

# Pneumatic Actuator PA11/21



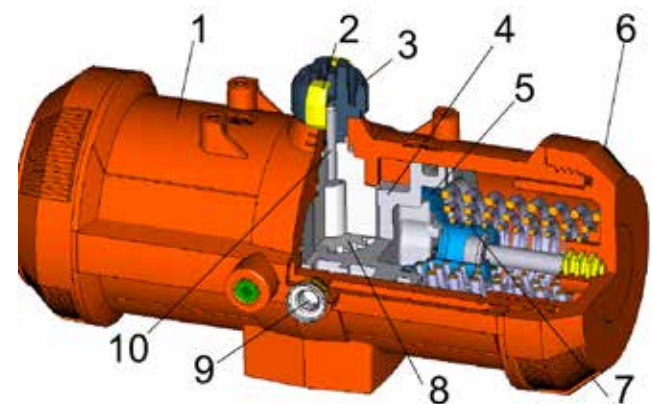
## General

- **Actuator Housing:** Glass-filled PP
- **Control Media:** Compressed air
- **Pneumatic Connection:** G1/8"
- **Cycle Time:** 1-2 sec
- **Stroke:** 90 degrees
- **Action:** FC, FO, DA
- **Max DA Control Pressure:** 101psi
- **Max FC/FO Control Pressure:** 65psi
- **Position Indicator:** Optical, integrated
- **Top Mount:** NAMUR compliant
- **Base Mount:** ISO 5211 compliant
- **Stroke Limiter:** Optional, 45 degrees

## Sample Specification

The PA11 and PA21 Pneumatic Actuators shall be of rack and pinion design with options for fail-safe to close, fail-safe to open and double acting functionalities. The outer housing material of construction shall be glass-filled polypropylene. Actuator end caps shall be threaded over the actuator housing to create a pressure tight seal and secure any spring packs. The actuator top mount shall be NAMUR compliant and feature an optical position indicator with field adjustable tabs with four insert positions stationed 90 degrees apart. The pneumatic connection ports shall be threaded BSP and fail-safe variants shall utilize a pneumatic exhaust port insert. The actuator base mount shall be of standard F0 pattern per DIN ISO 5211 and the drive shall be a Georg Fischer specific spline pattern with options to adapt to standard metric square or double square stem designs. All actuators shall be manufactured under ISO9001 for Quality and ISO14001 for Environmental Management.

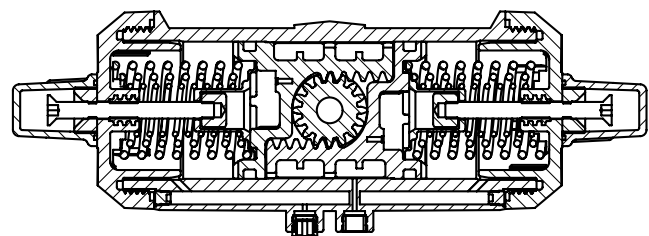
## Components



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Part	Description	Material
1	Actuator housing	Glass-filled PP
2	Position indicator clip	Reinforced thermoplastic
3	Position indicator	Reinforced thermoplastic
4	Rack	Reinforced thermoplastic
5	Spring pack cover	Zinc plated steel
6	Actuator end cap	Glass-filled PP
7	Spring pack	Spring steel
8	Pinion	Reinforced thermoplastic
9	Pneumatic connection	Stainless steel
10	Pinion shaft	Reinforced thermoplastic

## Optional Feature



Fail-safe Close Option Shown

## Stroke Limiter

Both the PA11 and PA21 Pneumatic Actuators are available with stroke limiters in fail-safe to close, fail-safe to open and double acting functionalities. The stroke can be limited up to a maximum of 45 degrees but cannot be extended to positions greater than 90 degrees. PA11 and PA21 Actuators with stroke limiters feature an adjustment screw on either side of the actuator for open/close limitation with a jam nut to secure the adjustment screw and threaded covers.

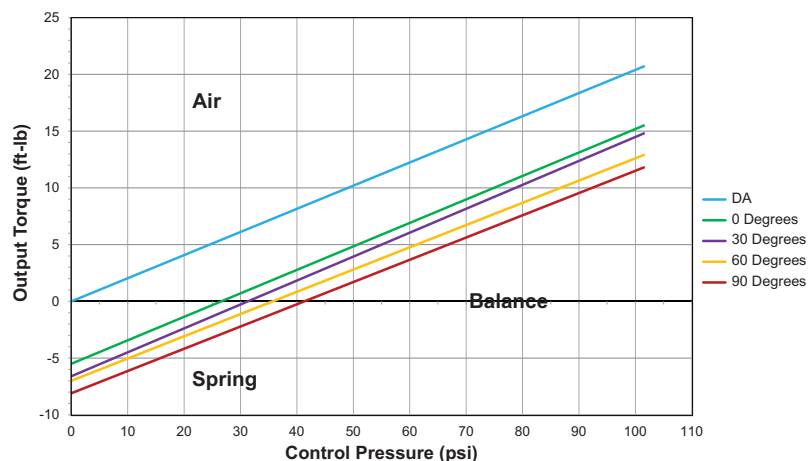
## Actuator Technical Data

	PA 11/21
Actuator Style	Rack and pinion
Control Media	Neutral, non aggressive gases (max. 104°F)
Max. Allowable Control Pressure	100 psi
Pneumatic Connection	1/8" BSP (NPT adapter supplied)
Cycle Time	1-2 seconds
Actuation Angle	90°
Action	Fail-safe close (FC) Fail-safe open (FO) Double acting (DA)
Operating Temperature	14°F - 122°F
Permissible Humidity	0-100%
Position Indicator	Visual
Housing Material	PP-glass filled

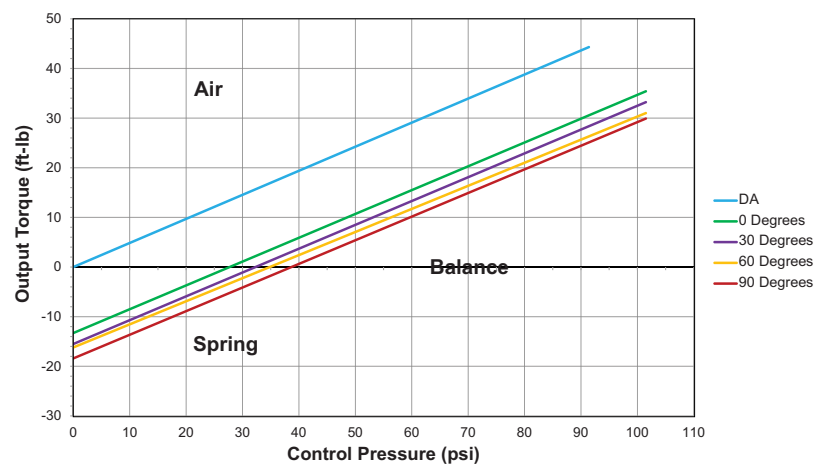
# Technical Data

## Torque Specification

PA11



PA21



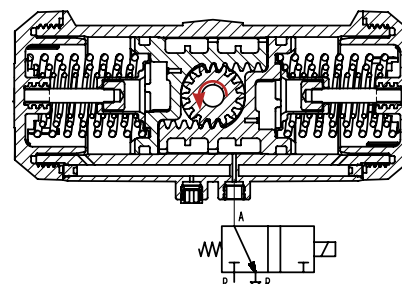
## Control Volume

Type	Action	Rotation	Volume (dm <sup>3</sup> )
PA11	FC	Open	0.15
	FO	Close	0.15
	DA	Open	0.18
	DA	Close	0.15
PA21	FC	Open	0.28
	FO	Close	0.28
	DA	Open	0.35
	DA	Close	0.28

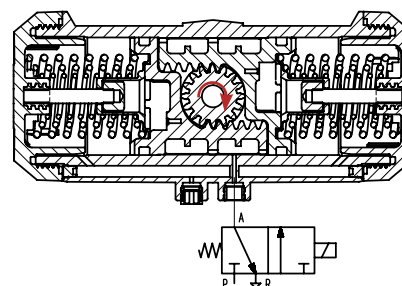
## Control Diagrams

Red arrow indicating rotation direction when actuated.  
Spring return versions shown in fail position. Double acting version shown in closed position. Actuator top view shown.

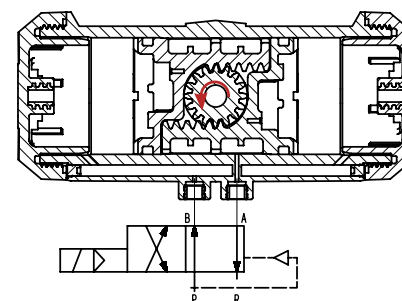
Fail-safe Close: 3/2 Solenoid



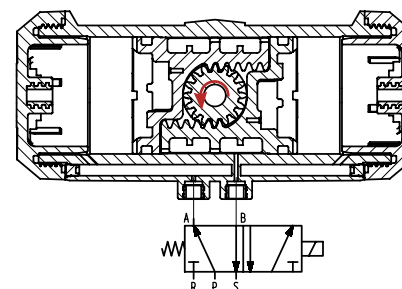
Fail-safe Open: 3/2 Solenoid



Double Acting: 4/2 Solenoid



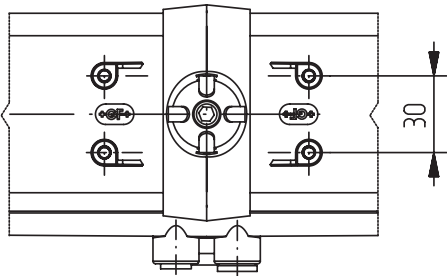
Double Acting: 5/2 Solenoid



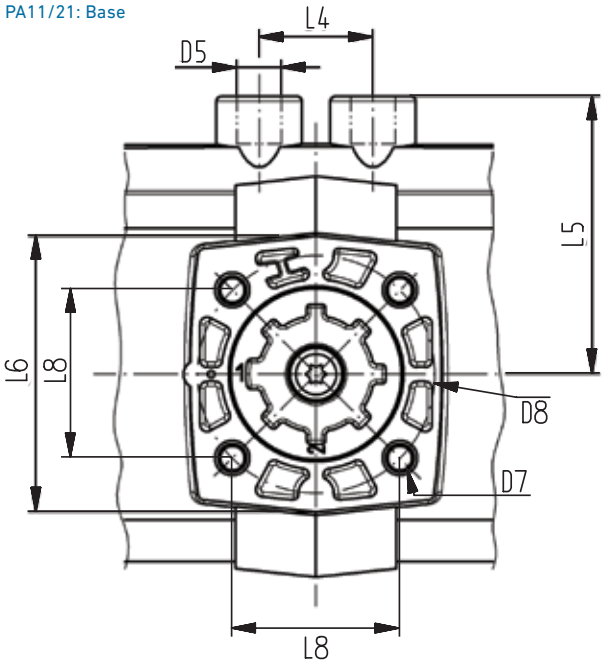
# Dimensions

The following tables are shown in millimeters unless otherwise specified

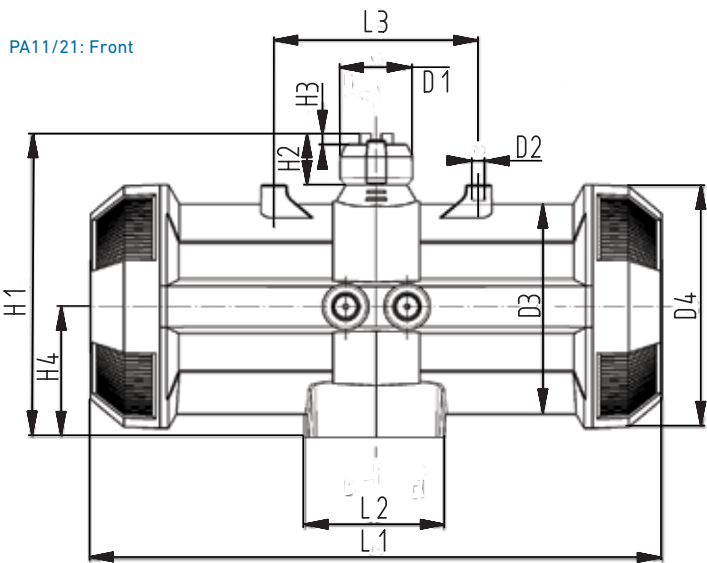
PA11/21: Top Mount



PA11/21: Base



PA11/21: Front



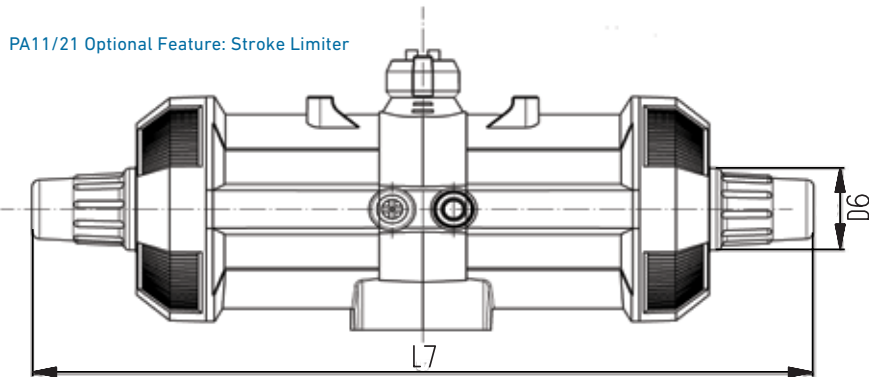
FC/F0/DA

Type	D1	D2	D3	D4	D5	D7	D8	H1	H2	H3	H4
PA11	29	M5	61	74	G $\frac{1}{8}$ "	M5X12.5	42	97	20	4	40
PA21	29	M5	82	94	G $\frac{1}{8}$ "	M6X12.5	50	119	20	4	51

FC/F0/DA

Type	L1	L2	L3	L4	L5	L6	L8
PA11	194	44	80	24	48	54	29.7
PA21	224	55	80	24	58.5	58	35.4

PA11/21 Optional Feature: Stroke Limiter



Stroke Limiter: FC/F0/DA

Type	D6	L7
PA11	35	275
PA21	35	305