



## Pneumatics

Pneumatic & General Purpose Valves

Cylinders & Rotary Actuators

Drives & Handling Solutions

Air Treatment, Pressure Sensors & Accessories

Stepper Motors, Systems & Additional Products

## **BIBUS - 'Supporting your Success'**

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Over 60 years' experience in our core business disciplines; Technology, Metals and Electronics have meant we have built excellent trading partnerships with market leading manufactures to offer our customers quality products and expertise in all areas.

## **BIBUS (UK) Ltd**

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As a Technological Subsidiary of BIBUS Holding AG our customers benefit from our expertise in the field of Mechatronics, Pneumatics and Environmental Technologies. Dedicated product managers located across the UK help us support our customers with excellent service, expertise and skills.

## **Our Aim**

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We constantly strive to strengthen our position among suppliers and manufacturers to offer customers quality products at competitive prices in the shortest possible lead time.

## **Efficient Logistics**

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High degree of availability of stocked items, inter-company support and frequent shipments from manufactures with modern warehousing systems ensures an efficient flow of goods.

## **Expertise**

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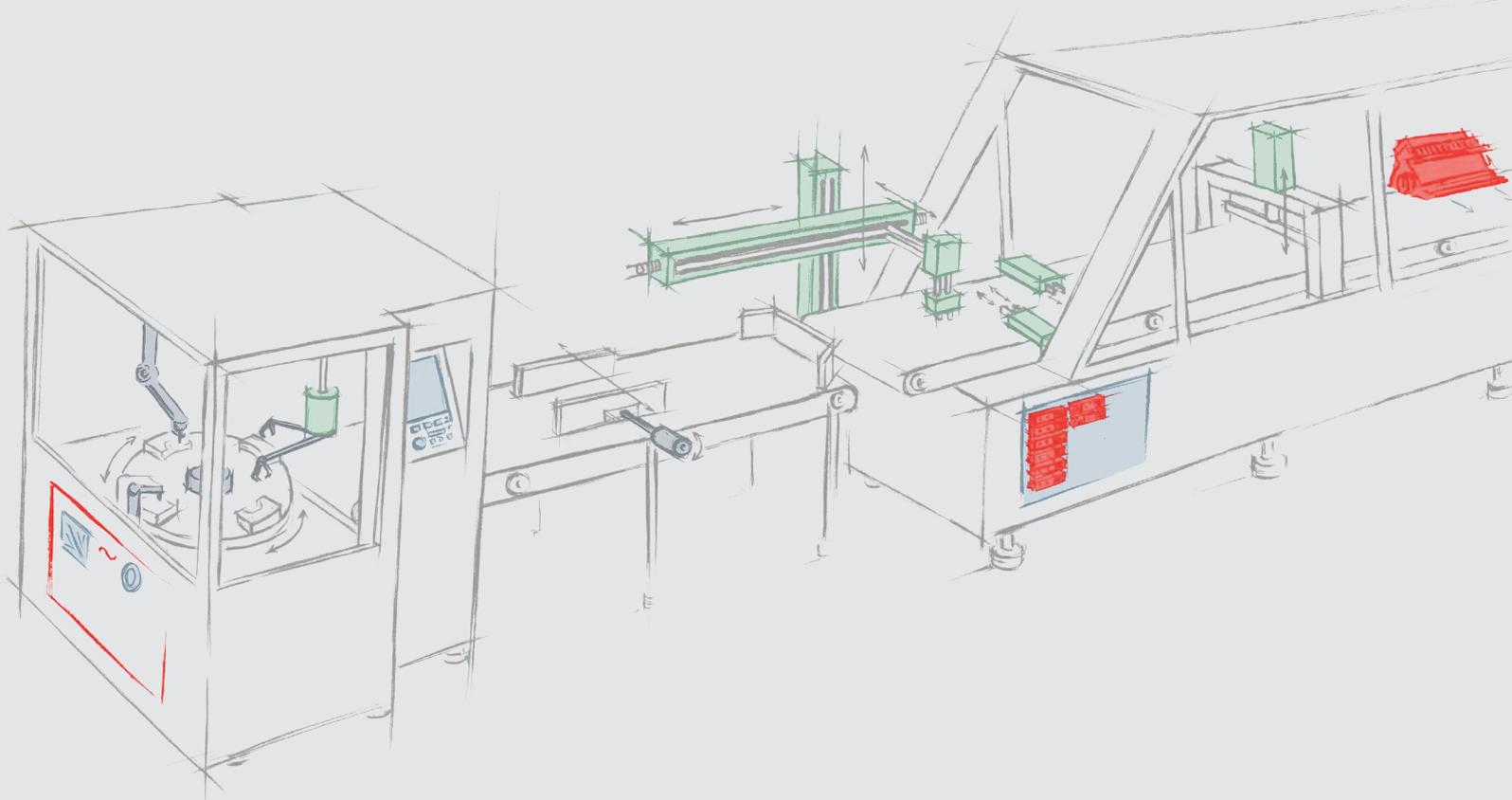
By working with manufacturers our product managers are fully trained to be able to offer technical support and knowledge to help our customers overcome their problems.

## **Quality**

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Quality and the relevant qualifications go without saying at BIBUS.

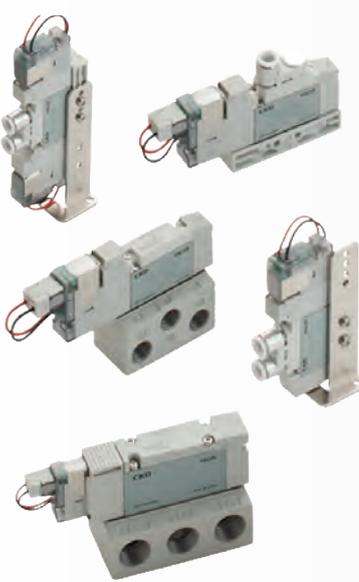




- One of the largest range of fluid control valves on the market.
- An innovative valve range, using operating technology from the traditional to the sophisticated, such as Pulse Width Modulation, DeviceNet and EtherNet protocols.
- Continuous development to achieve high performance directional control valves for air, gas, water, steam, oil and high / low vacuum.
- Accredited with ISO certifications, with CE and UL approvals of products for global support.

## NEW 3GA\*R / 3GB\*R 4GA\*R / 4GB\*R - INDIVIDUAL TYPE

Model no.	Voltage (v)	Solenoid Position								A/B Connection Port							
		3/2 Normally closed	3/2 Normally open	N.C. A & B side	Single solenoid	Double solenoid	All ports closed	A/B/R connection	P/A/B connection	Push-in				Female thread			
										Ø 4	Ø 6	Ø 8	Ø 10	M5	Rc 1/8	Rc 1/4	Rc 3/8
3GA1*R	220 AC	●	●	●						●	●			●			
3GA2*R		●	●	●						●	●	●			●		
3GA3*R		●	●								●	●	●			●	
3GB1*R	100 AC	●		●						●	●			●			
3GB2*R	24 DC	●	●	●						●	●	●			●		
12 DC																	
4GA1*R	Option			●	●	●	●	●	●	●	●	●		●			
4GA2*R				●	●	●	●	●	●	●	●	●		●			
4GA3*R	5 DC			●	●	●	●	●	●	●	●	●			●		
4GB1*R	3 DC			●	●	●	●	●	●			●			●		
4GB2*R				●	●	●	●	●	●			●			●		
4GB3*R				●	●	●	●	●	●						●	●	



- Compact design
- Long life:
  - 100 million cycles
- Low wattage:
  - 0.4 Watts
  - 0.1 Watts option
- Very reliable:
  - Override protective cover
  - Filter and check valve as standard
- Imperial tubing and NPT port option available

## NEW MN4GA\*R / MN4GB\*R - REDUCED WIRED TYPE

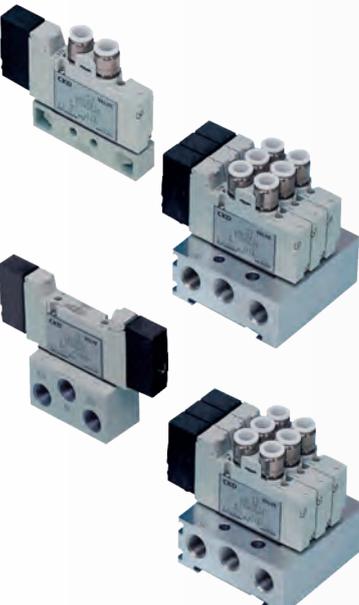
Model no.	Voltage (v)	Solenoid Position										A/B Connection Port					
		3/2 Normally closed	3/2 Normally open	Single solenoid	Double solenoid	All ports closed	A/B/R connection	P/A/B connection	Two 3 port valve	Mix	Push-in				Female thread		
											Ø 4	Ø 6	Ø 8	Ø 10	M5	Rc 1/8	Rc 1/4
MN4GA1*R	24 DC 12 DC	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
MN4GA2*R		●	●	●	●	●	●	●	●	●	●	●	●	●	●		
MN4GA3*R		●	●	●	●	●	●	●	●	●		●	●	●			●
MN4GB1*R				●	●	●	●	●	●	●	●	●	●				
MN4GB2*R				●	●	●	●	●	●	●	●	●	●				
MN4GB3*R				●	●	●	●	●	●	●		●	●	●			



- Low wattage
- Variety of serial transmission variation:
  - Ethercat
  - EtherNet/IP
  - PROFIBUS
  - CC-Link
  - DeviceNET
- 32 position available
- Power separation
- Mix valve sizes on the same manifold

## NEW 3GD\*R / 3GE\*R / 4GD\*R / 4GE\*R - INDIVIDUAL TYPE

Model no.	Voltage (v)	Solenoid Position								A/B Connection Port							
		3/2 Normally closed	3/2 Normally open	N.C. A & B side	Single solenoid	Double solenoid	All ports closed	A/B/R connection	P/A/B connection	Push-in				Female thread			
										Ø 4	Ø 6	Ø 8	Ø 10	M5	Rc 1/8	Rc 1/4	Rc 3/8
3GD1*R	220 AC	●	●	●						●	●			●			
3GD2*R		●	●	●						●	●	●			●		
3GD3*R		●	●								●	●	●			●	
3GE1*R	100 AC	●		●						●	●			●			
3GE2*R	24 DC	●	●	●						●	●	●			●		
12 DC																	
4GD1*R	Option			●	●	●	●	●	●	●	●	●		●			
4GD2*R				●	●	●	●	●	●	●	●	●		●			
4GD3*R	5 DC			●	●	●	●	●	●		●	●	●			●	
4GE1*R	3 DC			●	●	●	●	●	●			●			●		
4GE2*R				●	●	●	●	●	●			●			●		
4GE3*R				●	●	●	●	●	●						●	●	



- Compact design
- Long life:
  - 60 million cycles
- Low wattage
- Very reliable:
  - Override protective cover
  - Filter and check valve as standard

## W4GB / MW4GB - 5 PORT PILOT OPERATED VALVE / PLUG-IN MANIFOLD

Model no.	Voltage (v)	Solenoid Position					A/B Connection Port											
		Single solenoid	Double solenoid	All ports closed	A/B/R connection	P/A/B connection	Push-in			Female thread								
							Ø 4	Ø 6	Ø 8	Rc 1/4	Rc 3/8	G 1/4	G 3/8	NPT 1/4	NPT 3/8			
W4GB2	100 AC 24 DC 12 DC	●	●	●	●	●					●							
W4GB4	100 AC 110 AC 24 DC 12 DC	●	●	●	●	●						●	●	●	●	●	●	●
MW4GB		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●




- Compact design:
  - Valve widths ranging from 15 to 29mm
- Very reliable:
  - A soft spool design
  - Filter as standard
- Long life:
  - Newly developed wear resistant packing
- Wide variety of options available:
  - Broad wire connections
  - High-density integration - Manifolds can be freely and flexibly combined

## NP / NAP / NVP - 3 PORT LARGE FLOW RATE VALVE

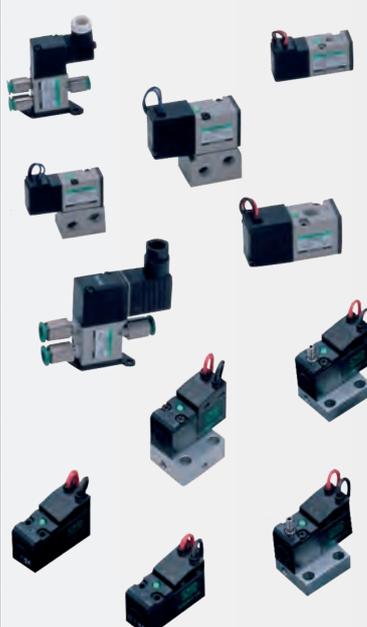
Model no.	Voltage (v)	Electrical Connection					A/P Port Size									
		Grommet coil	DIN terminal box	Terminal box with indicator light	T type terminal box	T type terminal with indicator light	Female thread									
							Rc 3/8	Rc 1/2	Rc 3/4	Rc 1	Rc 1 1/4	Rc 1 1/2	Rc 2			
NP	100 AC 200 AC 24 DC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
NAP	Option						●	●	●	●	●	●	●	●	●	●
NVP	110 AC 220 AC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



- Poppet structure
- Compact and lightweight
- 2 types of pilot available:
  - NP - internal pilot
    - Normally closed
    - Normally open
  - NAP/NVP - external pilot
- External pilot for positive or negative pressures
- Free mounting
- Oil-free available

## 3MA / 3MB & 3PA/3PB - 3 PORT DIRECT ACTING VALVE

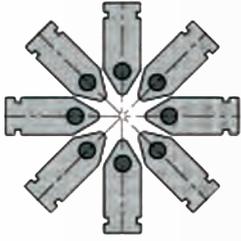
Model no.	Voltage (v)	2 position solenoid	Electrical Connection				A/B Connection Port											
			Grommet lead	Terminal box	C-connector	D-connector	Ø 4 barbed	Push in			Female thread							
								Ø 4	Ø 6	Ø 8	M3	M5	Rc 1/8	Rc 1/4	Rc 3/8			
3MA	24 DC 12 DC	●	●	●	●	●	●	●										
3MB	Option 6 DC 5 DC	●	●	●	●	●		●	●	●								
3PA1	100 AC 200 AC	●	●	●	●	●								●				
3PA2	24 DC	●	●	●	●	●									●			
3PB1	Option	●	●	●	●	●									●			
3PB2	110 AC 220 AC 12 DC	●	●	●	●	●									●	●		



- Compact design:
  - Valve widths ranging from 10 to 22 mm
- Low wattage:
  - Allows connection to various electronic control circuits
- Wide variety of options available:
  - Broad wire connections
- 3PA / 3PB - Large flow rate with a balanced poppet valve construction
- Easy maintenance:
  - Piping, wiring and manual operation in the same direction

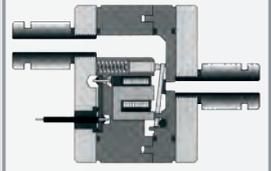
# High Speed Valves

## TECHNOLOGY AND MAIN FEATURES

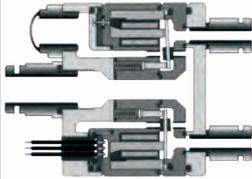


Matrix technology uses two highly innovative principles: the absence of internal friction and the modular architecture design (multi-valve). This system, combined with the reduction of moving masses and the use of material with high energetic efficiency, allows fast response time (as low as 2-4ms), precision, repeatability and outlasting operating life (up to half a billion cycles). The results are working economy (reduced energy consumption), high reliability and insensibility to vibrations and accelerations. Another important feature is the possibility of piloting MATRIX's valves with both traditional on/off and innovative PWM, PFM and PCM techniques, obtaining proportional flow management.

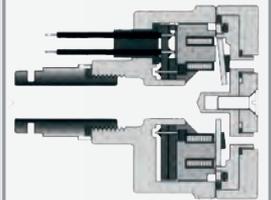
Flowrate: 30 - 1620 l/min  
Standard operating frequency: 100 -200 Hz. With speed-up control up to 800 Hz



## MAIN TARGET SECTORS



Sorting and Recycling - Applications for section, deviation, displacement and rejection  
Handling and Robotics - Force and position control, pick & place, vacuum management  
Medical - Artificial ventilation, breathing, anaesthesia, presso-therapy, bio-tech, dosage  
Marking - Punching, percussion and micro-percussion marking, engraving  
Packaging - Handling, filling, dosage, spraying, tension control  
Textile - Spinning, weaving, winding, tufting equipment, tension control, automation  
Testing - Quality and process control equipment  
Electronics - Handling, complete assembly lines and components testing equipment



### 320 series

	Type	2/2 - 3/2 valve
	Function	Normally closed Normally open
	Air Flow	Pressure
	Flow Rate	30 l/min
	Max frequency	200 Hz

### 580 series

	Type	2/2 multi-valve
	Function	Normally closed
	Air Flow	Pressure
	Flow Rate	180 l/min
	Max Frequency	200 Hz

### 720 series

	Type	2/2 - 3/2 - 5/2 valve
	Function	Normally closed Normally open
	Air Flow	Pressure Vacuum
	Flow Rate	50 - 100 l/min
	Max Frequency	200 Hz

### 750 series

	Type	2/2 - 3/2 - 5/2 - 3/3 multi-valve
	Function	Normally closed Normally open
	Air Flow	Pressure Vacuum
	Flow Rate	50 - 700 l/min
	Max Frequency	200 Hz

### 850 series

	Type	2/2 multi-valve
	Function	Normally closed
	Air Flow	Pressure
	Flow Rate	100 - 1600 l/min
	Max Frequency	500 Hz

### 890 series

	Type	2/2 multi-valve
	Function	Normally closed
	Air Flow	Pressure
	Flow Rate	100 - 1600 l/min
	Max Frequency	500 Hz



# General Purpose Valves

## DIRECT ACTING SOLENOID VALVE



Type	2/2, 3/2 Valve
Solenoid Position	Normally closed, Normally open
Port Size	M5, G 1/8, G 1/4, G 3/8, G 1/2, G 3/4, G 1
Sealing Material	NBR (Perbunan) - Neutral gases and liquids EPDM - Hot water and steam FPM - Oil, petrol and oxygen
Supply Voltage	24 VDC, 24 VAC, 230 VAC Option: 6 - 200 VDC, 12 - 240 VAC ( 50 Hz or 60Hz)
Medium	All liquids and gases, which does not attack the used material

- Large flow rate
- Compact and lightweight
- Diaphragm structure / poppet design
- Long life expectancy
- ATEX options

## PILOT / FORCE PILOT OPERATED SOLENOID VALVE



Type	2/2 Valve
Solenoid Position	Normally closed, Normally open
Port Size	G 3/8, G 1/2, G 3/4, G 1, G 1 1/4, G 1 1/2, G 2
Sealing Material	NBR (Perbunan) - Neutral gases and liquids EPDM - Hot water and steam FPM - Oil, petrol and oxygen
Supply Voltage	24 VDC, 24 VAC, 230 VAC Option: 6 - 200 VDC, 12 - 240 VAC ( 50 Hz or 60Hz)
Medium	All liquids and gases, which does not attack the used material

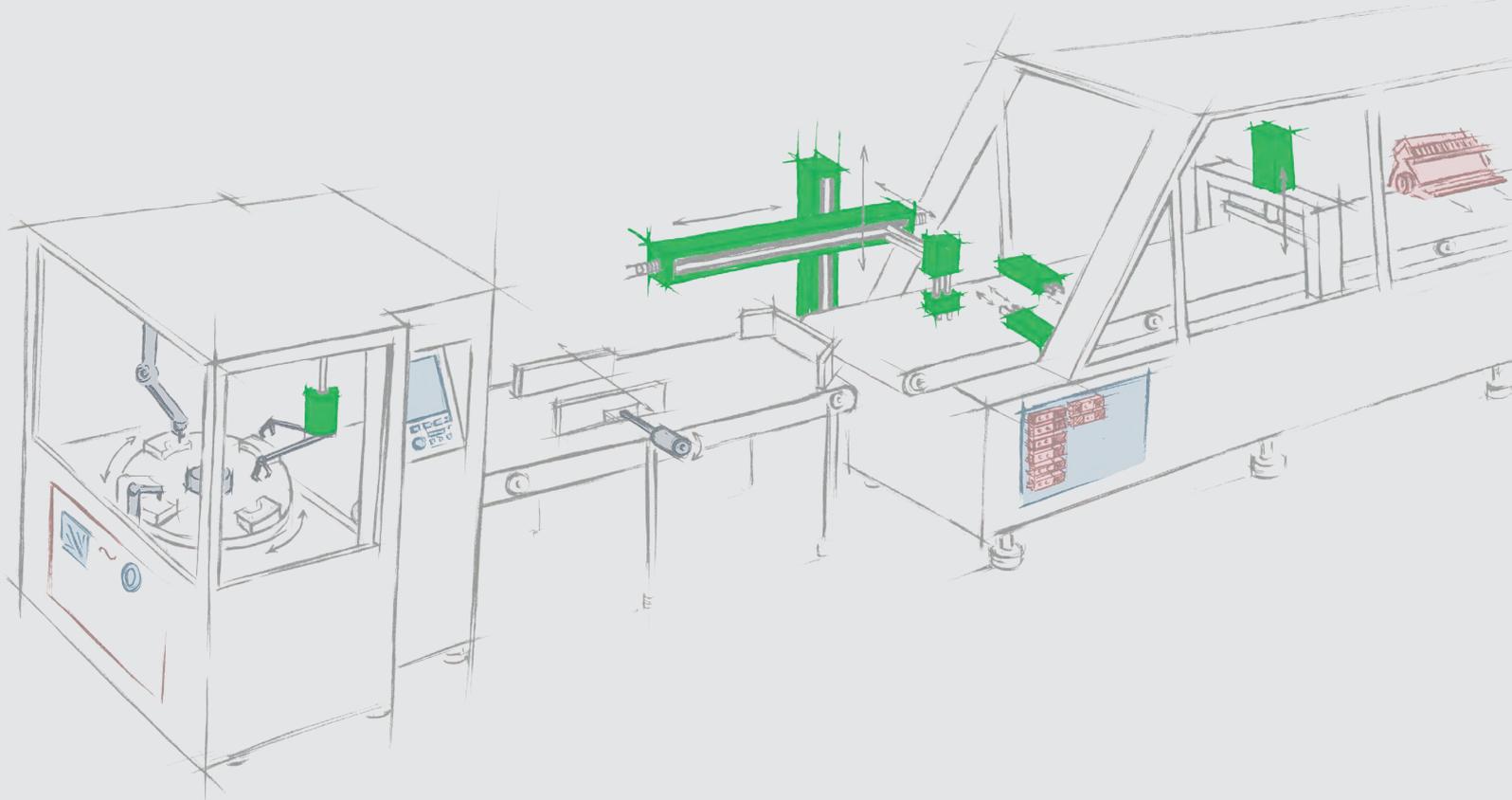
- Zero pressure differential
- Large flow rate
- Compact and lightweight
- Diaphragm structure / poppet design
- Long life expectancy
- ATEX options

## DIRECT ACTING / FORCE PILOT OPERATED STAINLESS STEEL SOLENOID VALVE



Type	2/2 Valve
Solenoid Position	Normally closed, Normally open
Port Size	M5, G 1/8, G 1/4, G 3/8, G 1/2, G 3/4, G 1, G 1 1/4, G 1 1/2, G 2
Sealing Material	NBR (Perbunan) - Neutral gases and liquids EPDM - Hot water and steam FPM - Oil, petrol and oxygen
Supply Voltage	24 VDC, 24 VAC, 230 VAC Option: 6 - 200 VDC, 12 - 240 VAC ( 50 Hz or 60Hz)
Medium	All liquids and gases, which does not attack the used material

- Zero pressure differential
- Large flow rate
- Compact and lightweight
- Diaphragm structure / poppet design
- Long life expectancy
- ATEX options



- A range of high performance cylinders and rotary actuators using high quality materials and manufacturing processes.
- Standard cylinder bore sizes from 4mm up to 250mm with special products up to 400mm.
- Standard stroke length from 1mm to 1000mm. Maximum stroke length up to 5000mm.
- A range of rack & pinion or vane style rotary actuators including three position drives. Select from 0° to 280° oscillating angles.

# Pneumatic Cylinders

SCM - ROUND SHAPED CYLINDER							
	Bore Size	Standard Stroke	Min Stroke	Max Stroke	Cushion	<ul style="list-style-type: none"> <li>• Clean design:                             <ul style="list-style-type: none"> <li>• Most compact general purpose cylinder</li> </ul> </li> <li>• An extensive range of model variations</li> <li>• Easy installation:                             <ul style="list-style-type: none"> <li>• 4 bolt mounting - no need for special tools</li> </ul> </li> <li>• Easy cushion adjustment</li> </ul>	
	20	25, 50, 75, 100, 125, 150, 200, 250, 300		10	1000		Rubber or Air
	25						
	32						
	40						
	50						
	63						
	80	1500					
100							

SSD / SSD2 - COMPACT CYLINDER							
	Bore Size	Standard Stroke	Min Stroke	Max Stroke	Cushion	<ul style="list-style-type: none"> <li>• Most comprehensive range from CKD</li> <li>• Single acting, double acting and through rod types</li> <li>• Square, space-saving design</li> <li>• Female / male piston rod</li> <li>• Direct installation</li> <li>• Direct mounted reed switch</li> </ul>	
	12	5, 10, 15, 20, 25, 30		1	30		With or Without Rubber
	16						
	20	5, 10, 15, 20, 25, 30, 35, 40, 45, 50		1	50		
	25						
	32	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100		1	50		
	40						
	50						
	63	10, 15, 20, 25, 30, 35, 40, 45, 50		1	50		
	80						
	100	10, 20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300		1	300		Rubber
	125						
140							
160							
180							
200							

SCA3 - MEDIUM BORE SIZE CYLINDER							
	Bore Size	Standard Stroke	Min Stroke	Max Stroke	Cushion	<ul style="list-style-type: none"> <li>• Very reliable:                             <ul style="list-style-type: none"> <li>• Most reliable among general cylinders</li> </ul> </li> <li>• Lightweight, corrosion &amp; impact resistant:                             <ul style="list-style-type: none"> <li>• Manufactured from aluminium parts</li> </ul> </li> </ul>	
	40	25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500		1	600		Air
	50						
	63				700		
	80				800		
100							

STG - GUIDED CYLINDER							
	Bore Size	Standard Stroke	Min Stroke	Max Stroke	Cushion	<ul style="list-style-type: none"> <li>• Lightweight:                             <ul style="list-style-type: none"> <li>• One of the lightest cylinders of it's type</li> </ul> </li> <li>• Lateral load resistant and stable operation:                             <ul style="list-style-type: none"> <li>• Metal bush bearing</li> <li>• Ball bearing type support</li> </ul> </li> <li>• Easy maintenance:                             <ul style="list-style-type: none"> <li>• No requirement of special tools</li> </ul> </li> <li>• Precise with high rigidity</li> </ul>	
	12	10, 20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250		5	250		Rubber or Air
	16						
	20	20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400		5	400		
	25						
	32	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400		5	400		
	40						
	50						
	63						
	80						
100							

### SCP3 - PENCIL SHAPED CYLINDER

	Bore Size	Standard Stroke	Min Stroke	Max Stroke	Cushion	<ul style="list-style-type: none"> <li>• Single acting, double acting &amp; through rod styles</li> <li>• Lightweight ,miniature cylinder</li> <li>• Smallest port size among general purpose cylinders</li> </ul>
	6	15, 30, 45, 60	5	100	Rubber or Air	
	10			200		
	16			300		

### SRL3 - RODLESS CYLINDER

	Bore Size	Standard Stroke	Min Stroke	Max Stroke	Cushion	<ul style="list-style-type: none"> <li>• Flat piston design: <ul style="list-style-type: none"> <li>• High load resistance</li> <li>• Non-rotating structure</li> </ul> </li> <li>• High speed cylinder</li> <li>• High precision guided models available</li> <li>• Long life expectancy: <ul style="list-style-type: none"> <li>• Linear sealing section</li> <li>• Magnet fitted as standard</li> <li>• Full dust cover option</li> </ul> </li> <li>• Brake version available</li> </ul>
	12	200, 300, 400, 500, 600, 700, 800, 900, 1000	1	5000	Air	
	16					
	20					
	25					
	32					
	40					
	50					
	63					
	80					
100						

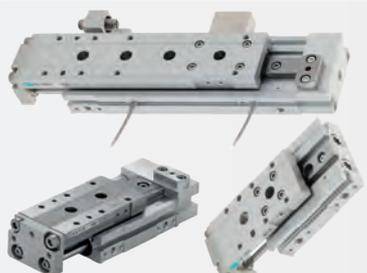
### CMK2 - MEDIUM BORE SIZE CYLINDER

	Bore Size	Standard Stroke	Min Stroke	Max Stroke	Cushion	<ul style="list-style-type: none"> <li>• Stainless steel design</li> <li>• Long life expectancy</li> <li>• High corrosion resistance</li> </ul>
	20	25, 50, 75, 100, 150, 200, 250, 300	5	750	Rubber or Air	
	25					
	32					
	40					

### JSC3 - BRAKE CYLINDER

	Bore Size	Standard Stroke	Min Stroke	Max Stroke	Cushion	<ul style="list-style-type: none"> <li>• Lightweight and reduced size: <ul style="list-style-type: none"> <li>• Manufactured using aluminium</li> <li>• Simple brake structure reduces size</li> </ul> </li> <li>• Highly reliable and accurate: <ul style="list-style-type: none"> <li>• Stopping accuracy: <math>\pm 1</math> mm</li> <li>• Durable brake material</li> </ul> </li> <li>• Piston magnet as standard</li> </ul>
	40	50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	1	1600	Air	
	50			2000		
	63			2500		
	80	50, 75, 100, 150, 200, 250, 300	1	2000	Air	
	100					
	125					
	140					
160						
180						

### LCG / LCR - LINEAR SLIDE CYLINDER

	Bore size	Standard stroke	Min stroke	Max stroke	Cushion	<ul style="list-style-type: none"> <li>• Twin piston design: double thrust</li> <li>• 4 row, guide ball layout: <ul style="list-style-type: none"> <li>• Stable operation</li> <li>• Smooth movement</li> <li>• Greater accuracy</li> </ul> </li> <li>• Rigid cylinder</li> </ul>
	6	10, 20, 30, 40, 50	10	50	Rubber	
	8	10, 20, 30, 40, 50, 75		75		
	12	10, 20, 30, 40, 50, 75, 100		100		
	16	10, 20, 30, 40, 50, 75, 100, 125		125		
	20	10, 20, 30, 40, 50, 75, 100, 125, 150		150		
	25					

# Rotary Actuators

## RV3 - ROTARY ACTUATOR WITH VANE MECHANISM



Model no.	Effective Torque															Oscillating Angle					
	0.12 Nm	0.28 Nm	0.31 Nm	0.71 Nm	0.98 Nm	1.70 Nm	2.11 Nm	3.19 Nm	3.88 Nm	4.7 Nm	7.70 Nm	10.1 Nm	14.7 Nm	27.9 Nm	34.3 Nm	66.6 Nm	90°	100°	180°	270°	280°
RV3*1	●	●															●	●	●		
RV3*3			●	●													●	●	●		
RV3*10					●		●										●	●	●		
RV3*20						●		●									●	●	●		
RV3*30								●		●							●	●	●		
RV3*50									●		●						●	●	●	●	●
RV3*150												●		●			●	●	●	●	●
RV3*300													●		●		●	●	●	●	●
RV3*50									●		●						●	●	●	●	●
RV3*150												●		●			●	●	●	●	●
RV3*300													●		●		●	●	●	●	●

- Space-saving design
- High torque:
  - Double vane options available
- Very reliable and durable
- Selective origin:
  - Select origin position between 45° and 90°
- Wide temperature working environment:
  - Temperature can be set between -5 to 80°C
- Low hydraulic versions available

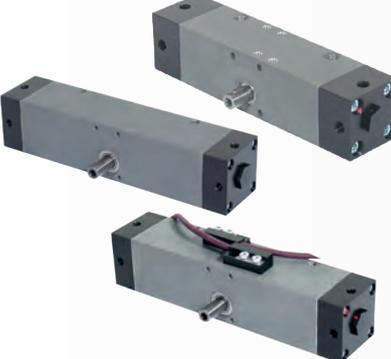
## GRC - TABLE TYPE ROTARY ACTUATOR



Type	Model no.	Effective Torque						Angle		Options			
		0.5 Nm	1.0 Nm	2.0 Nm	3.0 Nm	5.2 Nm	8.1 Nm	90°	180°	Outer mount shock absorber (NCK-0.3)	Outer mount shock absorber (NCK-0.7)	Outer mount shock absorber groove machined	
Basic type	GRC	●	●	●	●	●	●	●	●	●	●	●	●
High accuracy	GRC-K		●	●	●	●	●	●	●	●	●	●	●
Fine Speed	GRC-F	●	●	●	●	●	●	●	●	●	●	●	●
High accuracy / fine speed	GRC-KF		●	●	●	●	●	●	●	●	●	●	●

- Rack and pinion
- Reliable operation:
  - External stop assists smooth stopping
- Easy installation:
  - Simple piping / wiring
  - Piping ports can be selected from 3 sides
  - Direct load fitting
- High position accuracy

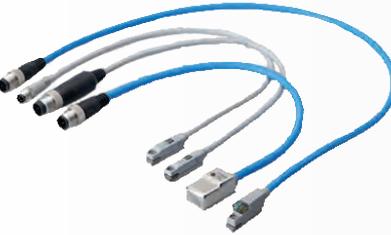
## DAD - 3 POSITION CYLINDER



Type	Effective Torque			Angle		Options			
	50	200	500	95	185	2 shaft ends	keyway and key	2 shaft ends / 1 keyway and key	2 shaft ends / 2 keyway and key
Basic type	●	●	●	●	●	●	●	●	●
with end position control	●	●	●	●	●	●	●	●	●

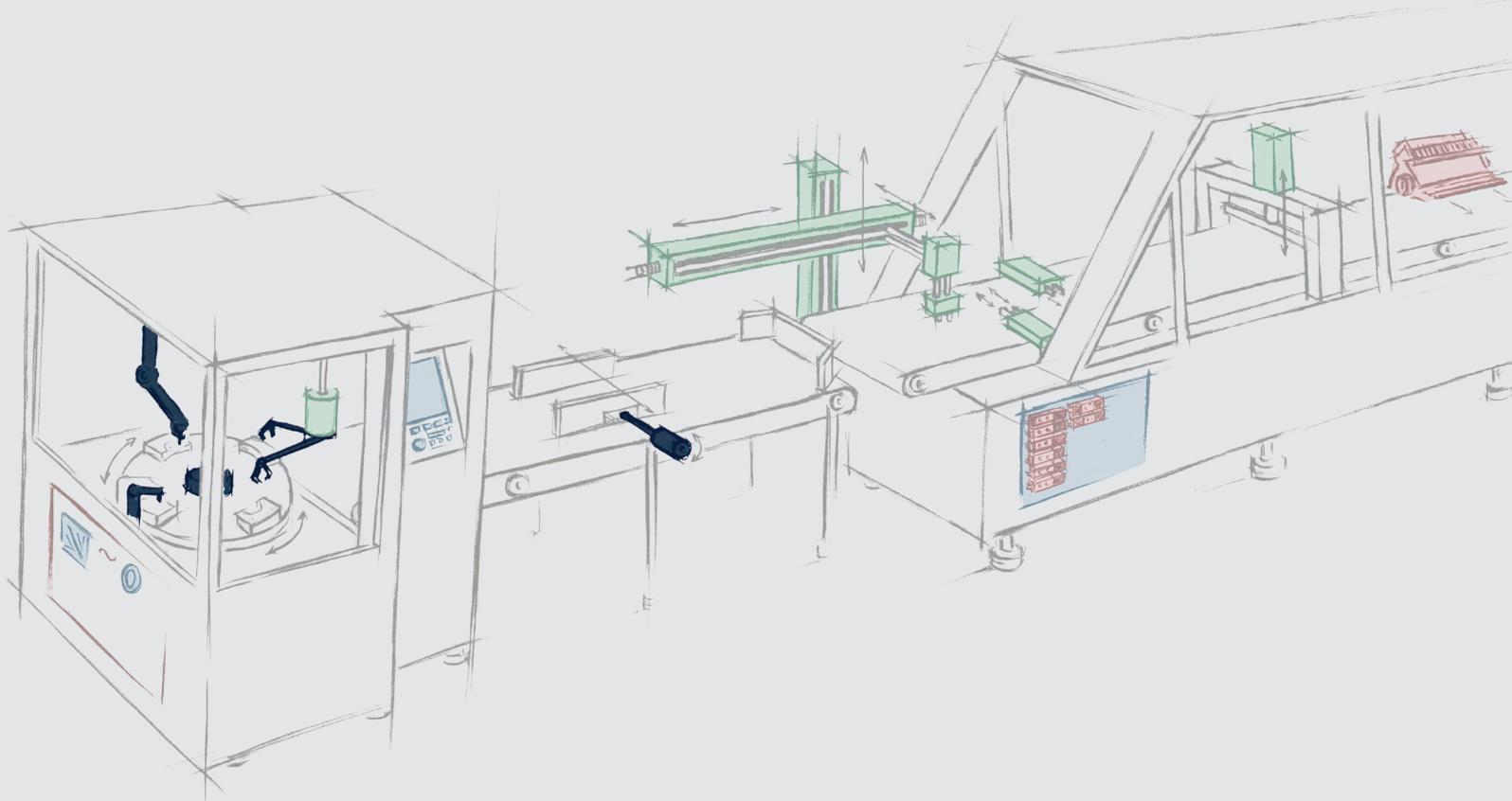
- Rack and pinion
- Mid-position starting point
- Switch option
- Cushioning

## SW - PROXIMITY / REED SWITCH



Proximity Switch	Reed Switch
2 wire, 3 wire, 4 wire	
LED, Neon, 2 colour indicator	
With preventive maintenance output	
Strong magnetic field proof	
With M8 connector	
Fitted with an off delay timer	
Coolant proof	

- A large range of switch options, suitable for your application
- Various switch mounting options



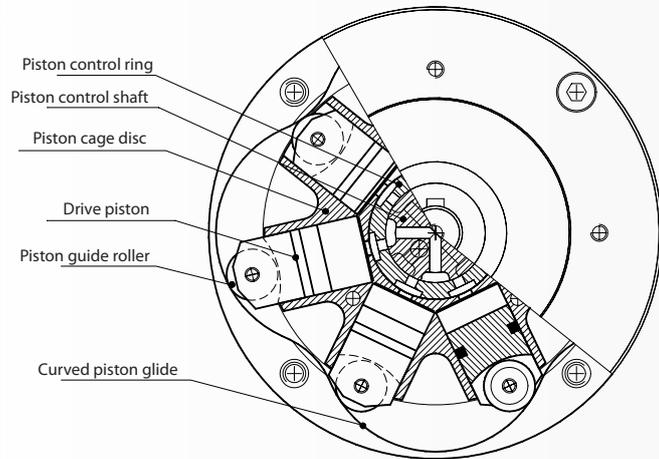
- BIBUS (UK) has one of the largest range of pneumatic motors available in global markets.
- A fantastic range of radial piston or vane type motors from market leaders Modec and P.T.M, who are chosen by OEM and end-users alike.
- Single or double acting, parallel or fulcrum function grippers, with a unique tilting operation, a range to satisfy all requirements.
- 100's of variations of vacuum cups from different shapes, sizes and material specification.

# Piston Motors

## OPERATING PRINCIPLE

The applied radial piston principle works without crankshaft or piston rods.

The pistons are arranged in a star pattern and glide along the inner curved surface of the housing. The compressed air is being supplied from the centre through the fixed piston control shaft via the floating piston control ring to the individual pistons. The piston control ring is connected to the piston cage in a floating arrangement, which is based on double bearings on the piston control shaft. During rotation the air to the pistons will alternate between supply and exhaust.



Immediate reverse rotation can be achieved through directional change of the air supply.

Three of the seven pistons are always actively engaged to generate rotation and torque of the air motor. The pistons near the highest elevation of the curve will exhaust and be forced to the lowest point of the curve. This represents the cycle of a simple cylinder.

The rollers of the cylinders are fabricated from high stress plastic material and run on double bearings. This allows for low friction with minimal noise and high life expectancy. Also compared to standard air motors the EasyDrive units have the highest torque rating at low revolutions and minimal air consumption.

## FEATURES AND OPTIONS AVAILABLE

	Material	Optional Type	<ul style="list-style-type: none"> <li>• Start / stop and shift in direction of rotation under full load possible</li> <li>• Maximum torque from starting available</li> <li>• Overload protection</li> <li>• Maintenance free</li> <li>• Low noise level</li> <li>• Minimised air consumption at high performance</li> <li>• Ex certification compliant to RL94/9/EG (optional)</li> </ul>
	Aluminium alloy	<ul style="list-style-type: none"> <li>• With planetary gear set</li> <li>• Water resistant</li> </ul>	
	Hard coated and black anodised	<ul style="list-style-type: none"> <li>• Sea water resistant</li> <li>• Silicone free</li> <li>• Rust-proof</li> </ul>	
	Steel parts C45	<ul style="list-style-type: none"> <li>• Stainless steel housing</li> <li>• Electronic speed control</li> <li>• Hollow shaft (external)</li> </ul>	
	Plastics in Delrin, NBR or specials	<ul style="list-style-type: none"> <li>• With adapter for air connection G 1/8</li> <li>• Customised output shafts</li> </ul>	

## VARIANTS



## TORQUE / PERFORMANCE

	Without Gear		Reduction 3:1		Reduction 9:1		Ratio 1:2	
	Min. 30 rpm	Max. 300 rpm	Min. 10 rpm	Max. 100 rpm	Min. 3.3 rpm	Max. 33 rpm	Min. 60 rpm	Max. 600 rpm
PMO 0450	4 Nm	2 Nm	12 Nm	6 Nm	36 Nm	18 Nm	2 Nm	1 Nm
PMO 0900	8 Nm	3 Nm	24 Nm	9 Nm	72 Nm	27 Nm	4 Nm	1.5 Nm
PMO 1800	16 Nm	2 Nm	48 Nm	6 Nm	144 Nm	18 Nm	8 Nm	1 Nm
PMO 3600	32 Nm	3 Nm	96 Nm	9 Nm	288 Nm	27 Nm	16 Nm	1.5 Nm
PMO 7200	64 Nm	20 Nm (at 140 rpm)	180 Nm	60 Nm (at 45 rpm)	540 Nm	180 Nm (at 15 rpm)	32 Nm	10 Nm (at 280 rpm)

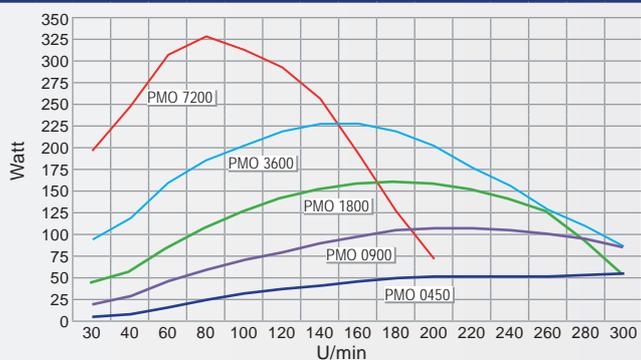
## LOAD

	Max. Load Axial	Radial Dyn. C	Radial Stat. C0	Max. Allow. Md
PMO 0450	100 N	750 N	400 N	5 Nm
PMO 0900	100 N	750 N	400 N	5 Nm
PMO 1800	200 N	1500 N	800 N	10 Nm
PMO 3600	200 N	1500 N	800 N	10 Nm
PMO 7200	200 N	1500 N	800 N	10 Nm

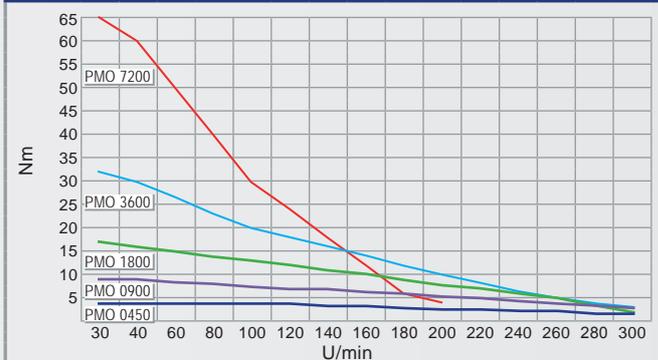
## WEIGHT

	Without Gear	With 3:1 Gear	With 9:1 Gear	With 1:2 Gear
PMO 0450	1.1 kg	2.0 kg	2.8 kg	2.1 kg
PMO 0900	1.3 kg	2.2 kg	3.0 kg	2.3 kg
PMO 1800	3.4 kg	6.1 kg	7.9 kg	5.9 kg
PMO 3600	4.0 kg	6.7 kg	8.5 kg	6.5 kg
PMO 7200	6.4 kg	9.1 kg	10.9 kg	8.9 kg

## PERFORMANCE IN WATT



## PERFORMANCE IN NM



## TECHNICAL INFORMATION

### Notes:

The motor can be seamlessly matched to various requirements of your application by setting the flow volume either via throttling or a pressure reduction.

**Inlet air throttling:** Achieves a long life expectancy, quiet running and low air consumption.

**Exhaust air throttling:** Reduces the lifespan and increases air consumption.

Due to the operating principles of the EasyDrive motor, the motor can be started under load at any time.

Different assembly possibilities are available by use of bigger flange plates or mounting brackets.

### Caution:

Do not lock the M5 exhaust port of the motor housing!  
This exhaust is needed for possible over pressure.

### Fitting Position:

Any position

### Temperature Application Range:

-10°C to 80°C

### Operating Medium:

Unoil compressed air filtered to <math><5 \mu</math> is mandatory

### Operating Pressure:

2 - 8 bar

### Rotation Direction:

CW or CCW, very short reversing time

### Maintenance:

Not required

## PRODUCT CHARACTERISTICS



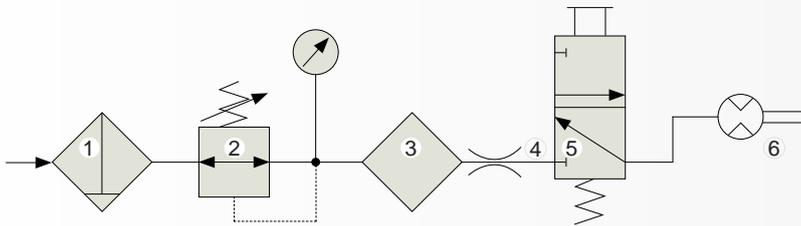
- Multi-direction motors available
  - Right turn
  - Left turn
  - Reversible
- Power range from 40 - 3000W
- Compact design
- Long life expectancy
- Easy maintenance
- Special adaptations available on request

## PILOTING OF SPEED AND TORQUE

There are two main ways to pilot MODEC Air Motors: Flow control or pressure control.

A Flow control valve is used when a high starting torque and low speed is required.

A pressure regulator is used when the control of the stall torque is more important than the starting torque.



1. Filter
2. Pressure regulator
3. Lubricating system
4. Flow control system
5. Distributor 3/2
6. Non reversible motor

### Mounting the air motor

A range of flanges are available making mounting easy and flexible.

### Assembly of air motor using angle head

Angle heads are available, MR07, MR08, MR10, MR20 and MR30. They bring a mounting solution where space is very limited and does not allow the use of classical MODEC Air Motors.

ROTARY SPEED (RPM)

TORQUE AT NOMINAL SPEED (N.m)

AIR PRESSURE USED (4,5,6 bar)

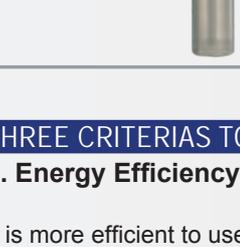
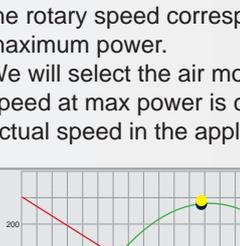
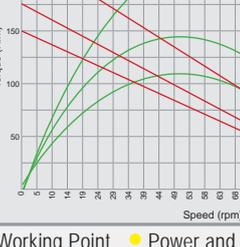
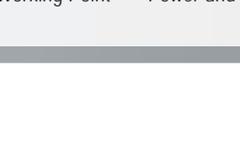
$$\text{Power (W)} = \text{Torque (N.m)} \times \text{Rotary speed (rpm)} / 9.55$$

Example : 150N.m x 50 rpm / 9.55 = 785W

Selection table per power ranges  
(Example : 785W motor, MT10/MR10 would be suitable)

Range	MT05/MT07/MR07	MT10/MR10	MT20/MR20	MT30
4 bar	100W	530W	1150W	2010W
5 bar	120W	650W	1400W	2460W
6 bar	150W	800W	1700W	3000W

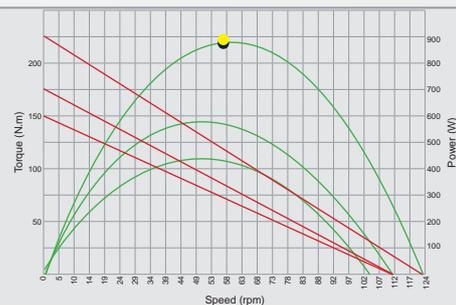
## MT / MR RANGE - STRAIGHT / 90° MOTORS

Model	Power Range	Max. Speed	Max. Torque	Rotation			Flange Type			Shaft Type			Exhaust		
				Right Turn	Left Turn	Reversible	Threaded mounting	2 hole mounting	flat mounting	3 hole mounting	Rounded Key	Square key	Square drive	Threaded shaft	Channeled exhaust
	MT05	40 - 150W	59 - 1517 rpm	1 - 19 N.m	●	●	●	●	●	●	●	●	●	●	●
	MT07	40 - 150W	17 - 75 rpm	17 - 50 N.m	●	●	●	●	●	●	●	●	●	●	●
	M708	250 - 630W	139 - 1780 rpm	3 - 38 N.m	●	●	●	●	●	●	●	●	●	●	●
	MT10	400 - 800W	116 - 1397 rpm	6 - 68 N.m	●	●	●	●	●	●	●	●	●	●	●
	MT20	800 - 1700W	94 - 1000 rpm	14 - 132 N.m	●	●	●	●	●	●	●	●	●	●	●
	MT30	1800 - 3000W	76 - 1378 rpm	20 - 300 N.m	●	●	●	●	●	●	●	●	●	●	●
	MR07	40 - 150W	13 - 57 rpm	21 - 75 N.m	●	●	●	●	●	●	●	●	●	●	●
	MR08	250 - 630W	104 - 280 rpm	19 - 50 N.m	●	●	●	●	●	●	●	●	●	●	●
	MR10	400 - 800W	87 - 216 rpm	38 - 90 N.m	●	●	●	●	●	●	●	●	●	●	●
	MR20	800 - 1700W	59 - 236 rpm	52 - 211 N.m	●	●	●	●	●	●	●	●	●	●	●
	MR30	1800 - 3000W	38 - 324 rpm	63 - 579 N.m	●	●	●	●	●	●	●	●	●	●	●

## THREE CRITERIAS TO CONSIDER WHEN BUYING AN AIR MOTOR

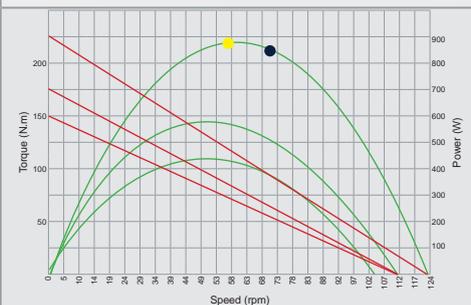
### 1. Energy Efficiency

It is more efficient to use an air motor at the rotary speed corresponding to the maximum power.  
We will select the air motor for which the speed at max power is closest to the actual speed in the application.



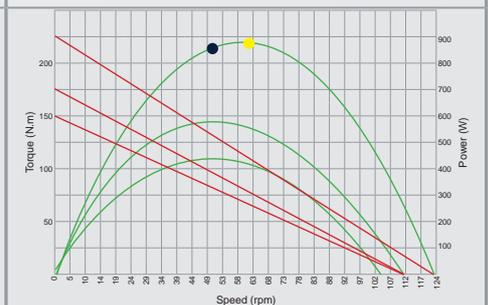
### 2. Power Reserve

If we want to maintain constant speed in case of torque increase, it is necessary to consider a power reserve.  
This is obtained by choosing an air motor with speed, at work point, higher than the speed at max power.



### 3. Maximum Stall Torque

For specific applications, it is necessary to guarantee precise stall torque.  
For example, when using an air motor for safe doors operating system (or a screwing system), maximum torque can be guaranteed by air motor stall torque.



● Working Point    ● Power and Maximum Efficiency

## SELECTION GUIDELINES



- Weight of object to be gripped
- Length of gripper jaw (finger)
- Operating pressure
- Safety factors:
  - Grip only 1:5 factor
  - Moving / acceleration 1:20 factor

## PSM / PSZ - PARALLEL GRIPPERS

Model no.	Clamping Force						Stroke Length										Angle			
	60 / 30N	100 / 50N	250 / 125N	500 / 250N	1200 / 600N	3000 / 1500N	7 mm	11 mm	13 mm	16 mm	27 mm	29 mm	30 mm	52 mm	60 mm	80 mm	105 mm	90 °		180 °
 PSM	0030	●					●						●	●						
	0050		●					●				●		●						
	0200			●					●	●				●			●			
	0600				●					●			●		●					
 PSZ	0200			●						●			●			●	●	●		
	0600				●							●		●		●		●	●	
	1200					●										●		●	●	
	3000						●									●		●	●	

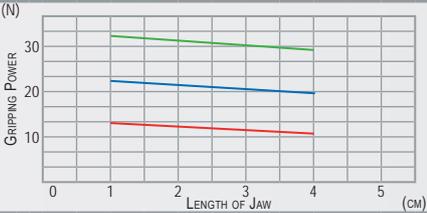
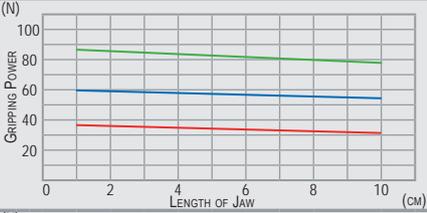
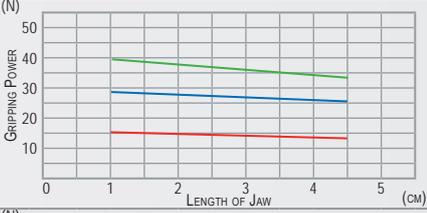
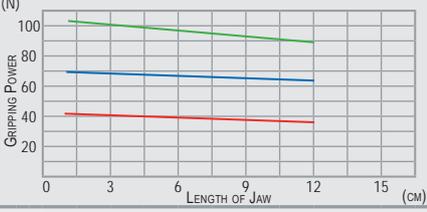
- Rack and Pinion principle
- Allows compact and low weight design
- Position sensing
- Suitable for long clamping fingers
- Unique ability to tilt the work piece between either 90 or 180 degrees\*
- Reinforced bearing (PSZ model only)

## BHA - COMPACT CROSS ROLLER PARALLEL HAND GRIPPER

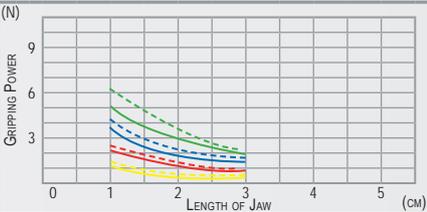
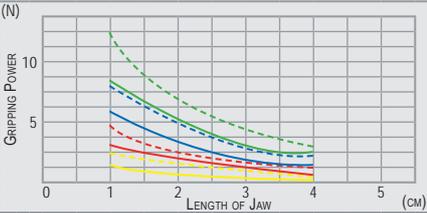
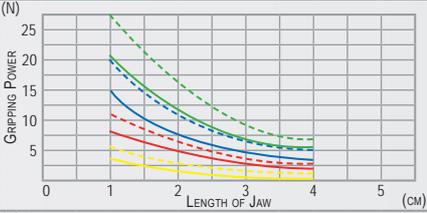
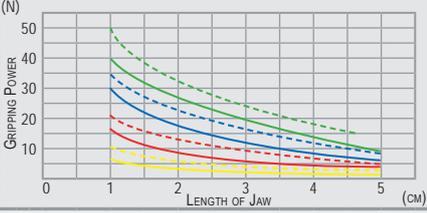
Model no.	Bore Size				Stroke Length				Gripping Power	
	12	16	20	25	5	9	11	15		
 BHA	01-CS1	●				●				
	03CS1		●				●			
	04CS1			●				●		
	05CS1				●				●	

- Compact cross roller parallel gripper
- Double or Single acting
- Light weight
- High precision movement
- Position sensing

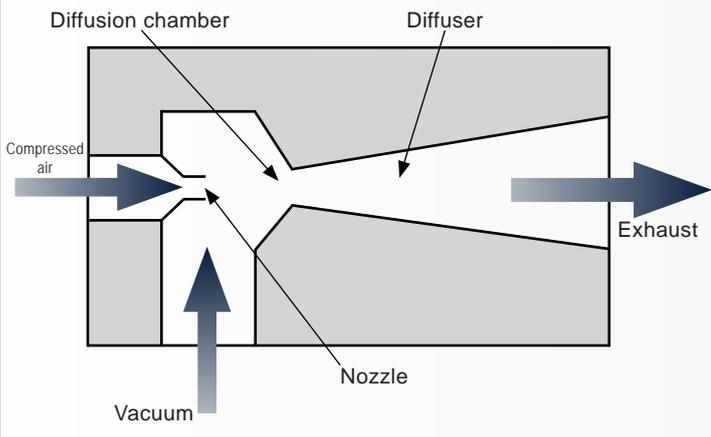
## HLA - THIN PARALLEL HAND - BUSH TYPE / BEARING TYPE

Model no.		Bore		Stroke Length				Gripping Power		
		12	20	15	13	23	25			
	HLA	12CS	●		●					<ul style="list-style-type: none"> <li>• Thin style parallel gripper</li> <li>• Double acting</li> <li>• Bush or Bearing guided options available</li> <li>• Light weight</li> <li>• Rubber protection cover available</li> </ul>
		20CS		●			●			
	HLB	12CS	●				●			
		20CS		●		●				

## FH500 - FEATHER HAND (MIN-FULCRUM HAND) - DOUBLE OR SINGLE ACTING

Model no.		Bore Size				Open Angle	Closed Angle	Gripping Power	
		10	12	16	20				
	FH510	●				20°	-5°		<ul style="list-style-type: none"> <li>• Fulcrum type operation</li> <li>• Single or Double acting</li> <li>• Integrated flow control option</li> <li>• Nylon jaw option</li> <li>• Proximity sensing</li> </ul>
	FH512		●						
	FH516			●					
	FH520				●				

## PRINCIPLE OF VACUUM EJECTOR



- The compressed air flows through a jet nozzle in which it is accelerated to a high downstream speed. The pressure is lower in the diffuser chamber than the ambient pressure, as a result, air is sucked in from the vacuum port causing a partial vacuum.
- Vacuum suction cups are a quick and convenient way for handling large workpieces (such as packages), flexible parts (such as foils) or parts with sensitive surfaces (such as optical lenses).
- A vacuum suction cup can be connected to the vacuum port.

## EJECTOR SYSTEM TYPE

Model	Piping			Components						Nozzle Diameter						Features
	Discrete	Individual wiring	Reduced wiring	Vacuum generator	Vacuum break	Vacuum switch	vacuum filter	Silencer	Check valve	Ø 0.5 mm	Ø 0.7 mm	Ø 1.0 mm	Ø 1.2 mm	Ø 1.5 mm	Ø 2.0 mm	
	VSY	●					●	●		●	●					<ul style="list-style-type: none"> <li>• Ejector integrated with vacuum break function.</li> <li>• Compact &amp; lightweight design enables use at end of vacuum piping.</li> </ul>
	VSH	●						●		●	●	●	●	●	●	<ul style="list-style-type: none"> <li>• Port sizes range from M5 to Rc 1/4 enabling direct installation to solenoid valves.</li> </ul>
	VSU	●							●	●	●					<ul style="list-style-type: none"> <li>• Vacuum and support ports are arranged in a line enabling installation between pipes.</li> <li>• Dedicated fixed bracket available.</li> </ul>
	VSB	●					●		●	●	●	●				<ul style="list-style-type: none"> <li>• Square type with internal silencer enables the main unit to be installed and fixed in place.</li> <li>• Mechanical vacuum switch option available.</li> </ul>
	VSC	●							●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>• Port sizes range from M5 to Rc 3/8 enabling pads to be installed direct.</li> </ul>
	VSG	●			●	●	●	●	●	●	●					<ul style="list-style-type: none"> <li>• Discrete universal type emphasizes basic functions.</li> <li>• United valves, vacuum sensors and vacuum filters are selectable based on the work purpose.</li> </ul>
	VSK	●			●	●	●	●	●	●	●	●				<ul style="list-style-type: none"> <li>• Modularised units enable the optimum unit to be selected.</li> </ul>
	VSKM		●		●	●	●	●	●	●	●	●				<ul style="list-style-type: none"> <li>• The break air flow and pressure can be controlled.</li> <li>• The Vacuum break time can be shortened with the vacuum break circuit relief function.</li> </ul>
	VSJ	●			●	●	●	●	●	●	●	●				<ul style="list-style-type: none"> <li>• Compact and slim vacuum unit.</li> <li>• Either direct fixing or DIN rail installation possible.</li> </ul>
	VSJM		●		●	●	●	●	●	●	●	●				<ul style="list-style-type: none"> <li>• Large vacuum unit optimum for controlling large flow.</li> <li>• Three standard nozzles are available:                             <ul style="list-style-type: none"> <li>• Single</li> <li>• 2-step</li> <li>• Twin</li> </ul> </li> </ul>
	VSX	●			●	●	●	●	●	●	●	●				<ul style="list-style-type: none"> <li>• Compact and slim vacuum unit.</li> <li>• Either direct fixing or DIN rail installation possible.</li> </ul>
	VSXM		●		●	●	●	●	●	●	●	●				<ul style="list-style-type: none"> <li>• Compact and slim vacuum unit.</li> <li>• Either direct fixing or DIN rail installation possible.</li> </ul>
	VSQ	●			●	●	●	●	●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>• Large vacuum unit optimum for controlling large flow.</li> <li>• Three standard nozzles are available:                             <ul style="list-style-type: none"> <li>• Single</li> <li>• 2-step</li> <li>• Twin</li> </ul> </li> </ul>
VSZM			●	●	●	●	●	●	●	●	●				<ul style="list-style-type: none"> <li>• Wire-saving vacuum unit dedicated manifolds.</li> <li>• Air consumption is reduced by suppressing valve energy to 0.55 W.</li> </ul>	

\* Vacuum pump systems available on request

## VACUUM PADS

Model	Holder Shape							Pad Size	Pad Material	Application			
	With Buffer				Vacuum								
	None (Fixed type)	None (with stopper)	None (Set screw type)	Available (with stopper)	Available (without stopper)	Top / Joint	Side / joint				Direct mounting type		
	VSP-M	●						●	●	●	Ø0.7, Ø1, Ø1.5, Ø2, Ø3, Ø4	Nitrile, silicon, urethane, fluoro, antistatic silicon, antistatic butadiene, NBR	• Ideal for small workpieces
	VSP-R	●	●					●	●	●	Ø1, Ø2, Ø3, Ø4, Ø6, Ø8, Ø10, Ø15, Ø20, Ø25, Ø30, Ø40, Ø50, Ø60, Ø80, Ø100, Ø150, Ø200	Nitrile, silicon, urethane, fluoro, antistatic silicon, antistatic butadiene, NBR	• Ideal for thick, flat workpieces
	VSP-A	●	●					●	●	●	Ø15, Ø20, Ø25, Ø30, Ø40, Ø50, Ø60, Ø80, Ø100	Nitrile, silicon, urethane, fluoro, antistatic silicon, antistatic butadiene, NBR	• Ideal for picking up round balls, etc...
	VSP-S	●			●			●	●	●	Ø10, Ø15, Ø20, Ø25, Ø30, Ø35, Ø50, Ø70, Ø100	Cloroplane rubber	• Ideal for workpieces with uneven surfaces such as exterior walls
	VSP-B	●			●			●	●	●	Ø10, Ø20, Ø30, Ø40, Ø50, Ø80	Nitrile, silicon, antistatic silicon	• Ideal for soft workpieces such as paper or vinyl
	VSP-W	●			●			●	●	●	Ø10, Ø20, Ø30, Ø40, Ø50	Nitrile, silicon, NBR	• Ideal for transferring inclined workpieces or vinyl-packed products
	VSP-E	●		●	●			●	●	●	4 x 10, 4 x 20, 4 x 30, 5 x 10, 5 x 20, 5 x 30, 6 x 10, 6 x 20, 6 x 30, 8 x 20, 8 x 30	Nitrile, silicon, antistatic butadiene	• Ideal for workpieces with limited suction space such as IC circuit boards
	VSP-L	●			●	●		●	●	●	Ø4, Ø6, Ø8, Ø10, Ø15, Ø20, Ø30, Ø40	Nitrile, silicon, fluoro, antistatic silicon	• Ideal for unloading molded parts and transferring delicate workpieces
	VSP-LB	●			●	●		●	●	●	Ø6, Ø8, Ø10, Ø15, Ø20	Nitrile, silicon	• Ideal for unloading molded parts and picking up paper
	VSP-K	●			●			●	●	●	Ø10, Ø20, Ø30, Ø40, Ø50	NBR	• Ideal for oil covered workpieces such as pressed parts
	VSP-P	●			●			●	●	●	Ø8, Ø10, Ø15, Ø20	Nitrile, fluoro silicon	• Ideal for transferring thin workpieces such as vinyl and photocopy paper

## VACUUM RELATED PRODUCTS

Position Locking Valve - VSECV	Vacuum Break Unit - VSLF	Vacuum Filter - VSFU	Vacuum Switch - VSUS
			
<ul style="list-style-type: none"> <li>• Separate circuit workpiece maintains vacuum even if workpiece deviates.</li> <li>• Suitable for Selvac vacuum pad series.</li> <li>• Port size: M3 to Rc 1/8.</li> </ul>	<ul style="list-style-type: none"> <li>• Control vacuum break air while maintaining characteristics of vacuum ejector.</li> <li>• Vacuum break circuit relief shortens vacuum break time.</li> <li>• Port Size: Ø4-6 mm : Ø4-Rc 1/8</li> </ul>	<ul style="list-style-type: none"> <li>• Tools are not required to replace or clean the element.</li> <li>• In-line types are easily installed in piping.</li> <li>• Port size: M5 to Ø10mm</li> </ul>	<ul style="list-style-type: none"> <li>• 2 point output and analogue output types available.</li> <li>• Push-in, M5 female thread, or direct installation piping connection is selectable.</li> </ul>

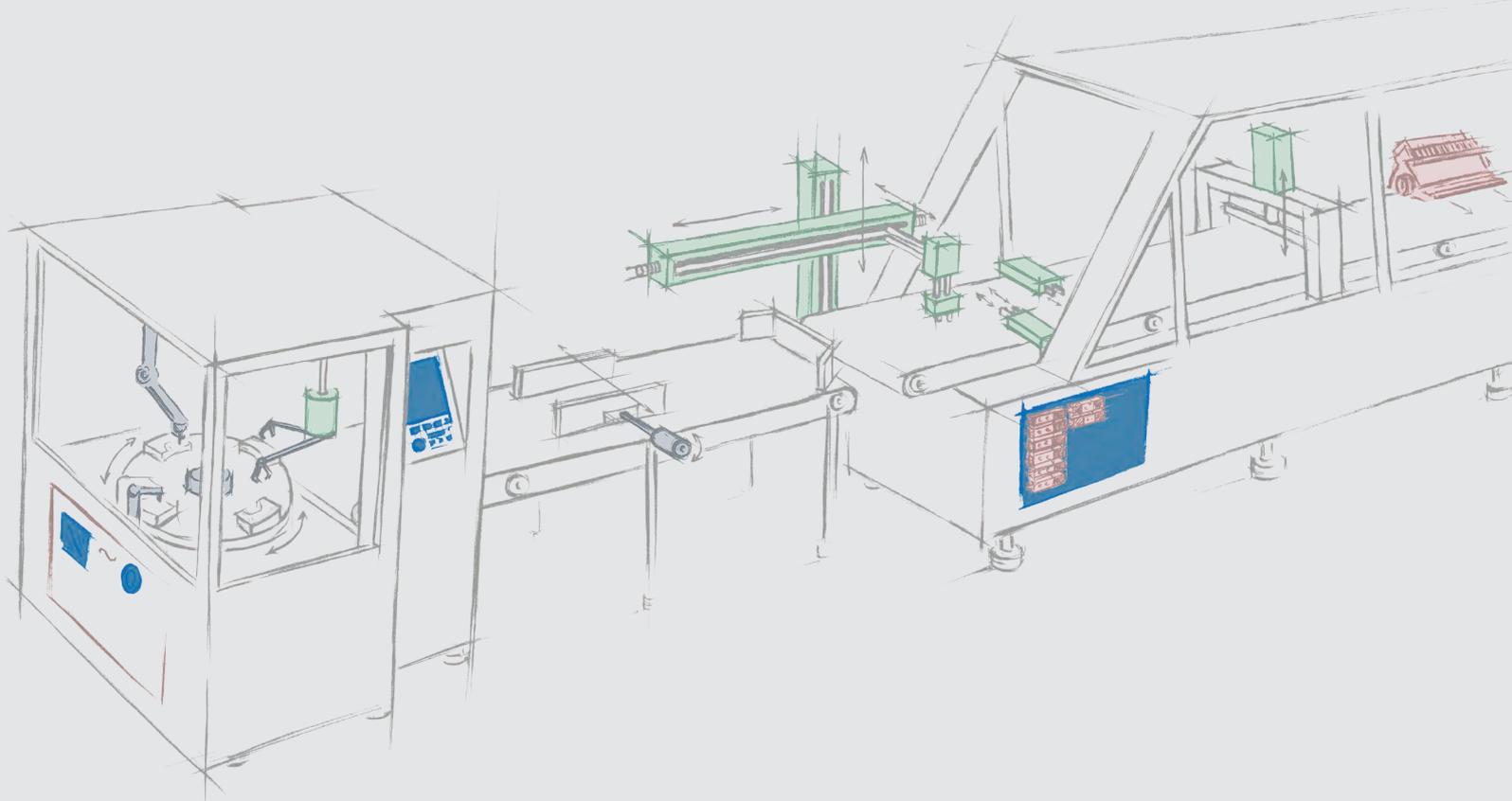
# Labour Saving Mechanism

ABSODEX - AX1000 SERIES				
22 Nm	45 Nm	75 Nm	150 Nm	210 Nm
				
AX1022T	AX1045T	AX1075T	AX1150T	AX1210T
TS Driver			TH Driver	
Features			Applications	
<ul style="list-style-type: none"> <li>• High precision model with indexing accuracy and low displacement</li> <li>• High speed rotation (240 rpm - 120 rpm)</li> <li>• Output shaft run out</li> </ul>			<ul style="list-style-type: none"> <li>• Precision measurement</li> <li>• Turntable</li> <li>• Inspection machine</li> <li>• Assembly machine</li> </ul>	

ABSODEX - AX2000 SERIES		
6 Nm	12 Nm	18 Nm
		
AX2006T	AX2012T	AX2018T
TS Driver		
Features		Applications
<ul style="list-style-type: none"> <li>• High speed rotation (300 rpm)</li> <li>• Small diameter and low profile</li> <li>• Large diameter of hollow hole ( Ø 30)</li> </ul>		<ul style="list-style-type: none"> <li>• Pick &amp; Place</li> <li>• Turntable</li> <li>• Assembly machine</li> </ul>

ABSODEX - AX4000 SERIES							
9 Nm	22 Nm	45 Nm	75 Nm	150 Nm	300 Nm	500 Nm	1000 Nm
							
AX4009T	AX4022T	AX4045T	AX4075T	AX4150T	AX4300T	AX500T	AX410WT
TS Driver				TH Driver			
Features				Applications			
<ul style="list-style-type: none"> <li>• High speed rotation (240 rpm - 140 rpm)</li> <li>• Capable of handling load of large moment of inertia</li> <li>• Wide variety of options</li> <li>• Easy to pipe &amp; wire with large inner hollow</li> </ul>				<ul style="list-style-type: none"> <li>• Turntable</li> <li>• Inspection machine</li> <li>• Assembly machine</li> <li>• Pick &amp; Place</li> </ul>			

ABSODEX - AX6000 SERIES	
1.2 Nm	3 Nm
	
AX6001M	AX6003M
MU Driver	
Features	Applications
<ul style="list-style-type: none"> <li>• Compact design - smallest on the market - from Ø 80 MM</li> <li>• Simple set-up</li> <li>• Maintenance free</li> </ul>	<ul style="list-style-type: none"> <li>• Turntable</li> <li>• Assembly machine</li> </ul>



- A complete modular range of auxiliary components including filter, regulator and lubricator units for the best aesthetics and protection in the market.
- Standard filtration of 5 microns, with options of 0.3 micron, sub micron 0.001, odour removal and membrane drying achieving high quality clean air systems.
- Standard 20 Bar rated push-in fittings with elliptical collet design for easy release in confined spaces.
- Full range of instrumentations available to monitor, test, control pressure, vacuum or flow.

# Modular Air Treatment

C SERIES - FRL COMBINATION							
Model no.	Port Size						Flow Rate m <sup>3</sup> /min(ANR)
	1/8	1/4	3/8	1/2	3/4	1	
 C1000	●	●					0.63
 C2000		●	●				1.7
 C3000		●	●				1.75
 C4000		●	●	●			3.0
 C6500					●	●	5.0
 C8000					●	●	7.5

- Space-saving modular combination:
  - Filter (F series)
  - Regulator (R series)
  - Lubricator (L series)
- Standard accessories:
  - Pressure gauge
  - Bracket
  - Bowl guard
- Various options available:
  - Drainage:
    - Filter with manual drain cock, lubricator without manual cock
    - Filter auto drain with manual override, Normally open
    - Filter auto drain with manual override, Normally closed
  - Filtration:
    - 5 µm
    - 0.3 µm (Y-type)
  - Bowl material:
    - Polycarbonate
    - Metal
  - Relief mechanism

\* Other options are available on request

- Port size and NPT thread type option via adapter

F SERIES - AIR FILTER							
Model no.	Port Size						Flow Rate m <sup>3</sup> /min(ANR)
	1/8	1/4	3/8	1/2	3/4	1	
 F1000	●	●					0.61
 F3000		●	●				1.5
 F4000		●	●	●			3.0
 F6000					●	●	6.2
 F8000					●	●	6.8

- Drain capacity:
  - 12 cm<sup>3</sup>
  - 45 cm<sup>3</sup>
  - 80 cm<sup>3</sup>
- Standard accessories:
  - Bowl guard
- Various options available:
  - Drainage:
    - Manual drain cock
    - Auto drain with manual override, Normally open
    - Auto drain with manual override, Normally closed
  - Filtration:
    - 5 µm
    - 0.3 µm (Y-type)
  - Bowl material:
    - Polycarbonate
    - Metal

\* Other options are available on request

- Port size and NPT thread type option via adapter

## R SERIES - REGULATOR

Model no.		Port Size						Flow Rate m <sup>3</sup> /min(ANR)	
		1/8	1/4	3/8	1/2	3/4	1		
	R1000	●	●					1.35	<ul style="list-style-type: none"> <li>• Compact design</li> <li>• Fitted with relief a mechanism</li> <li>• Standard accessories:                             <ul style="list-style-type: none"> <li>• Pressure gauge</li> <li>• Panel mount nut</li> </ul> </li> <li>• R*100 with integrated back flow function</li> <li>• Port size and NPT thread type option via adapter</li> <li>• High pressure regulator version available (16 bar)</li> </ul>
	R2000		●	●				2.5	
	R3000		●	●				2.6	
	R4000		●	●	●			5.0	
	R6000					●	●	7.7	
	R8000					●	●	14.0	

## M SERIES - OIL MIST FILTER / DEODORISER

Model no.		Port Size						Flow Rate m <sup>3</sup> /min(ANR)	
		1/8	1/4	3/8	1/2	3/4	1		
	M1000	●	●					0.15 (0.01 μm)	<ul style="list-style-type: none"> <li>• Drain capacity:                             <ul style="list-style-type: none"> <li>• 12 cm<sup>3</sup> • 45 cm<sup>3</sup> • 80 cm<sup>3</sup></li> </ul> </li> <li>• Standard accessories:                             <ul style="list-style-type: none"> <li>• Bowl guard</li> </ul> </li> <li>• Various options available:                             <ul style="list-style-type: none"> <li>• Drainage:                                     <ul style="list-style-type: none"> <li>• Manual drain cock</li> <li>• Auto drain with manual override, Normally closed</li> </ul> </li> <li>• Mantle (element):                                     <ul style="list-style-type: none"> <li>• 0.1 μm (M-type)</li> <li>• 0.3 μm (S-type)</li> <li>• Deodorisation (X-type)</li> </ul> </li> <li>• Bowl material:                                     <ul style="list-style-type: none"> <li>• Polycarbonate</li> <li>• Metal</li> </ul> </li> </ul> </li> <li>* Other options are available on request</li> <li>• Port size and NPT thread type option via adapter</li> </ul>
	M3000		●	●				0.36 (0.01 μm)	
	M4000		●	●	●			0.825 (0.01 μm)	
	M6000					●	●	1.27 (0.01 μm)	
	M8000					●	●	1.27 (0.01 μm)	

# Modular Air Treatment

W SERIES - FILTER / REGULATOR									
Model no.		Port Size						Flow Rate m <sup>3</sup> /min(ANR)	<ul style="list-style-type: none"> <li>• Drain capacity: • 12 cm<sup>3</sup> • 45 cm<sup>3</sup> • 80 cm<sup>3</sup></li> <li>• Standard accessories: • Pressure gauge • Bowl guard</li> <li>• Various options available: • Drainage: • Manual drain cock • Auto drain with manual override, Normally open • Auto drain with manual override, Normally closed</li> <li>• Filtration: • 5 µm • 0.3 µm (Y-type)</li> <li>• Bowl material: • Polycarbonate • Metal</li> <li>• Relief mechanism</li> <li>* Other options are available on request</li> <li>• Port size and NPT thread type option via adapter</li> </ul>
		1/8	1/4	3/8	1/2	3/4	1		
	W1000	●	●					1.15	
	W3000		●	●				2.43	
	W4000		●	●	●			4.75	
	W8000					●	●	10.0	

L SERIES - LUBRICATOR									
Model no.		Port Size						Flow Rate m <sup>3</sup> /min(ANR)	<ul style="list-style-type: none"> <li>• Supplying fine mist oil</li> <li>• Drain capacity: • 20 cm<sup>3</sup> • 85 cm<sup>3</sup> • 170 cm<sup>3</sup></li> <li>• Standard accessories: • Bowl guard</li> <li>• Various options available: • Drainage: • Without manual cock • With manual cock • With float switch</li> <li>• Bowl material: • Polycarbonate • Metal</li> <li>* Other options are available on request</li> <li>• Port size and NPT thread type option via adapter</li> </ul>
		1/8	1/4	3/8	1/2	3/4	1		
	L1000	●	●					0.7	
	L3000		●	●				2.25	
	L4000		●	●	●			2.7	
	L8000					●	●	10.0	

SHUT-OFF VALVE						
Model no.		Port Size				<ul style="list-style-type: none"> <li>• One action exhaust</li> <li>• Prevent accidents from residual pressure</li> <li>• V3010 Lockable version available</li> </ul>
		1/8	1/4	3/8	1/2	
	V1000	●	●			
	V3000		●	●	●	

SLOW START VALVE						
Model no.		Port Size				<ul style="list-style-type: none"> <li>• Maintain safety at start-up / stopping</li> <li>• Lockable version available</li> <li>• Options available: • Brackets • Pressure gauge • Silencer</li> </ul>
		1/8	1/4	3/8	1/2	
	V3301		●	●	●	
	V3321		●	●	●	

## BRACKETS

### T - TYPE BRACKET

	Model no.	Applicable Model
	B110	1000 Series
	B310	2000 Series
		3000 Series
	B410	4000 Series
	B810	6000 Series
8000 Series		

### C - TYPE BRACKET

	Model no.	Applicable Model
	B120	1000 Series
	B220	2000 Series
	B320	3000 Series
	B420	4000 Series
	B620	6000 Series
	B820	8000 Series

### PIPING ADAPTOR SET\*

	Model no.	Port Size	Applicable Model
	A100	1/8 - 3/8	1000 Series
	A400	1/4 - 1	2000 Series
			3000 Series
			4000 Series
	A800	3/4 - 1 1/4	6000 Series
8000 Series			

### JOINER SET

	Model no.	Applicable Model
	C1000-J100	1000 Series
	C4000-J400	2000 Series
		3000 Series
		4000 Series
	C8000-J800	6000 Series
8000 Series		

\* Available in Rc, NPT or G thread

## RA - MINIATURE REGULATOR

Model no.	Port Size						Flow Rate m <sup>3</sup> /min(ANR)	
	4	6	8	1/8	1/4	3/8		
 RA-050				●	●		0.1	<ul style="list-style-type: none"> <li>• Piston type regulator</li> <li>• Low pressure option (0.35Mpa)</li> <li>• With or without pressure gauge</li> <li>• Ideal for precise process control lines</li> </ul>
 RA-800				●	●		0.35	
 RA-060				●	●		0.1	<ul style="list-style-type: none"> <li>• Manifold type</li> </ul>

## RB500 - COMPACT REGULATOR / BLOCK MANIFOLD REGULATOR

Model no.	Port Size						Flow Rate m <sup>3</sup> /min(ANR)	
	1/8	1/4	3/8	1/2	3/4	1		
 RB500	●	●					0.1/0.2	<ul style="list-style-type: none"> <li>• Compact, space saving design</li> <li>• Reversible flow function integrated</li> <li>• Low pressure option (0.35Mpa)</li> </ul>
 MNRB500A	●	●	●				0.1/0.2	<ul style="list-style-type: none"> <li>• Common supply or individual supply</li> <li>• Up to 10 stations available</li> <li>• Pressure switch option</li> <li>• Special configurations available on request</li> </ul>
 MNRB500B	●	●					0.1/0.2	

# Pneumatic Fittings & Tubing

PART NUMBER GUIDE				
G	PC	04	G	01
20 bar Rated Fittings	Product Code	Tube Size Ø 4, Ø 6, Ø 8, Ø 10, Ø 12, Ø 16	Parallel Thread	Thread Size 01=1/8", 02=1/4", 03=3/8", 04=1/2"

FITTING SPECIFICATION		
Fitting Specification		Features
Fluid	Air (no other gas / liquid)	
Working Pressure	0 ~ 284 PSI	0 ~ 20Kgf/cm <sup>2</sup>
Negative Pressure	- 29.5 in Hg	-750mmHg(10Torr)
Temperature Range	32 ~ 176°F	0 ~ 80°C
Applicable Tube Material	Polyurethane and Nylon	

- Elliptical collet for easier pressing for disconnection in confined spaces.
- Tapered thread PTFE treated. Parallel thread fitted with O-ring.
- Revolving body construction giving flexible tube direction.

ONE-TOUCH FITTINGS					
<b>GPC</b> 	<b>GPOC</b> 	<b>GPCF</b> 	<b>GPUC</b> 	<b>GPG</b> 	<b>GPL</b> 
<b>GPLL</b> 	<b>GPL45</b> 	<b>GPLF</b> 	<b>GPUL</b> 	<b>GPH</b> 	<b>GPHF</b> 
<b>PHT</b> 	<b>PHT</b> 	<b>GPOL</b> 	<b>GPA</b> 	<b>GPAF</b> 	<b>GPA</b> 
<b>GPA</b> 	<b>GPMM</b> 	<b>GPPM</b> 	<b>GPMF</b> 	<b>GPLM</b> 	<b>GPT</b> 
<b>GPTF</b> 	<b>GPST</b> 	<b>GPUT</b> 	<b>GPUG</b> 	<b>GPZA</b> 	<b>GPZA22</b> 
<b>GPKD</b> 	<b>GPKG</b> 	<b>GPY</b> 	<b>GPWT</b> 	<b>GPW</b> 	<b>GPXT</b> 

<b>GPXG</b> 	<b>GPPF</b> 	<b>CAS</b> 	<b>PP</b> 	<b>GPCJ</b> 	<b>PIJ</b> 
<b>PJH</b> 	<b>GPGJ</b> 	<b>PIG</b> 	<b>GPLJ</b> 	<b>GPLLJ</b> 	<b>GPLJ45</b> 
<b>GPLGJ</b> 	<b>GPLGJ45</b> 	<b>GPKJ</b> 	<b>GPYJ</b> 	<b>GPWJ</b> 	<b>GPXJ</b> 

**PARALLEL FITTINGS**

<b>GPC-G</b> 	<b>GPOC-G</b> 	<b>GPCF-G</b> 	<b>GPL-G</b> 	<b>GPLL-G</b> 	<b>GPL45-G</b> 
<b>GPLF-G</b> 	<b>PHT-G</b> 	<b>PHT-G</b> 	<b>GPA-G</b> 	<b>GPA-G</b> 	<b>GPMF-G</b> 
<b>GPT-G</b> 	<b>GPTF-G</b> 	<b>GPST-G</b> 	<b>PKD-G</b> 	<b>GPWT-G</b> 	<b>GPXT-G</b> 
<b>GPCJ-G</b> 	<b>PGB-G</b> 	<b>PGB-G</b> 	<b>PGL-G</b> 	<b>PGT-G</b> 	<b>PGO-G</b> 

**ROTARY JOINTS**

<b>NRC</b> 	<b>NRC-G</b> 	<b>NHRC</b> 	<b>NHRF</b> 	<b>GNRL</b> 	<b>GNRL-G</b> 
---	---	--	---	--	--

1/8"  
1/4"  
3/8"  
1/2"  
4mm  
6mm  
8mm  
10mm  
12mm  
16mm

# Pneumatic Fittings & Tubing

HAND VALVES / BALL VALVES / SPEED CONTROLLERS					
<b>HVFF</b> 	<b>HVFS</b> 	<b>HVSF</b> 	<b>HVSF-G</b> 	<b>HVSS</b> 	<b>HSV</b> 
<b>BUC</b> 	<b>BM</b> 	<b>BC-G</b> 	<b>BUL</b> 	<b>BL</b> 	<b>GNSE</b> 
<b>GNSE-G</b> 	<b>GNSE-C</b> 	<b>GNSF</b> 	<b>GNSH</b> 	<b>GNSH-G</b> 	<b>NSS</b> 

CHECK VALVES / STOP FITTINGS					
<b>PCVC</b> 	<b>PCVU</b> 	<b>PCVF</b> 	<b>SPC</b> 	<b>SPL</b> 	<b>SPUM</b> 

SILENCERS					
<b>SM</b> 	<b>SL</b> 	<b>SSL</b> 	<b>SCL</b> 	<b>SBC</b> 	<b>SDC</b> 
<b>SB</b> 	<b>SLM</b> 	<b>SMT</b> 	<b>STP</b> 	<b>ST</b> 	<b>SLT</b> 

AIR GUN SPECIFICATION			Features
Tube Specification			
Fluid	Air (no other gas / liquid)		<ul style="list-style-type: none"> <li>• Various nozzle sizes available to make cleaning machines easier.</li> <li>• Easy operation and control of airflow.</li> </ul>
Working Pressure	0 ~ 150 PSI	0 ~ 9Kgf/cm <sup>2</sup>	
Temperature Range	32 ~ 140°F	0 ~ 60°C	

AIR GUN / TUBE CUTTER				Tube Cutter Specification	
<b>AG-S</b> 	<b>AG-M</b> 	<b>AG-L</b> 	<b>TC</b> 	Tube Material	Polyurethane and Nylon
				Tube Cutting Ø	Ø 3 - Ø 12mm
				Material	Polyacetal, Stainless Steel
				Colour	Blue

## COMPACT FITTING SPECIFICATION

Fitting Specification		Features
Fluid	Air (no other gas / liquid)	<ul style="list-style-type: none"> <li>• Worlds smallest quick-fitting joints.</li> <li>• Elliptical collet for easier pressing for disconnection in confined spaces.</li> <li>• Nickel plated fittings improving appearance and rust resistance. Tapered thread PTFE treated. Parallel thread fitted with O-ring.</li> </ul>
Working Pressure	0 ~ 150 PSI      0 ~ 9Kgf/cm <sup>2</sup>	
Negative Pressure	- 29.5 in Hg      -750mmHg(10Torr)	
Temperature Range	32 ~ 140°F      0 ~ 60°C	
Applicable Tube Material	Polyurethane and Nylon	

## COMPACT ONE-TOUCH FITTINGS



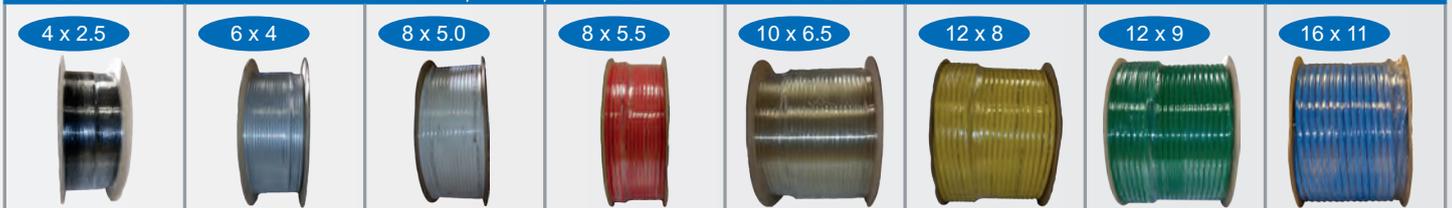
## COMPACT PARALLEL THREAD FITTINGS



## TUBING SPECIFICATION

Tube Specification		Features
Fluid	Air (no other gas / liquid)	<ul style="list-style-type: none"> <li>• Higher flexibility than nylon - helps working achievement.</li> <li>• Higher flexibility in low temperatures.</li> </ul>
Working Pressure	0 ~ 150 PSI      0 ~ 9Kgf/cm <sup>2</sup>	
Negative Pressure	- 29.5 in Hg      -750mmHg(10Torr)	
Temperature Range	32 ~ 140°F      0 ~ 60°C	
Applicable Tube Material	Polyurethane	

## ROLL OF TUBING - Ø 4 - 16MM / 200M, 100M, 50M LENGTHS AVAILABLE\*



\* Length of tubing depends on the diameter of tubing selected

## COILED TUBING - Ø 4 - 12MM / 1M - 10.5M LENGTHS AVAILABLE



# Instrumentations - Pressure switch / Flow meter

PRESSURE SWITCH																	
Model no.	Pressure Range (Kpa)							Output			Connecting Port						
	0 to 1000	0 to 100	0 to -100	-100 to 980	-100 to 300	-100 to 100	-101 to 500	NPN	PNP	Analog	Rc 1/8	Push-in	push & plug	M5 female	NPT 1/8		G 1/8
	PPE	●	●	●				●			●	●	●				<ul style="list-style-type: none"> <li>• Compact design</li> <li>• Semiconductor sensor type</li> </ul>
	PPE-A	●	●	●						●	●	●	●				<ul style="list-style-type: none"> <li>• Simple trimmer for easy setup</li> <li>• Integrated overload protection</li> </ul>
	PPX				●		●	●	●	●				●	●	●	<ul style="list-style-type: none"> <li>• Twin, Tri-colour LED display for easy comparison</li> <li>• Easy setup - Copy function</li> </ul>
	PPG-C	●		●			●	●	●	●					●	●	<ul style="list-style-type: none"> <li>• Single colour LED display</li> <li>• Choice of unit display</li> </ul>
	PPD3				●	●	●	●	●	●	●	●	●				<ul style="list-style-type: none"> <li>• Integrated or separate sensor type</li> </ul>
	PPD3-S				●	●	●	●	●	●	●	●					<ul style="list-style-type: none"> <li>• Semiconductor sensor type</li> <li>• IP65 protection</li> </ul>

\* All pressure switches are suitable for pressure and vacuum systems

FSM2 - SMALL SIZE FLOW SENSOR																
Body Material	Fluid	Port Size	Flow Rate													
			0.5 L/min	1 L/min	2 L/min	5 L/min	10 L/min	20 L/min	50 L/min	100 L/min	200 L/min	500 L/min		1000 L/min		
	Resin	Air, Nitrogen	Ø 4mm	●	●	●	●	●	●							<ul style="list-style-type: none"> <li>• Compact flow sensor with display</li> <li>• Integrated or separate display type</li> <li>• One way or bi-directional option</li> </ul>
			Ø 6mm	●	●	●	●	●	●	●						
			Ø 8mm							●	●	●				
			Ø 10mm								●	●				
	Stainless Steel	Air, Nitrogen	Rc 1/8	●	●	●	●	●	●	● <sup>1</sup>					<ul style="list-style-type: none"> <li>• Twin display with bi-colour</li> <li>• Integrated needle valve type for energy efficiency</li> <li>• Precision of ±3%FS</li> <li>• High speed response</li> </ul>	
		Argon	Rc 1/4								●	●	● <sup>2</sup>			
		Carbon oxide	M5	●	●	●	●	●	●	● <sup>1</sup>						
	Aluminium	Air, Nitrogen	Rc 1/2											●	●	<ul style="list-style-type: none"> <li>• Free mounting - can be mounted in any direction</li> </ul>

Note 1: Excluding carbon oxide model.

Note 2: Excluding argon and carbon oxide models

# Instrumentations - Flow meter

## FCM - SMALL SIZE FLOW CONTROLLER

	Fluid	Port Size				Flow Rate L/min							
		Ø 6	Ø 8	Rc 1/4	9/16-18 UNF	0.5 L/min	1 L/min	2 L/min	5 L/min	10 L/min	20 L/min	50 L/min	100 L/min
	Air, Nitrogen	●	●	●	●	●	●	●	●	●	●	●	●
	Argon			●	●	●	●	●	●	●	●	●	
	Oxygen			●	●	●	●	●	●				
	City Gas			●	●	●	●	●	●				
	Methane			●	●	●	●	●	●				
	Propane			●	●	●	●	●	●				

- Multi-function flow controller
- Proportional flow control via an input signal (1-10v)
- 3-Digit LED display for easy reading and operation
- Diverse applications
- Hydrogen and helium options available.

## WFK SERIES - FLOW SENSOR FOR WATER

Model no.	Port Size						Flow Rate L/min				
	3/8	1/2	3/4	1	1 1/4	1 1/2	0.1	1	10	100	1000
	004	●	●					■			0.50 - 4.00
	012	●	●					■			1.50 - 12.0
	008	●	●	●				■			1.00 - 8.00
	027	●	●	●				■			3.00 - 27.0
	008	●	●	●				■			1.00 - 8.00
	027	●	●	●				■			3.00 - 27.0
	050			●	●					■	10.0 - 50.0
	100				●	●				■	20.0 - 100
	200					●	●			■	40 - 200

- Karman Vortex type flow sensor:
  - No moving parts to increase reliability
- Can be used with poor water quality i.e. industrial water
- Stainless steel body and threaded pipe adaptor
- Free mounting position as the display rotates 270°
- 5-Digit LED display for easy reading
- Compact and lightweight
- Low pressure loss and large sectional area means energy saving of water supply

# Instrumentations - Pressure Control

EVS2 - COMPACT ELECTRO-PNEUMATIC REGULATOR																
Model no.	Control Pressure			Input Signal				Port Size			Output Signal		<ul style="list-style-type: none"> <li>• Small, lightweight and compact</li> <li>• Long service life</li> <li>• Multi input voltages for simple control</li> <li>• Simple piping cartridge fittings</li> <li>• M12 electrical connector</li> <li>• Ideal for control of low speed cylinders</li> </ul>			
	100 Kpa	500 Kpa	900 Kpa	0-10VDC	0-5VDC	4-20mADC	Parallel 10bit	Ø 4	Ø 6	RC 1/4	Rc 3/8	1-5V analog NPN		1-5V analog PNP	NPN Switch	PNP Switch
EVS2-100	●			●	●	●	●	●	●							
EVS2-200		●		●	●	●	●	●	●							

EVD - DIGITAL ELECTRO-PNEUMATIC REGULATOR																
Model no.	Control Pressure			Input Signal				Port Size			Output Signal		<ul style="list-style-type: none"> <li>• 3-Digit LED display for easy operation</li> <li>• Zero span adjustment function</li> <li>• 2 outputs for upper/ lower parameters</li> <li>• Modular design enables direct connection</li> <li>• Simple D sub electrical connector</li> </ul>			
	100 Kpa	500 Kpa	900 Kpa	0-10VDC	0-5VDC	4-20mADC	Parallel 10bit	Ø 4	Ø 6	RC 1/4	Rc 3/8	1-5V analog NPN		1-5V analog PNP	NPN Switch	PNP Switch
EVD-1000	●	●		●	●	●	●			●		●	●	●	●	
EVD-3000	●	●		●	●	●	●			●	●	●	●	●	●	●

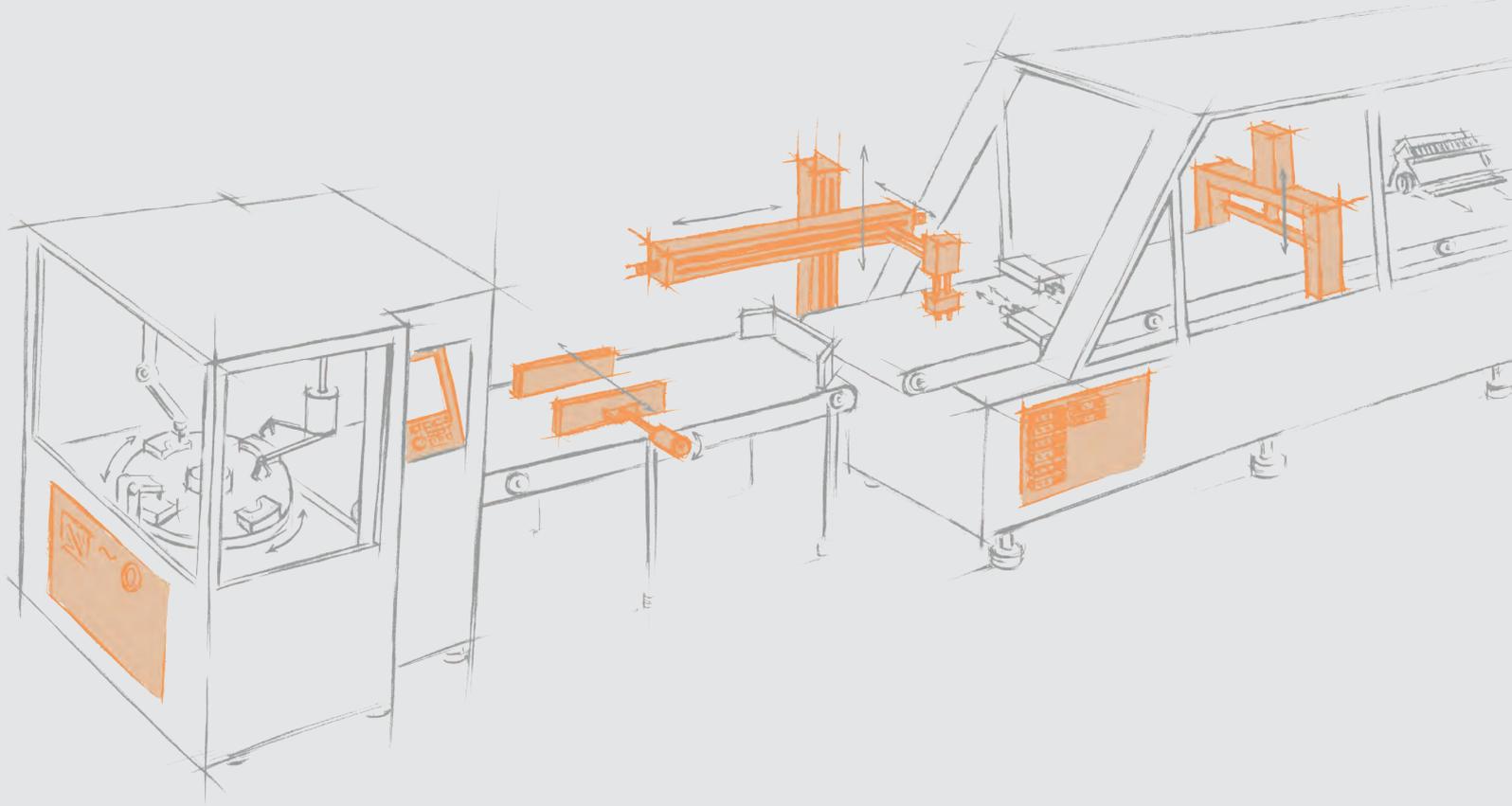
EVR - MANIFOLD PNEUMATIC REGULATOR																
Model no.	Control Pressure	Type		Input Signal			Port Size			Options				<ul style="list-style-type: none"> <li>• High precision regulator (resolution 0.1%FS)</li> <li>• Zero span adjustment function</li> <li>• 2 outputs for upper/ lower parameters</li> <li>• Temperature compensation</li> </ul>		
		Discrete	Manifold	0-10 VDC	0-5 VDC	4-20 mADC	RC 1/4	G 1/4	NPT 1/4	With Silencer	Straight cable connector	L-Shape cable connector	With Bracket			
EVR-250	500 Kpa	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

EPR - ELECTRO-PNEUMATIC REGULATOR												
Model no.	Control Pressure			Input Signal				Port Size		<ul style="list-style-type: none"> <li>• High pressure variants upto 16bar</li> <li>• Compact design and lightweight</li> <li>• Built to IP65</li> <li>• Fast response time for precise &amp; reliable pressure regulation</li> <li>• Unaffected by shocks, vibrations or accelerations.</li> <li>• Installed at any angle</li> <li>• Easy operation with easy to read digital display</li> <li>• Low power consumption</li> <li>• Remote control through serial RS-232</li> </ul>		
	0 - 5 bar	0 - 7 bar	0 - 12 bar	0-5 VDC	0-10VDC	RS-232	4-20 MA	Keypad	RC 1/8		RC 1/4	
EPR-50	●	●	●	●	●	●	●		●			
EPR-100	●	●	●	●	●	●	●		●			
EPR-200		●		●	●	●	●	●				●
EPR-300		●		●	●	●	●	●				●
EPR-500		●		●	●	●	●	●				●

1 bar is equal to 100 Kpa

# Additional

**BIBUS**<sup>®</sup>  
SUPPORTING YOUR SUCCESS



- The only pneumatic stepper motor in the world. High torque motor (up to 11N.m) with various versions available.
- Fully custom systems and products for every specification. From design to final delivery we can support and assist you, simplifying the whole process for you .
- A new range of electric actuators from CKD available.
- ISO and compact stainless steel cylinders suitable for extreme environments.
- A selection of valves for chemical, gas and water to safely shut-off valves.

# Unique Product - Stepper Motor

## PRODUCT CHARACTERISTICS



### Functionality and Precision

The BPS stepper motor creates rotation by means of a pneumatic activation of three internal pistons. Depending on the switching sequence of the control valves, a precise left/right 3° rotation is performed. The BPS can also be provided with a hollow shaft and spindle in order to generate a linear movement. Thanks to its unique construction, the BPS offers a maximum precision where the tolerance is always  $\pm 9$  angular minutes, irrespective of the number of steps or rotations!

### Wide range of applications

In environments with dust, dirt or powerful magnetic fields, the BPS pneumatic drive offers trouble-free operation.

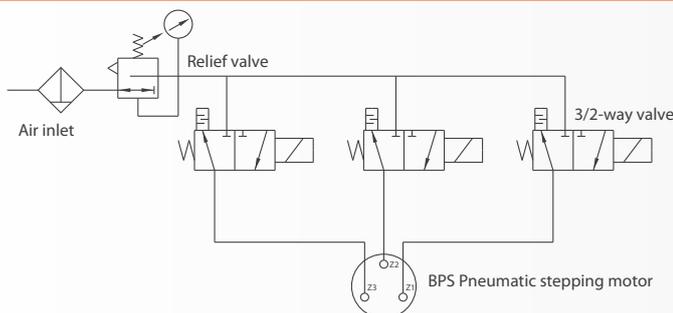
### Compact powerhouse with self-retention

Even the smallest series of BPS stepping motors is certain to impress with a torque of 1.7 Nm and compact diameter of only 52 mm. The self-retention mechanism keeps the BPS in its position even in the event of a power failure. This means that there is no step loss, thus allowing the BPS to serve as an absolute measuring system as well.

### Simplest control

Only 3 x 3/2-way valves are needed to drive the BPS. The BPS can easily be integrated into a PLC. Complete program modules for the Siemens S7-300 are available.

## OPERATING PRINCIPLE



The direction of rotation is determined by the sequence of the drive.

1-2-3 = Left rotation

3-2-1 = Right rotation

Function with Sensors:

Step 1: Valve 1 ON » Sensor 1 back-signal » Valve 1 OFF

Step 2: Valve 1 ON » Sensor 2 back-signal » Valve 2 OFF

Step 3: Valve 1 ON » Sensor 3 back-signal » Valve 3 OFF

This operation can be repeated until the desired position is achieved.

## PRODUCT FEATURES

### Extreme operating conditions

The BPS reveals its strengths in the presence of dust, dirt or strong magnetic fields: pneumatic actuation permits smooth operation even under the most difficult conditions (operating temperature  $-25^{\circ}$  to  $+70^{\circ}$  C, IP 55).

### Small but powerful

Even the smallest model series produces a convincing torque of 1.7 Nm with a compact 52 mm diameter.

### Self-locking

Even in the event of a power failure, the BPS maintains its position – No step loss occurs. A major advantage for tough applications.

### Precision

With its unique design, the BPS ensures maximum accuracy. The tolerance amounts to a constant  $\pm 9$  minutes of angle, regardless of the number of steps!

### Easy actuation

Directly via the Matrix valve with 3 valves (3/2-way), with or without sensors: the BPS can be incorporated without great complexity into a stored program control. For the "Siemens S7-300" SPC, free program modules are obtainable.

### Sensor unit

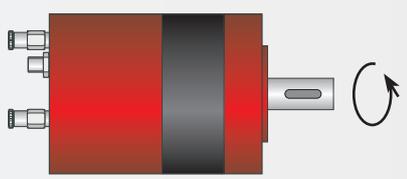
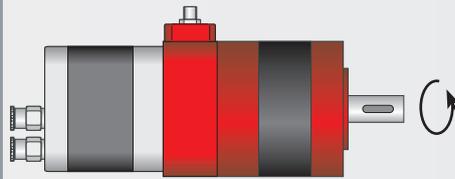
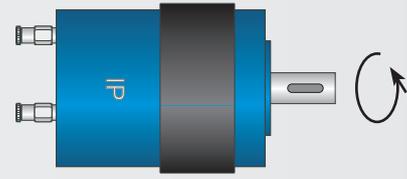
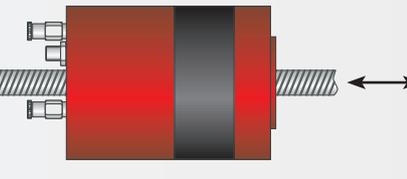
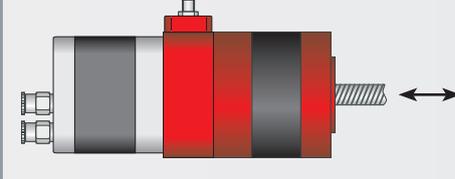
All types are available with a sensor unit, reporting the end position of the pistons to a SPC.

### BPS IP version

Specially protected motor housing for operation in Ex zones. Certificated for Ex zones 1, 2, 21 and 22.

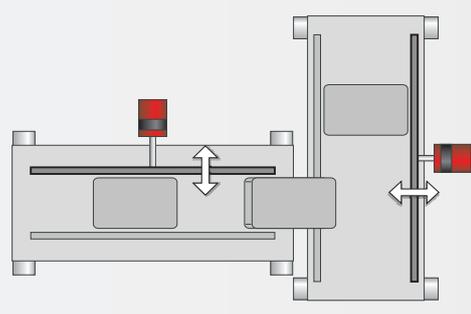
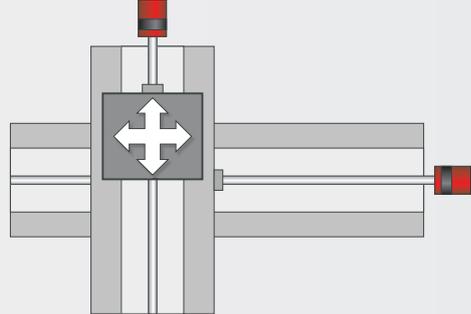
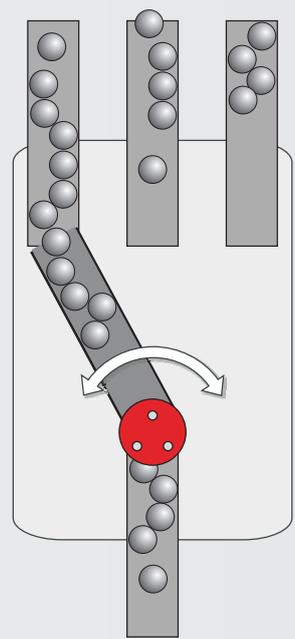
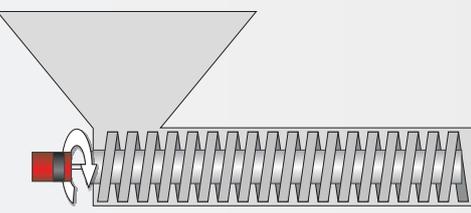
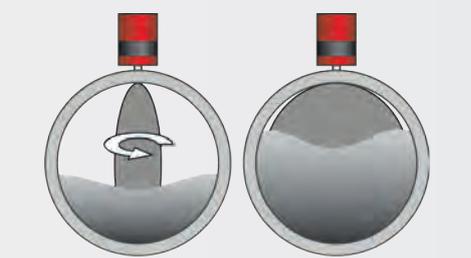
# Unique Product - Stepper Motor

## MODEL VARIATIONS

	Standard	With control valve	For Ex zone
Rotary motion	 <p>BPS with shaft</p>	 <p>BPS MX incl. control valve</p>	 <p>BPS-IP</p>
Linear motion	 <p>BPS SR with hollow shaft and spindle</p>	 <p>BPS MX-SR incl. control valve</p>	

## APPLICATIONS

The BPS is ideal whenever high accuracy is required under difficult working conditions. The shaft is used for rotary movements. Linear motions are possible with a hollow shaft type. The pneumatic stepper motor is available with or without attached Matrix valve.

Adjustment	Positioning	Isolating
Adjustment of limit stops and guides for a change of format on machines.	Positioning of tables in the X and Y axis.	Isolating and combining of parts.
		
Precise dosing	Proportional remote adjustment	
Precise dosing of bulk materials with screw-type conveyors.	Proportional remote adjustment of valves, flap valves and cocks.	
		

## CONTROL UNIT



- Inlet**  
Floating engage or proximity switch, every pulse actuates one to three steps
- Buttons**  
One step forward, one step backward, more steps forward or backward (as long as the button is pressed)
- Display**  
Rotating direction (by 3 LEDs), number of steps per pulse



## CUSTOM SYSTEMS

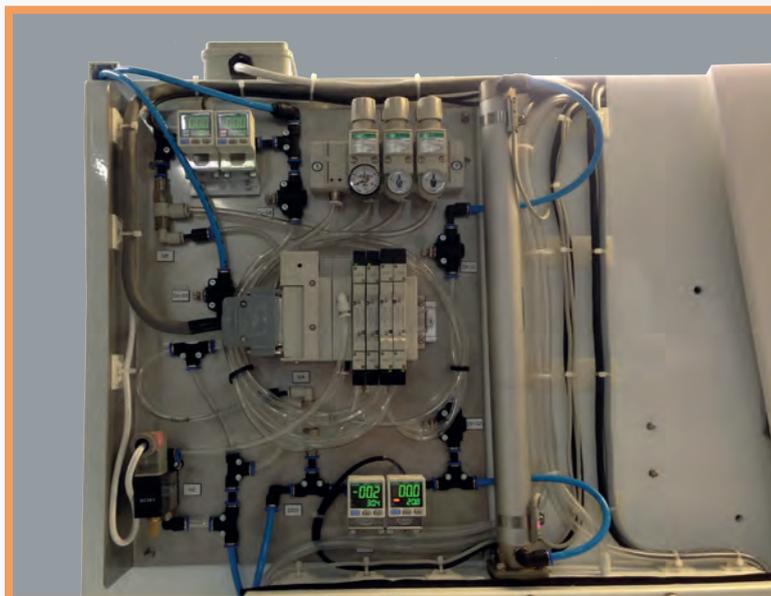
From a large number of components, we put one single delivery unit together for you. Whether you require a tailor-made component, a sub-assembly or a complete solution, we supply as you imagine it.

We provide ideas for implementation, develop detailed planning, calculating the cost and produce the assembly or a prototype if requested, which we subject to comprehensive tests.

We support you with advice and practical help from the sketch to the implementation. We carry out the necessary functional tests in special assembly and control rooms.

Tested by us, with all design specifications, pneumatic circuits, wiring diagrams, delivered with a functional warranty, we shorten the distance for you between the concept and the machine, thus reducing your interfaces.

Our best in class system approach consist of: pneumatic control panels, handling units, automation systems, equipment engineering, special cylinders, special valves and valve manifolds, packaging services and add on parts.



## HIGH PURITY CHEMICAL GAS / LIQUID CONTROL

### VACUUM

Air Operated / Solenoid / Electric Valve

- Long durability • High temperature version available (fluid temperature up to 150°C) • Multi-stage control valve (30 point). Proportional Control System
- All-in-one design function simplifies vacuum circuit system piping and reduces space • Suitable for high / low pressure (13.3Pa - 9.3KPa).

### PROCESS GAS

Air Operated / Manual Valve

- High performance • High quality • Appropriate seal structure
  - Surface roughness to prevent particle from occurring.
- Regulator
- Stable control • Small pressure drop • High quality seals.

### CHEMICAL LIQUIDS

Air Operated / Manual / Water Hammerless Valve

- High performance • High quality • Suitable for various fluids
- Upto 120°C fluid temperature • Various port sizes.

Fine Level Switch

- 1-8 point fluid level for efficient and safe fluid detection
- Suitable for various fluids such as pure water, acid and solvent.

## MODULAR ACTUATOR UNITS

### New Handling System

Small object parts transfer kit which offers compact design with flexible combinations.

Rigid aluminium frame, stop bolts with shock absorber, speed control valve and adjustable stroke block.

2 guide rails provide extra accuracy and rigidity and 2 station head option available for 2 step feeding and high movement.

- X-axis load capacity: 50Kg. Z-axis load capacity: 33Kg.
- X-axis speed: 100 - 1000mm/s. Z-axis speed: 50 - 300mm/s.
- X-axis maximum stroke:2000mm.
- Z-axis maximum stroke:2000mm.

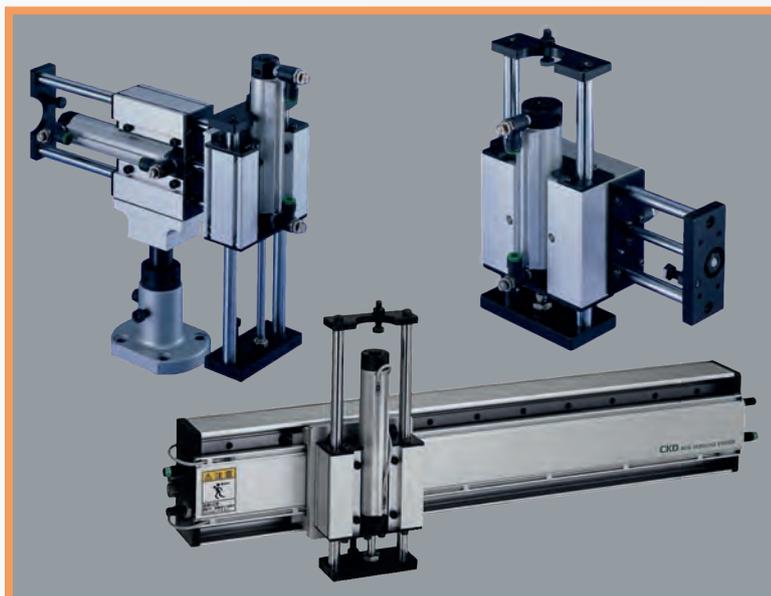
### 2-Action Pneumatic Robot

Pick and place robot arm with 2 axis drive, X-axis (horizontal) and Z axis (vertical).

Position detection switch, shock absorber and speed control valve as standard.

Position locking mechanism can be fitted on request.

- Maximum load capacity: 5Kg.
- X-axis stroke length: 50 - 300mm.
- Z-axis stroke length: 25 - 150mm.
- Maximum speed: 300mm/s.





### ELECTRIC SLIDER ACTUATOR

- Long service life - ball screw, linear guide, ball retainer and lubrication.
- Easy set up with E Tools.
- Simple operation with pendant teaching controller.
- Maximum load capacity of 30kg.
- Maximum speed of 600mm/s.
- Maximum stroke length up to 700mm.
- 7 or 63 position controller available.



### ELECTRIC ROD ACTUATOR

- Long service life - ball screw, linear guide, ball retainer and lubrication.
- Easy set up with E Tools.
- Simple operation with pendant teaching controller.
- Maximum load capacity of 67kg.
- Maximum speed of 600mm/s.
- Maximum stroke length up to 300mm.
- 7 or 63 position controller available.



### ISO CYLINDERS

- Various versions available from compact to tie rod type.
- Aluminium or Stainless steel covers.
- High corrosion resistance.
- Various options available.
- Wide range of mounting options.
- Standard bore Ø: 8 - 200mm.
- Standard stroke length: 10 - 500mm.
- Temperature range: -35°C to 80°C.



### SAFETY SHUT-OFF VALVE

- 3 port solenoid valve with spool position detection.
- Reliably detect valve position.
- Two safety shut-off circuit is available with 2 station modular connection.
- ISO 13849-1 compliant.
- Rc, G & NPT thread types available.
- Port size: 3/8", 1/2", 3/4"
- Voltage options: 100VAC, 200VAC, 24VDC.



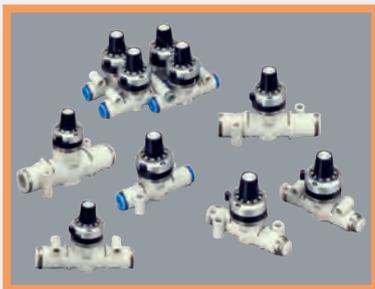
### COMPLETE PNEUMATIC UNIT

- Modularize and joins common air components for pneumatic control and actuator drive.
- Wide variety of components to chose from filter / regulator to valves.
- Space-saving - no pipework reduces footprint by 50%.
- Fully customisable as components can be changed or expended freely.
- Easy maintenance.



### INTEGRATED WATER UNIT

- Space-saving, piping free.
- Very reliable:
  - Reduced risk of pipes leaking.
  - Eliminating risk of foreign matter.
- Reduced man hours - reduced design and arrangement time.
- Multi fluid control option available.
- Flow rate: 0.5 - 32 L/min.
- Port size: Rc 3/8", Rc 1/2", Rc 3/4", Rc 1".



### NEEDLE VALVE WITH DIAL

- Rotary needle valve with linear flow properties.
- Accurate with good reproducibility:
  - Numeric values on dial.
- Speed control or vacuum release.
- One touch lock system.
- Can be used in adverse conditions.
- Flexible Mounting - free rotating mounting holes.
- Port size: Ø 4 - 12 mm push-in.



### SWING COUPLINGS

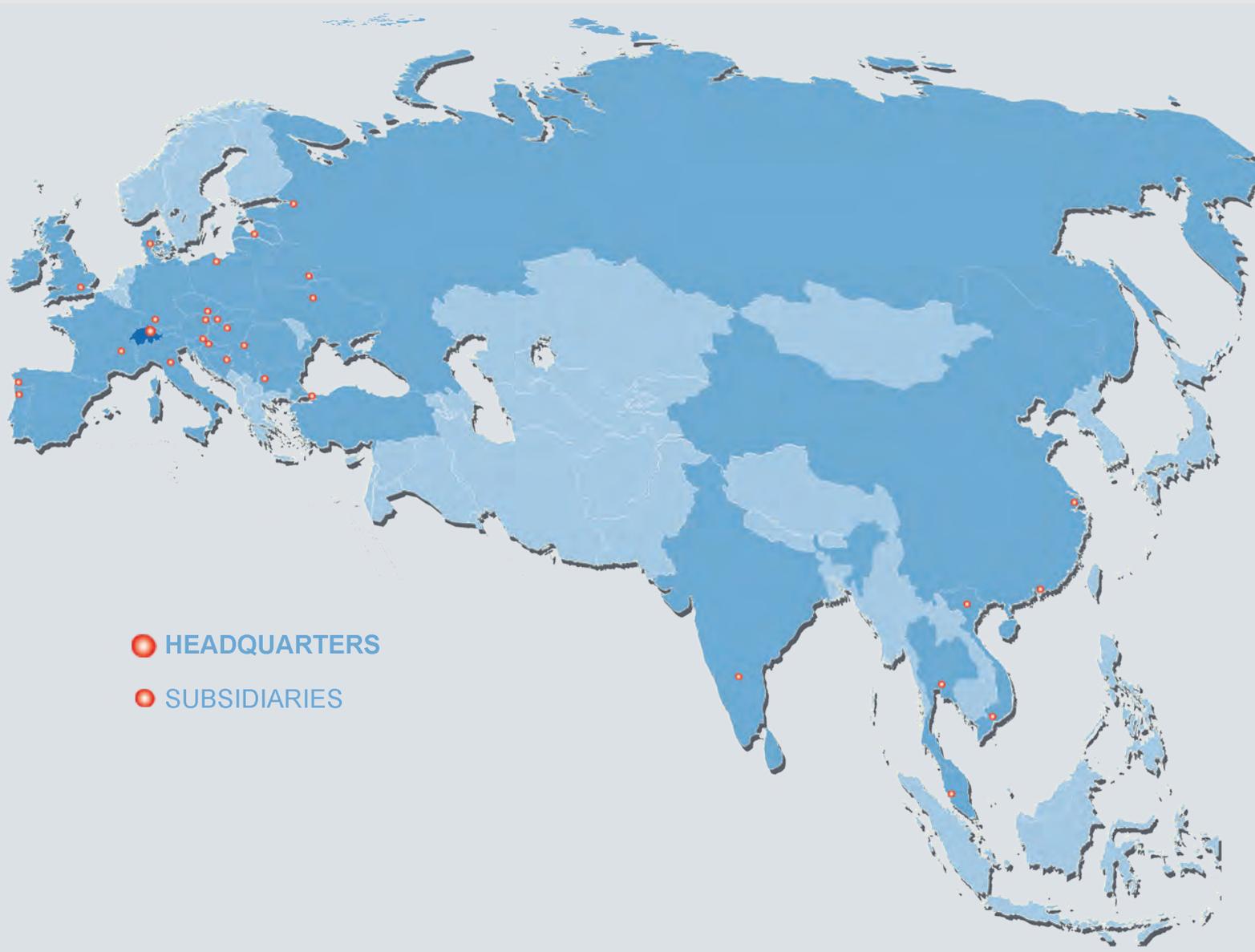
- Simple operation - plug and twist.
- Compatible with most common plugs.
- Compact design.
- Full flow - negligible loss of pressure.
- Operating pressure: 25 bar.
- Also suitable for vacuum (3 inHg).
- Standard sizes DN6 - DN19.
- Various versions available.
- ISO 4414, EN983 certified.



### NYLON TUBING

- Suitable for pneumatic and hydraulic:
  - Chemical plant, food industry & medical instruments.
- Long-life expectancy:
  - Anti-weather, anti-pressure, anti-vibration & heat proof.
- 15 bar rated tubing.
- 3 - 12mm outer diameter.
- Range of colours including: Black, Blue, Red, Yellow, Green & Clear.

Engineering  
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