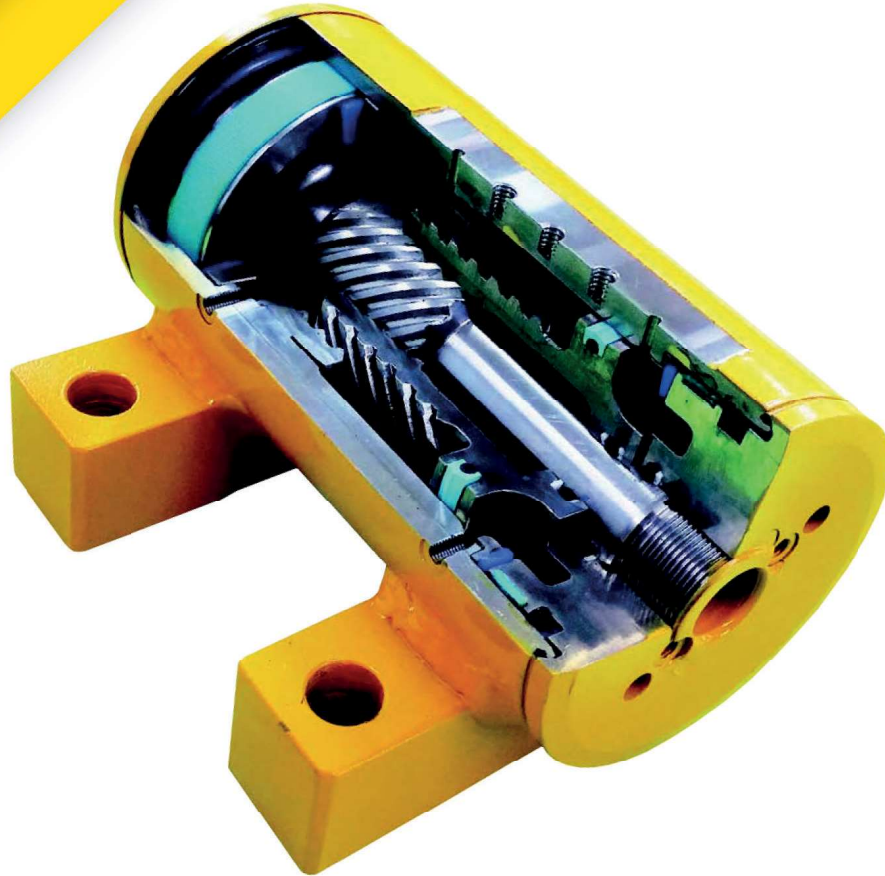




HYDRAULIC ROTARY ACTUATOR

Helical Gear Type

Mighty Hinge



High Moment

Works smoothly even in high momentum due to the strong support for its load and sidewall.



Free Grease Filling

Its oil-immersed bearings have excellent lubrication action without grease filling.



Long Lifetime

Its oil-immersed bearing support for load and sidewall has long lifetime with great lubrication action.



Light & Compact

Light & compact due to its space efficient design and minimal number of component.



Free Over-Run

(with Counterbalance Valve)

The counterbalance valve makes it stop rotating when the maneuvering bar stops. No need for external breaks for rotation.

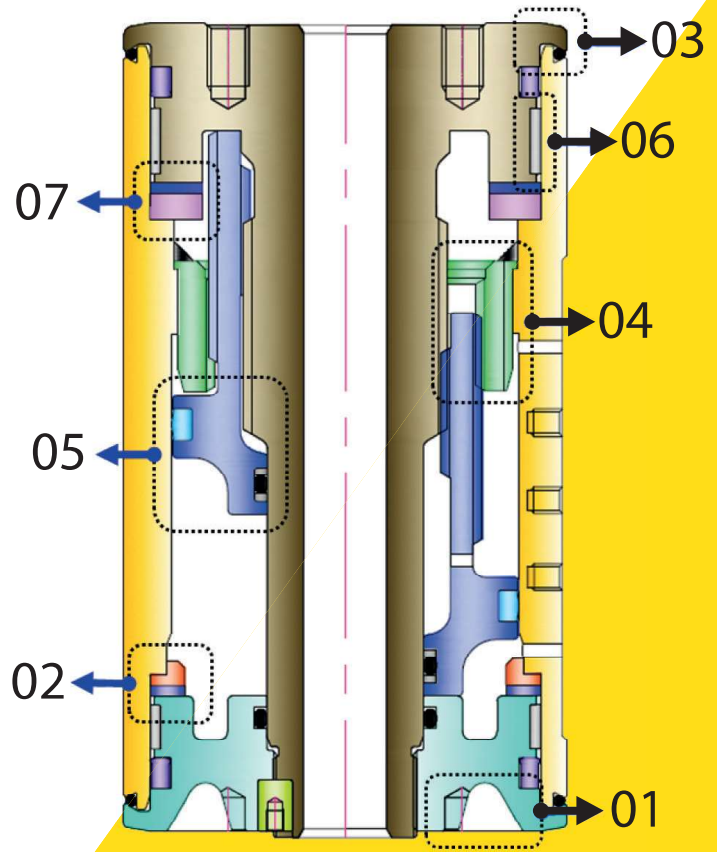
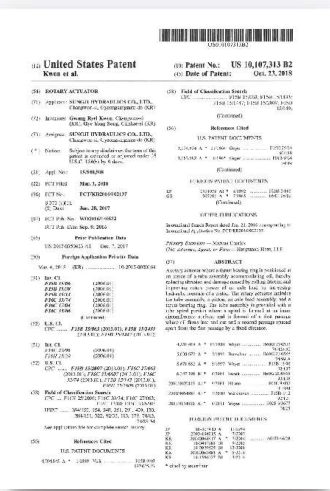
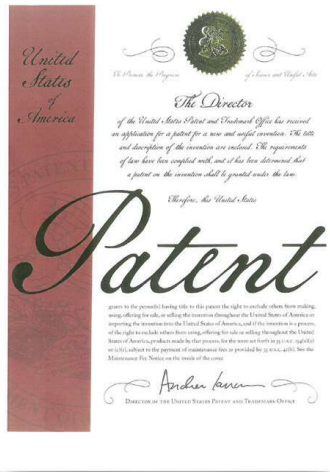


Free Over-Load

(with Counterbalance Valve)

To protect non-operating equipment, the counterbalance valve makes it instantly rotate in reaction to external shocks.

PATENT



Detailed Features

01 Minimized weight by optimal design for strength.

02 Minimized axial gap by exerting Pre-Torque when assembly.

03 Structure that effectively blocks infiltration of external substance and rain. [**Patent, PCT Application**]

04 Augmented rigidity and durability with Helical Gear type. **Minimized** gaps in rotating direction.

05 Augmented rotational torque by increment of surface area that receives hydraulic pressure and less helix angle.

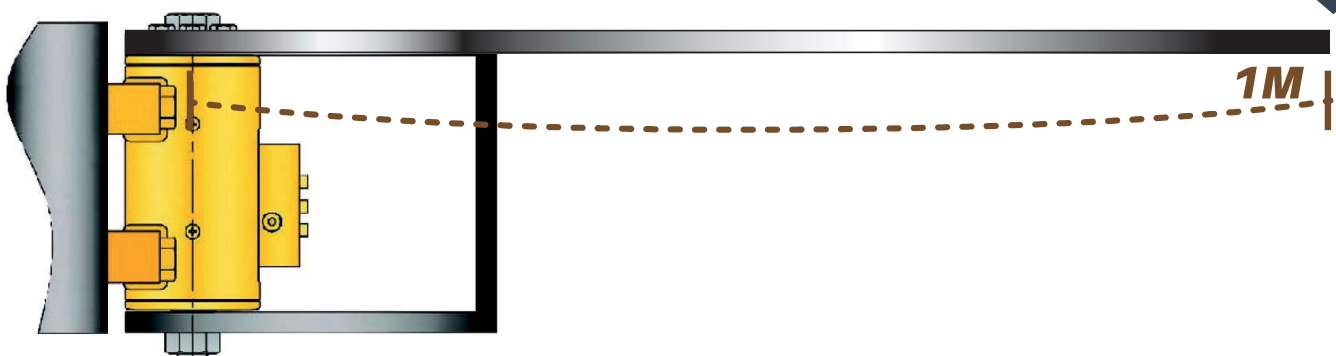
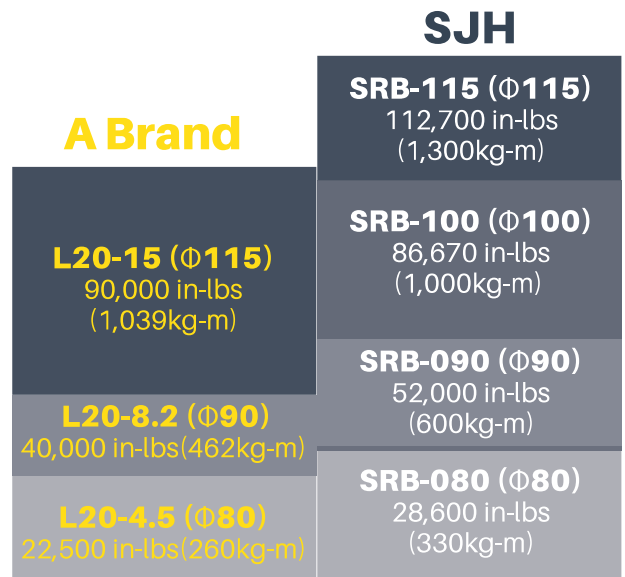
06 Augmented supporting moment and radial force by the increased W x D surface area. **Minimized** change of seal gap by the minimized axis tilting by moment.

07 Augmented supporting moment and thrust force by the increased W x D surface area. **No need** to refill grease due to its oil immersion type. [**Patent, PCT Application**]

Comparison of Specifications

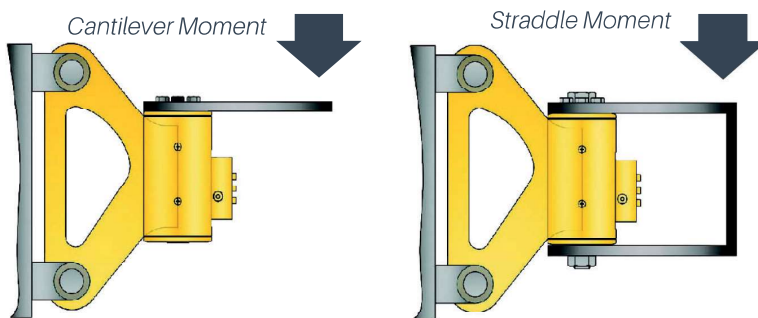
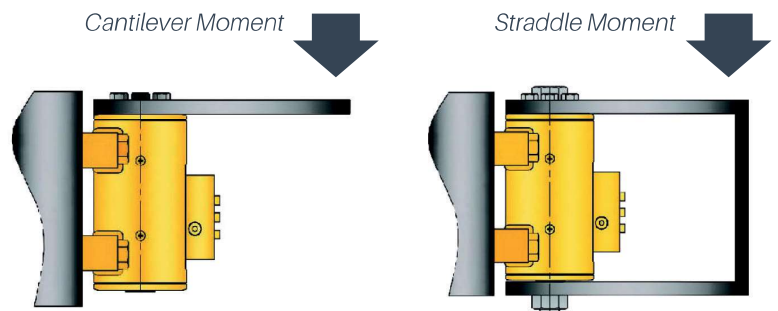
Rotary Actuator	L 20 - 4.5 (Φ80)	SRB-080 (Φ80)	L 20 - 8.2 (Φ90)	SRB - 090 (Φ90)	None	SRB-100 (Φ100)	L 20 - 15 (Φ115)	SRB -115 (Φ115)
	A Brand	SJH	A Brand	SJH	A Brand	SJH	A Brand	SJH
Torque								
Drive Torque <i>in - lbs (kg-m) at 210bar</i>	4,500 (52)	4,900 (57)	8,200 (95)	9,100 (105)	None	13,100 (151)	15,000 (173)	16,500 (190)
Holding Torque <i>in - lbs (kg-m) at 210bar</i>	11,800 (136)	12,700 (146)	21,000 (242)	23,400 (270)	None	33,800 (390)	38,720 (447)	42,900 (494)
Maximum Moment Capacity								
Straddle Moment <i>in - lbs (kg-m)</i>	22,500 (260)	28,600 (330)	40,000 (462)	52,000 (600)	None	86,670 (1,000)	90,000 (1,039)	112,700 (1,300)
Cantilever Moment <i>in - lbs (kg-m)</i>	12,000 (139)	15,430 (178)	22,000 (254)	28,100 (324)	None	46,800 (540)	48,000 (554)	60,700 (700)
Displacement <i>cc (cm³)</i>	132	168	234	239	None	357	436	564
Approximate Weight (Wet)								
with Counterbalance valve ^(kg)	12.7	12.1	17.2	16.0	None	25.8	30.4	27.3
without Counterbalance valve ^(kg)	12.2	11.4	16.8	15.3	None	25.0	29.9	26.5

Comparison of Straddle Moment



Mounting Options

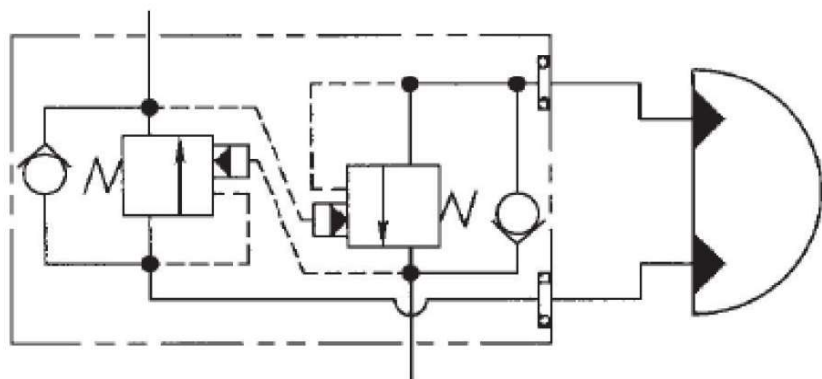
STANDARD Foot Mounting



OPTION Clevis Mounting

Valve Configurations

HYDRAULIC SCHEMATIC OF Optional Counterbalance Valve



Mounted Counterbalance valves prevent rotation in the event of a hydraulic line failure, control rotation when loads go over center, and protect the rotary actuator against excessive torque loads.

Raw material is aluminum, the valve blocks are bolted to a flat mounting pad on the rotary actuator housing.

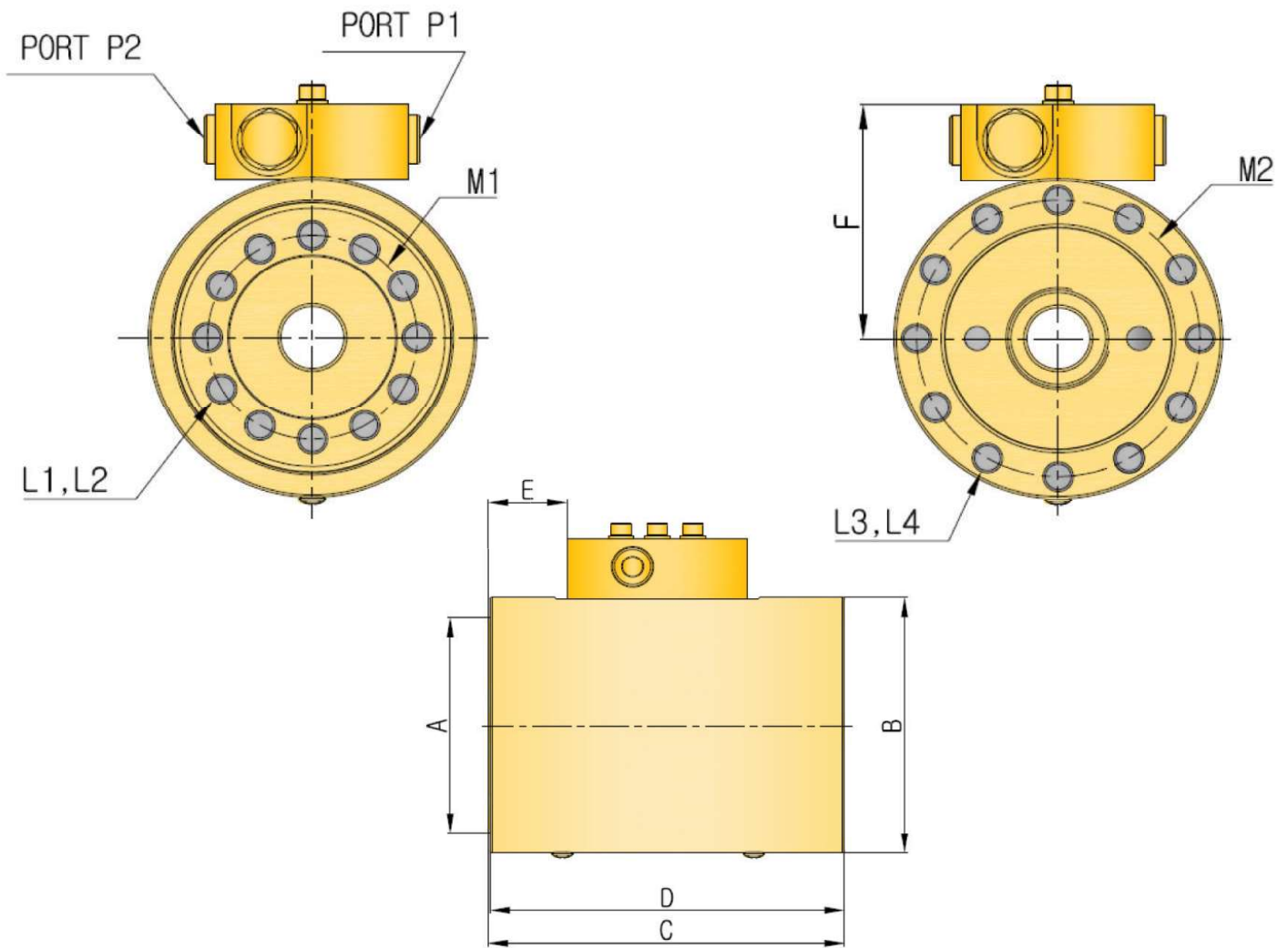
Three bolts secure the valve block to the rotary actuator.

Please look at dimension page for valve location.

The pilot ratio is 3:1 and the valves are set to relieve at 3300 psi \pm 300 psi (228 bar \pm 21 bar).

SRA Series Specification & Dimension

SRA Series Specification		SRA-080	SRA-090	SRA-110	SRA-140	SRA-160
Torque						
Drive Torque	in - lb @ 3,000 psi	1,700	3,000	5,500	9,500	15,000
	kg - m @ 210 bar	20	35	63	109	173
Holding Torque	in - lb @ 3,000 psi	5,600	11,000	17,000	34,000	50,000
	kg - m @ 210 bar	65	127	196	392	576
Maximum Moment Capacity						
Cantilever Mount	in - lb	5,000	9,000	20,000	50,000	80,000
	kg - m	58	104	230	576	922
Radial Capacity						
Radial	lb	2,000	3,000	4,000	8,000	11,000
	kg	907	1,361	1,814	3,629	4,990
Axial Capacity						
Axial	lb	2,000	3,000	4,000	8,000	11,000
	kg	907	1,361	1,814	3,629	4,990
Displacement						
180 degree	in ³	4.0	8.5	14.5	26.1	35.6
	cm ³	65	140	238	428	584
Approximate Weight (Wet)						
with Valve (CBV)	lb	14.1	22.0	32.6	55.1	97
	kg	6.4	10.0	14.8	25.0	44



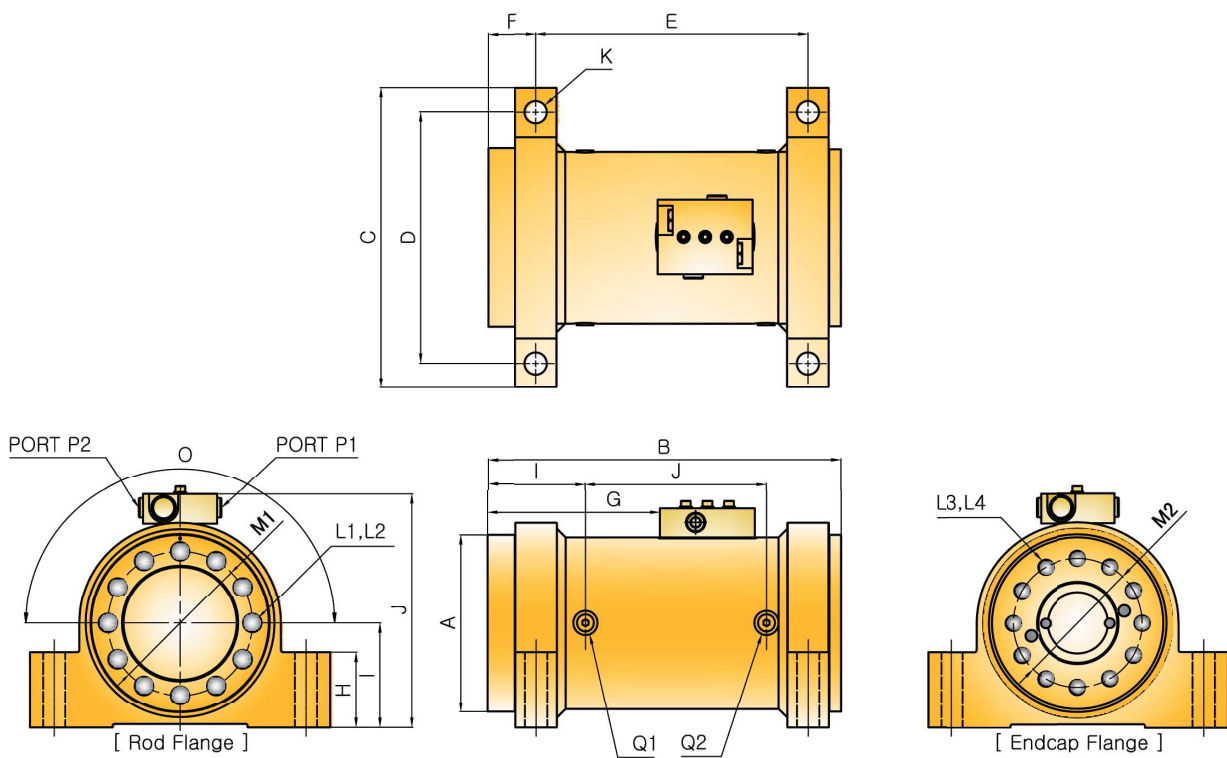
ITEMS		SRA-080	SRA-090	SRA-110	SRA-140	SRA-160
ØA	mm	80	94	108	138	148
ØB	mm	100	119	135	170	197
C	mm	140	143	156	184	311.2
D	mm	139	142	155	183	308.2
E	mm	29.5	30.5	31.5	34.5	61
F	mm	80	89.5	97.5	115	129
L1	Inch Metric	5/16-18 UNC M8 x 1.25	5/16-18 UNC M8 x 1.25	3/8-16 UNC M10 x 1.5	1/2-13 UNC M12 x 1.75	1/2-13 UNC M12 x 1.75
L2 <i>Number of mounting holes</i>	EA	8	8	12	12	12
L3	Inch Metric	5/16-18 UNC M8 x 1.25	5/16-18 UNC M8 x 1.25	3/8-16 UNC M10 x 1.5	1/2-13 UNC M12 x 1.75	1/2-13 UNC M12 x 1.75
L4 <i>Number of mounting holes</i>	EA	8	8	12	12	12
ØM1	mm	54	73	79.5	102	127
ØM2	mm	86	103	117.5	151	175

SRB Series Specification & Dimension

SRB Series Specification		SRB -080	SRB -090	SRB -100	SRB -115	SRB -140	SRB -160
Torque							
Drive Torque	in-lb @ 3,000 psi	4,900	9,100	13,100	16,500	25,000	39,000
	kg-m @ 210 bar	57	105	151	190	313	449
Holding Torque	in-lb @ 3,000 psi	12,700	23,400	33,800	42,900	62,900	93,200
	kg-m @ 210 bar	146	270	390	494	725	1,074
Maximum Moment Capacity							
Straddle Mount	in - lb	28,600	52,000	86,670	112,700	158,000	280,000
	kg - m	330	600	1,000	1,300	1,820	3,226
Cantilever Mount	in - lb	15,430	28,100	46,800	60,700	100,000	140,000
	kg - m	178	324	540	700	1,153	1,613
Radial Capacity							
Radial	lb	3,050	4,700	6,580	9,230	12,300	21,000
	kg	1,383	2,132	2,985	4,187	5,579	9,526
Axial Capacity							
Axial	lb	1,100	1,500	1,800	2,200	3,100	3,900
	kg	499	680	816	998	1,406	1,769
Displacement							
180 degree	in ³	10.3	14.6	21.8	34.4	55.96	75.5
	cm ³	168	239	357	564	917	1,237
Approximate Weight (Wet)							
with Valve (CBV)	lb	26.7	35.3	56.9	60.2	108.0	167.0
	kg	12.1	16.0	25.0	27.3	49.0	75.7

SRC Series Specification & Dimension

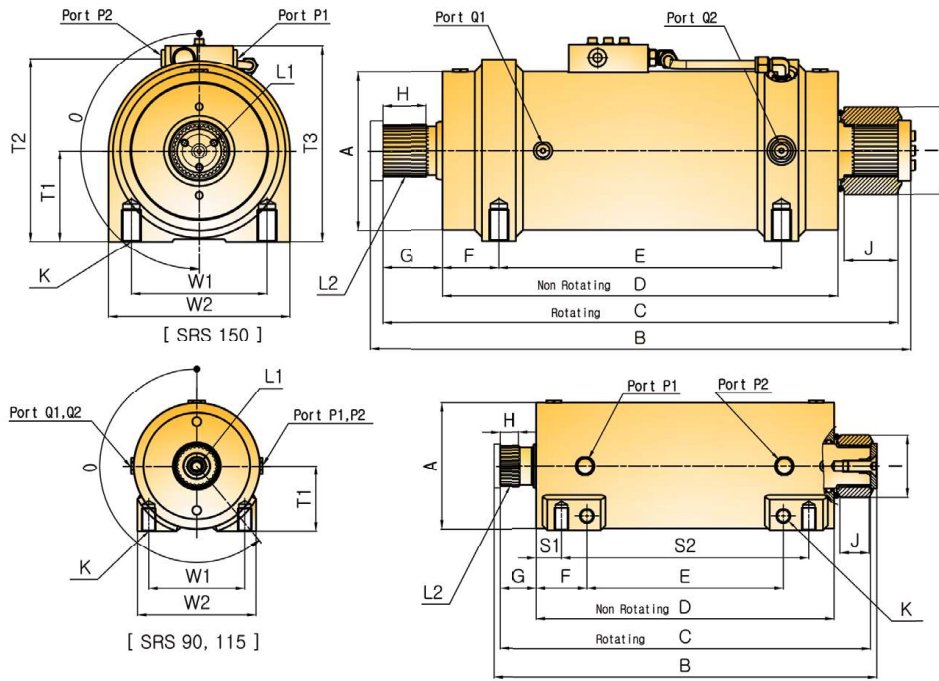
SRC Series Specification		SRC-115	SRC-150
Torque			
Drive Torque	in-lb @ 3,000 psi	17,000	42,000
	kg-m @ 210 bar	190	484
Holding Torque	in-lb @ 3,000 psi	43,600	103,000
	kg-m @ 210 bar	494	1,186
Maximum Moment Capacity			
Straddle Mount	in - lb	119,000	273,000
	kg - m	1,300	3,145
Cantilever Mount	in - lb	45,900	105,000
	kg - m	700	1,210
Radial Capacity			
Radial	lb	4,000	8,000
	kg	1,814	3,629
Axial Capacity			
Axial	lb	3,000	6,000
	kg	1,361	2,722
Displacement			
180 degree	in ³	30.8	71.7
	cm ³	505	1,175
Approximate Weight (Wet)			
with Valve (CBV)	lb	75	154
	kg	27.3	70



ITEMS		SRC-115	SRC-150
ØA	mm	139	183
B	mm	298	365
C	mm	222	310
D	mm	190	260
E	mm	229	281
F	mm	38.1	50
G	mm	145	178
H	mm	48	78
I	mm	80	108
J	mm	179	227
ØK	mm	M16	M22
L1	Inch Metric	1/2-13 UNC M12 x 1.75	3/4-10 UNC M20 x 2.5
L2 <i>Number of mounting holes</i>	EA	12	12
L3	Inch Metric	3/8-16 UNC M10 x 1.5	5/8-11 UNC M16 x 2.0
L4 <i>Number of mounting holes</i>	EA	12	12
ØM1	mm	115	150
ØM2	mm	108	133
O <i>Rotation</i>	degree	180° <i>Standard</i>	180° <i>Standard</i>
P1 PORT	inch	7/16-20 UNF	7/16-20 UNF
P2 PORT	inch	7/16-20 UNF	7/16-20 UNF
Q1 PORT	inch	7/16-20 UNF	7/16-20 UNF
Q2 PORT	inch	7/16-20 UNF	7/16-20 UNF

SRS Series Specification & Dimension

SRS Series Specification		SRS-90	SRS-115	SRS-150
Torque				
Drive Torque	in-lb @ 3,000 psi	15,000	27,000	60,000
	kg-m @ 210 bar	173	311	691
Holding Torque	in-lb @ 3,000 psi	30,100	54,200	127,000
	kg-m @ 210 bar	347	622	1,463
Maximum Moment Capacity				
Straddle Mount	in - lb	22,500	40,500	90,000
	kg - m	259	467	1,037
Standard Rotation (degree)		220°	220°	200°
Radial Capacity				
Radial	lb	2,520	4,500	8,600
	kg	1,143	2,041	3,901
Axial Capacity				
Axial	lb	2,520	4,500	8,600
	kg	1,143	2,041	3,901
Displacement				
Standard Rotation	in ³	14.58	48.9	93.6
	cm ³	239	801.5	1,534
Approximate Weight (Wet)				
with Valve (CBV)	lb	41	76.5	179
	kg	18.5	35	81



ITEMS		SRS-090	SRS-115	SRS-150
ØA	mm	116	142	178
B	mm	431	431	608
C	mm	417	417	579.5
D	mm	329	335	444.5
E	mm	215	221	371.5
F	mm	57	57	63.5
G	mm	44.5	41	67.5
H	mm	30	21	49
I	mm	69.3	69.3	98.3
J	mm	36	33	60.5
ØK	mm	5/8-11 UNC	5/8-11 UNC	7/8-9 UNC
L1	Inch Metric	1/2-13 UNC M12 x 1.75	3/4-10 UNC M20 x 2.5	M8 x 1.25 (Quantity3)
L2 <i>Shaft Spline both ends</i>	EA	ANSI B92.1 24T	ANSI B92.1 28T	ANSI B92.1 36T
S1	mm	28.5	28.5	-
S2	mm	272	278	-
T1	mm	58	73.2	101.5
T2	mm	-	-	206
T3	mm	-	-	221
W1	mm	85	108	152.4
W2	mm	110	133	204
O <i>Rotation</i>	degree	220° <i>Standard</i>	220° <i>Standard</i>	200° <i>Standard</i>
P1 PORT	inch	7/16-20 UNF	9/16-18 UNF	9/16-18 UNF
P2 PORT	inch	7/16-20 UNF	9/16-18 UNF	9/16-18 UNF
Q1 PORT	inch	7/16-20 UNF	9/16-20 UNF	7/16-20 UNF
Q2 PORT	inch	7/16-20 UNF	9/16-20 UNF	7/16-20 UNF



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Model Code Reference Guide for SRA, SRB, SRC, SRS

SRB - 115 - 180 - CN - FT - SH - S


a
b
c
d
e
f
g

Meaning of Symbol		Details of Description			
a	Rotator Series	SRA	SRB	SRC	SRS
b	Cylinder Size	80 : $\Phi 80$ 110 : $\Phi 110$ 90 : $\Phi 90$ 140 : $\Phi 140$ others Discussable	80 : $\Phi 80$ 90 : $\Phi 90$ 100 : $\Phi 100$ 115 : $\Phi 115$ 140 : $\Phi 140$ others Discussable	115 : $\Phi 115$ 150 : $\Phi 150$ others Discussable	90 : $\Phi 90$ 115 : $\Phi 115$ 150 : $\Phi 150$ others Discussable
c	Rotating Angle	180 : 180 degree 360 : 360 degree others Possible			200 : 200 degree 220 : 220 degree
d	Counter Balance Valve	CN : 7/16-20-UNF-2B ISO 11926-1 / SAE J1926 -1/ UNF CG : G $\frac{1}{4}$ ISO1179 -1 / BSPP CO : Without			
e	Mounting Type	RF : Rear Flange Mounting	FT : Foot Mounting CL : Clevis Mounting Discussable RF : Rear Flange Mounting FF : Front Flange Mounting	FT : Foot Mounting FF : Front Flange Mounting	FT : Foot Mounting
f	Shaft & End cap Configuration	SH Mounting holes in Shaft Flange only	SH Mounting holes in Shaft Flange with through-hole for tie rod SE Mounting holes in Shaft Flange and End Cap Flange	SH Mounting holes in Shaft Flange only SE Mounting holes in Shaft Flange and End Cap Flange	DS : Dual Splines DA : Dual Adapters SA : Single Adapters
g	Seals	N : Normal Seals & Bearings		S : Special Seals & Bearings	

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