34	54	93	82.7	31	77	212
100	45	70	45	63	60	88	36	60	130	3/4"	43	38	M33X2	M48X2	43	68	101	96.9	35	82	225

Tie Rod Cylinder

Basic Cylinder

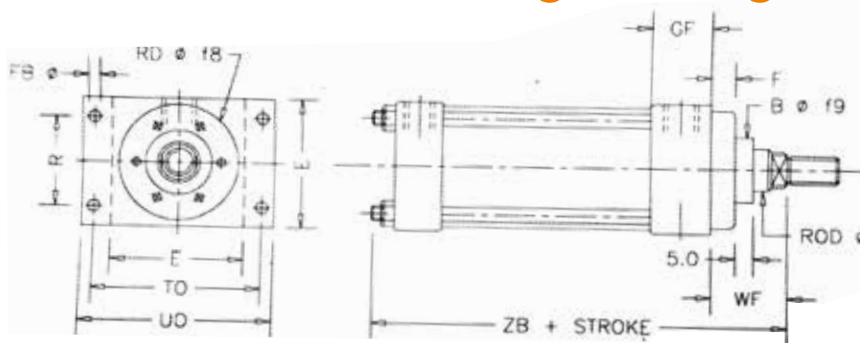
Features:

- This is hydraulic basic cylinder with cushioning from 63 mm bore onwards.
- It is used for bronze filled telfon seals with minimum speed & without stick-slip (5mm/min).
- These are high finish on cylinder tube for long seal life.
- All cylinders confirm to ISO standarads.
- It can be used in the range of 0.5 MPa (minimum operating pressure)
16MPa (maximum operating pressure)
Ø63 (cushioning from high bore)

Applications:

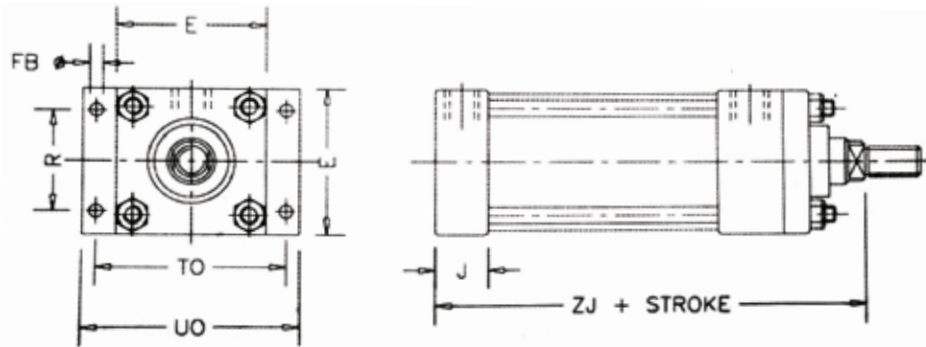
- It is used for clamp work pieces (push or pull method).
- Used for design (direct mounting on th application).
- These are used for various combination of endings & mounting.
- Used for international quality seals with hard chrome plated & ground piston.
- It can clamp a wide range of components (used in assembly auto machine).

ME5 - Head Mounting Rectangular :



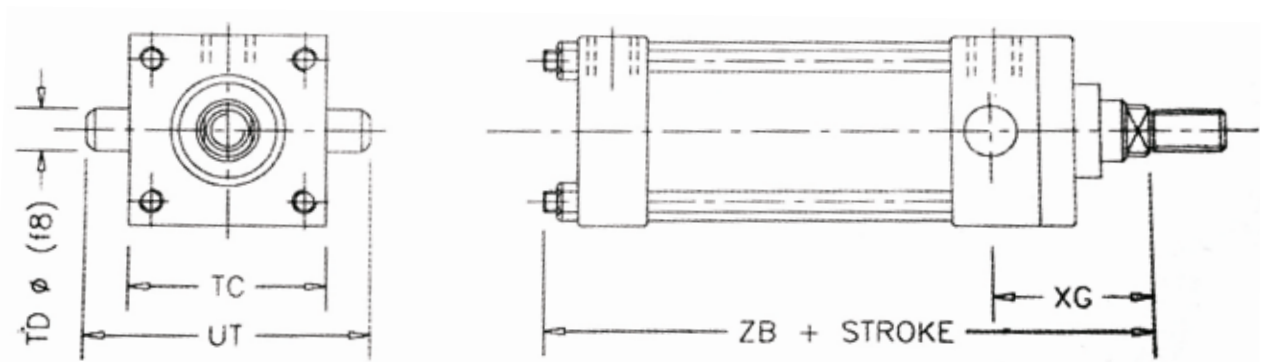
BORE	ROD		F	FB	R	RD		TO	UO	WF
25	12		10	5.5	27	38		51	65	25
40	18	28	10	11	41	62	62	87	110	35
50	22	36	16	14	52	74	74	105	130	41
63	28	45	16	14	65	75	88	117	145	48
80	36	56	20	18	83	82	105	149	180	51
100	45	70	22	18	97	92	125	162	200	57

ME6 - Cap Mounting Rectangular :



BORE	E	FB	J	R	TO	UO	ZJ
25	40	5.5	20	27	51	65	114
40	63	11	30	41	87	110	153
50	75	14	32	52	105	130	159
63	90	14	32	65	117	145	168
80	115	18	38	83	149	180	190
100	100	18	38	97	162	200	203

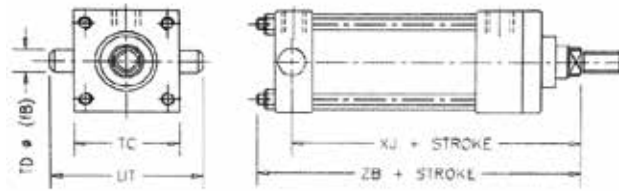
MT1 - Head Mounting integral Trunnion :



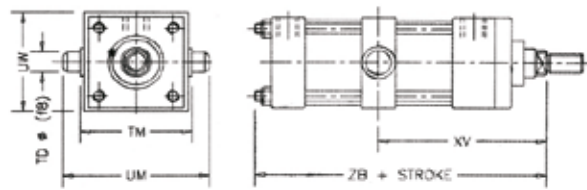
BORE	TC	TD	UT	XG	ZB
25	38	12	58	44	121
40	63	20	95	57	166
50	76	25	116	64	176
63	89	32	139	70	185
80	114	40	178	76	212
100	127	50	207	71	225

Tie Rod Cylinder

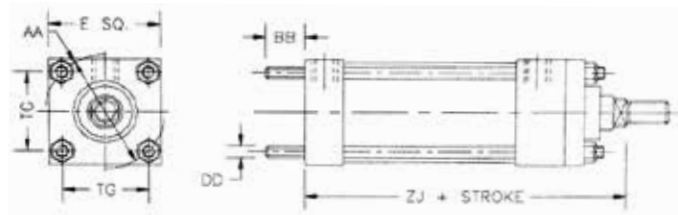
MT2 - Cap Mounting Integral Trunnion



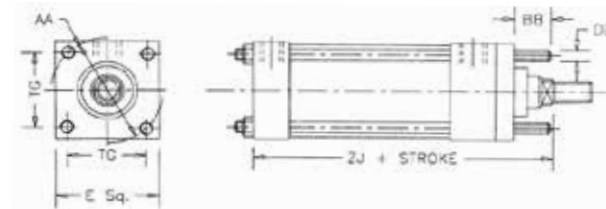
MT4 - Mounting with Intermediate Fixed Trunnion



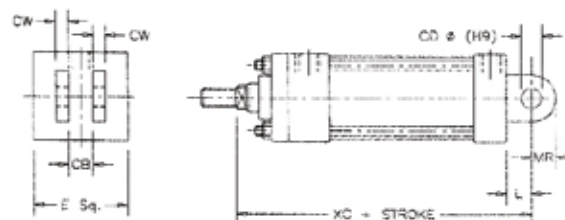
MX2- Cap Mounting Tie Rods Extended



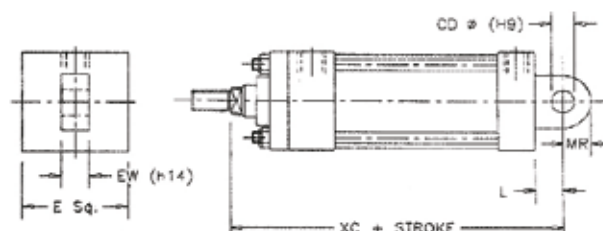
MX3- Head Mounting Tie Rods Extended



MP1- Cap Mounting Fixed Clevis



MP3- Cap Mounting Fixed Eye



External Dimension Table:

All dimensions in mm

BORE	TC	TD	UT	XJ	ZB
25	38	12	58	101	121
40	63	20	95	134	166
50	76	25	116	140	176
63	89	32	139	149	185
80	114	40	178	168	212
100	127	50	207	187	225

BORE	TD	TM	UM	UW	XV	ZB
25	12	48	68	63	To be specified	121
40	20	76	108	92		166
50	25	89	129	112		176
63	32	100	150	126		185
80	40	127	191	160		212
100	50	140	220	180		225

BORE	AA	BB	DD	E	TG	ZJ
25	40	19	M 5X0.8	40	28.3	114
40	59	35	M 8X1.0	63	41.7	153
50	74	46	M 12X1.25	75	52.3	159
63	91	46	M 12.X1.25	90	64.3	168
80	117	59	M 16X1.5	115	82.7	190
100	137	59	M 16X.1.5	130	96.9	203

BORE	AA	BB	DD	E	TG	ZJ
25	40	19	M 5X0.8	40	28.3	114
40	59	35	M 8X1.0	63	41.7	153
50	74	46	M 12X1.25	75	52.3	159
63	91	46	M 12.X1.25	90	64.3	168
80	117	59	M 16X1.5	115	82.7	190
100	137	59	M 16X.1.5	130	96.9	203

BORE	A		CB	CD	CW	E	L	MR	XC
25	14		12	10	6	40	13	12	127
40	18	28	20	14	10	63	19	17	172
50	22	36	30	20	15	75	32	29	191
63	28	45	30	20	15	90	32	29	200
80	36	56	40	28	20	115	39	34	229
100	45	63	50	36	25	130	54	50	257

BORE	A		CD	E	EW	L	MR	XC
25	14		10	40	12	13	12	127
40	18	28	14	63	20	19	17	172
50	22	36	20	75	30	32	29	191
63	28	45	20	90	30	32	29	200
80	36	56	28	115	40	39	34	229
100	45	63	36	130	50	54	50	257

Low Rpm Hydraulic Rotary Union

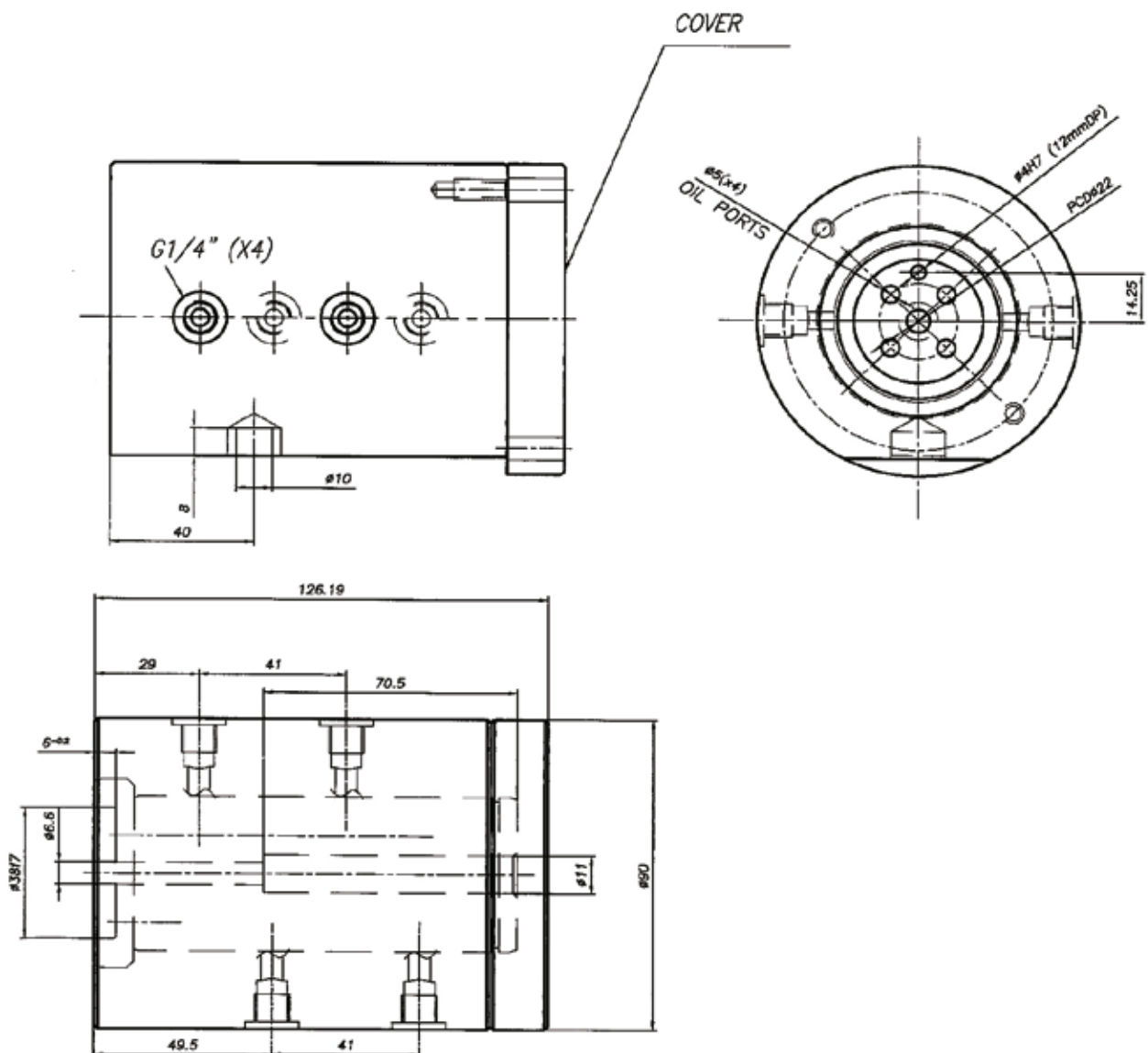


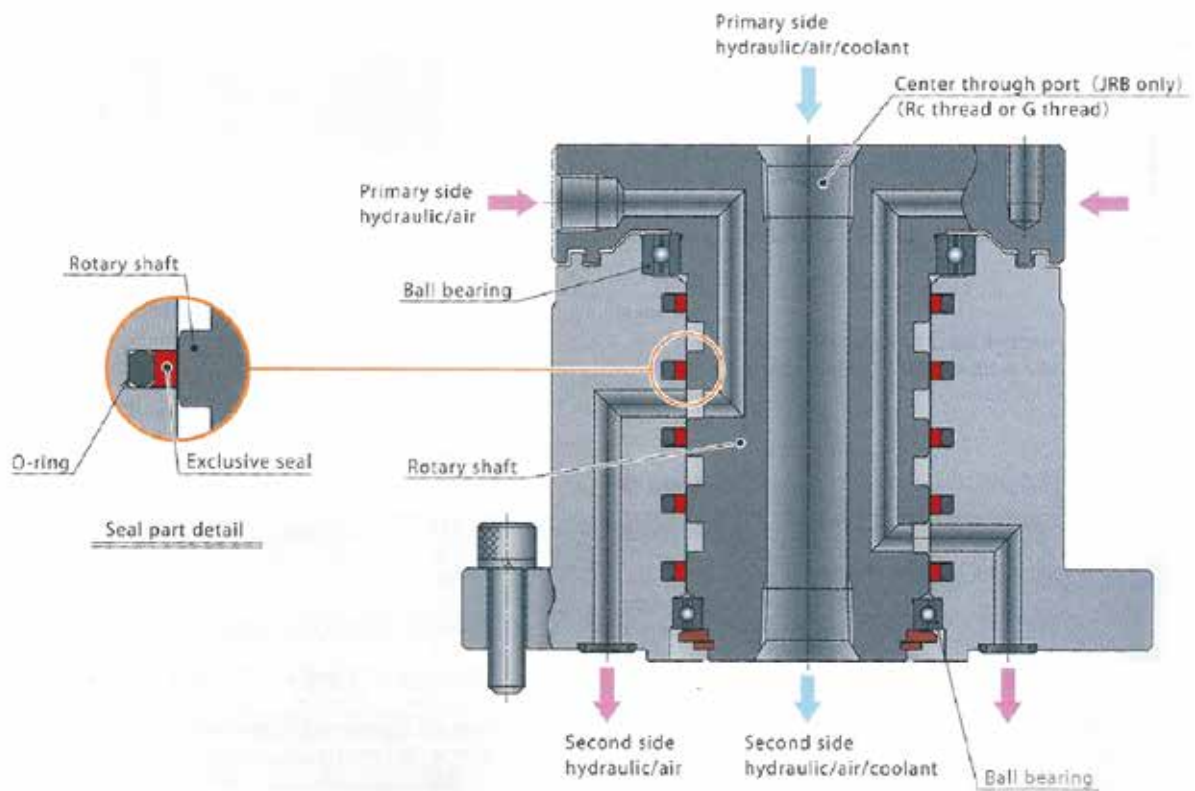
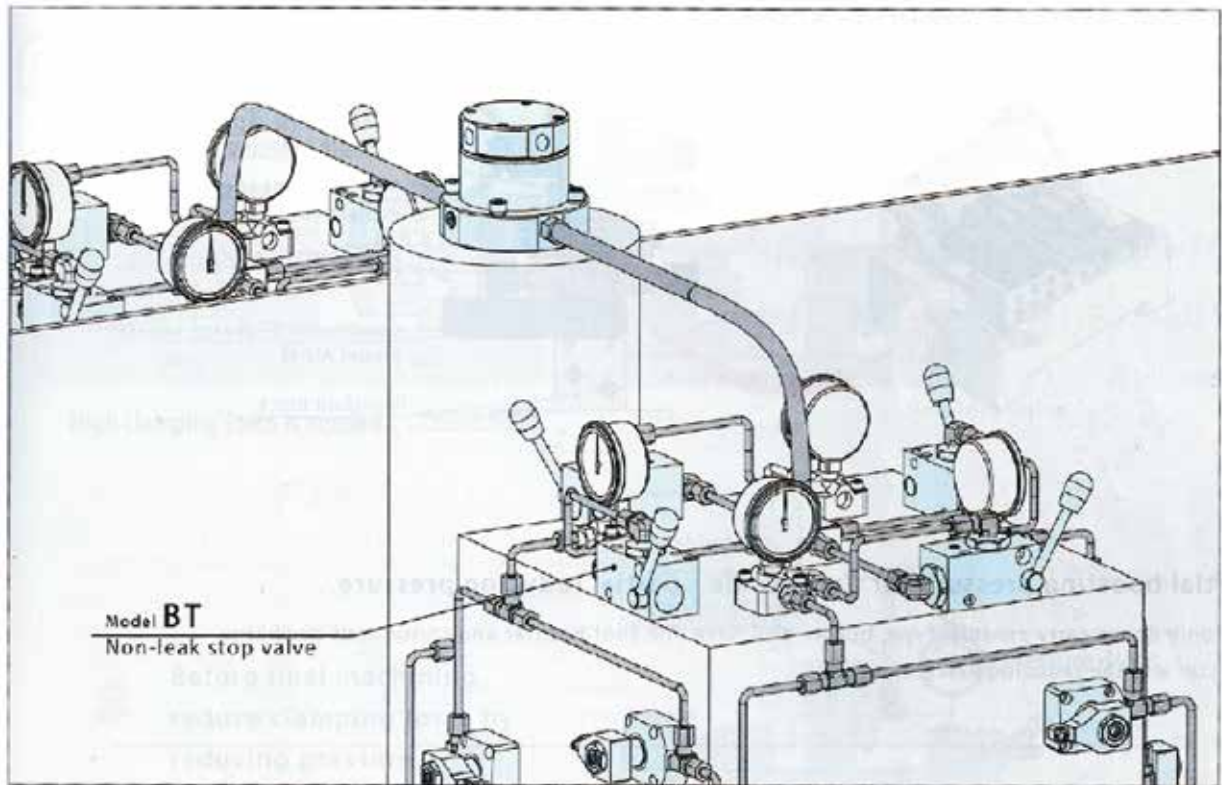
Features:

- This is hydraulic 4 port type with compact design.
- It is a G1/4 port housing with alloy steel body.
- These distributors can be mounted through single screw from back side.
- It can be used in the range of 1-30 MPa (maximum operating pressure)
18lpm (maximum flow allowed)
15 mpa
70 bar N (pushing force)

Applications:

- It is used for clamp & de-clamp oil connections through rotating medium.
- Used for air & oil connections in parallel.
- It can be available in 2 port(min) to 12 port (max) design.







Pull Down Cylinder

Product Code - PDSC-15





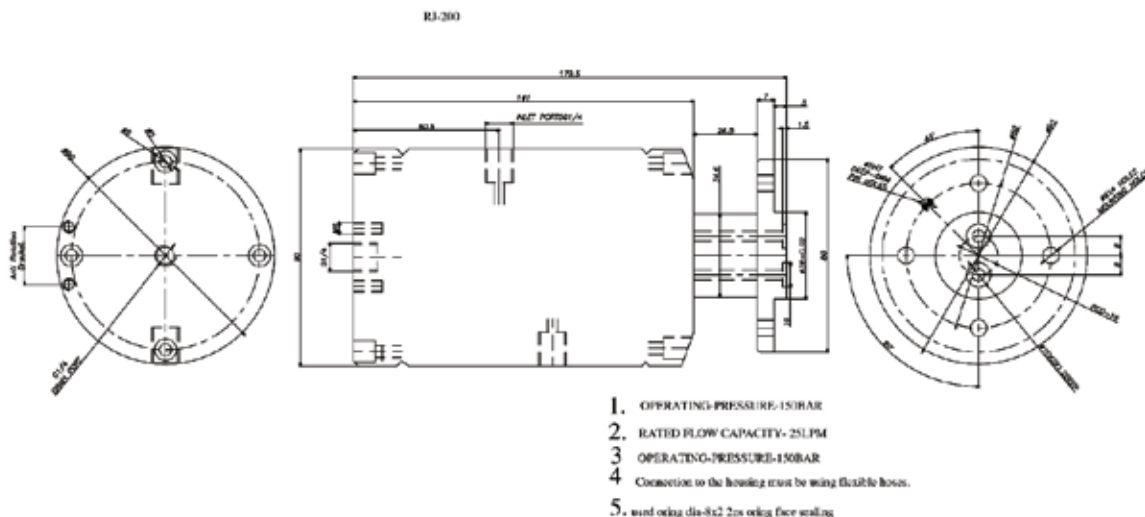
Rotary

Rotary Joints convey Fluid Under Pressure fro a stationary source to a rotating system or vice versa. They are also referenda Rotating unions, Rotary couplings, Swivel Joints etc.

We also provide Customised solutions for individual applications based on the specific operating parameters demanded by each customer designs / application.

Applications

- Earth moving Equipments
- Material Handling Equipments
- Machine Tools
- Hydro Electric Turbines
- Special Purpose Machines
- Robotics & Automation
- Mobile Cranes
- Wagon Tiplers
- Test Rigs & Simulators
- Automation
- Mining Equipments.





Rotary

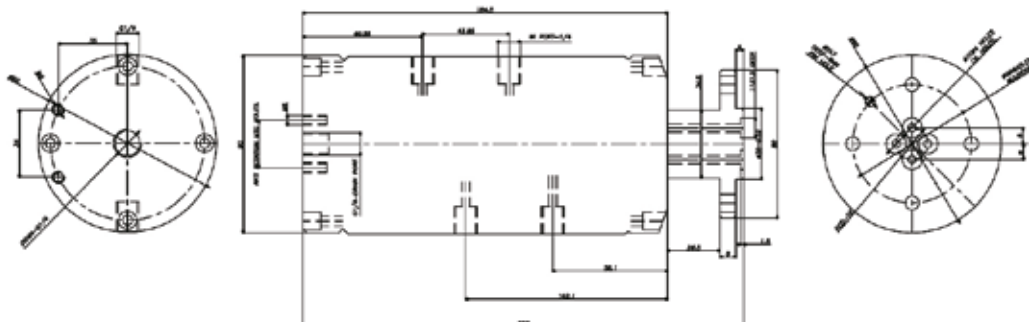
Rotary Joints convey Fluid Under Pressure from a stationary source to a rotating system or vice versa. They are also referred to as Rotating unions, Rotary couplings, Swivel Joints etc.

We also provide Customised solutions for individual applications based on the specific operating parameters demanded by each customer design / application.

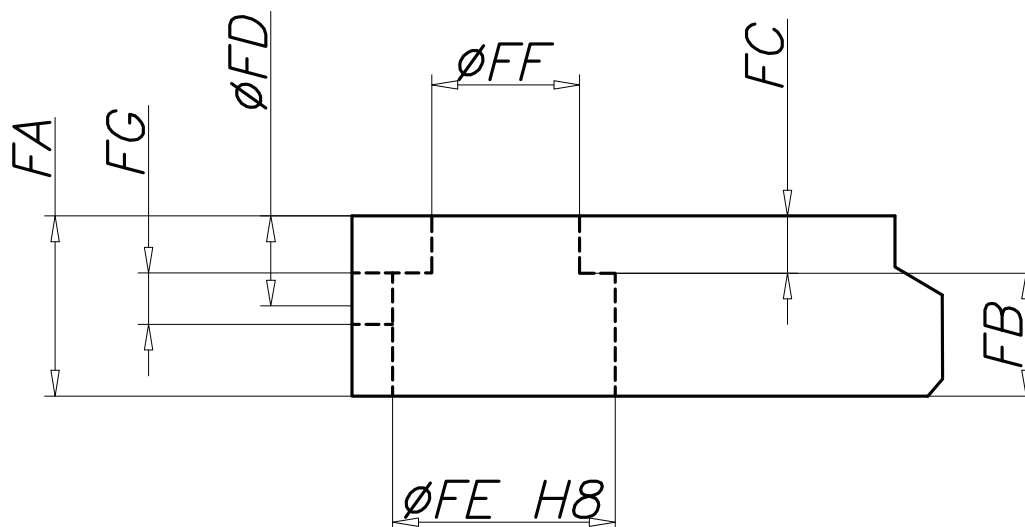
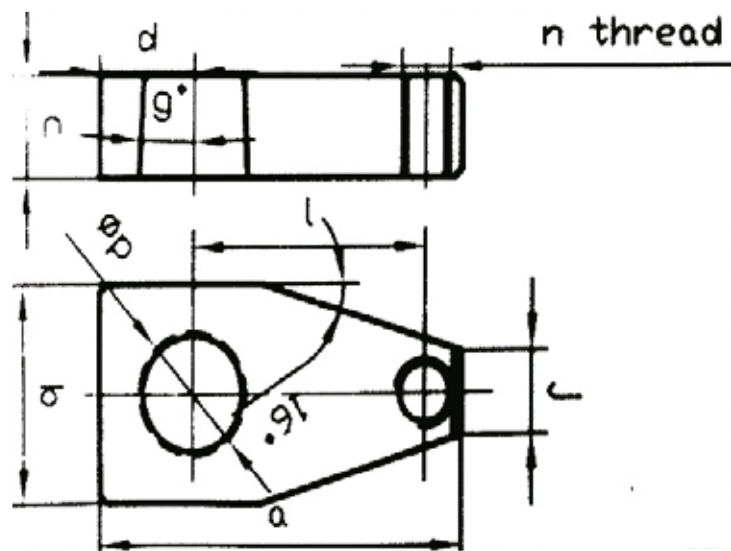
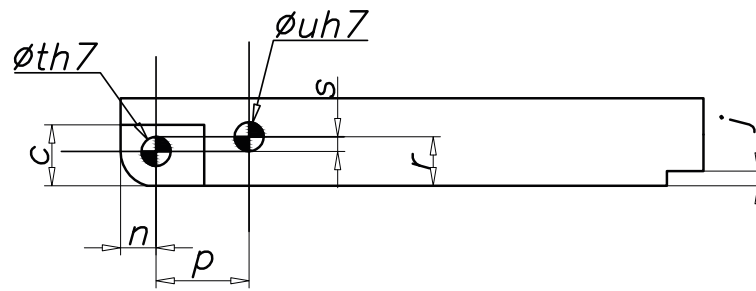
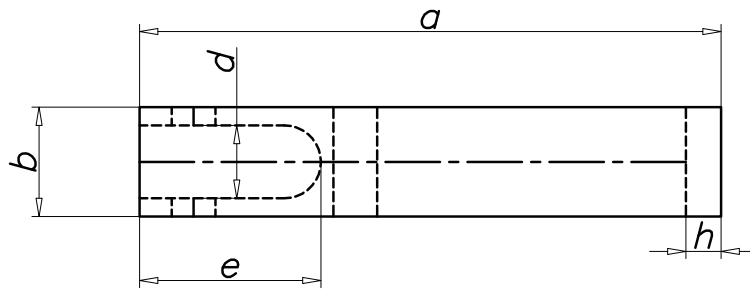
Applications

- Earth moving Equipments
- Material Handling Equipments
- Machine Tools
- Hydro Electric Turbines
- Special Purpose Machines
- Robotics & Automation
- Mobile Cranes
- Wagon Tiplers
- Test Rigs & Simulators
- Automation
- Mining Equipments.

HEIGH -RPM-RJ-400



ACCESSORIES



Clamp Arm table Standard:

Model	90RH	TC01 - 360	TC01 - 400	TC01 - 480	TC01-550	TC01-650	TC01-750	TC01 -900	TC01 - 105
	90LH								
a		70	75	85	90	105	110	150	200
b		10	12	12	16	19	22	25	32
c		13	14	16	20	25	32	38	45
d		5	6	6	8	10	11	13	16
e		13	14.5	16	17	22	26	31	36
g		10	12	13	17	18	22	26	31
h		10.5	13	13	17	22	25	31	38
j		3	3	3	4	5	5	6	6
n		4.5	5.5	6	6	8	10	11	13
p		14.5	16	18.5	21	24.5	30	36	44
r		4.5	5.5	6	6	8	10	11	13
s		2.5	2.5	3.5	6	7.5	9.5	13	16
Øt		5	6	6	6	8	10	12	15
Øu		5	6	6	6	10	12	15	18

Clamp arm table without sleeve Standard:

Model	90RH	SC02- 361 R	SC02- 401 R	SC02- 481 R	SC02- 551 R	SC02- 651 R	SC02- 751 R	SC02- 901 R	SC02- 1051 R
	90LH	SC02- 362 L	SC02- 402 L	SC02- 482 L	SC02- 552 L	SC02- 652 L	SC02- 752 L	SC02- 902 L	SC02- 1052 L
a		50	56.5	65.5	77	91.5	105	127	152
b		26	28	35	38	50	58	75	90
c		11	13	16	22	22	28	34	40
d		13	14	17.5	19	25	29	38	45
g		3	3	3	3	3	5.5	5.5	5.5
l		32	36.5	42	50	56.5	65	75	90
j		10	12	12	17	19	22	27	32
n		M5	M6	M6	M8	M8	M10	M12	M16
Øp		15	18	22	25	30	36	45	55

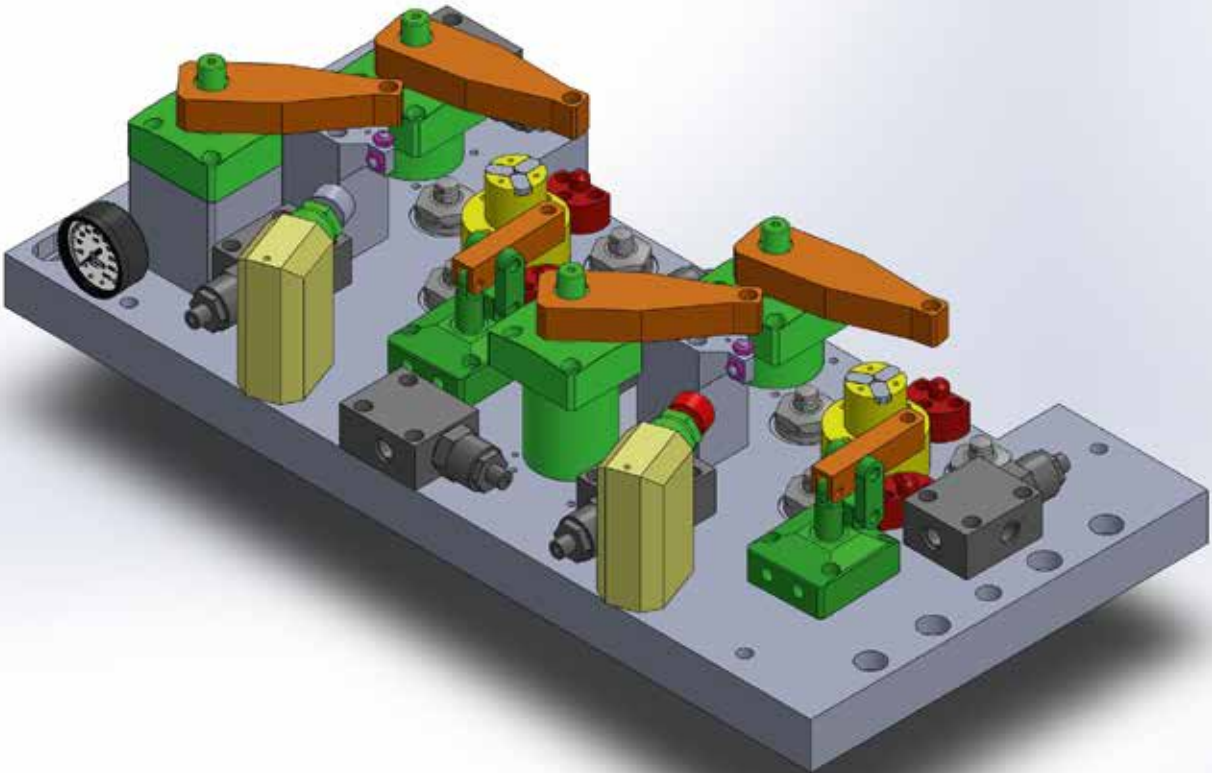
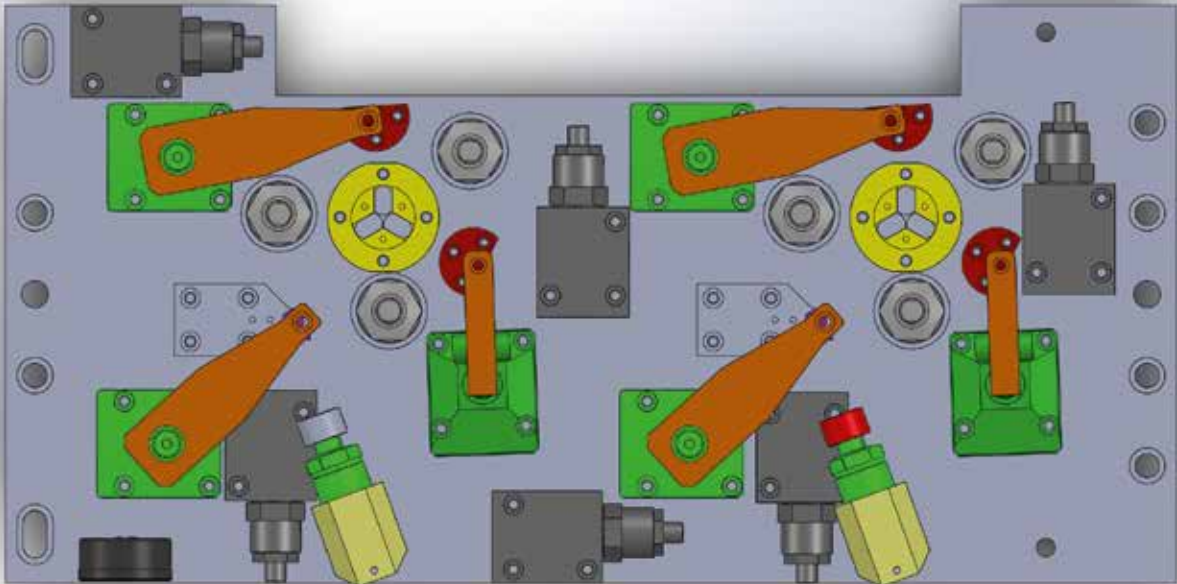
Clamp arm table with sleeve Standard:

Model	90RH	SB03- 361 R	SB03- 401 R	SB03- 481 R	SB03- 551 R	SB03- 651 R	SB03- 751 R	SB03- 901 R	SB03- 1051 R
	90LH	SB03- 362 L	SB03- 402 L	SB03- 482 L	SB03- 552 L	SB03- 652 L	SB03- 752 L	SB03- 902 L	SB03- 1052 L
FA		12	16	19	25	25	32	38	45
FB		9.5	13	15	21	21	27	33	39
FC		2.5	3	4	4	4	5	5	6
FD		4.3	5.3	6.3	6.3	7.5	8.5	9.5	10.5
ØFE		17	20	25	28	34	40	49	60
FF		13.9	16.7	20.6	23	28	32.9	14.8	51.2
FG		4	5	5	6	6	8	8	8

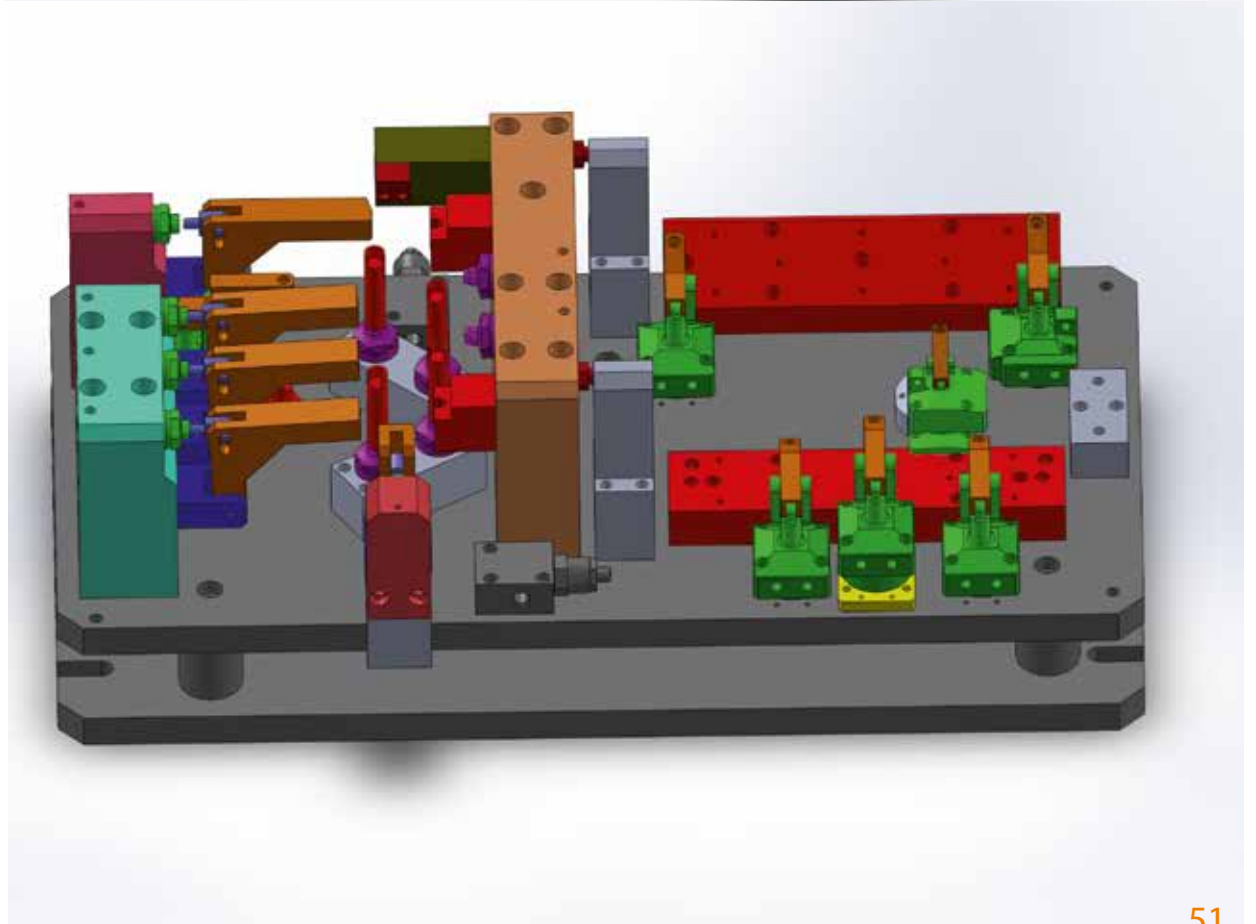
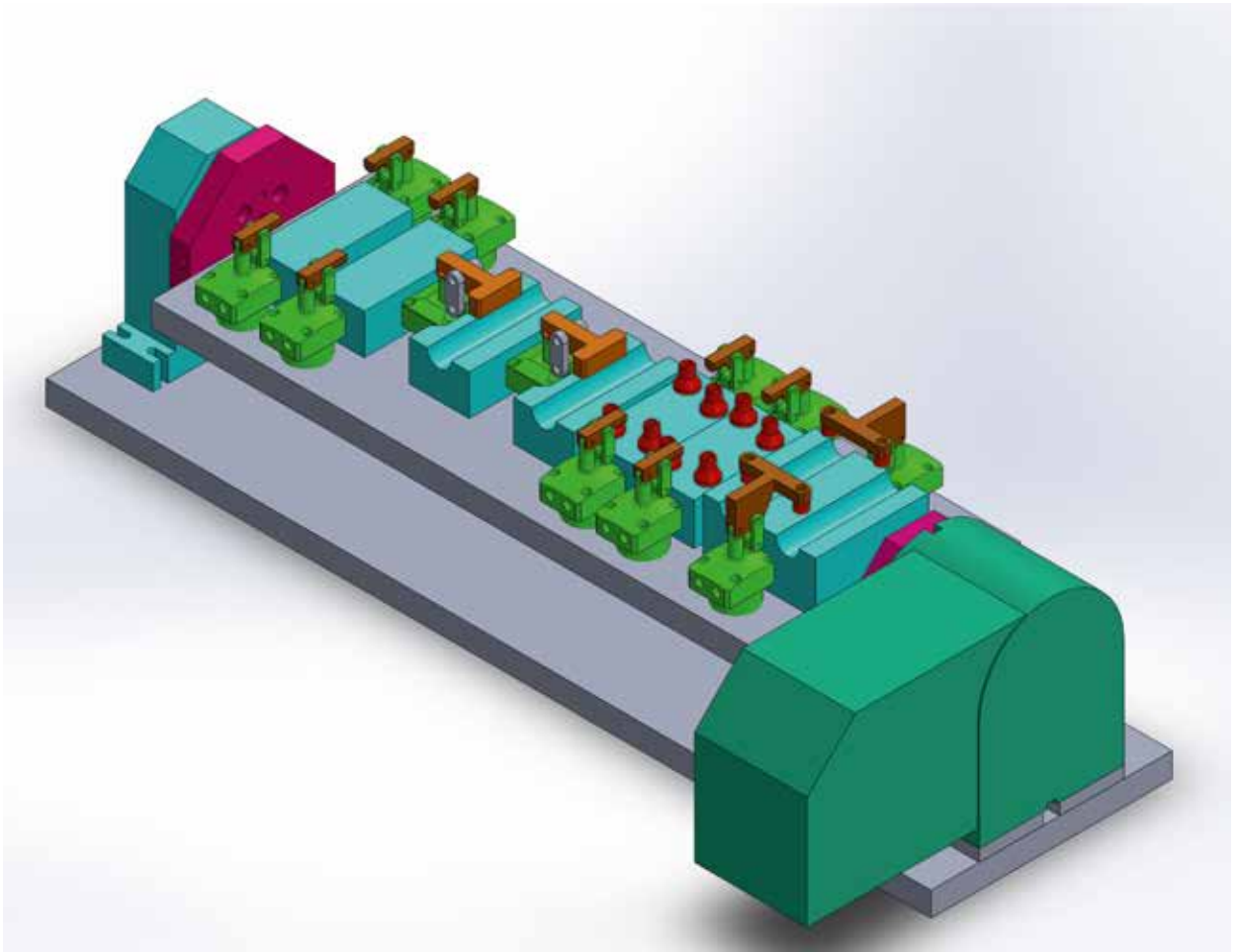
CLAMPING CYLINDERS



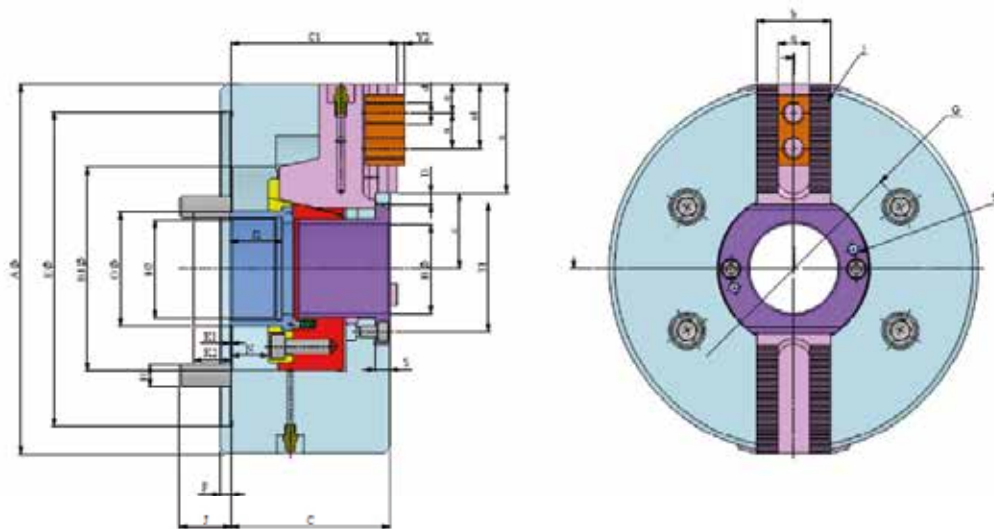
APPLICATIONS



APPLICATIONS

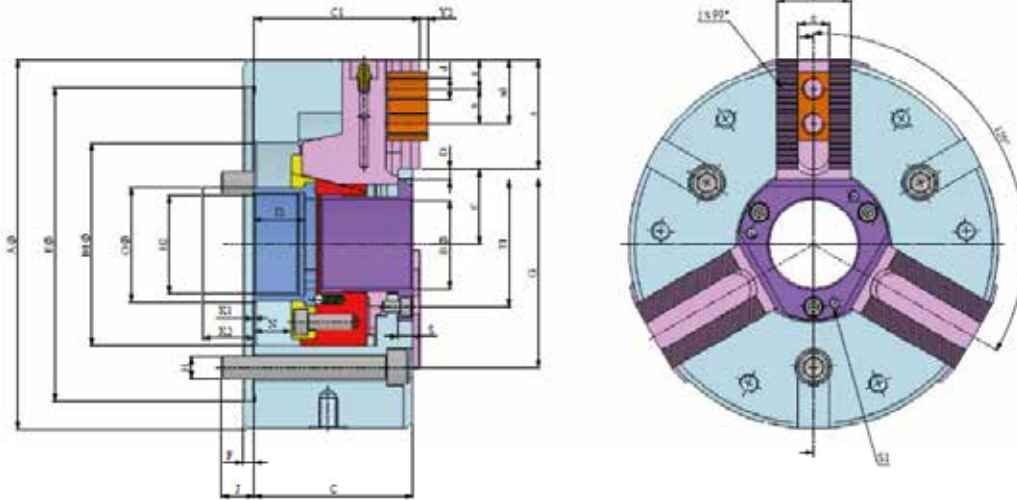


STANDARD POWER CHUCK



Dimensions / Performance data 2B - PH			135	165	200	250	315	400	500
Type 2 PH / Chuck Size			135	165	200	250	315	400	500
Dimensions									
Outer diameter	A0	mm	135	165	200	250	315	400	500
Bore	B10 ^{+0.1}	mm	81	90	110	132	155	210	250
Mounting recess	EO H6	mm	110	140	170	220	300	380	380
Actuator-Ø	F	mm							
Mounting bolts	H		M10	M10	M12	M16	M20	M24	M24
Thread mounting	H2		M36 x 1.5	M42 x 1.5	M55 x 2	M72 x 2	M92 x 2	M133 x 2	M172 x 3
Puller thread protective sleeve	S		M4	M5	M6	M6	M6	M8	M8
Chuck width	C	mm	56.2	77	85	88	85	120	120
Chuck width	C1	mm	58	82	89	92	92	125	125.5
Thread length of mounting bolts	J	mm	15	14	18	24	31	31	36
Thread length of actuator	J2	mm	17	27	28	28	28	28	28
Basejaw protr. over chuck face	S	mm	6	8	8	8	8	12	12
Actuator stroke	N	mm	10	15	20	20	20	30	30
Pitch circle - Ø of mounting bolts	G ^{+0.1}	mm	82.6	104.8	133.4	171.4	235	330.2	330.2
Pitch circle - Ø of protective sleeve	T1 ^{+0.1}	mm	44	54	68	86	104	145	185
Jaw stroke	D	mm	2.7	3.15	5.3	5.3	5.3	8	8
Position of Jaw min	c	mm	25.15	28.65	35.7	43.7	54.2	74	92
Position of Jaw max	c	mm	27.85	31.8	41	49	59.5	82	100
Jaw mounting bolts	d		M8	M10	M12	M16	M16	M20	M20
Distance of Jaw mounting bolts	e	mm	8	9	9	10	10	15	15
Distance of Jaw mounting bolts	n1	mm	30	38.5	50	60	85	103	130
Minimum distance	n	mm	14	19	19	25	25	34	34
Distance T-nut and serration	Y2	mm	2	3	3.5	3.5	3.5	3.5	3.5
Length of serration	a	mm	41	50.7	59	76	98	118	150
Jaw width	b	mm	23	35	40	45	50	60	60
Slot with Imperial	q H7	mm	10	12	17	21	21	25.5	25.5
Slot with metric	q H7	mm	10	12	17	21	21	25.5	25.5
Pitch of serration / Imperial	j		1/16" x 90°	1/16" x 90°	1/16" x 90°	1/16" x 90°	1/16" x 90°	3/32" x 90°	3/32" x 90°
Pitch of serration / Metric	j		1.5 x 60°	1.5 x 60°	1.5 x 60°	1.5 x 60°	1.5 x 60°	1.5 x 60°	1.5 x 60°
Performance data									
Max. Drawbar pull		kgf	1133	1333	2660	4000	4000	6000	6000
Max. Gripping force		kgf	2400	3600	5330	8000	8660	13333	14000
Rpm max		f/min	7000	5000	5000	4000	3200	2500	2000
Weight		kg	10	13.7	16	26	38	94	132
Flywheel effect GD2		kpm2	0.15	0.2	0.38	0.8	2.6	8.4	24.8

STANDARD POWER CHUCK



Dimensions / Performance data 3B - PH									
Type 3 PH / Chuck Size			135	165	200	250	315	400	500
Dimensions									
Outer diameter	AO	mm	135	165	200	250	315	400	500
Bore	B10 ^{+0.1}	mm	81	90	110	132	155	210	250
Mounting recess	E0 H6	mm	110	140	170	220	300	380	380
Actuator-Ø	F	mm							
Mounting bolts	H		M10	M10	M12	M16	M20	M24	M24
Thread mounting	H2		M36 x 1.5	M42 x 1.5	M55 x 2	M72 x 2	M92 x 2	M133 x 2	M172 x 3
Puller thread protective sleeve	S		M4	M5	M6	M6	M6	M8	M8
Chuck width	C	mm	56.2	77	85	88	85	120	120
Chuck width	C1	mm	58	82	89	92	92	125	125.5
Thread length of mounting bolts	J	mm	15	14	18	24	31	31	36
Thread length of actuator	J2	mm	17	27	28	28	28	28	28
Basejaw protr. over chuck face	S	mm	6	8	8	8	8	12	12
Actuator stroke	N	mm	10	15	20	20	20	30	30
Pitch circle - Ø of mounting bolts	C ^{+0.1}	mm	82.6	104.8	133.4	171.4	235	330.2	330.2
Pitch circle - Ø of protective sleeve	T1 ^{+0.1}	mm	44	54	68	86	104	145	185
Jaw stroke	D	mm	2.7	3.15	5.3	5.3	5.3	8	8
Position of Jaw min	c	mm	25.15	28.65	35.7	43.7	54.2	74	92
Position of Jaw max	c	mm	27.85	31.8	41	49	59.5	82	100
Jaw mounting bolts	d		M8	M10	M12	M16	M16	M20	M20
Distance of Jaw mounting bolts	e	mm	8	9	9	10	10	15	15
Distance of Jaw mounting bolts	n1	mm	30	38.5	50	60	85	103	130
Minimum distance	n	mm	14	19	19	25	25	34	34
Distance T-nut and serration	Y2	mm	2	3	3.5	3.5	3.5	3.5	3.5
Length of serration	a	mm	41	50.7	59	76	98	118	150
Jaw breath									
Jaw width	b	mm	23	35	40	45	50	60	60
Slot with Imperial	q H7	mm	10	12	17	21	21	25.5	25.5
Slot with metric	q H7	mm	10	12	17	21	21	25.5	25.5
Pitch of serration Imperial	j		1/16" x 90°	1/16" x 90°	1/16" x 90°	1/16" x 90°	1/16" x 90°	3/32" x 90°	3/32" x 90°
Pitch of serration Metric	j		1.5 x 60°	1.5 x 60°	1.5 x 60°	1.5 x 60°	1.5 x 60°	1.5 x 60°	1.5 x 60°
Performance data									
External Clamping Max / Min			135 / 25	165 / 32	200 / 25	250 / 28	315 / 42	400 / 45	500 / 74
Internal Clamping Max / Min			135 / 50	165 / 62	200 / 70	250 / 76	315 / 84	400 / 105	500 / 138
Max. Drawbar pull	kgf		1700	2000	4000	6000	6000	9000	9000
Max. Gripping force	kgf		3600	5400	8000	12000	13000	20000	21000
Rpm max	1/min		7000	5000	5000	4000	3200	2500	2000
Weight	kg		10	13.7	16	26	38	94	132
Flywheel effect GD2	kpm2		0.15	0.2	0.38	0.8	2.6	8.4	24.8
Max top jaw weight	kg		1.25	1.5	1.7	3.5	4	7.5	7.5

POWER CHUCK & PNEUMATIC CHUCK



High Speed Rotary:

There is no filter provided with this product to prevent foreign materials & contaminants from getting into the hydraulic system & pipes.

Cautions for Use:

1. The product should be operated by persons with the necessary knowledge & experience.
2. Do not take the equipment apart or modify it. If the equipment is taken apart or modified the warranty will be void, even within the warranty period.

Warranty:

Warranty period.

The product warranty period is for 1.5 years after shipment from our plant or 1 year of use, whichever is shorter.

Warranty scope.

Defects or failures caused by the following are not covered.

1. Proper maintenance & inspections were not performed.
2. The product was used in an imperfect state at the decision of the user.
3. The user did not use or handle the product properly. (including damages caused by a third party)
4. The cause was due to some factor other than our product.
5. The product was modified or repaired by another company or was modified or repaired without our approval or confirmation.
6. The damage or defect was caused by natural disaster or accident through no fault of our own.
7. Parts & replacements necessary due to wear & tear. (rubber, plastic, sealant, ceratin electrical components, etc.)



Regd. Address:

No.4/192, Venkateshapuram 5th Street, Kottivakkam,
Chennai - 600041. Tamilnadu.

Office Address:

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