

## Stainless Steel Pneumatic actuator

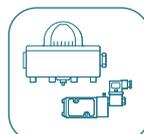
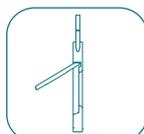
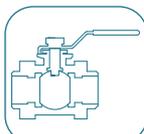
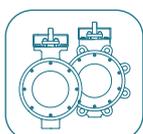


English

Fig.542



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## General specifications

### Specifications

Fig.542 stainless steel pneumatic actuator applies innovative rack and pinion drive mechanism, integrating the latest pneumatic actuator technology and materials. This model is designed as per extensive field mounting and application experience with following product strengths:

- ☆ High performance and high reliability.
- ☆ Fully compliant with the latest international standards and regulations.
- ☆ 100% with factory pressure and leak tested and externally marked with dedicated serial number for traceability.
- ☆ 100% individually boxed with suitable cardboard carton for protection and appropriately labeled in detail for identification.

Housing material:	SS304, SS316
Operating media:	Dry or lubricated air, non-corrosive gas
Operating temperature:	-18°C~+80°C : Standard (NBR O-ring) -40°C~+80°C : Low temperature (Silicone O-ring) -18°C~+150°C : High temperature (FPM O-ring)
Travel adjustment:	Adjustable +5°/-5° by 0° and 90° position
Air supply pressure:	2.5bar~8bar
Lubrication:	Pre-lubricated for life of actuator on assembly under normal operating conditions



**CE SIL**

ATEX, CE and SIL approval for all Coreline pneumatic actuators.

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## Design features

Integrate and compact design utilizes the same body and end caps for the same double acting and spring return models. It also benefits less spare parts inventory and is greatly convenient for customers' field application by adding or removing spring cartridges.

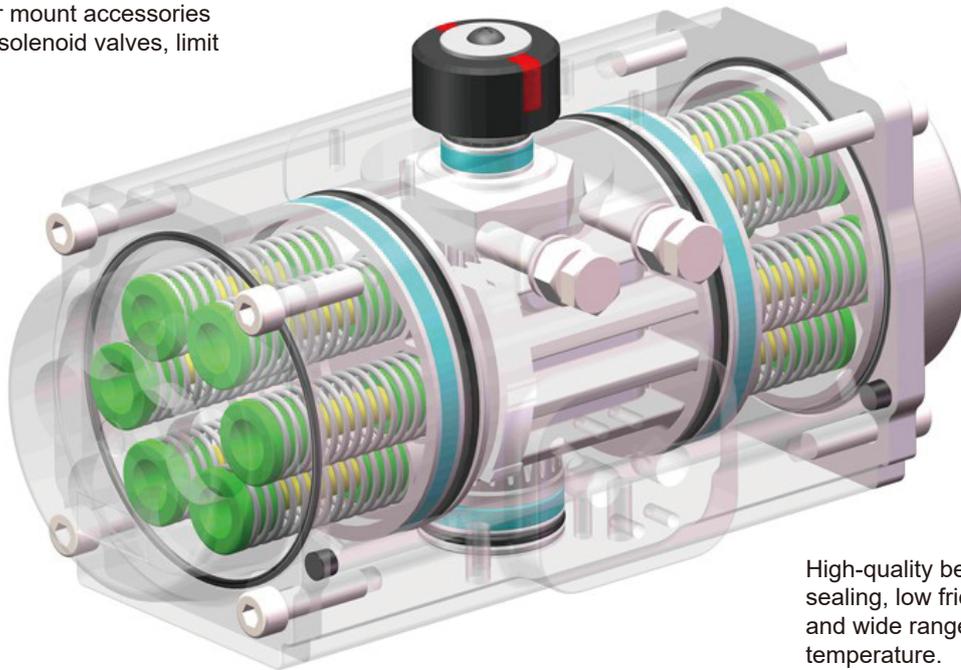
Fully compliant with the latest international standards including ISO5211, DIN3337 and VDI/VDE3845, etc. Fully compliant with NUMAR standard and interchange ability, convenient to replace or mount accessories including solenoid valves, limit switches.

Dual independent travel stoppers can be conveniently and precisely implement  $\pm 5^\circ$  adjustments externally in two directions, allowing actuators in alignment with valve on both the opening and closing phases of the stroke.

The composite bearings and guides on pinion and piston ensure precise operation, low friction and high life cycle, preventing output shaft from fractures.

Rack and pinion tooth in high precision is designed in outstanding tooth profile ratio to realize less clearance, accurate drive and high output power.

Modularized preload spring cartridges with special coating is applicable to a wide range of scenarios with high security and anti-corrosion.



High-quality bearings are of reliable sealing, low friction, high cycle life and wide range of application temperature.

Apply rack and pinion with double pistons in advantages of compact structure, high cycle life, and swift operation. The piston tooth surface processed by CNC machining center performs with optimized gearing efficiency and transmission precision, as well as stable operation and reliable performance. It is convenient to switch rotation direction only by inverting the pistons for symmetrical mounting position design.

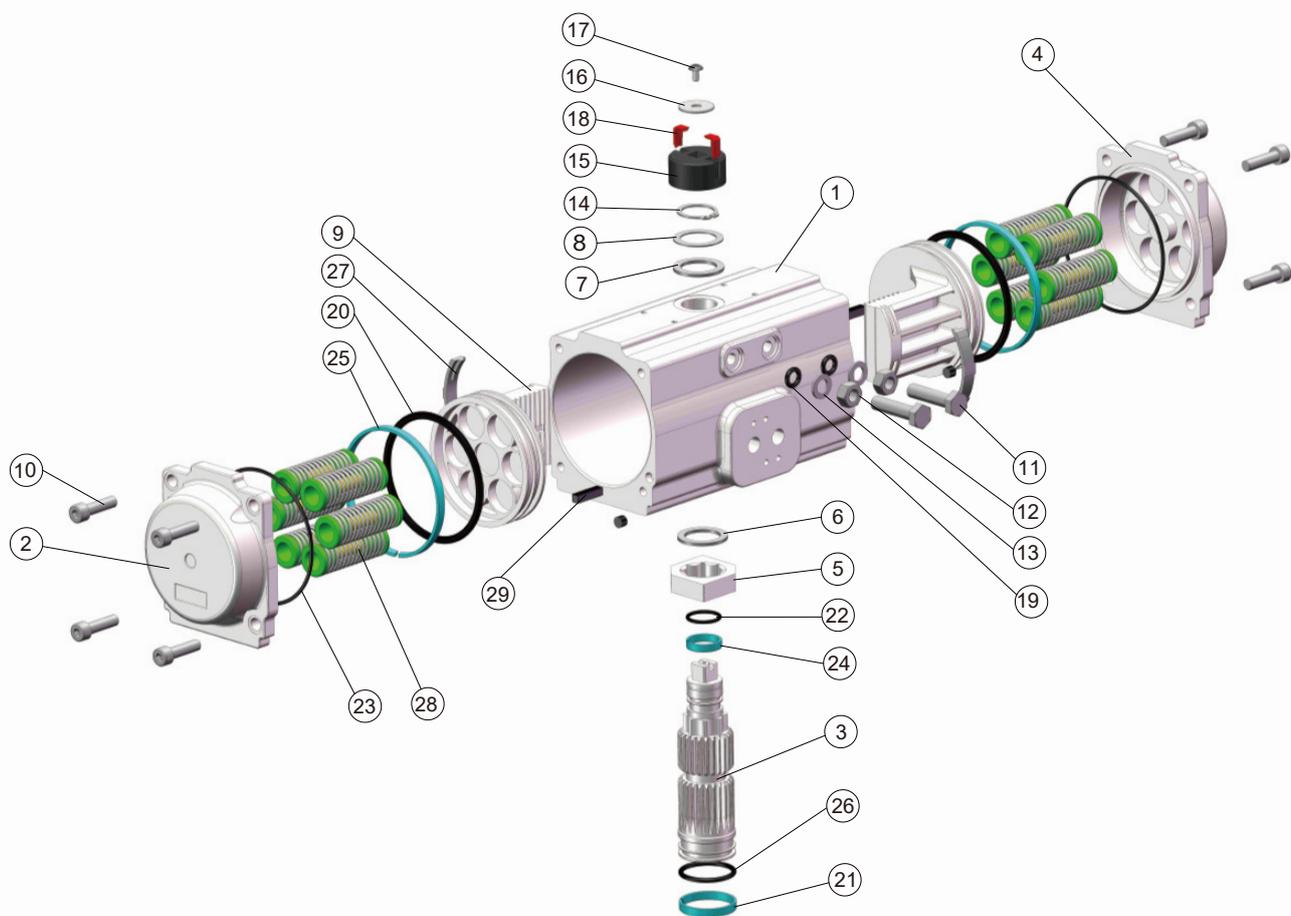
Under normal operating conditions, the safety factor of 20%-30% increase of valve torque should be considered when selecting double-acting actuators.

Under normal operating conditions, the safety factor of 30%-50% increase of valve torque should be considered when selecting single-acting actuators.

All of the internal and external fasteners are made in long term corrosion-resistant stainless steel.

Multifunctional position indicator with slot in compliance with NAMUR standard offers simplicity and clarity for visual indication. Connection to a variety of standard and common sensors can be easily realized.

# Material part list



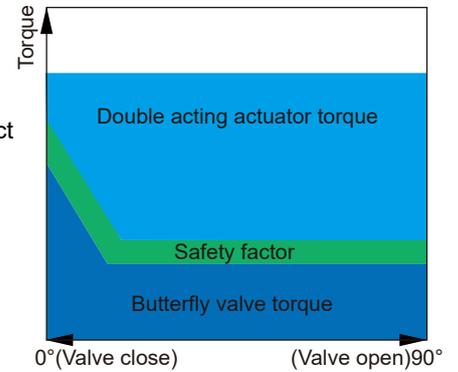
No.	Part name	Qty	Material	No.	Part name	Qty	Material
1	Body	1	Stainless steel	16	Indicator washer	1	Stainless steel
2	Left end cap	1	Stainless steel	17	Indicator screw	1	Stainless steel
3	Pinion	1	Stainless steel	18	Color code	2	Plastic (ABS)
4	Right end cap	1	Stainless steel	19	O-ring (Travel stop)	2	NBR
5	OCTI Cam (Stop arrangement)	1	Stainless steel	20	O-ring (Piston)	2	NBR
6	Washer	1	Polyoxymethylene	21	O-ring (Lower pinion)	1	NBR
7	Washer	1	Polyoxymethylene	22	O-ring (Upper pinion)	1	NBR
8	Thrust washer	1	Stainless steel	23	O-ring (End cap)	2	NBR
9	Piston	2	Stainless steel	24	Bearing (Pinion top)	1	Polyoxymethylene
10	End cap bolt	8	Stainless steel	25	Bearing (Piston)	2	Polyoxymethylene
11	Travel stop	2	Stainless steel	26	Bearing (Pinion bottom)	1	Polyoxymethylene
12	Travel stop nut	2	Stainless steel	27	Plate (Piston)	2	Polyoxymethylene
13	Travel stop washer	2	Stainless steel	28	Spring	0~12	Spring steel
14	Spring clip	1	Spring steel	29	Plug	2	NBR
15	Indicator	1	Plastic (ABS)				

# Double acting - Sizing and output torque

## Sizing - Double acting actuators

Double acting actuator has constant torque over the whole stroke, follow the below instructions to choose the actuator model for correct sizing.

- Define the maximum torque of the valve.
- Multiply the valve torque with a safety factor according to the valve manufacturer advice. Safety factor depends on the valve type and working conditions.
- Look at the column below the actual air supply pressure to find a torque value exact to or exceeding the torque needed.
- Once the torque value is found, move to the left column "Size" to find the required actuator model.



## Sizing example - Double acting actuators

Butterfly valve torque including safety factor: = 67.6Nm (52Nm + 30% safety)

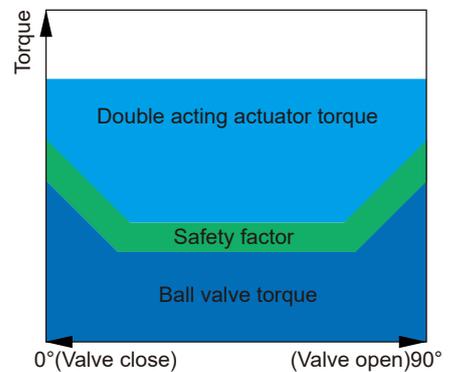
Air supply pressure: = 5bar

**Size 85** produces a minimum output torque of 81.7Nm

Ball valve torque including safety factor: = 728Nm (560Nm + 30% safety)

Air supply pressure: = 6bar

**Size 160** produces a minimum output torque of 802.2Nm



## Output torque of double acting actuators

MODEL	Output torque - Double acting [Nm]									
	Air Supply [bar]									
	2.5	3	3.5	4	4.5	5	5.5	6	7	8
542-65D	19.1	22.9	26.7	30.6	34.4	38.2	42	45.9	53.5	61.2
542-75D	25.2	30.2	35.3	40.3	45.3	50.4	55.4	60.4	70.5	80.6
542-85D	40.8	49	57.2	65.4	73.5	81.7	89.9	98.1	114.4	130.7
542-95D	61.2	73.5	85.7	100	110.2	122.5	134.7	147	171.5	196
542-110D	83.1	99.7	116.4	133	149.6	166.2	182.9	199.5	232.7	266
542-125D	132.5	159	185.5	212	238.6	265.1	291.6	318.1	371.1	424.1
542-140D	219.3	263.2	307.1	351	394.9	438.7	482.6	526.4	614.2	702
542-160D	334.2	401.1	468	534.8	601.7	668.5	735.4	802.2	935.9	1069.6
542-190D	505	606	707	808	909	1010	1111	1212	1414	1616.1
542-210D	658	789.7	921.3	1052.9	1184.5	1316.1	1447.8	1579.4	1842.6	2105.8
542-240D	967	1160.3	1353.7	1547.1	1740.5	1934	2127.3	2320.7	2707.5	3094.3
542-270D	1468.6	1762.3	2056	2349.7	2643.4	2937.2	3230.9	3524.6	4112	4699.5

# Spring return - Sizing

## Sizing - Spring return actuators

Spring return actuator has four different torque values: Air torques at 0° and 90° when pressurized. Spring torques at 90° and 0° when air pressure is discharged. Follow the below instructions to choose the actuator model for correct sizing.

- Define the maximum torque of the valve.
- Multiply the valve torque with a safety factor according to the valve manufacturer advice. Safety factor depends on the valve type and working conditions.
- Look at the column below the actual air supply pressure and column for spring torque and find a size where both torque values are exact to or exceeding the torque needed. It is the lowest torque value which counts for both air and spring torque. Note there is different torque development for ball valves and butterfly valves.
- Once the torque value is found, move to the left column "Size" to find the required actuator model.

## Sizing example - Spring return actuators

**OBS:** Butterfly valve torque is 100% by 0° to 6° angle and 33% from 7° to 90° angle.

Butterfly valve torque including safety factor: = 67.6Nm (52Nm + 30% safety)

Torque by 0° to 6°: = 67.6Nm

Torque by 7° to 90°: = 22.3Nm

Air supply pressure: = 5.5bar

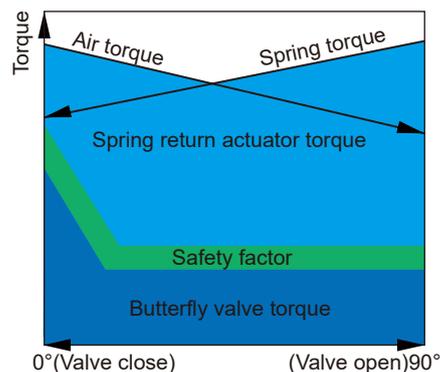
**Size 110 S12** produces minimum required torque as follows:

Air stroke 0°: = 105.4Nm > 67.6Nm

Air stroke 90°: = 59.5Nm > 22.3Nm

Spring stroke 90°: = 123.4Nm > 22.3Nm

Spring stroke 0°: = 77.5Nm > 67.6Nm



Ball valve torque including safety factor: = 728Nm (560Nm + 30% safety)

Air supply pressure: = 6bar

**Size 240 S10** produces minimum required torque as follows:

Air stroke 0°: = 1572.7Nm > 728Nm

Air stroke 90°: = 1134.5Nm > 728Nm

Spring stroke 90°: = 1186.2Nm > 728Nm

Spring stroke 0°: = 748Nm > 728Nm

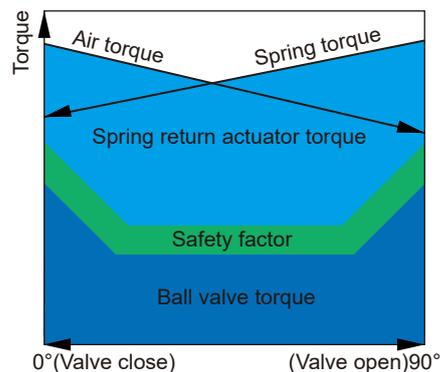
**Size 240 S12** produces minimum required torque as follows:

Air stroke 0°: = 1423.1Nm > 728Nm

Air stroke 90°: = 897.3Nm > 728Nm

Spring stroke 90°: = 1423.4Nm > 728Nm

Spring stroke 0°: = 897.6Nm > 728Nm



# Spring return - Output torque

Model	Output torque - Spring return [Nm]																						
	Air Supply [bar]																				Spring Return		
	2.5		3		3.5		4		4.5		5		5.5		6		7		8				
	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°	
542-50S05	5.8	3.7	7.7	5.6	9.6	7.5	11.5	9.4	13.4	11.3	15.2	13.1	17.1	15.0	19.0	16.9	22.8	20.7	26.6	24.5	5.7	3.6	
542-50S06	5.1	2.6	7.0	4.5	8.9	6.4	10.8	8.3	12.7	10.2	14.5	12.0	16.4	13.9	18.3	15.8	22.1	19.6	25.9	23.4	6.8	4.3	
542-50S07			6.3	1.4	8.2	5.2	10.1	7.1	12.0	9.0	13.8	10.8	15.7	12.7	17.6	14.6	21.4	18.4	25.2	22.2	8.0	5.0	
542-50S08					7.4	4.1	9.3	6.0	11.2	7.9	13.0	9.7	14.9	11.6	16.8	13.5	20.6	17.3	24.4	21.1	9.1	5.8	
542-50S09							8.6	4.8	10.5	6.7	12.3	8.5	14.2	10.4	16.1	12.3	19.9	16.1	23.7	19.9	10.3	6.5	
542-50S10									9.8	5.6	11.6	7.4	13.5	9.3	15.4	11.2	19.2	15.0	23.0	18.8	11.4	7.2	
542-50S11											10.9	6.3	12.8	8.2	14.7	10.1	18.5	13.9	22.3	17.7	12.5	7.9	
542-50S12													12.1	7.0	14.0	8.9	17.8	12.7	21.6	16.5	13.7	8.6	
542-65S05	11.9	7.9	15.7	11.7	19.5	15.5	23.4	19.4	27.2	23.2	31.0	27.0	34.8	30.8	38.7	34.7	46.3	42.3	54.0	50.0	11.2	7.2	
542-65S06	10.2	5.7	14.3	9.5	18.1	13.3	22.0	17.2	25.8	21.0	29.6	24.8	33.4	28.6	37.3	32.5	44.9	40.1	52.6	47.8	13.4	8.6	
542-65S07			12.8	7.2	16.6	11.0	20.5	14.9	24.3	18.7	28.1	22.5	31.9	26.3	35.8	30.2	43.4	37.8	51.1	45.5	15.7	10.1	
542-65S08					15.2	8.8	19.1	12.7	22.9	16.5	26.7	20.3	30.5	24.1	34.4	28.0	42.0	35.6	49.7	43.3	17.9	11.5	
542-65S09							17.6	10.4	21.4	14.2	25.2	18.0	29.0	21.8	32.9	25.7	40.5	33.3	48.2	41.0	20.2	13.0	
542-65S10									20.0	12.0	23.8	15.8	27.6	19.6	31.5	23.5	39.1	31.1	46.8	38.8	22.4	14.4	
542-65S11											22.4	13.6	26.2	17.4	30.1	21.3	37.7	28.9	45.4	36.6	24.6	15.8	
542-65S12													24.7	15.1	28.6	19.0	36.2	26.6	43.9	34.3	26.9	17.3	
542-75S05	16.0	9.1	21.0	14.1	26.1	19.2	31.1	24.2	36.1	29.2	41.2	34.3	46.2	39.3	51.2	44.3	61.3	54.4	71.4	64.5	16.1	9.2	
542-75S06	14.2	5.9	19.2	10.9	24.3	16.0	29.3	21.0	34.3	26.0	39.4	31.1	44.4	36.1	49.4	41.1	59.5	51.2	69.6	61.3	19.3	11.0	
542-75S07			17.3	7.7	22.4	12.8	27.4	17.8	32.4	22.8	37.5	27.9	42.5	32.9	47.5	37.9	57.6	48.0	67.7	58.1	22.5	12.9	
542-75S08					20.6	9.5	25.6	14.5	30.6	19.5	35.7	24.6	40.7	29.6	45.7	34.6	55.8	44.7	65.9	54.8	25.8	14.7	
542-75S09							23.7	11.3	28.7	16.3	33.8	21.4	38.8	26.4	43.8	31.4	53.9	41.5	64.0	51.6	29.0	16.6	
542-75S10									26.9	13.1	32.0	18.2	37.0	23.2	42.0	28.2	52.1	38.3	62.2	48.4	32.2	18.4	
542-75S11											30.2	15.0	35.2	20.0	40.2	25.0	50.3	35.1	60.4	45.2	35.4	20.2	
542-75S12													33.3	16.8	38.3	21.8	48.4	31.9	58.5	42.0	38.6	22.1	
542-85S05	25.8	14.8	34.0	23.0	42.2	31.2	50.4	39.4	58.5	47.5	66.7	55.7	74.9	63.9	83.1	72.1	99.4	88.4	115.7	104.7	26.0	15.0	
542-85S06	22.8	9.6	31.0	17.8	39.2	26.0	47.4	34.2	55.5	42.3	63.7	50.5	71.9	58.7	80.1	66.9	96.4	83.2	112.7	99.5	31.2	18.0	
542-85S07			28.0	12.6	36.2	20.8	44.4	29.0	52.5	37.1	60.7	45.3	68.9	53.5	77.1	61.7	93.4	78.0	109.7	94.3	36.4	21.0	
542-85S08					33.2	15.6	41.4	23.8	49.5	31.9	57.7	40.1	65.9	48.3	74.1	56.5	90.4	72.8	106.7	89.1	41.6	24.0	
542-85S09							38.4	18.6	46.5	26.7	54.7	34.9	62.9	43.1	71.1	51.3	87.4	67.6	103.7	83.9	46.8	27.0	
542-85S10									43.5	21.5	51.7	29.7	59.9	37.9	68.1	46.1	84.4	62.4	100.7	78.7	52.0	30.0	
542-85S11											48.7	24.5	56.9	32.7	65.1	40.9	81.4	57.2	97.7	73.5	57.2	33.0	
542-85S12													53.9	27.5	62.1	35.7	78.4	52.0	94.7	68.3	62.4	36.0	
542-95S05	36.7	24.5	49.0	36.8	61.2	49.0	75.5	63.3	85.7	73.5	98.0	85.8	110.2	98.0	122.5	110.3	147.0	134.8	171.5	159.3	36.7	24.5	
542-95S06	31.8	17.2	44.1	29.5	56.3	41.7	70.6	56.0	80.8	66.2	93.1	78.5	105.3	90.7	117.6	103.0	142.1	127.5	166.6	152.0	44.0	29.4	
542-95S07			39.2	22.1	51.4	34.3	65.7	48.6	75.9	58.8	88.2	71.1	100.4	83.3	112.7	95.6	137.2	120.1	161.7	144.6	51.4	34.3	
542-95S08					46.5	27.0	60.8	41.3	71.0	51.5	83.3	63.8	95.5	76.0	107.8	88.3	132.3	112.8	156.8	137.3	58.7	39.2	
542-95S09							55.9	33.9	66.1	44.1	78.4	56.4	90.6	68.6	102.9	80.9	127.4	105.4	151.9	129.9	66.1	44.1	
542-95S10									61.2	36.8	73.5	49.1	85.7	61.3	98.0	73.6	122.5	98.1	147.0	122.6	73.4	49.0	
542-95S11											68.6	41.8	80.8	54.0	93.1	66.3	117.6	90.8	142.1	115.3	80.7	53.9	
542-95S12													75.9	46.6	88.2	58.9	112.7	83.4	137.2	107.9	88.1	58.8	
542-110S05	50.8	31.7	67.4	48.3	84.1	65.0	100.7	81.6	117.3	98.2	133.9	114.8	150.6	131.5	167.2	148.1	200.4	181.3	233.7	214.6	51.4	32.3	
542-110S06	44.3	21.4	60.9	38.0	77.6	54.7	94.2	71.3	110.8	87.9	127.4	104.5	144.1	121.2	160.7	137.8	193.9	171.0	227.2	204.3	61.7	38.8	
542-110S07			54.5	27.7	71.2	44.4	87.8	61.0	104.4	77.6	121.0	94.2	137.7	110.9	154.3	127.5	187.5	160.7	220.8	194.0	72.0	45.2	
542-110S08					64.7	34.2	81.3	50.8	97.9	67.4	114.5	84.0	131.2	100.7	147.8	117.3	181.0	150.5	214.3	183.8	82.2	51.7	
542-110S09							74.9	40.5	91.5	57.1	108.1	73.7	124.8	90.4	141.4	107.0	174.6	140.2	207.9	173.5	92.5	58.1	
542-110S10									85.0	46.8	101.6	63.4	118.3	80.1	134.9	96.7	168.2	129.9	201.4	163.2	102.8	64.6	
542-110S11											95.1	53.1	111.8	69.8	128.4	86.4	161.6	119.6	194.9	152.9	113.1	71.1	
542-110S12													105.4	59.5	122.0	76.1	155.2	109.3	188.5	142.6	123.4	77.5	

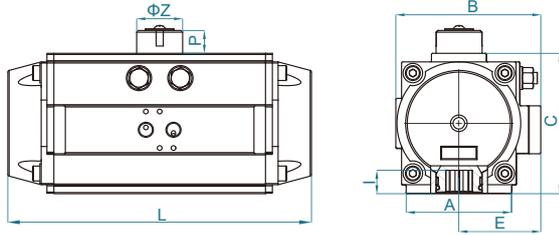
# Spring return - Output torque

Model	Output torque - Spring return [Nm]																					
	Air Supply [bar]																				Spring Return	
	2.5		3		3.5		4		4.5		5		5.5		6		7		8			
	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°		
542-125S05	78.5	53.9	105.0	80.4	131.5	106.9	158.0	133.4	184.6	160.0	211.1	186.5	237.6	213.0	264.1	239.5	317.1	292.5	370.1	345.5	78.6	54.0
542-125S06	67.7	38.2	94.2	64.7	120.7	91.2	147.2	117.7	173.8	144.3	200.3	170.8	226.8	197.3	253.3	223.8	306.3	276.8	359.3	329.8	94.3	64.8
542-125S07			83.4	49.0	109.9	75.5	136.4	102.0	163.0	128.6	1895	155.1	216.0	181.6	242.5	208.1	295.5	261.1	348.5	314.1	110.0	75.6
542-125S08					99.1	59.7	125.6	86.2	152.2	112.8	178.7	139.3	205.2	165.8	231.7	192.3	284.7	245.3	337.7	298.3	125.8	86.4
542-125S09							1148	70.5	141.4	97.1	167.9	123.6	194.4	150.1	220.9	176.0	273.9	229.6	326.9	282.6	141.5	97.2
542-125S10									130.6	81.4	157.1	107.9	183.6	134.4	210.1	160.9	263.1	213.9	316.1	266.9	157.2	108.0
542-125S11											146.3	92.2	172.8	118.7	199.3	145.2	252.3	198.2	305.3	251.2	172.9	118.8
542-125S12													162.0	103.0	188.5	129.5	241.5	182.5	294.5	235.5	188.6	129.6
542-140S05	133.8	85.4	177.7	129.3	221.6	173.2	265.5	217.1	309.4	261.0	353.2	304.8	397.1	348.7	440.9	392.5	528.7	480.3	616.5	568.1	133.9	85.5
542-140S06	116.7	58.6	160.6	102.5	204.5	146.4	248.4	190.3	292.3	234.2	336.1	278.0	380.0	321.9	423.8	365.7	511.6	453.5	599.4	541.3	160.7	102.6
542-140S07			143.5	75.7	187.4	119.6	231.3	163.5	275.2	207.4	319.0	251.2	362.9	395.1	406.7	338.9	494.5	426.7	582.3	514.5	187.5	119.7
542-140S08					170.3	92.9	214.2	136.8	258.1	180.7	301.9	224.5	345.8	268.4	389.6	312.2	477.4	400.0	565.2	487.8	214.2	136.8
542-140S09							197.1	110.0	241.0	153.9	284.8	197.7	328.7	241.6	372.5	285.4	460.3	373.2	548.1	461.0	241.0	153.9
542-140S10									223.9	127.1	267.7	170.9	311.6	214.8	355.4	258.6	443.2	346.4	531.0	434.2	267.8	171.0
542-140S11											250.6	144.1	294.5	188.0	338.3	231.8	429.1	319.6	513.9	407.4	294.6	188.1
542-140S12													277.4	161.2	321.2	205.0	426.0	292.8	496.8	380.6	321.4	205.2
542-160S05	208.7	125.6	275.6	192.5	342.5	259.4	409.3	326.2	476.2	393.1	543.0	459.9	609.9	526.8	676.7	593.6	810.4	727.3	944.1	861.0	208.6	125.5
542-160S06	183.6	83.9	250.5	150.8	317.4	217.7	384.2	284.5	451.1	351.4	517.9	418.2	584.8	485.1	651.6	551.9	785.3	686.6	919.0	819.3	250.3	150.6
542-160S07			225.4	109.1	292.3	176.0	359.1	242.8	426.0	309.7	492.8	376.5	559.7	443.4	626.5	510.2	760.2	643.9	893.9	777.6	292.0	175.7
542-160S08					267.2	134.2	334.0	201.0	400.9	267.9	467.7	334.7	534.6	401.6	601.4	468.4	735.1	602.1	868.8	735.8	333.8	200.8
542-160S09							308.9	159.3	375.8	226.2	442.6	293.0	509.5	359.9	576.3	426.7	710.0	560.4	843.7	694.1	375.5	225.9
542-160S10									350.7	184.5	417.5	251.3	484.4	318.2	551.2	385.0	684.9	518.7	818.6	652.4	417.2	251.0
542-160S11											392.4	209.6	459.3	276.5	526.1	343.3	659.8	477.0	793.5	610.7	458.9	276.1
542-160S12													434.2	234.8	501.0	301.6	634.7	435.3	768.4	569.0	500.6	301.2
542-190S05	309.0	195.0	410.0	296.0	511.0	397.0	612.0	498.0	713.0	599.0	814.0	700.0	915.0	801.0	1016.0	902.0	1218.0	1104.0	1420.1	1306.1	310.0	196.0
542-190S06	269.8	133.0	370.8	234.0	471.8	335.0	572.8	436.0	673.8	537.0	774.0	638.0	875.8	739.0	976.8	840.0	1178.8	1042.0	1380.9	1244.1	372.0	235.2
542-190S07			331.6	172.0	432.6	273.0	533.6	374.0	634.6	475.0	735.6	576.0	836.6	677.0	937.6	778.0	1139.6	980.0	1341.7	1182.1	434.0	274.4
542-190S08					393.4	211.0	494.4	312.0	595.4	413.0	696.4	514.0	797.4	615.0	898.4	716.0	1100.4	918.0	1302.5	1120.1	496.0	313.6
542-190S09							455.2	250.0	556.2	351.0	657.2	452.0	758.2	553.0	859.2	654.0	1061.2	856.0	1263.3	1058.1	558.0	352.8
542-190S10									517.0	289.0	618.0	390.0	719.0	491.0	820.0	592.0	1022.0	794.0	1224.1	996.1	620.0	392.0
542-190S11											578.8	328.0	679.8	429.0	780.8	530.0	982.8	732.0	1184.9	934.1	682.0	431.2
542-190S12													640.6	367.0	741.6	468.0	943.6	670.0	1145.7	872.1	744.0	470.4
542-210S05	380.0	278.0	511.7	409.7	643.3	541.3	774.9	672.9	906.5	804.5	1038.1	936.1	1169.8	1067.8	1301.4	1199.4	1564.6	1462.6	1827.8	1725.8	380.0	278.0
542-210S06	324.4	202.0	456.1	333.7	587.7	465.3	719.3	596.9	850.9	728.5	982.5	860.1	1114.2	991.8	1245.8	1123.4	1509.0	1386.6	1772.2	1649.8	456.0	333.6
542-210S07			400.5	257.7	532.1	389.3	663.7	520.9	795.3	652.5	926.9	784.1	1058.6	915.8	1190.2	1047.4	1453.4	1310.6	1716.6	1573.8	532.0	389.2
542-210S08					476.5	313.3	608.1	444.9	739.7	576.5	871.3	708.1	1003.0	839.8	1134.6	971.4	1397.8	1234.6	1661.0	1497.8	608.0	444.8
542-210S09							552.5	368.9	684.1	500.5	815.7	632.1	947.4	763.8	1079.0	895.4	1342.2	1158.6	1605.4	1421.8	684.0	500.4
542-210S10									628.5	424.5	760.1	556.1	891.8	687.8	1023.4	819.4	1286.6	1082.6	1549.8	1345.8	760.0	556.0
542-210S11											704.5	480.1	836.2	611.8	967.8	743.4	1231.0	1006.6	1494.2	1269.8	836.0	611.6
542-210S12													780.6	535.8	912.2	667.4	1175.4	930.6	1438.6	1193.8	912.0	667.2
542-240S05	593.0	373.9	786.3	567.2	979.7	760.6	1173.1	954.0	1366.5	1147.4	1560.0	1340.9	1753.3	1534.2	1946.7	1727.6	2333.5	2114.4	2720.3	2501.2	593.1	374.0
542-240S06	518.2	255.3	711.5	448.6	904.9	642.0	1098.3	835.4	1291.7	1028.8	1485.2	1222.3	1678.5	1415.6	1871.9	1609.0	2258.7	1995.8	2645.5	2382.6	711.7	448.8
542-240S07			636.7	330.0	830.1	523.4	1023.5	716.8	1216.9	910.2	1410.4	1103.7	1603.7	1297.0	1797.1	1490.4	2183.9	1877.2	2570.7	264.0	830.3	523.6
542-240S08					755.3	404.7	948.7	598.1	1142.1	791.5	1335.6	985.0	1528.9	1178.3	1722.3	1371.7	2109.1	1758.5	2495.9	2145.3	949.0	598.4
542-240S09							873.9	479.5	1067.3	672.9	1260.8	866.4	1454.1	1059.7	1647.5	1253.1	2034.3	1639.9	2421.1	2026.7	1067.6	673.2
542-240S10									992.5	554.3	1186.0	747.8	1379.3	941.1	1572.1	1134.5	1959.5	1521.3	2346.3	1908.1	1186.2	748.0
542-240S11											1111.2	629.2	1304.5	822.5	1498.1	1015.9	1884.7	1402.7	2271.5	1789.5	1304.8	822.8
542-240S12													1229.7	703.9	1423.1	897.3	1809.9	1284.1	2196.7	1670.9	1423.4	897.6
542-270S05	853.0	615.8	1146.7	909.5	1440.4	1203.2	1734.1	1496.9	2027.8	1790.6	2321.6	2084.4	2615.3	2378.1	2909.0	2671.8	3496.4	3259.2	4083.9	3846.7	852.8	615.6
542-270S06	729.9	445.2	1023.6	738.9	1317.3	1032.6	1611.0	1326.3	1904.7	1620.0	2198.5	1913.8	2492.2	2207.5	2785.9	2501.2	3373.3	3088.6	3960.8	3676.1	1023.4	738.7
542-270S07			900.5	568.4	1194.2	862.1	1487.9	1155.8	1781.6	1449.5	2075.4	1743.3	2369.1	2037.0	2662.8	2330.7	3250.2	2918.1	3837.7	3505.6	1193.9	861.8
542-270S08					1071.0	691.5	1364.7	985.2	1658.4	1278.9	1952.2	1572.7	2245.9	1866.4	2539.6	2160.1	3127.0	2747.5	3714.5	3335.0	1364.5	985.0
542-270S09							1241.6	814.7	1535.3	1108.4	1829.1	1402.2	2122.8	1695.9	2416.5	1989.6	3003.9	2577.0	3591.4	3164.5	1535.0	1108.1
542-270S10									1412.2	937.8	1706.0	1231.6	1999.7	1525.3	2293.4	1819.0	2880.8	2406.4	3468.3	2993.9	1705.6	1231.2
542-270S11											1582.9	1061.0	1876.6	1354.7	2170.3	1648.4	2757.7	2235.8	3345.2	2823.3	1876.2	1354.3
542-270S12													1753.5	1184.2	2047.2	1477.9	2634.6	2065.3	3222.1	2652.8	2046.7	1477.4

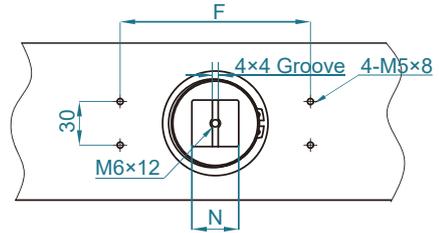


# Dimensions

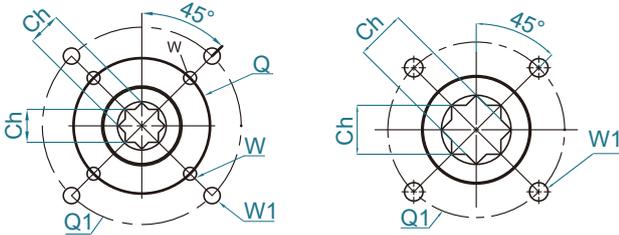
Dimensions



VDI/VDE 3845 Top connection



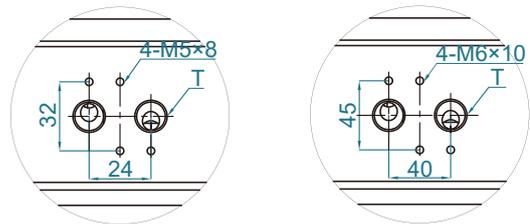
ISO5211 - DIN3337 Bottom view



Size 50-160

Size 190-270

NAMUR air connection



G1/4" : Size 50-210

G1/2" : Size 240-270

SIZE	A	B	C	L	E	F	P	Z	N	I	Top flange	Q	Q1	W	W1	Ch	T
50	46	71	70	151	41.5	80	20	40	10	12	F03/F05	36	50	M5×7.5	M6×9	11×11	G1/4"
65	64	84.5	89	168	46.5	80	20	40	10	16	F05/F07	50	70	M6×9	M8×12	14×14	G1/4"
75	68	98.8	100	182	55	80	20	40	14	16	F05/F07	50	70	M6×9	M8×12	14×14	G1/4"
85	68	109	113	210	59.5	80	20	40	14	19	F05/F07	50	70	M6×9	M8×12	17×17	G1/4"
95	88	118	123	262	63	80	20	40	14	19	F05/F07	50	70	M6×9	M8×12	17×17	G1/4"
110	93	132	136	285	73	80	20	40	14	19	F07/F10	70	102	M8×12	M10×15	17×17	G1/4"
125	96	152	159	320	81	80/130	30	56	22	25	F07/F10	70	102	M8×12	M10×15	22×22	G1/4"
140	110	172	178	401	91	80/130	30	56	22	31	F10/F12	102	125	M10×15	M12×18	27×27	G1/4"
160	112	189	200	459	100	80/130	30	56	22	31	F10/F12	102	125	M10×15	M12×18	27×27	G1/4"
190	136	217	232	495	112	130	30	56	22	41	F10/F14	102	140	M10×15	M16×24	36×36	G1/4"
210	140	236	255	529	122	130	30	80	32.5	40	F14		140		M16×24	36×36	G1/4"
240	160	269	292	618	139	130	30	80	32.5	50	F16		165		M20×25	46×46	G1/2"
270	160	296	331	737	151	130	30	80	32.5	50	F16		165		M20×25	46×46	G1/2"

## Technical data

### Working time, air consumption, weight

Size	Working time				Air consumption		Weight	
	DA		SR		DA / SR		DA	SR
	Open [s]	Close [s]	Open [s]	Close [s]	Open [L]	Close [L]	[kg]	[kg]
50	0.3	0.4	0.9	0.7	0.1	0.15	1.08	1.2
65	0.4	0.4	0.9	0.8	0.22	0.26	1.91	2.15
75	0.4	0.4	0.9	0.9	0.25	0.41	2.41	2.8
85	0.9	0.9	1.0	1.2	0.45	0.61	3.32	3.95
95	0.9	1.0	1.4	1.6	0.95	0.98	4.98	5.8
110	0.9	1.0	1.4	1.6	1.07	1.24	6.63	7.95
125	1.3	1.4	2.4	2.4	1.47	1.86	10.24	12.1
140	1.3	1.4	2.8	3.0	2.13	3.08	15.1	15.93
160	2.0	2.4	4.8	4.9	3.89	4.7	21.3	25.6
190	2.2	2.6	2.4	3.0	6.16	8.59	29.3	33.81
210	2.9	3.8	3.4	4.1	8.22	10.95	37.7	48.4
240	3.2	3.7	3.8	4.0	12.26	16.01	54.2	77.8
270	4.4	4.9	5.0	5.5	17.35	24.83	82	90.6

#### Notice:

(A) The operation time above are measured in following experimental conditions:

1.For model 50-160

(1)Room temperature

(2)Actuator stroke 90°

(3)Solenoid valve with orifice of 4 mm and a flow capacity Qn400L/min

(4)Inside pipe diameter 6 mm

(5) Neutral clean air

(6)Air supply pressure 5.5 bar

(7)Actuator without external resistance load

2.For model 190-270

(1)Room temperature

(2)Actuator stroke 90°

(3)Solenoid valve with orifice of 12 mm and a flow capacity Qn5100L/min

(4)Inside pipe diameter 8 mm

(5)Neutral clean air

(6)Air supply pressure 5.5 bar

(7)Actuator without external resistance load

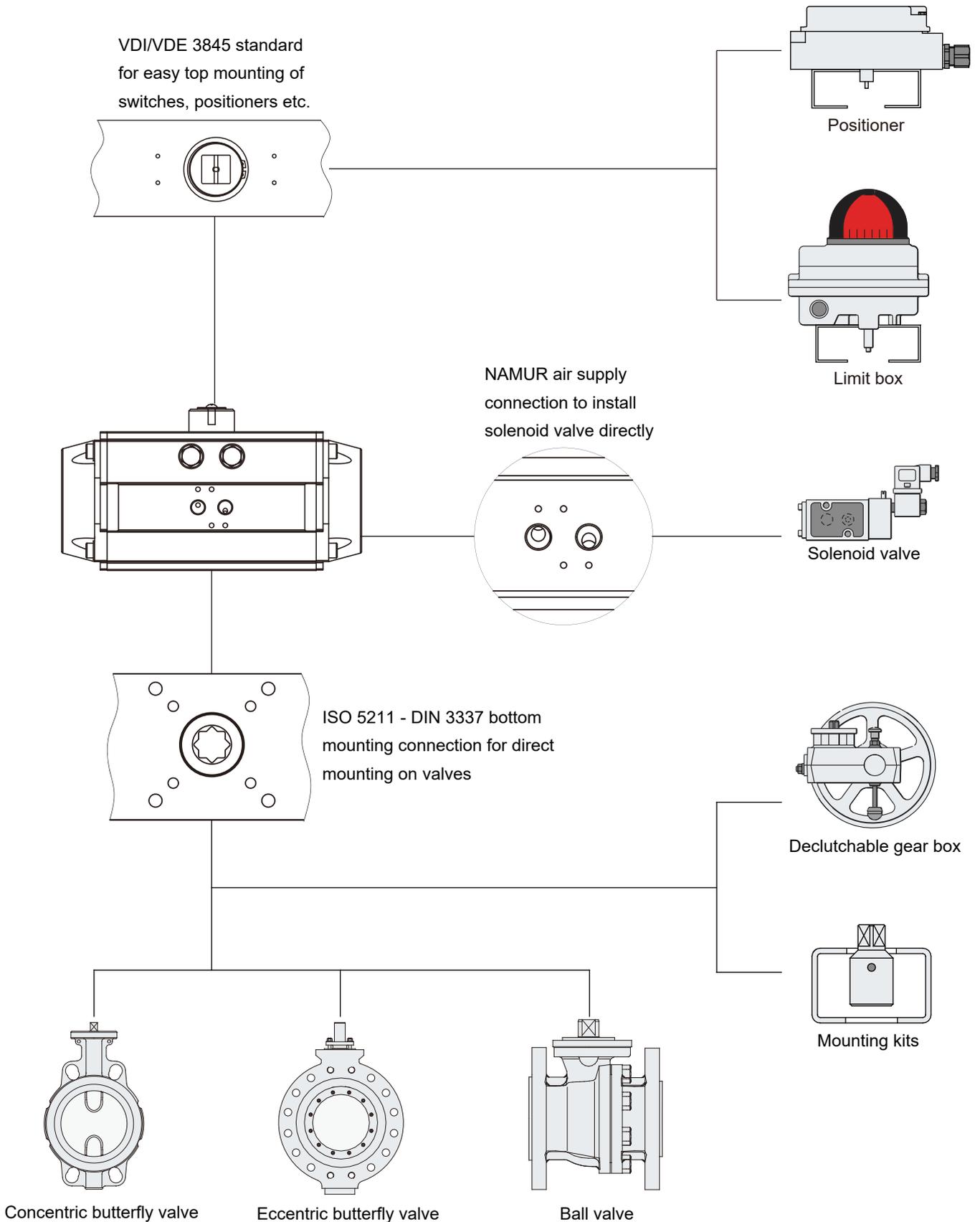
Cautions: Obviously on the field applications when one or more parameters are different from above, the operation time will be different. Air consumption rest with air supply, open/switch stroke, air volume and action cycle times.

To determine standard litre per minute use the following formula:

$$\text{Air consumption (L/min)} = (\text{open+close volume.L}) \times \frac{\text{air supply pressure.Kpa}+101.3}{101.3} \times \text{strokes/min}$$

# Actuator interface for valve automation

## Actuator interface for valve automation and mounting standard





### **Solenoid valve**

- 5/2 and 3/2 NC.
- Single coil and double coil.
- Wide range voltage both for DC and AC.
- Namur connection both for 1/4" and 1/2".



### **Explosion-proof solenoid valve**

- Environmentally-protected structure with explosion-proof Exd II CT6.
- Extruded enclosure with weather proof IP66.
- F class coil of insulation protection.
- SS316 body material available on request.



### **Position switch box**

- Compact design with visual indicator.
- Easy and safe adjustment of limit switch.
- Mechanical switches, proximity sensor.
- 4-20mA current feedback is available with multi-function type.



### **Explosion-proof position switch box**

- Explosion-proof Exd II CT6 or Exd II BT6.
- Compact design with visual indicator.
- Easy and safe adjustment of limit switch.
- Mechanical switches, proximity sensor.



### **Intelligent positioner**

- Full digital control, reliability, stability, small size and light weight.
- Convenient for adjustment by simple buttons.
- Simple function setting, convenient for the transform of positive action and counteraction, valve open and closing.
- Intelligent control. It can give analysis, alarm and optimization when medium fluctuates, span excesses, actuator leakage occurs.



### **Electron-pneumatic positioner**

- High anti-vibration.
- Split-range operation by inputting electrical signals.
- Exquisite design.
- Putting in and out cam is available without disassembling feedback level.
- Convenient for ZREO and SPAN adjustments.
- Convenient for on-side maintenance.

# Coreline

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## CORELINE VALVE CO., LTD.

Add: No.210 Xinyuan Road, Ehu Industrial Park, 214116 Wuxi, China

Phone: +86 510 8852 5336

Http: // www.coreline.dk

E-mail : mail@coreline.cn