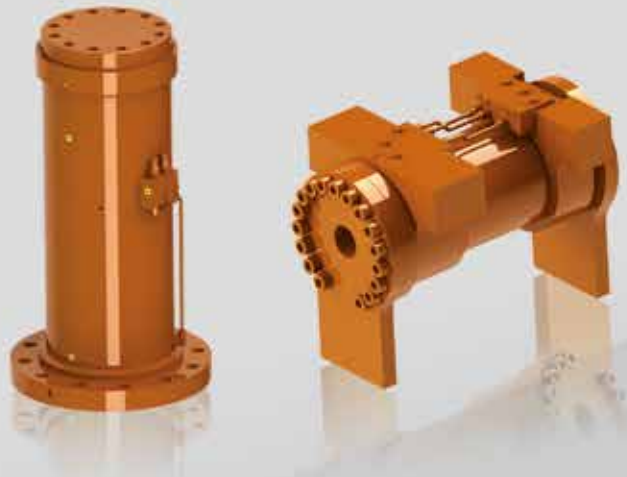




## SHANDONG VICTORY EQUIPMENT CO., LTD

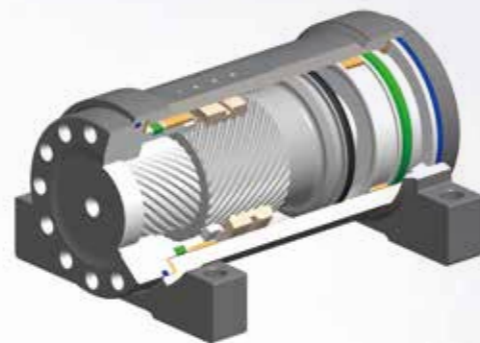


HYDRAULIC ROTARY ACTUATORS

[WWW.LIONSHARETECH.COM](http://WWW.LIONSHARETECH.COM) >>



# CORPORATE PROFILE



Shandong Victory Equipment Co., Ltd. (Weihai Lionshare Hydraulics Co., Ltd.) focus on the hydraulic rotary actuators. Now we are on of the leading brand in the hydraulic rotary actuators industry.

The area of the factory is 28,000m<sup>3</sup>, the area of the workshop is 21,000m<sup>3</sup>,office is 2,000m<sup>3</sup>. There are two Workshops, a Dust-free Assembly Room, a Test & Inspection Laboratory, a Painting Workshop and a Modern Warehouse. There are 185 employees and 235 modern equipments. And the equipment investment is \$16 million, Total investment is \$32 million.

Our monthly production capacity is more than 5,000 units for different models.

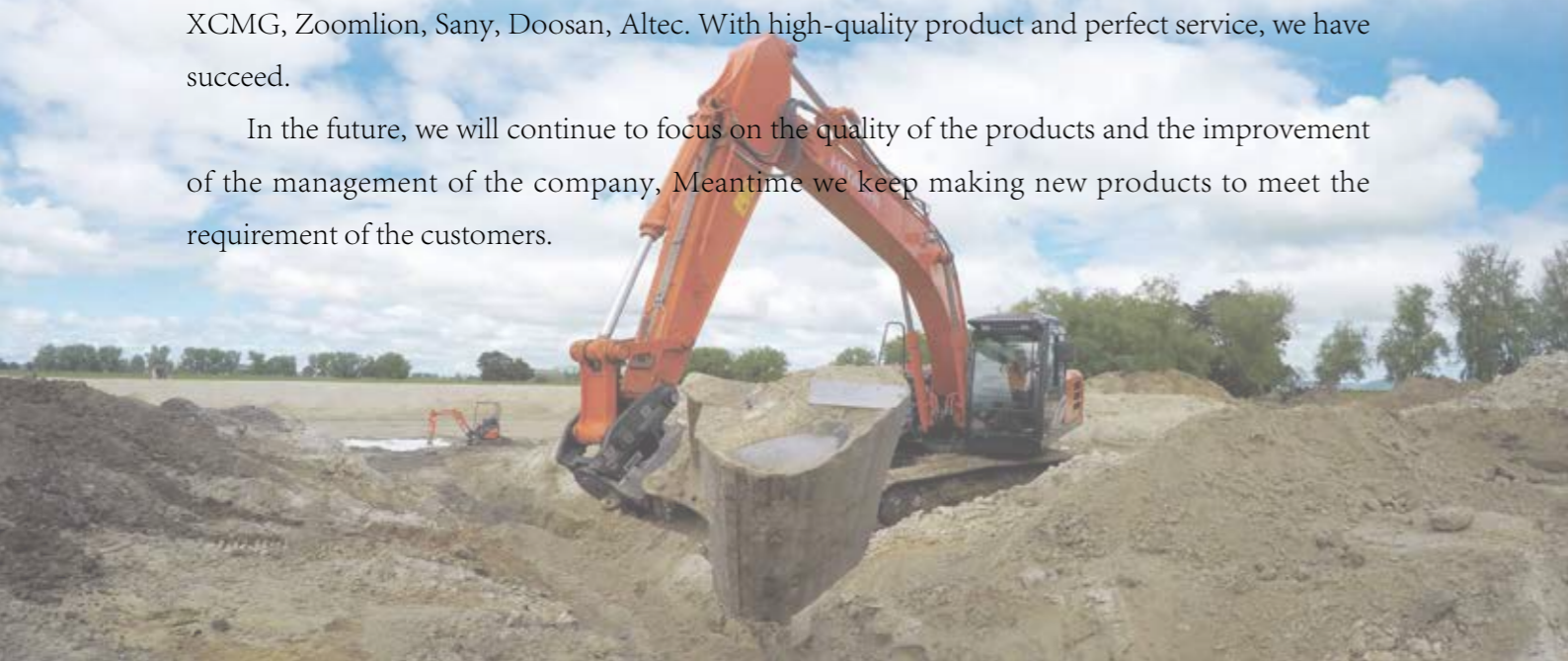
Our products cover 8 series,400 models and more than 1000 kinds. We accept customization in oder to meet different requirement of the diversiform application.

In 2023, the annual output value is \$23 million. Meanwhile we have 18 Patent Certificates and ISO9001 Quality System Certification.

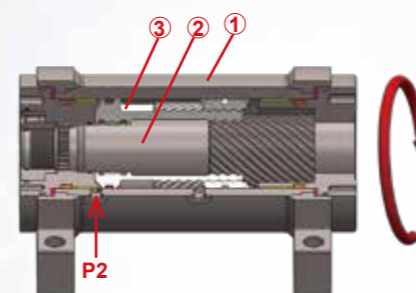
Our products are widely used in Construction, Mining, Military, Aerospace, Agricultural ship building, Food industry and so on.

Our products are sold all over the world. We have many Well-known customers , such as XCMG, Zoomlion, Sany, Doosan, Altec. With high-quality product and perfect service, we have succeed.

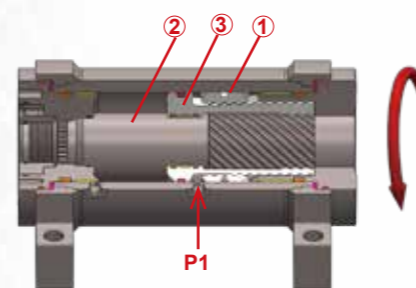
In the future, we will continue to focus on the quality of the products and the improvement of the management of the company, Meantime we keep making new products to meet the requirement of the customers.



## OPERATING PRINCIPLE



We assume the housing ① is fixed on the table.While the hydraulic pressure is applied to the piston ③ through the P1 port,the piston moves axially to the left side.As the helical gearing of the piston ③ and shaft ② rotate simultaneously.The shaft ② rotates counterclockwise as the arrow showing.Please note the shaft ② has no axial movement.The piston ③ has both axial movement and rotation.The housing ① fixed with the gear ring has no movement.



We assume the housing ① is fixed on the table.While the hydraulic pressure is applied to the piston ③ through the P2 port,the piston moves axially to the right side.As the helical gearing of the piston ③ and shaft ② rotate simultaneously.The shaft ② rotates clockwise as the arrow showing.Please note the shaft ② has no axial movement.The piston ③ has both axial movement and rotation.The housing ① fixed with the gear ring has no movement.

## PRODUCT ADVANTAGE



### POWERFUL

- High torque
- High bearing capacity

### DURABLE

- Moving parts enclosed
- Suitable for harsh environments

### MOUNTING OPTIONS

- Cantilever Mount  
The load is mounted to the shaft flange and is supported at only one end of the shaft. Cantilever mounting is not recommended for aerial work platforms or other critical and safety-related applications.
- Straddle Mount  
The load is supported at both ends of the shaft.

### COMPACT

- High power density
- Fits in tight spaces

### BACKDRIVES IN OVERLOAD CONDITIONS

- Hydraulic fuse
- Prevents mechanical damage

### SIMPLIFIES

- Eliminates bearings, linkages & brackets
- Reduces bill of materials
- Simplifies supply chain, assembly and maintenance

### HOLDS POSITION

- Zero internal leakage
- Smooth operation
- No external brake required

### COUNTERBALANCE VALVE

- Make the rotation smooth

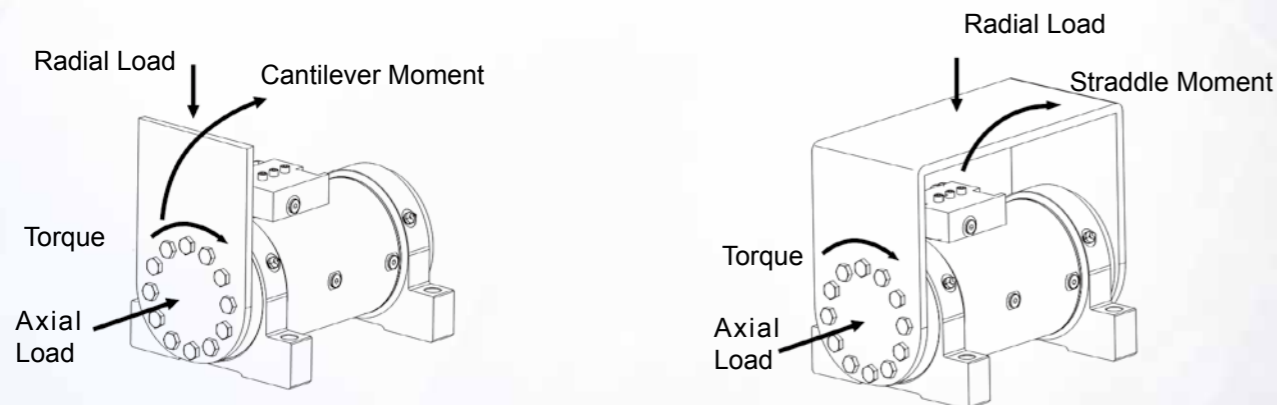


MODEL CODE REFERENCE GUIDE

LS3 — 047 — 180 — QDYJW
1 2 3 4 5 6 7 8 9 10 11 12

- 1 The Series No.
2, 3,4 The Drive Torque Nm@210Bar/100
5,6,7 Rotation Angle (090,120,180,200,220,270,360)
8 Shaft/End Cap
9 Housing Configuration
10 Valve Options
11 Seals
12 Distinguish Code

SPECIFICATIONS REFERENCE GUIDE

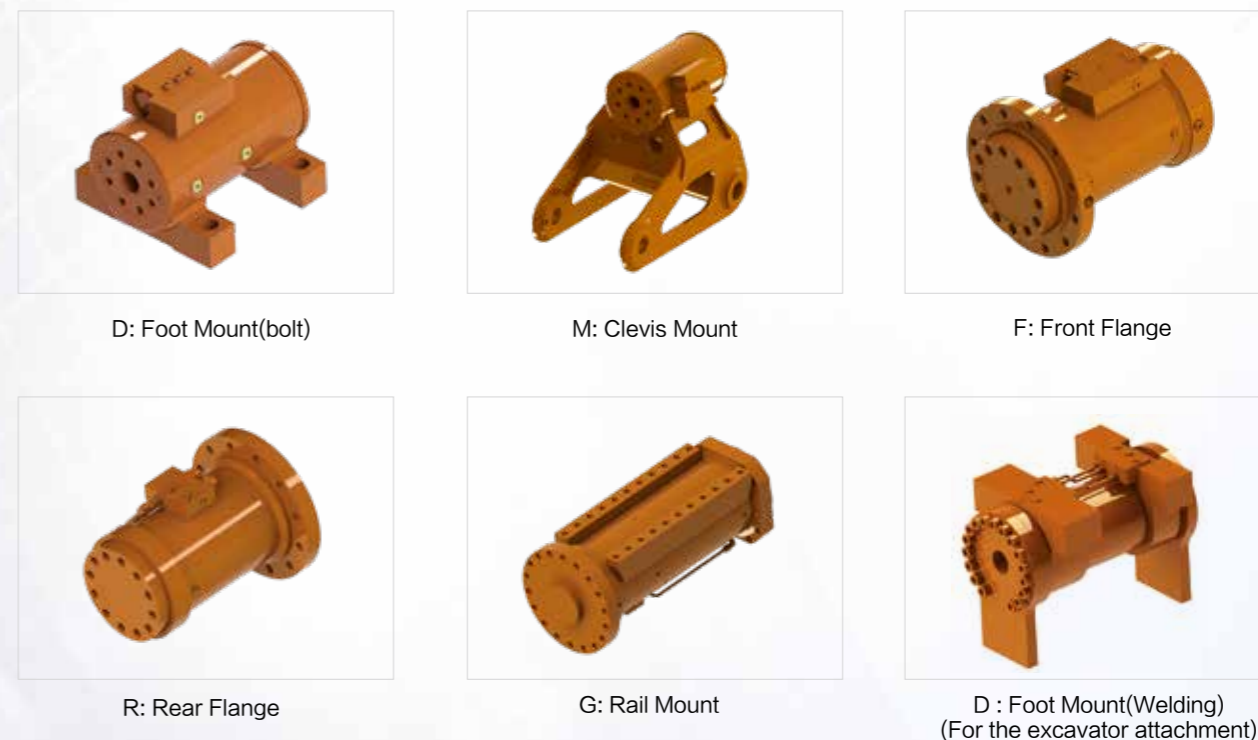


SHAFT&END CAP CONFIGURATION/HOUSING CONFIGURATION

SHAFT&END CAP CONFIGURATION



HOUSING CONFIGURATION

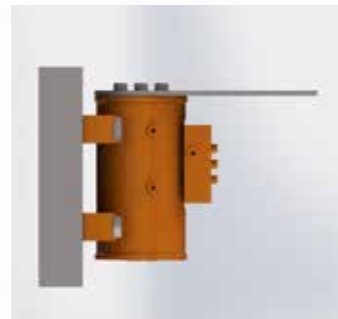




CANTILEVER MOUNT



LS1 SERIES

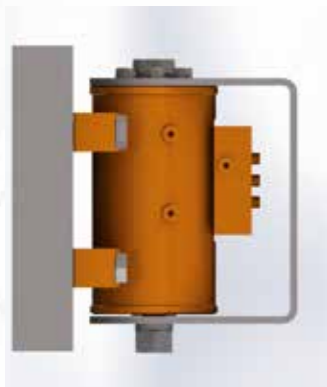


LS2 SERIES



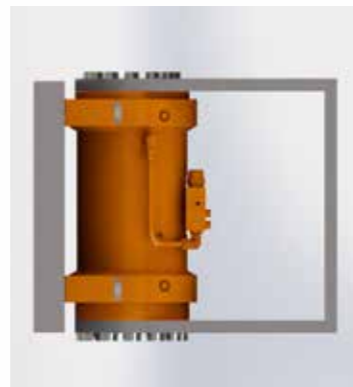
LS3 SERIES

STRADDLE MOUNT



LS2 SERIES

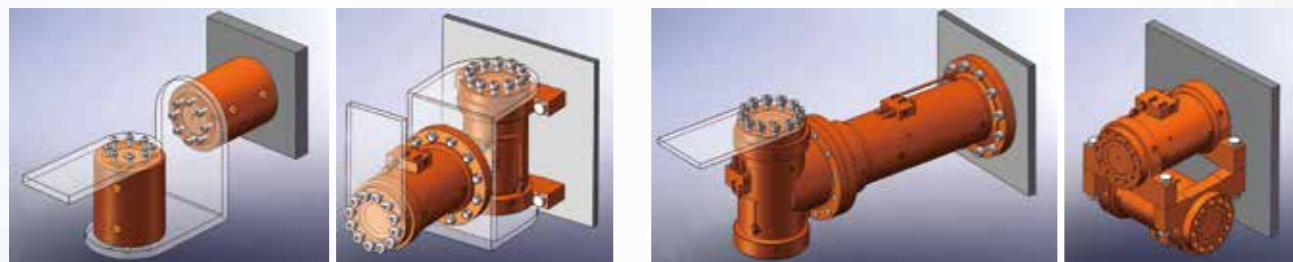
The upper portion of the bracket is bolted to the shaft flange. The lower portion is secured either by a tie rod passed through the shaft bore or is bolted to the endcap flange.



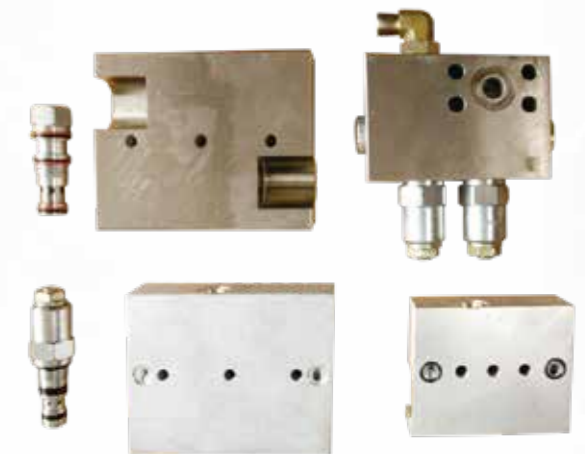
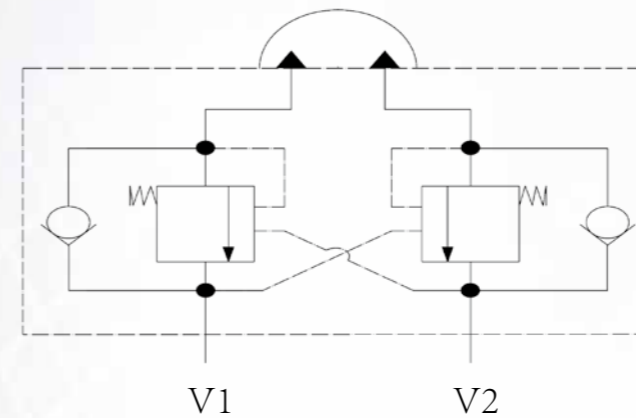
LS3 SERIES

The upper portion of the bracket is bolted to the shaft flange, the lower portion is bolted to the endcap flange.

MOUNTING OPTIONS



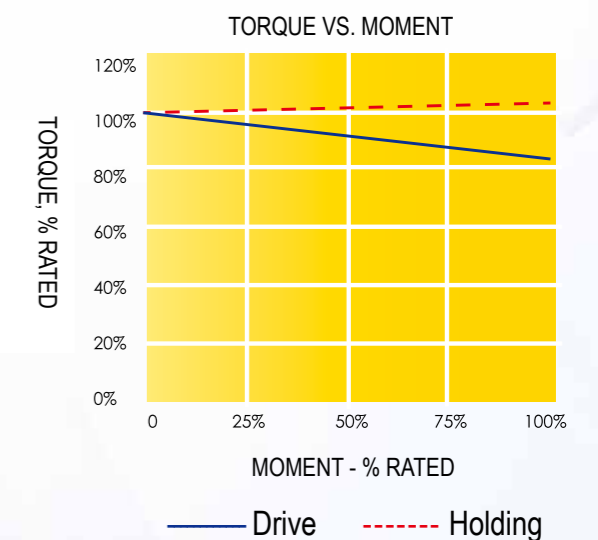
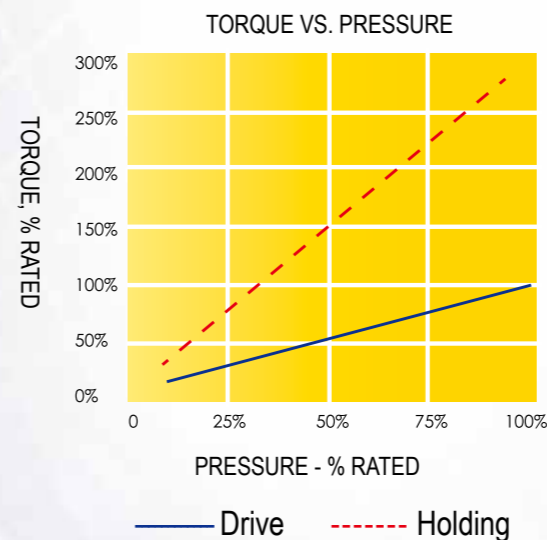
COUNTERBALANCE VALVES



The pilot ratio of LS1,LS2 Series and LS3-19-180,LS3-28-180 is 3:1,The valves are set to relieve at 210bar.The pilot ratio of others series is 2.5:1. The valves are set to relieve at 250 bar.

TORQUE VERSUS HYDRAULIC PRESSURE AND LOADS

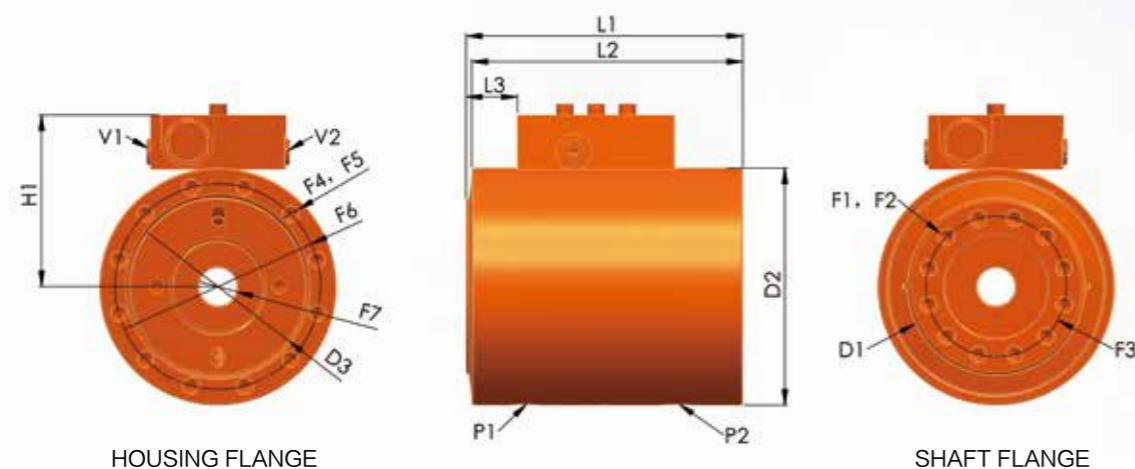
The driving torque and holding torque are approximately linear with hydraulic pressure. As moment loads increase, drive torque may be reduced by up to 15%.





## PRODUCT SPECIFICATION

### LS1 SERIES



LS1 SERIES						
MODELS	2	3	6	10	16	27
Drive Torque Nm@21MPa	180	320	600	1000	1600	2700
Holding Torque Nm@21MPa	630	1200	1900	3800	5700	9400
Moment Capacity, Cantilever mount [Nm]	560	1000	2200	5600	9000	11200
Radial Capacity [kg]	900	1350	1850	3600	4980	6700
Axial Capacity [kg]	900	1350	1850	3600	4980	6700
Displacement 180°	63.9	121	192	365	552	914
Displacement 360°	—	243	384	733	1105	1829
Weight 180°[kg]	6.4	10	14.2	26	43.3	57
Weight 360°[kg]	—	12.8	19.2	35	54.5	83
Shaft mounting surface diameter [mm]	77.2	89	102	127	148	185



## PRODUCT SPECIFICATION

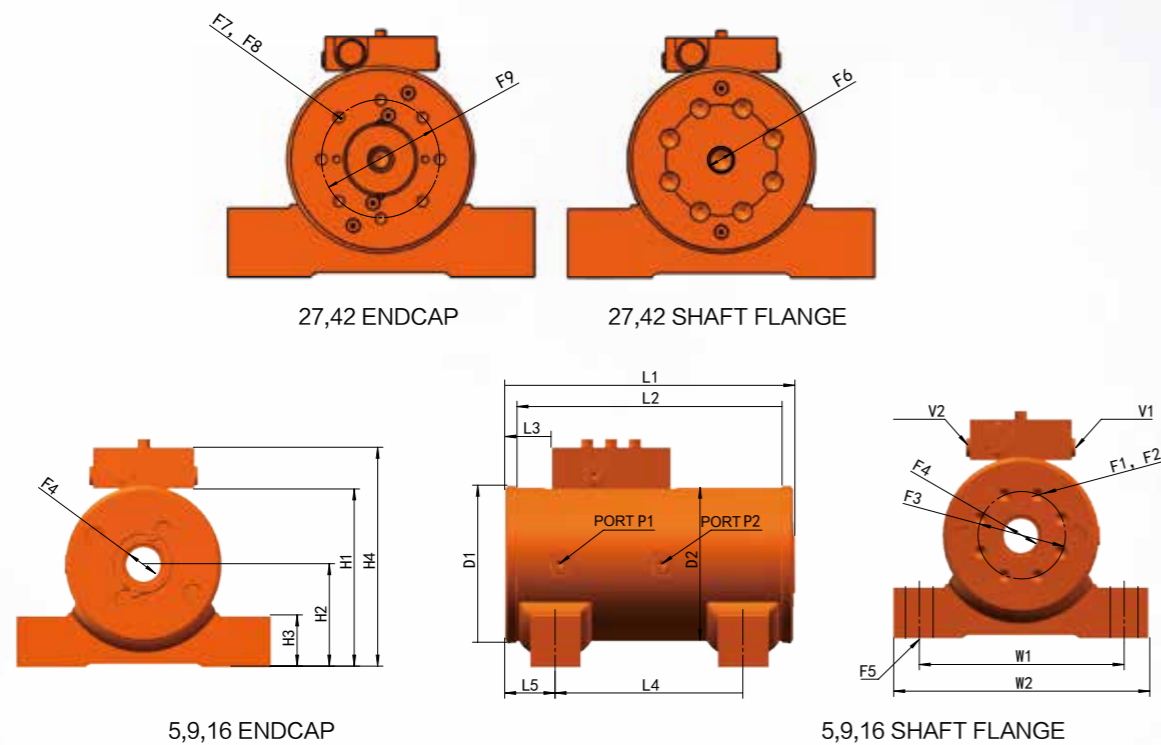
LS1 SERIES						
MODELS	2	3	6	10	16	27
D2 Housing diameter [mm]	100	119	135	170	198	226
F1 Mounting holes, shaft flange	M8×1.25	M8×1.25	M10×1.5	M12×1.75	M12×1.75	M16×2
F2 Number of mounting holes, shaft flange	8	8	12	12	12	12
F3 Bolt circle diameter, shaft flange [mm]	54	73	80	102	127	140
F4 Mounting holes, housing flange	M8×1.25	M8×1.25	M10×1.5	M12×1.75	M12×1.75	M12×1.75
F5 Number of mounting holes, housing flange	8	8	12	12	12	12
F6 Bolt circle diameter housing flange [mm]	86	103	117	151	175	203
F7 Shaft through-hole diameter [mm]	14.3	17	21.4	35.7	45.7	66.7
H1 Centerline to valve top [mm]	80	90	98	115	129	143
L1 Overall Length ( 180°) [mm]	140	143	156	184	224	241
L1 Overall Length ( 360°) [mm]	—	189	212	258	311	346
L2 Overall Length, non-rotating 180°	138	142	154	182	221	239
L2 Overall length, non-rotating 360°	—	188	211	256	308	344
L3 Shaft flange to counterbalance valve 180°	25.4	26.9	27.7	27.9	38.6	43.9
L3 Shaft flange to counterbalance valve 360°	—	22.6	24.6	42.7	60.2	70.4
P1, P2 Ports, housing	ISO-1179"G"Series of ports. Sizes vary from 1/8 to 1/4. Please refer the drawing					
V1, V2 Ports, valve	ISO-11926/SAE Series of ports. Sizes are 7/16. Please refer the drawing					

\* We can provide American-standard size products.



## PRODUCT SPECIFICATION

### LS2 SERIES



LS2 SERIES					
MODELS	5	9	16	27	42
Drive Torque Nm@21MPa	500	900	1600	2680	4200
Holding Torque Nm@21MPa	1300	2400	4400	7100	10500
Straddle Mount [Nm]	2500	4500	10200	16400	31600
Moment Capacity Cantilever Mount [Nm]	1360	2480	5420	11300	15800
Radial Capacity [kg]	1380	2130	4190	5580	9530
Axial Capacity [kg]	500	680	1000	1400	1770
Displacement 180°	132	234	436	726	1070
Weight [kg]	12.5	17	30	51	77
D1 Shaft and endcap flange diameter [mm]	104	117	142	170	196
D2 Housing diameter [mm]	101	114	139	165	191



## PRODUCT SPECIFICATION

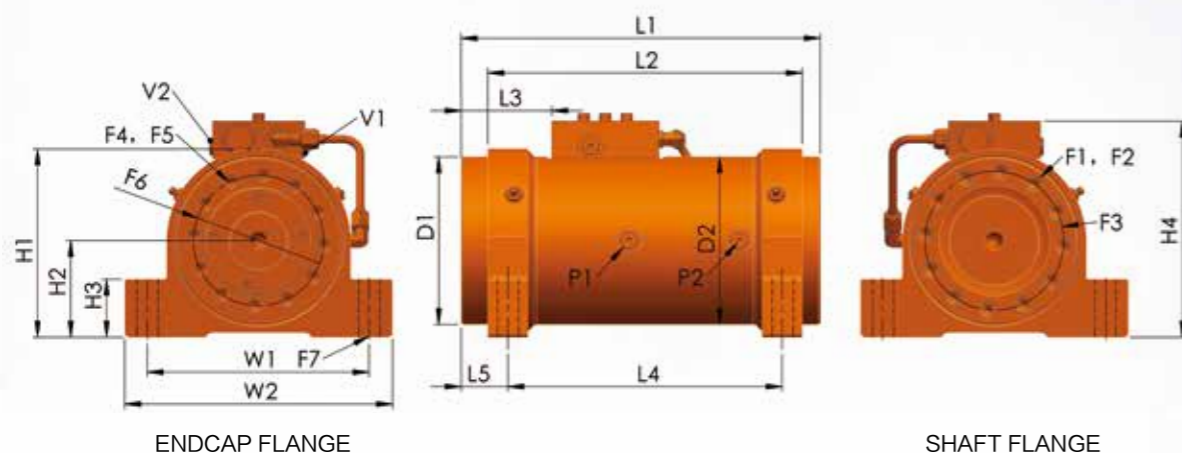
LS2 SERIES					
MODELS	5	9	16	27	42
F1 Mounting holes, shaft flange [mm]	M10×1.5	M10×1.5	M12×1.75	M20×2.5	M20×2.5
F2 Number of mounting holes, shaft flange	6	8	8	8	10
F3 Bolt circle diameter, shaft flange [mm]	53.9	65	85	102	121
F4 Through-hole diameter [mm]	M20	M24	M24	—	—
F5 Foot hole diameter	M16	M20	M24	M24	M30
F6 Shaft center hole size [mm]	—	—	—	M24×3	1 1/4-7
F7 Mounting holes, endcap flange [mm]	—	—	—	M12×1.75	M16×2
F8 Number of mounting holes, endcap flange	—	—	—	8	10
F9 Bolt circle diameter, endcap flange [mm]	—	—	—	108	121
H1 Overall height(excluding valve) [mm]	119	135	158	193	218
H2 Height to centerline [mm]	66	76.2	85.9	108	121
H3 Foot height [mm]	34.3	38.1	44.5	63.5	70
H4 Overall height (with valve) [mm]	146	163	185	220	245
L1 Overall length [mm]	188	216	248	298	337
L2 Overall length, non-rotating [mm]	173	197	229	276	314
L3 Shaft flange to counterbalance valve [mm]	32	34.5	44.7	48.8	49
L4 Mounting length [mm]	111	140	152	184	216
L5 Shaft flange to mounting hole [mm]	37.9	37.6	47	57.2	60.5
W1 Mounting width [mm]	145	152	197	222	267
W2 Overall width [mm]	178	191	248	279	330
P1, P2 Ports, housing	ISO-1179“G”Series of ports. Sizes vary from 1/8 to 1/4. Please refer the drawing				
V1, V2 Ports, valve	ISO-11926/SAE Series of ports. Sizes are 7/16. Please refer the drawing				

\*We can provide American-standard size products.



## PRODUCT SPECIFICATION

### LS3 SERIES



LS3 SERIES, FOOT MOUNT									
MODELS	19	28	47	73	105	140	180	240	430
Drive Torque Nm@21MPa	1900	2800	4700	7300	10500	14000	18000	24000	43000
Holding Torque Nm@21MPa	4900	6800	12000	18000	26000	35000	46000	59000	110000
Moment Capacity, Cantilever mount [Nm]	5200	7100	11900	18400	29500	38800	55900	72900	64400
Straddle Mount 180°	13400	16900	30800	47800	75100	98900	130500	170000	170000
Straddle Mount 360°	19200	24600	45400	71200	111500	146000	197700	256500	170000
Radial Capacity[kg]	1800	2300	3600	5000	6800	8200	10000	11800	11800
Axial Capacity [kg]	1400	1800	2700	3600	4500	5900	6800	8200	8200
Displacement 180°	492	688	1180	1870	2680	3540	4650	6000	10200
Displacement 360°	980	1390	2360	3740	5360	7080	9320	12000	20400
Weight 180°[kg]	34.5	50	72.5	110	160	220	280	360	500
Weight 360°[kg]	45.5	63.4	100	140	200	290	370	455	720
D1 Overall flange diameter [mm]	139	155	183	209	234	263	288	310	310
D2 Housing Diameter [mm]	140	152	178	203	229	254	279	305	305
F1 Mounting holes, shaft flange	M12×1.75	M16×2	M20×2.5	M22×2.5	M24×3	M27×3	M27×3	M30×3.5	M30×3.5

## PRODUCT SPECIFICATION



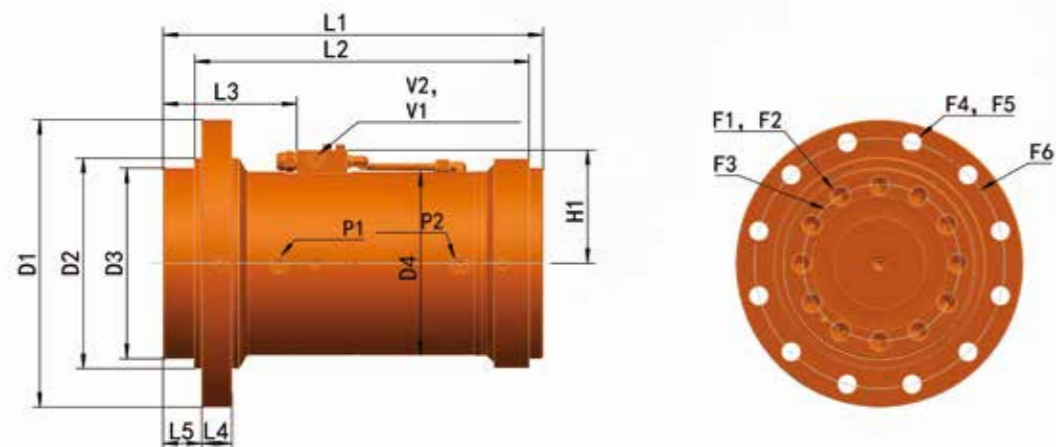
LS3 SERIES, FOOT MOUNT									
MODELS	19	28	47	73	105	140	180	240	430
F2 Quantity of mounting holes	12	12	12	12	12	12	12	12	12
F3 Bolt circle diameter, shaft flange[mm]	115	125	150	170	195	215	240	255	255
F4 Mounting holes, endcap flange [mm]	M10×1.5	M12×1.75	M16×2	M20×2.5	M22×2.5	M24×3	M27×3	M27×3	M27×3
F5 Quantity of mounting holes	12	12	12	12	12	12	12	12	12
F6 Bolt circle diameter, endcap flange[mm]	108	120	133	150	170	190	210	230	230
F7 Foot hole diameter [mm]	M16	M20	M22	M24	M27	M30	M36	M36	M36
H1 Overall height(excluding valve) [mm]	156	186	212	240	276	305	327	362	362
H2 Height to centerline [mm]	80	94.9	108	122	140	154	165	184	184
H3 Foot Height [mm]	48	70	78	88	105	110	120	135	135
H4 Overall Height(with valve) [mm]	179	201	226	271	283	310	334	366	366
L1 Overall length 180° [mm]	298	323	365	413	475	524	551	600	906
L1 Overall length 360° [mm]	427	470	538	615	705	776	836	906	1330
L2 Overall length non-rotating 180°	261	286	323	363	431	463	493	534	848
L2 Overall length non-rotating 360°	392	433	496	565	661	715	775	843	1272
L3 Shaft flange to counterbalance valve 180° [mm]	75.2	134	143	130	152	185	196	221	374
L3 Shaft flange to counterbalance valve 360° [mm]	149	157	197	232	267	308	338	374	405
L4 Mounting Length 180°[mm]	229	248	281	314	374	400	426	460	766
L4 Mounting Length 360°[mm]	358	395	454	516	604	652	708	766	1190
L5 Shaft flange to mounting hole 180° [mm]	38.1	43.9	50	56.9	59.9	74.2	75.9	80	80
W1 Mounting width[mm]	190	230	260	300	340	380	410	450	450
W2 Overall width	222	268	310	350	400	447	484	530	530
P1, P2 Ports, housing	ISO-11926/SAE Series of ports.Sizes are 7/16,Please refer the drawing								
V1, V2 Ports, valve	ISO-1179-1/BSPP"G"Series of ports.Sizes are 1/8.Please refer the drawing								

\* We can provide American-standard size products.



## PRODUCT SPECIFICATION

### LS3 SERIES



LS3 SERIES, FLANGE MOUNT									
MODELS	19	28	47	73	105	140	180	240	430
Drive Torque Nm@21MPa	1900	2800	4700	7300	10500	14000	18000	24000	43000
Holding Torque Nm@21MPa	4900	6800	12000	18000	26000	35000	46000	59000	110000
Moment Capacity Cantilever Mount [Nm]	5200	7100	11900	18400	29500	38800	55900	72900	64400
Radial Capacity [kg]	1800	2300	3600	5000	6800	8200	10000	11800	11800
Axial Capacity [kg]	1400	1800	2700	3600	4500	5900	6800	8200	8200
Displacement 180°	492	688	1180	1870	2680	3540	4650	6000	10200
Displacement 360°	980	1390	2360	3740	5360	7080	9320	12000	20400
Weight 180°[kg]	34.5	50	72	110	160	220	280	360	500
Weight 360°[kg]	45.5	63.4	100	140	200	290	370	455	720
D1 Overall flange diameter[mm]	200	235	280	315	355	396	442	475	310



## PRODUCT SPECIFICATION

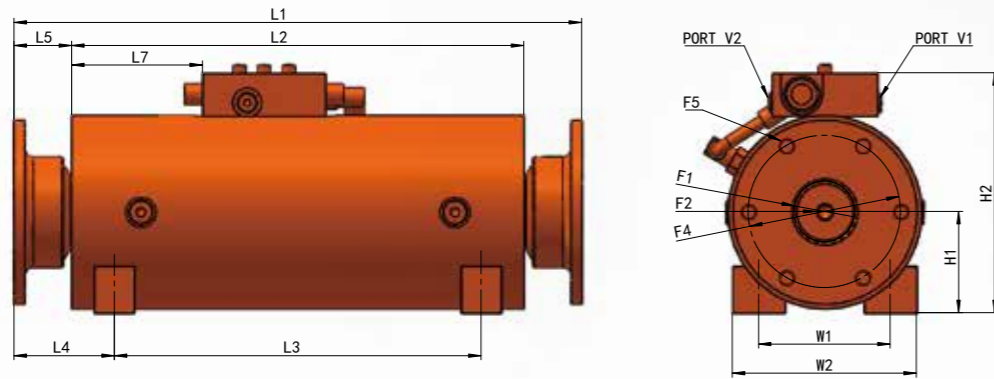
LS3 SERIES, FLANGE MOUNT									
MODELS	19	28	47	73	105	140	180	240	430
D2 Pilot diameter[mm]	150	175	205	230	260	290	315	340	340
D3 Shaft and endcap flange [mm]	139	155	183	209	234	263	288	310	310
D4 Housing diameter [mm]	140	152	178	203	229	254	279	305	305
F1 Mounting holes, shaft flange	M12×1.75	M16×2	M20×2.5	M22×2.5	M24×3	M27×3	M27×3	M30×3.5	M30×3.5
F2 Quantity of mounting holes	12	12	12	12	12	12	12	12	12
F3 Bolt circle diameter, shaft flange[mm]	115	125	150	170	195	215	240	255	255
F4 Mounting holes, housing flange	M10×1.5	M12×1.75	M16×2	M20×2.5	M22×2.5	M24×3	M27×3	M27×3	M27×3
F5 Quantity of mounting holes	12	12	12	12	12	12	12	12	12
F6 Bolt circle diameter, housing flange [mm]	175	206	245	275	310	345	380	410	410
H1 Centerline to valve top [mm]	99.1	106	118	131	144	156	169	182	184
L1 Overall length 180°	298	323	365	413	475	524	551	600	906
L1 Overall length 360°	427	470	538	615	705	776	836	906	1330
L2 Overall length, non-rotating 180°	261	286	323	363	431	463	493	534	848
L2 Overall length, non-rotating 360°	392	433	496	565	661	715	775	843	1272
L3 Shaft flange to counterbalance valve 180°[mm]	75.2	134	143	130	152	185	196	221	374
L3 Shaft flange to counterbalance valve 360°[mm]	149	157	197	232	267	308	338	374	405
L4 Mounting flange thickness [mm]	25.2	26	31	33	40	42	46	52	52
L5 Shaft flange to mounting flange face [mm]	27	32	35	42	40	53	54	56	56
P1, P2 Ports, housing	ISO-1179"G"Series of ports. Sizes vary from 1/8 to 1/4. Please refer the drawing								
V1, V2 Ports, valve	ISO-11926/SAE Series of ports. Sizes are 7/16. Please refer the drawing								

\* We can provide American-standard size products.





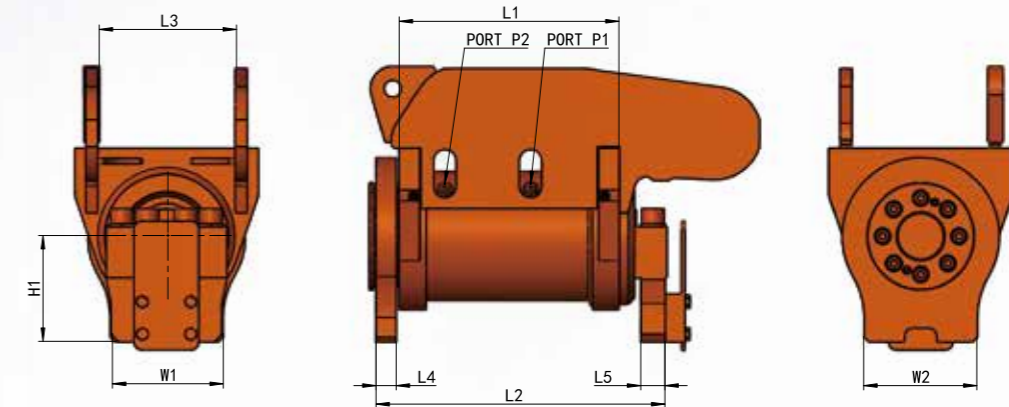
LS4 SERIES



LS4 SERIES			
MODEL	28	50	67
Drive Torque Nm@21MPa	2800	5000	6700
Holding Torque Nm@21MPa	6100	10600	14300
Rotation Angle°	220	200	
Straddle Mount Moment Capacity [Nm]	4200	7600	10100
Radial Capacity [kg]	2040	3130	3900
Axial Capacity [kg]	2040	3130	3900
Displacement [cc]	775	1360	1650
Approximate weight[kg]	33.6	58	75
1 Housing diameter [mm]	140	165	178
F1 Shaft spline, both ends [mm]	See the drawing for specific details		
F2 Shaft mounting hole size, bothends[mm]	M12×1.75	M12×1.75	M12×1.75
F3 Foot hole diameter mm	M16×2	M20×2.5	M22×2.5
F4 flange mounting hole indexing circle[mm]	Detailed specifications please refer the drawings.		
F5 flange mounting hole diameter[mm]			
H1 Height to centerline mm	150	176	203
H2 Overall height (with valve)[mm]	73.2	83.9	102
L1 Overall length, include of flange	417	546	579
L2 Overall Length, not include the rotating part [mm]	335	422	445
L3 Mounting length mm	265	320	320
L4 Mounting hole to end of shaft [mm]	75.1	113	130
L5 Shaft extension[mm]	40.9	61.9	67.6
W1 Mounting width [mm]	104	140	150
W2 Overall foot width [mm]	133	170	203
P1,P2 Ports on housing	ISO-11926/SAE Series. Sizes from 7/16 to 9/16, Please refer the drawing		
V1,V2 Ports on valve	ISO-11926/SAE Series. Sizes from 7/16 to 9/16,Please refer the drawing		



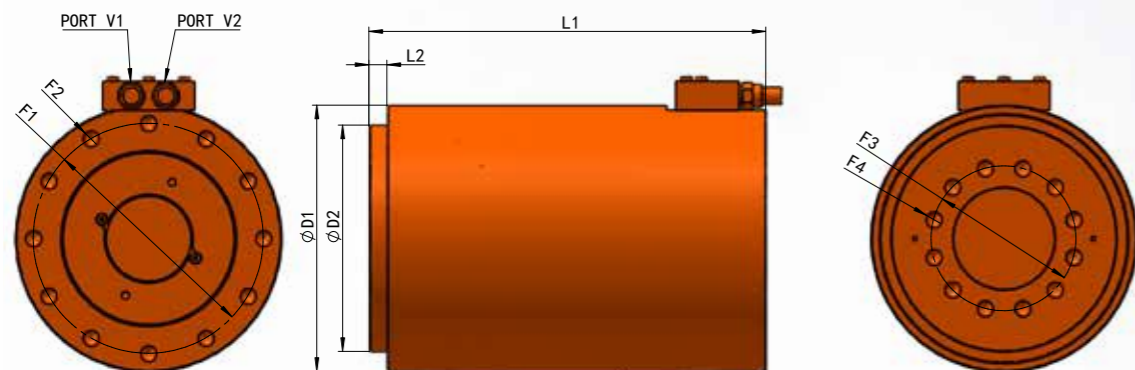
LS5 SERIES



LS5 SERIES							
MODEL	9	40	47	73	105	140	180
Operating pressure	210	210	210	210	210	210	210
Drive Torque Nm@21MPa	900	4000	4700	7300	10500	14000	18000
Holding Torque Nm@21MPa	2400	9000	12000	18000	26000	35000	46000
Displacement[cc]	234	790	1180	1870	1995	2640	3460
Approximate weight[kg]	27	50	125	160	220	290	440
Rotation Angle°	180	180	180	180	134	134	134
L1 Cylinder Overall length[mm]	212.4	276.6	286	345.4	377.4	408.2	437.5
L2 Overall length [mm]	Can be customized according to customer's requirement						
L3 Side plate thickness[mm]	146	165	215.9	215.9	305	362	362
L4 Cylinder thickness[mm]	Can be customized according to customer's requirement						
L5[mm]	Can be customized according to customer's requirement						
W1 Cylinder width[mm]	Can be customized according to customer's requirement						
W2 Side plate width[mm]	Can be customized according to customer's requirement						
H1 Bolted plate width[mm]	Can be customized according to customer's requirement						
P1,P2	ISO-1179-1/BSPP'G' ,Sizes from 1/8 to 3/8, Please refer the drawing						
Excavator Weight(T)	1.7	3.5	5.5	7	10	12	15



LS6 SERIES

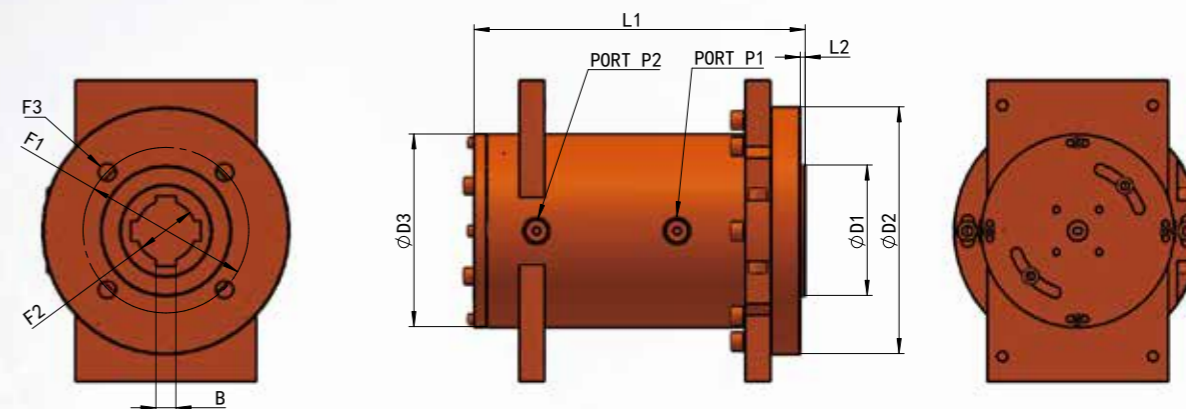


LS6 SERIES			
MODELS	40	63	90
Drive Torque Nm@21MPa	4000	6300	9000
Holding Torque Nm@21MPa	9000	15000	22000
Rotation Angle°	180	180	180
Max. Moment[Nm]	60000	100000	150000
D1 Cylinder diameter [mm]	Can be customized according to customer's requirement	299	294
D2 diameter[mm]		250	250
L1 Overall length[mm]		384	438.5
L2 Overall length[mm]		4	30
F1 mounting threaded hole index round[mm]		264	254
F2 mounting threaded hole size		M22	M22
F3 outputs threaded hole indexing circles		160	160
F4 output threaded hole size		M20	M22
P1,P2 Ports on housing	ISO-1179-BSPP'G Series. Sizes from 1/8 to 3/8, Please refer the drawing		
V1,V2 Ports on valve	ISO-1179-BSPP'G Series. Sizes from 1/8 to 3/8, Please refer the drawing		

\* We can provide American-standard size products.



LS7 系列 (阀门控制器) 参数

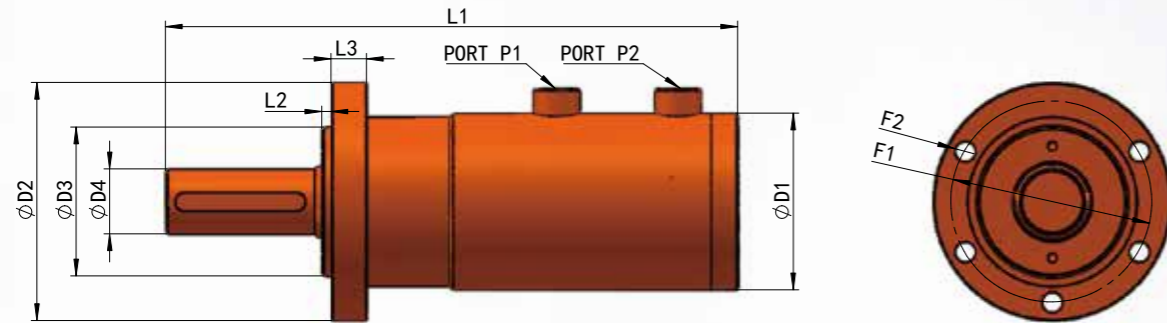


LS7 SERIES				
	LS7-060-90	LS7-240-90	LS7-320-90	
Operating pressure	140	140	140	140
Drive Torque Nm@21MPa	3000	6000	24000	32000
Displacement[cc]	967	790	1180	1870
Weight [kg]	69	50	416	545
Rotation Angle°	90-95 Adjustable			
L1 Cylinder Overall length[mm]	325	462	622	631
L2 Overall length [mm]	5	5	5	5
φD1[mm]	130	200	260	260
φD2[mm]	246	340	460	498
φD3[mm]	192	240	320	378
F1[mm]	165	254	356	356
F2[mm]	60	72	160	160
F3[mm]	4*M20	8*M16	8*M30	8*M30
B[mm]	18	20	40	40
P1,P2	ISO-1179-1/BSPP'G', Sizes from 1/8 to 3/8, Please refer the drawing			

\* We can provide American-standard size products.



LS8 SERIES



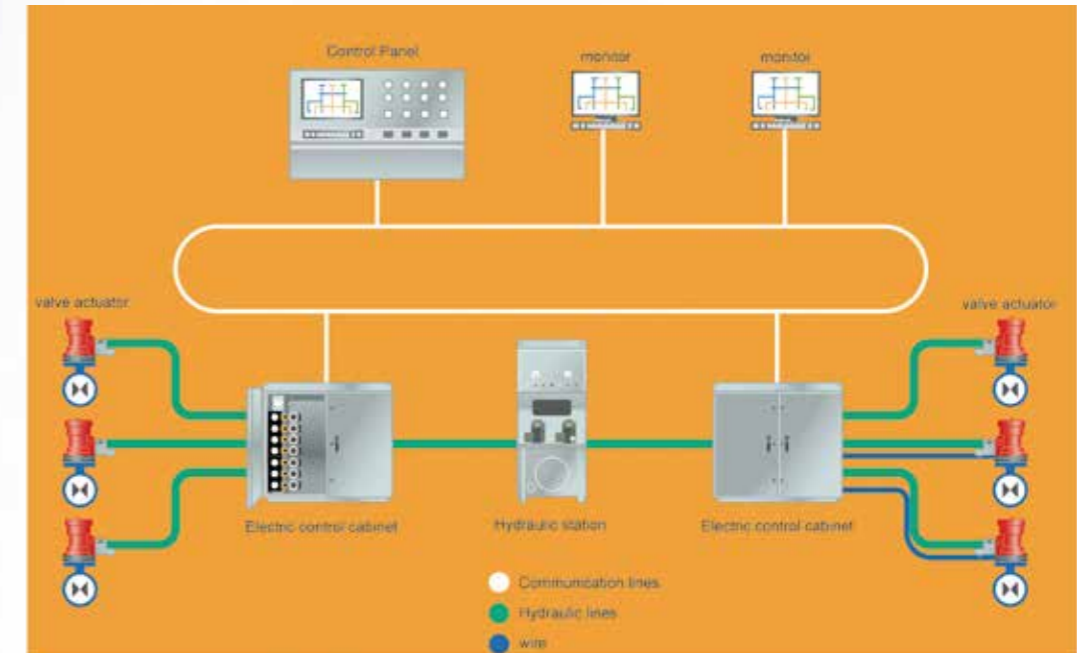
LS8 SERIES			
Operating pressure	210	210	210
Drive Torque Nm@21MPa	700	1300	2800
Displacement [cc]	140	395	1270
Weight [kg]	11.5	24.5	50
Rotation Angle°	180	180	360
L1 Cylinder Overall length[mm]	307.5	293	581
L2 Overall length[mm]	5	8	7
phi D1[mm]	95	149	140
phi D2[mm]	128	149	237
phi D3[mm]	80	70	115
phi D4[mm]	35	40	55
F1[mm]	108	105	215
F2[mm]	5-phi11	4-M12	8-phi13
P1,P2	ISO-1179-1/BSPP'G', Sizes from 1/8 to 3/8, Please refer the drawing		

\* We can provide American-standard size products.

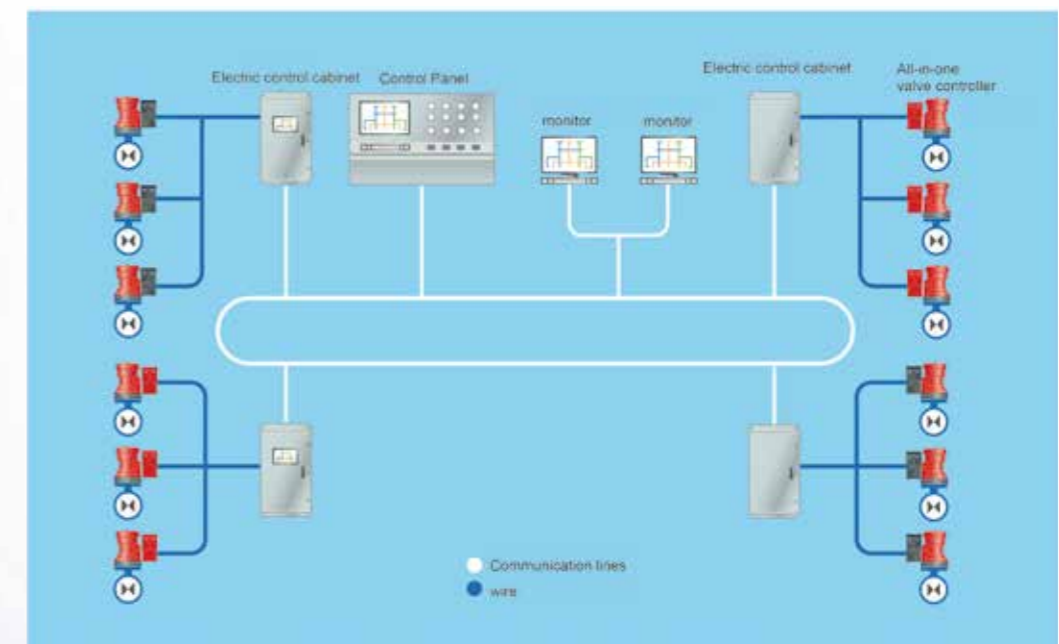


OPERATION PRINCIPLE

Hydraulic Control Schematic



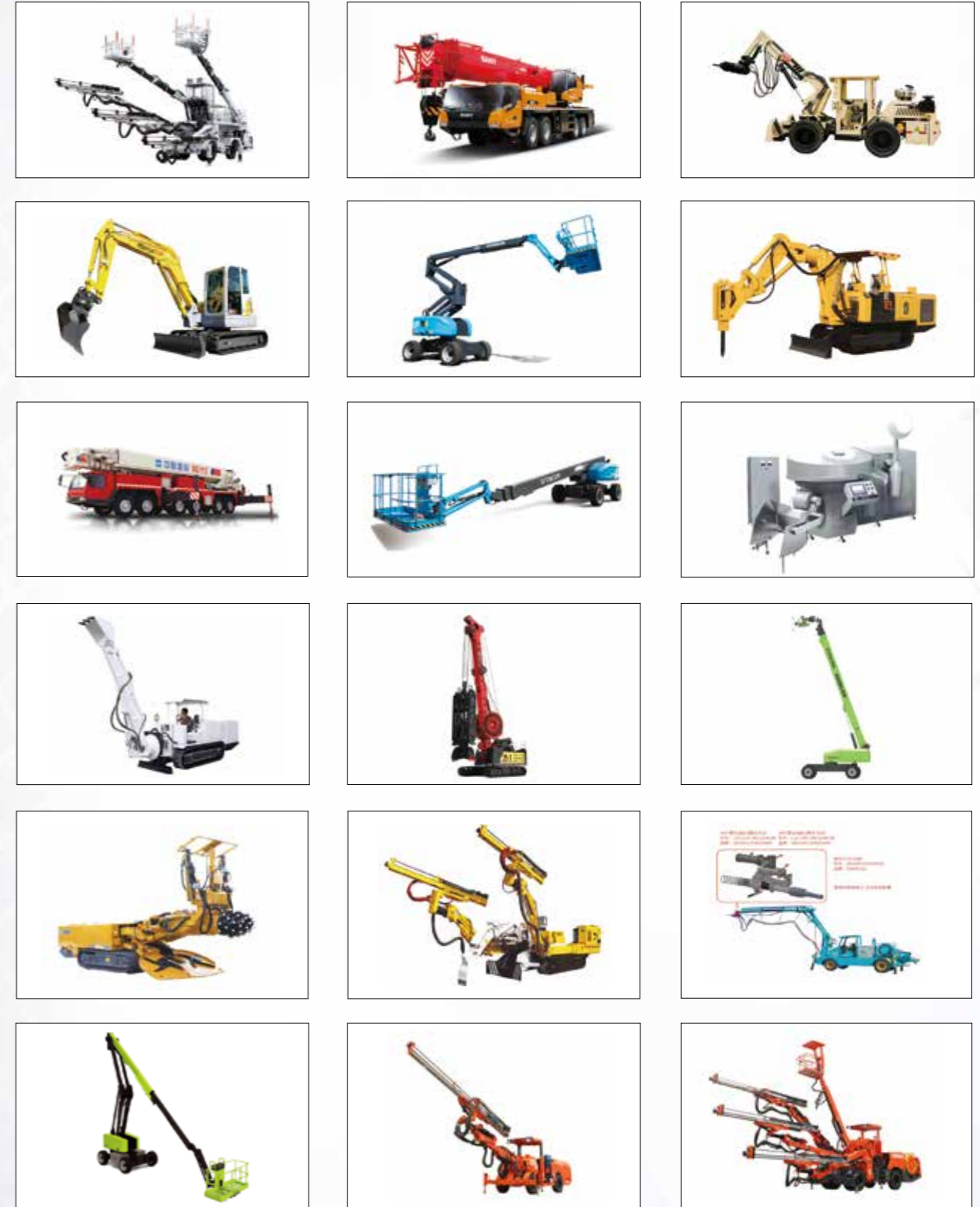
Electro-hydraulic control system Schematic





PRODUCT COMPARISON

APPLICATION



FROM CHINA, SERVING THE WORLD



**Go For It**



SHANDONG VICTORY EQUIPMENT CO., LTD.

WEIHAI LIONSHARE HYDRAULICS CO., LTD.

TEL:+86-631-5679993

FAX:+86-631-5670039

E-mail : [info@lionsharetech.com](mailto:info@lionsharetech.com)

Web:[www.lionsharetech.com](http://www.lionsharetech.com)