

rotork[®]

Fluid Systems

Introducing the RCR Range single- and double-acting pneumatic piston actuators.

Design

Single- and double-acting pneumatic piston actuators (rack and pinion).

Action

Standard 90°, 120°, 180° and 240° upon application. Customised angles available as well as three position versions.

Stroke adjustment

90° Position from -5° to +5°

Single and double end stop options

Torques 2.4 to 5,800 Nm

Air Pressure 2 to 10 bar

Supply Filtered air PNEUROP/ISO class 4, other fluids on request

Materials

Body Anodized aluminium ASTM 6063, UNI 10681, additional versions on request

End caps Aluminium UNI EN1706, EN AC-46100, epoxy coated

Pistons Aluminium UNI EN1706

Pinion Nickel plated steel AISI SAE 11L37 - ASTM B 656, stainless steel optional

Bearing pad guide Technopolymer - Delrin Poliarilammide - IXEF

Seals NBR, alternative Viton or Silicone

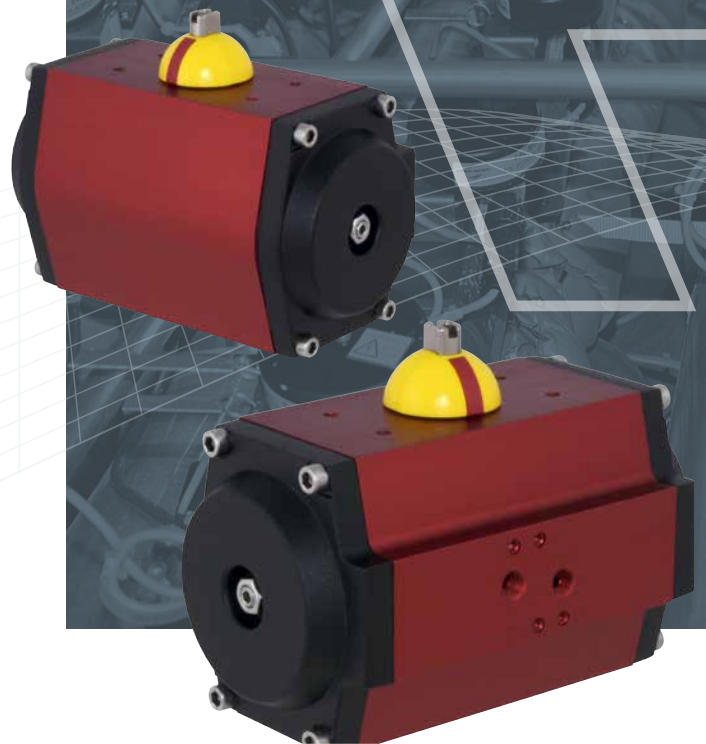
Temperature range

Standard -50 to +70 °C (NBR O-Ring - Guide Delrin)

Special versions -15 to +160 °C (Viton O-Ring - Guide IXEF)
or -30 to +200 °C (Silicone O-Ring - Guide PTFE)

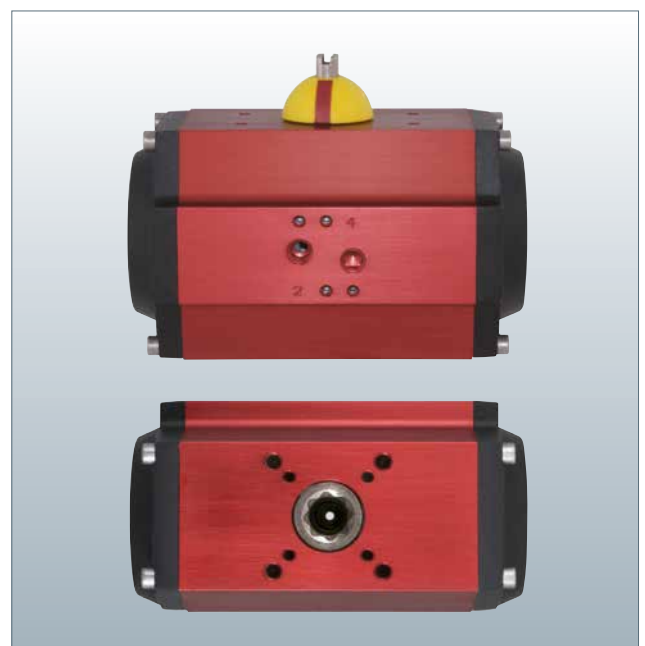
Mechanical interfaces

ISO 5211, NAMUR VDI/DE 3845, EN 15714-3-4



RCR Range

Rack and Pinion Actuators



Redefining Flow Control

Sizing Guide for Double-Acting Actuators

Model	Pneumatic Torque (Nm)													
	2 bar	2.5 bar	3 bar	3.5 bar	4 bar	4.5 bar	5 bar	5.6 bar	6 bar	6.5 bar	7 bar	8 bar	9 bar	10 bar
33, 34	2.4	2.9	3.5	4.1	4.7	5.2	5.8	6.5	7.0	7.6	8.2	9.4	10.5	11.7
43, 44	4.7	5.8	7.0	8.2	9.4	10.5	11.7	13.1	14.0	15.2	16.4	18.7	21.0	23.4
52	7.8	9.7	11.7	13.6	15.6	17.5	19.5	21.8	23.4	25.3	27.3	31.2	35.1	39.0
63	11.6	14.5	17.4	20.3	23.2	26.1	29.0	32.5	34.8	37.7	40.6	46.4	52.2	58.0
75	20.0	25.0	30.0	35.0	40.0	45.0	50.0	56.0	60.0	65.0	70.0	80.0	90.0	100.0
83	29.0	36.2	43.5	50.7	58.0	65.2	72.5	81.2	87.0	94.2	101.5	116.0	130.5	145.0
92	40.0	50.0	60.0	70.0	80.0	90.0	100.0	112.0	120.0	130.0	140.0	160.0	180.0	200.0
110	58.0	72.5	87.0	101.5	116.0	130.5	145.0	162.4	174.0	188.5	203.0	232.0	261.0	290.0
118	86.0	107.5	129.0	150.5	172.0	193.5	215.0	240.8	258.0	279.5	301.0	344.0	387.0	430.0
127	116.0	145.0	174.0	203.0	232.0	261.0	290.0	324.8	348.0	377.0	406.0	464.0	522.0	580.0
143	186.0	232.5	279.0	325.5	372.0	418.5	465.0	520.8	558.0	604.5	651.0	744.0	837.0	930.0
160	230.0	287.5	345.0	402.5	460.0	517.5	575.0	644.0	690.0	747.5	805.0	920.0	1,035	1,150
190	400.0	500.0	600.0	700.0	800.0	900.0	1,000	1,120	1,200	1,300	1,400	1,600	1,800	2,000
210	480.0	600.0	720.0	840.0	959.9	1,080	1,200	1,344	1,440	1,560	1,680	1,920	2,160	2,400
254	920.0	1,150	1,380	1,610	1,840	2,070	2,300	2,576	2,760	2,990	3,220	3,680	4,140	4,600
255	1,160	1,450	1,740	2,030	2,320	2,610	2,900	3,248	3,480	3,770	4,060	4,640	5,220	5,800

Sizing Guide for Single-Acting Actuators

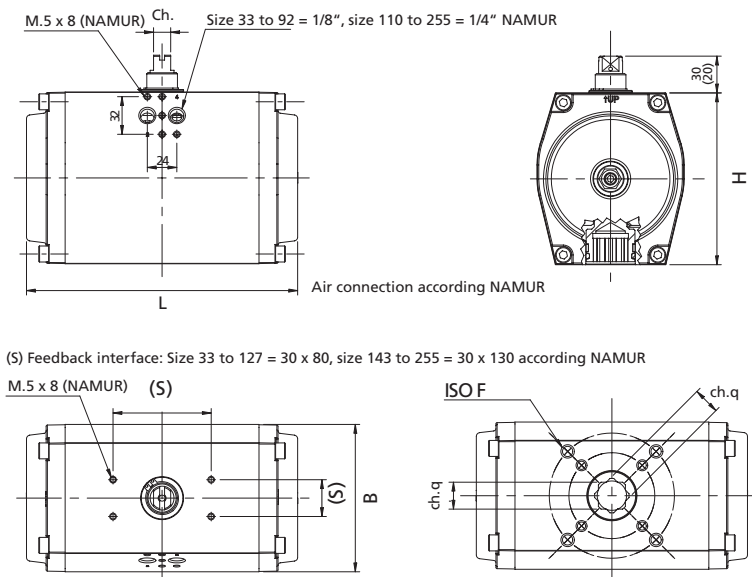
Model	Springs	Spring Torque (Nm)		Pneumatic Torque (Nm)																			
				2 bar		3 bar		4 bar		5 bar		5.6 bar		6 bar		7 bar		8 bar		9 bar		10 bar	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
43, 44	2	1.68	2.53	2.97	2.09	5.31	4.43	7.64	6.77	9.98	9.11	11.39	10.51	12.32	11.45	14.66	13.79	17.00	16.12	19.34	18.46	21.68	20.80
	4	3.36	5.07			3.59	1.85	5.93	4.18	8.27	6.52	9.68	7.93	10.61	8.86	12.95	11.20	15.29	13.54	17.63	15.88	19.97	18.22
	6	5.03	7.60					4.22	1.60	6.56	3.94	7.96	5.34	8.90	6.28	11.24	8.61	13.58	10.95	15.92	13.29	18.26	15.63
	8	6.71	10.14							4.85	1.35	6.25	2.75	7.19	3.69	9.53	6.03	11.87	8.37	14.21	10.71	16.54	13.05
52	2	1.91	3.19	5.84	4.54	9.74	8.44	13.64	12.34	17.54	16.23	19.87	18.57	21.43	20.13	25.33	24.03	29.23	27.92	33.12	31.82	37.02	35.72
	4	3.82	6.37	3.90	1.29	7.79	5.19	11.69	9.09	15.59	12.98	17.92	15.32	19.48	16.88	23.38	20.78	28.28	24.67	31.17	28.57	35.07	32.47
	6	5.73	9.56			5.84	1.94	9.74	5.83	13.64	9.73	15.98	12.07	17.53	13.63	21.43	17.52	25.33	21.42	29.23	25.32	33.12	29.22
	8	7.64	12.75					7.79	2.58	11.69	6.48	14.03	8.82	15.59	10.38	19.48	14.27	23.38	18.17	27.28	22.07	31.17	25.96
	10	9.55	15.94							9.74	3.23	12.08	5.57	13.64	7.13	17.53	11.02	21.43	14.92	25.33	18.82	29.22	22.71
	12	11.46	19.12									10.13	2.32	11.69	3.88	15.59	7.77	19.48	11.67	23.38	15.57	27.28	19.46
63	2	3.01	4.42	8.54	7.09	14.34	12.89	20.14	18.69	25.94	24.50	29.42	27.98	31.74	30.30	37.54	36.10	43.34	41.90	49.14	47.70	54.94	53.50
	4	6.01	8.84	5.47	2.58	11.27	8.38	17.07	14.18	22.87	19.99	26.35	23.47	28.67	25.79	34.47	31.59	40.27	37.39	46.08	43.19	51.88	48.99
	6	9.02	13.26			8.20	3.87	14.00	9.68	19.81	15.48	23.29	18.96	25.61	21.28	31.41	27.08	37.21	32.88	43.01	38.68	48.81	44.48
	8	12.03	17.68					10.94	5.17	16.74	10.97	20.22	14.45	22.54	16.77	28.34	22.57	34.14	28.37	39.94	34.17	45.74	39.97
	10	15.03	22.11							13.67	6.46	17.15	9.94	19.47	12.26	25.27	18.06	31.08	23.86	36.88	29.66	42.68	35.46
	12	18.04	26.53									14.09	5.43	16.41	7.75	22.21	13.55	28.01	19.35	33.81	25.15	39.61	30.95
75	2	5.24	7.96	14.65	11.87	24.65	21.87	34.65	31.87	44.65	41.87	50.65	47.87	54.64	51.87	64.64	61.86	74.64	71.86	84.64	81.86	94.64	91.86
	4	10.48	15.93	9.31	3.75	19.31	13.75	29.31	23.75	39.30	33.75	45.30	39.74	49.30	43.74	59.30	53.74	69.30	63.74	79.30	73.74	89.29	83.74
	6	15.71	23.89			13.96	5.63	23.96	15.63	33.96	25.62	39.96	31.62	43.96	35.62	53.96	45.62	63.95	55.62	73.95	65.62	83.95	75.61
	8	20.95	31.85					18.62	7.50	28.62	17.50	34.62	23.50	38.62	27.50	48.61	37.50	58.61	47.50	68.61	57.49	78.61	67.49
	10	26.19	39.81							23.27	9.38	29.27	15.38	33.27	19.38	43.27	29.38	53.27	39.37	63.27	49.37	73.26	59.37
	12	31.43	47.78							17.93	1.26	23.93	7.26	27.93	11.26	37.93	21.25	47.93	31.25	57.92	41.25	67.92	51.25
83	2	7.23	11.19	21.62	17.58	36.12	32.07	50.62	46.57	65.11	61.07	73.81	69.77	79.61	75.56	94.11	90.06	108.6	104.6	123.1	119.1	137.6	133.6
	4	14.46	22.39	14.25	6.16	28.75	20.65	43.24	35.15	57.74	49.65	66.44	58.35	72.24	64.15	86.73	78.64	101.2	93.14	115.7	107.6	130.2	122.1
	6	21.68	33.58			21.37	9.24	35.87	23.73	50.37	38.23	59.07	46.93	64.86	52.73	79.36	67.23	93.86	81.72	108.4	96.22	122.9	110.7
	8	28.91	44.78					28.50	12.31	42.99	26.81	51.69	35.51	57.49	41.31	71.99	55.81	86.49	70.30	101.0	84.80	115.5	99.30
	10	36.14	55.97							35.62	15.39	44.32	24.09	50.12	29.89	64.62	44.39	79.11	58.89	93.61	73.36	108.1	87.88
	12	43.37	67.17							28.25	3.98	36.95	12.67	42.75	18.47	57.24	32.97	71.74	47.47	86.24	61.96	100.7	76.46
92	2	9.10	14.34	30.72	25.37	50.73	45.38	70.73	65.38	90.73	85.38	102.7	97.39	110.7	105.4	130.7	125.4	150.7	145.4	170.7	165.4	190.7	185.4
	4	18.20	28.69	21.44	10.74	41.44	30.75	61.45	50.75	81.45	70.75	93.45	82.75	101.5	90.76	121.5	110.8	141.5	130.8	161.5	150.8	181.5	170.8
	6	27.31	43.03			32.16	16.12	52.16	36.12	72.16	56.12	84.17	68.12	92.17	76.12	112.2	96.13	132.2	116.1	152.2	136.1	172.2	156.1
	8	36.41	57.38					42.88	21.49	62.88	41.49	74.88	53.49	82.88	61.49	102.9	81.50	122.9	101.5	142.9	121.5	162.9	141.5
	10	45.51	71.72					33.59	6.86	53.60	26.86	65.60	38.86	73.60	46.86	93.60	66.86	113.6	86.87	133.6	106.9	153.6	126.9
	12	54.61	86.07							44.31	12.23	56.31	24.23	64.32	32.23	84.32	52.23	104.3	72.24	124.3	92.24	144.3	112.2

RCR Range

Rack and Pinion Actuators

Sizing Guide for Single-Acting Actuators *continued*

Model		Springs	Spring Torque (Nm)		Pneumatic Torque (Nm)																			
					2 bar		3 bar		4 bar		5 bar		5.6 bar		6 bar		7 bar		8 bar		9 bar		10 bar	
			0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
110	2	15.81	23.71	41.9	33.8	70.9	62.8	99.9	91.8	128.9	120.8	146.3	138.2	157.9	149.8	186.9	178.8	215.9	207.8	244.9	236.8	273.9	265.8	
	4	31.61	47.42	25.8	9.6	54.8	38.6	83.8	67.6	112.8	96.6	130.2	114.1	141.8	125.7	170.8	154.7	199.8	183.7	228.8	212.7	257.8	241.7	
	6	47.42	71.13			38.6	14.5	67.6	43.5	96.6	72.5	114.1	89.9	125.7	101.5	154.7	130.5	183.7	159.5	212.7	188.5	241.7	217.5	
	8	63.22	94.84					51.5	19.3	80.5	48.3	97.9	65.7	109.5	77.3	138.5	106.3	167.5	135.3	196.5	164.3	225.5	193.3	
	10	79.03	118.5							64.4	24.1	81.8	41.5	93.4	53.1	122.4	82.1	151.4	111.1	180.4	140.1	209.4	169.1	
	12	94.84	142.3										65.7	17.3	77.3	28.9	106.3	57.9	135.3	86.9	164.3	115.9	193.3	144.9
118	2	21.25	36.46	64.3	48.8	107.3	91.8	150.3	134.8	193.3	177.8	219.1	203.6	236.3	220.8	279.3	263.8	322.3	306.8	365.3	349.8	408.3	392.8	
	4	42.50	72.92	42.7	11.6	85.7	54.6	128.7	97.6	171.7	140.6	197.5	166.4	214.7	183.6	257.7	226.6	300.7	269.6	343.7	312.6	386.7	355.6	
	6	63.75	109.4			64.0	17.4	107.0	60.4	150.0	103.4	175.8	129.2	193.0	146.4	236.0	189.4	279.0	232.4	322.0	275.4	365.0	318.4	
	8	84.99	145.8					85.3	23.3	128.3	66.3	154.1	92.1	171.3	109.3	214.3	152.3	257.3	195.3	300.3	238.3	343.3	281.3	
	10	106.2	182.3							106.6	29.1	132.4	54.9	149.6	72.1	192.6	115.1	235.6	158.1	278.6	201.1	321.6	244.1	
	12	127.5	218.7									110.8	17.7	128.0	34.9	171.0	77.9	214.0	120.9	257.0	163.9	300.0	206.9	
127	2	29.94	48.78	85.5	66.2	143.5	124.2	201.5	182.2	259.5	240.2	294.2	275.0	317.4	298.2	375.4	356.2	433.4	414.2	491.4	472.2	549.4	530.2	
	4	59.88	97.57	54.9	16.5	112.9	74.5	170.9	132.5	228.9	190.5	263.7	225.3	286.9	248.5	344.9	306.5	402.9	364.5	460.9	422.5	518.9	480.5	
	6	89.82	146.3			82.4	24.7	140.4	82.7	198.4	140.7	233.2	175.5	256.4	198.7	314.4	256.7	372.4	314.7	430.4	372.7	488.4	430.7	
	8	119.8	195.1					109.8	33.0	167.8	91.0	202.6	125.8	225.8	149.0	283.8	206.9	341.8	264.9	399.8	322.9	457.8	380.9	
	10	149.7	243.9							137.3	41.2	172.1	76.0	195.3	99.2	253.3	157.2	311.3	215.2	369.3	273.2	427.3	331.2	
	12	179.6	292.7									141.6	26.2	164.8	49.4	222.8	107.4	280.8	165.4	338.8	223.4	396.8	281.4	
143	2	48.1	68.9	137.0	115.7	230.0	208.7	323.0	301.7	416.0	394.7	471.8	450.5	509.0	487.7	602.0	580.7	695.0	673.7	788.0	766.7	881.0	859.8	
	4	96.1	137.8	87.9	45.5	181.0	138.5	274.0	231.5	367.0	324.5	422.8	380.3	460.0	417.5	553.0	510.5	646.0	603.5	739.0	696.5	832.0	789.5	
	6	144.2	206.7			131.9	68.2	224.9	161.2	317.9	254.2	373.7	310.0	410.9	347.2	503.9	440.2	596.9	533.2	689.9	626.2	782.9	719.2	
	8	192.3	275.6					175.9	90.9	268.9	183.9	324.7	239.7	361.9	276.9	454.9	369.9	547.9	462.9	640.9	555.9	733.9	648.9	
	10	240.3	344.4					126.9	20.7	219.9	113.7	275.7	169.5	312.9	206.7	405.9	299.7	498.9	392.7	591.9	485.7	684.9	578.7	
	12	288.4	413.3							170.8	43.4	226.6	99.2	263.8	136.4	356.8	229.4	449.8	322.4	542.9	415.4	635.9	508.4	
160	2	55.9	83.0	172.4	144.5	287.4	259.5	402.5	374.5	517.5	489.5	586.5	558.5	632.5	604.5	747.5	719.5	862.5	834.5	977.5	949.5	1,092	1,065	
	4	111.8	166.0	114.9	59.0	229.9	174.0	344.9	289.0	459.9	404.0	528.9	473.0	574.9	519.0	689.9	634.1	804.9	749.1	919.9	864.1	1,035	979.1	
	6	167.6	249.0			172.3	88.6	287.3	203.6	402.3	318.6	471.3	387.6	517.3	433.6	632.3	548.6	747.3	663.6	862.3	778.6	977.3	893.6	
	8	223.5	332.0					229.8	118.1	344.8	233.1	413.8	302.1	459.8	348.1	574.8	463.1	689.8	578.1	804.8	693.1	919.8	808.1	
	10	279.4	415.0					172.2	32.6	287.2	147.6	356.2	216.6	402.2	262.6	517.2	377.6	632.2	492.6	747.2	607.6	862.2	722.6	
	12	335.3	498.0							229.7	62.1	298.7	131.1	344.7	177.1	459.7	292.1	574.7	407.1	689.7	522.1	804.7	637.1	
190	2	106.2	133.9	290.6	262.1	490.6	462.1	690.6	662.1	890.6	862.1	1,011	982.1	1,091	1,062	1,291	1,262	1,491	1,462	1,691	1,662	1,891	1,862	
	4	212.5	267.8	181.2	124.2	381.2	324.2	581.2	524.2	781.2	724.2	901.2	844.2	981.2	924.2	1,181	1,124	1,381	1,324	1,581	1,524	1,781	1,724	
	6	318.7	401.7			271.8	186.3	471.8	386.3	671.8	586.3	791.8	706.3	871.8	786.3	1,072	986.3	1,272	1,186	1,472	1,386	1,672	1,586	
	8	424.9	535.6			162.4	48.4	362.4	248.4	562.4	448.4	682.4	568.4	762.4	648.4	962.4	848.4	1,162	1,048	1,362	1,248	1,562	1,448	
	10	531.2	669.5					253.0	110.5	453.0	310.5	573.0	430.5	653.0	510.5	853.0	710.5	1,053	910.5	1,253	1,111	1,453	1,311	
	12	637.4	803.4							343.5	172.6	463.6	292.6	543.6	372.6	743.6	572.6	943.6	772.6	1,144	972.6	1,344	1,173	
210	2	114.2	160.7	362.4	314.5	602.3	554.5	842.3	794.5	1,082	1,034	1,226	1,178	1,322	1,274	1,562	1,514	1,802	1,754	2,042	1,994	2,282	2,234	
	4	228.4	321.3	244.7	149.0	484.7	389.0	724.7	629.0	964.7	868.9	1,109	1,016	1,205	1,109	1,445	1,349	1,685	1,589	1,925	1,829	2,165	2,069	
	6	342.6	482.0			367.1	223.5	607.1	463.5	847.1	703.5	991.1	847.4	1,097	943.4	1,327	1,183	1,567	1,423	1,807	1,663	2,047	1,903	
	8	456.8	642.7			249.5	58.0	489.5	298.0	729.4	538.0	873.4	682.0	969.4	777.9	1,209	1,018	1,449	1,258	1,689	1,498	1,929	1,738	
	10	571.0	803.4					371.8	132.5	611.8	372.5	755.8	516.5	851.8	612.5	1,092	852.4	1,332	1,092	1,572	1,332	1,812	1,572	
	12	685.2	964.0							494.2	207.0	638.2	351.0	734.2	447.0	974.2	686.9	1,214	926.9	1,454	1,167	1,694	1,407	
254	2	238.1	321.3	674.8	589.1	1,135	1,049	1,595	1,509	2,055	1,969	2,331	2,245	2,515	2,429	2,975	2,889	3,435	3,349	3,895	3,809	4,355	4,269	
	4	476.3	642.7	429.5	258.1	889.6	718.2	1,350	1,178	1,810	1,638	2,086	1,914	2,270	2,098	2,730	2,558	3,190	3,018	3,650	3,478	4,110	3,938	
	6	714.4	964.0			644.3	387.2	1,104	847.2	1,564	1,307	1,840	1,583	2,024	1,767	2,484	2,227	2,945	2,687	3,405	3,147	3,865	3,607	
	8	952.5	1,285					859.1	516.2	1,319	976	1,595	1,252	1,779	1,436	2,239	1,896	2,699	2,356	3,159	2,816	3,619	3,276	
	10	1,191	1,607					613.8	185.2	1,074	645	1,350	921	1,534	1,105	1,994	1,565	2,454	2,025	2,914	2,485	3,374	2,945	
	12	1,429	1,928							829	314	1,105	590	1,289	774	1,749	1,234	2,209	1,694	2,669	2,154	3,129	2,614	
255	2	272.2	406.1	880	742	1,460	1,322	2,040	1,902	2,620	2,482	2,968	2,830	3,200	3,062	3,780	3,642	4,360	4,222	4,940	4,802	5,520	5,382	
	4	544.4	812.2	599	323	1,179	903	1,759	1,484	2,339	2,064	2,687	2,412	2,919	2,644	3,499	3,224	4,079	3,804	4,659	4,384	5,239	4,964	
	6	816.6	1,218			899	485	1,479	1,061															



Dimensions

Model	Dimensions (mm)				H	B	Ch	Ch.q	ISO	Air consumption (dm ³)				Weight (kg)			
	90°	120°	180°							SR 90°	90°	DA 120°	180°	SR 90°	90°	DA 120°	180°
33	90	-	-		65	61.5	10	9	F03	-	0.15	-	-	-	0.47	-	-
34	90	-	-		65	61.5	10	9	F04	-	0.15	-	-	-	0.47	-	-
43	116	-	-		65	61.5	10	9	F03/F05	0.10	0.18	-	-	0.66	0.60	-	-
44	116	-	-		65	61.5	10	9	F04	0.10	0.18	-	-	0.66	0.60	-	-
52	133	151	195		74	68.5	10	14	F03/F05	0.13	0.25	0.28	0.46	1.00	0.90	1.10	1.30
63	137	155	200		88	80	10	14	F05/F07	0.21	0.40	0.45	0.74	1.62	1.45	1.70	2.00
75	161	183	237		100	92.5	10	17	F05/F07	0.32	0.60	0.68	1.12	2.45	2.10	2.46	2.90
83	180	205	268		108	99.5	10	17	F05/F07	0.45	0.88	1.00	1.63	2.95	2.50	2.95	3.50
92	209	239	310		117	110.5	14	17	F05/F07	0.62	1.20	1.35	2.25	4.00	3.40	4.00	4.60
110	221	251	322		140	120	14	22	F07/F10	0.98	1.90	2.15	3.52	6.20	5.20	6.10	7.20
118	291	341	421		140	120	20	22	F07/F10	1.40	2.70	3.05	5.00	8.35	7.10	8.00	9.70
127	301	353	453		160	137	20	22	F07/F10	2.00	3.65	4.10	6.80	10.7	9.00	10.0	12.5
143	337	387	488		198	172	20	27	F10/F12	2.50	4.60	6.12	9.20	15.8	12.4	14.0	16.0
160	379	444	570		198	172	28	27	F10/F12	3.80	7.00	8.00	13.0	20.1	16.4	18.8	26.0
190	422	-	-		255	224	28	36	F12/F16	6.50	12.5	-	-	37.8	28.0	-	-
210	468	544	696		255	224	32	36	F14	8.00	15.0	17.0	21.5	39.6	31.8	37.4	49.2
254	609	711	911		302	272	32	46	F16	14.0	27.0	31.5	41.0	70.6	55.5	66.5	79.8
255	689	815	-		302	272	32	46	F16	17.0	32.0	38.0	-	84.3	69.2	77.0	-

SR = Spring-Return DA = Double-Acting

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