COOSAI VALVE

Company Introduction

China Coosai Valve Co., Ltd is a leader which has 20 years experience in the design and manufacture of quality engineered and tailor made valves.

The prime markets served by Coosai are the Oil &Gas exploration and production sectors, oil field , power plants, pulp and paper mills, chemical plants, mining industry, sugar industry , and other special service industrial applications.

Coosai offers a vast production range that satisfies the most critical project requirements, manufacturing valves in a wide range of sizes(up to 5000mm),pressures classes(up to ANSI 2500LB and 10000PSI),materials(Stainless steel and special alloy material)

Coosai valves are CE PED 97/23/EEC, API 6D-0749, API6A-1199,API607(fire safe) and TS certified.

Coosai diaphragm pumps are CE and ATEX(EX Equipment Ⅱ 2 GDC) certified.

Coosai Electric actuator is CE certified.

Coosai workshops cover an area of 12000 square meters. Total registered asset is RMB 80 million .Besides ISO9001:2008 quality management and QC system, Coosai has the capability in offering varied products by virtue of over 100 sets large scale CNC lathes, testing equipment and computerized control valve testing and calibration bench. Nondestructive testing equipment include PT,UT,MT and RT are available.

There is a real technical proficiency at Coosai with an organization to produce and supply valves according to any specific requirements the customer may ask.

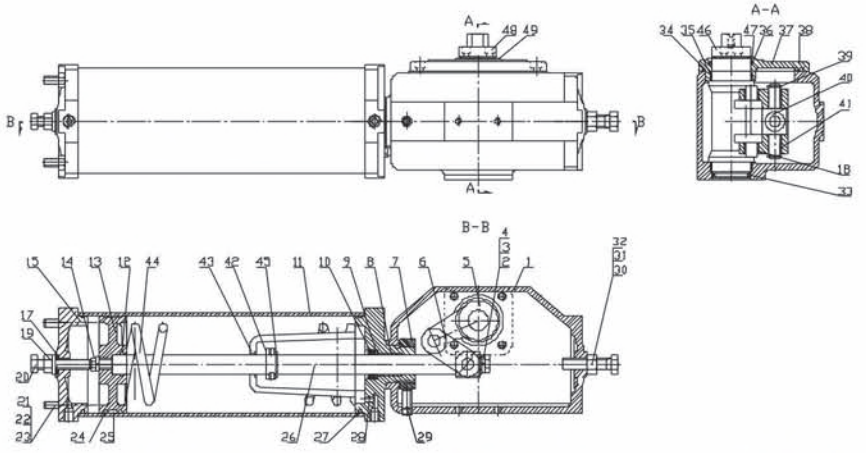
Coosai is dedicated to offering the best configuration and satisfy client's expectations and their eventual commitments.

We look forward to meeting all distinguished clients and industry experts and sincerely welcome all your valuable inquiries.

Single acting actuator

Design of single acting spring return actuator is based on the design structure of double acting actuator. There are 2 different designs : Air Close–Spring Open type and Air Open–Spring Close type. Air Close type is suitable for the services requiring the valve to be opened when air supply is failed or electricity is failed. Air Open type is suitable for the services requiring the valve to be closed when air supply is failed or electricity is failed.

Single acting with air supplied to open



No.	Part name	Qty	Material	No.	Part name	Qty	Material
25	O–ring	2	NBR				
24	Guide ring	1	PTFE	49	Open dial indicator	1	Stainless steel
23	Bolt	4	45+Zn	48	Screw	2	Stainless steel
22	Washer	4	Q235	47	Open indicator hand	1	Plastic
21	Nut	4	35	46	Crank arm cap	1	WCB
20	Bolt	1	35	45	Spring	1	60Si2MnA
19	Nut	1	15	44	Spring seat	1	45
18	Self lubricated bearing	2		43	Spring cover	1	45
17	Washer	1	Q235	42	Snap ring	1	65Mn
16	Gasket	1	PTFE	41	Self lubricated bearing	2	
15	Upper cap	1	WCB/Q235	40	Universal axis	1	45
14	Bolt	1	25	39	Backup ring	2	65Mn
13	Piston	1	WCB/Q235	38	Screw	4	35
12	O–ring	1	NBR	37	Cover	1	WCB
11	Cylinder	1	ALalloy(250aboveQ235)	36	O–ring	1	NBR
10	Steel wire backup ring	1	Stainless spring steel wire	35	Self lubricated bearing	2	
9	Y–ring	1	PU	34	Waterproof gasket	1	NBR
8	Self lubricated bearing	1	Compound material	33	O–ring	1	NBR
7	Round nut	2	15	32	Washer	1	Q235
6	Connecting rod	2	WCB	31	Bolt	1	35
5	Crank arm	1	ZG25	30	Nut	1	15
4	Washer	2	Q235	29	Screw	1	35
3	Bolt	1	35	28	Lower cap	1	WCB/Q235
2	Washer	2	25Mn	27	O–ring	2	NBR
1	Body	1	WCB	26	Piston rod	1	45+Cr

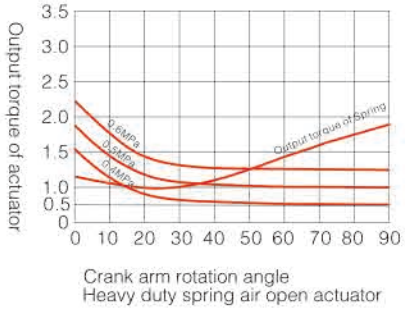
Output torque data of double acting actuator

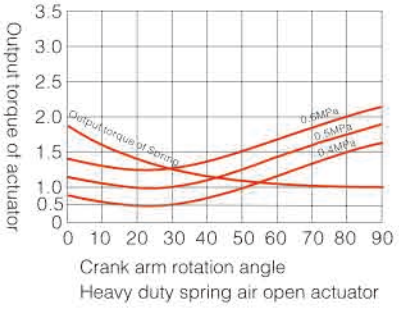
Code of actuator	Air supply pressure 3Bar	Air supply pressure 4Bar	Air supply pressure 5Bar	Air supply pressure 6Bar	Air supply pressure 7Bar
ZS36-63	28	38	48	58	68
ZS36-80	45	60	76	91	106
ZS45-80	58	76	96	115	134
ZS45-100	90	120	150	180	210
ZS55-100	108	144	180	216	
ZS55-125	168	224	280	336	392
ZS63-160	292	390	488	585	683
ZS63-200	502	670	838	/	/
ZS80-200	638	850	1064	1276	1489
ZS80-250	996	1328	1660	/	/
ZS100-250	1245	1660	2075	2490	2905
ZS100-300	1797	2396	2995	3594	4193
ZS125-300	2244	2992	3740	4488	5236
ZS125-350	3054	4072	5090	6108	7126

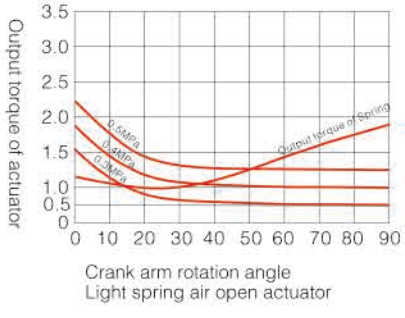
Technical data of single acting actuator

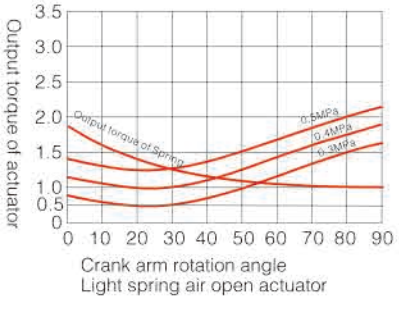
Code of actuator	Cylinder diameter(mm)	Cylinder volume(ml)	Max. bore diameter(mm)	Max. output air pressure(MPa)	Working temperature
ZDS45/ZDSK45-100	100	2120	25	0.8	80℃
ZDL45/ZDLK45-100	100	2276	25	0.8	80℃
ZDS55/ZDSK55-125	125	3925	30	0.8	80℃
ZDL55/ZDLK55-125	125	3740	30	0.8	80℃
ZDS63/ZDSK63-160	160	7235	40	0.8	80℃
ZDL63/ZSLK63-160	160	8440	40	0.8	80℃
ZDS63/ZDSK63-200	200	12870	40	0.8	80℃
ZDL63/ZDLK63-200	200	13500	40	0.8	80℃
ZDS80/ZDSK80-250	250	23300	60	0.8	80℃
ZDL80/ZDLK80-250	250	24770	60	0.8	80℃
ZDS80/ZDSK80-300	300	35325	60	0.8	80℃
ZDL80/ZDLK80-300	300	38150	60	0.8	80℃
ZDS100/ZDSK100-300	300	38150	70	0.6	80℃
ZDL100/ZDLK100-300	300	40978	70	0.8	80℃
ZDS125/ZLSK125-300	300	49455	100	0.8	80℃
ZDL125/ZDLK125-300	300	52980	100	0.8	80℃
ZDS125/ZDSK125-350	350	67315	100	0.8	80℃
ZDL125/ZDLK125-350	350	72120	100	0.8	80℃

Note: ZDS series actuator presents heavy duty Spring Air Close single acting actuators, suitable for those systems where require air supply pressure ≥0.5MPa.
ZDL series actuator presents light duty Air Close single acting actuators, suitable for those systems where require air supply pressure ≥0.4MPa.
ZDSK series actuator presents heavy duty Spring Air Open single acting actuators, suitable for those systems where require air supply pressure ≥0.4MPa.
ZDL series actuator presents light duty Spring Air Open single acting actuators, suitable for those systems where require air supply pressure ≥0.4MPa.

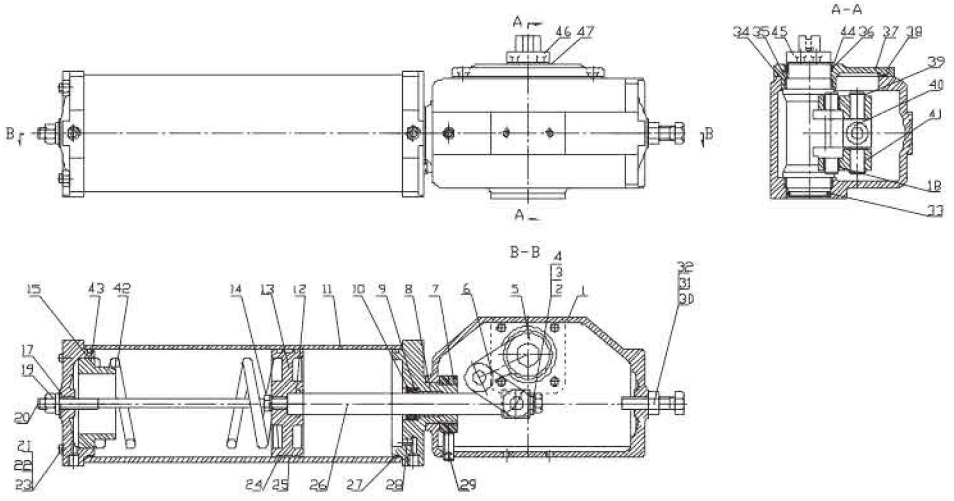






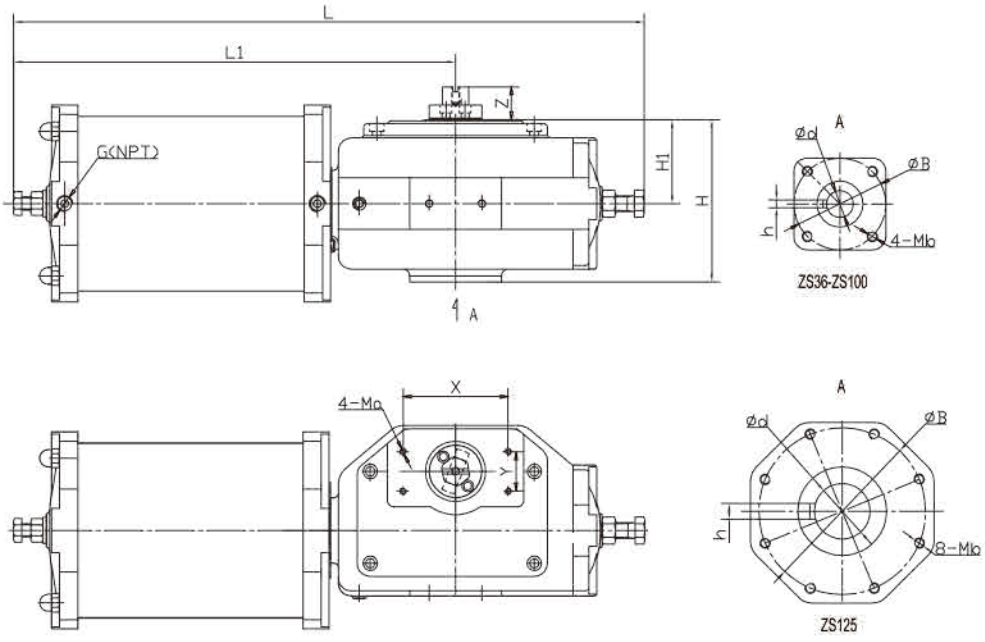


Single acting with air failed to close



No.	Part name	Qty	Material	No.	Part name	Qty	Material
25	O-ring	2	NBR				
24	Guide ring	1	PTFE				
23	Bolt	4	45+Zn				
22	Washer	4	Q235	47	Open dial indicator	1	
21	Nut	4	35	46	Screw	2	Stainless steel
20	Bolt	1	35	45	Open indicator hand	1	Stainless steel
19	Nut	1	15	44	Crank arm cover	1	Plastic
18	Self lubricated bearing	2		43	Spring	1	WCB
17	Washer	1	Q235	42	Spring seat	1	60Si2MnA
16	Gasket	1	PTFE	41	Self lubricated bearing	2	45
15	Upper cap	1	WCB/Q235	40	Universal axis	1	
14	Bolt	1	25	39	Backup ring	2	45
13	Piston	1	WCB/Q235	38	Screw	4	65Mn
12	O-ring	1	NBR	37	Cover	1	35
11	Cylinder	1	AL alloy(250 above Q235)	36	O-ring	1	WCB
10	Backup ring	1	Stainless spring steel wire	35	Self lubricated bearing	2	NBR
9	Y-ring	1	PU	34	Waterproof gasket	1	NBR
8	Self lubricated bearing	1	Compound material	33	O-ring	1	NBR
7	Round nut	2	15	32	Washer	1	Q235
6	Connecting rod	2		31	Bolt	1	35
5	Crank arm	1	ZG25	30	Nut	1	15
4	Washer	2		29	Screw	1	35
3	Bolt	1	35	28	Lower cap	1	WCB/Q235
2	Washer	2	25Mn	27	O-ring	2	NBR
1	Body	1	WCB	26	Piston rod	1	45+Cr

Outline of double acting actuator



Dimension table of double acting actuator

Code of actuator	L	L1	H	H1	Z	X	Y	Ma	¢B	Mb	¢d	h	G(NPT)
ZS36-63	390	270	115	59	26	80	30	M6	70	4-M8	ℂ16	5	1/4
ZS36-80	395	275	115	59	26	80	30	M6	70	4-M8	ℂ20	6	
ZS45-80	440	296	124	64	26	80	30	M6	70	4-M8	ℂ16	5	
ZS45-100	445	300	124	64	26	80	30	M6	70	4-M8	ℂ20	6	
ZS55-125	507	343	129	67	26	80	30	M6	102	4-M10	ℂ20 ℂ30	6 8	
ZS63-160	617	418	164	83	26	130	30	M6	125	4-M12	ℂ30	8	3/8
ZS63-200	625	426	164	83	26	130	30	M6	125	4-M12	ℂ35 ℂ40	10 12	
ZS80-200	742	502	198	100	26	130	30	M6	140	4-M16	ℂ40 ℂ45	12 14	3/8
ZS80-250	750	510	198	100	26	130	30	M6	140	4-M16	ℂ50 ℂ55 ℂ60	14 16 18	
ZS100-250	900	605	251	125	26	130	30	M6	165	4-M20	ℂ50 ℂ55 ℂ60	14 16 18	3/8
ZS100-300	900	605	251	125	26	130	30	M6	165	4-M20	ℂ65 ℂ70	18 20	3/8
ZS125-300	1150	758	300	147	26	130	30	M6	254	8-M16	ℂ60 ℂ70 ℂ80	18 20 22	3/8
ZS125-350	1155	763	300	147	26	130	30	M6	254	8-M16	ℂ90 ℂ100	25 28	1/2

Selection of actuator

This series of actuators are suitable for quarter turn valves with spring return system, follow the below steps to select an actuator:

1. Ensure the valve is subjected to quarter turn type;
2. If valve is required to be closed when air supply is failed, then should select Air Open actuator; if valve is required to be opened when air is failed, then should select Air Close actuator.
3. Confirm operating torque of the valve;
4. Referring to the table of rated output torque of springs to select a suitable actuator, generally the rated output torque of selected actuator shall be 1.1 to 1.3 times that of valve's stem torque, which also depends on the importance of the valve. If it is required with high reliability for the valve operation, then an actuator with more safety factors shall be selected.
5. Pay special attention to the air supply pressure at jobsite when choosing actuators, it is important to select a correct one based on the real air supply pressure.

Output torque table of actuator

Code of actuator	Output torque of spring	Air supply pressure 3Bar	Air supply pressure 4Bar	Air supply pressure 5Bar	Air supply pressure 6Bar	Air supply pressure 7Bar
ZDL45/ZDLK45-100	45	24	54	84	90	120
ZDS45/ZDLS45-100	60		30	60		
ZDL55/ZDLK55-125	86	46	102	158	170	228
ZDS55/ZDSK55-125	115		57	115		
ZDL63/ZDLK63-160	160	86	194	300	245	430
ZDS63/ZSSK63-160	214		107	214		
ZDL63/ZDLK63-200	250	134	302	470	503	670
ZDS63/ZDSK63-200	335		168	335		
ZDL80/ZDLK80-250	500	266	600	932	1000	1330
ZDS80/ZDSK80-250	665		332	665		
ZDL80/ZDLK80-300	720	383	863	1342	1438	1917
ZDS80/ZDSK80-300	960		480	958		
ZDL100/ZDLK100-300	900	480	1080	1680	1800	2400
ZDS100/ZDSK100-300	1200		600	1200		
ZDL125/ZLSK125-300	1125	600	1350	2100	2250	3000
ZDS125/ZDSK125-300	1500		750	1500		
ZDL125/ZDLK125-350	1530	820	1835	2850	3060	4080
ZDS125/ZDSK125-350	2040		1020	2040		

Selection of Regulating valve

Procedure of selection of Regulating valve

1. Selection of Regulating valve

There are many categories of regulating valves. Normal categories include one way one seat type, one way two seats, angle type, diaphragm type, small flow type, 3 way type, V-ball type, butterfly type, Sleeve type, ball type, etc. The following aspects shall be considered when specifically selected.

(1) Construction of valve core

Mainly considering according to the selected flow characteristics and imbalanced force and other factors.

(2)Wear resistance

When fluid medium is suspension with high concentration abrasiveness, the internal materials of valve have to be hard.

(3) Corrosion resistance

Because medium is with corrosiveness, so try to select a valve with simple construction.

(4) Temperature and pressure of medium

When the temperature and pressure of medium is high and greatly variable, the material of core and seats of valve shall be selected with good temperature resistance and good pressure resistance.

(5) Prevention of cavitation and flash

Cavitation and flash effect only occur on liquid medium. During the actual production, flash and cavitation will create vibration and noises, the service lift of valves will be reduced, so flash and cavitation should be avoid when selecting a valve.

Selection of actuator for regulating valve

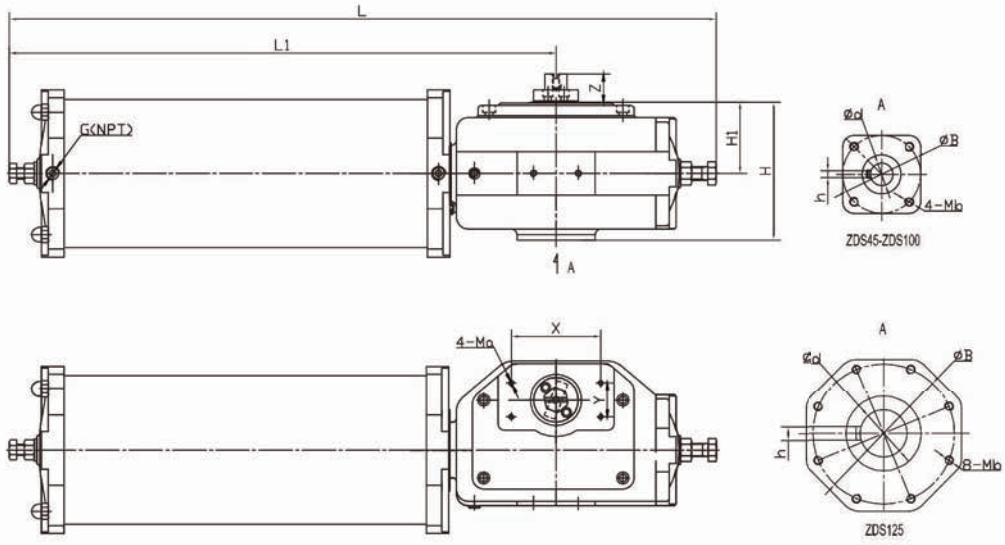
In order to ensure a normal operation for regulating valve, the assembled actuator shall be able to have an enough output torque to operate the valve and ensure high level seal.

Normally, it is without spring return for double acting pneumatic, hydraulic and electric actuators. The magnitude of force has nothing to do with its moving direction, so, the key point to select an actuator is to know its max. output torque and revolution moment. As for single acting pneumatic actuator, its output torque is related to the opening degree of valve, also some forces produced by regulating valve will affect its moving characteristic. So it is required to establish force balance on opening range of the regulating valve.

Confirmation of actuator type

After the output torque of actuator is confirmed, selecting relevant actuator according to the demand of craft environment, if explosion proof is required in the field, it is recommended to select pneumatic actuator. Considering the aspect of energy saving, it is recommended to select electric actuator. If high precision of regulation is required, it is recommended to select hydraulic actuator, such as speed regulation of transparent machine in power generation plant, temperature regulation and control of catalytic device reactor in refinery, etc.

Outline of single acting actuator



Dimension table of single acting actuator

Code of actuator	L	L1	H	H1	Z	X	Y	Ma	¢ B	Mb	¢ d	h	G(NPT)
ZDL45/ZDLK45-100	620	465	124	64	26	80	30	M6	70	4-M8	¢ 16	5	1/4
ZDS45/ZDLS45-100	600	445	124	64	26	80	30	M6	70	4-M8	¢ 20	6	1/4
ZDL55/ZDLK55-125	750	586	129	67	26	80	30	M6	102	4-M10	¢ 20	6	1/4
ZDS55/ZDSK55-125	694	530	129	67	26	80	30	M6	102	4-M10	¢ 25	8	1/4
ZDL63/ZDLK63-160	910	710	164	83	26	130	30	M6	125	4-M12	¢ 30	8	3/8
ZDS63/ZSSK63-160	855	655	164	83	26	130	30	M6	125	4-M12	¢ 35	10	3/8
ZDL63/ZDLK63-200	930	730	164	83	26	130	30	M6	125	4-M12	¢ 40	12	3/8
ZDS63/ZDSK63-200	865	665	164	83	26	130	30	M6	125	4-M12			3/8
ZDL80/ZDLK80-250	1120	883	198	100	26	130	30	M6	140	4-M16	¢ 40	12	3/8
ZDS80/ZDSK80-250	1070	833	198	100	26	130	30	M6	140	4-M16	¢ 45	14	3/8
ZDL80/ZDLK80-300	1180	940	198	100	26	130	30	M6	140	4-M16	¢ 50	14	3/8
ZDS80/ZDSK80-300	1100	860	198	100	26	130	30	M6	140	4-M16	¢ 55	16	3/8
ZDL100/ZDLK100-300	1360	1065	251	125	26	130	30	M6	165	4-M20	¢ 60	14	3/8
ZDS100/ZDSK100-300	1260	965	251	125	26	130	30	M6	165	4-M20	¢ 50	18	3/8
ZDL125/ZLSK125-300	1750	1360	300	147	26	130	30	M6	254	8-M16	¢ 60	18	3/8
ZDS125/ZDSK125-300	1600	1210	300	147	26	130	30	M6	254	8-M16	¢ 70	20	3/8
ZDL125/ZDLK125-350	1770	1380	300	147	26	130	30	M6	254	8-M16	¢ 80	22	1/2
ZDS125/ZDSK125-350	1620	1230	300	147	26	130	30	M6	254	8-M16	¢ 90	25	1/2
											¢ 100	28	

Coosai®

www.coosaisv.com

China Coosai Valve Co.,Ltd

Add: Dongou Industry Zone,Oubei Town,Yongjia,Wenzhou,China

Tel:+86-577- 67988858 Cell phone:+86 15267748088

Fax:+86-577-57778668 E-mail: zhou@coosaivalve.com

www.coosaisv.com