



ASY Series Scotch Yoke Pneumatic Actuators

ASY系列拨叉式气动执行器

- Suitable for use on low temperature to -60° and high temperature to $+200^{\circ}$
- Suitable for use in severe environments such as chemical & petroleum and offshore industries
- Available for double acting and spring return and the air pressure from 3Bar to 6bar
- Available for bi-directional travel stop adjustment at $\pm 6^{\circ}$

About ASY Actuator

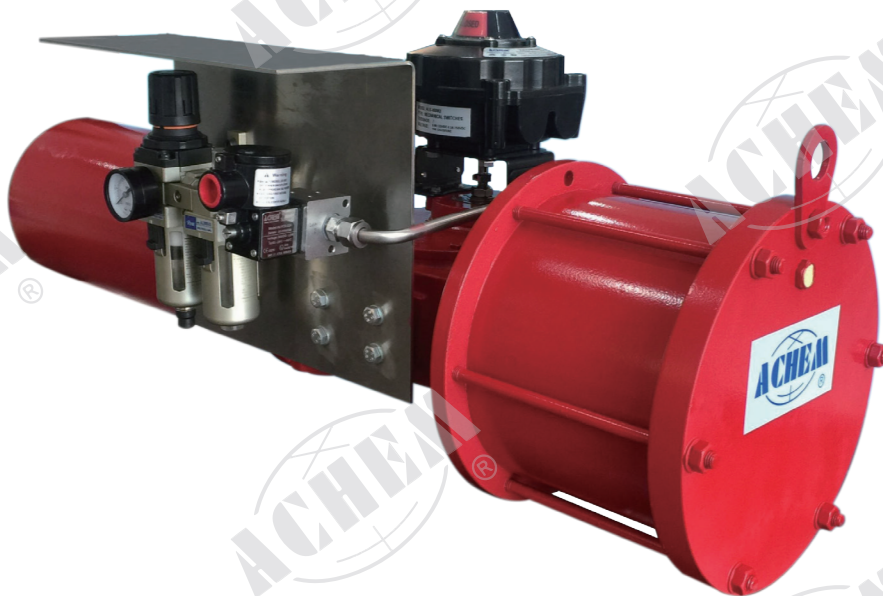
ACHEM ASY series scotch yoke pneumatic actuators are specifically designed for use with quarter-turn valves. The large output torque range offered by ALPHA-ACHEM GROUP ensures that our actuators match the operational characteristics of plug, ball or butterfly valves; or any device requiring precise and reliable 90° rotary motion. The Series ASY Scotch yoke actuators offer large output torque range. For the spring return version, the output torque range from 200Nm to 170,000Nm. For the double acting version, the output torque range from 100Nm to 250,000Nm.

Robust and Lightweight Design

Totally enclosed weatherproof centrebody fabricated in carbon steel or ductile iron provide an excellent strength to weight ratio. The mechanism of piston and yoke has an advantage torque output.

Minimum Maintenance

Every ACHEM ASY actuator is built to provide long and efficient service with minimum maintenance. The design, engineering and materials used in their construction ensure optimum performance even in the harshest of environments.



Extensive Product Range

ALPHA-ACHEM GROUP offers the most extensive line of fluid power valve actuators. Products include low and high pressure pneumatic, hydraulic and pneumatic-hydraulic actuators and Spring-Diaphragm actuators

Manual Override Options

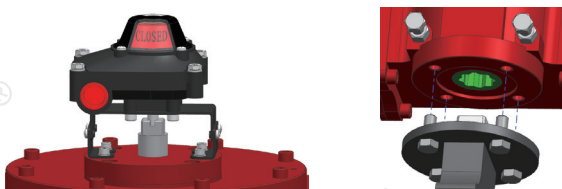
A dependable manual override facility is an important part to many valve/actuator applications. ALPHA-ACHEM GROUP has a variety of override options available to meet virtually any requirement. Available options include open or closed screw manual override and hydraulic override.

Complete Control Solutions

Air Control component packages are a part of any actuator/valve installation. ALPHA-ACHEM GROUP has extensive experience in the design and assembly of all types of air control systems to satisfy any customer requirement for on/off, control or ESD service. Packages can be mounted on a panel or in a cabinet and mounted either on the actuator or at a remote location.

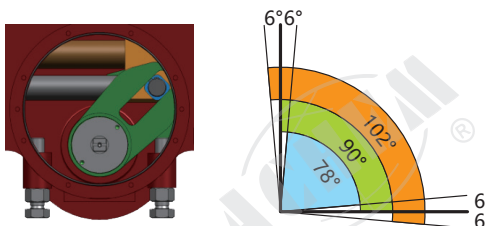
ISO5211 and Namur Mounting

The ASY series actuator's connections are with ISO5211 interface to valve and Namur interface to limit switch box or valve positioners.



Stroke

ASY yoke mechanism fitted with mechanical end stops (open or closed positions) to ensure adjustable range of $\pm 6^\circ$.



Water ingress protection

O-ring and seals (NBR for standard and PTFE for extreme cold) are fitted on bodys, caps, cylinders and each connection to ensure water ingress protected.



Operating Conditions

Working media is 3 - 6 bar pressure air which is less than 40um filtered, dried and lubricated. ASY actuator is available to be used in high temperature and extreme cold environments.



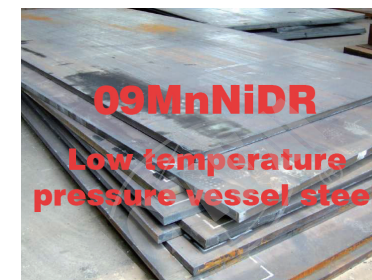
Corrosion Resistant

ASY actuators are laid on three coats of paint to resist severe weather, chemical and petroleum environments. The inner surface of cylinder is coated by PTFE, enhance corrosion resistant and selflubricating.



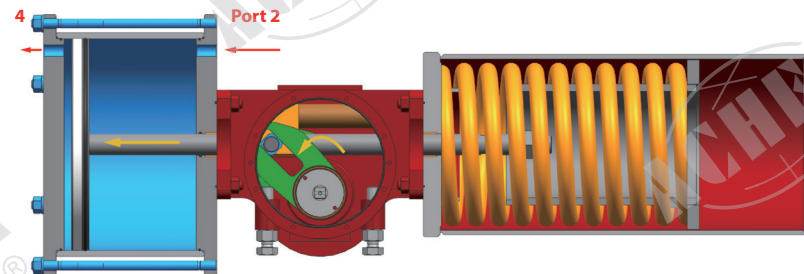
ASY in extreme cold environment

In extreme cold environment application, the PTFE is used for seal and low temperature pressure vessel steel (09MnNiDR) is used for each module. The body will be welded by 09MnNiDR.



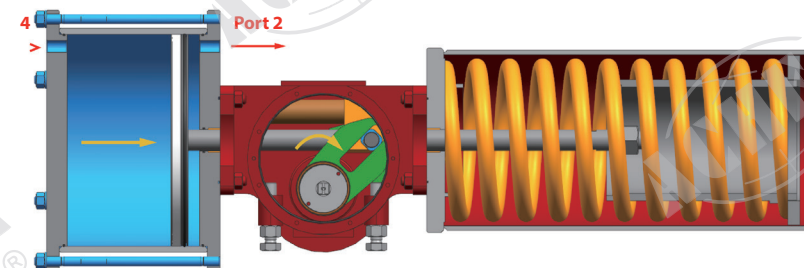
As for ASY series scotch yoke pneumatic actuators, the double acting and spring return types are available on requiring. In the double acting actuator, one or two pneumatic cylinders are fitted to one or each sides and the actuator is operated by pressure air totally. In the spring return actuator, one side is fitted with pneumatic cylinder and another side is fitted with a spring cartridge for emergency shut down (ESD) applications. The actuator is operated by pressure air in one position (open or closed) and by spring energy in another position (closed or open). Following is the operating principle.

Air to open position

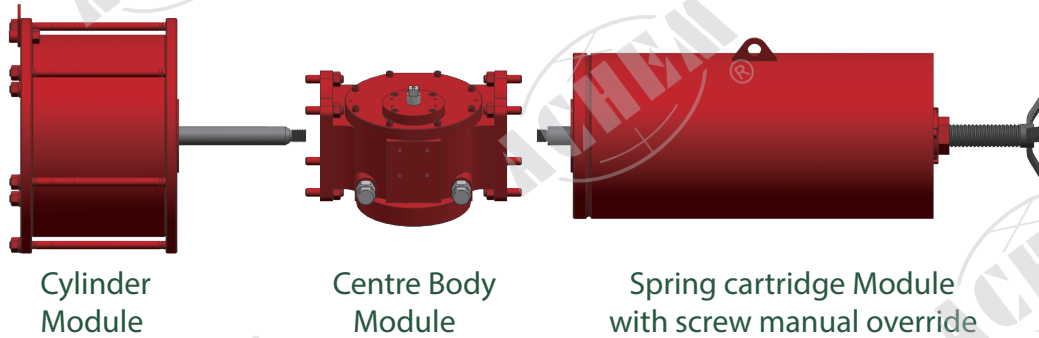


Air to port 2 forces the piston towards the left, causing the spring to be compressed and the yoke turns counterclockwise (to open the valve) while air is exhausted from port 4 (refer to the photograph above).

Spring return to closed position



Loss of air pressure on port 2, the stored energy in the spring forces the piston towards the right and the yoke turns clockwise (to closed the valve) while air is exhausted from port 2 and port 4 keeping breathed status with atmospheric environment (refer to the photograph above).

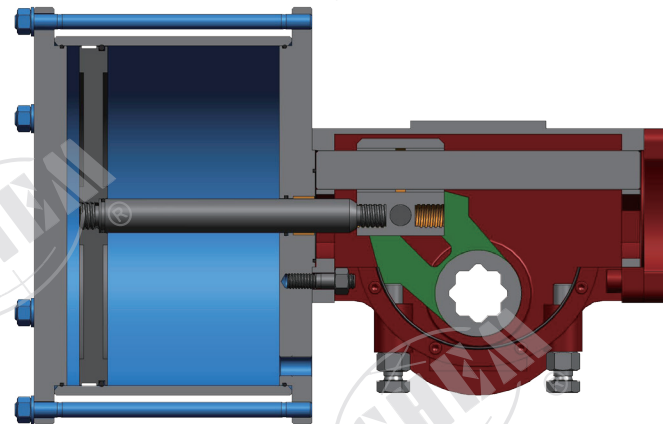


Flexible Modular Design

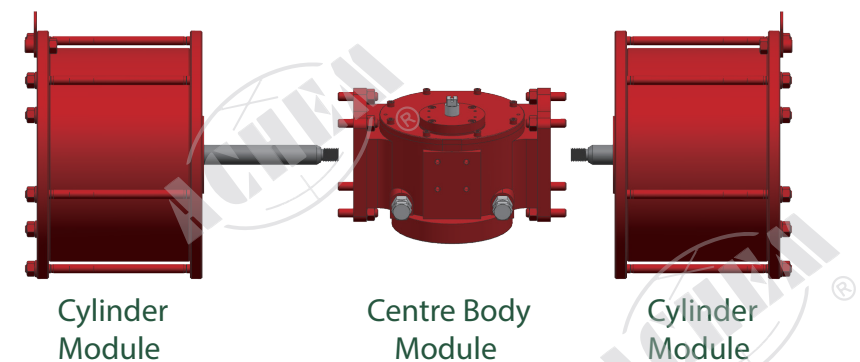
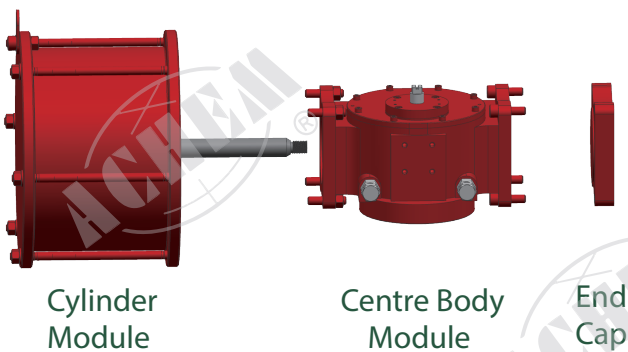
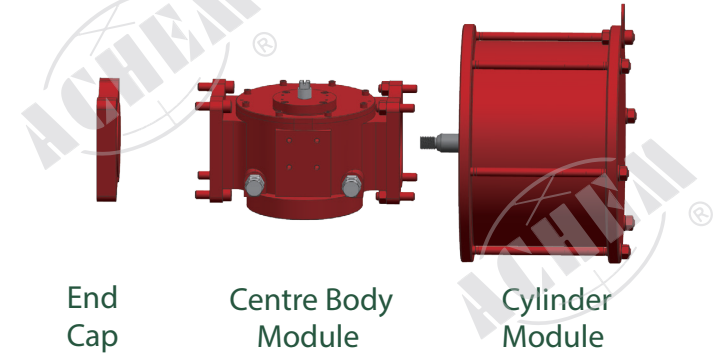
ACHEM ASY series actuator share modular construction design. The centre body is available in ten sizes. A pneumatic or hydraulic cylinder can be attached to either or both sides. A spring cartridge can also be fitted to either side for ESD (emergency shut down) applications.

Interchanged by yourself

The modules are removable and interchangeable while mounted to operate the valve used in certain specific applications. Note that only same size of modular unit can be interchange.



Connection between cylinder and centre body modules

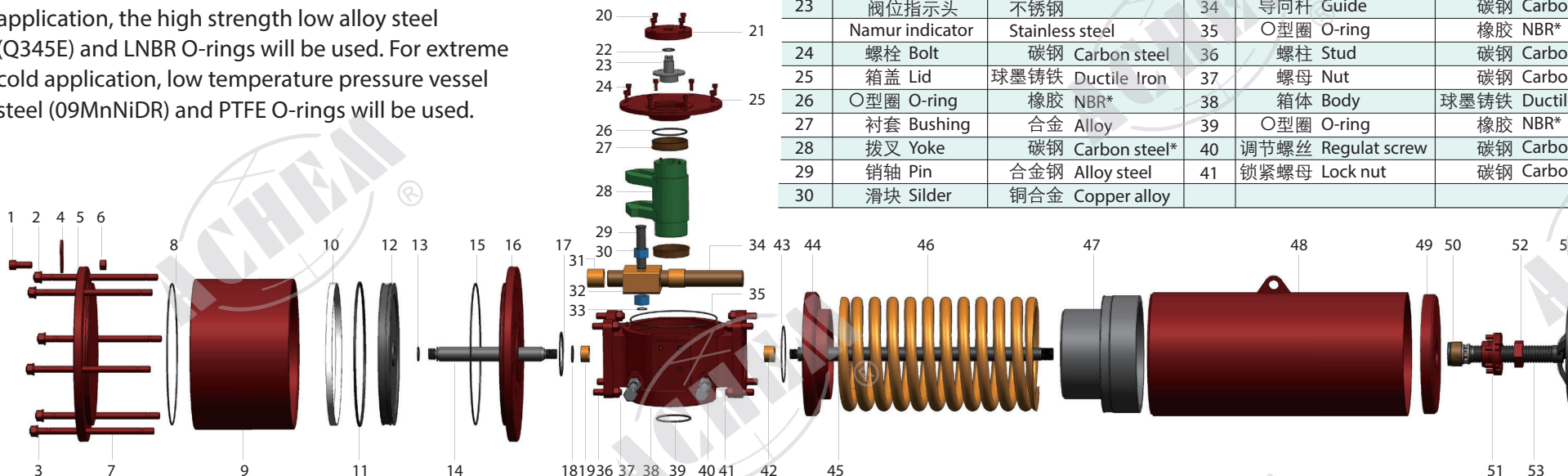


* Material for choice

The carbon steels and NBR O-rings are for standard temperature application. For low temperature application, the high strength low alloy steel (Q345E) and LNBR O-rings will be used. For extreme cold application, low temperature pressure vessel steel (09MnNiDR) and PTFE O-rings will be used.

驱动模块 Body Module

序号	名称 Name	材质 Material	序号	名称 Name	材质 Material
20	螺栓 Bolt	碳钢 Carbon steel	31	衬套 Bushing	合金 Alloy
21	压盖 Gland	不锈钢 Stainless steel	32	导向块 Guide	碳钢 Carbon steel
22	○型圈 O-ring	橡胶 NBR*	33	卡簧 Snap spring	65Mn
23	阀位指示头 Namur indicator	不锈钢 Stainless steel	34	导向杆 Guide	碳钢 Carbon steel
24	螺栓 Bolt	碳钢 Carbon steel	35	○型圈 O-ring	橡胶 NBR*
25	箱盖 Lid	球墨铸铁 Ductile Iron	36	螺柱 Stud	碳钢 Carbon steel
26	○型圈 O-ring	橡胶 NBR*	37	螺母 Nut	碳钢 Carbon steel
27	衬套 Bushing	合金 Alloy	38	箱体 Body	球墨铸铁 Ductile Iron
28	拨叉 Yoke	碳钢 Carbon steel*	39	○型圈 O-ring	橡胶 NBR*
29	销轴 Pin	合金钢 Alloy steel	40	调节螺丝 Regulate screw	碳钢 Carbon steel
30	滑块 Silder	铜合金 Copper alloy	41	锁紧螺母 Lock nut	碳钢 Carbon steel

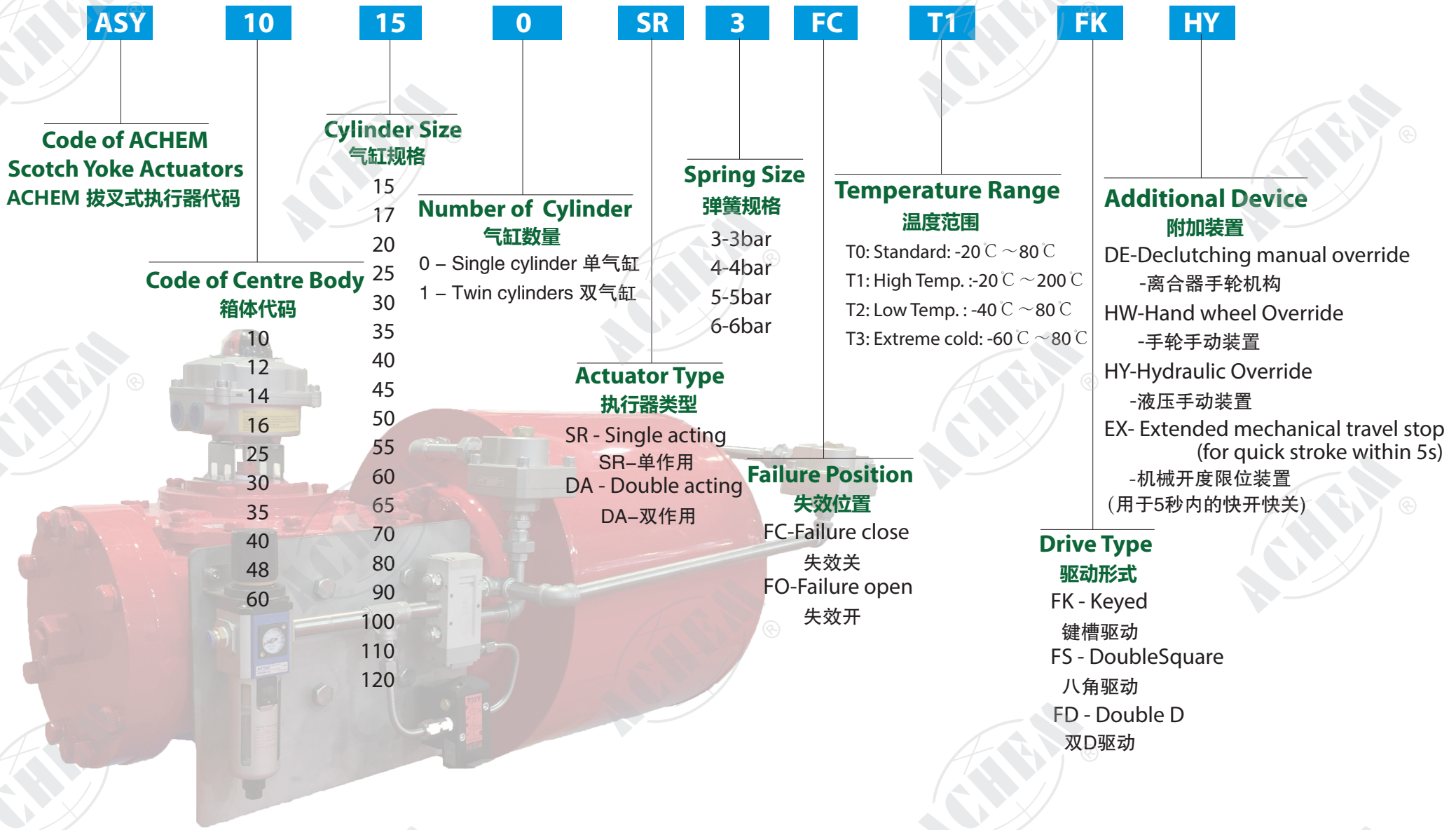


气缸模块 Cylinder Module

序号	名称 Name	材质 Material	序号	名称 Name	材质 Material
1	螺栓 Bolt	碳钢 Carbon steel*	11	○型圈 O-ring	橡胶 NBR*
2	螺母 Nut	碳钢 Carbon steel	12	活塞 Piston	碳钢 Carbon steel*
3	垫圈 Gasket	碳钢 Carbon steel	13	○型圈 O-ring	橡胶 NBR*
4	吊耳 Lug	碳钢 Carbon steel	14	推杆 Push rod	碳钢 Carbon steel
5	后缸盖 Rear end	碳钢 Carbon steel*	15	○型圈 O-ring	橡胶 NBR*
6	螺母 Nut	碳钢 Carbon steel	16	前缸盖 Front end	碳钢 Carbon steel*
7	螺杆 Screw	碳钢 Carbon steel	17	○型圈 O-ring	橡胶 NBR*
8	○型圈 O-ring	橡胶 NBR*	18	○型圈 O-ring	橡胶 NBR*
9	缸筒 Cylinder barrel	碳钢 Carbon steel*	19	衬套 Bushing	合金 Alloy
10	导向带 Guidance tape	PTFE			

弹簧模块 Spring Module

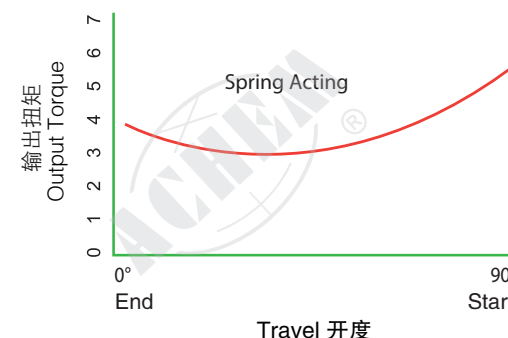
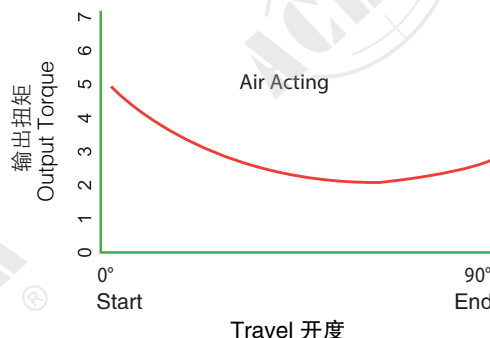
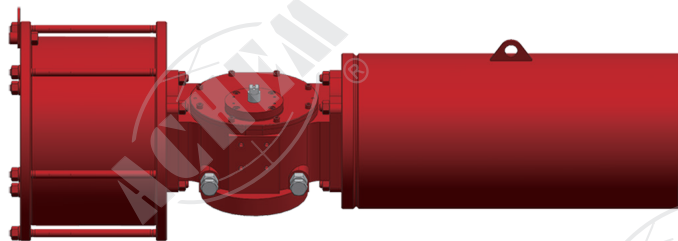
序号	名称 Name	材质 Material
42	衬套 Bushing	合金 Alloy
43	○型圈 O-ring	橡胶 NBR*
44	弹簧前盖 Spring cover	碳钢 Carbon steel*
45	弹簧轴 Spring shaft	碳钢 Carbon steel
46	弹簧 Spring	弹簧钢 Spring steel
47	弹簧座 Spring seat	碳钢 Carbon steel*
48	弹簧筒 Spring body	碳钢 Carbon steel*
49	端盖 End cover	碳钢 Carbon steel*
50	联轴器 Coupling	碳钢 Carbon steel
51	锁紧装置 Lock device	碳钢 Carbon steel
52	螺帽 Nut	碳钢 Carbon steel
53	丝杆 Wirerod	碳钢 Carbon steel
54	手轮 Handwheel	铸铁 Cast iron



Output Torque / 输出扭矩

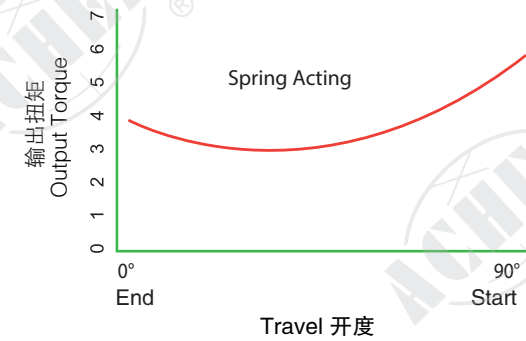
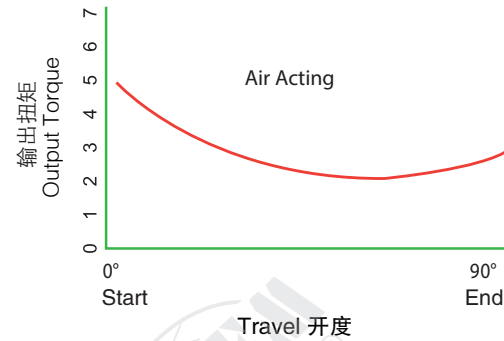
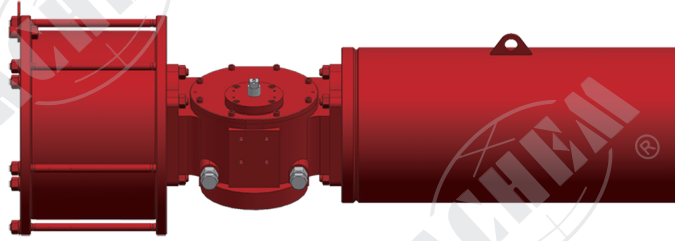


Output Torque of ASY Series Actuator with Spring Return (SR) / ASY系列气动执行器单作用输出扭矩 (SR)



Model	3Bar						4Bar						5Bar						6Bar					
	Spring Acting			Air Acting			Spring Acting			Air Acting			Spring Acting			Air Acting			Spring Acting			Air Acting		
	Start	Run	End	Start	Run	End	Start	Run	End	Start	Run	End	Start	Run	End	Start	Run	End	Start	Run	End	Start	Run	End
ASY10-150SR	191	93	120	203	95	127	255	124	159	271	127	170	319	156	199	339	159	212	382	187	239	407	191	254
ASY10-170SR	245	120	154	261	123	163	328	160	205	349	163	218	410	200	256	436	204	272	491	240	307	522	245	327
ASY12-170SR	307	150	192	327	153	204	410	200	256	436	204	272	512	250	320	545	255	340	614	300	384	653	306	409
ASY12-200SR	425	207	266	452	212	283	567	276	354	603	283	377	709	346	443	754	353	471	850	415	532	904	424	565
ASY14-200SR	510	249	319	543	254	339	680	332	425	724	339	452	850	415	532	905	424	565	1020	498	638	1085	509	679
ASY14-250SR	797	389	498	848	398	530	1063	518	664	1131	530	707	1329	648	831	1414	663	884	1594	778	997	1696	795	1060
ASY14-300SR	1148	560	718	1221	573	763	1531	746	957	1629	763	1018	1914	933	1196	2036	954	1272	2296	1120	1435	2442	1145	1527
ASY16-250SR	996	486	623	1060	497	663	1329	648	831	1414	663	884	1661	810	1038	1767	828	1104	1993	972	1246	2120	994	1325
ASY16-300SR	1435	700	897	1527	716	954	1914	933	1196	2036	954	1272	2392	1166	1495	2545	1193	1590	2870	1400	1794	3053	1431	1909
ASY16-350SR	1953	952	1221	2078	974	1299	2605	1270	1628	2771	1299	1732	3256	1587	2035	3464	1624	2165	3906	1905	2442	4156	1948	2598
ASY25-350SR	2344	1143	1465	2494	1169	1559	3126	1524	1953	3325	1559	2078	3907	1905	2442	4156	1948	2598	4688	2286	2930	4987	2338	3117
ASY25-400SR	3061	1493	1914	3257	1527	2036	4082	1991	2551	4343	2036	2714	5103	2488	3189	5429	2545	3393	6123	2986	3827	6514	3054	4072
ASY25-450SR	3875	1889	2422	4122	1932	2576	5167	2519	3229	5497	2576	3435	6458	3149	4037	6871	3221	4294	7750	3779	4844	8244	3865	5153
ASY30-450SR	4305	2099	2691	4580	2147	2863	5741	2799	3588	6107	2863	3817	7176	3499	4485	7634	3578	4771	8611	4199	5382	9160	4294	5726
ASY30-500SR	5315	2592	3322	5655	2651	3534	7087	3456	4430	7540	3534	4712	8859	4320	5537	9425	4418	5890	10631	5184	6644	11309	5301	7069

Output Torque of ASY Series Actuator with Spring Return (SR) / ASY系列气动执行器单作用输出扭矩 (SR)

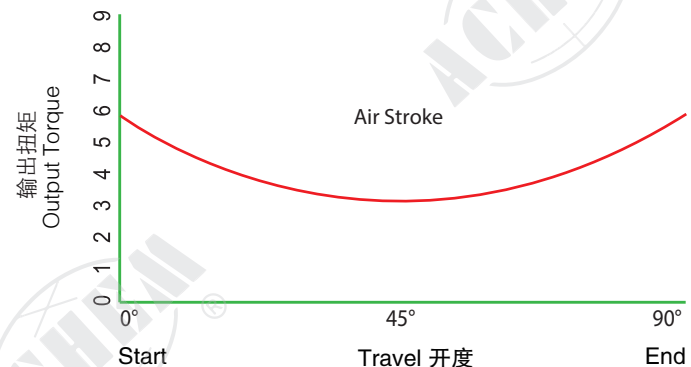
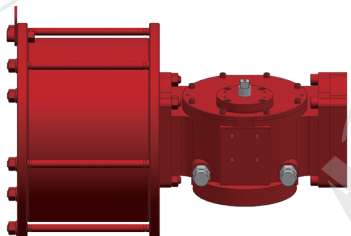


Model	3Bar						4Bar						5Bar						6Bar					
	Spring Acting			Air Acting			Spring Acting			Air Acting			Spring Acting			Air Acting			Spring Acting			Air Acting		
	Start	Run	End	Start	Run	End	Start	Run	End	Start	Run	End	Start	Run	End	Start	Run	End	Start	Run	End	Start	Run	End
ASY30-550SR	6431	3136	4020	6812	3207	4276	8576	4181	5360	9123	4276	5702	10720	5227	7092	11404	5346	7127	12863	6272	8040	13684	6415	8553
ASY35-550SR	9004	4391	5628	9479	4490	5987	12006	5854	7504	12772	5987	7983	15008	7318	9380	15966	7484	9978	18009	8781	11256	19158	8981	11974
ASY35-600SR	10716	5225	6698	11400	5344	7125	14288	6967	8930	15200	7125	9500	17860	8707	11163	19000	8906	11875	21432	10450	13395	22800	10688	14250
ASY35-700SR	14585	7112	9116	15517	7274	9698	19448	9483	12155	20689	9698	12931	24310	11853	15194	25862	12123	16163	29171	14224	18232	31033	14547	19396
ASY40-600SR	13012	6345	8133	13843	6489	8652	17350	8460	10844	18457	8652	11536	21688	10575	13555	23072	10815	14420	26025	12690	16266	27686	12978	17304
ASY40-700SR	17711	8636	11070	18842	8832	11776	23615	11515	14760	25123	11776	15702	29519	14393	18449	31403	14720	19627	35422	17272	22139	37684	17664	23553
ASY40-800SR	23133	11280	14458	24610	11536	15381	30845	15039	19278	32813	15381	20508	38556	18799	24097	41017	19227	25635	46266	22559	28917	49219	23072	30762
ASY48-800SR	27215	13270	17010	28953	13572	18096	36288	17693	22680	38604	18096	24127	45360	22117	28350	48255	22619	30159	54431	26540	34020	57905	27143	36191
ASY48-900SR	34444	16795	21528	36644	17177	22902	45927	22393	28704	48858	22902	30536	57408	27992	35880	61073	28628	38170	68889	33590	43056	73287	34353	45804
ASY48-1000SR	42524	20735	26578	45239	21206	28274	56699	27646	35437	60319	28274	37699	70874	34558	44296	75398	35343	47124	85049	41469	53156	90477	42412	56549
ASY60-800SR	35380	17251	22113	37639	17643	23524	47174	23001	29484	50185	23524	31366	58967	28752	36855	62731	29405	39207	70760	34502	44226	75277	35286	47048
ASY60-900SR	44778	21833	27987	47637	22330	29773	59705	29111	37315	63515	29773	39697	74631	36389	46644	79394	37216	49621	89556	43667	55973	95273	44659	59546
ASY60-1000SR	55281	26955	34551	58811	27567	36757	73709	35940	46068	78414	36757	49009	92137	44925	57585	98018	45946	61261	110564	53910	69102	117621	55135	73513
ASY60-1100SR	66891	32615	41807	71161	33357	44476	89188	43487	55743	94881	44476	59301	111485	54359	69678	118601	55594	74126	133782	65231	83614	142321	66713	88951

Output Torque / 输出扭矩



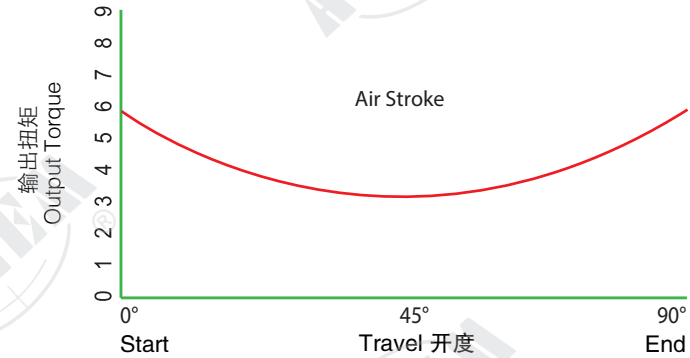
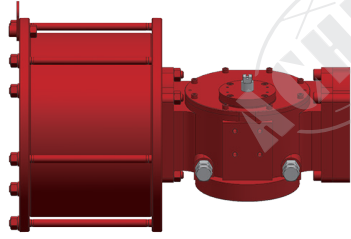
Double Acting Output Torque of ASY Series Actuator (DA) / ASY系列气动执行器双作用输出扭矩 (DA)



Model	3Bar			4Bar			5Bar			6Bar		
	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End
ASY10-150DA	306	173	306	405	208	405	509	255	509	611	310	611
ASY10-170DA	398	245	398	523	310	523	654	331	654	- *	- *	- *
ASY12-170DA	491	285	491	654	387	654	817	475	817	987	564	987
ASY12-200DA	689	391	689	905	452	905	1131	565	1131	1357	815	1357
ASY14-200DA	839	509	839	1108	679	1108	1385	848	1385	1670	1018	1670
ASY14-250DA	1295	795	1295	1736	1060	1736	2172	1325	2172	- *	- *	- *
ASY14-300DA	1862	1145	1862	- *	- *	- *	- *	- *	- *	- *	- *	- *
ASY16-250DA	1625	994	1625	2164	1325	2164	2712	1657	2712	3310	1988	3310
ASY16-300DA	2335	1431	2335	3121	1909	3121	3889	2386	3889	- *	- *	- *
ASY16-350DA	3181	1948	3181	4239	2589	4239	- *	- *	- *	- *	- *	- *
ASY25-350DA	3924	2338	3924	5237	3117	5237	6547	3897	6547	7861	4676	7861
ASY25-400DA	4985	3054	4985	6642	4072	6642	8313	5089	8313	- *	- *	- *
ASY25-450DA	6308	3865	6308	8413	5153	8413	- *	- *	- *	- *	- *	- *
ASY30-450DA	7720	4294	7720	10291	5726	10291	12854	7157	12854	15431	8588	15431
ASY30-500DA	9514	5301	9514	12694	7069	12694	15867	8836	15867	- *	- *	- *

- * The torque is more than the maximum flange torque value stipulated by ISO5211.

Double Acting Output Torque of ASY Series Actuator (DA) / ASY系列气动执行器双作用输出扭矩 (DA)



Model	3Bar			4Bar			5Bar			6Bar		
	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End
ASY30-550DA	11520	6415	11520	15363	9105	15363	- *	- *	- *	- *	- *	- *
ASY35-550DA	14670	8981	14670	19551	11974	19551	24441	14968	24441	29324	17961	29324
ASY35-600DA	17454	10688	17454	23263	14250	23263	29077	17813	29077	34896	21375	34896
ASY35-700DA	23751	14547	23751	31678	19396	31678	- *	- *	- *	- *	- *	- *
ASY40-600DA	- **	- **	- **	- *	- *	- *	35350	21630	35350	42377	25956	42377
ASY40-700DA	- **	- **	- **	38440	23553	38440	48071	29441	48071	57681	35329	57681
ASY40-800DA	37682	29584	37682	50318	39852	50318	62786	38453	62786	- *	- *	- *
ASY48-800DA	- **	- **	- **	- *	- *	- *	73862	45239	73862	88640	54287	88640
ASY48-900DA	- **	- **	- **	74762	45804	74762	93486	57256	93486	112140	68707	112140
ASY48-1000DA	69285	42412	69285	92351	56549	92351	115320	70686	115320	- *	- *	- *
ASY60-800DA	- **	- **	- **	- *	- *	- *	- *	- *	- *	119621	70508	119621
ASY60-900DA	- **	- **	- **	100965	59546	100965	126201	74432	126201	151456	89319	151456
ASY60-1000DA	93476	55135	93476	124639	75654	124639	155801	91892	155801	189450	113466	189450
ASY60-1100DA	113082	66713	113082	150789	88951	150789	188467	111189	188467	226162	133427	226162

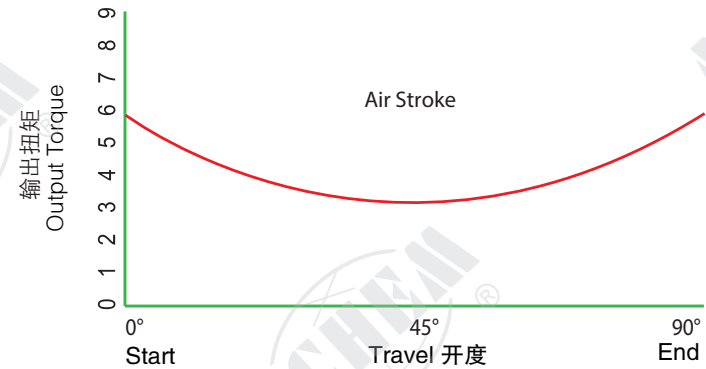
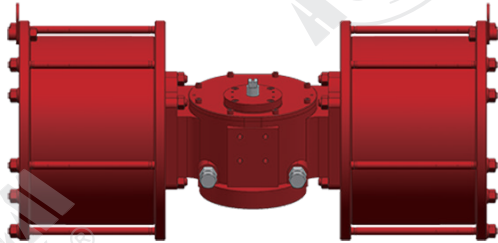
- ** The torque is too small for operation.

- * The torque is more than the maximum flange torque value stipulated by ISO5211.

Output Torque / 输出扭矩



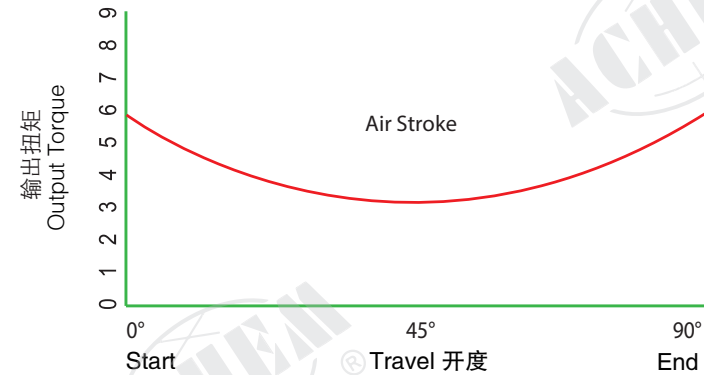
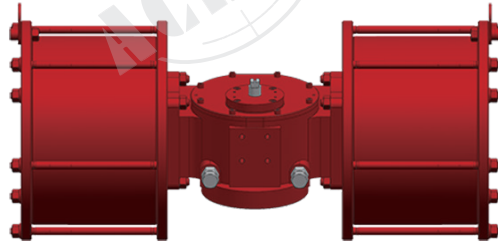
Double Acting Output Torque of ASY Series Actuator (DA) / ASY系列气动执行器双缸双作用输出扭矩 (DA)



Model	3Bar			4Bar			5Bar			6Bar		
	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End
ASY16-141-DA	1055	561	1055	1407	748	1407	1758	935	1758	2110	1122	2110
ASY16-161-DA	1378	733	1378	1837	977	1837	2296	1221	2296	2756	1466	2756
ASY16-201-DA	2153	1145	2153	2870	1527	2870	3588	1909	3588	4306	2290	4306
ASY25-201-DA	2583	1374	2583	3444	1832	3444	4306	2290	4306	5167	2748	5167
ASY25-251-DA	4037	2147	4037	5382	2863	5382	6728	3578	6728	8073	4294	8073
ASY25-301-DA	5813	3092	5813	7750	4122	7750	- *	- *	- *	- *	- *	- *
ASY30-301-DA	6458	3435	6458	8611	4580	8611	10764	5726	10764	12917	6871	12917
ASY30-351-DA	8791	4676	8791	11721	6234	11721	14651	7793	14651	17581	9352	17581
ASY30-401-DA	11482	6107	11482	15309	8143	15309	- *	- *	- *	- *	- *	- *
ASY35-401-DA	16074	8550	16074	21432	11400	21432	26790	14250	26790	32149	17100	32149
ASY35-451-DA	20344	10821	20344	27125	14428	27125	- *	- *	- *	- *	- *	- *

- * The torque is more than the maximum flange torque value stipulated by ISO5211.

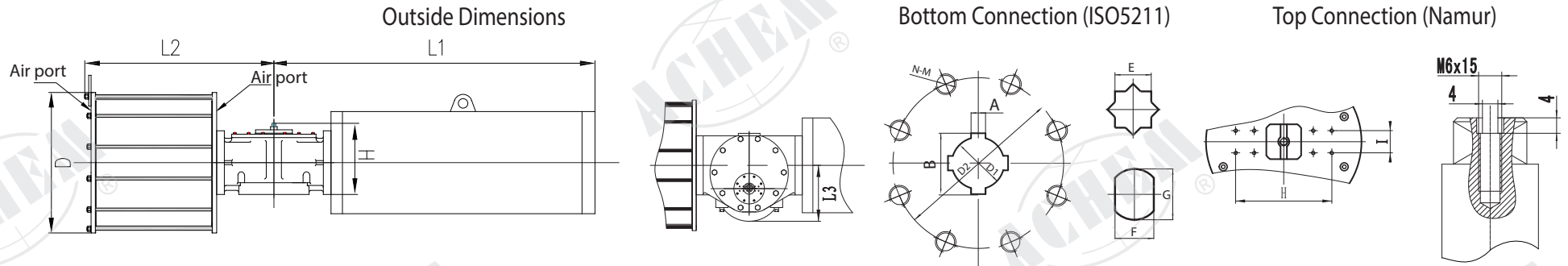
Double Acting Output Torque of ASY Series Actuator (DA) / ASY系列气动执行器双缸双作用输出扭矩 (DA)



Model	3Bar			4Bar			5Bar			6Bar		
	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End
ASY35-501-DA	25116	13360	25116	33488	17813	33488	41860	22266	41860	50232	26719	50232
ASY40-501-DA	30498	16222	30498	40664	21630	40664	50830	27037	50830	60996	32445	60996
ASY40-551-DA	36903	19629	36903	49204	26172	49204	61505	32715	61505	- *	- *	- *
ASY40-601-DA	43917	23360	43917	58556	31147	58556	- *	- *	- *	- *	- *	- *
ASY48-601-DA	51667	27483	51667	68890	36644	68890	86112	45804	86112	103335	54965	103335
ASY48-651-DA	60637	32254	60637	80850	43005	80850	101062	53757	101062	121275	64508	121275
ASY48-701-DA	70325	37407	70325	93767	49876	93767	117208	62345	117208	- *	- *	- *
ASY48-801-DA	91853	48858	91853	122471	65144	122471	- *	- *	- *	- *	- *	- *
ASY60-801-DA	119409	63515	119409	159212	84687	159212	199015	105859	199015	238818	127031	238818
ASY60-901-DA	151127	80387	151127	201503	107182	201503	251879	133978	251879	- *	- *	- *
ASY60-1001-DA	186577	99243	186577	248769	132324	248769	- *	- *	- *	- *	- *	- *

- * The torque is more than the maximum flange torque value stipulated by ISO5211.

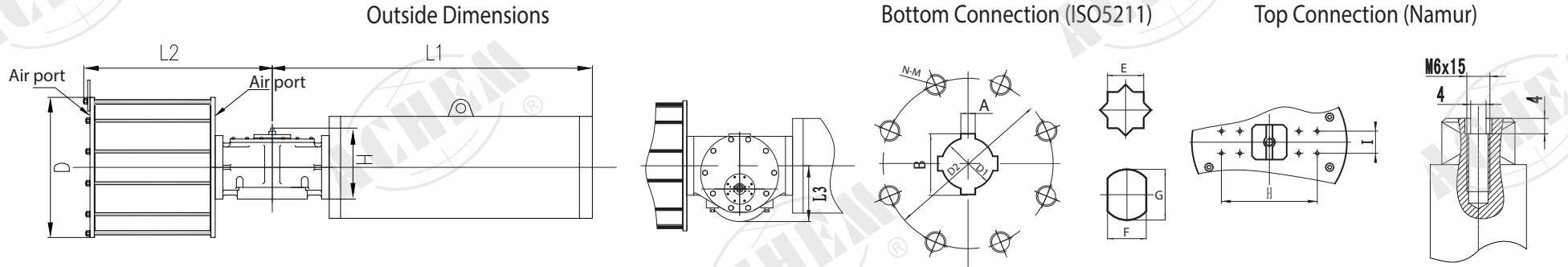
Dimension of ASY Series Spring Return Actuator(SR) / ASY单作用执行器外形尺寸(SR)



Unit : mm

Model	Outside Dimensions					Female Drive Connection						Flange Connection			Top Connection (Namur)		Air Port
						Keyed (FK)			Double Square (FS)		Double D (FD)						
	D	L1	L2	L3	H	A	B	D1	E	F	G	D2	N-M	ISO5211	I	H	
ASY10-150SR	210	445	240	80	165	8	34.6	28	22	22	28.2	102	4-M10	F10	30	80	3/8"NPT / BSPP
ASY10-170SR	230	445	240	80	165	8	34.6	28	22	22	28.2	102	4-M10	F10	30	80	3/8"NPT / BSPP
ASY12-170SR	230	620	290	90	170	10	38.6	36	27	27	36.2	125	4-M12	F12	30	80	3/8"NPT / BSPP
ASY12-200SR	260	620	290	90	170	10	38.6	36	27	27	36.2	125	4-M12	F12	30	80	3/8"NPT / BSPP
ASY14-200SR	260	680	370	150	200	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	3/8"NPT / BSPP
ASY14-250SR	310	680	370	150	200	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/2"NPT / BSPP
ASY14-300SR	370	680	370	150	200	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/2"NPT / BSPP
ASY16-250SR	310	910	470	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/2"NPT / BSPP
ASY16-300SR	370	910	470	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/2"NPT / BSPP
ASY16-350SR	430	970	470	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/2"NPT / BSPP
ASY16-400SR	480	970	470	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	3/4"NPT / BSPP
ASY25-350SR	430	1040	540	240	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	1/2"NPT / BSPP
ASY25-400SR	480	1040	540	240	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/4"NPT / BSPP

Dimension of ASY Series Spring Return Actuator(SR) / ASY单作用执行器外形尺寸(SR)



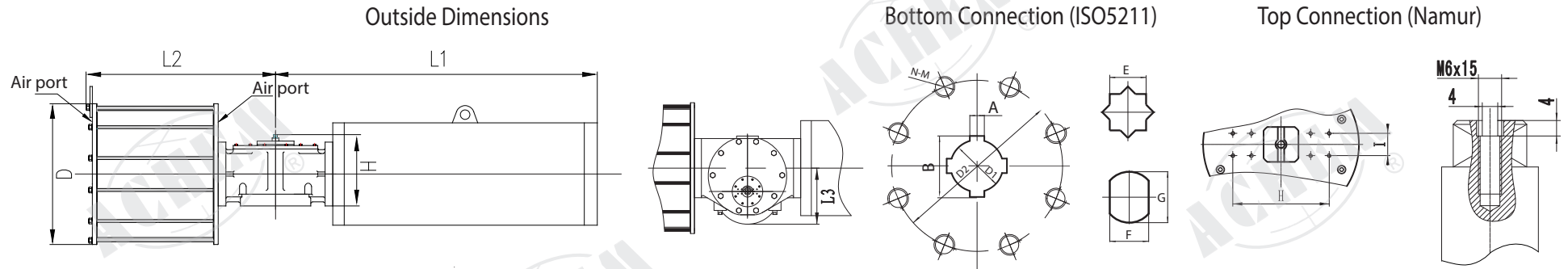
Unit : mm

Model	Outside Dimensions					Female Drive Connection						Flange Connection			Top Connection (Namur)		Air Port
						Keyed (FK)			Double Square (FS)	Double D (FD)							
	D	L1	L2	L3	H	A	B	D1	E	F	G	D2	N-M	ISO5211	I	H	
ASY25-450SR	530	1100	540	240	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/4"NPT / BSPP
ASY30-450SR	530	1145	620	275	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	3/4"NPT / BSPP
ASY30-500SR	580	1145	620	275	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	3/4"NPT / BSPP
ASY30-550SR	630	1205	620	275	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	3/4"NPT / BSPP
ASY35-550SR	630	1400	825	347.5	275	28	112.8	100	-	-	-	356	8-M30	F35	30	130(80)	3/4"NPT / BSPP
ASY35-600SR	690	1205	810	350	275	28	112.8	100	-	-	-	356	8-M30	F35	30	130(80)	1"NPT / BSPP
ASY35-700SR	790	1205	810	350	275	28	112.8	100	-	-	-	356	8-M30	F35	30	130(80)	1"NPT / BSPP
ASY35-800SR	900	1355	810	350	275	28	112.8	100	-	-	-	356	8-M30	F35	30	130(80)	1 1/2"NPT / BSPP
ASY40-600SR	690	1780	960	410	350	40	178.8	160	-	-	-	406	8-M36	F40	30	130(80)	1"NPT / BSPP
ASY40-700SR	790	1780	960	410	350	40	178.8	160	-	-	-	406	8-M36	F40	30	130(80)	1"NPT / BSPP
ASY40-800SR	900	1780	960	410	350	40	178.8	160	-	-	-	406	8-M36	F40	30	130(80)	1 1/2"NPT / BSPP
ASY40-900SR	1020	1810	960	410	350	40	178.8	160	-	-	-	406	8-M36	F40	30	130(80)	2"NPT / BSPP

Dimensions / 外形尺寸



Dimension of ASY Series Spring Return Actuator(SR) / ASY单作用执行器外形尺寸(SR)

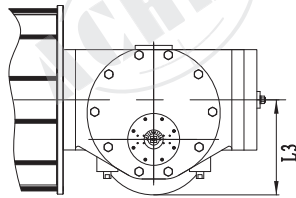
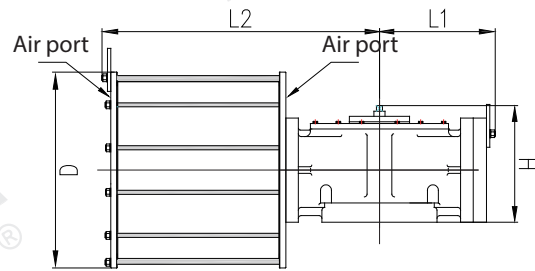


Unit : mm

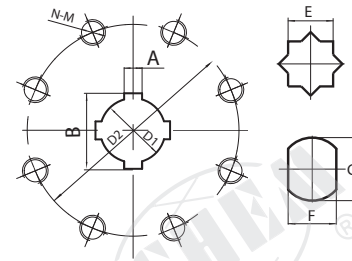
Model	Outside Dimensions					Female Drive Connection						Flange Connection			Top Connection (Napur)		Air Port
						Keyed (FK)			Double Square (FS)		Double D (FD)						
	D	L1	L2	L3	H	A	B	D1	E	F	G	D2	N-M	ISO5211	I	H	
ASY40-1000SR	1130	1810	960	410	350	40	178.8	160	-	-	-	406	8-M36	F40	30	130(80)	2"NPT / BSPP
ASY48-800SR	900	2260	1120	480	420	45	200.8	180	-	-	-	483	12-M36	F48	30	130(80)	1 1/2"NPT / BSPP
ASY48-900SR	1020	2260	1120	480	420	45	200.8	180	-	-	-	483	12-M36	F48	30	130(80)	2"NPT / BSPP
ASY48-1000SR	1130	2260	1120	480	420	45	200.8	180	-	-	-	483	12-M36	F48	30	130(80)	2"NPT / BSPP
ASY48-1100SR	1250	2450	1120	480	420	45	200.8	180	-	-	-	483	12-M36	F48	30	130(80)	2"NPT / BSPP
ASY48-1200SR	1370	2450	1120	480	420	45	200.8	180	-	-	-	483	12-M36	F48	30	130(80)	2"NPT / BSPP
ASY60-800SR	900	2735	1365	603	500	50	242.8	220	-	-	-	603	20-M36	F60	30	130(80)	1 1/2"NPT / BSPP
ASY60-900SR	1020	2735	1365	603	500	50	242.8	220	-	-	-	603	20-M36	F60	30	130(80)	2"NPT / BSPP
ASY60-1000SR	1130	2735	1365	603	500	50	242.8	220	-	-	-	603	20-M36	F60	30	130(80)	2"NPT / BSPP
ASY60-1100SR	1250	2735	1365	603	500	50	242.8	220	-	-	-	603	20-M36	F60	30	130(80)	2"NPT / BSPP
ASY60-1200SR	1370	3260	1365	603	500	50	242.8	220	-	-	-	603	20-M36	F60	30	130(80)	2"NPT / BSPP
ASY60-1300SR	1480	3490	1365	603	500	50	242.8	220	-	-	-	603	20-M36	F60	30	130(80)	2"NPT / BSPP

Dobule Acting Dimension of ASY Series Actuator (DA) / ASY双作用执行器外形尺寸 (DA)

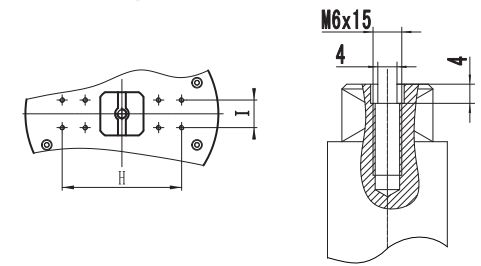
Outside Dimensions



Bottom Connection (ISO5211)



Top Connection (Napur)



Unit : mm

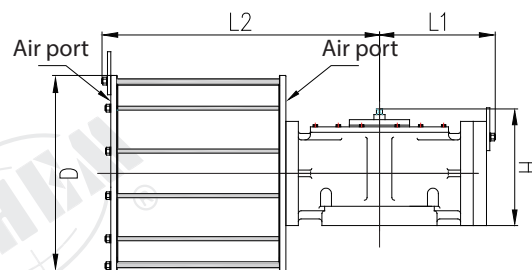
Model	Outside Dimensions					Female Drive Connection						Flange Connection			Top Connection (Napur)		Air Port
						Keyed (FK)			Double Square (FS)	Double D (FD)							
	D	L1	L2	L3	H	A	B	D1	E	F	G	D2	N-M	ISO5211	I	H	
ASY14-200DA	270	170	370	170	200	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	3/8"NPT /BSPP
ASY14-250DA	320	170	370	170	200	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/2"NPT /BSPP
ASY14-300DA	380	170	370	170	200	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/2"NPT /BSPP
ASY16-250DA	320	190	440	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/2"NPT /BSPP
ASY16-300DA	380	190	440	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/2"NPT /BSPP
ASY16-350DA	430	190	440	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/2"NPT /BSPP
ASY25-350DA	430	230	510	210	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	1/2"NPT /BSPP
ASY25-400DA	480	230	510	210	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/4"NPT /BSPP
ASY25-450DA	530	230	510	210	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/4"NPT /BSPP
ASY30-450DA	530	280	580	250	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	3/4"NPT /BSPP
ASY30-500DA	580	280	580	250	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	3/4"NPT /BSPP
ASY30-550DA	640	280	580	250	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	3/4"NPT /BSPP

Dimensions / 外形尺寸

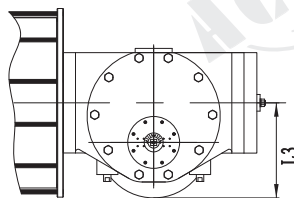


Dobule Acting Dimension of ASY Series Actuator (DA) / ASY双作用执行器外形尺寸 (DA)

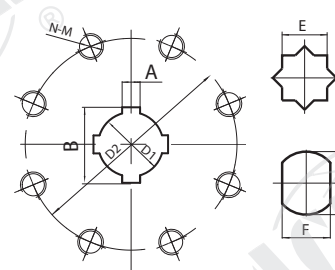
Outside Dimensions



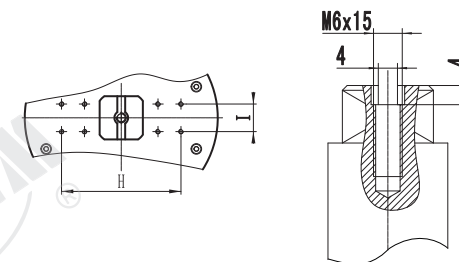
Unit : mm



Bottom Connection (ISO5211)

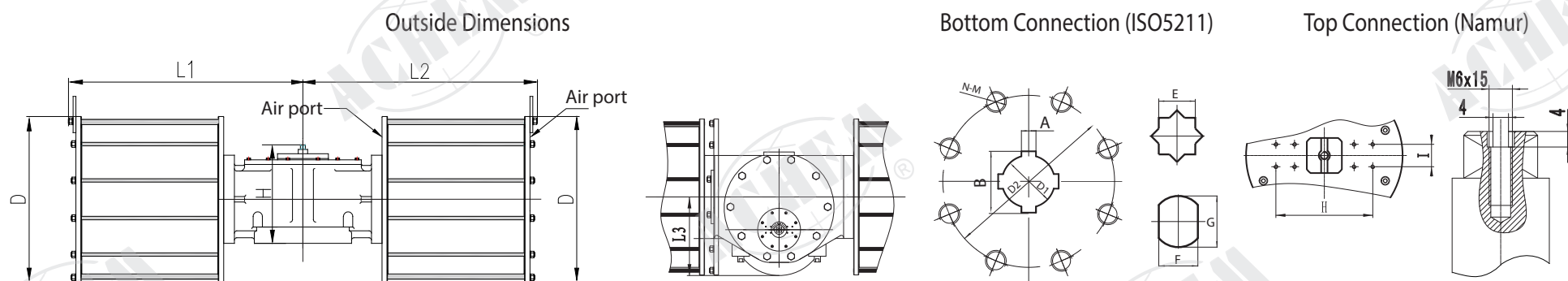


Top Connection (Namura)



Model	Outside Dimensions					Female Drive Connection						Flange Connection			Top Connection (Namura)		Air Port			
	D	L1	L2	L3	H	Keyed (FK)			Double Square (FS)			Double D (FD)			D2	N-M		ISO5211	I	H
						A	B	D1	E	F	G									
ASY35-550DA	640	330	830	350	310	28	112.8	100	-	-	-	356	8-M30	F35	30	130(80)	3/4"NPT / BSPP			
ASY35-600DA	690	330	830	350	310	28	112.8	100	-	-	-	356	8-M30	F35	30	130(80)	1"NPT / BSPP			
ASY35-700DA	800	330	830	350	310	28	112.8	100	-	-	-	356	8-M30	F35	30	130(80)	1"NPT / BSPP			
ASY40-600DA	690	380	970	400	350	40	178.8	160	-	-	-	406	8-M36	F40	30	130(80)	1"NPT / BSPP			
ASY40-700DA	800	380	970	400	350	40	178.8	160	-	-	-	406	8-M36	F40	30	130(80)	1"NPT / BSPP			
ASY40-800DA	900	380	970	400	350	40	178.8	160	-	-	-	406	8-M36	F40	30	130(80)	1 1/2"NPT / BSPP			
ASY48-800DA	900	410	1120	450	420	45	200.8	180	-	-	-	483	12-M36	F48	30	130(80)	1 1/2"NPT / BSPP			
ASY48-900DA	1000	410	1120	450	420	45	200.8	180	-	-	-	483	12-M36	F48	30	130(80)	2"NPT / BSPP			
ASY48-1000DA	1100	410	1120	450	420	45	200.8	180	-	-	-	483	12-M36	F48	30	130(80)	2"NPT / BSPP			
ASY60-900DA	1000	440	1260	520	500	50	242.8	220	-	-	-	603	20-M36	F60	30	130(80)	2"NPT / BSPP			
ASY60-1000DA	1100	440	1260	520	500	50	242.8	220	-	-	-	603	20-M36	F60	30	130(80)	2"NPT / BSPP			
ASY60-1100DA	1200	440	1260	520	500	50	242.8	220	-	-	-	603	20-M36	F60	30	130(80)	2"NPT / BSPP			

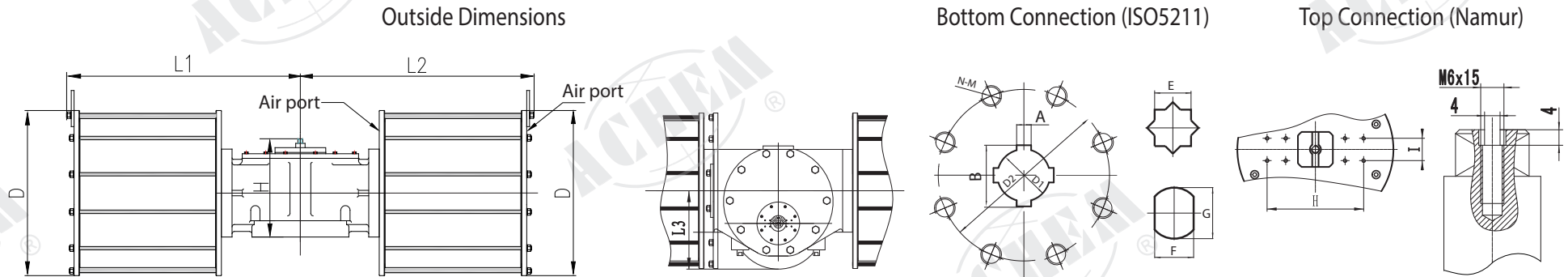
Dobule Acting Dimension of ASY Series Actuator (DA) / ASY双缸双作用执行器外形尺寸 (DA)



Unit : mm

Model	Outside Dimensions					Female Drive Connection						Flange Connection			Top Connection (Namur)		Air Port
						Keyed (FK)		Double Square (FS)	Double D (FD)								
	D	L1	L2	L3	H	A	B	D1	E	F	G	D2	N-M	ISO5211	I	H	
ASY16-141-DA	200	440	440	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	3/8"NPT / BSPP
ASY16-161-DA	220	440	440	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	3/8"NPT / BSPP
ASY16-201-DA	270	440	440	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	3/8"NPT / BSPP
ASY25-201-DA	270	510	510	210	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/8"NPT / BSPP
ASY25-251-DA	320	510	510	210	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	1/2"NPT / BSPP
ASY25-301-DA	380	510	510	210	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	1/2"NPT / BSPP
ASY30-301-DA	380	580	580	250	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	1/2"NPT / BSPP
ASY30-351-DA	430	580	580	250	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	1/2"NPT / BSPP
ASY30-401-DA	480	580	580	250	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	3/4"NPT / BSPP
ASY35-401-DA	480	830	830	350	310	28	112.8	100	-	-	-	356	8-M30	F35	30	130(80)	3/4"NPT / BSPP
ASY35-451-DA	530	830	830	350	310	28	112.8	100	-	-	-	356	8-M30	F35	30	130(80)	3/4"NPT / BSPP

Dobule Acting Dimension of ASY Series Actuator (DA) / ASY双缸双作用执行器外形尺寸 (DA)



Unit : mm

Model	Outside Dimensions					Female Drive Connection						Flange Connection			Top Connection (Napur)		Air Port
	D	L1	L2	L3	H	Keyed (FK)			Double Square (FS)	Double D (FD)		D2	N-M	ISO5211	I	H	
ASY35-501-DA	580	830	830	350	310	28	112.8	100	-	-	-	356	8-M30	F35	30	130(80)	3/4"NPT / BSPP
ASY40-501-DA	580	970	970	400	350	40	178.8	160	-	-	-	406	8-M36	F40	30	130(80)	3/4"NPT / BSPP
ASY40-551-DA	630	970	970	400	350	40	178.8	160	-	-	-	406	8-M36	F40	30	130(80)	3/4"NPT / BSPP
ASY40-601-DA	690	970	970	400	350	40	178.8	160	-	-	-	406	8-M36	F40	30	130(80)	1"NPT / BSPP
ASY48-601-DA	690	1120	1120	450	420	45	200.8	180	-	-	-	483	12-M36	F48	30	130(80)	1"NPT / BSPP
ASY48-651-DA	740	1120	1120	450	420	45	200.8	180	-	-	-	483	12-M36	F48	30	130(80)	1"NPT / BSPP
ASY48-701-DA	800	1120	1120	450	420	45	200.8	180	-	-	-	483	12-M36	F48	30	130(80)	1"NPT / BSPP
ASY48-801-DA	900	1120	1120	450	420	45	200.8	180	-	-	-	483	12-M36	F48	30	130(80)	1 1/2"NPT / BSPP
ASY60-801-DA	900	1260	1260	520	500	50	242.8	220	-	-	-	603	20-M36	F60	30	130(80)	1 1/2"NPT / BSPP
ASY60-901-DA	1000	1260	1260	520	500	50	242.8	220	-	-	-	603	20-M36	F60	30	130(80)	2"NPT / BSPP
ASY60-1001-DA	1100	1260	1260	520	500	50	242.8	220	-	-	-	603	20-M36	F60	30	130(80)	2"NPT / BSPP

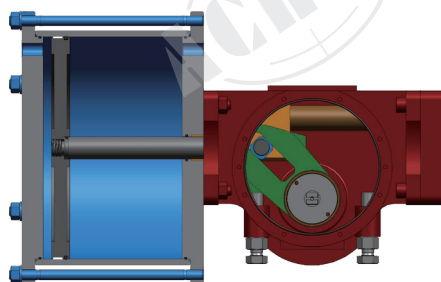
Air Consumption / 耗气量计算

ASY Series Air volume opening & closing / ASY系列执行器开向体积和关向体积

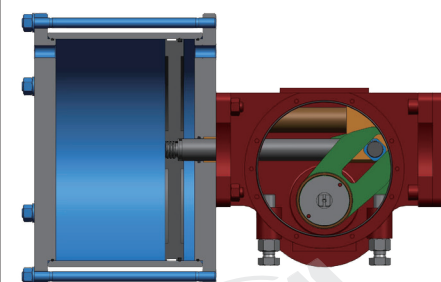
Model 型号	Volume Opening 开向体积 (L)	Model 型号	Volume Opening 开向体积 (L)
ASY10-150DA	1.68	ASY30-550DA	56.52
ASY10-170DA	2.17	ASY35-550DA	78.89
ASY12-170DA	2.68	ASY35-600DA	93.72
ASY12-200DA	3.69	ASY35-700DA	110.16
ASY14-200DA	4.42	ASY40-600DA	113.87
ASY14-250DA	6.97	ASY40-700DA	155.40
ASY14-300DA	10.03	ASY40-800DA	203.13
ASY16-250DA	8.70	ASY48-800DA	238.56
ASY16-300DA	12.55	ASY48-900DA	302.35
ASY16-350DA	17.14	ASY48-1000DA	373.39
ASY25-350DA	20.56	ASY60-800DA	309.93
ASY25-400DA	26.86	ASY60-900DA	392.80
ASY25-450DA	34.07	ASY60-1000DA	485.10
ASY30-450DA	37.85	ASY60-1100DA	587.47
ASY30-500DA	46.63		

Model 型号	Volume Closing 关向体积 (L)	Model 型号	Volume Closing 关向体积 (L)
ASY10-150DA	1.71	ASY30-550DA	56.99
ASY10-170DA	2.20	ASY35-550DA	79.55
ASY12-170DA	2.72	ASY35-600DA	94.67
ASY12-200DA	3.77	ASY35-700DA	111.11
ASY14-200DA	4.52	ASY40-600DA	115.02
ASY14-250DA	7.07	ASY40-700DA	156.55
ASY14-300DA	10.17	ASY40-800DA	204.48
ASY16-250DA	8.83	ASY48-800DA	240.15
ASY16-300DA	12.72	ASY48-900DA	303.94
ASY16-350DA	17.31	ASY48-1000DA	375.23
ASY25-350DA	20.77	ASY60-800DA	311.99
ASY25-400DA	27.13	ASY60-900DA	394.86
ASY25-450DA	34.34	ASY60-1000DA	487.49
ASY30-450DA	38.15	ASY60-1100DA	589.86
ASY30-500DA	47.10		

Open Position of ASY Actuators

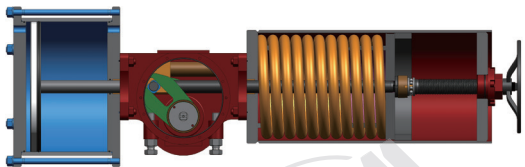


Close Position of ASY Actuators

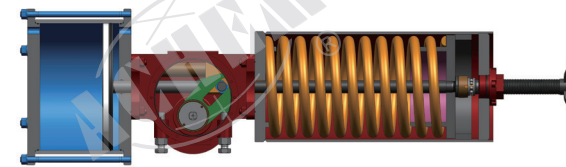


ASY series scotch yoke pneumatic actuators are available to arm with additional devices (manual overrides and travel stopers) to meet some special requirement, such as the assembly debugging in test run, emergency shut down in power failure and safety travel stop in the operation of quick stroke within 5s).

Hand wheel Override (HW). As for ASY10-XXSR to ASY16-XXSR actuators, the hand wheel manual overrider is armed on the side of the spring cartridge. Note that this kind of hand wheel manual override also is available for ASY series double acting actuators.

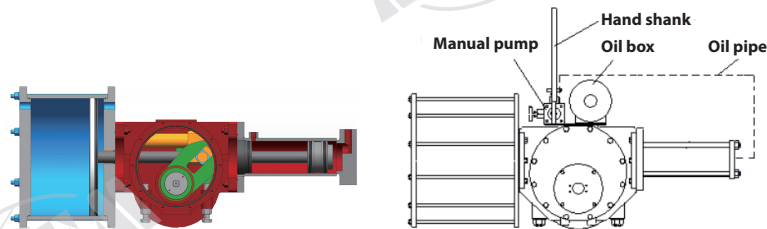


Open position operated by hand wheel.

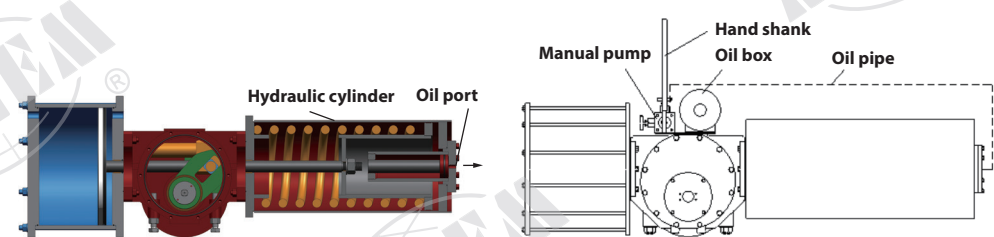


Closed position operated by hand wheel.

Hydraulic Override (HY). As for ASY25 to ASY60 series actuators, the hydraulic overrides are available both for double acting and spring return.



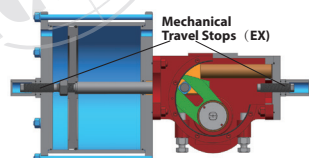
ASY double acting actuator with hydraulic override.



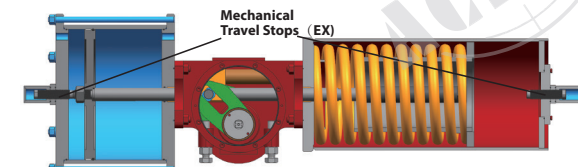
ASY spring return actuator hydraulic override

Extended mechanical travel stop (EX). As a standard configuration, ASY yoke mechanism fitted with mechanical end stops (open or closed positions) inside of centre body to ensure adjustable range of $\pm 6^\circ$. For quick stroke operation within 5s, ASY offers an extended mechanical travel stops (EX) in each end of the actuator to ensure travel stop safely and adjustable range of $\pm 6^\circ$ at stop positions reliably.

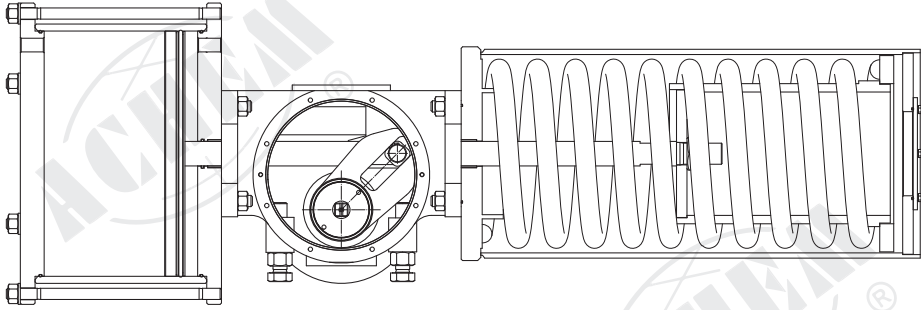

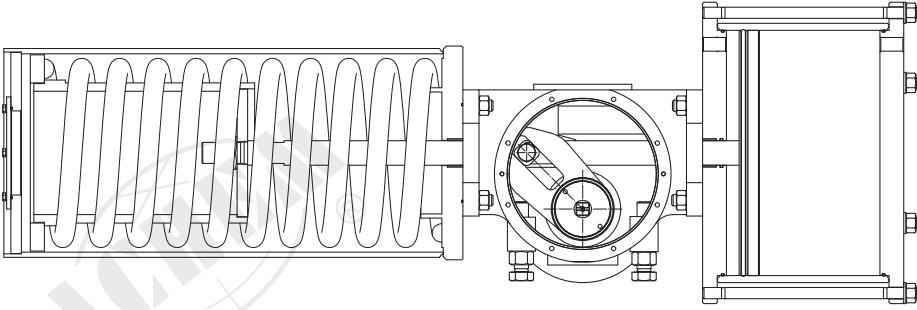

Double acting ASY actuators are built with EX stops.



Spring return ASY actuators are built with EX stops.



As for ASY spring return actuator, fail-close or fail-open modus are depended on the configuration. Because of sharing modular construction, these modus can be required when ordering or reconfiguration by customer accordingly.

Spring Return Actuator configuration	Fail Direction	
 <p data-bbox="293 826 987 914">Cylinder Module on left side Spring cartridge Module is in right side</p>	<p data-bbox="1252 651 1570 738">CW Fail to Closed (FC)</p>	
 <p data-bbox="338 1337 1003 1425">Cylinder Module on right side Spring cartridge Module is in left side</p>	<p data-bbox="1261 1137 1559 1225">CCW Fail to Open (FO)</p>	

ALPHA-ACHEM Group is available to supply accessories, such as ALV series solenoid valve, ALS series limit switch boxes, ALP series valve positioners, to be assembly with ASY scotch yoke actuators based on Namur and ISO5211 standards. These accessories can be mounted on a panel or in a cabinet or mounted on the actuator directly.





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