AIR TORQUE®

COMPANY PROFILE

CATALOGUE

ALUMINIUM ACTUATOR RANGE

Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

Киргизия (996)312-96-26-47 Казахстан (772)734-952-31 Таджикистан (992)427-82-92-69

Единый адрес для всех регионов: www.airtorque.nt-rt.ru || aqr@nt-rt.ru

AIR TORQUE®

Founded in 1990, Air Torque Spa has become in few years one of the worldwide leading manufacturer of rack and pinion pneumatic actuators.
Since the beginning the mission of the Air Torque Spa has been always to offer innovative products by combining the long filed experience as market leader, the innovational spirit, the well-known reliability in actuator designing and the high quality manufacturing level supported by high level Western Europe components suppliers, and based on an ISO 9000-2008 quality system.
With the attitude to always satisfy the market and customers needs, Air Torque Spa has developed the worldwide widest range of aluminium alloy rack and pinion actuators with torques up to 10.000 Nm and available with different options in terms of valve interfaces, surface protection levels and smart functional features; all covered by several International Patents.
Air Torque Spa has integrated its production of standard actuators with special actuators like 120°, 135° and 180° rotation both double acting and spring returns; 3 position actuators both 90° and 180° rotation, fast acting actuators and hydraulic dampered actuators. A line of rack and pinion stainless steel actuators completes the range of Air Torque Spa lines of products.
Air Torque Spa factory counts nowadays 50 employers on an extension of 5000 square meters, with a yearly production of more than 300.000 actuators.
The sales are covering all the world, from the Americas to Oceania, through a wide network of official distributors, directly to big end-users and directly to big OEM customers.

RANGE

Product Lines	Range
4th Generation Line "Upgrade" Series  	**17 sizes available** with torques up to 10.000 Nm in double acting and up to 4068 Nm for the spring return version, available in 6 different protection levels. Working temperature from -55°C and up to +150°C (Standard from -40°C up to +80°C).
Power Technology Line "B" Series  	**17 sizes available** with torques up to 10.000 Nm in double acting and up to 4068 Nm for the spring return version, available in 6 different protection levels. Working temperature from -55°C and up to +150°C (Standard from -40°C up to +80°C).
Stainless Steel Line "S" Series  	**9 sizes available** with torques up to 1966 Nm in double acting and up to 865 Nm for the spring return version. Working temperature from -55°C and up to +150°C (Standard from -40°C up to +80°C).

ALUMINIUM ACTUATOR RANGE

AIR TORQUE
Product Range

DOUBLE ACTING
from 13,2 Nm to
10.000 Nm at 6 bar

- 100% travel stop limitation
- Lock-out capability

DOUBLE ACTING 90° rotation
- 3 Position actuator 90° rotation
- FAST ACTING
- Hydraulic Damper

DOUBLE ACTING 120° rotation

DOUBLE ACTING 135° rotation

DOUBLE ACTING 180° rotation
- 3 Position actuator 180° rotation

SPRING RETURN
from 8,1 Nm to
4068 Nm with 12 springs

- 100% travel stop limitation
- Lock-out capability

SPRING RETURN 90° rotation
- 3 Position actuator 90° rotation
- FAST ACTING
- Hydraulic Damper

SPRING RETURN 120° rotation

SPRING RETURN 180° rotation
- FAIL MID 180° rotation

FIELDS OF APPLICATION

CHEMICAL	FOOD INDUSTRY	NAVAL
PHARMACEUTICAL	PULP & PAPER	CAR INDUSTRY
REFINERY	WATER TREATMENT	STEEL PLANT

REFERENCES

AALBORG INDUSTRIES	OEGUSSA-EVONIK	LINOE GAS	SAMSUNG TOTAL
AIR LIQUIDE	OUPONT	NESTE OIL	SK ENERGY
AKZONOBEL	ENI	NESTLE	SOLVAY
AURAMARINE	FLSMIOTH	NOVARTIS	TECHNIMONT
BASF	HALTON MARINE	POSCO	THE DOW CHEMICAL COMPANY
BAYER	HYUNOAI HEAVY INDUSTRY	PRAXAIR	TRACTEBEL
CHEMINOVA	JONHSON CONTROLS	REPSOL	VOPAK
DAEWOO SHIPBUILDING	LG PETRO CHEMICAL	SAMSUNG PETRO CHEMICAL	WÄRTSILÄ

The 4th Generation Line pneumatic actuators, Upgrade Series, are the result of the Air Torque mission to offer always innovative products by combining the long field experience as market leader, the innovational spirit, the well-known reliability in actuator designing and the high quality manufacturing level.

The Air Torque experience has produced the following main key features included in the 4th Generation Line, ***U**pgrade Series*:

Reliable and flexible solutions

By combining high quality products, field and design experience, Air Torque is able to satisfy all the customers and market expectations by offering reliable, flexible and customized solutions together with a qualified service.

Innovative Patented Design

The new technical features developed and incorporated in the 4th Generation Line pneumatic actuators, ***U**pgrade Series*, permit to have the best product versatility for an easier and easier valve automation. The Upgrade Series are covered by five International patents.

The most complete range and options

The ***U**pgrade Series* pneumatic actuators are available in:

- Eighteen models
- Spring return and double acting versions
- Torque up to 10.000 Nm
- Six different protection levels
- Low and high temperature constructions
- Large availability of many ISO flanges and drive shaft connections for direct valve automation
- 120°-135°-180° rotation both in double acting and spring return
- 180° spring return Fail-Mid
- 3 Position actuators, 90° and 180° rotation, both double acting and spring return versions
- Fast acting actuators
- Hydraulic damper actuators

High quality level production

The 4th Generation Line pneumatic actuators, ***U**pgrade Series*, have been designed and tested to obtain the highest cycling life and the most reliable performance with very reduced maintenance and service.

International Standard

The 4th Generation Line pneumatic actuators, ***U**pgrade Series*, have been designed, manufactured and tested in full compliance with all the applicable International standards.

Technology and material

The 4th Generation Line pneumatic actuators, ***U**pgrade Series*, are manufactured with the highest material quality, the most accurate material selections and the latest production technologies.

TECHNICAL FEATURES

1. Alodur hard anodized body

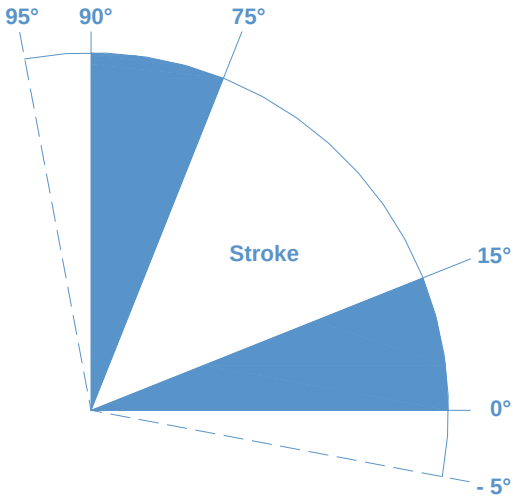
Extruded aluminum body with Alodur special hard anodization applied internally and externally for a complete corrosion protection, a lower friction coefficient and an increased surface hardness for the longest wearing resistance.
Many additional protective coatings are available on the external surface for different environmental working conditions.

2. Pistons design

Dual piston rack and pinion design for compact construction, symmetric mounting position, high-cycle life and fast operation, reverse rotation can be accomplished in the field by simply inverting the pistons. Both pistons are anodized for a better corrosion and wearing resistance.

3. Two independent external travel stop adjustments

As a standard, travel stops allowing adjustment for – 5° up to +15° on the close position, and for + 5° up to -15° on the open position. This allows accurate valve alignment, stroke limitation and provides on actuator a large travel adjustment.



4. Universal and anti-blowout drive shaft

It permits an easy conversion from parallel to diagonal square and vice versa. It is also available in double square; both solutions permit a lower and more flexible inventory.

5. Drive shaft top adaptor

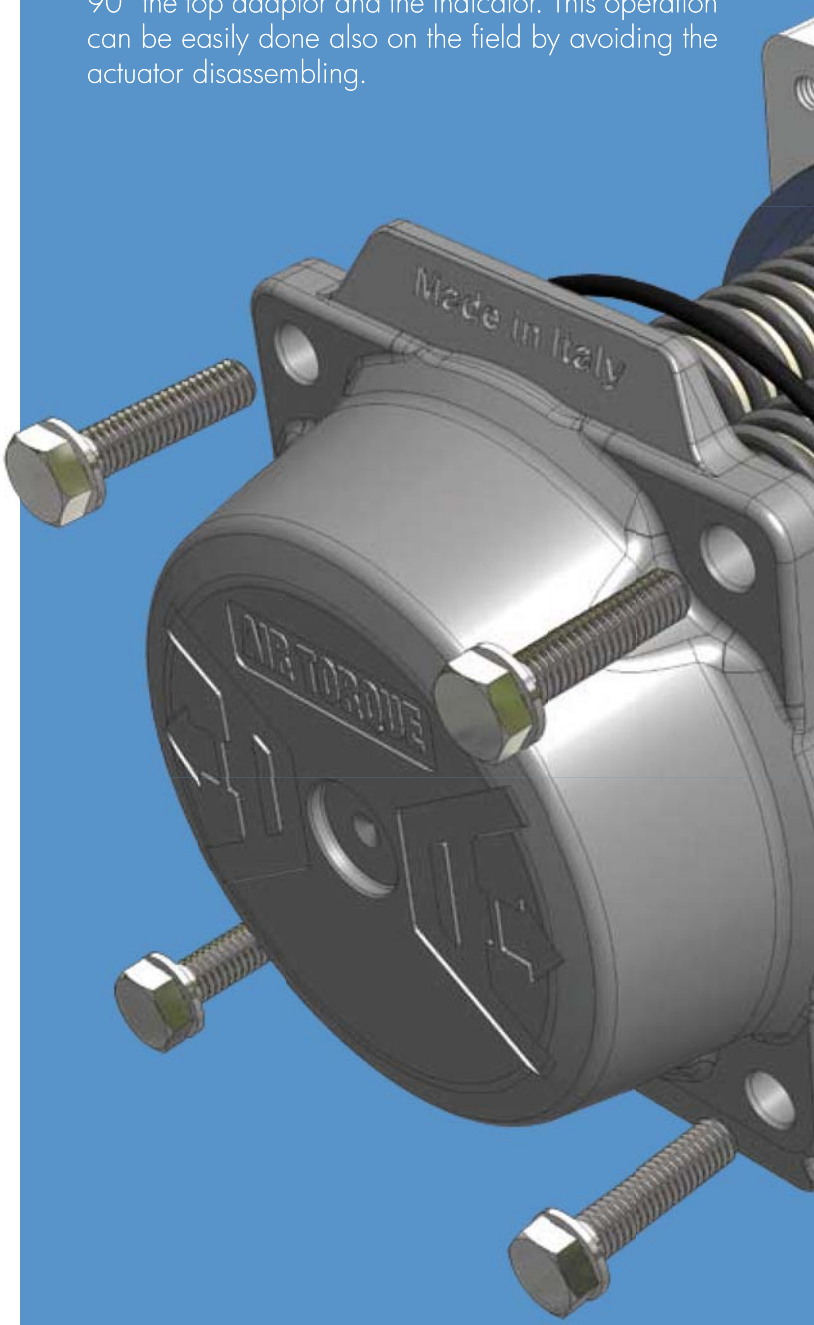
The aluminum top adaptor for ancillary driving/attachment gives a more precise and stable coupling with ancillary stem suitable for higher temperature application. It is suitable and available both for single (diagonal and parallel) and double square drive shafts.

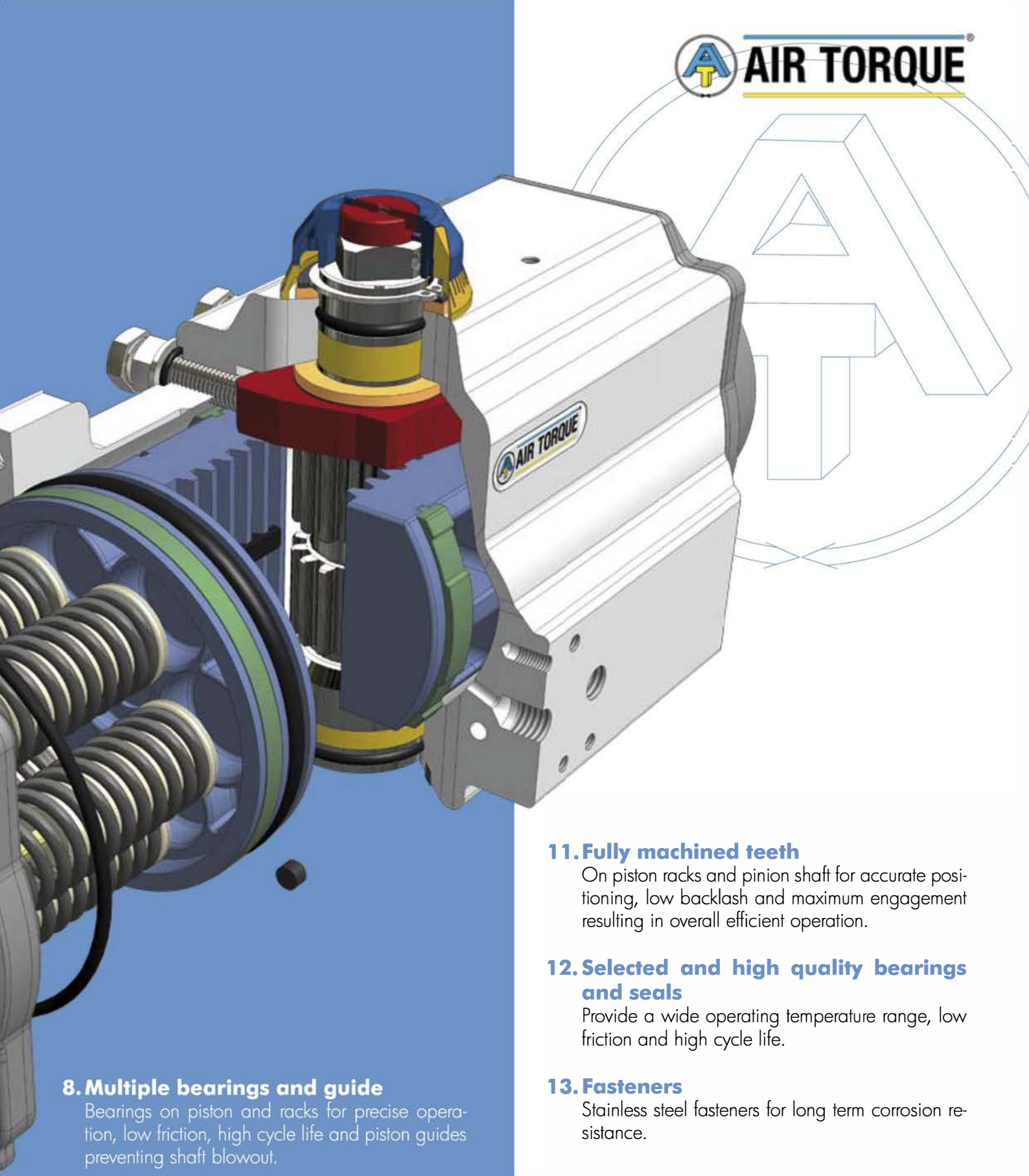
6. One compact and modern design

With identical body and end caps for double acting and spring return model to reduce inventory, allows field conversion, by adding or removing modular spring cartridge.

7. Position indication

The combination of the new top adaptor and the new position indicators allows to achieve easily the correct actuator/valve position indication by just rotating of 90° the top adaptor and the indicator. This operation can be easily done also on the field by avoiding the actuator disassembling.





8. Multiple bearings and guide
Bearings on piston and racks for precise operation, low friction, high cycle life and piston guides preventing shaft blowout.

9. Modular preloaded springs
Cartridge design in high grade coated steel for simple range versatility, greater safety and corrosion resistance.

10. Electroless nickel-plated drive-shaft
Blow-out proof, bearing guided for improved safety and maximum cycle life.

11. Fully machined teeth
On piston racks and pinion shaft for accurate positioning, low backlash and maximum engagement resulting in overall efficient operation.

12. Selected and high quality bearings and seals
Provide a wide operating temperature range, low friction and high cycle life.

13. Fasteners
Stainless steel fasteners for long term corrosion resistance.

14. Full compliance
To specifications ISO 5211, DIN 3337 and VDI/VDE 3845 providing the product interchangeability and the easiest valve automation and accessories installation.

15. Product Identity
Plastic insert with Air Torque logo and unique patented design.

PRODUCT RANGE

Air Torque 4th Generation Upgrade Series based on 18 models

Double Acting
from 13,2 Nm to 9173 Nm at 5,5 bar

- Double Acting 90° rotation
  - 3 Position actuator 90° rotation
  - Fast Acting
  - Hydraulic damper
- Double Acting 120° rotation
- Double Acting 135° rotation
- Double Acting 180° rotation
  - 3 Position actuator 180°rotation

Spring Return
from 8,1 Nm to 4068 Nm with 12 springs

- Spring Return 90°
  - 3 Position actuator 90°rotation
  - Fast Acting
- Spring Return 120°
- Spring Return 180°
  - Fail Mid 180° rotation

THE PRODUCT RANGE INCLUDES ALSO THE FOLLOWING OPTIONS

LOCK-OUT CAPABILITY

In order to permanently lock the actuator in position, the actuator can be supplied with a special locking device by using a padlock and therefore preventing unwanted operation.

100% TRAVEL STOP LIMITATION

When a stroke of less than 90° is required e.g. 1°, 5°, 10°, 25°, 50°, 70° and the standard adjustment is not suitable, the actuator can be supplied with special bolts in both End-Caps to allow stroke adjustment or limitation from 0° to 90° according to customer requirements.

ACTUATOR OPERATING CONDITIONS

1. Operating media

Dry or lubricated air, inert/non-corrosive gases provided that they are compatible with the internal actuator parts

2. Supply pressure

For Double Acting and Spring Return actuators the maximum supply pressure is up to 8 bar (116 PSI), the minimum supply pressure is 2.5 bar (36 PSI).

3. Working Temperature

- Standard actuator construction suitable from – 40°C (-40°F) to +80°C (+176°F)
- High temperature – HT – actuator construction suitable from –15°C (+5°F) to +150°C (+302°F)
- Extreme low temperature – LLT – actuator construction suitable from -55°C (-67°F) to + 80°C (+176°F)

4. Lubrication

Actuators are factory lubricated for life under normal operating conditions.
The standard lubricant is suitable for use from -40°C (-40°F) to +80°C (+176°F)

5. Installation

Actuator suitable both for indoor and outdoor installation.

6. Protection and Corrosion resistance

Air Torque actuators are available in 6 different protection levels suitable for different environmental conditions. For severe duties select from the protection level table or contact AIR TORQUE.

7. Actuator selection and Marking

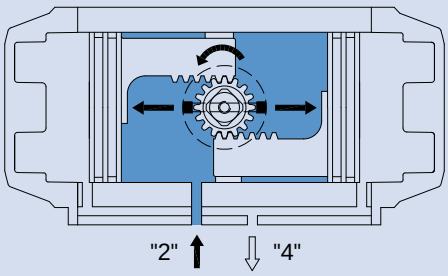
To have a correct actuator selection, the operating conditions have to be evaluated and defined; they will be marked on the actuator identification label.

ACTUATOR FUNCTION and ROTATION

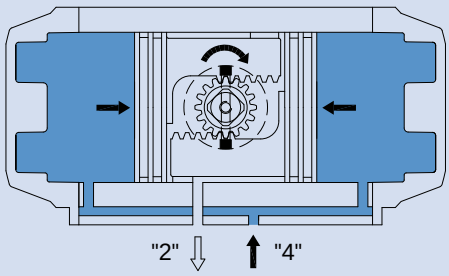
The standard actuator rotation is clockwise to close, a counter-clockwise rotation is achieved when port 2 is pressurized. Non standard actuator rotation is counter-clockwise to close, a clockwise rotation is achieved when port 2 is pressurized. See the technical data-sheet for details.

Double Acting operation function (standard rotation) TOP View:

Air supplied to Port 2 forces the pistons towards the actuator end caps, with the exhaust air exiting from Port 4, a counter-clockwise rotation is achieved.

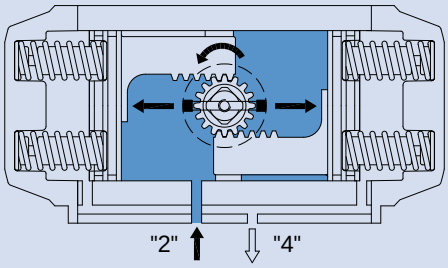


Air supplied to Port 4 forces the pistons inward, exhaust air exits from Port 2, a clockwise rotation is achieved.

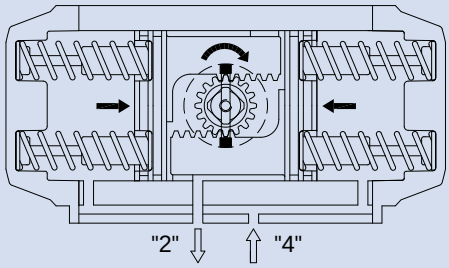


Single Acting operation function (standard rotation) TOP View:

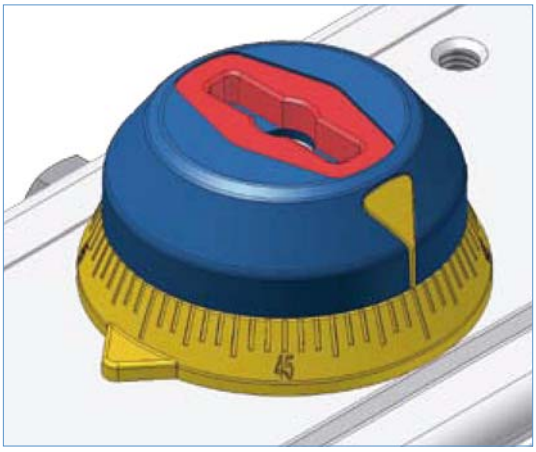
Air supplied to Port 2 forces the pistons toward the actuator end caps, compressing the springs, with the exhaust air exiting from Port 4, a counter clockwise rotation is achieved.



The loss of air pressure (air or electric failure) at Port 2 allows the springs to force the pistons inward with the exhaust air exiting from Port 2, a clockwise rotation is achieved.



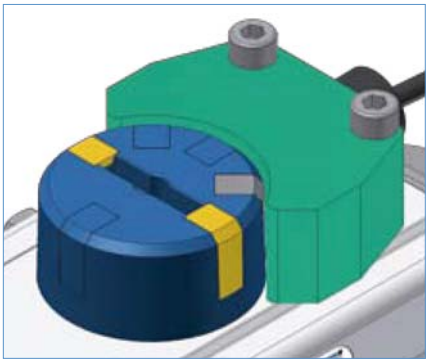
POSITION INDICATOR AND TOP ADAPTOR

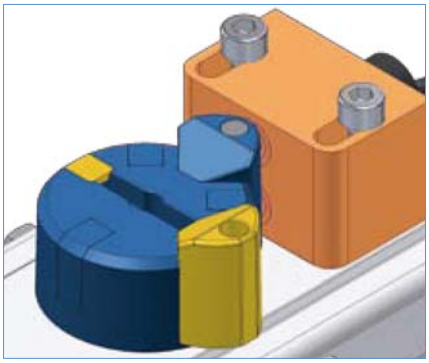


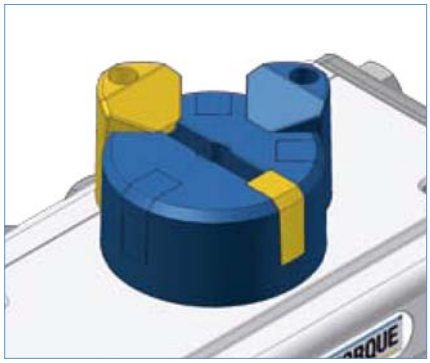
Options available for AT045U and AT101U

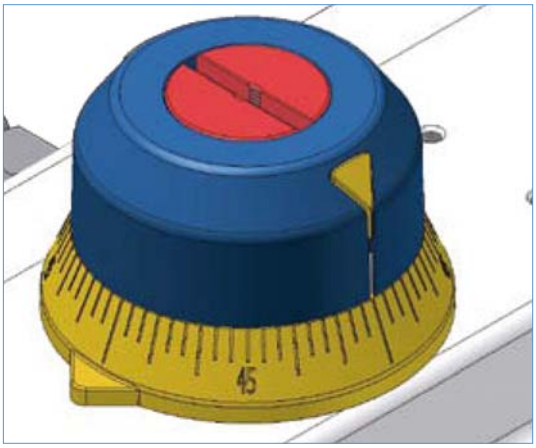
Standard position indicator **with stainless steel insert** for ancillary driving/attachment for a more precise and stable coupling with ancillary stem. A graduated ring is fitted, as a standard, under the position indicator in order to have an accurate position indication.

Optional indicators for direct mounting of sensors (P+F, IFM, etc.) and mechanical limit-switches





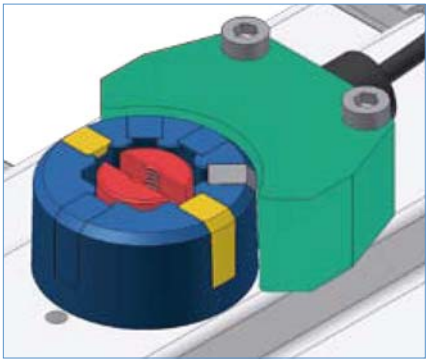


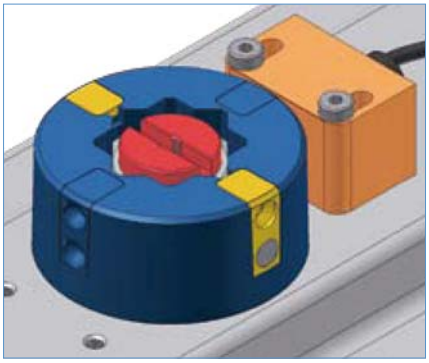


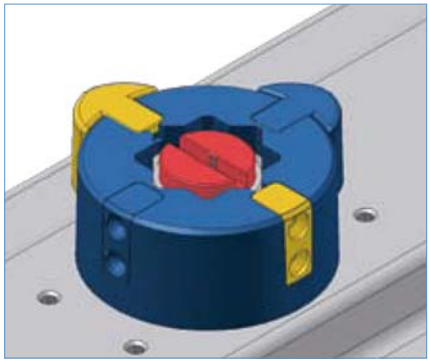
Options available for AT201U and AT1001U

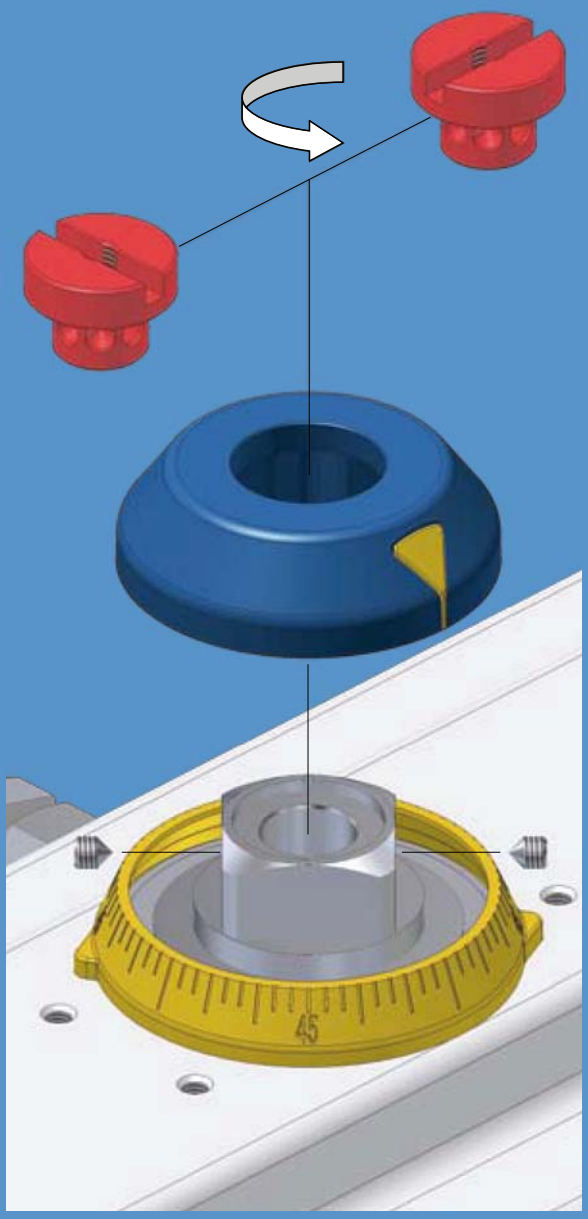
Standard position indicator **with aluminum top adaptor** for ancillary driving/attachment for a more precise and stable coupling with ancillary stem. A graduated ring is fitted, as a standard, under the position indicator in order to have an accurate position indication.

Optional indicators for direct mounting of sensors (P+F, IFM, etc.) and mechanical limit-switches





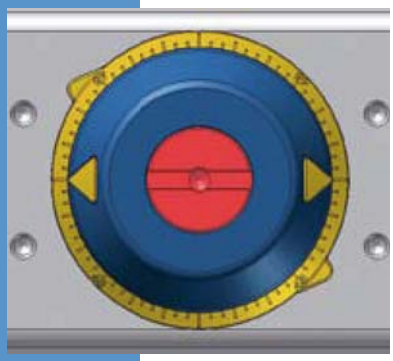




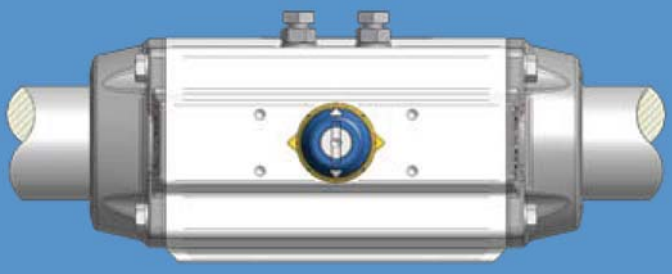
In line and across line actuator installation versatility

The patented design of the top adaptor in combination with the position indicator permits to easily achieve the right actuator/valve position indication since both can be easily fitted in any 45° position.
Therefore during the valve automation it is not necessary to reassemble the drive shaft in order to achieve the correct position indication.

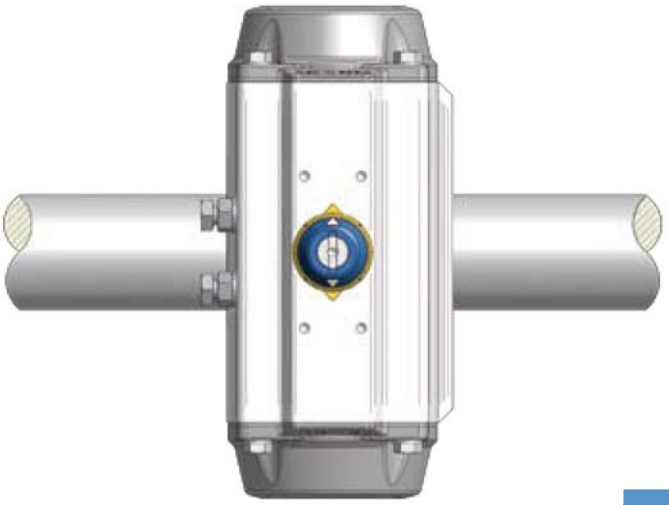
The top adaptor is suitable and available for any drive shaft connections like single square (diagonal and parallel), double square, head flat or key head.



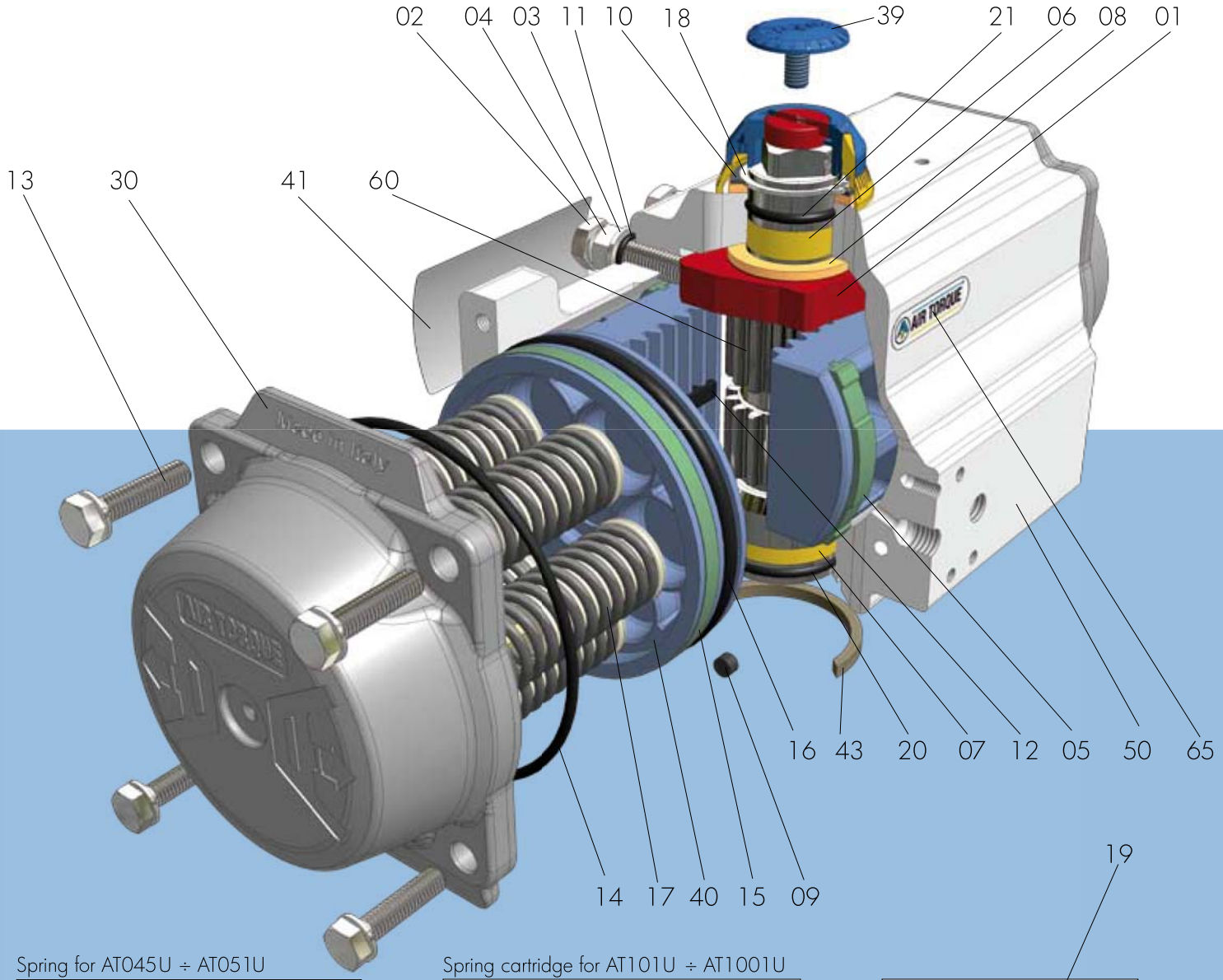
Actuator in close position and IN LINE installation



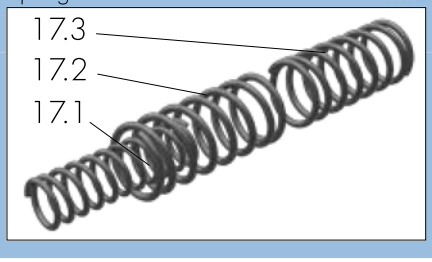
Actuator in close position and ACROSS LINE installation (Top adaptor and position indicator 90° rotated)



PARTS AND MATERIALS



Spring for AT045U ÷ AT051U



Spring cartridge for AT101U ÷ AT1001U

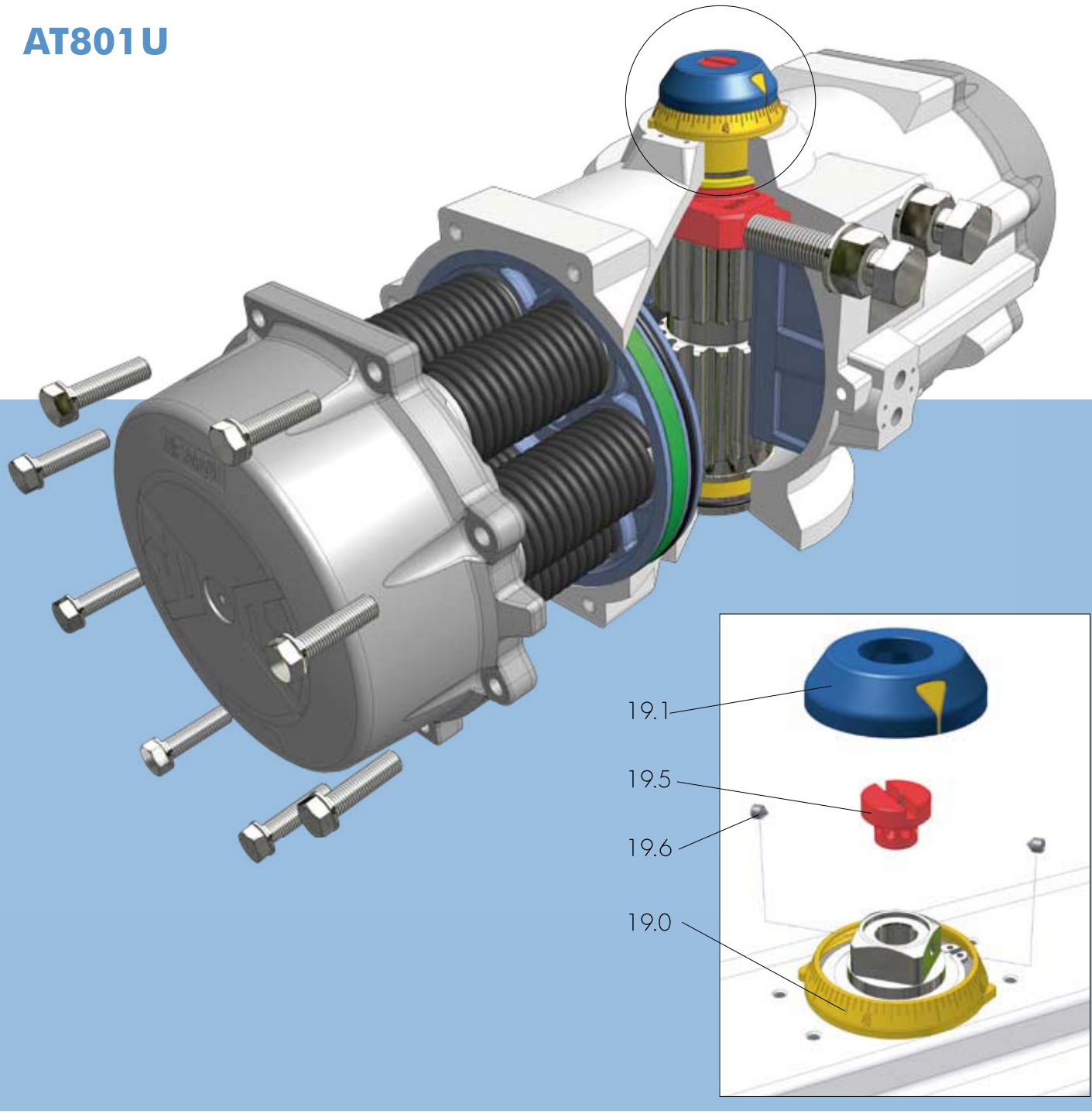
PART N°	Spare Parts	UNIT Q.TY / NOTE		PART DESCRIPTION	STANDARD MATERIAL
01		1	*NA for AT045U*	OCTI-CAM (Stop arrangement)	Stainless Steel *(only for AT051U ÷ AT301U)* Carbon Steel / Nodular Cast Iron, zinc coated
02		2	*NA for AT045U*	STOP CAP SCREW	Stainless Steel
03		2	*NA for AT045U*	WASHER	Stainless Steel
04		2	*NA for AT045U*	NUT (Stop screw)	Stainless Steel
05	○	**2** **4**	 *for AT1001U*	**BEARING (Piston back)**	High-grade polymers
06	○	**1**		**BEARING (Pinion top)**	High-grade polymers
07	○	**1**		**BEARING (Pinion bottom)**	High-grade polymers
08	○	**2**	*1 Pc. for AT045U*	**THRUST BEARING (Pinion)**	High-grade polymers
09	○ □	**2**		**PLUG**	M-NBR / Silicone
09.1	○ □	**2**	*for AT801U ÷ AT1001U*	**"O-RING" PLUG**	M-NBR / Silicone
10		1		THRUST WASHER (Pinion)	Stainless Steel
11	○ □	**2**	*NA for AT045U*	**"O" RING (Stop screw)**	M-NBR
12		2	*NA for AT045U*	PISTON GUIDE	High-grade polymers

○ Parts included in Complete spare parts kit

□ Parts included in "O" ring spare parts kit

AIR TORQUE

AT801U



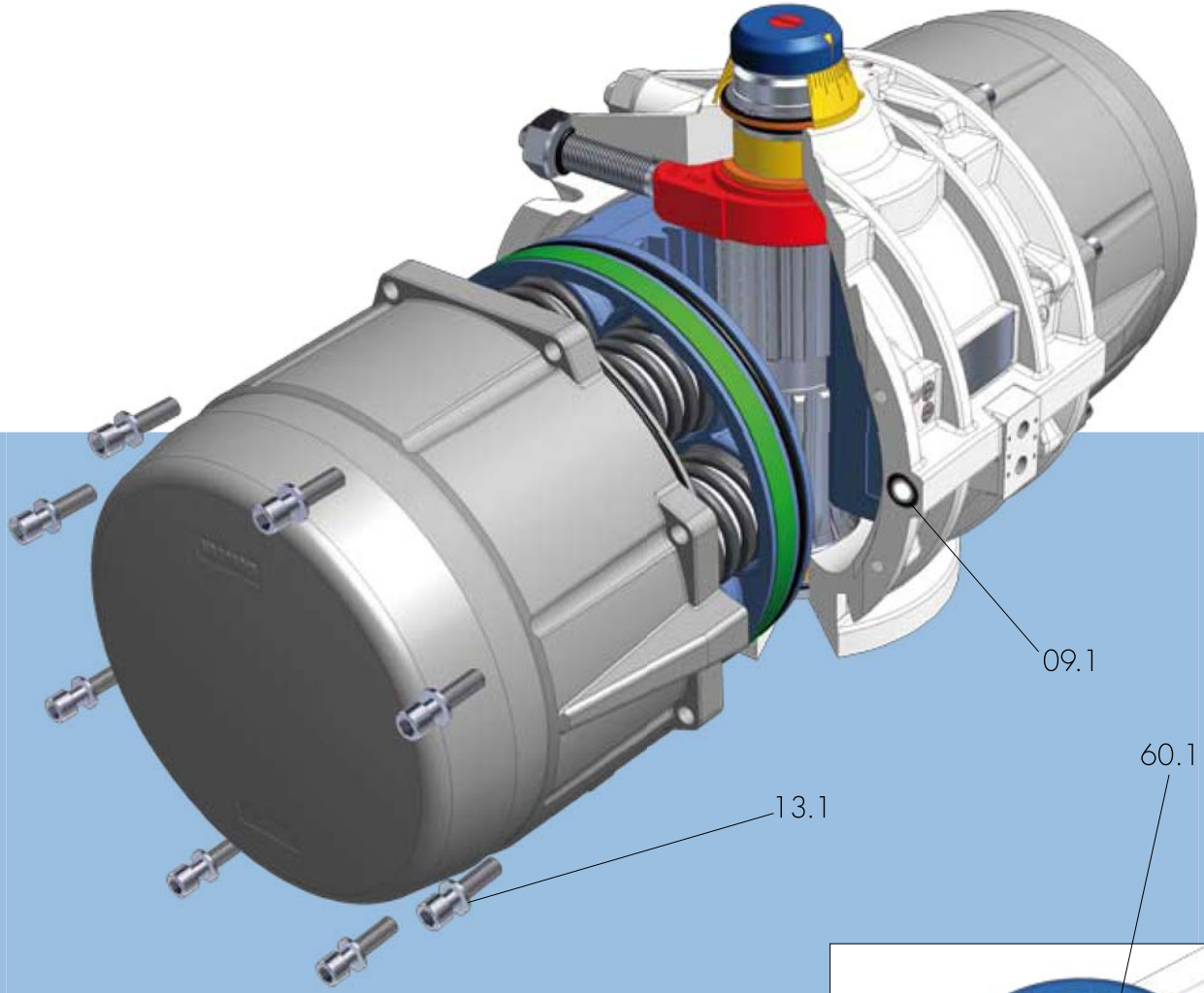
PART N°	Spare Parts	UNIT Q.TY / NOTE		PART DESCRIPTION	STANDARD MATERIAL
13		8	*for AT045U ÷ AT651U*	CAP SCREW (End cap)	Stainless Steel
		12	*for AT701U ÷ AT751U*		
		16	*for AT801U ÷ AT1001U*		
13.1		16	*for AT1001U*	WASHER (Cap Screw end cap)	Stainless Steel
14	○ □	**2**		**"O" RING (End cap)**	M-NBR
15	○	**2**		**BEARING (Piston head)**	High-grade polymers
16	○ □	**2**		**"O" RING (Piston)**	M-NBR
17		max. 12	*for AT101U ÷AT1001U*	SPRING (Cartridge)	SiCr Spring alloy Steel coated
17.1		max. 2	*for AT045U ÷AT051U*	SPRING	
17.2				SPRING	
17.3				SPRING	
18		1		SPRING CLIP (Pinion)	Spring Steel, ENP
19		1	*for AT045U ÷ AT101U*	POSITION INDICATOR	High-grade polymers / Stainless Steel
19.0		1		GRADUATED RING	High-grade polymers
19.1		1	*NA for AT045U ÷AT101U*	POSITION INDICATOR	High-grade polymers
19.5		1	*NA for AT045U ÷AT101U*	TOP ADAPTOR	Extruded Aluminium alloy, anodized
19.6		2	*NA for AT045U ÷AT101U*	HEX. SOCKET SCREW (Top Adaptor)	Stainless Steel

○ Parts included in Complete spare parts kit

□ Parts included in "O" ring spare parts kit

AIR TORQUE

AT1001U



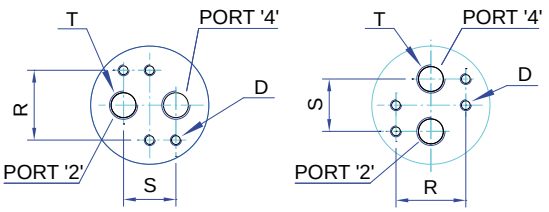
PART N°	Spare Parts	UNIT Q.TY / NOTE		PART DESCRIPTION	STANDARD MATERIAL
20	○ □	**1**		**"O" RING (Pinion bottom)**	M-NBR
21	○ □	**1**		**"O" RING (Pinion top)**	M-NBR
30		2		END CAP	Pressure Die Cast Aluminium alloy, anodized and coated Cast Aluminium alloy, anodized and coated *(for AT1001U)*
39		1		CAP SCREW (Indicator)	High-grade polymers
40		2		PISTON	Pressure Die Cast Aluminium alloy, anodized Cast Aluminium alloy, anodized *(for AT1001U)*
41		1		ACTUATOR IDENTIFICATION LABEL	Polyester-Silver
42		2	*only for AT045U, AT751U and AT1001U*	END CAP LABEL	Polyester-Silver
43		1		SPIGOT (Only on request)	Extruded Aluminium alloy, anodized
50		1		BODY	Extruded Aluminium alloy, coated Cast Aluminium alloy, coated *(for AT801U and AT1001U)*
60		1		DRIVE SHAFT	Extruded Aluminium alloy, anodized *(for AT045U and AT1001U)* Steel, ENP
60.1		1	*only for protection level "E"and "F"*	INTEGRAL DRIVE SHAFT	Stainless Steel, ENP
65		1		PLASTIC INSERT	High-grade polymers

○ Parts included in Complete spare parts kit

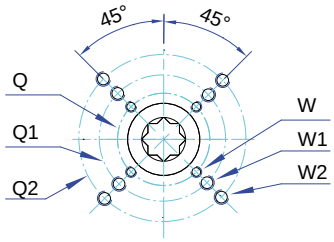
□ Parts included in "O" ring spare parts kit

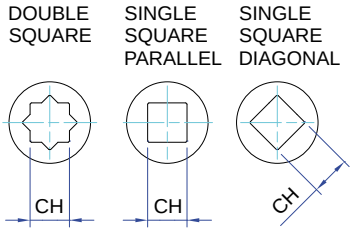
DIMENSIONS AND TECHNICAL DATA

AIR CONNECTION VDI/VDE 3845



BOTTOM VIEW ISO 5211





DIMENSIONS IN mm

ACTUATOR MODEL	AT045U D/S	AT051U D/S	AT101U D/S	AT201U D/S	AT251U D/S	AT301U D/S	AT351U D/S	AT401U D/S	AT451U D/S	AT501U D/S	AT551U D/S	AT601U D/S	AT651U D/S	AT701U D/S	AT751U D/S	AT801U D/S	AT1001U D/S
A	118	135,5	153,5	203,5	241	259	304	333	394,5	422,5	474	528	605	710	812	855	950
B	66	69	85	102	115	127	145	157	177	196	220,5	245	298,5	330	383	410	518
C	62	71	84,5	93	106	118,5	136	146,5	166	181	200	221,5	262	330	371	418	528
D	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M6x10	M6x10	M6x10	M6x10	M6x10
E	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M6x10
F	80	80	80	80	80	80	80	80	80	80	130	130	130	130	130	130	200
G	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	50
N	11	11	11	17	17	17	27	27	27	27	36	36	36	36	36	36	36
P	15/20	20	20	20	20	20	30	30	30	30	50	50	50	50	50	50	80
R	32	32	32	32	32	32	32	32	32	32	32	32	45	45	45	45	45
S	24	24	24	24	24	24	24	24	24	24	24	24	40	40	40	40	40
T ISO 228	1/8"	1/8"	1/8"	1/8"	1/8"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"	1/2"	1/2"	1/2"	1/2"
Ø Z1	42	42	42	42	42	42	58	58	67,5	67,5	80	80	115	115	115	115	135
ISO Flange	F04	F04	F05 + F07	F05 + F07	F05 + F07	F07 + F10	F07 + F10	F07 + F10	F10 + F12	F10 + F12	F14	F14	F16	F16	F16	F16 + F25	F16 + F25 + F30
Q	42	42	50	50	50	70	70	70	102	102	140	140	165	165	165	165	165
Q1	-	-	70	70	70	102	102	102	125	125	-	-	-	-	-	254	254
Q2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	298
W	M5	M5	M6	M6	M6	M8	M8	M8	M10	M10	M16	M16	M20	M20	M20	M20	M20
W1	-	-	M8	M8	M8	M10	M10	M10	M12	M12	-	-	-	-	-	M16	M16
W2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M20

OPTIONAL ISO Flange		F03	F03 + F05 - -	F03 + F05 F04 + F07 F05	F05 F04 + F07 -	F07	F05 + F07 F07 -	F10	F10	F12	F12	F10 + F12	F10 + F12	F12 F14 -	F12 F14 -	F14 F16 + F25 -	F25	F30
CH x l min.	D	-	9 x 11	9 x 11	11 x 12	11 x 12	14 x 16	14 x 16	17 x 19	22 x 24	22 x 24	22 x 24	22 x 24	27 x 29	27 x 29	55 x 59	55 x 59	75 x 80
		-	11 x 12	14 x 16	14 x 16	14 x 16	17 x 19	22 x 24	27 x 29	27 x 29	27 x 29	36 x 39	36 x 39	46 x 49	46 x 49	-	-	-
		-	-	-	17 x 19	17 x 19	22 x 24	-	-	-	-	-	-	-	-	-	-	-
	DS	9 x 11	11 x 12	11 x 12	14 x 16	17 x 19	17 x 19	17 x 19	22 x 24	27 x 29	27 x 29	27 x 29	27 x 29	36 x 39	36 x 39	46 x 49	46 x 49	55 x 59
		11 x 12	-	14 x 16	17 x 16	-	22 x 24	22 x 24	27 x 29	-	-	36 x 39	36 x 39	46 x 49	46 x 49	55 x 59	55 x 59	75 x 80

TECHNICAL DATA (METRIC UNIT)

METRIC	MODEL TYPE	AT045U D	AT045U S	AT051U D	AT051U S	AT101U D	AT101U S	AT201U D	AT201U S	AT251U D	AT251U S	AT301U D	AT301U S	AT351U D	AT351U S	AT401U D	AT401U S	AT451U D	AT451U S	AT501U D	AT501U S	AT551U D	AT551U S	AT601U D	AT601U S	AT651U D	AT651U S	AT701U D	AT701U S	AT751U D	AT751U S	AT801U D	AT801U S	AT1001U D	AT1001U S
Opening Time	(Sec.)	0,15	0,2	0,2	0,25	0,25	0,3	0,3	0,4	0,4	0,5	0,5	0,7	0,7	0,9	0,9	1,2	1,2	1,5	1,5	1,8	2	2,4	2,7	3,5	3,5	4,1	4	4,5	5	6	6	7,5	8	10
Closing Time	(Sec.)	0,2	0,25	0,25	0,3	0,3	0,35	0,35	0,5	0,5	0,6	0,6	0,9	0,8	1,1	1,1	1,4	1,4	1,8	1,7	2,1	2,2	2,8	3,2	4	4	4,6	4,5	5	6	7	7	8,5	9	11
Air Volume Opening	(L)	0,06		0,09		0,16		0,31		0,51		0,71		1,19		1,54		2,41		3,14		4,26		5,94		10		14,5		20		25		49	
Air Volume Closing	(L)	0,1		0,15		0,26		0,49		0,78		1,11		1,8		2,34		3,78		4,92		6,89		9,46		15,2		21,4		33		40		84	
Approximate Weight	(Kg)	0,75	0,9	1,1	1,3	1,6	1,8	2,7	3	3,8	4,4	5,2	6	8,1	9,4	10	12,4	14,2	17,1	17,8	21,4	24,3	32,7	34,3	43,6	54,6	69	76,3	95,5	118	150	127	169	170	238

Note: (A) The above moving times of the actuator are obtained in the following test conditions:
For model AT045U ÷ AT501U: (1) Room Temperature, (2) Actuator Stroke 90° , (3) Solenoid Valve with Orifice Of 4 mm and a flow capacity Qn 400L/min., (4) Inside pipe diameter 8 mm, (5) Medium clean air, (6) Air supply pressure 5,5 bar (79,75 Psi), (7) Actuator without external resistance load.

For model AT551U ÷ AT1001U: (1) Room Temperature, (2) Actuator Stroke 90° , (3) Solenoid Valve with Orifice Of 11 mm and a flow capacity Qn 6000L/min., (4) Inside pipe diameter 11 mm, (5) Medium clean air, (6) Air supply pressure 5,5 bar (79,75 Psi), (7) Actuator without external resistance load.

Cautions: obviously on the field applications when one or more of the above parameter are different, the moving time will be different.

DIMENSIONS AND TECHNICAL DATA

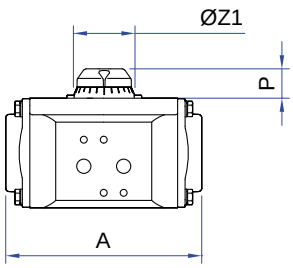
AIR TORQUE

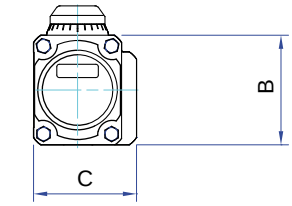
FRONT VIEW

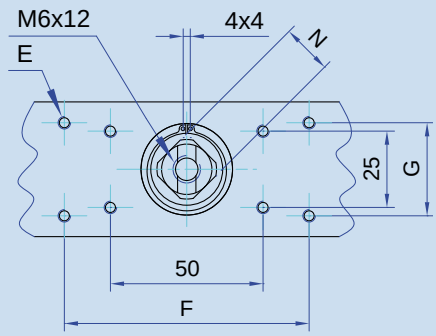
SIDE VIEW

TOP DETAIL

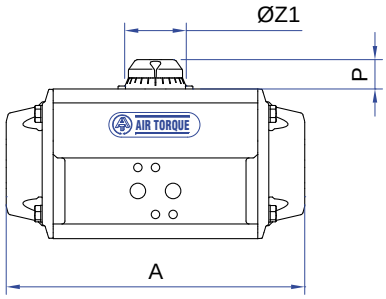
AT045U

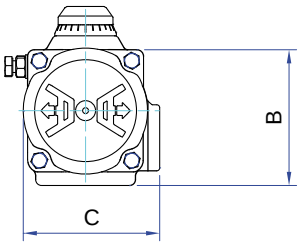




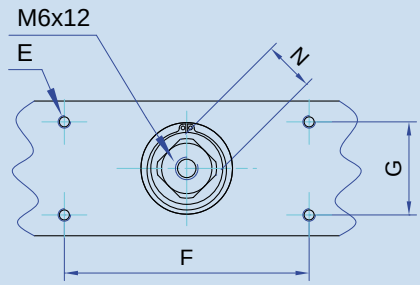


AT051 U ÷ AT651U

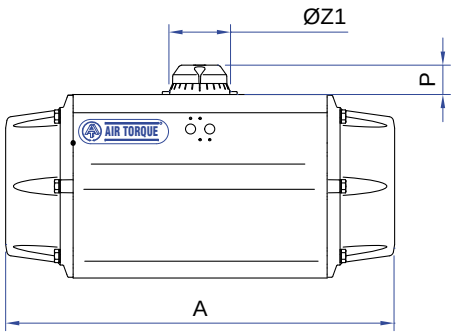


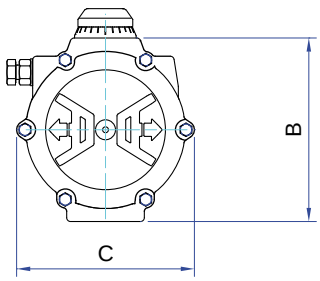


AT051U ÷ AT101U

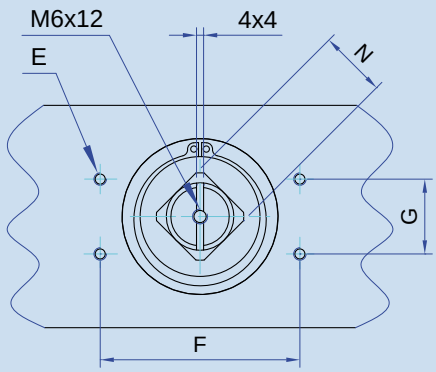


AT701 U ÷ AT751U

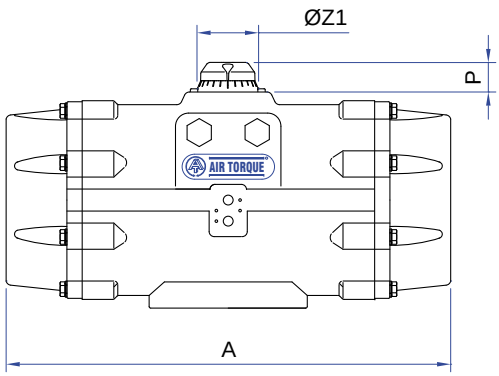


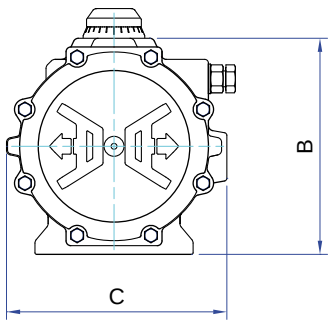


AT201U ÷ AT751U

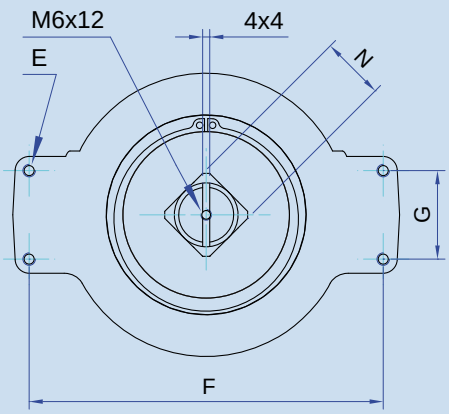


AT801U

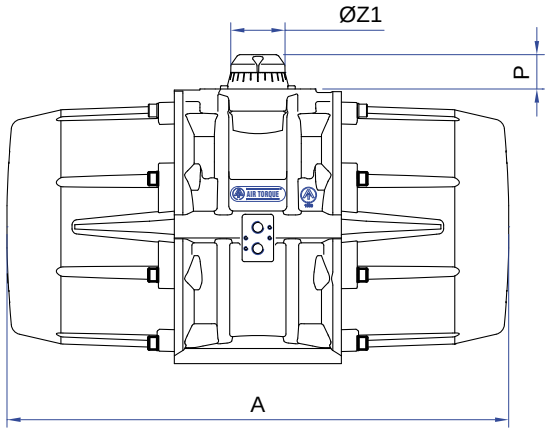


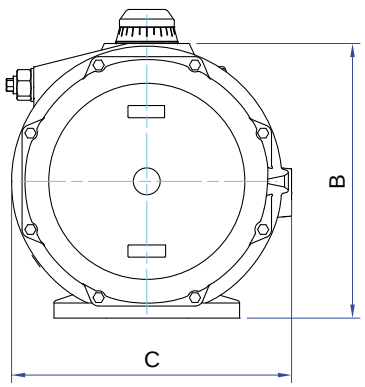


AT801U ÷ AT1001U



AT1001U

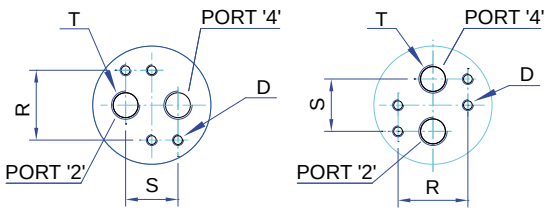




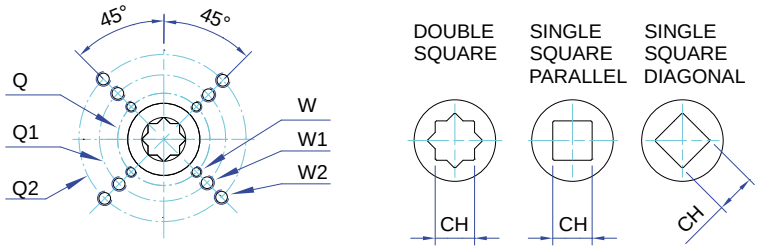
DIMENSIONS AND TECHNICAL DATA

AIR TORQUE

AIR CONNECTION VDI/VDE 3845



BOTTOM VIEW ISO 5211



DIMENSIONS IN INCH

ACTUATOR MODEL	AT045U D/S	AT051U D/S	AT101U D/S	AT201U D/S	AT251U D/S	AT301U D/S	AT351U D/S	AT401U D/S	AT451U D/S	AT501U D/S	AT551U D/S	AT601U D/S	AT651U D/S	AT701U D/S	AT751U D/S	AT801U D/S	AT1001U D/S
A	4,65	5,33	6,04	8,01	9,49	10,20	11,97	13,11	15,53	16,63	18,66	20,79	23,82	27,95	31,97	33,66	37,40
B	2,60	2,72	3,35	4,02	4,53	5,00	5,71	6,18	6,97	7,72	8,68	9,65	11,75	12,99	15,08	16,14	20,39
C	2,44	2,80	3,33	3,66	4,17	4,67	5,35	5,77	6,54	7,13	7,87	8,72	10,31	12,99	14,61	16,46	20,79
D	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M6x0,39	M6x0,39	M6x0,39	M6x0,39	M6x0,39
E	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M6x0,39
F	3,15	3,15	3,15	3,15	3,15	3,15	3,15	3,15	3,15	3,15	5,12	5,12	5,12	5,12	5,12	5,12	7,87
G	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,97
N	0,43	0,43	0,43	0,67	0,67	0,67	1,06	1,06	1,06	1,06	1,42	1,42	1,42	1,42	1,42	1,42	1,42
P	0,59 / 0,79	0,79	0,79	0,79	0,79	0,79	1,18	1,18	1,18	1,18	1,97	1,97	1,97	1,97	1,97	1,97	3,15
R	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,77	1,77	1,77	1,77	1,77
S	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	1,57	1,57	1,57	1,57	1,57
T * ISO 228	1/8"	1/8"	1/8"	1/8"	1/8"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"	1/2"	1/2"	1/2"	1/2"
ØZ1	1,65	1,65	1,65	1,65	1,65	1,65	2,28	2,28	2,66	2,66	3,15	3,15	4,53	4,53	4,53	4,53	5,31
ISO Flange	F04	F04	F05 + F07	F05 + F07	F05 + F07	F07 + F10	F07 + F10	F07 + F10	F10 + F12	F10 + F12	F14	F14	F16	F16	F16	F16 + F25	F16 + F25 + F30
Q	1,65	1,65	1,97	1,97	1,97	2,76	2,76	2,76	4,02	4,02	5,51	5,51	6,50	6,50	6,50	6,50	6,50
Q1	-	-	2,76	2,76	2,76	4,02	4,02	4,02	4,92	4,92	-	-	-	-	-	10	10
Q2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,73
W	M5	M5	M6	M6	M6	M8	M8	M8	M10	M10	M16	M16	M20	M20	M20	M20	M20
W1	-	-	M8	M8	M8	M10	M10	M10	M12	M12	-	-	-	-	-	M16	M16
W2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M20

OPTIONAL ISO Flange		F03	F03 + F05 - -	F03 + F05 F04 + F07 F05	F05 F04 + F07 -	F07	F05 + F07 F07 -	F10	F10	F12	F12	F10 + F12	F10 + F12	F12 F14 -	F12 F14 -	F14 F16 + F25 -	F25	F30
CH x l min.	D	-	0,35 x 0,43	0,35 x 0,43	0,43 x 0,47	0,43 x 0,47	0,55 x 0,63	0,55 x 0,63	0,67 x 0,75	0,87 x 0,94	0,87 x 0,94	0,87 x 0,94	0,87 x 0,94	1,06 x 1,14	1,06 x 1,14	2,17 x 2,32	2,17 x 2,32	2,95 x 3,15
		-	0,43 x 0,47	0,55 x 0,63	0,55 x 0,63	0,55 x 0,63	0,67 x 0,75	0,87 x 0,94	0,87 x 0,94	1,06 x 1,14	1,06 x 1,14	1,42 x 1,54	1,42 x 1,54	1,81 x 1,93	1,81 x 1,93	-	-	-
		-	-	-	0,67 x 0,75	0,67 x 0,75	0,87 x 0,94	-	-	-	-	-	-	-	-	-	-	-
	DS	0,35 x 0,43	0,43 x 0,47	0,43 x 0,47	0,55 x 0,63	0,67 x 0,75	0,67 x 0,75	0,67 x 0,75	0,87 x 0,94	1,06 x 1,14	1,06 x 1,14	1,06 x 1,14	1,06 x 1,14	1,42 x 1,54	1,42 x 1,54	1,81 x 1,93	1,81 x 1,93	2,17 x 2,32
		0,43 x 0,47	-	0,55 x 0,63	0,67 x 0,75	-	0,87 x 0,94	0,87 x 0,94	1,06 x 1,14	-	-	1,42 x 1,54	1,42 x 1,54	1,81 x 1,93	1,81 x 1,93	2,17 x 2,32	2,17 x 2,32	2,95 x 3,15

* NPT (ANSI B1-20-1) threads available on request.

TECHNICAL DATA (IMPERIAL UNIT)

IMPERIAL	MODEL TYPE	AT045U D	AT045U S	AT051U D	AT051U S	AT101U D	AT101U S	AT201U D	AT201U S	AT251U D	AT251U S	AT301U D	AT301U S	AT351U D	AT351U S	AT401U D	AT401U S	AT451U D	AT451U S	AT501U D	AT501U S	AT551U D	AT551U S	AT601U D	AT601U S	AT651U D	AT651U S	AT701U D	AT701U S	AT751U D	AT751U S	AT801U D	AT801U S	AT1001U D	AT1001U S
Opening Time	(Sec.)	0,15	0,2	0,2	0,25	0,25	0,3	0,3	0,4	0,4	0,5	0,5	0,6	0,7	0,8	0,9	1,1	1,2	1,4	1,5	1,7	2	2,2	2,7	3,2	3,5	4	4	4,5	5	6	6	7,5	8	10
Closing Time	(Sec.)	0,2	0,25	0,25	0,3	0,3	0,35	0,35	0,5	0,5	0,6	0,7	0,8	0,9	1,1	1,2	1,4	1,5	1,8	1,8	2,1	2,4	2,8	3,5	4	4,1	4,6	4,5	5	6	7	7	8,5	9	11
Air Volume Opening	(Cu. In.)	3,66		5,5		9,8		18,9		31,1		43,3		72,6		94		147,1		191,6		260		362,5		610,2		884,8		1220		1526		2990	
Air Volume Closing	(Cu. In.)	6,1		9,2		15,9		29,9		47,6		67,7		109,8		142,8		230,7		300,2		420,5		577,3		927,6		1305		2014		2441		5126	
Approximate Weight	(Lbs)	1,65	1,98	2,4	2,9	3,5	4,0	6,0	6,6	8,4	9,7	11,5	13,2	17,9	20,7	22,0	27,3	31,3	37,7	39,2	47,2	53,6	72,1	75,6	96,1	120	152	168	211	260	331	280	371	375	525

Note: (A) The above moving times of the actuator are obtained in the following test conditions:

For model AT045U ÷ AT501U: (1) Room Temperature, (2) Actuator Stroke 90° , (3) Solenoid Valve with Orifice Of 4 mm and a flow capacity Qn 400L/min., (4) Inside pipe diameter 8 mm, (5) Medium clean air, (6) Air supply pressure 5,5 bar (79,75 Psi), (7) Actuator without external resistance load.

For model AT551U ÷ AT1001U: (1) Room Temperature, (2) Actuator Stroke 90° , (3) Solenoid Valve with Orifice Of 11 mm and a flow capacity Qn 6000L/min., (4) Inside pipe diameter 11 mm, (5) Medium clean air, (6) Air supply pressure 5,5 bar (79,75 Psi), (7) Actuator without external resistance load.

Cautions: obviously on the field applications when one or more of the above parameter are different, the moving time will be different.

TORQUE OUTPUT (Nm)

SPRING RETURN TORQUE

Supply Pressure		2,5 bar		3 bar		3,5 bar		4 bar		4,2 bar		4,5 bar		5 bar		5,5 bar		6 bar		7 bar		8 bar		Spring stroke	
Model	Spring set	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	90°	0°
AT045U	S 1-1	**4,3**	**2,9**																					**3,1**	**1,7**
	S 1-2			**4,7**	**2,4**																			**4,8**	**2,6**
	S 2-2					4,9	2,0	**6,1**	**3,2**	**6,6**	**3,7**	7,3	4,4											**6,4**	**3,5**
	S 2-3											6,6	2,8	**7,8**	**4,0**	**9,0**	**5,2**	10,2	6,4					**8,0**	**4,2**
	S 3-3															8,2	3,6	**9,4**	**4,8**	11,8	7,2	14,1	9,5	**9,6**	**5,0**
AT051U	S 1	**5,0**	**3,0**	7	4,7	8	6,3	10,0	8	9,4	8,3	11,7	9,6	13,3	11,3									**5,3**	**3,3**
	S 2	4	1,9	**6,0**	**3,6**	7,7	5,3	9,3	6,9	9	7,4	11,0	8,6	12,7	10,2	14,3	11,9							**6,4**	**4,0**
	S 3			5,3	2,5	**7,0**	**4,2**	8,7	5,8	8,2	6,6	10,3	7,5	12,0	9,2	13,7	10,8	15,3	12,5					**7,4**	**4,6**
	S 4					6,3	3	**8,0**	**5**	**7,6**	**5,8**	9,7	6,4	11,3	8,1	13,0	9,8	14,7	11,4	18,0	14,7			**8,5**	**5,3**
	S 5							7,3	3,7	7,0	4,9	**9,0**	**5,4**	10,7	7,0	12,3	8,7	14,0	10	17,3	13,7	20,6	17,0	**9,6**	**5,9**
	S 6											8,4	4,3	**10,0**	**6,0**	11,7	7,6	13,3	9,3	16,7	12,6	20,0	16	**10,6**	**6,6**
	S 7													9,4	4,9	**11**	**6,6**	13	8,2	16,0	11,6	19,3	14,9	**11,7**	**7,3**
	S 8															10,4	6	**12,0**	**7,2**	15,3	10,5	18,7	13,8	**12,8**	**7,9**
AT101U	S 05	**9,1**	**6,2**	12	9,2	15	12,1	17,9	15	19,1	16,2	20,8	17,9	23,8	20,9									**8,4**	**5,5**
	S 06	8	4,5	**10,9**	**7,5**	13,9	10,4	16,8	13,3	18	14,5	19,7	16,3	22,7	19,2	25,6	22,1							**10,1**	**6,7**
	S 07			9,8	5,8	**12,8**	**8,7**	15,7	11,6	16,9	12,8	18,6	14,6	21,5	17,5	24,5	20,4	27,4	23,4					**11,8**	**7,8**
	S 08					11,6	7	**14,6**	**10**	**15,7**	**11,1**	17,5	12,9	20,4	15,8	23,4	18,7	26,3	21,7	32,2	27,5			**13,5**	**8,9**
	S 09							13,5	8,3	14,6	9,4	**16,4**	**11,2**	19,3	14,1	22,3	17,1	25,2	20	31,1	25,9	36,9	31,7	**15,2**	**10**
	S 10											15,3	9,5	**18,2**	**12,4**	21,1	15,4	24,1	18,3	29,9	24,2	35,8	30	**16,9**	**11,1**
	S 11													17,1	10,8	**20**	**13,7**	23	16,6	28,8	22,5	34,7	28,3	**18,6**	**12,2**
	S 12															18,9	12	**21,9**	**14,9**	27,7	20,8	33,6	26,7	**20,2**	**13,3**
AT201U	S 05	**18**	**11,8**	23,8	17,6	29,7	23,4	35,5	29,2	37,8	31,6	41,3	35	47,1	40,9									**17,3**	**11,1**
	S 06	15,8	8,3	**21,6**	**14,1**	27,5	19,9	33,3	25,8	35,6	28,1	39,1	31,6	44,9	37,4	50,7	43,2							**21**	**13,3**
	S 07			19,4	10,7	**25,2**	**16,5**	31,1	22,3	33,4	24,6	36,9	28,1	42,7	33,9	48,5	39,8	54,3	45,6					**24,2**	**15,5**
	S 08					23	13	**28,8**	**18,8**	**31,2**	**21,2**	34,7	24,7	40,5	30,5	46,3	36,3	52,1	42,1	63,7	53,7			**27,7**	**17,7**
	S 09							26,6	15,4	29	17,7	**32,5**	**21,2**	38,3	27	44,1	32,8	49,9	38,6	61,5	50,3	73,2	61,9	**31**	**19,9**
	S 10											30,2	17,7	**36,1**	**23,6**	41,9	29,4	47,7	35,2	59,3	46,8	71	58,5	**34,6**	**22,1**
	S 11													33,8	20,1	**39,7**	**25,9**	45,5	31,7	57,1	43,4	68,7	55	**38,1**	**24,3**
	S 12															37,5	22,4	**43,3**	**28,3**	54,9	39,9	66,5	51,5	**41,5**	**26,5**
AT251U	S 05	**27,4**	**16,9**	36,6	26	45,7	35,2	54,9	44,3	58,5	48	64	53,5	73,2	62,6									**28,9**	**18,3**
	S 06	23,8	11,1	**32,9**	**20,3**	42,1	29,4	51,2	38,6	54,9	42,2	60,4	47,7	69,5	56,9	78,7	66							**34,7**	**22**
	S 07			29,2	14,5	**38,4**	**23,6**	47,5	32,8	51,2	36,4	56,7	41,9	65,8	51,1	75	60,2	84,2	69,4					**40,4**	**25,7**
	S 08					34,7	17,9	**43,9**	**27**	**47,5**	**30,7**	53	36,2	62,2	45,3	71,3	54,5	80,5	63,6	98,8	81,9			**46,2**	**29,3**
	S 09							40,2	21,2	43,9	24,9	**49,4**	**30,4**	58,5	39,5	67,7	49	76,8	57,8	95,1	76,1	113	94,5	**52**	**33**
	S 10											45,7	24,6	**54,8**	**33,8**	64	42,9	73,1	52,1	91,5	70,4	110	88,7	**57,8**	**36,7**
	S 11													51,2	28	**60,3**	**37,1**	69,5	46,3	87,8	64,6	106	82,9	**63,5**	**40,3**
	S 12															56,7	31,4	**65,8**	**40,5**	84,1	58,8	102	77,1	**69,3**	**44**
AT301U	S 05	**41,1**	**27,1**	54,4	40,4	67,7	53,7	81	67	86,3	72,3	94,3	80,3	108	93,6									**39,4**	**25,3**
	S 06	36,1	19,2	**49,4**	**32,5**	62,7	45,8	76	59,1	81,3	64,4	89,3	72,4	103	85,7	116	99							**47,3**	**30,4**
	S 07			44,3	24,6	**57,6**	**37,9**	70,9	51,2	76,2	56,5	84,2	64,5	97	77,8	111	91,1	124	104					**55,1**	**35,5**
	S 08					52,5	30	**65,8**	**43,3**	**71,1**	**48,7**	79,1	56,6	92,4	69,9	106	83,2	119,0	96,5	146	123			**63**	**40,5**
	S 09							60,8	35,5	66,1	40,8	**74,0**	**48,8**	87,3	62,1	101	75,3	113,9	88,6	141	115	167	142	**70,9**	**45,6**
	S 10											69	40,9	**82,3**	**54,2**	95,6	67,5	109	80,8	135	107	162	134	**78,8**	**50,7**
	S 11													77,2	46,3	**90,5**	**59,6**	104	72,9	130	99	157	126	**86,7**	**55,7**
	S 12															85,4	51,7	**99**	**65**	125	92	152	118	**94,5**	**60,8**
AT351U	S 05	**66,5**	**41,9**	87,9	63,4	109,4	84,9	131	106	140	115	152	128	174	149									**65,5**	**41**
	S 06	58,3	28,8	**79,7**	**50,3**	101,2	71,8	123	93,3	131	102	144	115	166	136	187	158							**78,6**	**49,2**
	S 07			71,5	37,2	**93**	**58,7**	115	80,2	123	88,8	136	102	158	123	179	145	200	166					**91,7**	**57,4**
	S 08					84,8	45,6	**106**	**67,1**	**115**	**75,7**	128	88,6	149	110	171	132	192	153	235	196			**105**	**65,6**
	S 09							98,1	54	107	62,6	**120**	**75**	141	97	163	118	184	140	227	183	270	226	**118**	**73,8**
	S 10											111	62,4	**133**	**83,9**	154	105	176	127	219	170	262	213	**131**	**82**
	S 11													125	70,8	**146**	**92,3**	168	114	211	157	254	200	**144**	**90,2**
	S 12															138	79,2	**159**	**101**	202	144	245	187	**157**	**98,4**
AT401U	S 05	**86**	**56,1**	114	83,8	141	111	169	139	180	150	197	167	224	195									**82,4**	**52,5**
	S 06	75,5	39,6	**103**	**67,3**	131	95,0	159	123	170	134	186	150	214	178	242	206							**98,9**	**63**
	S 07			92,7	50,8	**120**	**78,5**	148	106	159	117	176	134	203	162	231	189	259	217					**115**	**73,5**
	S 08					110	62	**138**	**89,7**	**149**	**101**	165	117	193	145	221	173	248	201	304	256			**132**	**84**
	S 09							127	73,3	138	84,3	**155**	**101**	182	129	210	156	238	184	293	239	349	295	**148**	**94,5**
	S 10											144	84,5	**172**	**112**	200	140	227	168	283	223	338	278	**165**	**105**
	S 11													161	95,7	**189**	**123**	217	151	272	206	328	262	**181**	**116**
	S 12															179	107	**206**	**135**	262	190	317	245	**198**	**126**
AT451U	S 05	**135**	**89**	179	132	222	176	265	219	283	236	309	262	352	306									**129**	**82,4**
	S 06	119	63	**162**	**106**	206	149,7	249	193	266	211	293	237	336	280	379	324							**155**	**99**
	S 07			146	80	**189**	**124**	233	167	250	185	276	211	320	254	363	298	406	341					**180**	**115**
	S 08					173	98	**216**	**142**	**233**	**159**	260	185	303	229	347	272	390	316	477	403			**206**	**132**
	S 09							200	116	217	133	**243**	**159**	287	203	330	246	374	290	460	377	547	464	**232**	**148**
	S 10											227	134	**270**	**177**	314	221	357	264	444	351	531	438	**258**	**165**
	S 11													254	151	**297**	**195**	341	238	428	325	515	412	**283**	**181**
	S 12															281	169	**324**	**213**	411	299	498	386	**309**	**198**
AT501U	S 05	**171**	**118**	228	174	285	231	342	288	364	310	398	344	455	401									**166**	**112**
	S 06	149	84	**206**	**141**	262	198	319	255	342	277	376	311	433	368	489	425							**199**	**135**
	S 07			183	108	**240**	**165**	297	221	319	244	353	278	410	335	467	391	524	448					**233**	**157**
	S 08					218	131	**274**	**188**	**297**	**211**	331	245	388	302	444	358	501	415	615	528			**266**	**180**
	S 09							252	155	275	178	**309**	**212**	365	268	422	325	479	382	592	495	706	609	**299**	**202**
	S 10											286	178	**343**	**235**	400	292	456	349	570	462	683	575	**332**	**224**
	S 11													320	202	**377**	**259**	434	315	547	429	661	542	**365**	**247**
	S 12															355	225	**411**	**282**	525	396	638	509	**399**	**269**
AT551U	S 05	**225**	**146**	301	223	378	299	455	376	485	406	531	452	608	529									**237**	**158**
	S 06	193	99	**270**	**175**	346	252	423	329	454	359	500	405	576	482	653	558							**284**	**190**
	S 07			238	128	**315**	**205**	391	281	422	312	468	358	544	434	621	511	698	587					**332**	**221**
	S 08					283	157	**360**	**234**	**390**	**264**	436	310	513	387	589	464	666	540	819	693			**379**	**253**
	S 09							328	186	359	217	**405**	**263**	481	340	558	416	634	493	788	646	941	799	**426**	**285**
	S 10											373	216	**450**	**292**	526	369	603	445	756	599	909	752	**474**	**316**
	S 11													418	245	**495**	**321**	571	398	724	551	877	704	**521**	**348**
	S 12															463	274	**540**	**351**	693	504	846	657	**568**	**379**

Spring set	The above value are the out-put torque that remain available to operate the valve when the part "2" is pressurized	Out-put torque available when air supply fails

TORQUE OUTPUT (Nm)

AIR TORQUE

SPRING RETURN TORQUE

Supply Pressure		2,5 bar		3 bar		3,5 bar		4 bar		4,2 bar		4,5 bar		5 bar		5,5 bar		6 bar		7 bar		8 bar		Spring stroke	
Model	Spring set	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	90° Start	0° End
AT601U	S 05	**319**	**217**	426	323	532	430	638	536	681	578	745	642	851	749									**315**	**213**
	S 06	277	154	**383**	**260**	489	367	596	473	638	515	702	579	808	686	915	792							**378**	**255**
	S 07			341	197	**447**	**304**	553	410	596	453	660	516	766	623	872	729	979	835					**441**	**298**
	S 08					404	241	**511**	**347**	**553**	**390**	617	453	723	560	830	666	936	772	1149	985			**504**	**340**
	S 09							468	284	511	327	**575**	**390**	681	497	787	603	894	709	1106	922	1319	1135	**567**	**383**
	S 10											532	327	**638**	**434**	745	540	851	646	1064	859	1277	1072	**630**	**425**
	S 11													596	371	**702**	**477**	809	583	1021	796	1234	1009	**693**	**468**
	S 12															660	414	**766**	**520**	979	733	1192	946	**756**	**510**
AT651U	S 05	**533**	**372**	712	551	890	730	1069	908	1141	980	1248	1087	1426	1266									**521**	**360**
	S 06	461	268	**640**	**447**	818	625	997	804	1068	876	1176	983	1354	1162	1533	1340							**625**	**433**
	S 07			568	343	**746**	**521**	925	700	996	771	1104	879	1282	1057	1461	1236	1640	1415					**730**	**505**
	S 08					674	417	**853**	**596**	**924**	**667**	1032	774	1210	953	1389	1132	1568	1310	1925	1668			**834**	**577**
	S 09							781	491	852	563	**959**	**670**	1138	849	1317	1028	1495	1206	1853	1564	2210	1921	**938**	**649**
	S 10											887	566	**1066**	**745**	1245	923	1423	1102	1781	1459	2138	1817	**1042**	**721**
	S 11													994	640	**1173**	**819**	1351	998	1709	1355	2066	1713	**1146**	**793**
	S 12															1101	715	**1279**	**894**	1637	1251	1994	1608	**1251**	**865**
AT701U	S 05	**751**	**496**	1011	755	1270	1015	1529	1274	1633	1378	1789	1533	2048	1793									**801**	**546**
	S 06	642	336	**902**	**595**	1161	854	1420	1114	1524	1217	1680	1373	1939	1632	2198	1892							**961**	**655**
	S 07			792	435	**1052**	**694**	1311	954	1415	1057	1570	1213	1830	1472	2089	1732	2349	1991					**1121**	**764**
	S 08					943	534	**1202**	**793**	**1306**	**897**	1461	1053	1721	1312	1980	1571	2239	1831	2758	2350			**1281**	**873**
	S 09							1093	633	1197	737	**1352**	**893**	1612	1152	1871	1411	2130	1671	2649	2189	3168	2708	**1442**	**982**
	S 10											1243	732	**1503**	**992**	1762	1251	2021	1510	2540	2029	3059	2548	**1602**	**1091**
	S 11													1393	832	**1653**	**1091**	1912	1350	2431	1869	2950	2388	**1762**	**1200**
	S 12															1544	931	**1803**	**1190**	2322	1709	2840	2228	**1922**	**1309**
AT751U	S 05	**1064**	**703**	1423	1062	1782	1421	2141	1780	2284	1924	2500	2139	2859	2498									**1092**	**731**
	S 06	918	485	**1277**	**844**	1636	1203	1995	1562	2138	1706	2354	1921	2713	2280	3072	2639							**1310**	**877**
	S 07			1131	626	**1489**	**985**	1848	1344	1992	1487	2207	1703	2566	2062	2925	2421	3284	2780					**1528**	**1023**
	S 08					1343	766	**1702**	**1125**	**1846**	**1269**	2061	1484	2420	1843	2779	2202	3138	2561	3856	3279			**1746**	**1170**
	S 09							1556	907	1700	1051	**1915**	**1266**	2274	1625	2633	1984	2992	2343	3710	3061	4428	3779	**1965**	**1316**
	S 10											1769	1048	**2128**	**1407**	2487	1766	2846	2125	3564	2843	4282	3560	**2183**	**1462**
	S 11													1982	1188	**2341**	**1547**	2700	1906	3418	2624	4135	3342	**2401**	**1608**
	S 12															2194	1329	**2553**	**1688**	3271	2406	3989	3124	**2620**	**1754**
AT801U	S 05	**1332**	**1014**	1783	1465	2233	1915	2684	2365	2864	2546	3134	2816	3585	3266									**1238**	**920**
	S 06	1149	767	**1599**	**1217**	2049	1667	2500	2118	2680	2298	2950	2568	3401	3019	3851	3469							**1486**	**1104**
	S 07			1415	969	**1865**	**1420**	2316	1870	2496	2050	2766	2321	3217	2771	3667	3222	4118	3672					**1733**	**1288**
	S 08					1682	1172	**2132**	**1623**	**2312**	**1803**	2582	2073	3033	2524	3483	2974	3934	3424	4835	4325			**1981**	**1472**
	S 09							1948	1375	2128	1555	**2398**	**1825**	2849	2276	3299	2726	3750	3177	4651	4078	5551	4978	**2229**	**1656**
	S 10											2215	1578	**2665**	**2028**	3115	2479	3566	2929	4467	3830	5386	4731	**2476**	**1839**
	S 11													2481	1781	**2931**	**2231**	3382	2682	4283	3582	5184	4483	**2724**	**2023**
	S 12															2748	1983	**3198**	**2434**	4099	3335	5000	4236	**2971**	**2207**
AT1001U	S 05	**2474**	**1695**	3308	2529	4142	3362	4976	4196	5310	4530	5810	5030	6644	5864									**2475**	**1695**
	S 06	2135	1200	**2969**	**2034**	3803	2867	4637	3701	4971	4035	5471	4535	6305	5369	7139	6203							**2970**	**2034**
	S 07			2630	1539	**3464**	**2373**	4298	3206	4632	3540	5132	4040	5966	4874	6800	5708	7633	6542					**3465**	**2373**
	S 08					3125	1878	**3959**	**2711**	**4292**	**3045**	4793	3545	5627	4379	6461	5213	7294	6047	8962	7715			**3960**	**2712**
	S 09							3620	2217	3953	2550	**4454**	**3050**	5288	3884	6122	4718	6955	5552	8623	7220	10291	8887	**4455**	**3051**
	S 10											4115	2555	**4949**	**3389**	5783	4223	6616	5057	8284	6725	9952	8393	**4949**	**3390**
	S 11													4610	2894	**5444**	**3728**	6277	4562	7945	6230	9613	7898	**5444**	**3729**
	S 12															5105	3233	**5938**	**4067**	7606	5735	9274	7403	**5939**	**4068**
	Spring set	The above value are the out-put torque that remain available to operate the valve when the part "2" is pressurized																						Out-put torque available when air supply fails	

DOUBLE ACTING TORQUE

Supply Pressure / Model	2,5 bar	3 bar	3,5 bar	4 bar	4,2 bar	4,5 bar	5 bar	5,5 bar	6 bar	7 bar	8 bar
AT045U D	6,0	7,2	8,4	9,6	10,1	10,8	12,0	13,2	14,4	16,8	19,1
AT051U D	8,3	10,0	11,6	13,3	14,0	15,0	16,6	18,3	19,9	23,3	26,6
AT101U D	14,7	17,6	20,5	23,5	24,6	26,4	29,3	32,2	35,2	41,0	46,9
AT201U D	29,1	34,9	40,7	46,5	48,9	52,4	58,2	64,0	69,8	81,4	93,1
AT251U D	45,8	54,9	64,1	73,2	76,9	82,4	91,5	100,7	109,8	128,1	146,4
AT301U D	66,5	79,8	93,1	106	112	120	133	146	160	186	213
AT351U D	107	129	150	172	181	193	215	236	258	301	344
AT401U D	138	166	194	222	233	249	277	305	332	388	443
AT451U D	217	261	304	348	365	391	435	478	522	609	696
AT501U D	284	340	397	454	477	511	567	624	681	794	908
AT551U D	383	459	536	613	643	689	766	842	919	1072	1225
AT601U D	532	638	745	851	893	957	1064	1170	1276	1489	1702
AT651U D	893	1072	1251	1430	1501	1608	1787	1966	2144	2502	2859
AT701U D	1297	1556	1815	2075	2179	2334	2594	2853	3112	3631	4150
AT751U D	1795	2154	2513	2872	3015	3231	3590	3949	4308	5026	5744
AT801U D	2252	2703	3153	3604	3784	4054	4504	4955	5405	6306	7207
AT1001U D	4169	5003	5837	6671	7005	7505	8339	9173	10007	11674	**

** AT1001U D operated with 8 bar (116 Psi) supply pressure requires SPECIAL construction. Contact AIR TORQUE factory.

TORQUE OUTPUT (Lb-In)

SPRING RETURN TORQUE

Supply Pressure		40 Psi		50 Psi		60 Psi		70 Psi		80 Psi		90 Psi		100 Psi		110 Psi		116 Psi		Spring stroke	
Model	Spring set	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	90° Start	0° End
AT045U	S 1-1	43,3	30,9	57,9	45,5	72,4	60,0	87,0	74,6	102	89,6	116	104	131	119					**27,4**	**15,0**
	S 1-2	35,3	15,8	49,9	30,4	64,4	44,9	79,0	59,5	94,0	74,5	108	88,5	123	103	138	119			**42,5**	**23,0**
	S 2-2			41,9	16,2	56,5	30,8	71,0	45,4	85,6	59,9	100	74,5	115	89,1	130	104	138	112	**56,6**	**31,0**
	S 2-3					50,3	16,6	68,4	31,2	79,4	45,8	94,0	60,3	109,0	74,9	124	90,2	132	98,2	**70,8**	**37,2**
	S 3-3							57,8	17,0	72,3	31,6	86,9	46,2	101,0	60,8	117	76,0	125	84,1	**85,0**	**44,3**
AT051U	S 1	51,9	34	72,2	54,4	92,5	74,7	113	94,9	133	115	153	136	174	156					**47,1**	**29,2**
	S 2	46,1	24,7	66,3	45,0	86,6	65	107	85,6	127	106	147	126	168	146	188	167			**56,5**	**35,1**
	S 3	40,2	15,2	60,5	35,5	81	55,8	101	76,1	121	96	142	117	162	137	182	157	194	169	**65,9**	**40,9**
	S 4			54,7	26,1	75	46,3	95,2	67	116	87	136	107	156	127	176	148	189	160	**75**	**46,8**
	S 5			48,8	16,7	69	37,0	89,4	57,3	110	78	130	98	150	118	171	138	183	151	**84,8**	**52,6**
	S 6					63,3	27,6	83,5	47,9	104	68	124	88,4	144	109	165	129	177	141	**94,1**	**58,5**
	S 7					57,4	18,1	77,7	38,4	98,0	58,7	118	79,0	139	99	159	120	171	132	**104**	**64,3**
	S 8							71,9	29,0	92,1	49,2	112,4	69,5	133	90	153	110	165	122	**113**	**70,2**
AT101U	S 05	94	68,5	130	104	166	140	201	176	237	212	273	247	309	283					**74,7**	**49,1**
	S 06	84,2	53,5	120	89,3	156	125	192	161	227	197	263	232	299	268	335	304			**89,6**	**58,9**
	S 07	74,4	38,6	110	74,4	146	110	182	146	218	182	253	218	289	253	325	289	346	311	**105**	**68,8**
	S 08			100	59,5	136	95,2	172	131	208	167	243	203	279	238	315	274	337	296	**119**	**78,6**
	S 09					126	80,3	162	116	198	152	234	188	269	223	305	259	327	281	**134**	**88,4**
	S 10							152	101	188	137	224	173	260	209	295	244	317	266	**149**	**98,2**
	S 11									178	122	214	158	250	194	286	229	307	251	**164**	**108**
	S 12													240	179	276	214	297	236	**179**	**118**
AT201U	S 05	186	131	257	202	328	273	399	344	470	415	541	486	612	557					**153**	**97,8**
	S 06	167	100	238	171	309	242	380	313	451	384	522	455	593	526	664	597			**184**	**117**
	S 07	147	70	218	141	289	212	360	283	431	354	502	425	573	496	644	567	687	609	**214**	**137**
	S 08			198	110	269	181	340	252	412	323	483	394	554	465	625	536	667	579	**245**	**157**
	S 09					250	150	321	221	392	292	463	363	534	434	605	505	648	548	**276**	**176**
	S 10							301	191	372	262	443	333	514	404	585	475	628	517	**306**	**196**
	S 11									353	231	424	302	495	373	566	444	608	487	**337**	**215**
	S 12													475	342	546	413	589	456	**368**	**235**
AT251U	S 05	285	191	396	303	508	415	620	526	731	638	843	750	955	862					**256**	**162**
	S 06	252	140	476	252	476	364	587	475	699	587	811	699	922	810	1034	922			**307**	**195**
	S 07	220	89	331	201	443	313	555	424	667	536	778	648	890	759	1002	871	1069	938	**358**	**227**
	S 08			299	150	411	261	522	373	634	485	746	597	858	708	969	820	1036	887	**409**	**260**
	S 09					378	210	490	322	602	434	713	545	825	657	937	769	1004	836	**460**	**292**
	S 10							457	271	569	383	681	494	793	606	904	718	971	785	**511**	**325**
	S 11									537	331	648	443	760	555	872	667	939	734	**562**	**357**
	S 12													728	504	839	616	906	683	**613**	**389**
AT301U	S 05	425	301	587	463	750	625	912	787	1074	950	1236	1112	1399	1274					**349**	**224**
	S 06	380	231	542	393	705	555	867	718	1029	880	1192	1042	1354	1205	1516	1367			**418**	**269**
	S 07	335	161	498	323	660	486	822	648	984	810	1147	973	1309	1135	1471	1297	1569	1395	**488**	**314**
	S 08			453	254	615	416	777	578	940	741	1102	903	1264	1065	1426	1227	1524	1325	**558**	**359**
	S 09					570	346	732	509	895	671	1057	833	1219	995	1382	1158	1479	1255	**627**	**404**
	S 10							688	439	850	601	1012	763	1174	926	1337	1088	1434	1185	**697**	**449**
	S 11									805	531	967	694	1130	856	1292	1018	1389	1116	**767**	**493**
	S 12													1085	786	1247	949	1344	1046	**837**	**538**
AT351U	S 05	687	470	949	732	1211	994	1474	1257	1736	1519	1998	1781	2260	2044					**580**	**363**
	S 06	614	354	876	616	1139	878	1401	1141	1663	1403	1926	1665	2188	1928	2450	2190			**696**	**435**
	S 07	541	238	804	500	1066	762	1328	1025	1591	1287	1853	1549	2115	1812	2378	2074	2535	2231	**812**	**508**
	S 08			731	384	993	646	1256	909	1518	1171	1780	1433	2043	1696	2305	1958	2463	2115	**928**	**581**
	S 09					921	530	1183	793	1446	1055	1708	1317	1970	1580	2233	1842	2390	1999	**1044**	**653**
	S 10							1111	677	1373	939	1635	1201	1898	1464	2160	1726	2317	1883	**1160**	**726**
	S 11									1300	823	1563	1085	1825	1348	2087	1610	2245	1767	**1276**	**798**
	S 12													1753	1232	2015	1494	2172	1652	**1392**	**871**
AT401U	S 05	888	623	1226	961	1564	1299	1902	1637	2240	1976	2578	2314	2916	2652					**729**	**465**
	S 06	795	477	1133	815	1471	1154	1809	1492	2147	1830	2485	2168	2823	2506	3161	2844			**875**	**558**
	S 07	702	331	1040	670	1378	1008	1716	1346	2054	1684	2392	2022	2730	2360	3069	2698	3271	2901	**1021**	**651**
	S 08			947	524	1285	862	1623	1200	1961	1538	2299	1876	2637	2214	2976	2552	3178	2755	**1167**	**744**
	S 09					1192	716	1530	1054	1868	1392	2206	1730	2544	2068	2883	2407	3085	2609	**1313**	**837**
	S 10							1437	908	1775	1246	2113	1584	2452	1923	2790	2261	2993	2464	**1459**	**930**
	S 11									1682	1100	2020	1439	2359	1777	2697	2115	2900	2318	**1604**	**1023**
	S 12													2266	1631	2604	1969	2807	2172	**1750**	**1116**
AT451U	S 05	1394	983	1925	1514	2456	2044	2987	2575	3517	3106	4048	3637	4579	4167					**1140**	**729**
	S 06	1248	755	1779	1285	2310	1816	2841	2347	3372	2878	3902	3409	4433	3939	4964	4470			**1369**	**875**
	S 07	1103	527	1633	1057	2164	1588	2695	2119	3226	2650	3757	3181	4287	3711	4818	4242	5137	4561	**1597**	**1021**
	S 08			1488	829	2018	1360	2549	1891	3080	2422	3611	2952	4142	3483	4672	4014	4991	4333	**1825**	**1166**
	S 09					1873	1132	2403	1663	2934	2194	3465	2724	3996	3255	4527	3786	4845	4104	**2053**	**1312**
	S 10							2258	1435	2788	1965	3319	2496	3850	3027	4381	3558	4699	3876	**2281**	**1458**
	S 11									2643	1737	3173	2268	3704	2799	4235	3330	4553	3648	**2509**	**1604**
	S 12													3558	2571	4089	3102	4408	3420	**2737**	**1750**
AT501U	S 05	1777	1300	2469	1992	3162	2685	3854	3377	4547	4070	5239	4762	5931	5455					**1470**	**993**
	S 06	1578	1006	2271	1698	2963	2391	3655	3083	4348	3776	5040	4468	5733	5161	6425	5853			**1764**	**1192**
	S 07	1380	712	2072	1404	2764	2097	3457	2789	4149	3482	4842	4174	5534	4867	6227	5559	6642	5975	**2058**	**1390**
	S 08			1873	1110	2566	1803	3258	2495	3951	3188	4643	3880	5336	4573	6028	5265	6444	5681	**2352**	**1589**
	S 09					2367	1509	3060	2201	3752	2894	4445	3586	5137	4279	5829	4971	6245	5387	**2646**	**1788**
	S 10							2861	1907	3553	2600	4246	3292	4938	3985	5631	4677	6046	5093	**2940**	**1986**
	S 11									3355	2306	4047	2998	4740	3691	5432	4383	5848	4799	**3234**	**2185**
	S 12													4541	3397	5234	4089	5649	4505	**3528**	**2383**
AT551U	S 05	2340	1644	3275	2578	4210	3513	5145	4448	6079	5383	7014	6318	7949	7253					**2096**	**1399**
	S 06	2060	1225	2995	2159	3930	3094	4865	4029	5800	4964	6734	5899	7669	6833	8604	7768			**2515**	**1679**
	S 07	1780	805	2715	1740	3650	2675	4585	3610	5520	4545	6454	5480	7389	6414	8324	7349	8885	7910	**2934**	**1959**
	S 08			2435	1321	3370	2256	4305	3191	5240	4126	6175	5060	7109	5995	8044	6930	8605	7491	**3353**	**2239**
	S 09					3090	1837	4025	2772	4960	3706	5895	4641	6830	5576	7764	6511	8325	7072	**3772**	**2519**
	S 10							3745	2353	4680	3287	5615	4222	6550	5157	7485	6092	8045	6653	**4191**	**2798**
	S 11									4400	2868	5335	3803	6270	4738	7205	5673	7766	6234	**4610**	**3078**
	S 12													5990	4319	6925	5254	7486	5814	**5029**	**3358**
	Spring set	The above value are the out-put torque that remain available to operate the valve when the part "2" is pressurized																		Out-put torque available when air supply fails	

TORQUE OUTPUT (Lb-In)

AIR TORQUE

SPRING RETURN TORQUE

Supply Pressure		40 Psi		50 Psi		60 Psi		70 Psi		80 Psi		90 Psi		100 Psi		110 Psi		116 Psi		Spring stroke	
Model	Spring set	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	90° Start	0° End
AT601U	S 05	3312	2406	4610	3704	5908	5003	7207	6301	8505	7599	9803	8898	11102	10196					**2787**	**1882**
	S 06	2935	1849	4234	3147	5532	4445	6830	5744	8129	7042	9427	8340	10725	9639	12024	10937			**3345**	**2258**
	S 07	2559	1291	3857	2589	5156	3888	6454	5186	7752	6485	9051	7783	10349	9081	11648	10380	12427	11159	**3902**	**2634**
	S 08			3481	2032	4779	3330	6078	4629	7376	5927	8674	7225	9973	8524	11271	9822	12050	10601	**4460**	**3011**
	S 09					4403	2773	5701	4071	7000	5370	8298	6668	9596	7966	10895	9265	11674	10044	**5017**	**3387**
	S 10							5325	3514	6623	4812	7922	6110	9220	7409	10518	8707	11297	9486	**5575**	**3763**
	S 11									6247	4255	7545	5553	8844	6851	10142	8150	10921	8929	**6132**	**4140**
	S 12													8467	6294	9766	7592	10545	8371	**6690**	**4516**
AT651U	S 05	5535	4113	7716	6294	9898	8475	12079	10657	14260	12838	16441	15019	18623	17200					**4612**	**3190**
	S 06	4897	3190	7078	5372	9260	7553	11441	9734	13622	11915	15803	14097	17985	16278	20166	18459			**5534**	**3828**
	S 07	4259	2268	6440	4449	8622	6631	10803	8812	12984	10993	15165	13174	17347	15356	19528	17537	20837	18845	**6457**	**4466**
	S 08			5802	3527	7984	5708	10165	7889	12346	10071	14527	12252	16709	14433	18890	16614	20199	17923	**7379**	**5104**
	S 09					7346	4786	9527	6967	11708	9148	13889	11329	16071	13511	18252	15692	19561	17001	**8302**	**5742**
	S 10							8889	6045	11070	8226	13251	10407	15433	12588	17614	14770	18923	16078	**9224**	**6380**
	S 11									10432	7303	12613	9485	14795	11666	16976	13847	18285	15156	**10147**	**7018**
	S 12													14157	10743	16338	12925	17647	14233	**11069**	**7656**
AT701U	S 05	7836	5576	11002	8742	14168	11907	17333	15073	20499	18239	23665	21405	26831	24571					**7088**	**4828**
	S 06	6870	4158	10036	7324	13202	10490	16368	13656	19534	16822	22700	19987	25865	23153	29031	26319			**8505**	**5793**
	S 07	5905	2741	9071	5906	12236	9072	15402	12238	18568	15404	21734	18570	24900	21736	28066	24902	29965	26801	**9923**	**6759**
	S 08			8105	4489	11271	7655	14437	10821	17603	13986	20769	17152	23934	20318	27100	23484	29000	25384	**11340**	**7724**
	S 09					10305	6237	13471	9403	16637	12569	19803	15735	22969	18901	26135	22067	28034	23966	**12758**	**8690**
	S 10							12506	7986	15672	11151	18837	14317	22003	17483	25169	20649	27069	22549	**14176**	**9655**
	S 11									14706	9734	17872	12900	21038	16066	24204	19231	26103	21131	**15593**	**10621**
	S 12													20072	14648	23238	17814	25138	19713	**17011**	**11586**
AT751U	S 05	11059	7868	15441	12250	19823	16632	24205	21014	28587	25395	32969	29777	37351	34159					**9660**	**6469**
	S 06	9765	5936	14147	10318	18529	14700	22911	19081	27293	23463	31675	27845	36057	32227	40439	36610			**11592**	**7763**
	S 07	8471	4004	12853	8386	17235	12767	21617	17149	25999	21531	30381	25913	34763	30295	39146	34678	41774	37306	**13524**	**9056**
	S 08			11560	6454	15942	10835	20323	15217	24705	19599	29087	23981	33469	28363	37852	32746	40480	35374	**15456**	**10350**
	S 09					14648	8903	19030	13285	23412	17667	27794	22049	32176	26431	36558	30814	39187	33442	**17388**	**11644**
	S 10							17736	11353	22118	15735	26500	20117	30882	24499	35264	28882	37893	31510	**19320**	**12938**
	S 11									20824	13803	25206	18185	29588	22567	33971	26950	36599	29578	**21252**	**14231**
	S 12													28294	20635	32677	25018	35305	27646	**23184**	**15525**
AT801U	S 05	13855	11037	19353	16536	24852	22034	30350	27533	35849	33031	41347	38530	46846	44028					**10957**	**8140**
	S 06	12227	8846	17725	14344	23224	19843	28722	25341	34221	30840	39719	36338	45218	41837	50717	47335			**13149**	**9767**
	S 07	10599	6654	16097	12153	21596	17651	27094	23150	32593	28648	38091	34147	43590	39645	49089	45144	52388	48443	**15340**	**11395**
	S 08			14469	9961	19968	15460	25466	20958	30965	26457	36464	31955	41962	37454	47461	42953	50760	46252	**17531**	**13023**
	S 09					18340	13268	23839	18767	29337	24265	34836	29764	40334	35263	45833	40761	49132	44060	**19723**	**14651**
	S 10							22211	16576	27709	22074	33208	27573	38706	33071	44205	38570	47504	41869	**21914**	**16279**
	S 11									26081	19883	31580	25381	37078	30880	42577	36378	45876	39677	**24106**	**17907**
	S 12													35450	28688	40949	34187	44248	37486	**26297**	**19535**
AT1001U	S 05	25715	18812	35894	28991	46073	39170	56252	49349	66431	59528	76610	69707	86790	79887					**21904**	**15001**
	S 06	22715	14432	32894	24611	43073	34790	53252	44969	63431	55148	73610	65327	83789	75506	93968	85658			**26285**	**18001**
	S 07	19715	10051	29894	20230	40073	30409	50252	40588	60431	50767	70610	60946	80789	71125	90968	81304	97076	87411	**30665**	**21001**
	S 08			26894	15849	37073	26028	47252	36207	57431	46386	67610	56565	77789	66744	87968	76923	94076	83031	**35046**	**24001**
	S 09					34073	21647	44252	31826	54431	42005	64610	52184	74789	62364	84968	72543	91075	78650	**39427**	**27001**
	S 10							41252	27455	51431	37634	61610	47813	71789	57992	81968	68171	88075	74278	**43799**	**30002**
	S 11									48431	33253	58610	43432	68789	53611	78968	63790	85075	69897	**48179**	**33002**
	S 12											55609	39051	65788	49230	75967	59409	82075	65517	**52560**	**36002**
	Spring set	The above value are the out-put torque that remain available to operate the valve when the part "2" is pressurized																		Out-put torque available when air supply fails	

DOUBLE ACTING TORQUE

Supply Pressure / Model	40 Psi	50 Psi	60 Psi	70 Psi	80 Psi	90 Psi	100 Psi	110 Psi	116 Psi
AT045U D	58,3	72,9	87,4	102	117	131	146	161	169
AT051U D	81,1	101	122	142	162	183	203	223	235
AT101U D	143	179	215	251	286	322	358	394	415
AT201U D	284	355	426	497	568	639	710	781	824
AT251U D	447	559	670	782	894	1005	1117	1229	1296
AT301U D	649	811	974	1136	1298	1461	1623	1785	1883
AT351U D	1049	1312	1574	1836	2099	2361	2623	2886	3043
AT401U D	1352	1691	2029	2367	2705	3043	3381	3719	3922
AT451U D	2123	2654	3185	3716	4246	4777	5308	5839	6157
AT501U D	2770	3462	4155	4847	5540	6232	6925	7617	8032
AT551U D	3739	4674	5609	6544	7479	8413	9348	10283	10844
AT601U D	5193	6492	7790	9088	10387	11685	12984	14282	15061
AT651U D	8725	10906	13087	15269	17450	19631	21812	23994	25302
AT701U D	12663	15829	18995	22161	25327	28493	31659	34825	36724
AT751U D	17528	21910	26292	30674	35056	39438	43820	48202	50831
AT801U D	21994	27493	32991	38490	43988	49487	54985	60484	63783
AT1001U D	40716	50895	61074	71253	81432	91611	101790	111969	**

** AT1001U D operated with 8 bar (116 Psi) supply pressure requires SPECIAL construction. Contact AIR TORQUE factory.

SPRING SET CONFIGURATION

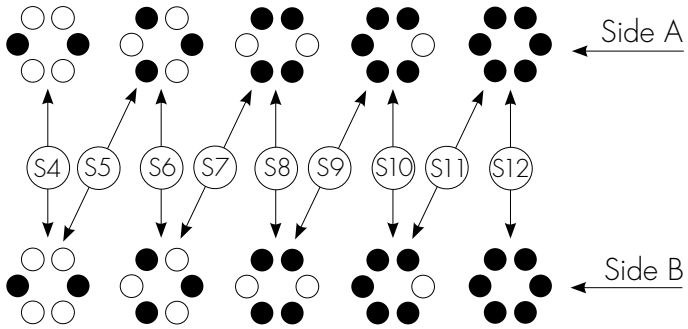
AT045U configuration

Spring Set	Side B	Side A
	AT045U Spring type	AT045U Spring type
S1-1	1 (green)	1 (green)
S1-2	1 (green)	2 (red)
S2-2	2 (red)	2 (red)
S2-3	2 (red)	3 (black)
S3-3	3 (black)	3 (black)

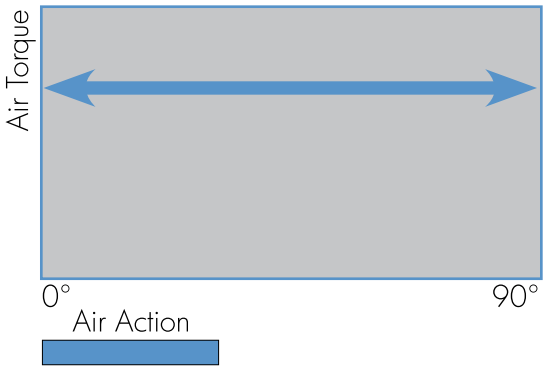
AT051U configuration

Spring Set	Side B		Side A	
	AT051U Internal Spring type	AT051U External Spring type	AT051U Internal Spring type	AT051U External Spring type
S1	1 (green)	----------	----------	2 (black)
S2	----------	2 (black)	----------	2 (black)
S3	----------	2 (black)	----------	3 (red)
S4	----------	3 (red)	----------	3 (red)
S5	----------	3 (red)	1 (green)	2 (black)
S6	1 (green)	2 (black)	1 (green)	2 (black)
S7	1 (green)	2 (black)	1 (green)	3 (red)
S8	1 (green)	3 (red)	1 (green)	3 (red)

AT101U to AT1001U configuration

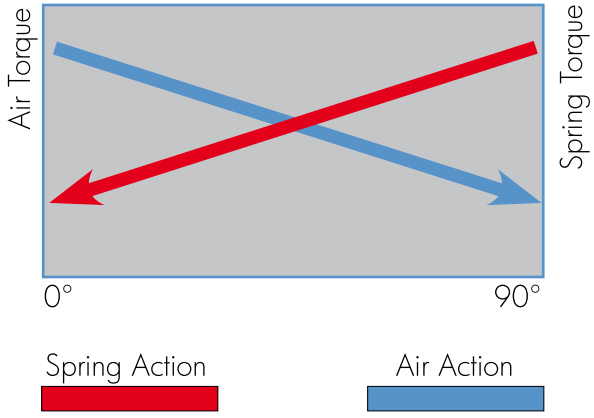


TYPICAL TORQUE CURVES FOR RACK PINION ACTUATORS



Torque output double acting

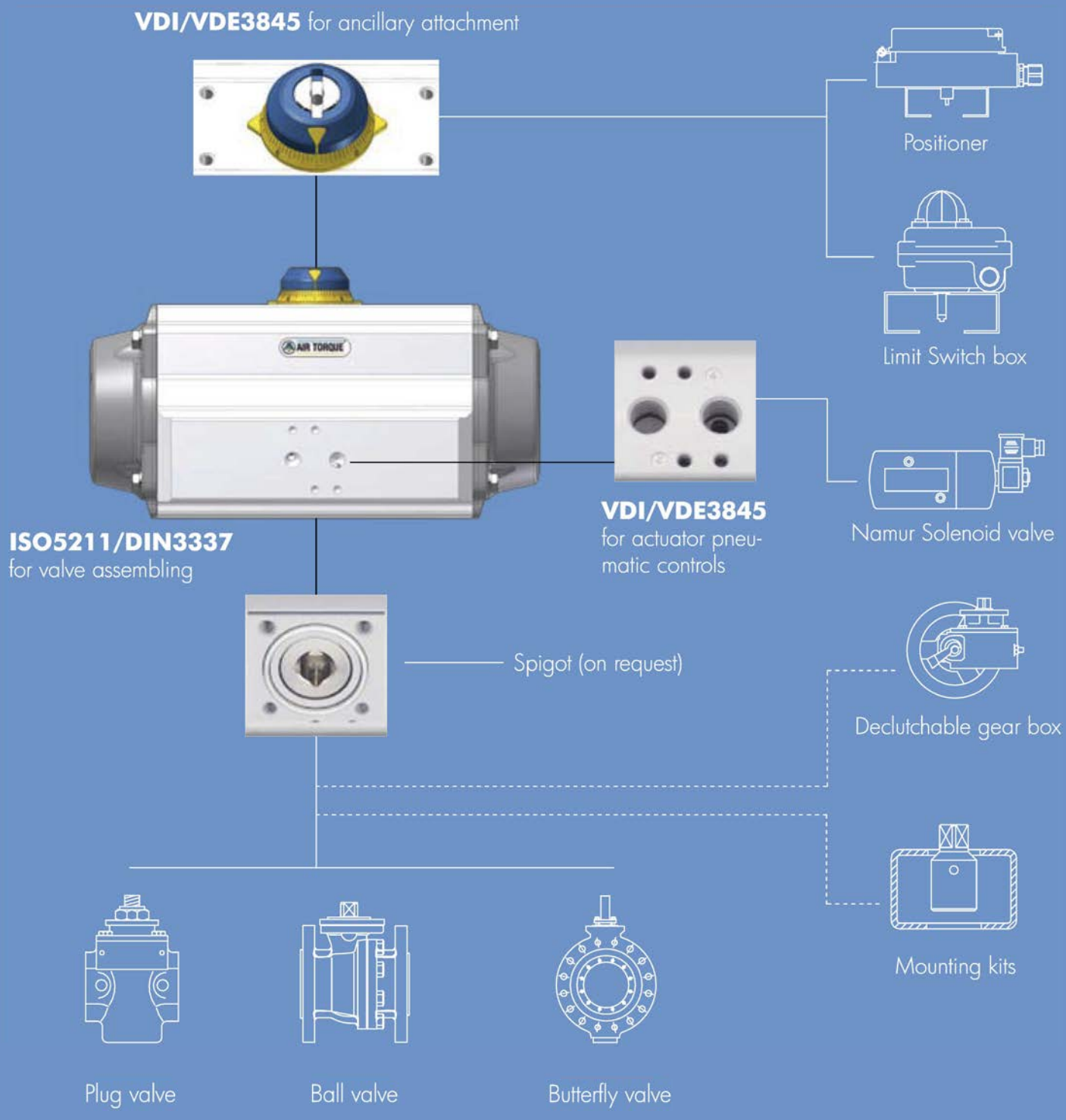
The double acting actuator has constant torque over the whole stroke, so that all that needs to be known for sizing is the maximum valve torque, which is multiplied by a safety factor (usually at least 25%-30% depending on the valve and service). The value thus obtained is then compared with figures in the minimum air pressure column in the actuator torque tables. After having found the same or nearest value (in excess), the suitable actuator model can be read from the column to the left.

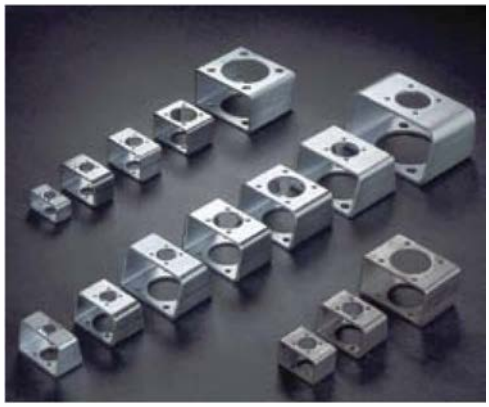


Torque output spring return

The spring return actuator has four different torque values: the air torques at 0° and 90° when it is pressurized, and the spring torques at 90° and 0° when the pressure is discharged. For a correct sizing, the torque curves of the actuator in both strokes have to be higher than the valve torque curves. Also for the spring return actuator sizing, the valve torques have to be multiplied by a safety factor (usually at least 25%-30% depending on the valve and service). The 4th Generation Line Upgrade Series are designed to give a balanced torque when the number of springs per side is equal to the air pressure supply in bar (for example 4 bar, 4 springs per side).

ACTUATOR INTERFACE FOR AUTOMATION





COUPLING AND BRACKETS

Air Torque has a large stock of couplings and brackets. All the accessories for valve automation available on request.

STANDARD PROTECTION LEVELS

PARTS	COATING
Body (AT045U to AT751U)	ALODUR anodized
Body (AT801U and AT1001U)	Anodized plus epoxy primer, plus polyurethane coating (RAL9007 - grey)
End-caps (AT045U to AT801U)	Anodized plus polyester coating (RAL9007 - grey - or RAL5015 blue)
End-caps (AT1001U)	Anodized plus polyester coating (RAL9007 - grey)
Carbon steel drive shaft (AT051U to AT801U)	ENP
Aluminum alloy drive shaft (AT045U and AT1001U)	ALODUR anodized

PROTECTION LEVEL A

PARTS	COATING
Body	ALODUR anodized plus PTFE coating (light grey)
End-caps	Anodized plus PTFE coating (light grey)
Carbon steel drive shaft (AT051U to AT801U)	ENP
Aluminum alloy drive shaft (AT045U and AT1001U)	ALODUR anodized

PROTECTION LEVEL D

PARTS	COATING
Body	ALODUR anodized plus epoxy coating (RAL7046 - grey)
End-caps	Anodized plus epoxy coating (RAL7046 - grey)
Stainless steel drive shaft	ENP
Stainless steel 316 fasteners	NA

PROTECTION LEVEL F

See technical data-sheet for protection details

STANDARD PROTECTION LEVELS

PROTECTION LEVEL B

PARTS	COATING
Body	ALODUR anodized plus PTFE coating (light grey)
End-caps	Anodized plus polyester coating (RAL9007 - grey - or RAL5015 blue)
End-caps (AT1001U)	Anodized plus polyester coating (RAL9007 - grey)
Carbon steel drive shaft (AT051U to AT801U)	ENP
Aluminum alloy drive shaft (AT045U and AT1001U)	ALODUR anodized

PROTECTION LEVEL E

PARTS	COATING
Body	ALODUR anodized plus PTFE coating (light grey)
End-caps	Anodized plus PTFE coating (light grey)
Stainless steel drive shaft	ENP

PROTECTION LEVEL P

PARTS	COATING
Body (AT045U to AT751U)	ALODUR anodized
Body (AT801U and AT1001U)	Anodized
End-caps	Anodized
Carbon steel drive shaft (AT051U to AT801U)	ENP
Aluminum alloy drive shaft (AT045U and AT1001U)	ALODUR anodized

See technical data-sheet for protection details

AVAILABLE OPTIONS AND ORDERING CODES

0	**Blank**: octi-cam assembled for standard travel stop adjustment **K**: octi-cam assembled for lock-out capability (stroke adjustment limited at +/- 5°).	**7**	**XXD** (square dimensions): single square dimension and diagonal assembling **XXL**: single square dimension and parallel assembling **XXDS**: dimension and double square **S x d (a)**: flat head dimensions **W x d**: double keys dimensions
00	**Blank**: for standard actuator **R50**: 50% travel stop limitation (45° up to 90°) **R100**: 100% travel stop limitation (0° up to 90°) **FA**: fast acting **FM**: fail mid 180° rotation **3P**: 3 position (only for spring return) **3PD**: 3 position (both for spring return and double acting) **HC**: hydraulic damper **TS**: top smart connection	**8**	**Blank**: actuator with standard seals suitable for -40°C (-40°F) to 80°C (+176°F) **HT**: actuator construction suitable for -15°C (+5°F) to 150°C (+302°F) **LLT**: actuator construction suitable for -55°C (-67°F) to 80°C (+176°F)
1	Actuator model, series and rotation **AT045U** to **AT1001U**: 90° (standard) **AT052U** up to **AT752U**: 120° **AT053U** to **AT753U**: 135° **AT058U** to **AT758U**: 180°	**9**	**Blank**: standard assembly type ST, clockwise to close (spring to close) and close indication at air failure condition (or with pressurized port 4 for double acting) for **in line** mounting. **STR**: clockwise to close (spring to close) and close indication at air failure condition (or with pressurized port 4 for double acting) for **across line** mounting. **LF**: counterclockwise to close (spring to open) and open indication at air failure condition (or with pressurized port 4 for double acting) for **across line** mounting. **LFR**: counterclockwise to close (spring to open) and open indication at air failure condition (or with pressurized port 4 for double acting) for **in line** mounting.
2	**S**: spring return **D**: double acting		
3	Only for spring return: number of springs, spring configuration set		
4	**A, B, D, E, F, P**: Protection level		
5	ISO Flange		
6	**Blank**: no spigot **Y**: with spigot	**10**	Further requested options

(a) head flat orientation to be specified

Examples of model designation

0	00	1	2	3	4	5	6	7	8	9	10
-	-	AT201U	S	12	B	F05-F07	Y	14D	HT	-	-

AT201, Upgrade Series, spring return with 12 springs, protection level B, ISO flange F05-F07, with spigot, 14 mm diagonal single square and high temperature construction.

0	00	1	2	3	4	5	6	7	8	9	10
K	-	AT351U	D	-	A	F07-F10	-	17DS	-	LFR	-

AT351, Upgrade series, with lock-out capability, double acting, protection level A, ISO flange F07-F10, 17 mm double square and counterclockwise to close (spring to open) and open indication at air failure condition (or with pressurized port 4 for double acting) for in line mounting.

Design and Innovation

The new technical features incorporated in the **PT "B" Series** pneumatic actuators, permits to have many benefit and versatility for an easier valve automation.

Range and options

The **PT "B" Series** pneumatic actuators are available in:

- Eighteen models
- Spring return and double acting versions
- Torque up to 10.000 Nm
- Five different protection levels
- Low and high temperature constructions
- Large availability of many ISO flanges and drive shaft connections for direct valve automation.

Further Options available on request:

- 120°-135°-180° rotation both in double acting and spring return
- 180° spring return Fail-Mid
- 3 Position actuators, 90° and 180° rotation, both double acting and spring return versions
- Fast acting actuators
- Hydraulic damper actuators
- Lock-Out capability in fully open or fully close position
- 100% travel stop adjustment.

Product Quality, Technology and material

The **PT "B" Series** pneumatic actuators, have been designed and tested to obtain the highest cycling life and the most reliable performance with very reduced maintenance and service. The actuators are manufactured with the highest material quality, the most accurate material selections and the latest production technologies.

International Standard

The **PT "B" Series** pneumatic actuators, have been designed, manufactured and tested in full compliance with all the applicable International standards.

TECHNICAL FEATURES

1. Alodur hard anodized body

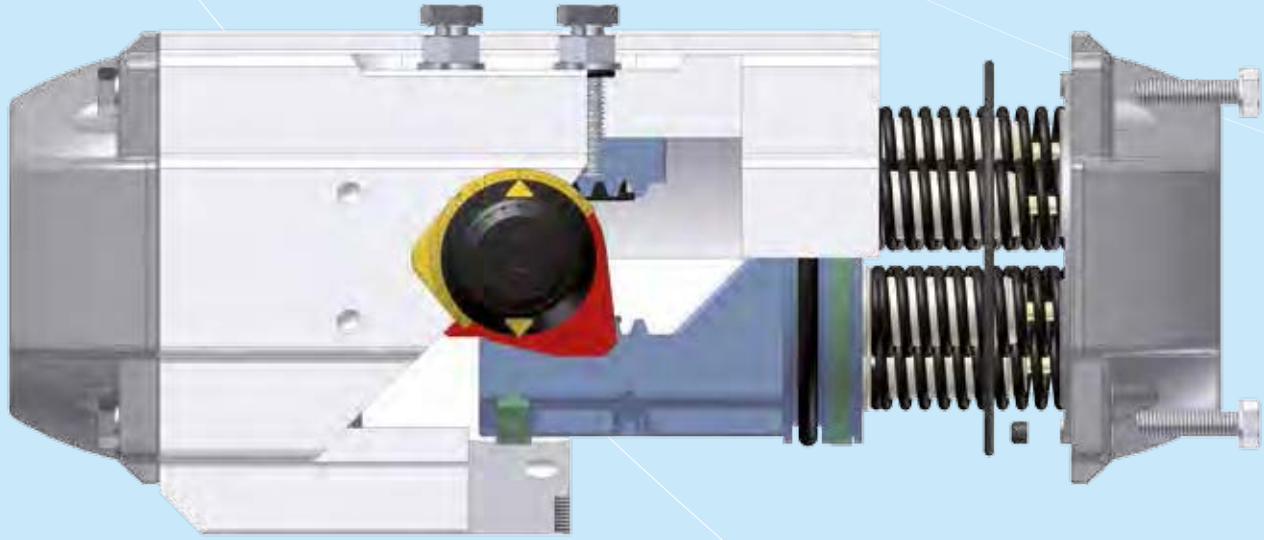
Extruded aluminum body with Alodur special hard anodization applied internally and externally for a complete corrosion protection, a lower friction coefficient and an increased surface hardness for the longest wearing resistance. Additional protective coatings are available on the external surface for different environmental working conditions.

2. Pistons design

Dual piston rack and pinion design for compact construction, symmetric mounting position, high-cycle life and fast operation, reverse rotation can be accomplished in the field by simply inverting the pistons. Both pistons are anodized for a better corrosion and wearing resistance.

3. Two independent external travel stop adjustments

As a standard, travel stops allowing adjustment for – 5° up to +15° on the close position, and for + 5° up to -15° on the open position. This allows accurate valve alignment, stroke limitation and provides on actuator a large travel adjustment.



4. Universal and anti-blowout drive shaft

Integral drive-shaft is available with double square as standard to permit versatility, lower and more flexible inventory. Others connections and an aluminum adaptor on top are available on requests.

5. One compact and unique design

With identical body and end caps for double acting and spring return model to reduce inventory, allows field conversion, by adding or removing modular spring cartridge.

6. Position indication

As standard actuators are supplied with a position indicators and a graduated ring allowing to achieve easily the correct actuator/valve position. Other types of position indicators suitable for direct mounting of sensors (P+F, IFM, etc.) and mechanical limit-switches available on request.

TECHNICAL FEATURES

7. Multiple bearings and guide

Bearings on piston and racks for precise operation, low friction, high cycle life and piston guides preventing shaft blowout.

8. Modular preloaded spring

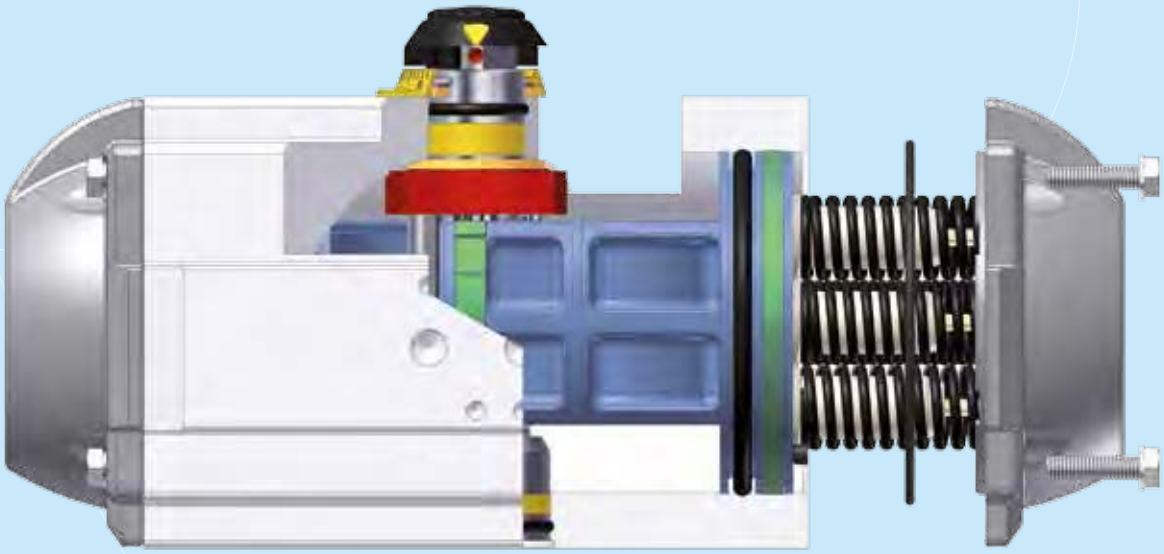
Cartridge design in high grade coated steel for simple range versatility, greater safety and corrosion resistance.

9. Electroless nickel-plated drive-shaft

Blow-out proof, bearing guided for improved safety and maximum cycle life.

10. Fully machined teeth

On piston racks and pinion shaft for accurate positioning, low backlash and maximum engagement resulting in overall efficient operation.



11. Selected and high quality bearings and seals

Provide a wide operating temperature range, low friction and high cycle life.

12. Fasteners

Stainless steel fasteners for long term corrosion resistance

13. Full compliance

To specifications ISO 5211, DIN 3337 and VDI/VDE 3845 providing the product interchangeability and the easiest valve automation and accessories installation.

14. Actuator Marking Traceability

Each actuator is marked with detailed information regarding product description, connections and working conditions; furthermore each individual actuator is produced with a serial number for full traceability.

ACTUATOR OPERATING CONDITIONS

1. Operating media

Dry or lubricated air, inert/non-corrosive gases provided that they are compatible with the internal actuator parts and lubricant. See the technical data-sheet for details.

2. Supply pressure

For Double Acting and Spring Return actuators the maximum supply pressure is up to 8 bar (116 PSI), the minimum supply pressure is 2.5 bar (36 PSI).

3. Working Temperature

- **Standard** actuator construction suitable from – 40°C (-40°F) to +80°C (+176°F)
- High temperature – **HT** - actuator construction suitable from –15°C (+5°F) to +150°C (+302°F)
- Extreme low temperature – **LLT** – actuator construction suitable from -55°C (-67 °F) to + 80°C (+176 °F)

4. Lubrication

Actuators are factory lubricated for life under normal operating conditions. The standard lubricant is suitable for use from -40°C (-40F) to +80°C (+176° F).

5. Installation

Actuator suitable both for indoor and outdoor installation.

6. Protection and Corrosion resistance

PT "B" Series pneumatic actuators are available in 5 different protection levels suitable for different environmental conditions. For severe duties select from the protection level table or contact AIR TORQUE.

7. Actuator designation and Marking

To have a correct actuator selection, the operating conditions have to be evaluated and defined; they will be marked on the actuator identification label.

ACTUATOR FUNCTION and ROTATION

The standard actuator rotation is clockwise to close, a counter-clockwise rotation is achieved when port 2 is pressurized.
Non standard actuator rotation is counter-clockwise to close, a clockwise rotation is achieved when port 2 is pressurized.
See the technical data-sheet for details.

Double Acting operation function (standard rotation) TOP View:

Air supplied to Port 2 forces the pistons towards the actuator end caps, with the exhaust air exiting from Port 4, a counter-clockwiserotation is achieved.

Air supplied to Port 4 forces the pistons inward, exhaust air exits from Port 2, a clockwise rotation is achieved.

Single Acting operation function (standard rotation) TOP View:

Air supplied to Port 2 forces the pistons toward the actuator end caps, compressing the springs, with the exhaust air exiting from Port 4, a counter clockwise rotation is achieved.

The loss of air pressure (air or electric failure) at Port 2 allows the springs to force the pistons inward with the exhaust air exiting from Port 2, a clockwise rotation is achieved.

AIR TORQUE®

SPRING SET CONFIGURATION

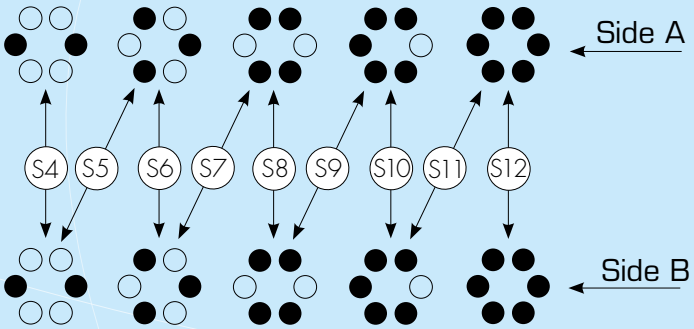
PT045 B configuration

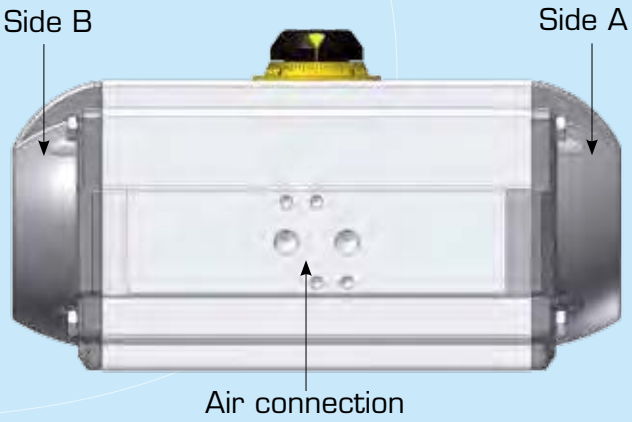
Spring Set	Side B	Side A
	PT045 B Spring type	PT045 B Spring type
S1-1	1 (green)	1 (green)
S1-2	1 (green)	2 (red)
S2-2	2 (red)	2 (red)
S2-3	2 (red)	3 (black)
S3-3	3 (black)	3 (black)

PT050 B configuration

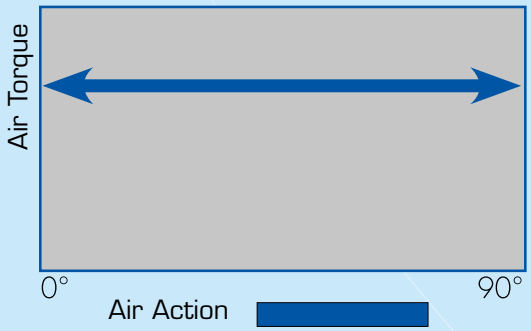
Spring Set	Side B		Side A	
	PT050 B Internal Spring type	PT050 B External Spring type	PT050 B Internal Spring type	PT050 B External Spring type
S1	1 (green)	----------	----------	2 (black)
S2	----------	2 (black)	----------	2 (black)
S3	----------	2 (black)	----------	3 (red)
S4	----------	3 (red)	----------	3 (red)
S5	----------	3 (red)	1 (green)	2 (black)
S6	1 (green)	2 (black)	1 (green)	2 (black)
S7	1 (green)	2 (black)	1 (green)	3 (red)
S8	1 (green)	3 (red)	1 (green)	3 (red)

PT100 B to PT1000 B configuration



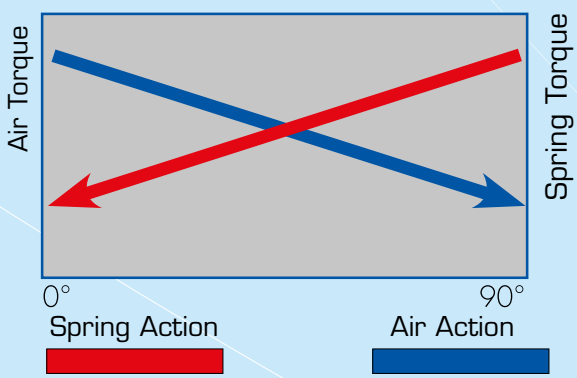


TYPICAL TORQUE CURVES FOR RACK PINION ACTUATORS



Torque output double acting

The double acting actuator has constant torque over the whole stroke, so that all that needs to be known for sizing is the maximum valve torque, which is multiplied by a safety factor (usually at least 25%-30% depending on the valve and service). The value thus obtained is then compared with figures in the minimum air pressure column in the actuator torque tables. After found the same or nearest value (in excess), the suitable actuator model can be read of the column to the left.



Torque output spring return

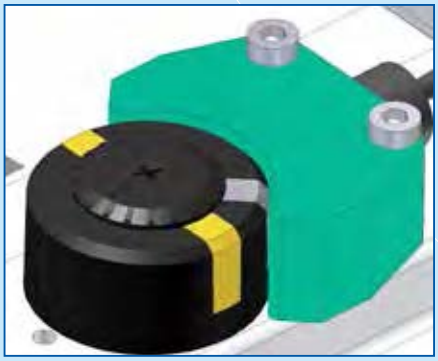
The spring return actuator has four different torque values: the air torques at 0° and 90° when it is pressurized, and the spring torques at 90° and 0° when the pressure is discharged. For a correct sizing, the torque curves of the actuator in both strokes have to be higher than the valve torque curves. Also for the spring return actuator sizing, the valve torques have to be multiplied by a safety factor (usually at least 25%-30% depending on the valve and service). The PT "B" Series are designed to give a balanced torque when the number of springs per side is equal to the air pressure supply in Bar (for example 4 Bar, 4 springs per side).

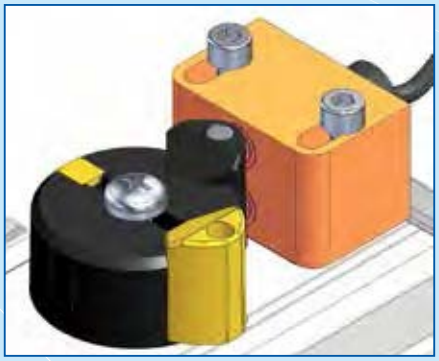
POSITION INDICATOR AND TOP ADAPTOR

Options available for PT045 B to PT100 B

Standard position indicator with **stainless steel insert** for ancillary driving/attachment for a more precise and stable coupling with ancillary stem. A graduated ring is fitted, as a standard, under the position indicator in order to have an accurate position indication.

Optional indicators for direct mounting of sensors (P+F, IFM, etc.) and mechanical limit-switches





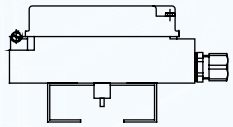
Options available for PT200 B to PT1000 B

As a standard the actuators are supplied with position indicator and a graduated ring in order to have an accurate position indication.
As an optional feature, an aluminum top adaptor is available for ancillary driving/attachment for a more flexible and versatile actuator installation.

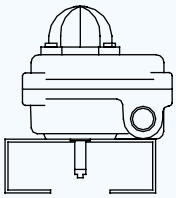
Optional indicators for direct mounting of sensors (P+F, IFM, etc.) and mechanical limit-switches

ACTUATOR INTERFACE FOR VALVE AUTOMATION - APPLIED STANDARDS

VDI/VDE3845 for ancillary attachment

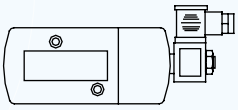


Positioner



Limit Switch box

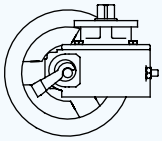
VDI/VDE3845
for actuator pneumatic controls



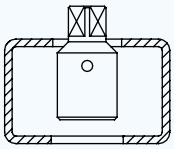
Namur Solenoid valve

ISO5211/DIN3337
for valve assembling

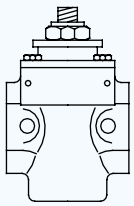
Spigot (on request)



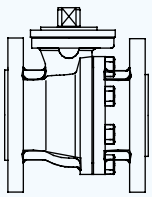
Declutchable gear box



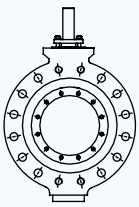
Mounting kits



Plug valve



Ball valve



Butterfly valve

Coupling and brackets

Air Torque has a large stock of couplings and brackets.
All the accessories for valve automation available on request.

DIMENSIONS AND TECHNICAL DATA

Dimensions in mm

ACTUATOR MODEL	PT045 B D/S	PT050 B D/S	PT100 B D/S	PT200 B D/S	PT250B D/S	PT300 B D/S	PT350 B D/S	PT400 B D/S	PT450 B D/S	PT500 B D/S	PT550 B D/S	PT600 B D/S	PT650 B D/S	PT700 B D/S	PT750 B D/S	PT800 B D/S	PT1000 B D/S
A	118	137	154	204	241	259	304	333	395	423	473	528	605	710	812	855	950
B	66	69	85	102	115	127	145	157	177	196	220,5	245	298,5	330	383	410	518
C	62	78,5	91,5	105	118,5	130,5	148,5	159	182,5	200,5	223	244,5	284	319	371	418	528
D	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M6x10	M6x10	M6x10	M6x10	M6x10
E	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M6x10
F	80	80	80	80	80	80	80	80	80	80	130	130	130	130	130	130	200
G	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	50
N	11	11	11	17	17	17	27	27	27	27	36	36	36	36	36	36	36
P	15 / 20	20	20	20	20	20	30	30	30	30	50	50	50	50	50	50	80
R	32	32	32	32	32	32	32	32	32	32	32	32	45	45	45	45	45
S	24	24	24	24	24	24	24	24	24	24	24	24	40	40	40	40	40
T ISO 228	1/8"	1/8"	1/8"	1/8"	1/8"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"	1/2"	1/2"	1/2"	1/2"
øZ1	42	42	42	42	42	42	58	58	67,5	67,5	80	80	115	115	115	115	135
ISO Flange	F04	F04	F05 + F07	F05 + F07	F05 + F07	F05 + F07 + F10	F07 + F10	F07 + F10	F10 + F12	F10 + F12	F14	F14	F16	F16	F16	F16 + F25	F16 + F25 + F30
Q	42	42	50	50	50	50	70	70	102	102	140	140	165	165	165	165	165
Q1	-	-	70	70	70	70	102	102	125	125	-	-	-	-	-	254	254
Q2	-	-	-	-	-	102	-	-	-	-	-	-	-	-	-	-	298
W	M5	M5	M6	M6	M6	M6	M8	M8	M10	M10	M16	M16	M20	M20	M20	M20	M20
W1	-	-	M8	M8	M8	M8	M10	M10	M12	M12	-	-	-	-	-	M16	M16
W2	-	-	-	-	-	M10	-	-	-	-	-	-	-	-	-	-	M20

OPTIONAL ISO Flange		F03	F03 + F05	F04 + F07	-	-	F07 + F10	-	-	-	-	F10 + F12	F10 + F12	F12	F12	F14	-	-
					-	-		-	-	-	-			F14	F14	F16 + F25	-	-
					-	-		-	-	-	-			-	-	-	-	-
CH x l min.	D	-	9 x 11	9 x 11	11 x 12	11 x 12	14 x 16	14 x 16	17 x 19	22 x 24	22 x 24	22 x 24	22 x 24	27 x 29	27 x 29	55 x 59	55 x 59	75 x 80
		-	11 x 12	14 x 16	14 x 16	14 x 16	17 x 19	22 x 24	22 x 24	27 x 29	27 x 29	36 x 39	36 x 39	46 x 49	46 x 49			
		-	-	-	17 x 19	17 x 19	22 x 24	-	-	-	-	-	-	-	-	-	-	
	DS	9 x 11	11 x 12	11 x 12	14 x 16	17 x 19	17 x 19	17 x 19	22 x 24	27 x 29	27 x 29	27 x 29	27 x 29	36 x 39	36 x 39	46 x 49	46 x 49	55 x 59
		11 x 12	-	14 x 16	17 x 19	-	22 x 24	22 x 24	27 x 29	-	-	36 x 39	36 x 39	46 x 49	46 x 49	55 x 59	55 x 59	75 x 80

Technical data (Metric Unit)

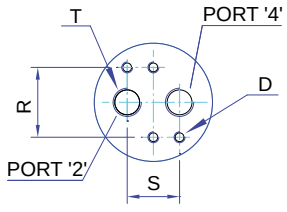
METRIC	MODEL TYPE	PT045 B		PT050 B		PT100 B		PT200 B		PT250 B		PT300 B		PT350 B		PT400 B		PT450 B		PT500 B		PT550 B		PT600 B		PT650 B		PT700 B		PT750 B		PT800B		PT1000 B	
		D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S
Opening Time	(Sec.)	0,15	0,2	0,2	0,25	0,25	0,3	0,3	0,4	0,4	0,5	0,5	0,7	0,7	0,9	0,9	1,2	1,2	1,5	1,5	1,8	2	2,4	2,7	3,5	3,5	4,1	4	4,5	5	6	6	7,5	8	10
Closing Time	(Sec.)	0,2	0,25	0,25	0,3	0,3	0,35	0,35	0,5	0,5	0,6	0,6	0,9	0,8	1,1	1,1	1,4	1,4	1,8	1,7	2,1	2,2	2,8	3,2	4	4	4,6	4,5	5	6	7	7	8,5	9	11
Air Volume Opening	(L)	0,06		0,09		0,16		0,31		0,51		0,71		1,19		1,54		2,41		3,14		4,26		5,94		10		14,5		20		25		49	
Air Volume Closing	(L)	0,1		0,15		0,26		0,49		0,78		1,11		1,80		2,34		3,78		4,92		6,89		9,46		15,2		21,4		33		40		84	
Approximate Weight	(Kg)	0,75	0,9	1,15	1,26	1,7	1,9	3,0	3,4	4,2	4,8	5,7	6,6	8,8	10,2	10,7	12,6	15,5	18,7	19,6	23,7	25	33	37	45	56	71	77	97	118	150	127	169	170	238

Note : (A) The above moving times of the actuator are obtained in the following test conditions:
For models PT045 B ÷ PT500 B: (1) Room Temperature, (2) Actuator Stroke 90°, (3) Solenoid Valve with Orifice Of 4 mm and a flow capacity Qn 400L/min., (4) Inside pipe diameter 8 mm, (5) Medium clean air, (6) Air supply pressure 5,5 bar (79,75 Psi), (7) Actuator without external resistance load.

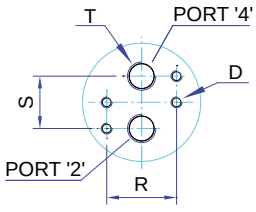
For models PT550 B ÷ PT1000 B: (1) Room Temperature, (2) Actuator Stroke 90°, (3) Solenoid Valve with Orifice Of 11 mm and a flow capacity Qn 6000L/min., (4) Inside pipe diameter 11 mm, (5) Medium clean air, (6) Air supply pressure 5,5 bar (79,75 Psi), (7) Actuator without external resistance load.

Cautions: obviously on the field applications when one or more of the above parameter are different, the moving time will be different.

AIR CONNECTION VDI/VDE 3845

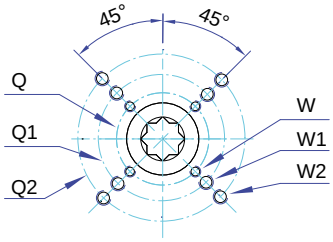


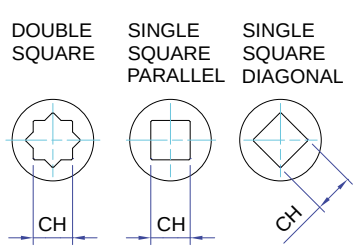
For models PT045 B ÷ PT250 B and PT750 B



For models PT300 B ÷ PT700 B, PT800 B and PT1000 B

BOTTOM VIEW ISO 5211

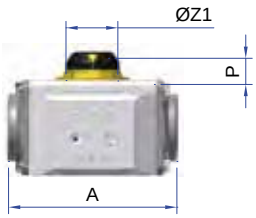




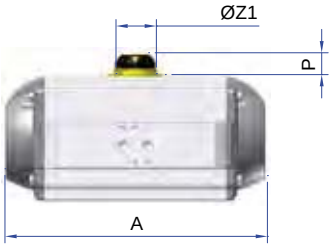
DIMENSIONS AND TECHNICAL DATA

FRONT VIEW

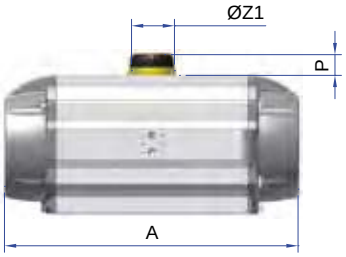
PT045 B



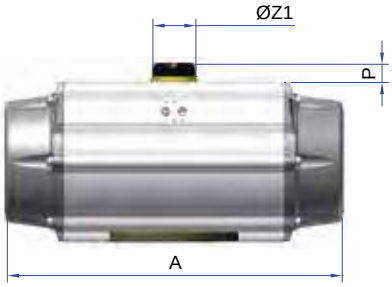
PT050 B ÷ PT650 B



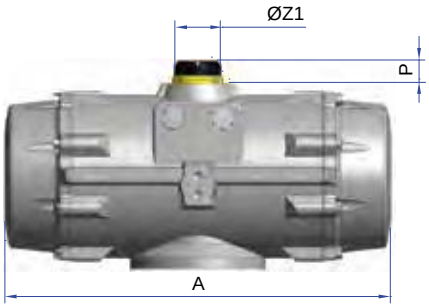
PT700 B



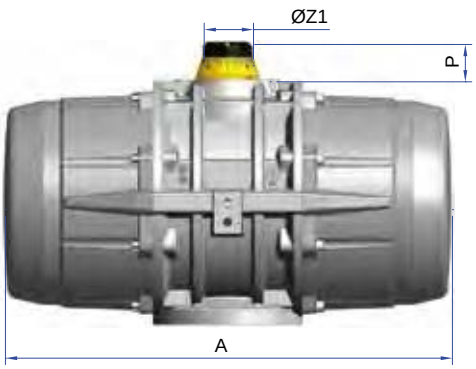
PT750 B



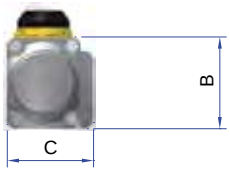
PT800 B

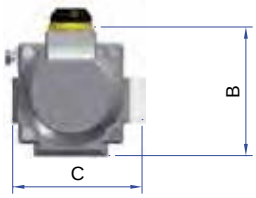


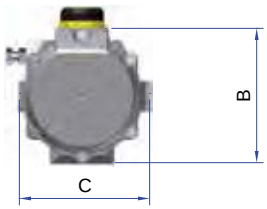
PT1000 B

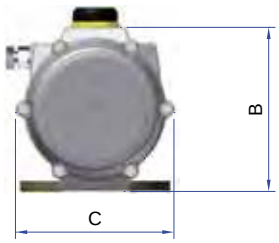


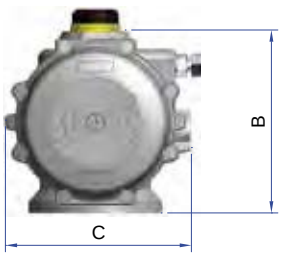
SIDE VIEW

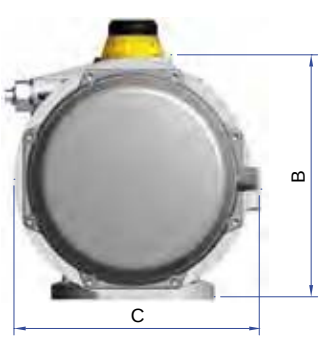






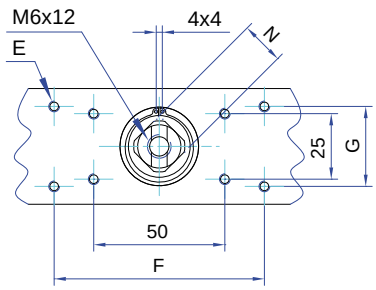




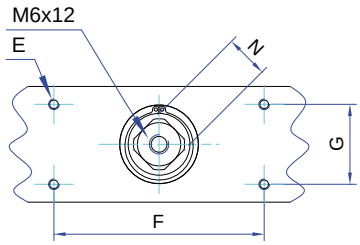


TOP DETAIL

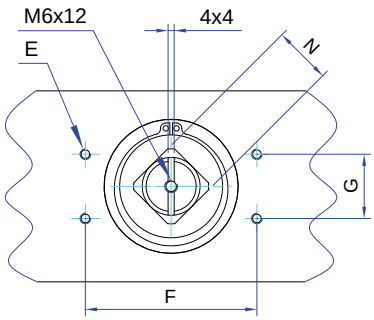
PT045 B



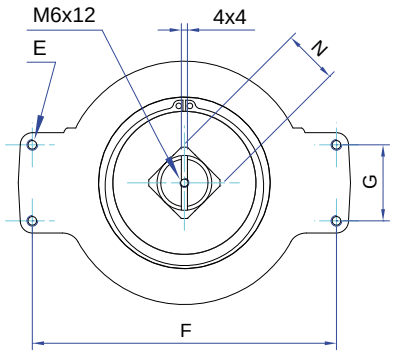
PT050 B ÷ PT100 B



PT200 B ÷ PT750 B



PT800 B ÷ PT1000 B



DIMENSIONS AND TECHNICAL DATA

Dimensions in inch

ACTUATOR MODEL	PT045 B D/S	PT050 B D/S	PT100 B D/S	PT200 B D/S	PT250 B D/S	PT300 B D/S	PT350 B D/S	PT400 B D/S	PT450 B D/S	PT500 B D/S	PT550 B D/S	PT600 B D/S	PT650 B D/S	PT700 B D/S	PT750 B D/S	PT800 B D/S	PT1000 B D/S
A	4,65	5,39	6,06	8,03	9,49	10,20	11,97	13,11	15,55	16,65	18,62	20,79	23,82	27,95	31,97	33,66	37,40
B	2,60	2,72	3,35	4,02	4,53	5,00	5,71	6,18	6,97	7,72	8,68	9,65	11,75	12,99	15,08	16,14	20,39
C	2,44	3,09	3,60	4,13	4,67	5,14	5,85	6,26	7,19	7,89	8,78	9,63	11,18	12,56	14,61	16,46	20,79
D	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M6x0,39	M6x0,39	M6x0,39	M6x0,39	M6x0,39
E	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M5x0,31	M6x0,39
F	3,15	3,15	3,15	3,15	3,15	3,15	3,15	3,15	3,15	3,15	5,12	5,12	5,12	5,12	5,12	5,12	7,87
G	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,97
N	0,43	0,43	0,43	0,67	0,67	0,67	1,06	1,06	1,06	1,06	1,42	1,42	1,42	1,42	1,42	1,42	1,42
P	0,59 / 0,79	0,79	0,79	0,79	0,79	0,79	1,18	1,18	1,18	1,18	1,97	1,97	1,97	1,97	1,97	1,97	3,15
R	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,77	1,77	1,77	1,77	1,77
S	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	1,57	1,57	1,57	1,57	1,57
T * ISO 228	1/8"	1/8"	1/8"	1/8"	1/8"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"	1/2"	1/2"	1/2"	1/2"
øZ1	1,65	1,65	1,65	1,65	1,65	1,65	2,28	2,28	2,66	2,66	3,15	3,15	4,53	4,53	4,53	4,53	5,31
ISO Flange	F04	F04	F05 + F07	F05 + F07	F05 + F07	F05 + F07 + F10	F07 + F10	F07 + F10	F10 + F12	F10 + F12	F14	F14	F16	F16	F16	F16 + F25	F16 + F25 + F30
Q	1,65	1,65	1,97	1,97	1,97	1,97	2,76	1,97	4,02	4,02	5,51	5,51	6,50	6,50	6,50	6,50	6,50
Q1	-	-	2,76	2,76	2,76	2,76	4,02	2,76	4,92	4,92	-	-	-	-	-	10	10
Q2	-	-	-	-	-	4,02	-	4,02	-	-	-	-	-	-	-	-	11,73
W	M5	M5	M6	M6	M6	M6	M8	M6	M10	M10	M16	M16	M20	M20	M20	M20	M20
W1	-	-	M8	M8	M8	M8	M10	M8	M12	M12	-	-	-	-	-	M16	M16
W2	-	-	-	-	-	M10	-	M10	-	-	-	-	-	-	-	-	M20

OPTIONAL ISO Flange		F03	F03 + F05	F04 + F07	-	-	F07 + F10	-	-	-	-	F10 + F12	F10 + F12	F12	F12	F14	-	-
					-	-		-	-	-	-			F14	F14	F16 + F25	-	-
					-	-		-	-	-	-			-	-	-	-	-
CH x l min.	D	-	0,35x0,43	0,35x0,43	0,43x0,47	0,43x0,47	0,55x0,63	0,55x0,63	0,67x0,75	0,87x0,94	0,87x0,94	0,87x0,94	0,87x0,94	1,06x1,14	1,06x1,14	2,17x2,32	2,17x2,32	2,95x3,15
		-	0,43x0,47	0,55x0,63	0,55x0,63	0,55x0,63	0,67x0,75	0,87x0,94	0,87x0,94	1,06x1,14	1,06x1,14	1,42x1,54	1,42x1,54	1,81x1,93	1,81x1,93	-	-	-
		-	-	-	0,67x0,75	0,67x0,75	0,87x0,94	-	-	-	-	-	-	-	-	-	-	-
	DS	0,35x0,43	0,43x0,47	0,43x0,47	0,55x0,63	0,67x0,75	0,67x0,75	0,67x0,75	0,87x0,94	1,06x1,14	1,06x1,14	1,06x1,14	1,06x1,14	1,42x1,54	1,42x1,54	1,81x1,93	1,81x1,93	2,17x2,32
		0,43x0,47	-	0,55x0,63	0,67x0,75	-	0,87x0,94	0,87x0,94	1,06x1,14	-	-	1,42x1,54	1,42x1,54	1,81x1,93	1,81x1,93	2,17x2,32	2,17x2,32	2,95x3,15

* NPT (ANSI B1-20-1) threads available on request.

Technical data (Imperial Unit)

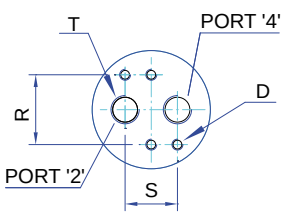
IMPERIAL	MODEL TYPE	PT045 B		PT050 B		PT100 B		PT200 B		PT250 B		PT300 B		PT350 B		PT400 B		PT450 B		PT500 B		PT550B		PT600 B		PT650 B		PT700 B		PT750 B		PT800 B		PT1000 B	
		D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S
Opening Time	(Sec.)	0,15	0,2	0,2	0,25	0,25	0,3	0,3	0,4	0,4	0,5	0,5	0,7	0,7	0,9	0,9	1,2	1,2	1,5	1,5	1,8	2	2,4	2,7	3,5	3,5	4,1	4	4,5	5	6	6	7,5	8	10
Closing Time	(Sec.)	0,2	0,25	0,25	0,3	0,3	0,35	0,35	0,5	0,5	0,6	0,6	0,9	0,8	1,1	1,1	1,4	1,4	1,8	1,7	2,1	2,2	2,8	3,2	4	4	4,6	4,5	5	6	7	7	8,5	9	11
Air Volume Opening	(Cu. In.)	3,66		5,5		9,8		18,9		31,1		43,3		72,6		94		147,1		191,6		260		362,5		610,2		884,8		1220		1526		2990	
Air Volume Closing	(Cu. In.)	6,1		9,2		15,9		29,9		47,6		67,7		109,8		142,8		230,7		300,2		420,5		577,3		927,6		1305		2014		2441		5126	
Approximate Weight	(Lbs)	1,65	1,98	2,5	2,8	3,8	4,2	6,5	7,4	9,3	10,6	12,6	14,6	19,4	22,5	23,6	27,8	34,2	41,2	43,2	52,2	55,1	72,8	81,6	99,2	123	157	170	215	260	331	280	371	375	525

Note : (A) The above moving times of the actuator are obtained in the following test conditions:
For models PT045 B ÷ PT500 B: (1) Room Temperature, (2) Actuator Stroke 90°, (3) Solenoid Valve with Orifice Of 4 mm and a flow capacity Qn 400L/min., (4) Inside pipe diameter 8 mm, (5) Medium clean air, (6) Air supply pressure 5,5 bar (79,75 Psi), (7) Actuator without external resistance load.

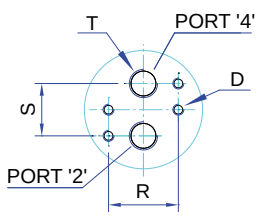
For models PT550 B ÷ PT1000 B: (1) Room Temperature, (2) Actuator Stroke 90°, (3) Solenoid Valve with Orifice Of 11 mm and a flow capacity Qn 6000L/min., (4) Inside pipe diameter 11 mm, (5) Medium clean air, (6) Air supply pressure 5,5 bar (79,75 Psi), (7) Actuator without external resistance load.

Cautions: obviously on the field applications when one or more of the above parameter are different, the moving time will be different.

AIR CONNECTION VDI/VDE 3845

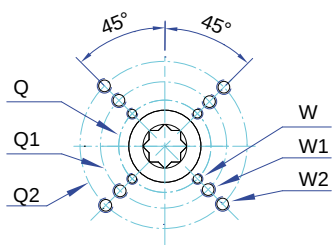


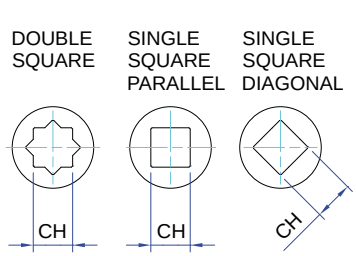
For models PT045 B ÷ PT250 B and PT750 B



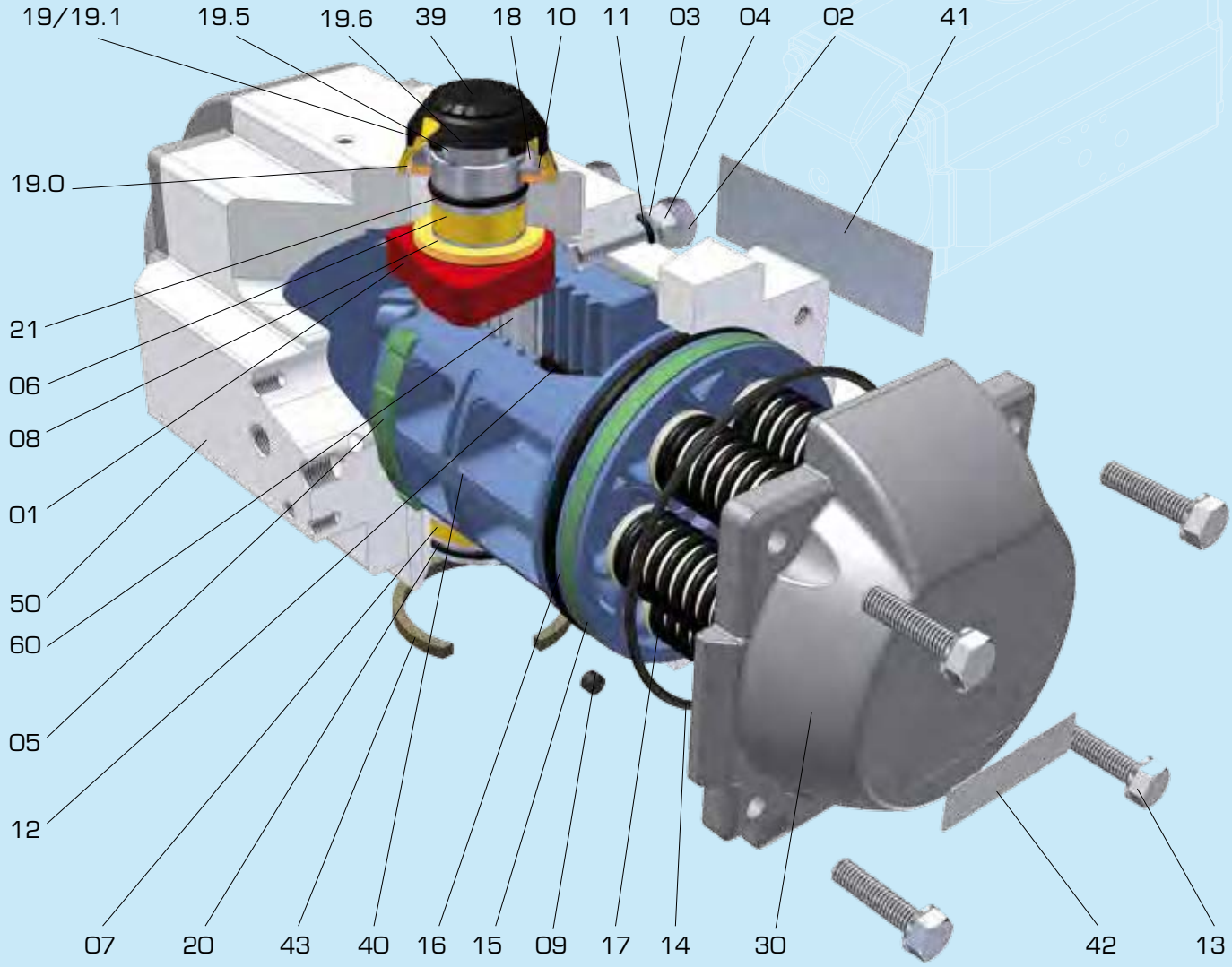
For models PT300 B ÷ PT700 B, PT800 B and PT1000 B

BOTTOM VIEW ISO 5211

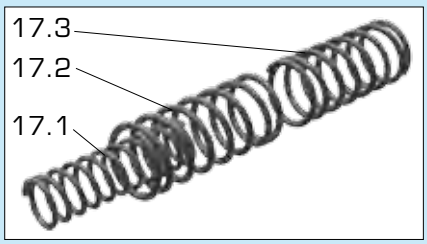




PARTS AND MATERIALS



Spring for PT045 B ÷ PT050 B



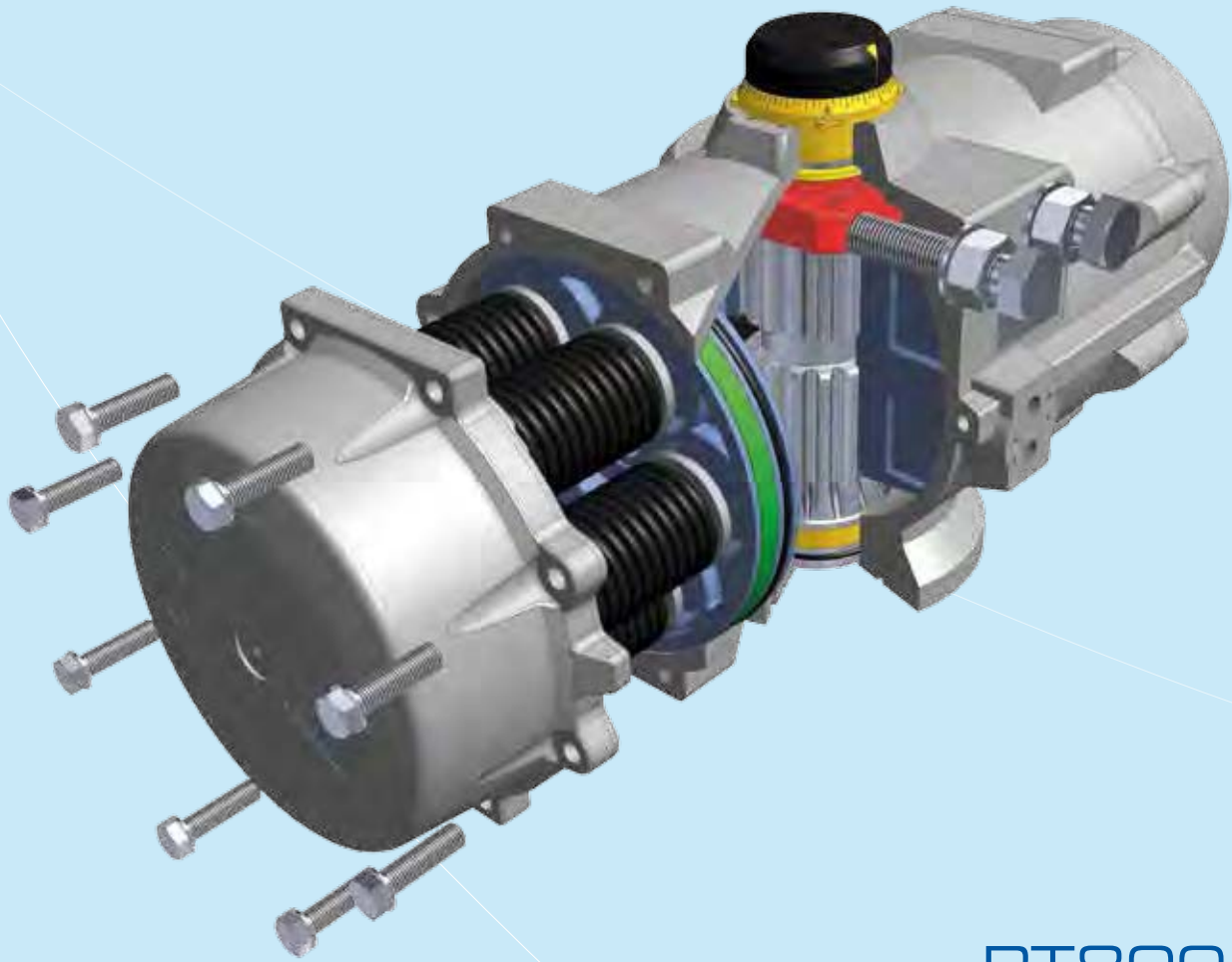
Spring cartridge PT100 B ÷ PT1000 B

PART N°	Spare Parts	UNIT Q.TY / NOTE		PART DESCRIPTION	STANDARD MATERIAL
01		1	NA for PT045 B	OCTI-CAM (Stop arrangement)	Stainless Steel (only for PT050 B ÷ PT300 B)
					Carbon Steel / Nodular Cast Iron, zinc coated
02		2	NA for PT045 B	STOP CAP SCREW	Stainless Steel
03		2	NA for PT045 B	WASHER	Stainless Steel
04		2	NA for PT045 B	NUT (Stop screw)	Stainless Steel
05	○	2		BEARING (Piston back)	High-grade polymers
		4	for PT1000 B		
06	○	1		BEARING (Pinion top)	High-grade polymers
07	○	1		BEARING (Pinion bottom)	High-grade polymers
08	○	2	1 pc. for PT045 B	THRUST BEARING (Pinion)	High-grade polymers
09	○ ☐	2		PLUG	M-NBR / Silicone
09.1	○ ☐	2	for PT800 B ÷ PT1000 B	“O” RING PLUG	M-NBR / Silicone
10		1		THRUST WASHER (Pinion)	Stainless Steel
11	○ ☐	2	NA for PT045 B	“O” RING (Stop screw)	M-NBR
12		2	NA for PT045 B	PISTON GUIDE	High-grade polymers

○ Parts included in Complete spare parts kit

☐ Parts included in “O” ring spare parts kit

PARTS AND MATERIALS



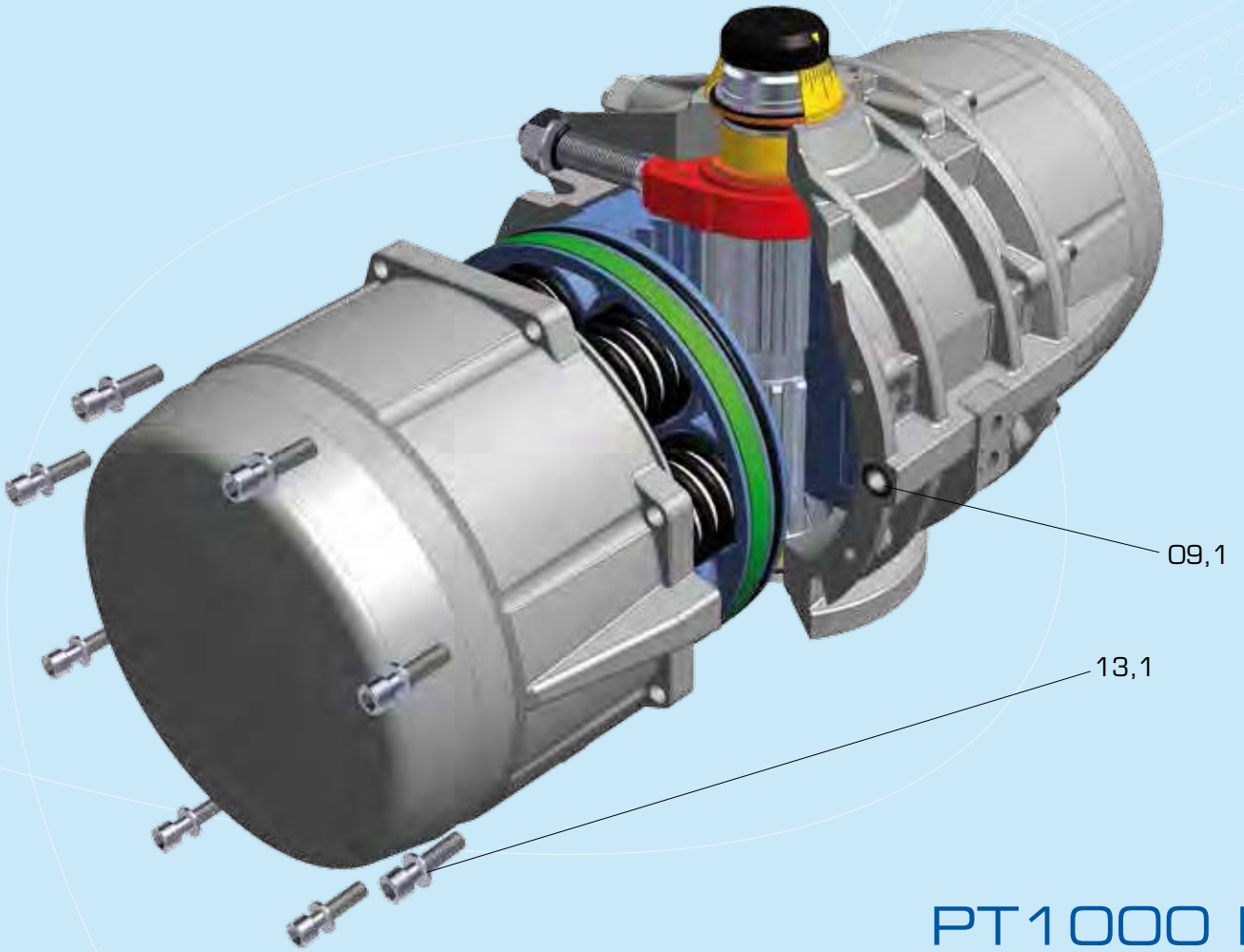
PT800 B

PART N°	Spare Parts	UNIT Q.TY / NOTE		PART DESCRIPTION	STANDARD MATERIAL
13		8	for PT045 B ÷ PT650 B	CAP SCREW (End cap)	Stainless Steel
		12	for PT700 B ÷ PT750 B		
		16	for PT800 B ÷ PT1000 B		
13.1		16	for PT1000 B	WASHER (Cap Screw end cap)	Stainless Steel
14	○ ☐	2		"O" RING (End cap)	M-NBR
15	○	2		BEARING (Piston head)	High-grade polymers
16	○ ☐	2		"O" RING (Piston)	M-NBR
17		max. 12	for PT100 B ÷ PT1000 B	SPRING (Cartridge)	SiCr Spring alloy Steel coated
17.1		max. 2 max. 4	only for PT045 B only for PT050 B	SPRING	
17.2				SPRING	
17.3				SPRING	
18		1		SPRING CLIP (Pinion)	Spring Steel, ENP
19		1	for PT045 B ÷ PT100 B	POSITION INDICATOR	High-grade polymers / Stainless Steel
19.0		1		GRADUATED RING	High-grade polymers
19.1		1	NA for PT045 B ÷ PT100 B	POSITION INDICATOR	High-grade polymers
19.5		1	NA for PT045 B ÷ PT100 B	TOP ADAPTOR	Extruded Aluminium alloy, anodized
19.6		2	NA for PT045 B ÷ PT100 B	HEX. SOCKET SCREW (Top Adaptor)	Stainless Steel

○ Parts included in Complete spare parts kit

☐ Parts included in "O" ring spare parts kit

PARTS AND MATERIALS



PT1000 B

PART N°	Spare Parts	UNIT Q.TY / NOTE		PART DESCRIPTION	STANDARD MATERIAL
20	○ □	1		"O" RING (Pinion bottom)	M-NBR
21	○ □	1		"O" RING (Pinion top)	M-NBR
30		2		END CAP	Pressure Die Cast Aluminium alloy, anodized and coated
					Cast Aluminium alloy, anodized and coated (for PT1000 B)
39		1		CAP SCREW (Indicator)	High-grade polymers
40		2		PISTON	Pressure Die Cast Aluminium alloy, anodized
					Cast Aluminium alloy, anodized (for PT1000 B)
41		1		ACTUATOR IDENTIFICATION LABEL	Polyester-Silver
42		2		END CAP LABEL	Polyester-Silver
43		1		SPIGOT (Only on request)	Extruded Aluminium alloy, anodized
50		1		BODY	Extruded Aluminium alloy, coated
					Cast Aluminium alloy, coated (for PT800 B and PT1000 B)
60		1		DRIVE SHAFT	Extruded Aluminium alloy, anodized (for PT045 B and PT1000 B)
					Steel, ENP
60.1		1	only for protection level "E"and "F"	INTEGRAL DRIVE SHAFT	Stainless Steel, ENP

○ Parts included in Complete spare parts kit

□ Parts included in "O" ring spare parts kit

TORQUE OUTPUT (Nm)

SPRING RETURN TORQUE

Supply Pressure		2,5 bar		3 bar		3,5 bar		4 bar		4,2 bar		4,5 bar		5 bar		5,5 bar		6 bar		7 bar		8 bar		Spring stroke	
Model	Spring set	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
		Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
PT045 B	S 1-1	4,3	2,9																					3,1	1,7
	S 1-2			4,7	2,4																			4,8	2,6
	S 2-2					4,9	2,0	6,1	3,2	6,6	3,7	7,3	4,4											6,4	3,5
	S 2-3											6,6	2,8	7,8	4,0	9,0	5,2	10,2	6,4					8,0	4,2
	S 3-3															8,2	3,6	9,4	4,8	11,8	7,2	14,1	9,5	9,6	5,0
PT050 B	S 1	5,0	3,0	7	4,7	8	6,3	10,0	8	9,4	8,3	11,7	9,6	13,3	11,3									5,3	3,3
	S 2	4	1,9	6,0	3,6	7,7	5,3	9,3	6,9	9	7,4	11,0	8,6	12,7	10,2	14,3	11,9							6,4	4,0
	S 3			5,3	2,5	7,0	4,2	8,7	5,8	8,2	6,6	10,3	7,5	12,0	9,2	13,7	10,8	15,3	12,5					7,4	4,6
	S 4					6,3	3	8,0	5	7,6	5,8	9,7	6,4	11,3	8,1	13,0	9,8	14,7	11,4	18,0	14,7			8,5	5,3
	S 5							7,3	3,7	7,0	4,9	9,0	5,4	10,7	7,0	12,3	8,7	14,0	10	17,3	13,7	20,6	17,0	9,6	5,9
	S 6											8,4	4,3	10,0	6,0	11,7	7,6	13,3	9,3	16,7	12,6	20,0	16	10,6	6,6
	S 7													9,4	4,9	11	6,6	13	8,2	16,0	11,6	19,3	14,9	11,7	7,3
	S 8															10,4	6	12,0	7,2	15,3	10,5	18,7	13,8	12,8	7,9
PT100 B	S 05	9,1	6,2	12	9,2	15	12,1	17,9	15	19,1	16,2	20,8	17,9	23,8	20,9									8,4	5,5
	S 06	8	4,5	10,9	7,5	13,9	10,4	16,8	13,3	18	14,5	19,7	16,3	22,7	19,2	25,6	22,1							10,1	6,7
	S 07			9,8	5,8	12,8	8,7	15,7	11,6	16,9	12,8	18,6	14,6	21,5	17,5	24,5	20,4	27,4	23,4					11,8	7,8
	S 08					11,6	7	14,6	10	15,7	11,1	17,5	12,9	20,4	15,8	23,4	18,7	26,3	21,7	32,2	27,5			13,5	8,9
	S 09							13,5	8,3	14,6	9,4	16,4	11,2	19,3	14,1	22,3	17,1	25,2	20	31,1	25,9	36,9	31,7	15,2	10
	S 10											15,3	9,5	18,2	12,4	21,1	15,4	24,1	18,3	29,9	24,2	35,8	30	16,9	11,1
	S 11													17,1	10,8	20	13,7	23	16,6	28,8	22,5	34,7	28,3	18,6	12,2
	S 12															18,9	12	21,9	14,9	27,7	20,8	33,6	26,7	20,2	13,3
PT200 B	S 05	18	11,8	23,8	17,6	29,7	23,4	35,5	29,2	37,8	31,6	41,3	35	47,1	40,9									17,3	11,1
	S 06	15,8	8,3	21,6	14,1	27,5	19,9	33,3	25,8	35,6	28,1	39,1	31,6	44,9	37,4	50,7	43,2							21	13,3
	S 07			19,4	10,7	25,2	16,5	31,1	22,3	33,4	24,6	36,9	28,1	42,7	33,9	48,5	39,8	54,3	45,6					24,2	15,5
	S 08					23	13	28,8	18,8	31,2	21,2	34,7	24,7	40,5	30,5	46,3	36,3	52,1	42,1	63,7	53,7			27,7	17,7
	S 09							26,6	15,4	29	17,7	32,5	21,2	38,3	27	44,1	32,8	49,9	38,6	61,5	50,3	73,2	61,9	31	19,9
	S 10											30,2	17,7	36,1	23,6	41,9	29,4	47,7	35,2	59,3	46,8	71	58,5	34,6	22,1
	S 11													33,8	20,1	39,7	25,9	45,5	31,7	57,1	43,4	68,7	55	38,1	24,3
	S 12															37,5	22,4	43,3	28,3	54,9	39,9	66,5	51,5	41,5	26,5
PT250 B	S 05	27,4	16,9	36,6	26	45,7	35,2	54,9	44,3	58,5	48	64	53,5	73,2	62,6									28,9	18,3
	S 06	23,8	11,1	32,9	20,3	42,1	29,4	51,2	38,6	54,9	42,2	60,4	47,7	69,5	56,9	78,7	66							34,7	22
	S 07			29,2	14,5	38,4	23,6	47,5	32,8	51,2	36,4	56,7	41,9	65,8	51,1	75	60,2	84,2	69,4					40,4	25,7
	S 08					34,7	17,9	43,9	27	47,5	30,7	53	36,2	62,2	45,3	71,3	54,5	80,5	63,6	98,8	81,9			46,2	29,3
	S 09							40,2	21,2	43,9	24,9	49,4	30,4	58,5	39,5	67,7	49	76,8	57,8	95,1	76,1	113	94,5	52	33
	S 10											45,7	24,6	54,8	33,8	64	42,9	73,1	52,1	91,5	70,4	110	88,7	57,8	36,7
	S 11													51,2	28	60,3	37,1	69,5	46,3	87,8	64,6	106	82,9	63,5	40,3
	S 12															56,7	31,4	65,8	40,5	84,1	58,8	102	77,1	69,3	44
PT300 B	S 05	41,1	27,1	54,4	40,4	67,7	53,7	81	67	86,3	72,3	94,3	80,3	108	93,6									39,4	25,3
	S 06	36,1	19,2	49,4	32,5	62,7	45,8	76	59,1	81,3	64,4	89,3	72,4	103	85,7	116	99							47,3	30,4
	S 07			44,3	24,6	57,6	37,9	70,9	51,2	76,2	56,5	84,2	64,5	97	77,8	111	91,1	124	104					55,1	35,5
	S 08					52,5	30	65,8	43,3	71,1	48,7	79,1	56,6	92,4	69,9	106	83,2	119,0	96,5	146	123			63	40,5
	S 09							60,8	35,5	66,1	40,8	74,0	48,8	87,3	62,1	101	75,3	113,9	88,6	141	115	167	142	70,9	45,6
	S 10											69	40,9	82,3	54,2	95,6	67,5	109	80,8	135	107	162	134	78,8	50,7
	S 11													77,2	46,3	90,5	59,6	104	72,9	130	99	157	126	86,7	55,7
	S 12															85,4	51,7	99	65	125	92	152	118	94,5	60,8
PT350 B	S 05	66,5	41,9	87,9	63,4	109,4	84,9	131	106	140	115	152	128	174	149									65,5	41
	S 06	58,3	28,8	79,7	50,3	101,2	71,8	123	93,3	131	102	144	115	166	136	187	158							78,6	49,2
	S 07			71,5	37,2	93	58,7	115	80,2	123	88,8	136	102	158	123	179	145	200	166					91,7	57,4
	S 08					84,8	45,6	106	67,1	115	75,7	128	88,6	149	110	171	132	192	153	235	196			105	65,6
	S 09							98,1	54	107	62,6	120	75	141	97	163	118	184	140	227	183	270	226	118	73,8
	S 10											111	62,4	133	83,9	154	105	176	127	219	170	262	213	131	82
	S 11													125	70,8	146	92,3	168	114	211	157	254	200	144	90,2
	S 12															138	79,2	159	101	202	144	245	187	157	98,4
PT400 B	S 05	86	56,1	114	83,8	141	111	169	139	180	150	197	167	224	195									82,4	52,5
	S 06	75,5	39,6	103	67,3	131	95,0	159	123	170	134	186	150	214	178	242	206							98,9	63
	S 07			92,7	50,8	120	78,5	148	106	159	117	176	134	203	162	231	189	259	217					115	73,5
	S 08					110	62	138	89,7	149	101	165	117	193	145	221	173	248	201	304	256			132	84
	S 09							127	73,3	138	84,3	155	101	182	129	210	156	238	184	293	239	349	295	148	94,5
	S 10											144	84,5	172	112	200	140	227	168	283	223	338	278	165	105
	S 11													161	95,7	189	123	217	151	272	206	328	262	181	116
	S 12															179	107	206	135	262	190	317	245	198	126
PT450 B	S 05	135	89	179	132	222	176	265	219	283	236	309	262	352	306									129	82,4
	S 06	119	63	162	106	206	149,7	249	193	266	211	293	237	336	280	379	324							155	99
	S 07			146	80	189	124	233	167	250	185	276	211	320	254	363	298	406	341					180	115
	S 08					173	98	216	142	233	159	260	185	303	229	347	272	390	316	477	403			206	132
	S 09							200	116	217	133	243	159	287	203	330	246	374	290	460	377	547	464	232	148
	S 10											227	134	270	177	314	221	357	264	444	351	531	438	258	165
	S 11													254	151	297	195	341	238	428	325	515	412	283	181
	S 12															281	169	324	213	411	299	498	386	309	198
PT500 B	S 05	171	118	228	174	285	231	342	288	364	310	398	344	455	401									166	112
	S 06	149	84	206	141	262	198	319	255	342	277	376	311	433	368	489	425							199	135
	S 07			183	108	240	165	297	221	319	244	353	278	410	335	467	391	524	448					233	157
	S 08					218	131	274	188	297	211	331	245	388	302	444	358	501	415	615	528			266	180
	S 09							252	155	275	178	309	212	365	268	422	325	479	382	592	495	706	609	299	202
	S 10											286	178	343	235	400	292	456	349	570	462	683	575	332	224
	S 11													320	202	377	259	434	315	547	429	661	542	365	247
	S 12															355	225	411	282	525	396	638	509	399	269
PT550 B	S 05	225	146	301	223	378	299	455	376	485	406	531	452	608	529									237	158
	S 06	193	99	270	175	346	252	423	329	454	359	500	405	576	482	653	558							284	190
	S 07			238	128	315	205	391	281	422	312	468	358	544	434	621	511	698	587					332	221
	S 08					283	157	360	234	390	264	436	310	513	387	589	464	666	540	819	693			379	253
	S 09							328	186	359	217	405	263	481	340	558	416	634	493	788	646	941	799	426	285
	S 10											373	216	450	292	526	369	603	445	756	599	909	752	474	316
	S 11													418	245	495	321	571	398	724	551	877	704	521	348
	S 12															463	274	540	351	693	504	846	657	568	379

Spring set	The above value are the out-put torque that remain available to operate the valve when the port "2" is pressurized	Out-put torque available when air supply fails

TORQUE OUTPUT (Nm)

SPRING RETURN TORQUE

Supply Pressure		2,5 bar		3 bar		3,5 bar		4 bar		4,2 bar		4,5 bar		5 bar		5,5 bar		6 bar		7 bar		8 bar		Spring stroke	
Model	Spring set	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
		Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
PT600 B	S 05	**319**	**217**	426	323	532	430	638	536	681	578	745	642	851	749									**315**	**213**
	S 06	277	154	**383**	**260**	489	367	596	473	638	515	702	579	808	686	915	792							**378**	**255**
	S 07			341	197	**447**	**304**	553	410	596	453	660	516	766	623	872	729	979	835					**441**	**298**
	S 08					404	241	**511**	**347**	**553**	**390**	617	453	723	560	830	666	936	772	1149	985			**504**	**340**
	S 09							468	284	511	327	**575**	**390**	681	497	787	603	894	709	1106	922	1319	1135	**567**	**383**
	S 10											532	327	**638**	**434**	745	540	851	646	1064	859	1277	1072	**630**	**425**
	S 11													596	371	**702**	**477**	809	583	1021	796	1234	1009	**693**	**468**
	S 12															660	414	**766**	**520**	979	733	1192	946	**756**	**510**
PT650 B	S 05	**533**	**372**	712	551	890	730	1069	908	1141	980	1248	1087	1426	1266									**521**	**360**
	S 06	461	268	**640**	**447**	818	625	997	804	1068	876	1176	983	1354	1162	1533	1340							**625**	**433**
	S 07			568	343	**746**	**521**	925	700	996	771	1104	879	1282	1057	1461	1236	1640	1415					**730**	**505**
	S 08					674	417	**853**	**596**	**924**	**667**	1032	774	1210	953	1389	1132	1568	1310	1925	1668			**834**	**577**
	S 09							781	491	852	563	**959**	**670**	1138	849	1317	1028	1495	1206	1853	1564	2210	1921	**938**	**649**
	S 10											887	566	**1066**	**745**	1245	923	1423	1102	1781	1459	2138	1817	**1042**	**721**
	S 11													994	640	**1173**	**819**	1351	998	1709	1355	2066	1713	**1146**	**793**
	S 12															1101	715	**1279**	**894**	1637	1251	1994	1608	**1251**	**865**
PT700 B	S 05	**751**	**496**	1011	755	1270	1015	1529	1274	1633	1378	1789	1533	2048	1793									**801**	**546**
	S 06	642	336	**902**	**595**	1161	854	1420	1114	1524	1217	1680	1373	1939	1632	2198	1892							**961**	**655**
	S 07			792	435	**1052**	**694**	1311	954	1415	1057	1570	1213	1830	1472	2089	1732	2349	1991					**1121**	**764**
	S 08					943	534	**1202**	**793**	**1306**	**897**	1461	1053	1721	1312	1980	1571	2239	1831	2758	2350			**1281**	**873**
	S 09							1093	633	1197	737	**1352**	**893**	1612	1152	1871	1411	2130	1671	2649	2189	3168	2708	**1442**	**982**
	S 10											1243	732	**1503**	**992**	1762	1251	2021	1510	2540	2029	3059	2548	**1602**	**1091**
	S 11													1393	832	**1653**	**1091**	1912	1350	2431	1869	2950	2388	**1762**	**1200**
	S 12															1544	931	**1803**	**1190**	2322	1709	2840	2228	**1922**	**1309**
PT750 B	S 05	**1064**	**703**	1423	1062	1782	1421	2141	1780	2284	1924	2500	2139	2859	2498									**1092**	**731**
	S 06	918	485	**1277**	**844**	1636	1203	1995	1562	2138	1706	2354	1921	2713	2280	3072	2639							**1310**	**877**
	S 07			1131	626	**1489**	**985**	1848	1344	1992	1487	2207	1703	2566	2062	2925	2421	3284	2780					**1528**	**1023**
	S 08					1343	766	**1702**	**1125**	**1846**	**1269**	2061	1484	2420	1843	2779	2202	3138	2561	3856	3279			**1746**	**1170**
	S 09							1556	907	1700	1051	**1915**	**1266**	2274	1625	2633	1984	2992	2343	3710	3061	4428	3779	**1965**	**1316**
	S 10											1769	1048	**2128**	**1407**	2487	1766	2846	2125	3564	2843	4282	3560	**2183**	**1462**
	S 11													1982	1188	**2341**	**1547**	2700	1906	3418	2624	4135	3342	**2401**	**1608**
	S 12															2194	1329	**2553**	**1688**	3271	2406	3989	3124	**2620**	**1754**
PT800 B	S 05	**1332**	**1014**	1783	1465	2233	1915	2684	2365	2864	2546	3134	2816	3585	3266									**1238**	**920**
	S 06	1149	767	**1599**	**1217**	2049	1667	2500	2118	2680	2298	2950	2568	3401	3019	3851	3469							**1486**	**1104**
	S 07			1415	969	**1865**	**1420**	2316	1870	2496	2050	2766	2321	3217	2771	3667	3222	4118	3672					**1733**	**1288**
	S 08					1682	1172	**2132**	**1623**	**2312**	**1803**	2582	2073	3033	2524	3483	2974	3934	3424	4835	4325			**1981**	**1472**
	S 09							1948	1375	2128	1555	**2398**	**1825**	2849	2276	3299	2726	3750	3177	4651	4078	5551	4978	**2229**	**1656**
	S 10											2215	1578	**2665**	**2028**	3115	2479	3566	2929	4467	3830	5386	4731	**2476**	**1839**
	S 11													2481	1781	**2931**	**2231**	3382	2682	4283	3582	5184	4483	**2724**	**2023**
	S 12															2748	1983	**3198**	**2434**	4099	3335	5000	4236	**2971**	**2207**
PT1000 B	S 05	**2474**	**1695**	3308	2529	4142	3362	4976	4196	5310	4530	5810	5030	6644	5864									**2475**	**1695**
	S 06	2135	1200	**2969**	**2034**	3803	2867	4637	3701	4971	4035	5471	4535	6305	5369	7139	6203							**2970**	**2034**
	S 07			2630	1539	**3464**	**2373**	4298	3206	4632	3540	5132	4040	5966	4874	6800	5708	7633	6542					**3465**	**2373**
	S 08					3125	1878	**3959**	**2711**	**4292**	**3045**	4793	3545	5627	4379	6461	5213	7294	6047	8962	7715			**3960**	**2712**
	S 09							3620	2217	3953	2550	**4454**	**3050**	5288	3884	6122	4718	6955	5552	8623	7220	10291	8887	**4455**	**3051**
	S 10											4115	2555	**4949**	**3389**	5783	4223	6616	5057	8284	6725	9952	8393	**4949**	**3390**
	S 11													4610	2894	**5444**	**3728**	6277	4562	7945	6230	9613	7898	**5444**	**3729**
	S 12															5105	3233	**5938**	**4067**	7606	5735	9274	7403	**5939**	**4068**
	Spring set	The above value are the out-put torque that remain available to operate the valve when the port "2" is pressurized																						Out-put torque available when air supply fails	

DOUBLE ACTING TORQUE

Supply Pressure	2,5 bar	3 bar	3,5 bar	4 bar	4,2 bar	4,5 bar	5 bar	5,5 bar	6 bar	7 bar	8 bar
Model											
PT045 B D	6,0	7,2	8,4	9,6	10,1	10,8	12,0	13,2	14,4	16,8	19,1
PT050 B D	8,3	10,0	11,6	13,3	14,0	15,0	16,6	18,3	19,9	23,3	26,6
PT100 B D	14,7	17,6	20,5	23,5	24,6	26,4	29,3	32,2	35,2	41,0	46,9
PT200 B D	29,1	34,9	40,7	46,5	48,9	52,4	58,2	64,0	69,8	81,4	93,1
PT250 B D	45,8	54,9	64,1	73,2	76,9	82,4	91,5	100,7	109,8	128,1	146,4
PT300 B D	66,5	79,8	93,1	106	112	120	133	146	160	186	213
PT350 B D	107	129	150	172	181	193	215	236	258	301	344
PT400 B D	138	166	194	222	233	249	277	305	332	388	443
PT450 B D	217	261	304	348	365	391	435	478	522	609	696
PT500 B D	284	340	397	454	477	511	567	624	681	794	908
PT550 B D	383	459	536	613	643	689	766	842	919	1072	1225
PT600 B D	532	638	745	851	893	957	1064	1170	1276	1489	1702
PT650 B D	893	1072	1251	1430	1501	1608	1787	1966	2144	2502	2859
PT700 B D	1297	1556	1815	2075	2179	2334	2594	2853	3112	3631	4150
PT750 B D	1795	2154	2513	2872	3015	3231	3590	3949	4308	5026	5744
PT800 B D	2252	2703	3153	3604	3784	4054	4504	4955	5405	6306	7207
PT1000 B D	4169	5003	5837	6671	7005	7505	8339	9173	10007	11674	**

** PT1000 B D operated with 8 bar (116 Psi) supply pressure requires SPECIAL construction. Contact AIR TORQUE factory.

TORQUE OUTPUT (Lb-In)

SPRING RETURN TORQUE

Supply Pressure		40 Psi		50 Psi		60 Psi		70 Psi		80 Psi		90 Psi		100 Psi		110 Psi		116 Psi		Spring stroke	
Model	Spring set	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	90° Start	0° End
PT045 B	S 1-1	43,3	30,9	57,9	45,5	72,4	60,0	87,0	74,6	102	89,6	116	104	131	119					27,4	15,0
	S 1-2	35,3	15,8	49,9	30,4	64,4	44,9	79,0	59,5	94,0	74,5	108	88,5	123	103	138	119			42,5	23,0
	S 2-2			41,9	16,2	56,5	30,8	71,0	45,4	85,6	59,9	100	74,5	115	89,1	130	104	138	112	56,6	31,0
	S 2-3					50,3	16,6	68,4	31,2	79,4	45,8	94,0	60,3	109,0	74,9	124	90,2	132	98,2	70,8	37,2
	S 3-3							57,8	17,0	72,3	31,6	86,9	46,2	101,0	60,8	117	76,0	125	84,1	85,0	44,3
PT050 B	S 1	51,9	34	72,2	54,4	92,5	74,7	113	94,9	133	115	153	136	174	156					47,1	29,2
	S 2	46,1	24,7	66,3	45,0	86,6	65	107	85,6	127	106	147	126	168	146	188	167			56,5	35,1
	S 3	40,2	15,2	60,5	35,5	81	55,8	101	76,1	121	96	142	117	162	137	182	157	194	169	65,9	40,9
	S 4			54,7	26,1	75	46,3	95,2	67	116	87	136	107	156	127	176	148	189	160	75	46,8
	S 5			48,8	16,7	69	37,0	89,4	57,3	110	78	130	98	150	118	171	138	183	151	84,8	52,6
	S 6					63,3	27,6	83,5	47,9	104	68	124	88,4	144	109	165	129	177	141	94,1	58,5
	S 7					57,4	18,1	77,7	38,4	98,0	58,7	118	79,0	139	99	159	120	171	132	104	64,3
	S 8							71,9	29,0	92,1	49,2	112,4	69,5	133	90	153	110	165	122	113	70,2
PT100 B	S 05	94	68,5	130	104	166	140	201	176	237	212	273	247	309	283					74,7	49,1
	S 06	84,2	53,5	120	89,3	156	125	192	161	227	197	263	232	299	268	335	304			89,6	58,9
	S 07	74,4	38,6	110	74,4	146	110	182	146	218	182	253	218	289	253	325	289	346	311	105	68,8
	S 08			100	59,5	136	95,2	172	131	208	167	243	203	279	238	315	274	337	296	119	78,6
	S 09					126	80,3	162	116	198	152	234	188	269	223	305	259	327	281	134	88,4
	S 10							152	101	188	137	224	173	260	209	295	244	317	266	149	98,2
	S 11									178	122	214	158	250	194	286	229	307	251	164	108
	S 12													240	179	276	214	297	236	179	118
PT200 B	S 05	186	131	257	202	328	273	399	344	470	415	541	486	612	557					153	97,8
	S 06	167	100	238	171	309	242	380	313	451	384	522	455	593	526	664	597			184	117
	S 07	147	70	218	141	289	212	360	283	431	354	502	425	573	496	644	567	687	609	214	137
	S 08			198	110	269	181	340	252	412	323	483	394	554	465	625	536	667	579	245	157
	S 09					250	150	321	221	392	292	463	363	534	434	605	505	648	548	276	176
	S 10							301	191	372	262	443	333	514	404	585	475	628	517	306	196
	S 11									353	231	424	302	495	373	566	444	608	487	337	215
	S 12													475	342	546	413	589	456	368	235
PT250 B	S 05	285	191	396	303	508	415	620	526	731	638	843	750	955	862					256	162
	S 06	252	140	476	252	476	364	587	475	699	587	811	699	922	810	1034	922			307	195
	S 07	220	89	331	201	443	313	555	424	667	536	778	648	890	759	1002	871	1069	938	358	227
	S 08			299	150	411	261	522	373	634	485	746	597	858	708	969	820	1036	887	409	260
	S 09					378	210	490	322	602	434	713	545	825	657	937	769	1004	836	460	292
	S 10							457	271	569	383	681	494	793	606	904	718	971	785	511	325
	S 11									537	331	648	443	760	555	872	667	939	734	562	357
	S 12													728	504	839	616	906	683	613	389
PT300 B	S 05	425	301	587	463	750	625	912	787	1074	950	1236	1112	1399	1274					349	224
	S 06	380	231	542	393	705	555	867	718	1029	880	1192	1042	1354	1205	1516	1367			418	269
	S 07	335	161	498	323	660	486	822	648	984	810	1147	973	1309	1135	1471	1297	1569	1395	488	314
	S 08			453	254	615	416	777	578	940	741	1102	903	1264	1065	1426	1227	1524	1325	558	359
	S 09					570	346	732	509	895	671	1057	833	1219	995	1382	1158	1479	1255	627	404
	S 10							688	439	850	601	1012	763	1174	926	1337	1088	1434	1185	697	449
	S 11									805	531	967	694	1130	856	1292	1018	1389	1116	767	493
	S 12													1085	786	1247	949	1344	1046	837	538
PT350 B	S 05	687	470	949	732	1211	994	1474	1257	1736	1519	1998	1781	2260	2044					580	363
	S 06	614	354	876	616	1139	878	1401	1141	1663	1403	1926	1665	2188	1928	2450	2190			696	435
	S 07	541	238	804	500	1066	762	1328	1025	1591	1287	1853	1549	2115	1812	2378	2074	2535	2231	812	508
	S 08			731	384	993	646	1256	909	1518	1171	1780	1433	2043	1696	2305	1958	2463	2115	928	581
	S 09					921	530	1183	793	1446	1055	1708	1317	1970	1580	2233	1842	2390	1999	1044	653
	S 10							1111	677	1373	939	1635	1201	1898	1464	2160	1726	2317	1883	1160	726
	S 11									1300	823	1563	1085	1825	1348	2087	1610	2245	1767	1276	798
	S 12													1753	1232	2015	1494	2172	1652	1392	871
PT400 B	S 05	888	623	1226	961	1564	1299	1902	1637	2240	1976	2578	2314	2916	2652					729	465
	S 06	795	477	1133	815	1471	1154	1809	1492	2147	1830	2485	2168	2823	2506	3161	2844			875	558
	S 07	702	331	1040	670	1378	1008	1716	1346	2054	1684	2392	2022	2730	2360	3069	2698	3271	2901	1021	651
	S 08			947	524	1285	862	1623	1200	1961	1538	2299	1876	2637	2214	2976	2552	3178	2755	1167	744
	S 09					1192	716	1530	1054	1868	1392	2206	1730	2544	2068	2883	2407	3085	2609	1313	837
	S 10							1437	908	1775	1246	2113	1584	2452	1923	2790	2261	2993	2464	1459	930
	S 11									1682	1100	2020	1439	2359	1777	2697	2115	2900	2318	1604	1023
	S 12													2266	1631	2604	1969	2807	2172	1750	1116
PT450 B	S 05	1394	983	1925	1514	2456	2044	2987	2575	3517	3106	4048	3637	4579	4167					1140	729
	S 06	1248	755	1779	1285	2310	1816	2841	2347	3372	2878	3902	3409	4433	3939	4964	4470			1369	875
	S 07	1103	527	1633	1057	2164	1588	2695	2119	3226	2650	3757	3181	4287	3711	4818	4242	5137	4561	1597	1021
	S 08			1488	829	2018	1360	2549	1891	3080	2422	3611	2952	4142	3483	4672	4014	4991	4333	1825	1166
	S 09					1873	1132	2403	1663	2934	2194	3465	2724	3996	3255	4527	3786	4845	4104	2053	1312
	S 10							2258	1435	2788	1965	3319	2496	3850	3027	4381	3558	4699	3876	2281	1458
	S 11									2643	1737	3173	2268	3704	2799	4235	3330	4553	3648	2509	1604
	S 12													3558	2571	4089	3102	4408	3420	2737	1750
PT500B	S 05	1777	1300	2469	1992	3162	2685	3854	3377	4547	4070	5239	4762	5931	5455					1470	993
	S 06	1578	1006	2271	1698	2963	2391	3655	3083	4348	3776	5040	4468	5733	5161	6425	5853			1764	1192
	S 07	1380	712	2072	1404	2764	2097	3457	2789	4149	3482	4842	4174	5534	4867	6227	5559	6642	5975	2058	1390
	S 08			1873	1110	2566	1803	3258	2495	3951	3188	4643	3880	5336	4573	6028	5265	6444	5681	2352	1589
	S 09					2367	1509	3060	2201	3752	2894	4445	3586	5137	4279	5829	4971	6245	5387	2646	1788
	S 10							2861	1907	3553	2600	4246	3292	4938	3985	5631	4677	6046	5093	2940	1986
	S 11									3355	2306	4047	2998	4740	3691	5432	4383	5848	4799	3234	2185
	S 12													4541	3397	5234	4089	5649	4505	3528	2383
PT550 B	S 05	2340	1644	3275	2578	4210	3513	5145	4448	6079	5383	7014	6318	7949	7253					2096	1399
	S 06	2060	1225	2995	2159	3930	3094	4865	4029	5800	4964	6734	5899	7669	6833	8604	7768			2515	1679
	S 07	1780	805	2715	1740	3650	2675	4585	3610	5520	4545	6454	5480	7389	6414	8324	7349	8885	7910	2934	1959
	S 08			2435	1321	3370	2256	4305	3191	5240	4126	6175	5060	7109	5995	8044	6930	8605	7491	3353	2239
	S 09					3090	1837	4025	2772	4960	3706	5895	4641	6830	5576	7764	6511	8325	7072	3772	2519
	S 10							3745	2353	4680	3287	5615	4222	6550	5157	7485	6092	8045	6653	4191	2798
	S 11									4400	2868	5335	3803	6270	4738	7205	5673	7766	6234	4610	3078
	S 12													5990	4319	6925	5254	7486	5814	5029	3358
	Spring set	The above value are the out-put torque that remain available to operate the valve when the port "2" is pressurized																		Out-put torque available when air supply fails	

TORQUE OUTPUT (Lb-In)

SPRING RETURN TORQUE

Supply Pressure		40 Psi		50 Psi		60 Psi		70 Psi		80 Psi		90 Psi		100 Psi		110 Psi		116 Psi		Spring stroke	
Model	Spring set	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	90° Start	0° End
PT600 B	S 05	3312	2406	4610	3704	5908	5003	7207	6301	8505	7599	9803	8898	11102	10196					**2787**	**1882**
	S 06	2935	1849	4234	3147	5532	4445	6830	5744	8129	7042	9427	8340	10725	9639	12024	10937			**3345**	**2258**
	S 07	2559	1291	3857	2589	5156	3888	6454	5186	7752	6485	9051	7783	10349	9081	11648	10380	12427	11159	**3902**	**2634**
	S 08			3481	2032	4779	3330	6078	4629	7376	5927	8674	7225	9973	8524	11271	9822	12050	10601	**4460**	**3011**
	S 09					4403	2773	5701	4071	7000	5370	8298	6668	9596	7966	10895	9265	11674	10044	**5017**	**3387**
	S 10							5325	3514	6623	4812	7922	6110	9220	7409	10518	8707	11297	9486	**5575**	**3763**
	S 11									6247	4255	7545	5553	8844	6851	10142	8150	10921	8929	**6132**	**4140**
	S 12													8467	6294	9766	7592	10545	8371	**6690**	**4516**
PT650 B	S 05	5535	4113	7716	6294	9898	8475	12079	10657	14260	12838	16441	15019	18623	17200					**4612**	**3190**
	S 06	4897	3190	7078	5372	9260	7553	11441	9734	13622	11915	15803	14097	17985	16278	20166	18459			**5534**	**3828**
	S 07	4259	2268	6440	4449	8622	6631	10803	8812	12984	10993	15165	13174	17347	15356	19528	17537	20837	18845	**6457**	**4466**
	S 08			5802	3527	7984	5708	10165	7889	12346	10071	14527	12252	16709	14433	18890	16614	20199	17923	**7379**	**5104**
	S 09					7346	4786	9527	6967	11708	9148	13889	11329	16071	13511	18252	15692	19561	17001	**8302**	**5742**
	S 10							8889	6045	11070	8226	13251	10407	15433	12588	17614	14770	18923	16078	**9224**	**6380**
	S 11									10432	7303	12613	9485	14795	11666	16976	13847	18285	15156	**10147**	**7018**
	S 12													14157	10743	16338	12925	17647	14233	**11069**	**7656**
PT700 B	S 05	7836	5576	11002	8742	14168	11907	17333	15073	20499	18239	23665	21405	26831	24571					**7088**	**4828**
	S 06	6870	4158	10036	7324	13202	10490	16368	13656	19534	16822	22700	19987	25865	23153	29031	26319			**8505**	**5793**
	S 07	5905	2741	9071	5906	12236	9072	15402	12238	18568	15404	21734	18570	24900	21736	28066	24902	29965	26801	**9923**	**6759**
	S 08			8105	4489	11271	7655	14437	10821	17603	13986	20769	17152	23934	20318	27100	23484	29000	25384	**11340**	**7724**
	S 09					10305	6237	13471	9403	16637	12569	19803	15735	22969	18901	26135	22067	28034	23966	**12758**	**8690**
	S 10							12506	7986	15672	11151	18837	14317	22003	17483	25169	20649	27069	22549	**14176**	**9655**
	S 11									14706	9734	17872	12900	21038	16066	24204	19231	26103	21131	**15593**	**10621**
	S 12													20072	14648	23238	17814	25138	19713	**17011**	**11586**
PT750 B	S 05	11059	7868	15441	12250	19823	16632	24205	21014	28587	25395	32969	29777	37351	34159					**9660**	**6469**
	S 06	9765	5936	14147	10318	18529	14700	22911	19081	27293	23463	31675	27845	36057	32227	40439	36610			**11592**	**7763**
	S 07	8471	4004	12853	8386	17235	12767	21617	17149	25999	21531	30381	25913	34763	30295	39146	34678	41774	37306	**13524**	**9056**
	S 08			11560	6454	15942	10835	20323	15217	24705	19599	29087	23981	33469	28363	37852	32746	40480	35374	**15456**	**10350**
	S 09					14648	8903	19030	13285	23412	17667	27794	22049	32176	26431	36558	30814	39187	33442	**17388**	**11644**
	S 10							17736	11353	22118	15735	26500	20117	30882	24499	35264	28882	37893	31510	**19320**	**12938**
	S 11									20824	13803	25206	18185	29588	22567	33971	26950	36599	29578	**21252**	**14231**
	S 12													28294	20635	32677	25018	35305	27646	**23184**	**15525**
PT800 B	S 05	13855	11037	19353	16536	24852	22034	30350	27533	35849	33031	41347	38530	46846	44028					**10957**	**8140**
	S 06	12227	8846	17725	14344	23224	19843	28722	25341	34221	30840	39719	36338	45218	41837	50717	47335			**13149**	**9767**
	S 07	10599	6654	16097	12153	21596	17651	27094	23150	32593	28648	38091	34147	43590	39645	49089	45144	52388	48443	**15340**	**11395**
	S 08			14469	9961	19968	15460	25466	20958	30965	26457	36464	31955	41962	37454	47461	42953	50760	46252	**17531**	**13023**
	S 09					18340	13268	23839	18767	29337	24265	34836	29764	40334	35263	45833	40761	49132	44060	**19723**	**14651**
	S 10							22211	16576	27709	22074	33208	27573	38706	33071	44205	38570	47504	41869	**21914**	**16279**
	S 11									26081	19883	31580	25381	37078	30880	42577	36378	45876	39677	**24106**	**17907**
	S 12													35450	28688	40949	34187	44248	37486	**26297**	**19535**
PT1000 B	S 05	25715	18812	35894	28991	46073	39170	56252	49349	66431	59528	76610	69707	86790	79887					**21904**	**15001**
	S 06	22715	14432	32894	24611	43073	34790	53252	44969	63431	55148	73610	65327	83789	75506	93968	85658			**26285**	**18001**
	S 07	19715	10051	29894	20230	40073	30409	50252	40588	60431	50767	70610	60946	80789	71125	90968	81304	97076	87411	**30665**	**21001**
	S 08			26894	15849	37073	26028	47252	36207	57431	46386	67610	56565	77789	66744	87968	76923	94076	83031	**35046**	**24001**
	S 09					34073	21647	44252	31826	54431	42005	64610	52184	74789	62364	84968	72543	91075	78650	**39427**	**27001**
	S 10							41252	27455	51431	37634	61610	47813	71789	57992	81968	68171	88075	74278	**43799**	**30002**
	S 11									48431	33253	58610	43432	68789	53611	78968	63790	85075	69897	**48179**	**33002**
	S 12											55609	39051	65788	49230	75967	59409	82075	65517	**52560**	**36002**
	Spring set	The above value are the out-put torque that remain available to operate the valve when the port "2" is pressurized																		Out-put torque available when air supply fails	

DOUBLE ACTING TORQUE

Supply Pressure / Model	40 Psi	50 Psi	60 Psi	70 Psi	80 Psi	90 Psi	100 Psi	110 Psi	116 Psi
PT045 B D	58,3	72,9	87,4	102	117	131	146	161	169
PT050 B D	81,1	101	122	142	162	183	203	223	235
PT100 B D	143	179	215	251	286	322	358	394	415
PT200 B D	284	355	426	497	568	639	710	781	824
PT250 B D	447	559	670	782	894	1005	1117	1229	1296
PT300 B D	649	811	974	1136	1298	1461	1623	1785	1883
PT350 B D	1049	1312	1574	1836	2099	2361	2623	2886	3043
PT400 B D	1352	1691	2029	2367	2705	3043	3381	3719	3922
PT450 B D	2123	2654	3185	3716	4246	4777	5308	5839	6157
PT500 B D	2770	3462	4155	4847	5540	6232	6925	7617	8032
PT550 B D	3739	4674	5609	6544	7479	8413	9348	10283	10844
PT600 B D	5193	6492	7790	9088	10387	11685	12984	14282	15061
PT650 B D	8725	10906	13087	15269	17450	19631	21812	23994	25302
PT700 B D	12663	15829	18995	22161	25327	28493	31659	34825	36724
PT750 B D	17528	21910	26292	30674	35056	39438	43820	48202	50831
PT800 B D	21994	27493	32991	38490	43988	49487	54985	60484	63783
PT1000 B D	40716	50895	61074	71253	81432	91611	101790	111969	**

** PT1000 B D operated with 8 bar (116 Psi) supply pressure requires SPECIAL construction. Contact AIR TORQUE factory.

STANDARD PROTECTION LEVELS

PROTECTION LEVEL	PARTS	COATING
 **A**	Body (PT045 B to PT750 B)	ALODUR anodized
	Body (PT800 B and PT1000 B)	Anodized plus epoxy primer, plus polyurethane coating (RAL9007 - grey)
	End-caps	Anodized plus polyester coating (RAL9007 - grey)
	Carbon steel drive shaft (PT050 B to PT800 B)	ENP
	Aluminum alloy drive shaft (PT045 B and PT1000 B)	ALODUR anodized
 **B**	Body	ALODUR anodized plus PTFE coating (light grey)
	End-caps	Anodized plus polyester coating (RAL9007 - grey)
	Carbon steel drive shaft (PT050 B to PT800 B)	ENP
	Aluminum alloy drive shaft (PT045 B and PT1000 B)	ALODUR anodized
 **D**	Body	ALODUR anodized plus PTFE coating (light grey)
	End-caps	Anodized plus PTFE coating (light grey)
	Carbon steel drive shaft (PT050 B to PT800 B)	ENP
	Aluminum alloy drive shaft (PT045 B and PT1000 B)	ALODUR anodized

See technical data-sheet for protection details

STANDARD PROTECTION LEVELS

PROTECTION LEVEL	PARTS	COATING
 **E**	Body	ALODUR anodized plus PTFE coating (light grey)
	End-caps	Anodized plus PTFE coating (light grey)
	Stainless steel drive shaft	ENP
 **F**	Body	ALODUR anodized plus epoxy coating (RAL7046 - grey)
	End-caps	Anodized plus epoxy coating - (RAL7046 - grey)
	Stainless steel drive shaft	ENP
	Stainless steel 316 fasteners	N.A.

See technical data-sheet for protection details

HOW TO ORDER
Power Technology PT "B" SERIES

Available Options and Ordering codes:

0

Blank: octi-cam assembled for standard travel stop adjustment
K: octi-cam assembled for lock-out capability (stroke adjustment limited at +/- 5°)

00

Blank: for standard actuator
R50: 50% travel stop limitation (45° up to 90°)
R100: 100% travel stop limitation (0° up to 90°)
FA: fast acting
FM: fail mid 180° rotation
3P: 3 position (only for spring return)
3PD: 3 position (both for spring return and double acting)
HC: hydraulic damper

1

Actuator model, series and rotation:
90° Rotation (Standard) = **PT045 B** to **PT1000 B**
120° Rotation (only Double Acting) = **PT052 B** to **PT752 B**
135° Rotation (only Double Acting) = **PT053 B** to **PT753 B**
180° Rotation (Double Acting and Spring Return) = **PT058 B** to **PT758 B**

2

D = Double Acting
S = Spring Return

3 (A)

Only for spring return: number of spring, spring set configuration

For model **PT045 B:** Spring Set configuration **S1-1 / S1-2 / S2-2 / S2-3 / S3-3**
For model **PT051 B:** Spring Set configuration **S1 / S2 / S3 / S4 / S5 / S6 / S7 / S8**
For models **PT101 B** to **PT1000 B** = Number of Spring:
- **05 to 12** spring for standard actuators 90° rotation
- **10 to 24** spring only for spring return 180° rotation actuators

4 (B)

A / B / D / E / F: Protection Level

5

ISO 5211 Flange (See table below)

Model	ISO 5211 Flange type available		
	Standard	Options	
PT045 B	F04	F03	
PT050 B	F04	F03 + F05	
PT100 B	F05 + F07	F04 + F07	
PT200 B	F05 + F07		
PT250 B	F05 + F07		
PT300 B	F05 + F07 + F10	F07 + F10	
PT350 B	F07 + F10		
PT400 B	F07 + F10		
PT450 B	F10 + F12		
PT500 B	F10 + F12		
PT550 B	F14	F10 + F12	
PT600 B	F14	F10 + F12	
PT650 B	F16	F12	F14
PT700 B	F16	F12	F14
PT750 B	F16	F14	F16 + F25
PT800 B	F16 + F25	F25	
PT1000 B	F16 + F25 + F30	F30	

6

Blank : no spigot
Y : with spigot

7 (C)

XXD : single square dimension and diagonal assembling
XXL : single square dimension and parallel assembling
XXDS : dimension and double square
S x d **(D)** : flat head dimensions
W x d : double keys dimensions
(for all Square dimensions available see table below)

Model	ISO 5211 Square dimensions and type available				
	Single Square			Double Square	
PT045 B				9	11 •
PT050 B	9	11		11 •	
PT100 B	9	14		11 •	14 •
PT200 B	11	14	17	14 •	17 •
PT250 B	11	14 •	17	17 •	
PT300 B	14	17	22	17 •	22 •
PT350 B	14	22		17 •	22 •
PT400 B	17	22		22 •	27 •
PT450 B	22	27		27 •	
PT500 B	22	27		27 •	
PT550 B	22	36		27 •	36 •
PT600 B	22	36		27 •	36 •
PT650 B	27	46		36 •	46 •
PT700 B	27	46		36 •	46 •
PT750 B	55			46 •	55 •
PT800 B	55			46 •	55 •
PT1000 B	75			55 •	75 •

• Available square type and size for Stainless Steel drive shaft.

8

Blank:
actuator with standard seals suitable for **-40°C (-40°F) to +80°C (+176°C)**

HT: actuator construction suitable for **-15°C (+5°F) to +150°C (+302°F)**
LLT: actuator construction suitable for **-55°C (-67°F) to +80°C (+176°F)**

9 (E)

Blank: standard assembly type ST, clockwise to close (spring to close) and close indication at air failure condition (or with pressurized port 4 for double acting) for **in line** mounting.

STR: clockwise to close (spring to close) and close indication at air failure condition (or with pressurized port 4 for double acting) for **across line** mounting.

LF: counterclockwise to close (spring to open) and open indication at air failure condition (or with pressurized port 4 for double acting) for **across line** mounting.

LFR: counterclockwise to close (spring to open) and open indication at air failure condition (or with pressurized port 4 for double acting) for **in line** mounting.

10

Further requested options

All dimensions and materials are referred to updated catalogue and/or technical data sheet.

Notes:

A) For models PT045 B and PT050 B the number indicated is the spring SET configuration and not spring quantity.
B) For corrosion protection level specification and colour see T.D.S. n° U00400AE / U00400BE / U00400DE / U00400EE / U00400FE
C) Standard Shaft connection is a female single or double square. For other connections contact AIR TORQUE.
D) Head flat orientation to be specified, see T.D.S. n° TYAS.
E) For detailed information see T.D.S. n° TYAS
F) If not specified the actuators will be supplied with standard Position Indicator Blue colour. Optional indicator for sensor or limit switch contact available on request, see T.D.S. n° Tab. 00011 E / Tab. 00012 E / Tab. 00013 E.

How to order: examples

0	00	1	2	3	4	5	6	7	8	9	10
-	-	PT200 B	S	12	B	F05+F07	Y	14 D	HT	-	-

PT200 B Series, spring return with 12 springs, protection level B, ISO flange F05-F07, with spigot, 14 mm diagonal single square and high temperature construction, standard position indicator Blue colour.

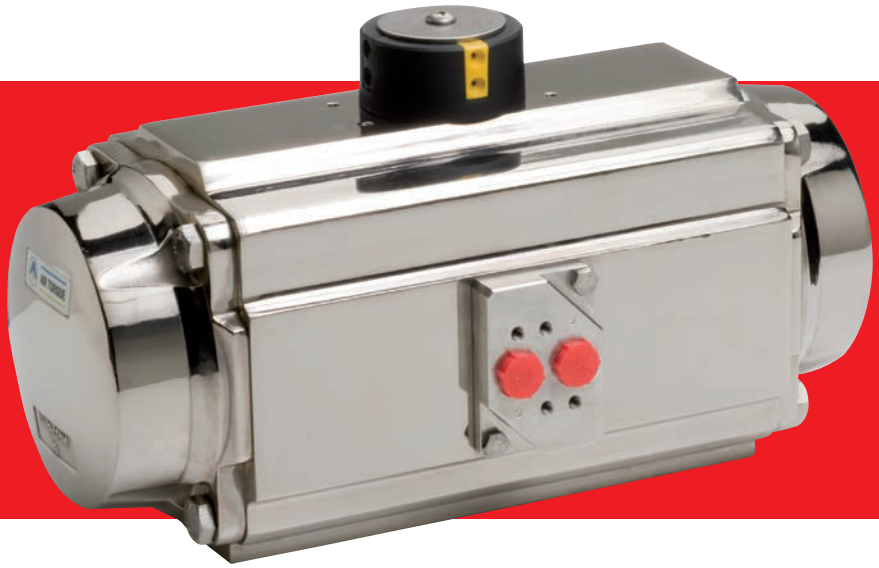
The Air Torque “S” Series stainless steel actuators are a corrosion resistant rack and pinion actuator particularly engineered for corrosive environments or sanitary.
They are manufactured by using forged high quality stainless steel body material in A182 F316/ EN 10088/3 1.4401.

The Air Torque “S” Series stainless steel actuators are well suited for automating butterfly, ball, and plug valves in harsh, corrosive environments and they are available in both Double Acting and Spring Return versions.

The most typical fields of applications are:

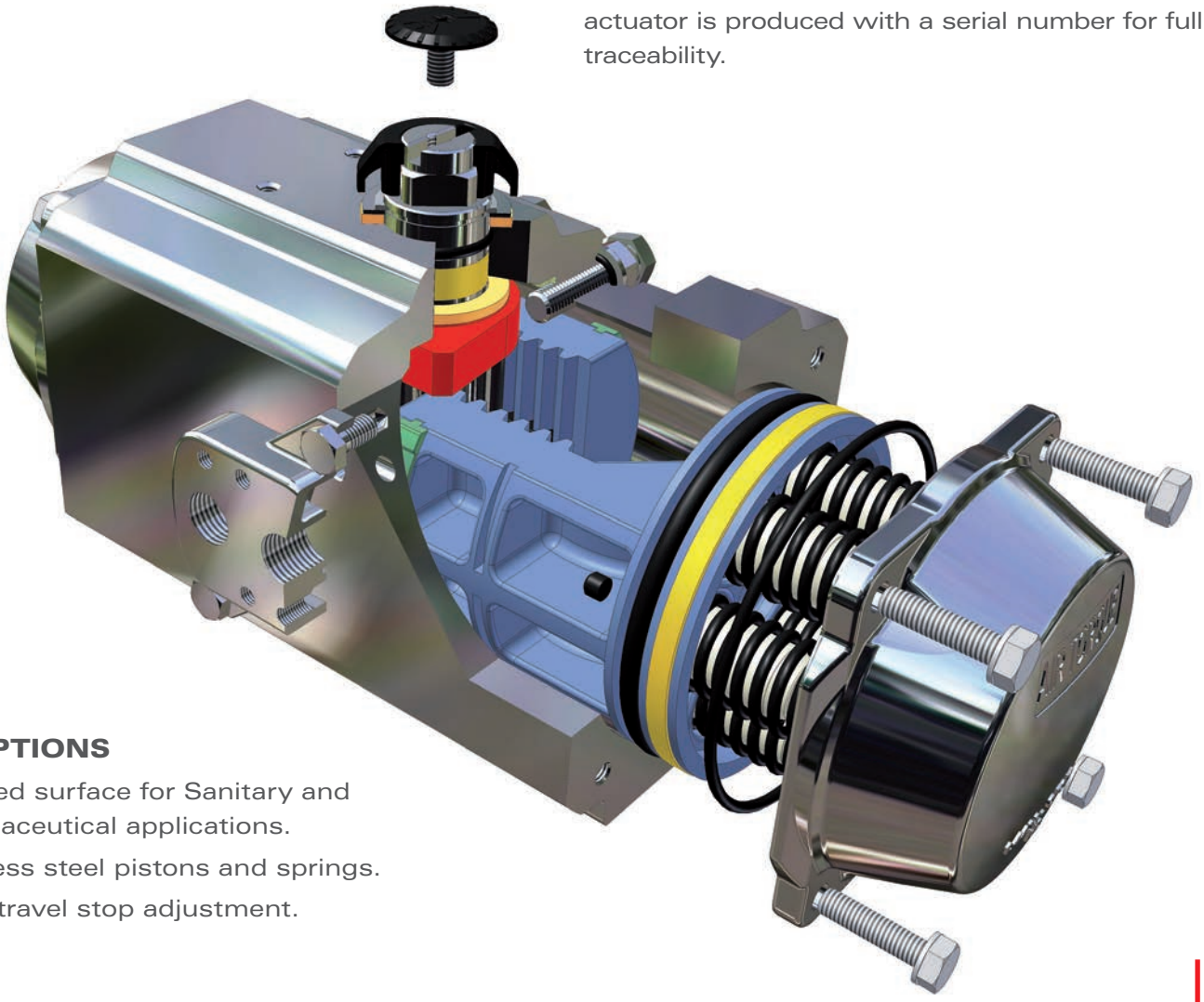
- Chemical processing
- Pulp and paper
- Pharmaceutical
- Marine and offshore
- Food and beverage
- Sanitary
- Cosmetics

The stainless steel actuators “S” Series are also available in polished finishing particularly suitable for Pharmaceutical and Food industry where surface cleanness is requested.



FEATURES AND BENEFITS

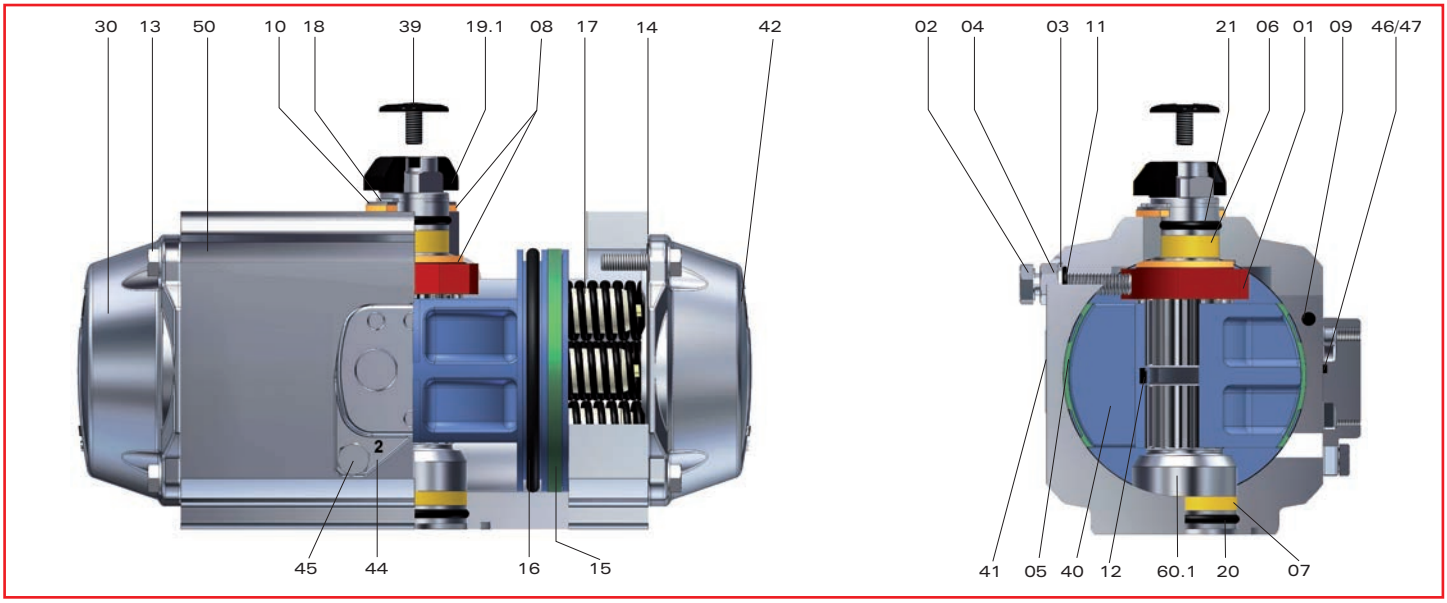
- **One compact and unique design**
  Compact and modern shape to avoid cavity and corrosive deposit build up. With identical body and end caps for double acting and spring return model to reduce inventory, it allows field conversion, by adding or removing modular spring cartridge.
- **Pistons design**
  Dual piston rack and pinion design for compact construction, symmetric mounting position, high-cycle life and fast operation, reverse rotation can be accomplished in the field by simply inverting the pistons. Both pistons are anodized for a better corrosion and wearing resistance.
- **Two independent external travel stop adjustments**
  As a standard, travel stops allowing adjustment for – 5° up to +5° on the close position, and for + 5° up to -5° on the open position. This allows accurate valve alignment.
- **Universal and anti-blowout drive shaft**
  Integral drive-shaft is available with double square as standard to permit versatility, lower and more flexible inventory.
- **Position indication**
  As standard actuators are supplied with a position indicators allowing visual actuator/valve position. Special types of position indicators suitable for direct mounting of sensors (P+F, IFM, etc.) and mechanical limit-switches available on request.
- **Multiple bearings and guide**
  Bearings on piston and racks for precise operation, low friction, high cycle life with piston guides that prevent shaft blowout.
- **Modular preloaded spring**
  Cartridge design in high grade coated steel for simple range versatility, greater safety and corrosion resistance.
- **Full compliance**
  To specifications ISO 5211, DIN 3337 and VDI/VDE 3845 providing the product interchangeability and the easiest valve automation and accessories installation. (Namur air connections only for model SB AT054U to SB AT404).
- **Actuator Marking Traceability**
  Each actuator is marked with detailed information regarding product description, connections and working conditions; furthermore each individual actuator is produced with a serial number for full traceability.



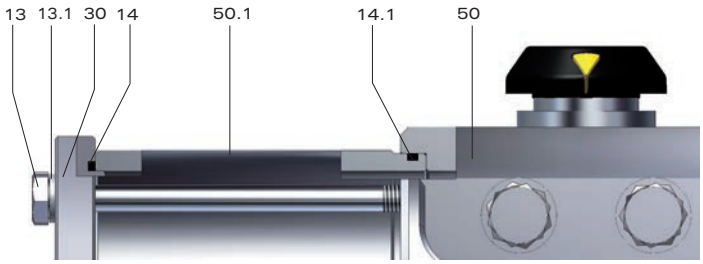
MAIN OPTIONS

1. Polished surface for Sanitary and Pharmaceutical applications.
2. Stainless steel pistons and springs.
3. 100% travel stop adjustment.

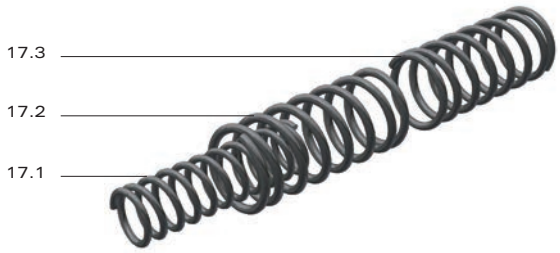
MATERIAL AND CONSTRUCTION



Only for model SB AT454 and bigger



Only for model SB AT054U



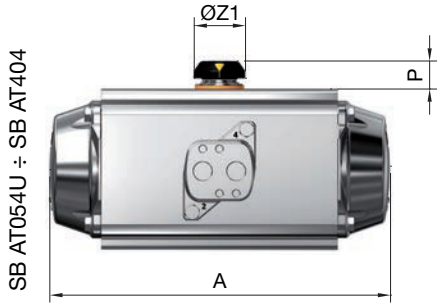
PART N°	Spare Parts	UNIT Q.TY / NOTE		PART DESCRIPTION	STANDARD MATERIAL
01		1		OCTI-CAM (Stop arrangement)	Stainless Steel (only for SB AT054U ÷ SB AT304) Carbon Steel, zinc coated
02		2		STOP CAP SCREW	Stainless Steel A2 70 (ISO 3506) / OPTIONAL Stainless Steel A4 70
03		2		WASHER	Stainless Steel A2 (ISO 3506) / OPTIONAL Stainless Steel A4
04		2		NUT (Stop screw)	Stainless Steel A2 70 (ISO 3506) / OPTIONAL Stainless Steel A4 70
05	○	2		BEARING (Piston back)	High-grade polymers
06	○	1		BEARING (Pinion top)	High-grade polymers
07	○	1		BEARING (Pinion bottom)	High-grade polymers
08	○	2		THRUST BEARING (Pinion)	High-grade polymers
09	○ □	2	NA for SB AT454 and bigger	PLUG	M-NBR / Silicone
10		1		THRUST WASHER (Pinion)	Stainless Steel AISI 304
11	○ □	2		"O" RING (Stop screw)	M-NBR
12		2		PISTON GUIDE	High-grade polymers
13		8		CAP SCREW (End cap)	Stainless Steel A4 70 (ISO 3506)
13.1		8	only for SB AT454 and bigger	WASHER (Cap Screw end cap)	Stainless Steel A4 (ISO 3506)
14	○ □	2		"O" RING (End cap)	M-NBR
14.1	○ □	2	only for SB AT454 and bigger	"O" RING (Body Extensions)	M-NBR
15	○	2		BEARING (Piston head)	High-grade polymers
16	○ □	2		"O" RING (Piston)	M-NBR
17		max. 12	for SB AT104 ÷ SB AT654	SPRING (Cartridge)	SiCr Spring alloy Steel coated
17.1		max. 4	only for SB AT054U	SPRING	
17.2				SPRING	
17.3				SPRING	
18		1		SPRING CLIP (Pinion)	Stainless Steel AISI 302
19.1		1		POSITION INDICATOR	High-grade polymers
20	○ □	1		"O" RING (Pinion bottom)	M-NBR
21	○ □	1		"O" RING (Pinion top)	M-NBR
30		2	for SB AT054U ÷ SB AT404 for SB AT454 and bigger	END CAP	Stainless Steel 1.4408 (EN 10283) / CF8M (ASTM A351), ENP Stainless Steel 1.4401 (EN 10088-3) / F316 (ASTM A 182), ENP
39		1		CAP SCREW (Indicator)	High-grade polymers
40		2		PISTON	Pressure Die Cast Aluminium alloy, anodized
41		1		ACTUATOR IDENTIFICATION LABEL	Polyester-Silver
42		2		END CAP LABEL	Polyester-Silver
44		1		NAMUR CONNECTION PLATE	Stainless Steel 1.4401 (EN 10088-3) / F316 (ASTM A 182) -only for SB AT054U Stainless Steel 1.4408 (EN 10283) / CF8M (ASTM A351)
45		2		CAP SCREW (Connection Plate)	Stainless Steel A4 70 (ISO 3506)
46	○ □	1		"O" RING Port 2 (Connection Plate)	M-NBR
47	○ □	1		"O" RING Port 4 (Connection Plate)	M-NBR
50		1		BODY	Stainless Steel 1.4401 (EN 10088-3) / F316 (ASTM A 182), ENP
50.1		2	only for SB AT454 and bigger	BODY EXTENSIONS	Stainless Steel 1.4401 (EN 10088-3) / F316 (ASTM A 182), ENP
60.1		1		INTEGRAL DRIVE SHAFT	Stainless Steel 1.4401 (EN 10088-3) / F316 (ASTM A 182), ENP

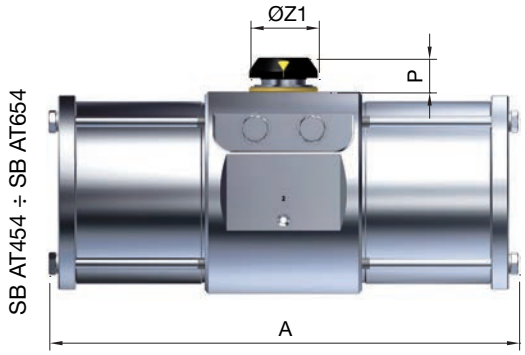
○ Parts included in Complete spare parts kit

□ Parts included in "O" ring spare parts kit

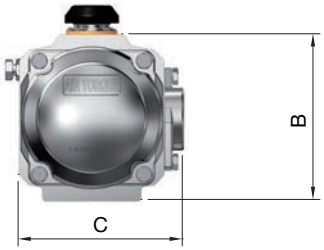
METRIC DIMENSIONS AND TECHNICAL DATA

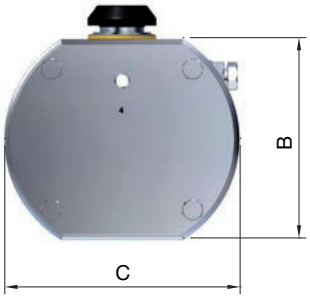
FRONT VIEW



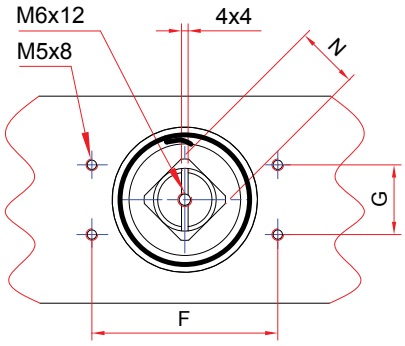


SIDE VIEW





TOP DETAIL



ACTUATOR MODEL	SB AT054U D/S	SB AT104 D/S	SB AT204 D/S	SB AT254 D/S	SB AT304 D/S	SB AT404 D/S	SB AT454 D/S	SB AT554 D/S	SB AT654 D/S
A	141	159	211	248	268	345	412	492	662
B	69	85	102	115	127	157	177	220,5	298,5
C (Approx.)	75	86	99	114	128	160	210	250	335
F	80	80	80	80	80	80	80	130	130
G	30	30	30	30	30	30	30	30	30
N	11	11	17	17	17	27	27	36	36
P	20	20	20	20	20	30	30	50	50
T ISO 228*	1/8”	1/4”	1/4”	1/4”	1/4”	1/4”	1/4”	1/4”	3/8”
øZ1	37	37	37	37	37	51	60	68	104
ISO Flange	F04	F05	F05 + F07	F05 + F07	F07 + F10	F07 + F10	F10 + F12	F14	F16
Q	42	50	50	50	70	70	102	140	165
Q1	-	-	70	70	102	102	125	-	-
W	M5	M6	M6	M6	M8	M8	M10	M16	M20
W1	-	-	M8	M8	M10	M10	M12	-	-

OPTIONAL ISO Flange		F03	-	-	-	-	-	-	F10 + F12	-
CH x l min.	DS	9x11	11x12	14x16	17x19	17x19	22x24	27x29	27x29	36x39
		11x12	14x16	17x19	-	22x24	27x29	-	36x39	46x49

*NPT (ANSI B1-20-1) threads available on request only for models **SB AT054U ÷ SB AT404**

METRIC	MODEL TYPE	SB AT054U		SB AT104		SB AT204		SB AT254		SB AT304		SB AT404		SB AT454		SB AT554		SB AT654	
		D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S
Opening Time (A)	(Sec.)	0,2	0,25	0,25	0,3	0,3	0,4	0,4	0,5	0,5	0,7	0,9	1,2	1,2	1,5	2	2,4	3,5	4,1
Closing Time (A)	(Sec.)	0,2	0,3	0,3	0,35	0,35	0,5	0,5	0,6	0,6	0,9	1,1	1,4	1,4	1,8	2,2	2,8	4	4,6
Air Volume Opening	(L)	0,09		0,16		0,31		0,51		0,71		1,54		2,41		4,26		10	
Air Volume Closing	(L)	0,15		0,26		0,49		0,78		1,11		2,34		3,78		6,89		15,2	
Approximate Weight	(Kg)	2,7	2,9	3,8	4,0	6,0	6,4	8,8	9,4	12,3	13,3	22,6	24,5	34,6	37,7	58	65	135	150

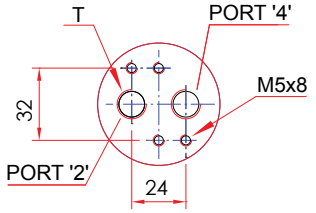
Note: (A) The above moving times of the actuator are obtained in the following test conditions:
For model SB AT054U ÷ SB AT454: (1) Room Temperature, (2) Actuator Stroke 90°, (3) Solenoid Valve with Orifice Of 4 mm and a flow capacity Qn 400L/min., (4) Inside pipe diameter 8 mm, (5) Medium clean air, (6) Air supply pressure 5,5 bar (79,75 Psi), (7) Actuator without external resistance load.

For model SB AT554 ÷ SB AT654: (1) Room Temperature, (2) Actuator Stroke 90° , (3) Solenoid Valve with Orifice Of 11 mm and a flow capacity Qn 6000L/min., (4) Inside pipe diameter 11 mm, (5) Medium clean air, (6) Air supply pressure 5,5 bar (79,75 Psi), (7) Actuator without external resistance load.

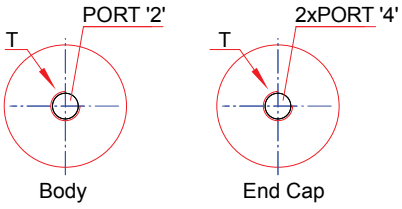
Cautions: obviously on the field applications when one or more of the above parameter are different, the moving time will be different.

AIR CONNECTION VDI/VDE 3845

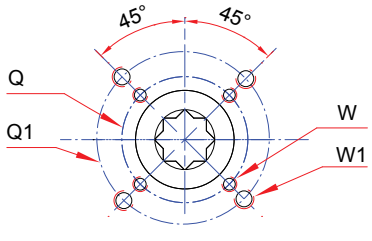
SB AT054U ÷ SB AT404

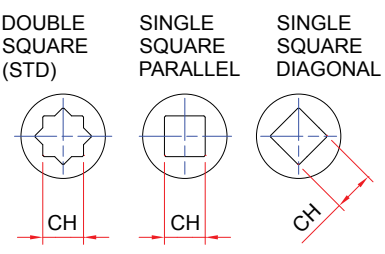


SB AT454 ÷ SB AT654



BOTTOM VIEW ISO 5211





TORQUE OUTPUT (Nm)

SPRING RETURN TORQUE

Supply Pressure		2,5 bar		3 bar		3,5 bar		4 bar		4,2 bar		4,5 bar		5 bar		5,5 bar		6 bar		7 bar		8 bar		Spring stroke	
Model	Spring set	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	90° Start	0° End
SB AT054U	S 1	**5,0**	**3,0**	7	4,7	8	6,3	10,0	8	10,7	8,7	11,7	9,6	13,3	11,3									**5,3**	**3,3**
	S 2	4	1,9	**6,0**	**3,6**	7,7	5,3	9,3	6,9	10,0	7,6	11,0	8,6	12,7	10,2	14,3	11,9							**6,4**	**4,0**
	S 3			5,3	2,5	**7,0**	**4,2**	8,7	5,8	9,4	6,6	10,3	7,5	12,0	9,2	13,7	10,8	15,3	12,5					**7,4**	**4,6**
	S 4					6,3	3	**8,0**	**5**	**8,7**	**5,5**	9,7	6,4	11,3	8,1	13,0	9,8	14,7	11,4	18,0	14,7			**8,5**	**5,3**
	S 5							7,3	3,7	8,1	4,4	**9,0**	**5,4**	10,7	7,0	12,3	8,7	14,0	10	17,3	13,7	20,6	17,0	**9,6**	**5,9**
	S 6											8,4	4,3	**10,0**	**6,0**	11,7	7,6	13,3	9,3	16,7	12,6	20,0	16	**10,6**	**6,6**
	S 7													9,4	4,9	**11**	**6,6**	13	8,2	16,0	11,6	19,3	14,9	**11,7**	**7,3**
	S 8															10,4	6	**12,0**	**7,2**	15,3	10,5	18,7	13,8	**12,8**	**7,9**
SB AT104	S 05	**9,1**	**6,2**	12	9,2	15	12,1	17,9	15	19,1	16,2	20,8	17,9	23,8	20,9									**8,4**	**5,5**
	S 06	8	4,5	**10,9**	**7,5**	13,9	10,4	16,8	13,3	18	14,5	19,7	16,3	22,7	19,2	25,6	22,1							**10,1**	**6,7**
	S 07			9,8	5,8	**12,8**	**8,7**	15,7	11,6	16,9	12,8	18,6	14,6	21,5	17,5	24,5	20,4	27,4	23,4					**11,8**	**7,8**
	S 08					11,6	7	**14,6**	**10**	**15,7**	**11,1**	17,5	12,9	20,4	15,8	23,4	18,7	26,3	21,7	32,2	27,5			**13,5**	**8,9**
	S 09							13,5	8,3	14,6	9,4	**16,4**	**11,2**	19,3	14,1	22,3	17,1	25,2	20	31,1	25,9	36,9	31,7	**15,2**	**10**
	S 10											15,3	9,5	**18,2**	**12,4**	21,1	15,4	24,1	18,3	29,9	24,2	35,8	30	**16,9**	**11,1**
	S 11													17,1	10,8	**20**	**13,7**	23	16,6	28,8	22,5	34,7	28,3	**18,6**	**12,2**
	S 12															18,9	12	**21,9**	**14,9**	27,7	20,8	33,6	26,7	**20,2**	**13,3**
SB AT204	S 05	**18**	**11,8**	23,8	17,6	29,7	23,4	35,5	29,2	37,8	31,6	41,3	35	47,1	40,9									**17,3**	**11,1**
	S 06	15,8	8,3	**21,6**	**14,1**	27,5	19,9	33,3	25,8	35,6	28,1	39,1	31,6	44,9	37,4	50,7	43,2							**21**	**13,3**
	S 07			19,4	10,7	**25,2**	**16,5**	31,1	22,3	33,4	24,6	36,9	28,1	42,7	33,9	48,5	39,8	54,3	45,6					**24,2**	**15,5**
	S 08					23	13	**28,8**	**18,8**	**31,2**	**21,2**	34,7	24,7	40,5	30,5	46,3	36,3	52,1	42,1	63,7	53,7			**27,7**	**17,7**
	S 09							26,6	15,4	29	17,7	**32,5**	**21,2**	38,3	27	44,1	32,8	49,9	38,6	61,5	50,3	73,2	61,9	**31**	**19,9**
	S 10											30,2	17,7	**36,1**	**23,6**	41,9	29,4	47,7	35,2	59,3	46,8	71	58,5	**34,6**	**22,1**
	S 11													33,8	20,1	**39,7**	**25,9**	45,5	31,7	57,1	43,4	68,7	55	**38,1**	**24,3**
	S 12															37,5	22,4	**43,3**	**28,3**	54,9	39,9	66,5	51,5	**41,5**	**26,5**
SB AT254	S 05	**27,4**	**16,9**	36,6	26	45,7	35,2	54,9	44,3	58,5	48	64	53,5	73,2	62,6									**28,9**	**18,3**
	S 06	23,8	11,1	**32,9**	**20,3**	42,1	29,4	51,2	38,6	54,9	42,2	60,4	47,7	69,5	56,9	78,7	66							**34,7**	**22**
	S 07			29,2	14,5	**38,4**	**23,6**	47,5	32,8	51,2	36,4	56,7	41,9	65,8	51,1	75	60,2	84,2	69,4					**40,4**	**25,7**
	S 08					34,7	17,9	**43,9**	**27**	**47,5**	**30,7**	53	36,2	62,2	45,3	71,3	54,5	80,5	63,6	98,8	81,9			**46,2**	**29,3**
	S 09							40,2	21,2	43,9	24,9	**49,4**	**30,4**	58,5	39,5	67,7	49	76,8	57,8	95,1	76,1	113	94,5	**52**	**33**
	S 10											45,7	24,6	**54,8**	**33,8**	64	42,9	73,1	52,1	91,5	70,4	110	88,7	**57,8**	**36,7**
	S 11													51,2	28	**60,3**	**37,1**	69,5	46,3	87,8	64,6	106	82,9	**63,5**	**40,3**
	S 12															56,7	31,4	**65,8**	**40,5**	84,1	58,8	102	77,1	**69,3**	**44**
SB AT304	S 05	**41,1**	**27,1**	54,4	40,4	67,7	53,7	81	67	86,3	72,3	94,3	80,3	108	93,6									**39,4**	**25,3**
	S 06	36,1	19,2	**49,4**	**32,5**	62,7	45,8	76	59,1	81,3	64,4	89,3	72,4	103	85,7	116	99							**47,3**	**30,4**
	S 07			44,3	24,6	**57,6**	**37,9**	70,9	51,2	76,2	56,5	84,2	64,5	97	77,8	111	91,1	124	104					**55,1**	**35,5**
	S 08					52,5	30	**65,8**	**43,3**	**71,1**	**48,7**	79,1	56,6	92,4	69,9	106	83,2	119,0	96,5	146	123			**63**	**40,5**
	S 09							60,8	35,5	66,1	40,8	**74,0**	**48,8**	87,3	62,1	101	75,3	113,9	88,6	141	115	167	142	**70,9**	**45,6**
	S 10											69	40,9	**82,3**	**54,2**	95,6	67,5	109	80,8	135	107	162	134	**78,8**	**50,7**
	S 11													77,2	46,3	**90,5**	**59,6**	104	72,9	130	99	157	126	**86,7**	**55,7**
	S 12															85,4	51,7	**99**	**65**	125	92	152	118	**94,5**	**60,8**
SB AT404	S 05	**86**	**56,1**	114	83,8	141	111	169	139	180	150	197	167	224	195									**82,4**	**52,5**
	S 06	75,5	39,6	**103**	**67,3**	131	95,0	159	123	170	134	186	150	214	178	242	206							**98,9**	**63**
	S 07			92,7	50,8	**120**	**78,5**	148	106	159	117	176	134	203	162	231	189	259	217					**115**	**73,5**
	S 08					110	62	**138**	**89,7**	**149**	**101**	165	117	193	145	221	173	248	201	304	256			**132**	**84**
	S 09							127	73,3	138	84,3	**155**	**101**	182	129	210	156	238	184	293	239	349	295	**148**	**94,5**
	S 10											144	84,5	**172**	**112**	200	140	227	168	283	223	338	278	**165**	**105**
	S 11													161	95,7	**189**	**123**	217	151	272	206	328	262	**181**	**116**
	S 12															179	107	**206**	**135**	262	190	317	245	**198**	**126**
SB AT454	S 05	**135**	**89**	179	132	222	176	265	219	283	236	309	262	352	306									**129**	**82,4**
	S 06	119	63	**162**	**106**	206	149,7	249	193	266	211	293	237	336	280	379	324							**155**	**99**
	S 07			146	80	**189**	**124**	233	167	250	185	276	211	320	254	363	298	406	341					**180**	**115**
	S 08					173	98	**216**	**142**	**233**	**159**	260	185	303	229	347	272	390	316	477	403			**206**	**132**
	S 09							200	116	217	133	**243**	**159**	287	203	330	246	374	290	460	377	547	464	**232**	**148**
	S 10											227	134	**270**	**177**	314	221	357	264	444	351	531	438	**258**	**165**
	S 11													254	151	**297**	**195**	341	238	428	325	515	412	**283**	**181**
	S 12															281	169	**324**	**213**	411	299	498	386	**309**	**198**
SB AT554	S 05	**225**	**146**	301	223	378	299	455	376	485	406	531	452	608	529									**237**	**158**
	S 06	193	99	**270**	**175**	346	252	423	329	454	359	500	405	576	482	653	558							**284**	**190**
	S 07			238	128	**315**	**205**	391	281	422	312	468	358	544	434	621	511	698	587					**332**	**221**
	S 08					283	157	**360**	**234**	**390**	**264**	436	310	513	387	589	464	666	540	819	693			**379**	**253**
	S 09							328	186	359	217	**405**	**263**	481	340	558	416	634	493	788	646	941	799	**426**	**285**
	S 10											373	216	**450**	**292**	526	369	603	445	756	599	909	752	**474**	**316**
	S 11													418	245	**495**	**321**	571	398	724	551	877	704	**521**	**348**
	S 12															463	274	**540**	**351**	693	504	846	657	**568**	**379**
SB AT654	S 05	**533**	**146**	712	551	890	730	1069	908	1141	980	1248	1087	1426	1266									**521**	**360**
	S 06	461	268	**640**	**447**	818	625	997	804	1068	876	1176	983	1354	1162	1533	1340							**625**	**433**
	S 07			568	343	**746**	**521**	925	700	996	771	1104	879	1282	1057	1461	1236	1640	1415					**730**	**505**
	S 08					674	417	**853**	**596**	**924**	**667**	1032	774	1210	953	1389	1132	1568	1310	1925	1668			**834**	**577**
	S 09							781	491	852	563	**959**	**670**	1138	849	1317	1028	1495	1206	1853	1564	2210	1921	**938**	**649**
	S 10											887	566	**1066**	**745**	1245	923	1423	1102	1781	1459	2138	1817	**1042**	**721**
	S 11													994	640	**1173**	**819**	1351	998	1709	1355	2066	1713	**1146**	**793**
	S 12															1101	715	**1279**	**894**	1637	1251	1994	1608	**1251**	**865**

Spring set — The above value are the out-put torque that remain available to operate the valve when the port "2" is pressurized — Out-put torque available when air supply fails

DOUBLE ACTING TORQUE

Supply Pressure / Model	2,5 bar	3 bar	3,5 bar	4 bar	4,2 bar	4,5 bar	5 bar	5,5 bar	6 bar	7 bar	8 bar
SB AT054U	8,3	10,0	11,6	13,3	14,0	15,0	16,6	18,3	19,9	23,3	26,6
SB AT104	14,7	17,6	20,5	23,5	24,6	26,4	29,3	32,2	35,2	41,0	46,9
SB AT204	29,1	34,9	40,7	46,5	48,9	52,4	58,2	64,0	69,8	81,4	93,1
SB AT254	45,8	54,9	64,1	73,2	76,9	82,4	91,5	100,7	109,8	128,1	146,4
SB AT304	66,5	79,8	93,1	106	112	120	133	146	160	186	213
SB AT404	138	166	194	222	233	249	277	305	332	388	443
SB AT454	217	261	304	348	365	391	435	478	522	609	696
SB AT554	383	459	536	613	643	686	766	842	919	1072	1225
SB AT654	893	1072	1251	1430	1501	1608	1787	1966	2144	2502	2859

HOW TO ORDER

Available Options and Ordering codes:

00	**Blank**: for standard actuator **R50**: 50% travel stop limitation (45° up to 90°) **R100**: 100% travel stop limitation (0° up to 90°)
1	**SB:** Standard material and surface finishing, with ENP coating **SBP:** Standard material and polished surface with ENP coating **SC:** Standard material and surface finishing, with NO ENP coating **SCP:** Standard material and polished surface with NO ENP coating
2	**90°** Rotation (Standard) **= AT054U to AT654** Other Rotation evaluated on request.
3	**D** = Double Acting **S** = Spring Return
4 (A)	Only for spring return: number of spring, spring set configuration For model AT054U: Spring Set configuration **S1/S2/S3/S4/S5/S6/S7/S8** For models **AT104 to AT654** = Number of Spring: **> 05 to 12** spring for standard actuators 90° rotation
5	**ISO 5211 Flange** (See table below)

Model	ISO 5211 Flange type available			
	Standard	**Options**		
AT054U	F04	F03		
AT104	F05			
AT204	F05+F07			
AT254	F05+F07			
AT304	F05+F07+F10			
AT404	F07+F10			
AT454	F10+F12			
AT554	F14	F10+F12		
AT654	F16			

6	**Blank**: no spigot **Y: with spigot**
7 (B)	**XXDS :** dimension and double square (for all Square dimensions available see table below)

ISO 5211 Square dimensions and type available			
Model	**Double Square**		
AT054U	9	11	
AT104	11	14	
AT204	14	17	
AT254	17		
AT304	17	22	
AT404	22	27	
AT454	27		
AT554	27	36	
AT654	36	46	

8	**Blank**: actuator with standard seals suitable for **-40°C (-40°F) to +80°C (+176°C)** **HT** : actuator construction suitable for **-15°C (+5°F) to +150°C (+302°F)** **LLT** : actuator construction suitable for **-55°C (-67°F) to +80°C (+176°F)**
9 (C)	**Blank**: standard assembly type ST, clockwise to close (spring to close) and close indication at air failure condition (or with pressurized port 4 for double acting) for **in line** mounting. **STR**: clockwise to close (spring to close) and close indication at air failure condition (or with pressurized port 4 for double acting) for **across line** mounting. **LF**: counterclockwise to close (spring to open) and open indication at air failure condition (or with pressurized port 4 for double acting) for **across line** mounting. **LFR**: counterclockwise to close (spring to open) and open indication at air failure condition (or with pressurized port 4 for double acting) for **in line** mounting.
10	Further requested options

All dimensions and materials are referred to updated catalogue and/or technical data sheet.

Notes:

A) For model AT054U the number indicated is the spring SET configuration and not spring quantity.

B) Standard Shaft connection is a female double square. For other connections contact AIR TORQUE.

C) For detailed information see T.D.S. n° TYAS

D) If not specified the actuators will be supplied with standard Position Indicator Blue colour.
Optional indicator for sensor or limit switch contact available on request, see T.D.S. n° Tab. 00011 E / Tab. 00012 E / Tab. 00013 E.

How to order examples:

00	1	2	3	4	5	6	7	8	9	10
-	SB	AT254	S	12	F05+F07	-	14 DS	HT	-	-

SB AT254, S.S actuator Series with standard material and surface finishing, with ENP coating, spring return with 12 springs, ISO flange F05-F07, without spigot, 17 mm double square and high temperature construction, standard position indicator Blue colour.

AIR TORQUE®

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Ставрополь (8652)20-65-13
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Тверь (4822)63-31-35
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Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
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