XOMOX®

Technische Dokumentation
Technical Documentation

XOMOX Pneumatic Actuator Type XRP

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CRANE
ChemPharma Flow Solutions

Table of Content

XOMOX®

Design Features & Benefits

- **Single- and Double-acting Pneumatic Actuators for Economical Quarter-turn Valve Operation (Plug, Ball & Butterfly Valves) in a wide range of industrial applications**
- **Standardized Actuator Assembling Flange acc. to DIN ISO 5211**
- **Standardized Solenoid Interface acc. to VDI/VDE 3845 (NAMUR)**
- **Standardized Limit Switches and Positioner Interface acc. to VDI/VDE 3845 (NAMUR)**
- **Position Indicator acc. to NAMUR**
- **Torque Range up to 10,000 Nm**
- **Robust Aluminium Body with anodized surface for superior corrosion protection**
- **Anti-blow out bushing, no exterior corrosion-susceptible locking rings**
- **Patented, pressure balanced spindle (anti-blow out proof design)**
- **Self-lubricating piston guiding tapes are arranged in wide distance and therefore efficiently prevent any piston cock; less friction and abrasion-free operation**
- **High Reliability and Operational Safety**
- **Long life-time due to significantly reduced abrasion**

Size 001

1. Design Features

Body Material:	Aluminium anodized acc. DIN 17611 (E6), calibrated
End Caps:	plastic end caps RAL 9005 (black)
End Cap Version:	air end caps
End Cap Screws:	material and strength acc. A2 70, DIN 912
Weight:	0.3 kg
Air Connection:	G 1/8"
Shaft:	one piece
Rotation:	clockwise => double acting and spring to close
	anti-clockwise => double acting and spring to open
Lubrication:	permanent greasing
Piston Support:	PTFE guiding tapes
Interfaces:	
Actuator/valve:	F03; flange acc. to DIN 5211 without centring key, with female square

2. Technical Data

Actuations principle:	Rack and Pinion
Allowable pressures:	
Working pressure:	2.5 to 10 bar
Tightness test:	1.1 x max. nominal pressure
Cycle Time:	$t_{open < 1.0 sec.}$, with solenoid valve K_v=1.2 [m³/ h],at 6 bar air supply pressure
	$t_{close < 1.0 sec.}$, with solenoid valve K_v=1.2 [m³/ h],at 6 bar air supply pressure
Travel:	90° standard, other options upon request
Air Consumption:	theoretical 0.06 N l/h at 1 bar per cycle 0° - 90°
Life span:	1 Mio. cycles at 6 bar working pressure, 20°C ambient temperature acc. VDI/VDE 3844
Ambient Temperature:	-20 to + 80° C (standard)
Installation Position:	random
Medium:	air and all non-aggressive gases

	Air Supply Pressure [bar]						
	2	**3**	**4**	**5**	**6**	**7**	**8**
Torques (Nm)	2.48 Nm	3.72 Nm	4.96 Nm	6.2 Nm	7.44 Nm	8.68 Nm	9.92 Nm

Figures for spring-torques and corresponding air-torques => see page 6

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Size 002

1. Design Features

Body Material:	Aluminium anodized acc. DIN 17611 (E6), calibrated
End Caps:	plastic end caps RAL 9005 (black)
End Cap Version:	air end caps
End Cap Screws:	material and strength acc. A2 70, DIN 912
Weight:	0.6 kg
Air Connection:	G 1/8"
Shaft:	one piece
Rotation:	clockwise => double acting and spring to close
	anti-clockwise => double acting and spring to open
Lubrication:	permanent greasing
Piston Support:	PTFE guiding tapes
Interfaces:	
Actuator/valve:	F04/F05; flange acc. DIN 5211 without centring key, with female square

2. Technical Data

Actuations principle:	Rack and Pinion
Allowable pressures:	
Working pressure:	2.5 to 10 bar
Tightness test:	1.1 x max. nominal pressure
Cycle Time:	$t_{open < 1.0 sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
	$t_{close < 1.0 sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
Travel:	90° standard, other options upon request
Air Consumption:	theoretical 0.09 N l/h at 1 bar per cycle 0° - 90°
Life span:	1 Mio. cycles at 6 bar working pressure, 20°C ambient temperature acc. VDI/VDE 3844
Ambient Temperature:	-20 to + 80° C (standard)
Installation Position:	random
Medium:	air and all non-aggressive gases

	Air Supply Pressure [bar]						
	2	**3**	**4**	**5**	**6**	**7**	**8**
Torques (Nm)	5.4 Nm	8.1 Nm	10.8 Nm	13.5 Nm	16.2 Nm	18.9 Nm	21.6 Nm

Figures for spring-torques and corresponding air-torques => see page 6

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Size 006

1. Design Features

Body Material:	Aluminium anodized acc. DIN 17611 (E6), calibrated
End Caps:	plastic end caps RAL 9005 (black)
End Cap Version:	air end caps
End Cap Screws:	material and strength acc. A2 70, DIN 912
Weight:	1.2 kg
Air Connection:	G 1/8"
Shaft:	one piece
Rotation:	clockwise => double acting and spring to close
	anti-clockwise => double acting and spring to open
Lubrication:	permanent greasing
Piston Support:	PTFE guiding tapes
Interfaces:	
Actuator/valve:	F04/F05; flange acc. DIN 5211 without centring key, with female square
Limit switches, positioner:	VDI/VDE 3845 (Namur)

2. Technical Data

Actuations principle:	Rack and Pinion
Allowable pressures:	
Working pressure:	2.5 to 10 bar
Tightness test:	1.1 x max. nominal pressure
Cycle Time:	$t_{open < 1,0 sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
	$t_{close < 1,0 sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
Travel:	90° standard, other options upon request
Air Consumption:	theoretical 0.13 N l/h at 1 bar per cycle 0° - 90°
Life span:	1 Mio. cycles at 6 bar working pressure, 20°C ambient temperature acc. VDI/VDE 3844
Ambient Temperature:	-20 to + 80° C (standard)
Installation Position:	random
Medium:	air and all non-aggressive gases

	Air Supply Pressure [bar]						
	2	**3**	**4**	**5**	**6**	**7**	**8**
Torques (Nm)	12.4 Nm	18.6 Nm	24.8 Nm	31 Nm	37.2 Nm	43.4 Nm	49.6 Nm

Figures for spring-torques and corresponding air-torques => see page 6

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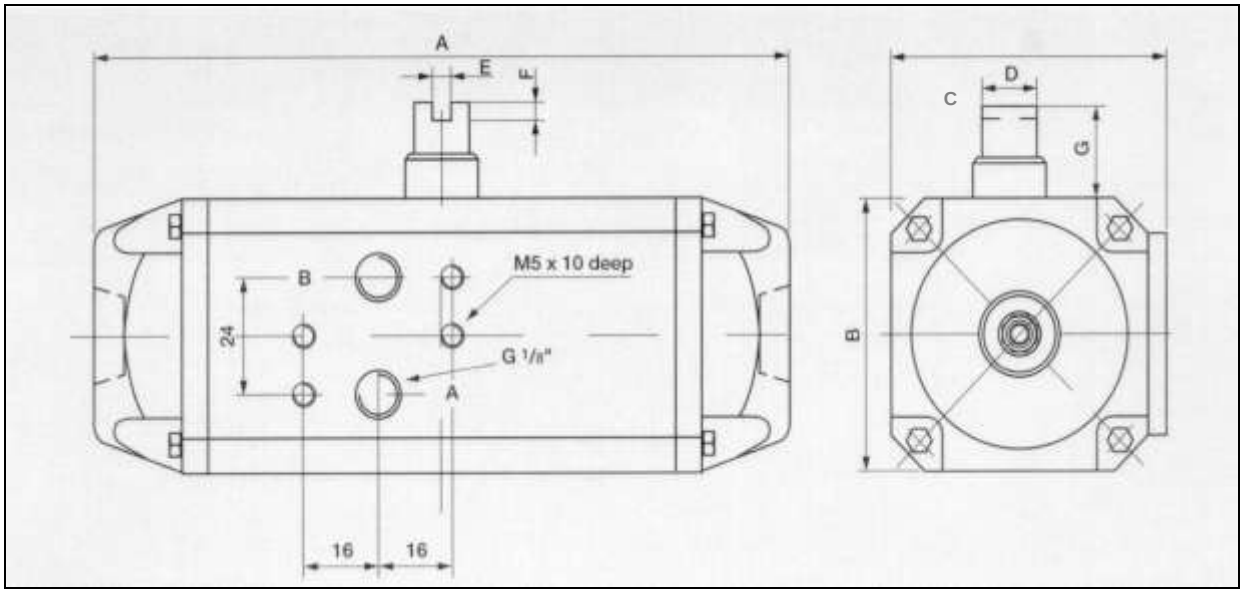
Sizes 001 to 006

- Connecting flange ISO 5211, with female square DIN 3337.
- Connection for solenoid valve VDI/VDE, Namur
- Connection for positioner and limit switch VDI/VDE 3845 (Namur)*

* Size A: Bore pattern 60 x 25 mm, shaft height 30 mm, Size B: Bore pattern 60 x 30 mm

Dimensions and Weights

Size	Connection	A	B	C	D	E	F	G	kg
R.. 001	F03 V09	88	45	45	8	4	4	15	0.6
R.. 002	F04 V11	133	56	60	12	4	4	20	0.8
R.. 006	F05 V14	176	66	71	22	4	4	20	1.1



Torques (Nm)
Double-acting Actuators

Sizes	Air Supply Pressure in bar						
	1	**2**	**3**	**4**	**5**	**6**	**7**
R.. 001	1.24	2.48	3.72	4.96	6.20	7.44	8.68
R.. 002	2.70	5.40	8.10	10.80	13.50	16.20	18.90
R.. 006	6.20	12.40	18.80	24.80	31.00	37.20	43.40

Torques (Nm)
Single-acting Actuators

Size	Air Supply Pressure in bar						
	1	**2**	**3**	**4**	**5**	**6**	**7**
Rx*.. 002	0.90	1.80	2.70	3.60	4.50	5.40	6.30
Rx*.. 006	2.06	4.12	6.18	8.24	10.60	12.38	14.42
No. of Springs	2	4	6	8	10	12	14

x*: S = Spring close, A = Spring open

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Sizes 012

1. Design Features

Body Material:	Aluminium anodized acc. DIN 17611 (E6), calibrated
End Caps:	Aluminium anodized end caps RAL 9005 (black), min. 60µm
End Cap Version:	air end caps
End Cap Screws:	material and strength acc. A2 70, DIN 912
Weight:	2.2 kg
Air Connection:	G ¼"
Shaft:	blow-out-proof, pressure-balanced, one piece
Rotation:	clockwise => double acting and spring to close
	anti-clockwise => double acting and spring to open
Lubrication:	permanent greasing
Piston Support:	PTFE guiding tapes
Interfaces:	
Actuator/valve:	F05; flange acc. to DIN 5211 with female square acc. DIN 3337
Solenoid valve:	VDI/VDE 3845 (Namur)
Limit switches, positioner:	VDI/VDE 3845 (Namur)
Position indicator:	red plastic indicator
Production:	acc. DIN EN ISO 9001

2. Technical Data

Actuations principle:	Rack and Pinion
Allowable pressures:	
Working pressure:	2 to 10 bar
Tightness test:	1.1 x max. nominal pressure
Cycle Time:	$t_{open < 1.0 sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
	$t_{close < 1.0 sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
Travel:	90° standard, other options upon request
Air Consumption:	theoretical 0.18 N l/h at 1 bar per cycle 0° - 90°
Life span:	1 Mio. cycles at 6 bar working pressure, 20°C ambient temperature acc. VDI/VDE 3844
Ambient Temperature:	-20 to + 80° C (standard)
Installation Position:	random
Medium:	air and all non-aggressive gases

	Air Supply Pressure [bar]						
	2	**3**	**4**	**5**	**6**	**7**	**8**
Torques (Nm)	24.7 Nm	37 Nm	49.3 Nm	61.6 Nm	74 Nm	86.3 Nm	98.6 Nm

Figures for spring-torques and corresponding air-torques => see page 14

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Sizes 025

1. Design Features

Body Material:	Aluminium anodized acc. DIN 17611 (E6), calibrated
End Caps:	Aluminium anodized end caps RAL 9005 (black), min. 60µm
End Cap Version:	air end caps
End Cap Screws:	material and strength acc. A2 70, DIN 912
Weight:	3.5 kg
Air Connection:	G ¼"
Shaft:	blow-out-proof, pressure-balanced, one piece
Rotation:	clockwise => double acting and spring to close
	anti-clockwise => double acting and spring to open
Lubrication:	permanent greasing
Piston Support:	PTFE guiding tapes
Interfaces:	
Actuator/valve:	F05; flange acc. to DIN 5211 with female square acc. DIN 3337
Solenoid valve:	VDI/VDE 3845 (Namur)
Limit switches, positioner:	VDI/VDE 3845 (Namur)
Position indicator:	red plastic indicator
Production:	acc. DIN EN ISO 9001

2. Technical Data

Actuations principle:	Rack and Pinion
Allowable pressures:	
Working pressure:	2 to 10 bar
Tightness test:	1.1 x max. nominal pressure
Cycle Time:	$t_{open < 1.0 sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
	$t_{close < 1.0 sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
Travel:	90° standard, other options upon request
Air Consumption:	theoretical 0,5 N l/h at 1 bar per cycle 0° - 90°
Life span:	1 Mio. cycles at 6 bar working pressure, 20°C ambient temperature acc. VDI/VDE 3844
Ambient Temperature:	-20 to + 80° C (standard)
Installation Position:	random
Medium:	air and all non-aggressive gases

	Air Supply Pressure [bar]						
	2	**3**	**4**	**5**	**6**	**7**	**8**
Torques (Nm)	47 Nm	72 Nm	95 Nm	119 Nm	143 Nm	167Nm	191 Nm

Figures for spring-torques and corresponding air-torques => see page 14

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Size 050

1. Design Features

Body Material:	Aluminium anodized acc. DIN 17611 (E6), calibrated
End Caps:	Aluminium anodized end caps RAL 9005 (black), min. 60µm
End Cap Version:	air end caps
End Cap Screws:	material and strength acc. A2 70, DIN 912
Weight:	Double-acting: 5.9 kg; single-acting (10 springs): 6.4 kg
Air Connection:	G ¼"
Shaft:	blow-out-proof, pressure-balanced, one piece
Rotation:	clockwise => double acting and spring to close
	anti-clockwise => double acting and spring to open
Lubrication:	permanent greasing
Piston Support:	PTFE guiding tapes
Interfaces:	
Actuator/valve:	F07; flange acc. to DIN 5211 with female square acc. DIN 3337
Solenoid valve:	VDI/VDE 3845 (Namur)
Limit switches, positioner:	VDI/VDE 3845 (Namur)
Position indicator:	red plastic indicator
Production:	acc. DIN EN ISO 9001

2. Technical Data

Actuations principle:	Rack and Pinion
Allowable pressures:	
Working pressure:	2.5 to 10 bar
Tightness test:	1.1 x max. nominal pressure
Cycle Time:	$t_{open < 0.8 sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
	$t_{close < 0.8 sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
Travel:	90° standard, other options upon request
Air Consumption:	theoretical 0.8 N l/h at 1 bar per cycle 0° - 90°
Life span:	1 Mio. cycles at 6 bar working pressure, 20°C ambient temperature acc. VDI/VDE 3844
Ambient Temperature:	-20 to + 80° C (standard)
Installation Position:	random
Medium:	air and all non-aggressive gases

	Air Supply Pressure [bar]						
	2	**3**	**4**	**5**	**6**	**7**	**8**
Torques (Nm)	89 Nm	133 Nm	177 Nm	222 Nm	266 Nm	310 Nm	364 Nm

Figures for spring-torques and corresponding air-torques => see page 14

XOMOX®

Size 090

1. Design Features

Body Material:	Aluminium anodized acc. DIN 17611 (E6), calibrated
End Caps:	Aluminium anodized end caps RAL 9005 (black), min. 60µm
End Cap Version:	air end caps
End Cap Screws:	material and strength acc. A2 70, DIN 912
Weight:	Double-acting: 10.4 kg; single-acting (10 springs): 12.2 kg
Air Connection:	G ¼"
Shaft:	blow-out-proof, pressure-balanced, one piece
Rotation:	clockwise => double acting and spring to close
	anti-clockwise => double acting and spring to open
Lubrication:	permanent greasing
Piston Support:	PTFE guiding tapes
Interfaces:	
Actuator/valve:	F07/F10*; flange acc. to DIN 5211 with female square acc. DIN 3337
Solenoid valve:	VDI/VDE 3845 (Namur)
Limit switches, positioner:	VDI/VDE 3845 (Namur)
Position indicator:	red plastic indicator
Production:	acc. DIN EN ISO 9001

* other options upon request

2. Technical Data

Actuations principle:	Rack and Pinion
Allowable pressures:	
Working pressure:	2.5 to 10 bar
Tightness test:	1.1 x max. nominal pressure
Cycle Time:	$t_{open\ <1.0\ sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
	$t_{close\ <\ 1.0\ sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
Travel:	90° standard, other options upon request
Air Consumption:	theoretical 1 N l/h at 1 bar per cycle 0° - 90°
Life span:	1 Mio. cycles at 6 bar working pressure, 20°C ambient temperature acc. VDI/VDE 3844
Ambient Temperature:	-20 to + 80° C (standard)
Installation Position:	random
Medium:	air and all non-aggressive gases

	Air Supply Pressure [bar]						
	2	**3**	**4**	**5**	**6**	**7**	**8**
Torques (Nm)	169 Nm	253 Nm	337Nm	421 Nm	505 Nm	589 Nm	673 Nm

Figures for spring-torques and corresponding air-torques => see page 14

XOMOX®

Size 130

1. Design Features

Body Material:	Aluminium anodized acc. DIN 17611 (E6), calibrated
End Caps:	Aluminium anodized end caps RAL 9005 (black), min. 60µm
End Cap Version:	air end caps
End Cap Screws:	material and strength acc. A2 70, DIN 912
Weight:	Double-acting: 19 kg; single-acting (10 springs): 19.8 kg
Air Connection:	G ¼"
Shaft:	blow-out-proof, pressure-balanced, one piece
Rotation:	clockwise => double acting and spring to close
	anti-clockwise => double acting and spring to open
Lubrication:	permanent greasing
Piston Support:	PTFE guiding tapes
Interfaces:	
Actuator/valve:	F10/12; flange acc. to DIN 5211 with female square acc. DIN 3337
Solenoid valve:	VDI/VDE 3845 (Namur)
Limit switches, positioner:	VDI/VDE 3845 (Namur)
Position indicator:	red plastic indicator
Production:	acc. DIN EN ISO 9001

2. Technical Data

Actuations principle:	Rack and Pinion
Allowable pressures:	
Working pressure:	2 to 10 bar
Tightness test:	1.1 x max. nominal pressure
Cycle Time:	$t_{open\ <1.0\ sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
	$t_{close\ <\ 1.0\ sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
Travel:	90° standard, other options upon request
Air Consumption:	theoretical 1.5 N l/h at 1 bar per cycle 0° - 90°
Life span:	1 Mio. cycles at 6 bar working pressure, 20°C ambient temperature acc. VDI/VDE 3844
Ambient Temperature:	-20 to + 80° C (standard)
Installation Position:	random
Medium:	air and all non-aggressive gases

	Air Supply Pressure [bar]						
	2	**3**	**4**	**5**	**6**	**7**	**8**
Torques (Nm)	256 Nm	385 Nm	513 Nm	642 Nm	770 Nm	898 Nm	1026 Nm

Figures for spring-torques and corresponding air-torques => see page 14

XOMOX®

Size 180

1. Design Features

Body Material:	Aluminium anodized acc. DIN 17611 (E6), calibrated
End Caps:	Aluminium anodized end caps RAL 9005 (black), min. 60µm
End Cap Version:	air end caps
End Cap Screws:	material and strength acc. A2 70, DIN 912
Weight:	Double-acting: 22.5 kg; single-acting (10 springs): 22.9 kg
Air Connection:	G ¼"
Shaft:	blow-out-proof, pressure-balanced, one piece
Rotation:	clockwise => double acting and spring to close
	anti-clockwise => double acting and spring to open
Lubrication:	permanent greasing
Piston Support:	PTFE guiding tapes
Interfaces:	
Actuator/valve:	F12; flange acc. to DIN 5211 with female square acc. DIN 3337
Solenoid valve:	VDI/VDE 3845 (Namur)
Limit switches, positioner:	VDI/VDE 3845 (Namur)
Position indicator:	red plastic indicator
Production:	acc. DIN EN ISO 9001

2. Technical Data

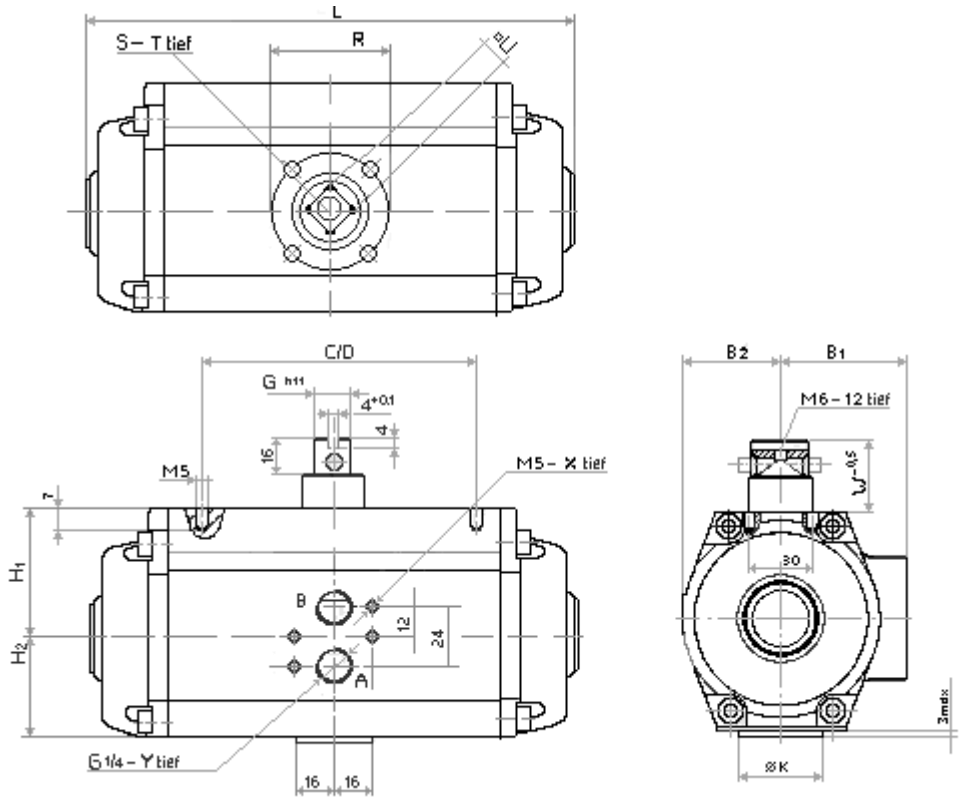
Actuations principle:	Rack and Pinion
Allowable pressures:	
Working pressure:	2 to 10 bar
Tightness test:	1.1 x max. nominal pressure
Cycle Time:	$t_{open < 1.2 sec.}$, with solenoid valve K_v=1.2 [m³/ h],at 6 bar air supply pressure
	$t_{close < 1.2sec.}$, with solenoid valve K_v=1.2 [m³/ h],at 6 bar air supply pressure
Travel:	90° standard, other options upon request
Air Consumption:	theoretical 2 N l/h at 1 bar per cycle 0° - 90°
Life span:	1 Mio. cycles at 6 bar working pressure, 20°C ambient temperature acc. VDI/VDE 3844
Ambient Temperature:	-20 to + 80° C (standard)
Installation Position:	random
Medium:	air and all non-aggressive gases

	Air Supply Pressure [bar]						
	2	**3**	**4**	**5**	**6**	**7**	**8**
Torques (Nm)	338 Nm	506 Nm	675 Nm	843 Nm	1012 Nm	1181 Nm	1350 Nm

Figures for spring-torques and corresponding air-torques => see page 14

XOMOX®

Sizes 012 to 180



Dimensions and Weights

Model	L	B1	B2	C1	C2	D	E	F	G	H1	H2	R	K	S	t	U	W	Weight (kg)	Connection
R.. 012	205	52	41	40	40	14	0	0	3	44.5	46.5	50	35	M6	9	14	20	2.4	F05
R.. 025	214	67	55	40	40	14	0	0	3	59.5	61.5	50	35	M6	9	14	20	3.6	F05
R.. 050	267	79	67	40	40	17	0	0	3	71.5	74.5	70	55	M8	12	17	20	6.4	F07
R.. 090	355	94	78	65	65	17	15	0	3	81.5	84.5	70	55	M8	12	17	20	11.2	F07
R.. 090	355	94	78	65	65	22	15	0	3	81.5	84.5	102	70	M10	16	22	30	11.2	F10
R.. 130	412	99.5	90	65	65	22	15	0	3	94	98	102	70	M10	16	22	30	18.5	F10
R.. 130	412	99.5	90	65	65	27	15	0	3	94	98	125	85	M12	17,5	27	30	18.5	F12
R.. 180	419	114	102	65	65	27	15	0	3	106.5	111.5	125	85	M12	17,5	27	30	23.0	F12

Single-acting Actuators: RS = spring close, RA = spring open

Torques (Nm)

Single-acting Actuators

	Air Supply Pressure in bar				
Size	**3**	**4**	**5**	**6**	**7**
Rx*.. 012	12.3	16.4	20.5	24.6	28.7
Rx*.. 025	24	32	40	48	56
Rx*.. 050	44	59	73	88	103
Rx*.. 090	80	107	134	161	188
Rx*.. 130	122	162	203	244	284
Rx*.. 180	160	214	267	320	374
No. of Springs	6	8	10	12	14

x*: S = Spring close, A = Spring open

XOMOX®

Size 205

1. Design Features

Body Material:	Aluminium anodized acc. DIN 17611 (E6), calibrated
End Caps:	Aluminium anodized end caps RAL 9005 (black), min. 60µm
End Cap Version:	air end caps
End Cap Screws:	material and strength acc. A2 70, DIN 912
Weight:	Double-acting: 30 kg; single-acting (10 springs): 47.4 kg
Air Connection:	G ¼"
Shaft:	blow-out-proof, pressure-balanced, one piece
Rotation:	clockwise => double acting and spring to close
	anti-clockwise => double acting and spring to open
Lubrication:	permanent greasing
Piston Support:	PTFE guiding tapes
Interfaces:	
Actuator/valve:	F12/F14*; flange acc. to DIN 5211 with female square acc. DIN 3337
Solenoid valve:	VDI/VDE 3845 (Namur)
Limit switches, positioner:	VDI/VDE 3845 (Namur)
Position indicator:	red plastic indicator
Production:	acc. DIN EN ISO 9001

* other options upon request

2. Technical Data

Actuations principle:	Rack and Pinion
Allowable pressures:	
Working pressure:	2 to 10 bar
Tightness test:	1.1 x max. nominal pressure
Cycle Time:	$t_{open\ <1.2\ sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
	$t_{close\ <\ 1.2\ sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
Travel:	90° standard, other options upon request
Air Consumption:	theoretical 3.1 N l/h at 1 bar per cycle 0° - 90°
Life span:	1 Mio. cycles at 6 bar working pressure, 20°C ambient temperature acc. VDI/VDE 3844
Ambient Temperature:	-20 to + 80° C (standard)
Installation Position:	random
Medium:	air and all non-aggressive gases

	Air Supply Pressure [bar]						
	2	**3**	**4**	**5**	**6**	**7**	**8**
Torques (Nm)	506 Nm	758 Nm	1011 Nm	1264 Nm	1517 Nm	1770 Nm	2023 Nm

Figures for spring-torques and corresponding air-torques => see page 17/18

XOMOX®

Size 380

1. Design Features

Body Material:	Aluminium anodized acc. DIN 17611 (E6), calibrated
End Caps:	Aluminium anodized end caps RAL 9005 (black), min. 60µm
End Cap Version:	air end caps
End Cap Screws:	material and strength acc. A2 70, DIN 912
Weight:	Double-acting: 36 kg; single-acting (10 springs): 60.4 kg
Air Connection:	G ¼"
Shaft:	blow-out-proof, pressure-balanced, one piece
Rotation:	clockwise => double acting and spring to close
	anti-clockwise => double acting and spring to open
Lubrication:	permanent greasing
Piston Support:	PTFE guiding tapes
Interfaces:	
Actuator/valve:	F12/F14*; flange acc. to DIN 5211 with female square acc. DIN 3337
Solenoid valve:	VDI/VDE 3845 (Namur)
Limit switches, positioner:	VDI/VDE 3845 (Namur)
Position indicator:	red plastic indicator
Production:	acc. DIN EN ISO 9001

* other options upon request

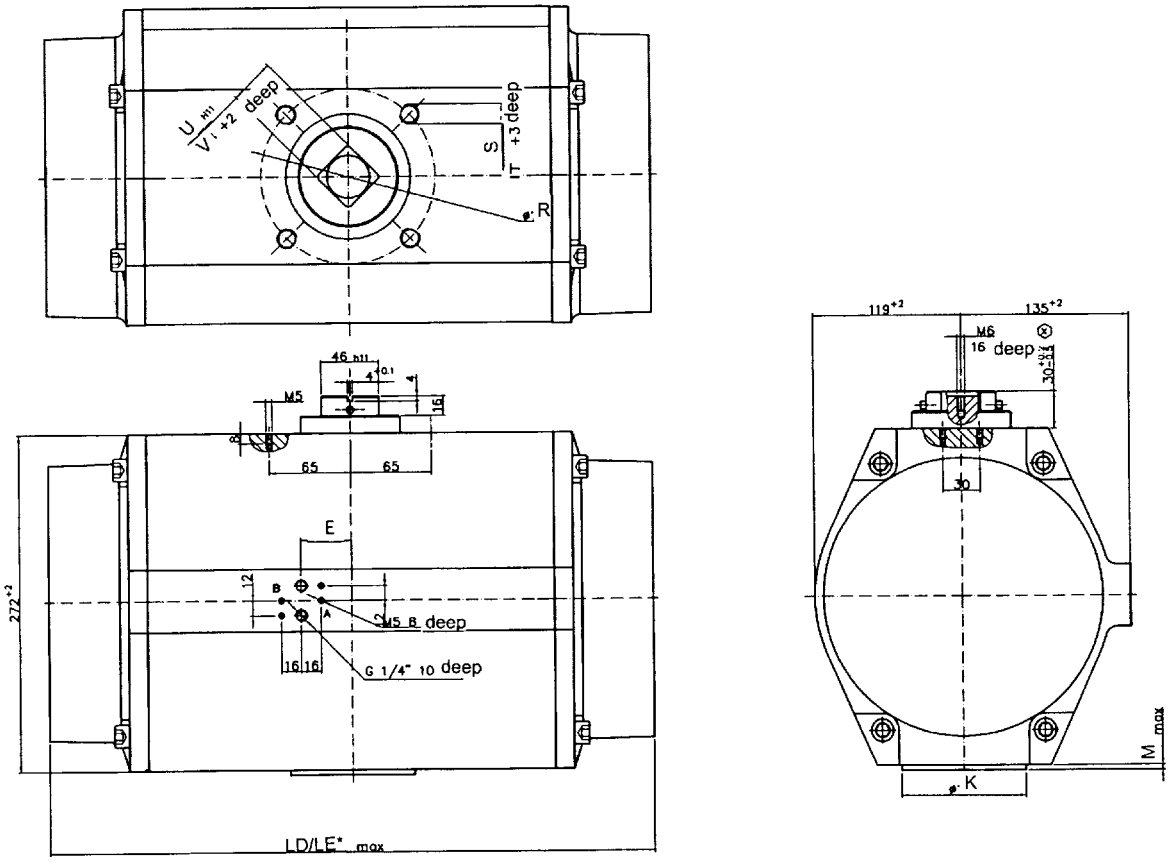
2. Technical Data

Actuations principle:	Rack and Pinion
Allowable pressures:	
Working pressure:	2 to 10 bar
Tightness test:	1.1 x max. nominal pressure
Cycle Time:	$t_{open < 2.1 sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
	$t_{close < 2.1 sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
Travel:	90° standard, other options upon request
Air Consumption:	theoretical 4.4 N l/h at 1 bar per cycle 0° - 90°
Life span:	1 Mio. cycles at 6 bar working pressure, 20°C ambient temperature acc. VDI/VDE 3844
Ambient Temperature:	-20 to + 80° C (standard)
Installation Position:	random
Medium:	air and all non-aggressive gases

	Air Supply Pressure [bar]						
	2	**3**	**4**	**5**	**6**	**7**	**8**
Torques (Nm)	758 Nm	1138 Nm	1517 Nm	1896 Nm	2275 Nm	2654 Nm	3033 Nm

Figures for spring-torques and corresponding air-torques => see page 17/18

Sizes 205 to 380



* LD – Double acting
* LE – Single acting

Dimensions (mm) and Weights

Size Connection	LD	LE*	E	R	K	M	S	T	U	V	Weight (kg)
205-F12	388	486	40	125	85	3	M12	20	27	29	31
205-F14	388	486	40	140	100	4	M16	25	36	38	31
205-F14/R45	388	486	40	70	100	4	M16	25	-	70	31
380-F12	510	602	71	125	85	3	M12	20	27	29	37
380-F14	510	602	71	140	100	4	M16	25	36	38	37
380-F14/R45	510	602	71	102	100	4	M16	25	-	70	37

* Single-acting Actuators: RS = spring close, RA = spring open

Torques (Nm)

Torque figures valid for range 0-90° only.

Double-acting Actuators

Size	Air Supply Pressure in bar					
	2	3	4	5	6	7
205	506	758	1011	1264	1517	1770
380	758	1138	1517	1896	2275	2654

Single-acting Actuators

Size	Air Supply Pressure in bar											
	2.5 – 2.9		3.0 – 3.9		4.0 – 4.9		5.0 – 5.9		6.0 – 6.9		7.0 – 10	
205	169	4	252	6	337	8	421	10	506	12	590	14
380	253	4	379	6	506	8	632	10	758	12	885	14

Single-acting Actuators: RS = spring close, RA = spring open

Connection Sizes

Connection sizes according to DIN/ISO 5211 and square hole according to DIN 3337

Connection Square hole Size	Torque [1] (Nm)	F04 V11	F05 V14	F07 V17	F10 V22	F12 V27	F14 V36	F14 Ø45	F16 V46	F16 Ø70	F25 V55	F25 Ø70	F25 Ø75	F25 Ø85	F30 V75
205-12	1000														
205-14*	2000														
205-14	2000														
380-12	1000														
380-14*	2000														
380-14	2000														

*Standard

1) Maximum torques for corresponding connection size according to ISO 5211

XOMOX®

Size 630

1. Design Features

Body Material:	Aluminium anodized acc. DIN 17611 (E6), calibrated
End Caps:	Aluminium anodized end caps RAL 9005 (black), min. 60µm
End Cap Version:	air end caps
End Cap Screws:	material and strength acc. A2 70, DIN 912
Weight:	Double-acting: 82 kg; single-acting (10 springs): 97 kg
Air Connection:	G ¼"
Shaft:	blow-out-proof, pressure-balanced, one piece
Rotation:	clockwise => double acting and spring to close
	anti-clockwise => double acting and spring to open
Lubrication:	permanent greasing
Piston Support:	PTFE guiding tapes
Interfaces:	
Actuator/valve:	F14/F16*; flange acc. to DIN 5211 with female square acc. DIN 3337
Solenoid valve:	VDI/VDE 3845 (Namur)
Limit switches, positioner:	VDI/VDE 3845 (Namur)
Position indicator:	red plastic indicator
Production:	acc. DIN EN ISO 9001

* other options upon request

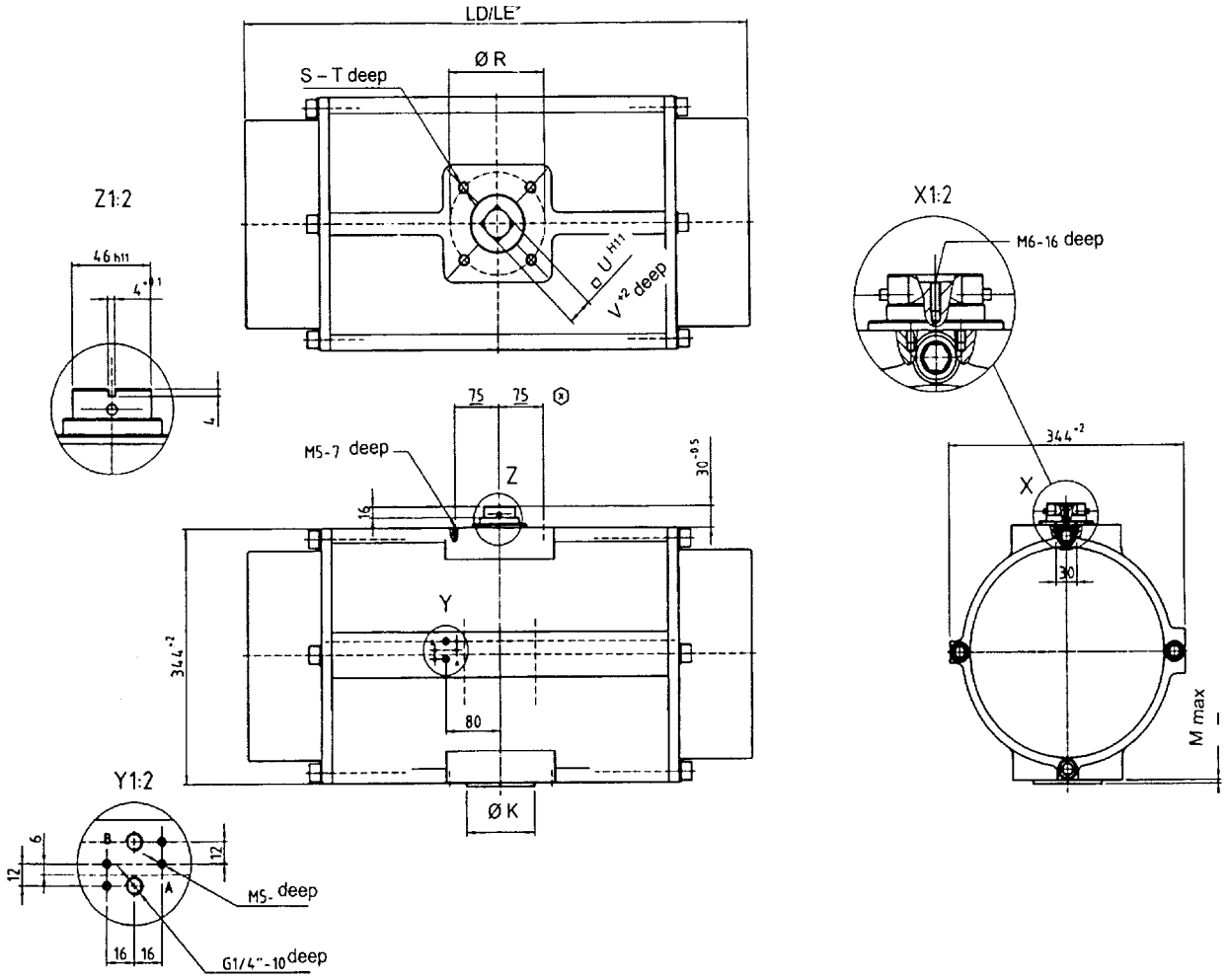
2. Technical Data

Actuations principle:	Rack and Pinion
Allowable pressures:	
Working pressure:	2 to 10 bar
Tightness test:	1.1 x max. nominal pressure
Cycle Time:	$t_{open < 3.2 sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
	$t_{close < 3.2 sec.}$, with solenoid valve K_V=1.2 [m³/ h],at 6 bar air supply pressure
Travel:	90° standard, other options upon request
Air Consumption:	theoretical 8.5 N l/h at 1 bar per cycle 0° - 90°
Life span:	1 Mio. cycles at 6 bar working pressure, 20°C ambient temperature acc. VDI/VDE 3844
Ambient Temperature:	-20 to + 80° C (standard)
Installation Position:	random
Medium:	air and all non-aggressive gases

	Air Supply Pressure [bar]						
	2	**3**	**4**	**5**	**6**	**7**	**8**
Torques (Nm)	1264 Nm	1896 Nm	2528 Nm	3159 Nm	3791 Nm	4423 Nm	5055 Nm

Figures for spring-torques and corresponding air-torques => see page 20/21

Size 630



Dimensions (mm) and Weights

Sizes / connection	LD*	LE*	R	K	M	S	T	U	V	Weight (KG)
630-F14	561	741	140	100	4	M16	25	36	38	80
630-F14 (R45)	561	741	140	100	4	M16	25	-	70	80
630-F16	561	741	165	130	5	M20	32	46	48	80
630-F16 (R70)	561	741	165	130	5	M20	32		84	80

*LD – double acting
*LE – single acting

Torques (Nm)

Torque figures valid for range 0-90° only.

Double-acting Actuators

Size	Air Supply Pressure in bar					
	2	3	4	5	6	7
630	1264	1896	2528	3159	3791	4423

Single-acting Actuators

	Air Supply Pressure in bar											
	2.5 – 2.9		3.0 – 3.9		4.0 – 4.9		5.0 – 5,9		6.0 – 6.9		7.0 – 10	
Size	Nm	Springs	Nm	Springs	Nm	Springs	Nm	Springs	Nm	Springs	Nm	Springs
630	421	4	632	6	843	8	1053	10	1263	12	1474	14

Single acting Actuators: RS = spring close, RA = spring open

Connection Sizes

Connection sizes according to DIN/ISO 5211 and square hole according to DIN 3337

Connection Square hole Sizes	Torque[1] (Nm)	F04 V11	F05 V14	F07 V17	F10 V22	F12 V27	F14 V36	F14 Ø45	F16 V46	F16 Ø70	F25 V55	F25 Ø70	F25 Ø75	F25 Ø85	F30 V75
630-14	2000														
630-A1	2000														
630-16*	4000														
630-A2	4000														

* Standard

1) Maximum torques for corresponding connection size according to ISO 5211

XOMOX®

Size 960

1. Design Features

Body Material:	Aluminium anodized acc. DIN 17611 (E6), calibrated
End Caps:	Aluminium anodized end caps RAL 9005 (black), min. 60µm
End Cap Version:	air end caps
End Cap Screws:	material and strength acc. A2 70, DIN 912
Weight:	Double-acting: 124 kg; single-acting (10 springs): 135 kg
Air Connection:	G ¼"
Shaft:	blow-out-proof, pressure-balanced, one piece
Rotation:	clockwise => double acting and spring to close
	anti-clockwise => double acting and spring to open
Lubrication:	permanent greasing
Piston Support:	PTFE guiding tapes
Interfaces:	
Actuator/valve:	F16/F25*; flange acc. to DIN 5211 with female square acc. DIN 3337
Solenoid valve:	VDI/VDE 3845 (Namur)
Limit switches, positioner:	VDI/VDE 3845 (Namur)
Position indicator:	red plastic indicator
Production:	acc. DIN EN ISO 9001

* other options upon request

2. Technical Data

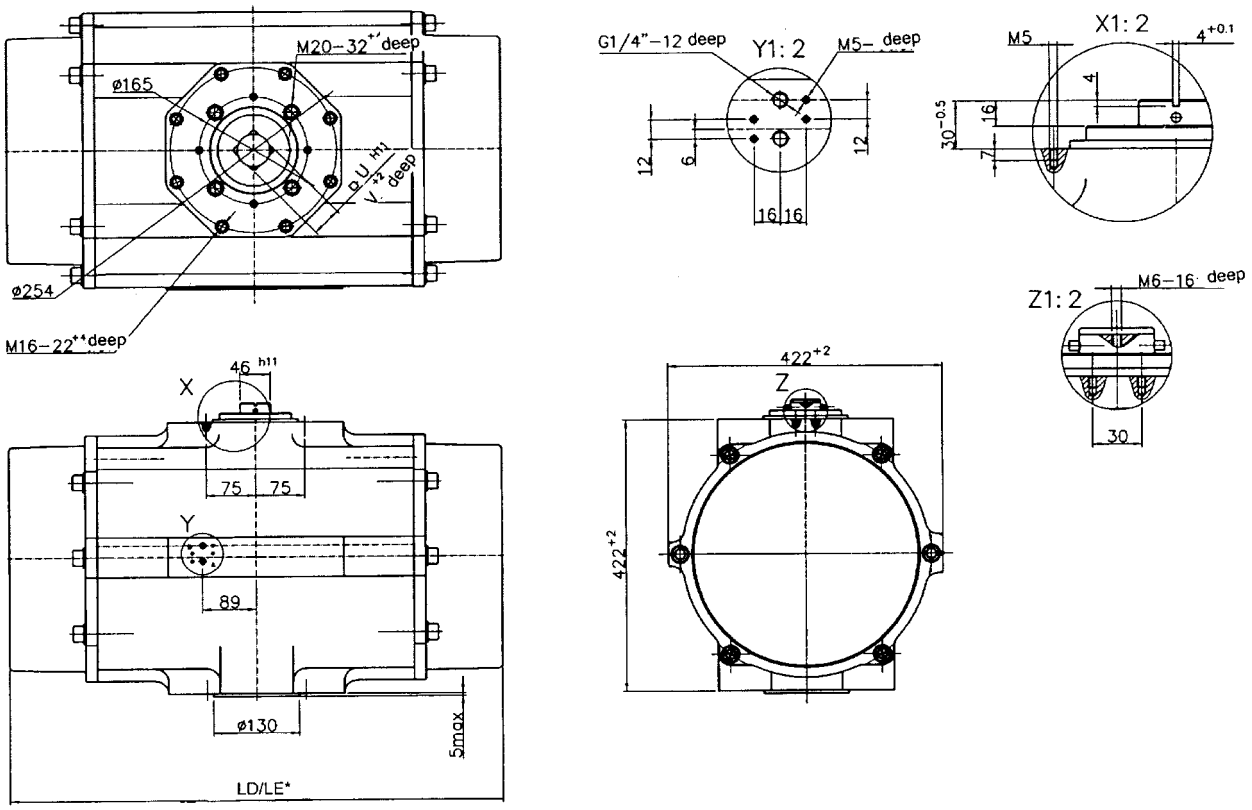
Actuations principle:	Rack and Pinion
Allowable pressures:	
Working pressure:	2 to 10 bar
Tightness test:	1.1 x max. nominal pressure
Cycle Time:	$t_{open < 4.0 sec.}$, with solenoid valve K_v=1.2 [m³/ h],at 6 bar air supply pressure
	$t_{close < 4.0 sec.}$, with solenoid valve K_v=1.2 [m³/ h],at 6 bar air supply pressure
Travel:	90° standard, other options upon request
Air Consumption:	theoretical 11.5 N l/h at 1 bar per cycle 0° - 90°
Life span:	1 Mio. cycles at 6 bar working pressure, 20°C ambient temperature acc. VDI/VDE 3844
Ambient Temperature:	-20 to + 80° C (standard)
Installation Position:	random
Medium:	air and all non-aggressive gases

	Air Supply Pressure [bar]						
	2	**3**	**4**	**5**	**6**	**7**	**8**
Torques (Nm)	1919 Nm	2879 Nm	3839 Nm	4799 Nm	5758 Nm	6718 Nm	7677 Nm

Figures for spring-torques and corresponding air-torques => see page 23/24

XOMOX®

Size 960



Dimensions (mm) and Weights

Sizes	LD*	LE*	U	V	Weight (kg)
960-F16 (V46)	533	754	46	48	123
960-16F/25 (R70)	533	754	-	112	123
960-F25 (V55)	533	754	55	57	123
960-F25 (R75)	533	754	-	122	123

* LD – double acting
LE – single acting

Torques (Nm)

Torques figures valid for range 0-90° only.

Double-acting Actuators

Size	Air Supply Pressure in bar					
	2	3	4	5	6	7
960	1919	2879	3839	4799	5758	6718

Single-acting Actuators

	Air Supply Pressure in bar											
	2.5 – 2.9		3.0 – 3.9		4.0 – 4.9		5.0 – 5.9		6.0 – 6.9		7.0 – 10	
	Nm	Springs	Nm	Springs	Nm	Springs	Nm	Springs	Nm	Springs	Nm	Springs
960	632	6	983	9	1264	12	1580	15	1896	18	1896	18

Single-acting Actuators: RS = spring close, RA = spring open

Connection Sizes

Connection sizes according to DIN/ISO 5211 and square hole according to DIN 3337

Connection Square hole Sizes	Torque[1)] (Nm)	F04 V11	F05 V14	F07 V17	F10 V22	F12 V27	F14 V36	F14 Ø45	F16 V46	F16 Ø70	F25 V55	F25 Ø70	F25 Ø75	F25 Ø85	F30 V75
950-16	4000														
960-A2	4000														
960-A3	8000														
960-25*	8000														
960-A4	8000														

* Standard

1) Maximum torques for corresponding connection size according to ISO 5211

XOMOX®

Size H15

1. Design Features

Body Material:	Aluminium anodized acc. DIN 17611 (E6), calibrated
End Caps:	Aluminium anodized end caps RAL 9005 (black), min. 60µm
End Cap Version:	air end caps
End Cap Screws:	material and strength acc. A2 70, DIN 912
Weight:	Double-acting: 151 kg; single-acting (10 springs): 167 kg
Air Connection:	G ¼"
Shaft:	blow-out-proof, pressure-balanced, one piece
Rotation:	clockwise => double acting and spring to close
	anti-clockwise => double acting and spring to open
Lubrication:	permanent greasing
Piston Support:	PTFE guiding tapes
Interfaces:	
Actuator/valve:	F25/F30*; flange acc. to DIN 5211 with female square acc. DIN 3337
Solenoid valve:	VDI/VDE 3845 (Namur)
Limit switches, positioner:	VDI/VDE 3845 (Namur)
Position indicator:	red plastic indicator
Production:	acc. DIN EN ISO 9001

* other options upon request

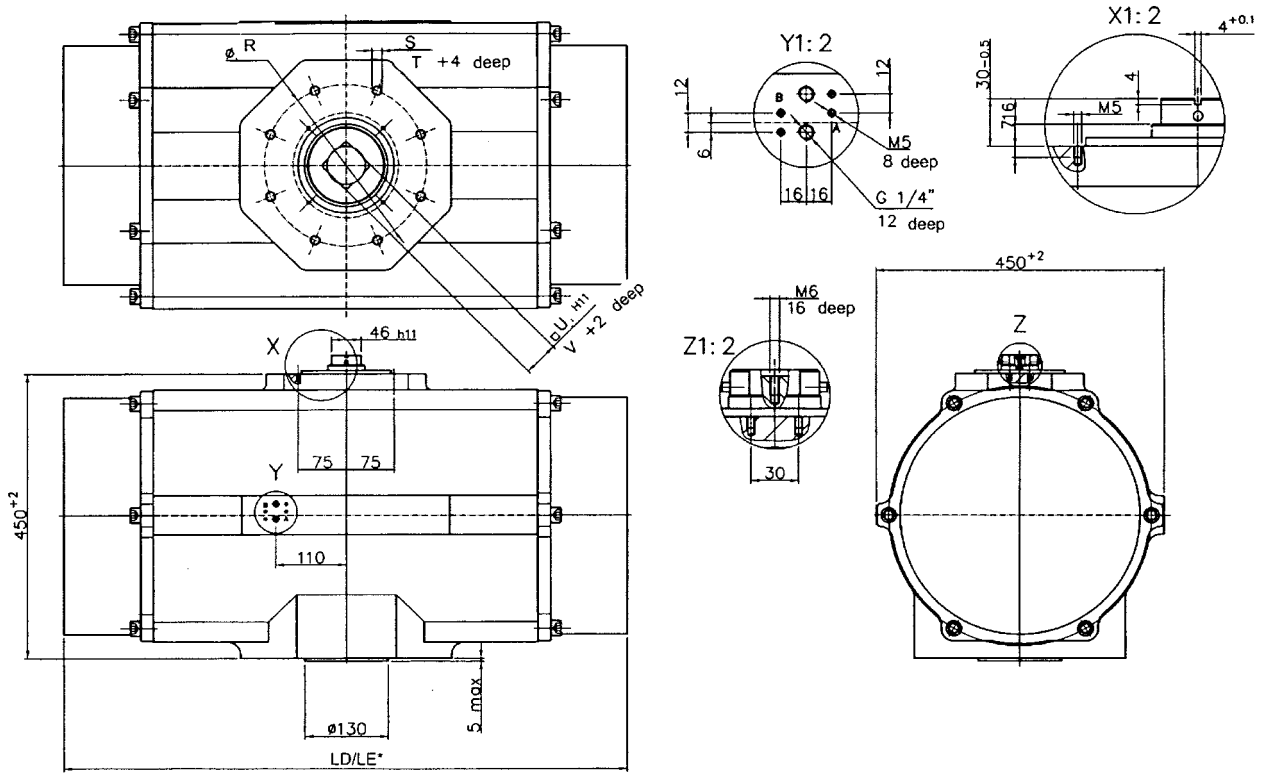
2. Technical Data

Actuations principle:	Rack and Pinion
Allowable pressures:	
Working pressure:	2 to 10 bar
Tightness test:	1.1 x max. nominal pressure
Cycle Time:	$t_{open < 6.5 sec.}$, with solenoid valve K_v=1.2 [m³/ h],at 6 bar air supply pressure
	$t_{close < 6.5 sec.}$, with solenoid valve K_v=1.2 [m³/ h],at 6 bar air supply pressure
Travel:	90° standard, other options upon request
Air Consumption:	theoretical 16 N l/h at 1 bar per cycle 0° - 90°
Life span:	1 Mio. cycles at 6 bar working pressure, 20°C ambient temperature acc. VDI/VDE 3844
Ambient Temperature:	-20 to + 80° C (standard)
Installation Position:	random
Medium:	air and all non-aggressive gases

	Air Supply Pressure [bar]						
	2	**3**	**4**	**5**	**6**	**7**	**8**
Torques (Nm)	2938 Nm	4407 Nm	5876 Nm	7345 Nm	8814 Nm	10283 Nm	11752 Nm

Figures for spring-torques and corresponding air-torques => see page 26/27

Size H15



* LD – double acting
LE – single acting

Dimensions (mm) and Weights

Size-connection	LD*	LE*	R	S	T	U	V	Weight (kg)
H15-F25 (V55)	669	879	254	M16	25	55	57	156
H15-F30 (R75)	669	879	298	M20	32	75	77	156
H15-F25 (R70)	669	879	254	M16	25	-	112	156
H15-F25 (R75)	669	879	254	M16	25	-	117	156
H15-V25 (R85)	669	879	254	M16	25	-	117	156

XOMOX®

Torques (Nm)

Torque figures valid for range 0-90° only.

Double-acting Actuators

Size	Air Supply Pressure in bar					
	2	3	4	5	6	7
H15	2938	4407	5876	7345	8814	10283

Single-acting Actuators

Size	Air Supply Pressure in bar											
	2.5 – 2.9		3.0 – 3.9		4.0 – 4.9		5.0 – 5.9		6.0 – 6.9		7.0 - 10	
	Nm	Springs	Nm	Springs	Nm	Springs	Nm	Springs	Nm	Springs	Nm	Springs
H15	979	4	1468	6	1958	8	2447	10	2937	12	3431	14

Single-acting Actuators: RS = spring close, RA = spring open

Connection Sizes

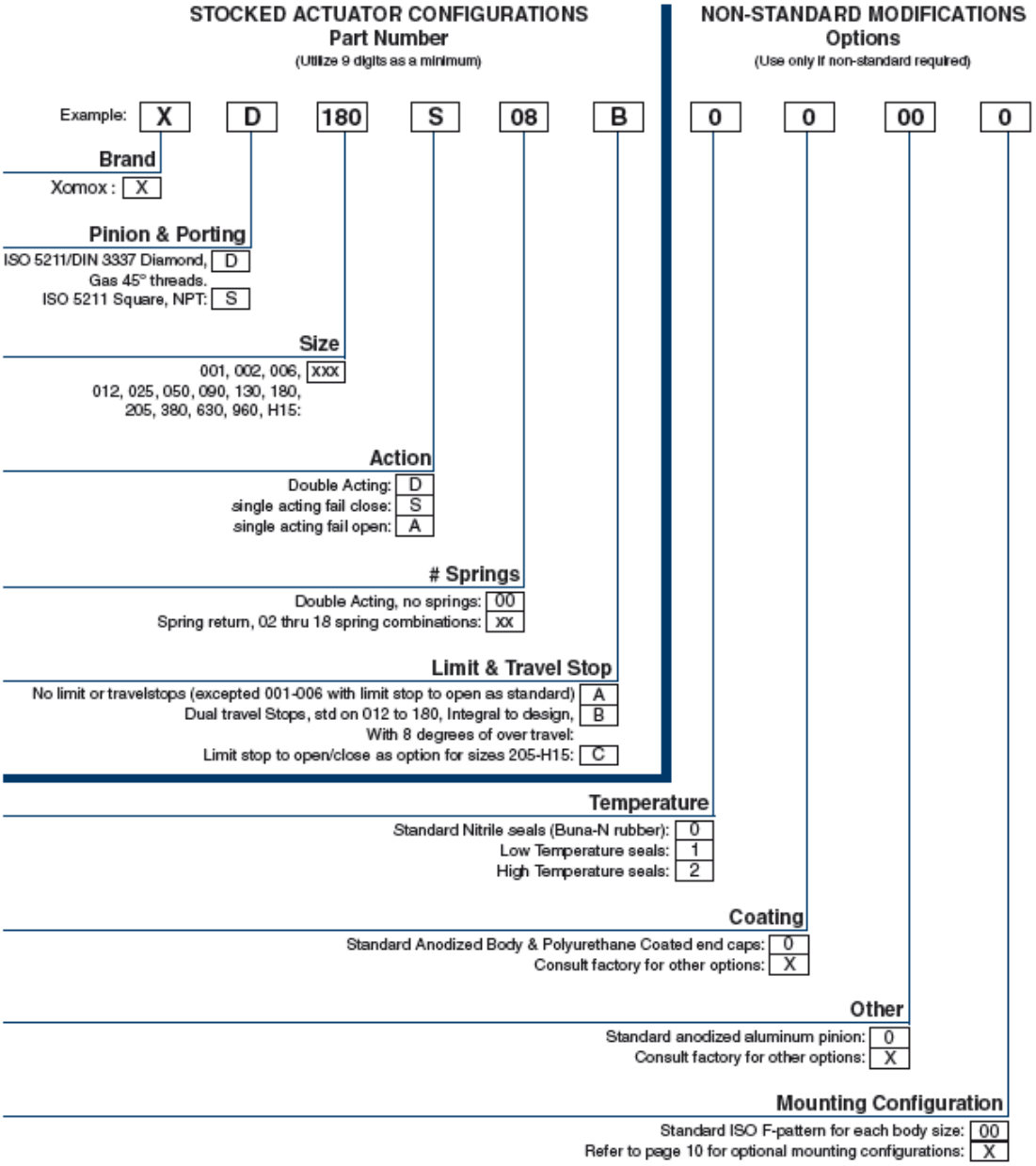
Connection sizes according to DIN/ISO 5211 and square hole according to DIN 3337

Connection Square hole Sizes	Torque Nm[1)]	F04 V11	F05 V14	F07 V17	F10 V22	F12 V27	F14 V36	F14 Ø45	F16 V46	F16 Ø70	F25 V55	F25 Ø70	F25 Ø75	F25 Ø80	F30 V75
H15-25*	4000														
H15-30	4000														
H16-A3	8000														
H15-A4	8000														
H15-A5	8000														

* Standard
1) Maximum torques for corresponding connection size according to ISO 5211

Due to constant product improvements, all technical details are correct at the time of issue, but may be subject to change without prior notice.

HOW TO SPECIFY
PART NUMBER



Other Design Options:
- 180° actuators
- Limit stops On/Off
- Overtravel ± 4°
- Hand emergency operation
- Hydraulically damping