

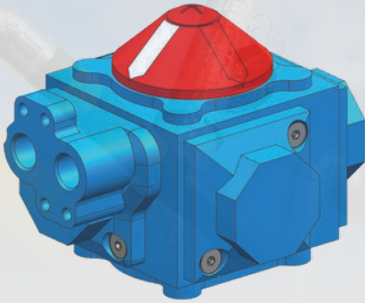


 **Alfomatic**

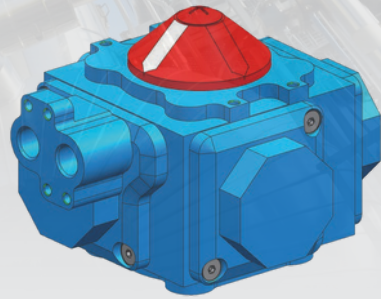
A R F

FOUR PISTONS PNEUMATIC ACTUATORS

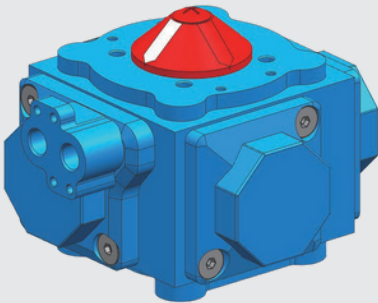
Product Profile



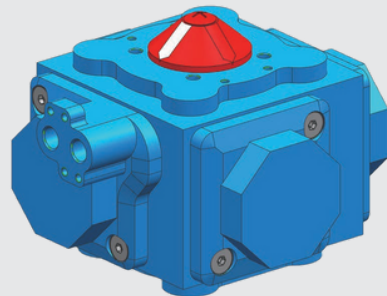
ARF-15



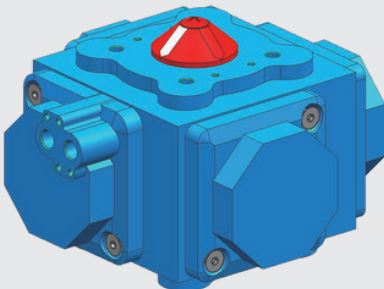
ARF-20



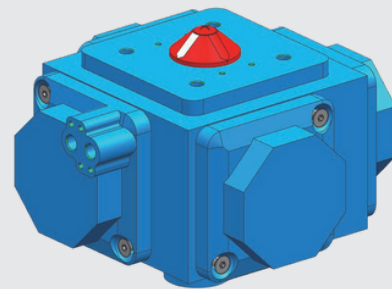
ARF-25



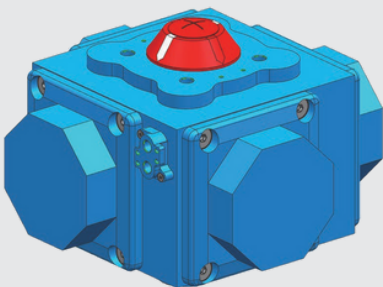
ARF-30



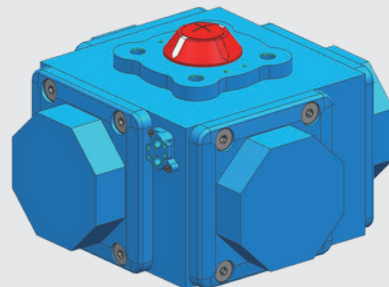
ARF-35



ARF-45



ARF-60



ARF-75



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Main Features

Balanced forces

The cube-shaped configuration positions the pistons in a way that allows each piston to develop thrust along its own axis with zero side load. This efficient design eliminates the use of guide rods and thrust bearings. The result is less stress on the seals than off-axis piston thrust, which is caused by the piston side loading that is inherent in the geometry of traditional actuator configurations.

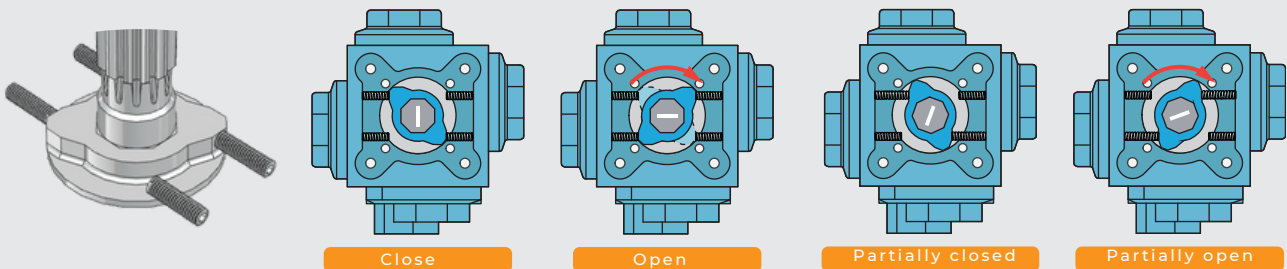


Fast action

Fast action is one of the most attractive features offered by the 4-piston actuator. The unique four-piston design allows for a smaller diameter actuator pinion that significantly shortens piston travel, resulting in a shorter response time.

Limit stop

The pinion and stop rotation can be adjusted by four large-diameter, diametrically-opposed adjustable set-screws that are threaded into the actuator body. Each opposing pair of screws exerts simultaneous and equal force on opposite sides of the stop when the rotation limit is reached, thus preventing the generation of off-center forces. The stop screws allow for $\pm 5^\circ$ rotation adjustment in both directions of travel. Larger span can be achieved with a longer set of stop screws. The stop material is stainless steel for better wear and corrosion resistance.

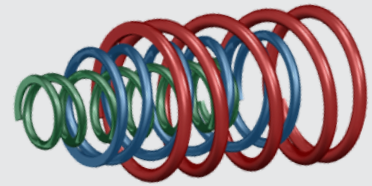


Less air consumption

The cubic structure and short piston design of the four-piston actuator greatly reduce its volume and reduce the movement space of the piston, thus achieving the effect of reducing air consumption.

Spring cartridge

The actuator's four spring chambers accommodate three different sizes of springs that are nested between the piston and the cylinder head and have a central positioning groove on the piston for calibration. Make sure that each set of springs does not entangle each other. The actuator has four cylinders and offers twelve combinations. Meet the needs of working under more different pressure conditions.



Specification

Unit: Nm

Model	Weight (KG)		Air consumption (L)			Stroke Time (sec.*)
	DA	SR	CCW	CW	Total	
ARF-15DA	0.9	1.1	0.07	0.09	0.16	0.1
ARF-20DA	1.5	1.9	0.12	0.15	0.27	0.15
ARF-25DA	2.8	3.5	0.25	0.33	0.58	0.2
ARF-30DA	4.4	5	0.44	0.54	0.98	0.3
ARF-35DA	7.1	9	0.74	0.8	1.54	0.5
ARF-45DA	11	15	1.33	1.33	2.66	0.9
ARF-60DA	26	35	3.2	3.2	6.4	2
ARF-75DA	51	64	5.76	5.76	11.52	3

* working conditions: CV1.4 , 5.5 Bar

Pressure range:

2~8bar

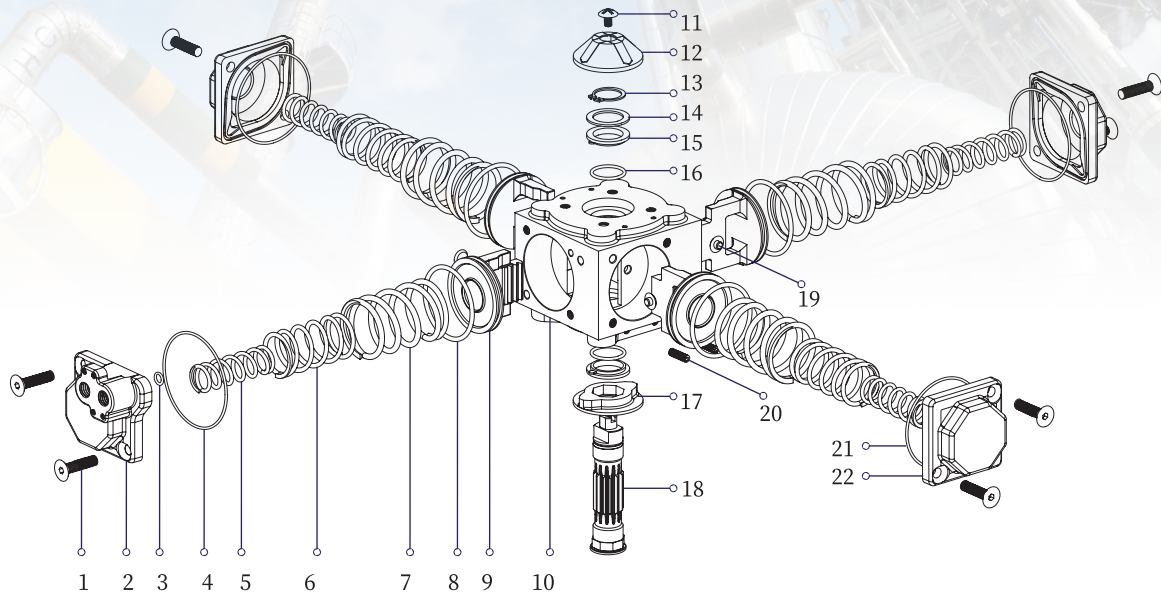
Operating temperature:

NBR: -20°C~ +80°C
FKM: -20°C~ +120°C
LTNBR: -40°C~ +80°C

Working medium:

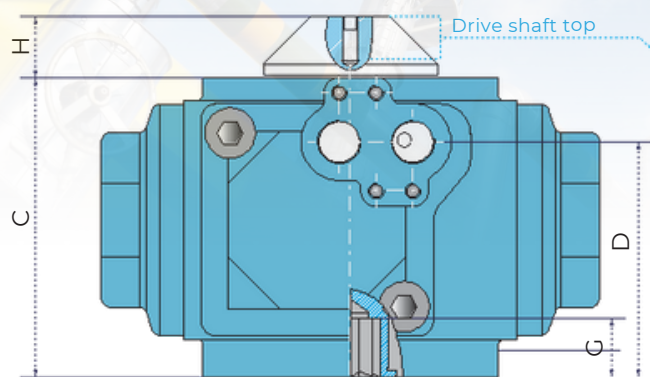
Air, Nitrogen,
CO₂,
Natural gas

Parts & Materials

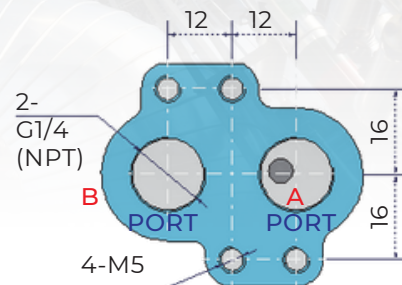
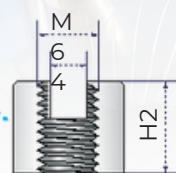


No.	Name	QT.	Material
1	Screw (End cap)	8	Stainless Steel
2	Namur (End cap)	1	Die-casting Aluminum
3	O-ring (Air Supply)	1	NBR / FKM / LTNBR
4	O-ring (Namur End cap)	1	NBR / FKM / LTNBR
5	Small Spring	4	Spring Steel
6	Middle Spring	4	Spring Steel
7	Large Spring	4	Spring Steel
8	O-ring (Piston)	4	NBR / FKM / LTNBR
9	Piston	4	Die-casting Aluminum
10	Body	1	Gravity Casting Aluminum
11	Indicator Screw	1	Plastic+Stainless Steel
12	Indicator	1	Plastic(ABS)
13	Spring clip	1	Stainless Steel
14	Thrust Washer	1	POM
15	Bearing	2	POM
16	O-ring (shaft)	2	NBR / FKM / LTNBR
17	Cam	1	Stainless Steel
18	Pinion	1	Alloy Steel With Nickel ChemicalCoating
19	Guide (Piston)	4	POM
20	Adjustment Screw	4	Stainless Steel
21	O-ring (End cap)	3	NBR / FKM / LTNBR
22	End cap	3	Die-casting Aluminum

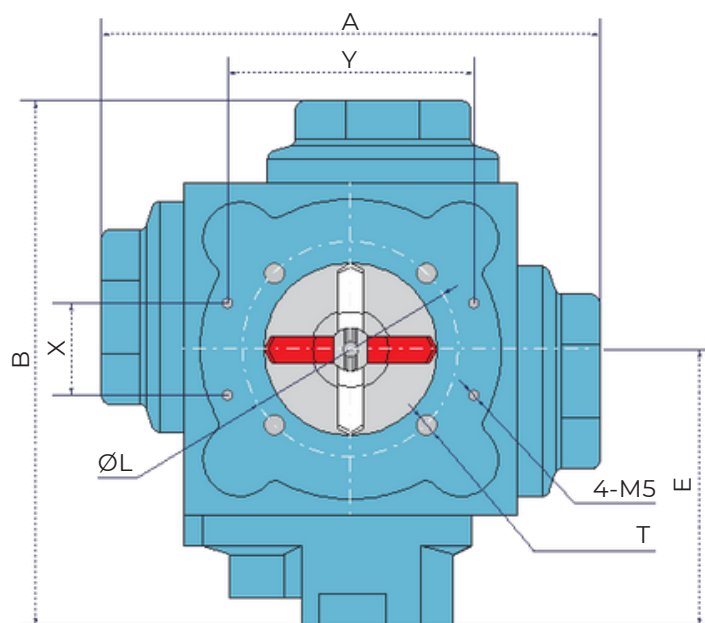
Dimension



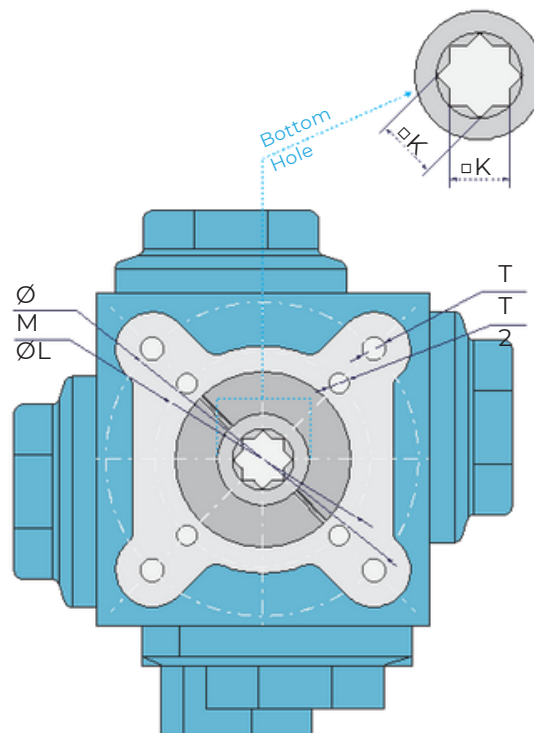
SIDE VIEW



Air connection NAMUR



TOP VIEW










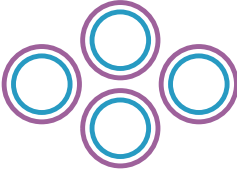





BOTTOM VIEW

Unit: mm

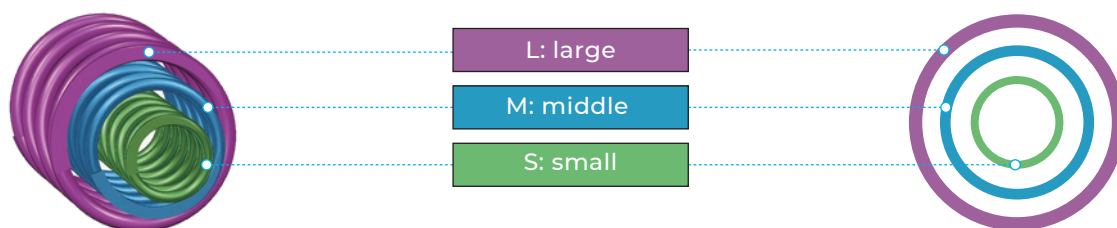
Model	A	B	C	D	E	G	□K	ØL	ØM	T	T2	X×Y,H	H2
ARF-15	112	122.5	70.7	52.2	66.5	13.4	9	50	70	M6×8	M8×11	30×80,20	14
ARF-20	131.5	143	82.5	63.4	77.2	16	11	50	70	M6×8	M8×11	30×80,20	14
ARF-25	162	171	98	77	90	19.5	14	70	102	M6×11	M10×14	30×80,20	14
ARF-30	186	198.5	117.3	93.7	105.5	23	17	70	102	M6×11	M10×14	30×80,20	14
ARF-35	222.6	233.1	136	104.7	122	27	22	102	-	M6×14	-	30×80,20	14
ARF-45	270.6	281.6	164.5	128.5	146	33	27	102	125	M6×14	M12×18	30×80,20	14
ARF-60	360	360	218	180	141.5	43	36	140	-	M6×24	-	30×130,30	20
ARF-75	434	434	268	222	166	43	36	165	-	M6×30	-	30×130,30	20

Spring combinations

 S4(1A)	 M4(1B)	 S2M4 (1B2)	 S4M4 (2)
 S2M4(2AB)	 S4M4(2A)	 S4M2L2(2A2B)	 S4L4(2B)
 S4M4L2(2A3)	 M4L4(2C)	 S2M4L4(2C3)	 S4M4L4(3)

 ARF-15SR only

 For ARF-20~75SR



Double Return Output Torque

Unit: Nm

Model	Operating Pressure (bar)						
	3 bar	4 bar	5 bar	5.5 bar	6 bar	7 bar	8 bar
ARF-15DA	10	14	17	19	21	24	27
ARF-20DA	18	25	32	35	38	45	51
ARF-25DA	39	52	65	72	79	92	105
ARF-30DA	62	84	107	119	130	153	176
ARF-35DA	114	151	190	208	226	265	304
ARF-45DA	222	297	371	408	445	519	593
ARF-60DA	527	703	879	967	1055	1230	1406
ARF-75DA	974	1299	1624	1786	1948	2273	2596

Spring Return Output Torque

Unit: Nm

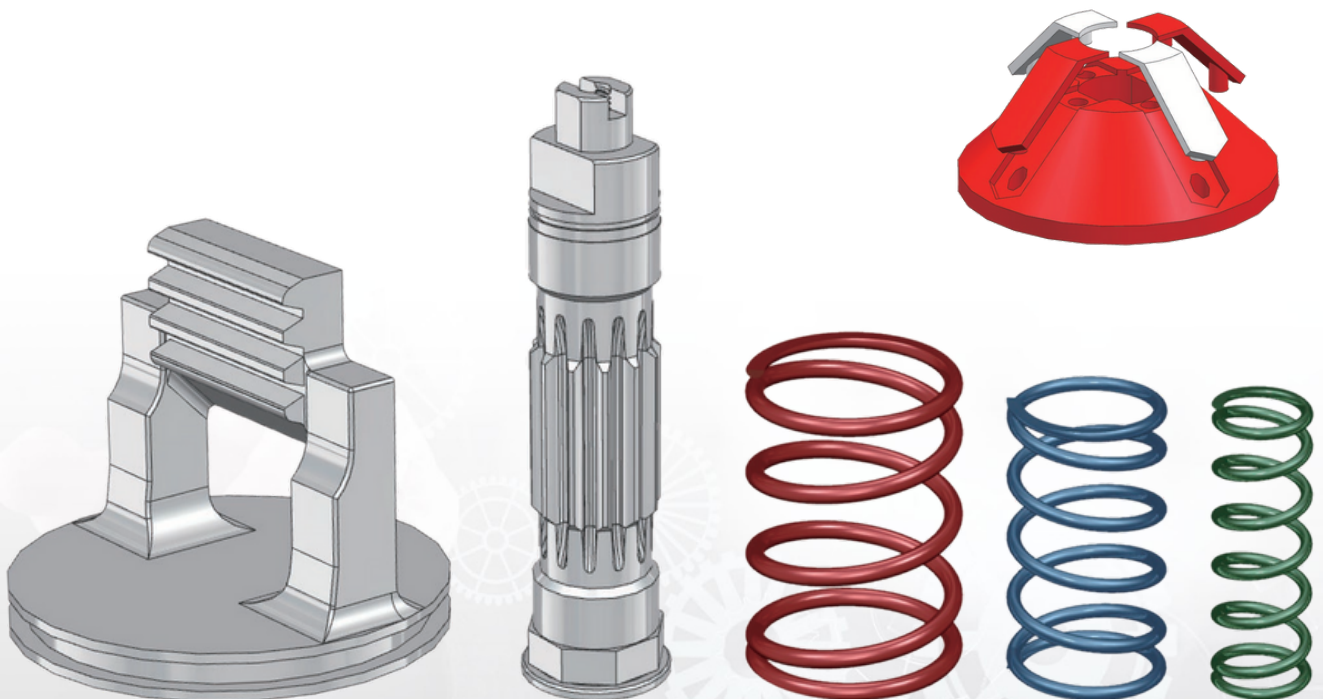
Model	Spring set code		Operating Pressure (bar)														Spring stroke	
			3 bar		4 bar		5 bar		5.5 bar		6 bar		7 bar		8 bar			
			0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
ARF-15	S4M4	1A	7	4	10	7	13	11	15	12	17	14	20	17	24	21	6	3
	S4M4	1B			8	4	12	8	13	10	15	11	18	14	22	18	9	5
	S2M4	1B2					10	5	12	7	13	9	16	11	20	15	12	7
	S4M4	2									11	6	14	8.5	18	12	15	9
ARF-20	S2M4	2AB	10	5	17	12	24	18	27	22	30	25	37	31	43	37	12	7
	S4M4	2A			16	10	22	16	26	19	29	22	35	29	41	35	15	9
	S4M2L2	2A2B			14	7	20	13	24	16	27	19	33	26	39	32	18	11
	S4L4	2B					18	10	22	13	25	17	31	23	38	29	21	13
	S4M4L2	2A3					17	9	20	12	23	15	20	22	36	28	22	15
	M4L4	2C							19	10	22	13	28	19	35	25	25	16
	S2M4L4	2C3									21	11	27	17	33	23	27	17
	S4M4L4	3									19	9	24	15	30	21	29	19
ARF-25	S2M4	2AB	25	15	38	27	51	40	58	47	65	53	78	66	90	78	23	13
	S4M4	2A	23	11	36	23	49	36	55	42	62	49	75	62	88	74	28	16
	S4M2L2	2A2B			33	19	46	32	53	39	60	45	73	58	86	70	32	18
	S4L4	2B					43	27	50	34	57	41	70	53	83	66	36	21
	S4M4L2	2A3					41	22	47	29	54	36	67	48	80	61	42	24
	M4L4	2C					38	18	45	24	52	31	64	44	77	56	47	27
	S2M4L4	2C3							43	19	50	25	63	38	75	50	52	29
	S4M4L4	3									47	21	60	34	73	46	57	31
ARF-30	S2M4	2AB	40	26	62	47	84	70	96	81	107	92	130	114	152	136	35	21
	S4M4	2A	36	19	57	40	80	62	91	73	102	84	125	107	148	129	42	26
	S4M2L2	2A2B			52	30	75	52	86	63	98	74	120	96	143	118	53	31
	S4L4	2B			48	18	70	43	81	54	93	65	115	87	138	109	62	36
	S4M4L2	2A3					66	36	77	47	89	58	111	80	134	103	69	40
	M4L4	2C					64	25	73	39	85	50	107	72	130	94	78	44
	S2M4L4	2C3									80	40	102	62	125	85	88	49
	S4M4L4	3									75	33	98	55	120	77	96	54
ARF-35	S2M4	2AB	81	50	118	86	156	123	174	141	192	158	230	195	268	232	62	32
	S4M4	2A	75	39	111	74	150	112	168	129	186	147	224	184	262	221	74	38
	S4M2L2	2A2B	64	26	100	62	139	99	157	117	175	134	213	171	251	208	87	49
	S4L4	2B			92	44	130	82	148	99	166	117	204	154	242	191	105	58
	S4M4L2	2A3					123	67	141	84	159	102	197	139	235	176	121	65
	M4L4	2C							133	68	151	86	189	123	227	160	137	73
	S2M4L4	2C3									143	75	181	112	219	149	149	82
	S4M4L4	3									135	63	173	100	211	137	161	89
ARF-45	S2M4	2AB	148	86	222	158	295	229	331	264	367	300	440	371	513	442	133	72
	S4M4	2A	134	60	208	132	280	203	317	239	353	275	426	346	499	417	159	86
	S4M2L2	2A2B			197	113	269	184	306	219	342	255	415	326	488	397	179	97
	S4L4	2B			179	82	252	153	288	188	325	224	398	295	471	366	212	115
	S4M4L2	2A3					238	127	274	163	311	198	383	269	456	340	239	130
	M4L4	2C					223	102	260	137	296	173	369	244	442	315	265	144
	S2M4L4	2C3									283	147	355	218	428	289	292	158
	S4M4L4	3									268	122	341	193	414	264	318	173
ARF-60	S2M4	2AB	359	216	532	385	706	554	792	639	879	723	1052	891	1225	1060	302	162
	S4M4	2A	328	160	501	329	675	498	762	583	848	667	1021	835	1194	1004	360	194
	S4M2L2	2A2B			478	285	651	454	738	538	824	623	997	791	1170	960	406	218
	S4L4	2B			442	221	615	390	702	475	789	559	961	727	1134	896	473	254
	S4M4L2	2A3					580	327	667	411	754	495	926	663	1099	832	539	290
	M4L4	2C					548	268	635	352	721	437	894	605	1067	774	600	323
	S2M4L4	2C3									688	378	861	546	1034	715	661	356
	S4M4L4	3									657	322	830	490	1003	659	720	388
ARF-75	S2M4	2AB	672	443	992	755	1312	1067	1472	1223	1631	1378	1951	1690	2270	2000	512	292
	S4M4	2A	614	345	935	657	1255	969	1414	1124	1574	1280	1894	1592	2212	1902	615	350
	S4M2L2	2A2B			891	582	1211	894	1370	1049	1530	1205	1850	1517	2168	1827	693	395
	S4L4	2B			820	461	1140	773	1299	928	1459	1084	1779	1396	2097	1706	819	467
	S4M4L2	2A3					1082	674	1242	830	1401	986	1722	1298	2040	1608	921	525
	M4L4	2C					1025	576	1184	732	1344	887	1664	1199	1982	1509	1024	584
	S2M4L4	2C3							1127	633	1286	789	1607	1101	1925	1411	1126	642
	S4M4L4	3									1229	691	1549	1003	1867	1313	1229	700

How to order

Product code	Model code	Acting type	Spring code	Operating temp.
ARF	15	DA: Double Acting	S4 *	BLANK: -20°C~ +80°C
	20		M4 *	
	25		S2M4 *	
	30		S4M4 *	
	35		S2M4 *	
	45	SR: Spring Return	S4M4 *	HT: -20°C~ +150°C
	60		S4M2L2 *	
	75		S4M4	
			S4M4L2	
			M4L4	
		S2M4L4	LT: -40°C~ +80°C	
		S4M4L4		

* For details on the specific combination, please see page 5.

** Optional spring combination for ARF-15





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