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Booked in the Enterprise Register of: Brescia number 1661640175
Share capital completely deposited: € 500.000,00

Pneumatic actuators

Aluminium double acting "DA" pneumatic actuator

features
features & benefits
output torque
codes, dimensions and materials

Features

TECHNICAL FEATURES

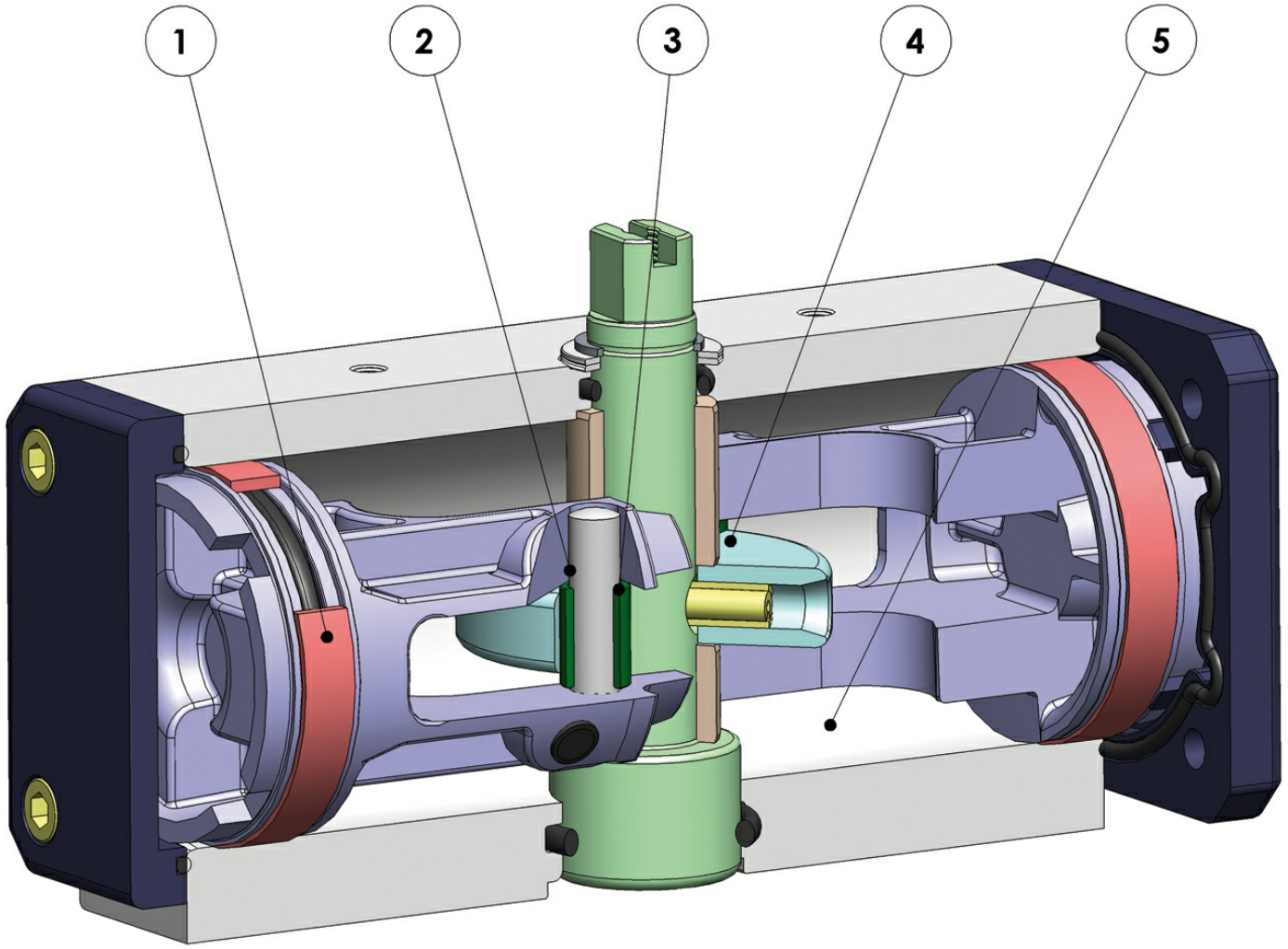
Torque from 8 Nm to 3840 Nm.
Mounting flange according to DIN/ISO 5211 DIN 3337
F03 - F04 - F05 - F07 - F10 - F12 - F14 - F16.
NAMUR connection for accessories.
Rotation angle 90°
Torque: directly proportional to the air supply (see table).
The code numbers after the DA letters, always correspond to the breakaway torque in Nm by 5,6 bar air supply.

WORKING CONDITION

Temperature: from 0°C to +80°C; from -20°C to +80°C with dry air only. (+150°C in special execution)
Air supply: 5,6 bar; maximum 8,4 bar.
Operating media: compressed filtered air, not necessarily lubricated.
In case of lubricated air, either non detergent oil or NBR compatible oil, must be used.

Features & benefits

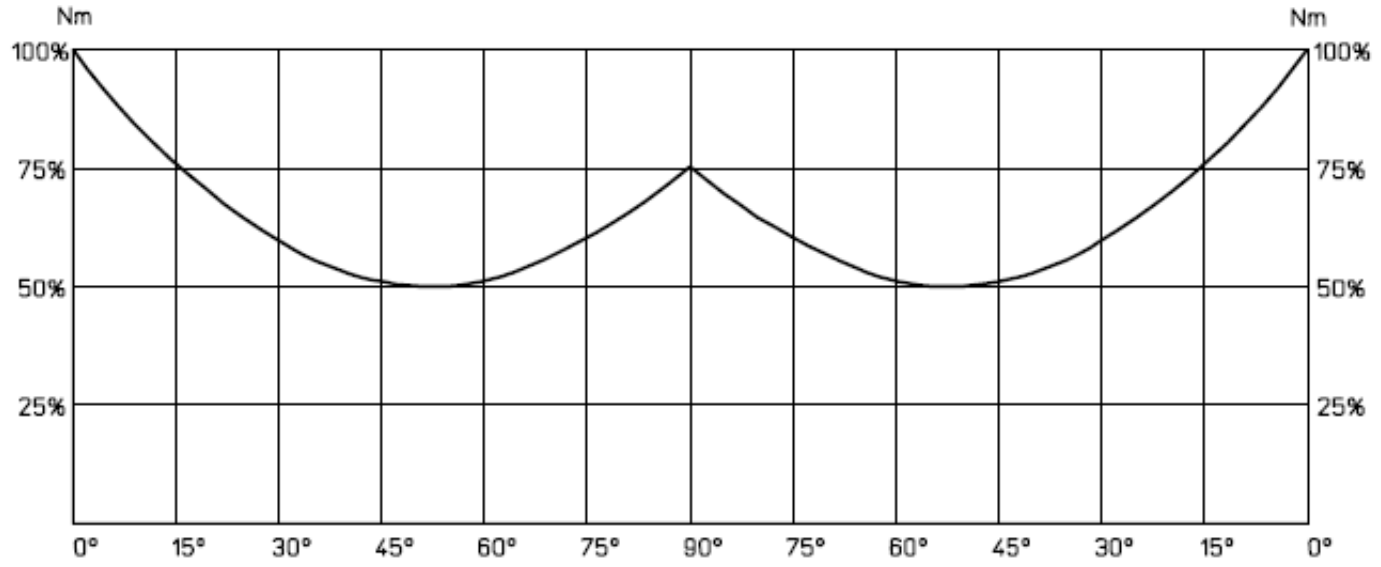
"The image may not be representative of the product".



FEATURES AND BENEFITS		
1	Energized and self-lubricated strips	Less friction between piston and cylinder
		It prevents the bonding of the seal to the cylinder even after long periods of inactivity
2	Slots, bushes and pins made by steel with hardness higher than 50 HRC	Higher resistance to the forces inside the actuator
3	Rolling friction between piston and slot	Less friction
4	Scotch yoke with rolling friction (transforming rotary motion into linear motion using piston and shaft without teeths/gears)	Reduced friction between piston and shaft with consequently less wear on the relevant parts
		Empowered Break Away Torque (BTO & BTC)
		Smaller volume/size than rack and pinion actuators (with the same torque) therefore less space required for installation
		Less weight than the rack and pinion (-30% kg / Nm), with consequent savings on the construction sizing of the plant/equipment

		Lower air consumption compared to the rack and pinion (-40% air cm3/Nm for Double Acting and -20% air cm3/Nm for Spring Return) therefore less load on the compressor or the possibility of using a smaller compressor's size.
5	Rolled cylinder	Less wear of the energized ties thanks to the low roughness of the surface (0.15 micron Ra)
	100% in- house manufacturing process technology	Maximum control and accuracy in all the stages of the manufacturing process
	ATEX Certificate	Installation is allowed in a potential explosive environment
	SIL 3 Certified	Guarantee of the high level of functional safety.

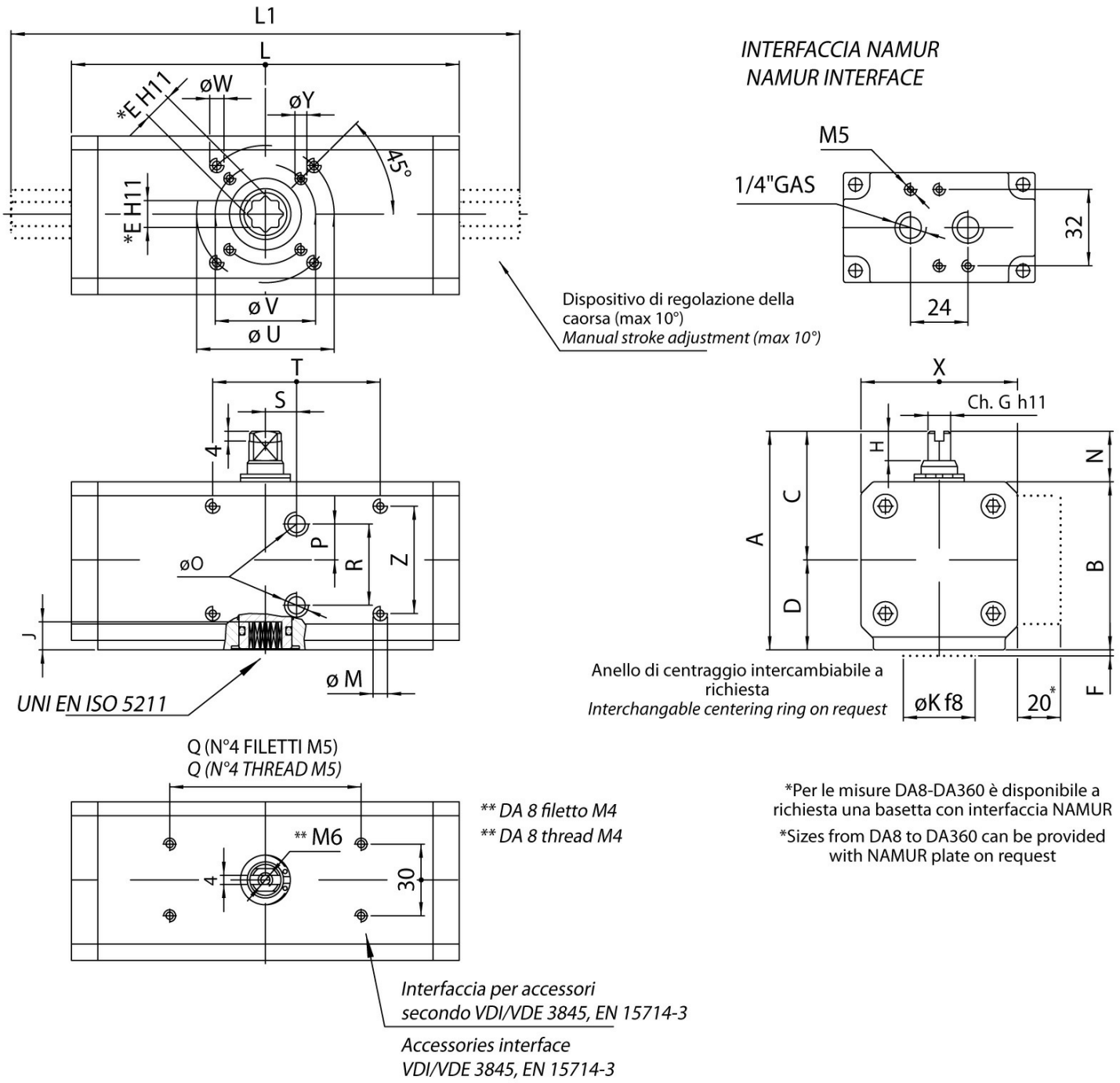
Output torque



OUTPUT TORQUE TABLE (Nm) α ° = rotation angle								
SIZE	α °	3 bar	4 bar	5 bar	5,6 bar	6 bar	7 bar	8 bar
DA 8	0°	4,3	5,7	7,1	8,0	8,6	10,0	11,4
	45°	2,1	2,8	3,6	4,0	4,3	5,0	5,7
	90°	4,3	5,7	7,1	8,0	8,6	10,0	11,4
DA 15	0°	8,0	10,7	13,4	15,0	16,1	18,8	21,4
	50°	4,0	5,4	6,7	7,5	8,0	9,4	10,7
	90°	6,0	8,1	10,1	11,3	12,1	14,1	16,1
DA 30	0°	16,1	21,4	26,8	30,0	32,1	37,5	42,9
	50°	8,0	10,7	13,4	15,0	16,1	18,8	21,4
	90°	12,0	16,1	20,1	22,5	24,1	28,1	32,1
DA 45	0°	24,0	32,1	40,2	45,0	48,3	56,4	64,2
	50°	12,0	16,2	20,1	22,5	24,0	28,2	32,1
	90°	18,0	24,3	30,3	34,0	36,3	42,3	48,3
DA 60	0°	32,1	42,9	53,6	60,0	64,3	75,0	85,7
	50°	16,1	21,4	26,8	30,0	32,1	37,5	42,9
	90°	24,1	32,1	40,2	45,0	48,2	56,3	64,3
DA 90	0°	48,0	64,2	80,4	90,0	96,6	112,8	128,4
	50°	24,0	32,4	40,2	45,0	48,0	56,4	64,2
	90°	36,0	48,6	60,6	68,0	72,6	84,6	96,6
DA 120	0°	64,3	85,7	107,1	120,0	128,6	150,0	171,4
	50°	32,1	42,9	53,6	60,0	64,3	75,0	85,7
	90°	48,2	64,3	80,4	90,0	96,4	112,5	128,6
DA 180	0°	96,0	128,4	160,8	180,0	193,2	225,6	264,8
	50°	48,0	64,8	80,4	90,0	96,0	112,8	128,4

	90°	72,0	97,2	121,2	135,0	145,2	169,2	193,2
DA 240	0°	128,6	171,4	214,3	240,0	257,1	300,0	342,9
	50°	64,3	85,7	107,1	120,0	128,6	150,0	171,4
	90°	96,4	128,6	160,7	180,0	192,9	225,0	257,1
DA 360	0°	192,0	256,8	321,6	360,0	386,4	451,2	513,6
	50°	96,0	129,6	160,8	180,0	192,0	225,6	264,8
	90°	144,0	194,4	242,4	270,0	290,4	338,4	386,4
DA 480	0°	257,1	342,9	428,6	480,0	514,3	600,0	685,7
	50°	128,6	171,4	214,3	240,0	257,1	300,0	342,9
	90°	192,9	257,1	321,4	360,0	385,7	450,0	514,3
DA 720	0°	384,0	513,6	643,2	720,0	772,8	902,4	1027,2
	50°	192,0	259,2	321,6	360,0	384,0	451,2	529,6
	90°	288,0	388,8	484,8	540,0	580,8	676,8	772,8
DA 960	0°	514,3	685,7	857,1	960,0	1028,6	1200,0	1371,4
	50°	257,1	342,9	428,6	480,0	514,3	600,0	685,7
	90°	385,7	514,3	642,9	720,0	771,4	900,0	1028,6
DAN 1440	0°	768,0	1027,2	1286,4	1440,0	1545,6	1804,8	2057,4
	50°	384,0	518,4	643,2	720,0	768,0	902,4	1059,2
	90°	576,0	777,6	969,9	1080,0	1161,6	1353,6	1545,6
DAN 1920	0°	1028,6	1371,4	1714,3	1920,0	2057,1	2400,0	2742,9
	50°	514,3	685,8	857,1	960,0	1028,6	1200,0	1371,4
	90°	771,4	1028,6	1285,7	1440,0	1542,9	1800,0	2057,1
DA 2880	0°	1543	2057	2571,4	2880	3085,7	3600	4114,3
	50°	771,4	1028,6	1285,7	1440	1543	1800	2057,1
	90°	1157	1543	1928,6	2160	2314,3	2700	3085,7
DA 3840	0°	2050	2840	3425	3840,0	4110	4880,0	5485
	50°	1025	1370	1710	1920,0	2055	2400,0	2740
	90°	1540	2055	2570	2880,0	3085	3600,0	4014
DA 5760	0°	3085,7	4114,3	5143	5760	6171,4	7200	8228,6
	50°	1542,9	2057	2571,4	2880	3085,7	3600	4114,3
	90°	2314,3	3085,7	3857,1	4320	4628,6	5400	6171,4
DA 8000	0°	4285,7	5714,3	7142,9	8000	8571,4	10000	
	50°	2142,9	2857,1	3571,4	4000	4285,7	5000	
	90°	3214,3	4285,7	5357,1	6000	6428,6	7500	

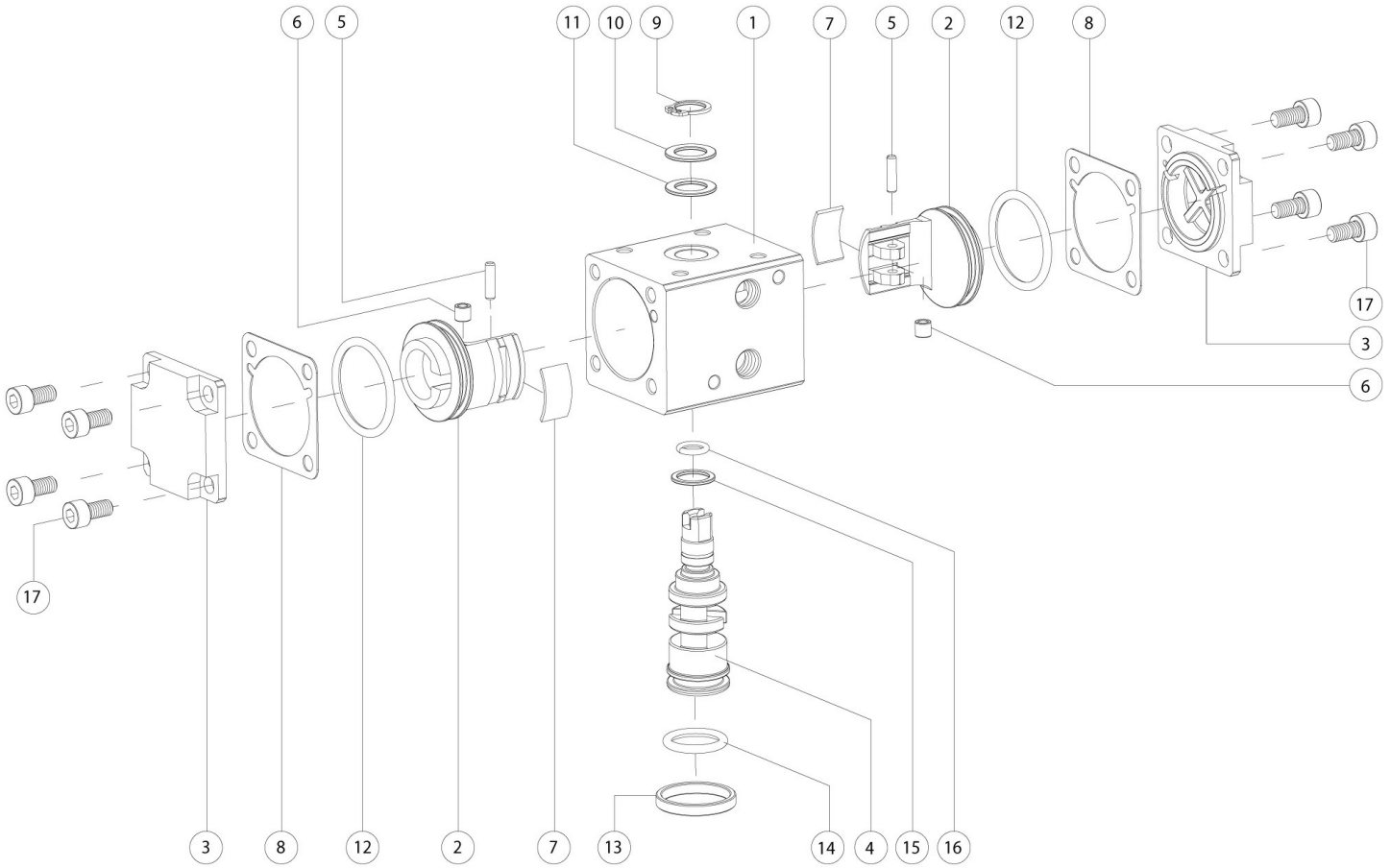
Codes, dimensions and materials – DA8



DIMENSION TABLE

code	DA008401S
code adj. 10°	---
Spare seals	KGDI0010
size	**DA 8F03**
L mm.	70
L1 mm.	---
A mm.	57,7
B mm.	42,7
X mm.	43,2
C mm.	35

D mm.	22,7
E mm.	9
J mm.	9,5
G mm.	8
H mm.	8
N mm.	15
øM x depth. mm.	M 5x5
øO thread GAS	1/8"
P mm.	11,5
Q mm.	30
R mm.	23
S mm.	5
T mm.	25
øU mm.	---
øV mm.	36
øK mm.	25
F mm.	2
øY x depth. mm.	M 5x8
øW x depth. mm.	---
Z mm.	30
air dm^3/cycle	0,034
weight Kg.	0,29

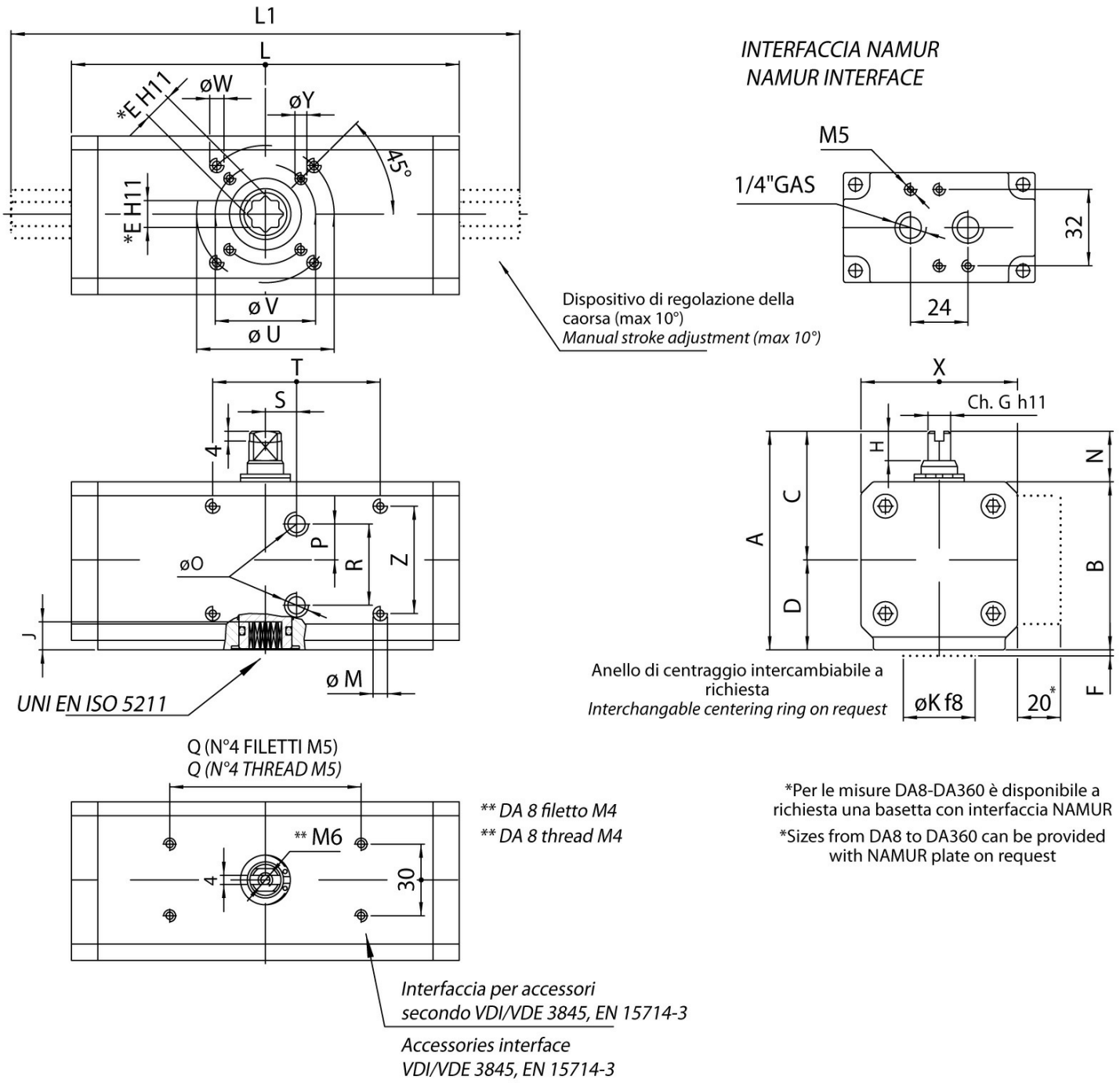


MATERIALS SPECIFICATION

Pos	Denomination	Q.TA' Q.ty	Material
1	Cylinder	1	Aluminium alloy
2	Piston	2	Aluminium alloy
3	Cap DA	2	Aluminium alloy
4	Shaft	1	Steel alloy
5	Sleeve	2	Steel alloy
6	Bush	2	Steel alloy
7*	Support band	2	Acetalic resins
8*	O-ring	2	NBR
9	Seeger	1	Stainless steel
10	Washer	1	Stainless steel
11*	Ext. support ring	1	Acetalic resins
12*	O-ring	2	NBR
13	Center ring F03	1	Alluminium alloy
14*	O-ring	1	FKM
15*	Int.support ring	1	Acetalic resins
16*	O-ring	1	FKM
17	Screw	8	Stainless steel

*Components of spare part kit

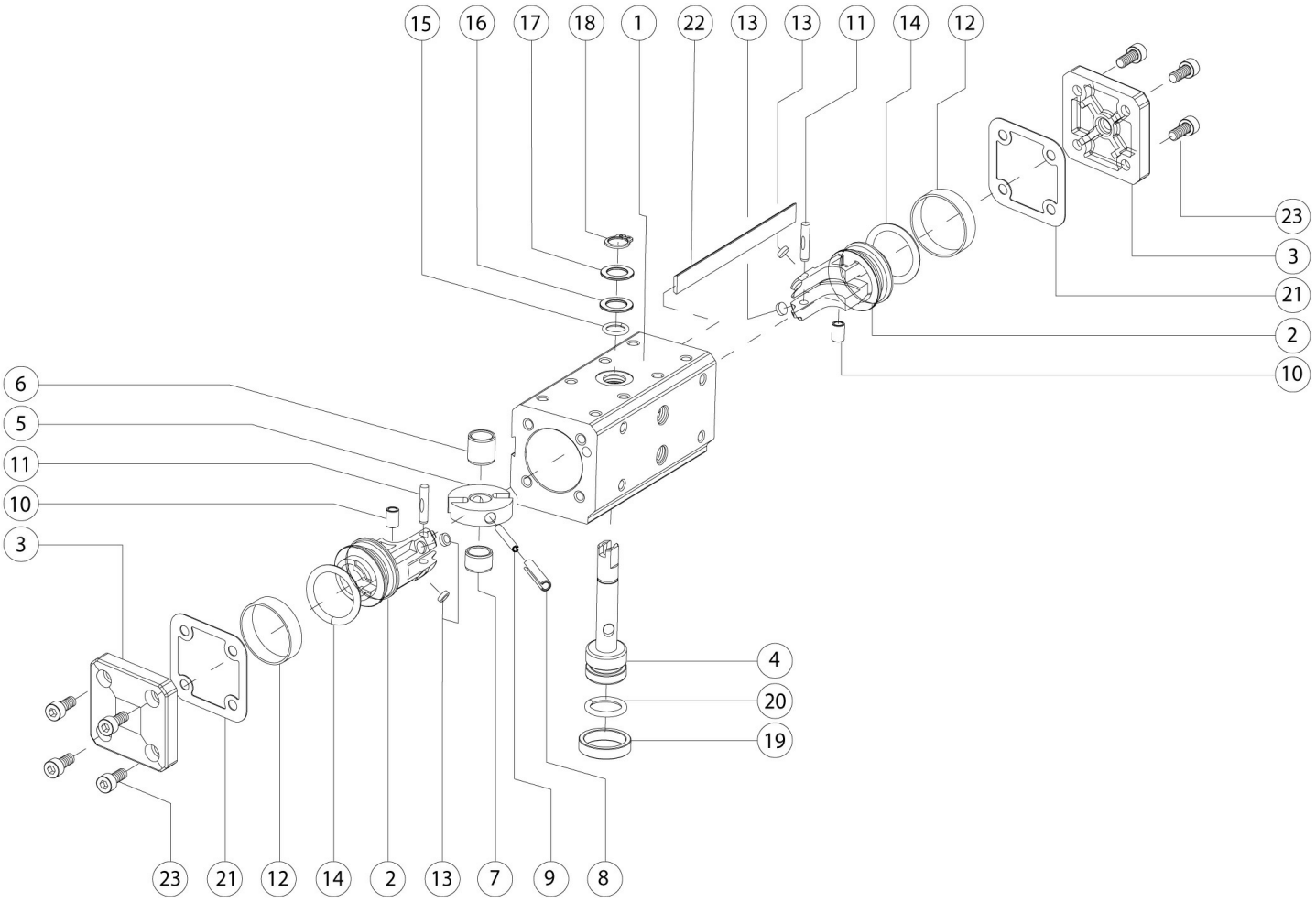
Codes, dimensions and materials – DA15



DIMENSION TABLE

code	DA015401S
code adj. 10°	DA015411S
Spare seals	KGDI0012
size	**DA 15** **F03**
L mm.	115
L1 mm.	160
A mm.	72,4
B mm.	52
X mm.	48

C mm.	44,2
D mm.	28,2
E mm.	9
J mm.	10,2
G mm.	8
H mm.	10
N mm.	20
øM x depth. mm.	M 5x10
øO thread GAS	1/8"
P mm.	9
Q mm.	80
R mm.	20,5
S mm.	6
T mm.	70
øU mm.	---
øV mm.	36
øK mm.	25
F mm.	2
øY x depth. mm.	M 5x9
øW x depth. mm.	---
Z mm.	30
air dm^3/cycle	0,079
weight Kg.	0,73



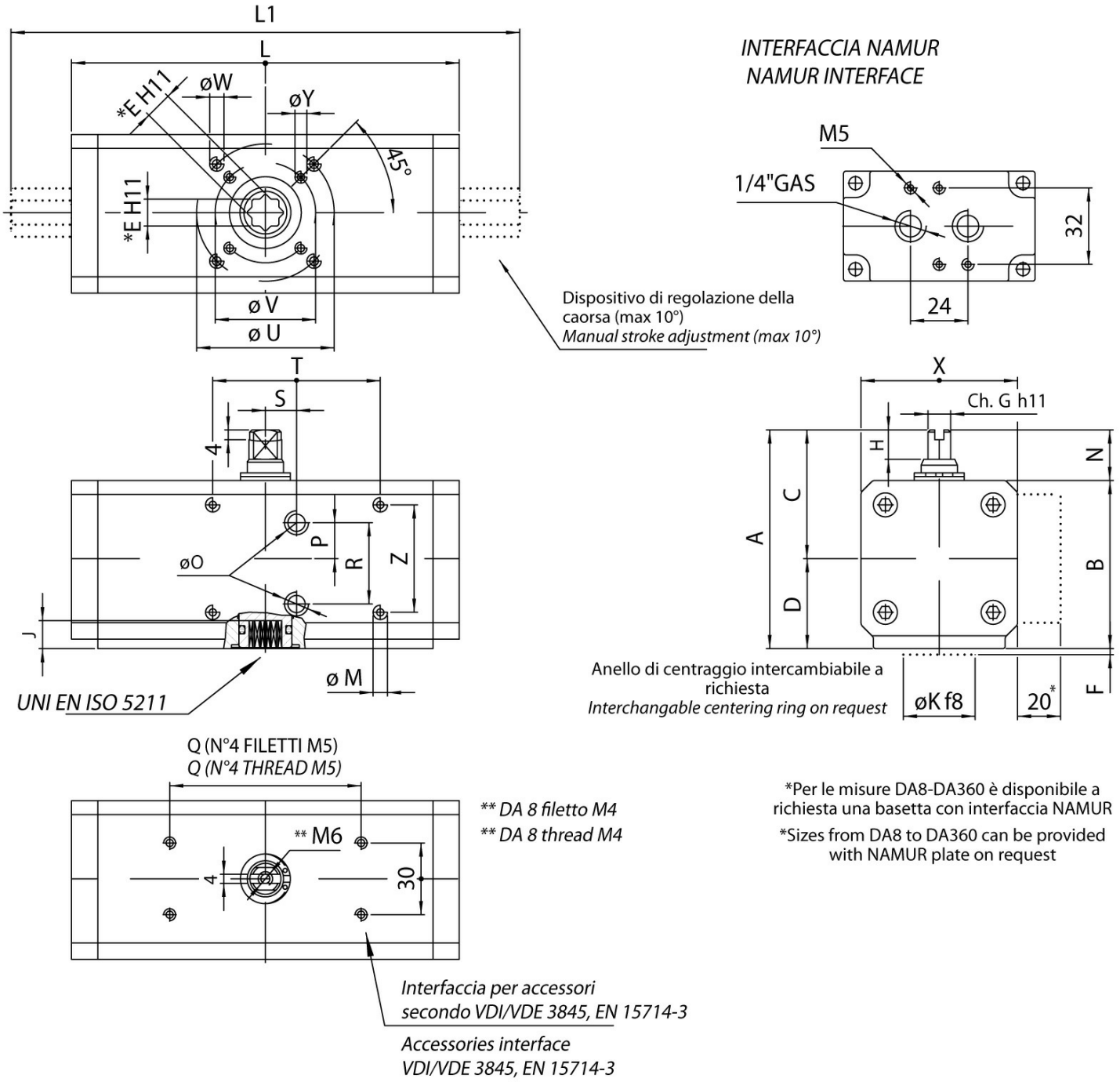
MATERIALS SPECIFICATION

Pos	Denomination	Q.ty	Material
1	Cylinder	1	Aluminium alloy
2	Piston	2	Aluminium alloy
3	Cap DA	2	Aluminium alloy
4	Shaft	1	Stainless steel
5	Scotch yoke	1	Steel alloy
6	Bush	1	Acetalic resins
7	Bush	1	Acetalic resins
8	Ext. elastic pin	1	Steel alloy
9	Int. elastic pin	1	Steel alloy
10	Bush	2	Steel alloy
11	Sleeve	2	Steel alloy
12*	Dynamic seal	2	Polyurethan
13*	suppoert disk	4	Carbo-graphite filled PTFE
14*	O-ring	2	NBR
15*	O-ring	1	Viton
16*	Ext. support ring	1	Acetalic resins
17	Washer	1	Stainless steel
18	Seeger	1	Stainless steel
19	Center ring F03	1	Aluminium alloy

20*	O-ring	1	Viton
21*	Gasket	2	AFM-38
22	Plate	1	Aluminium
23	Screw	8	Stainless steel

*Components of spare part kit

Codes, dimensions and materials – DA30 – DA360



*Per le misure DA8-DA360 è disponibile a richiesta una basetta con interfaccia NAMUR

*Sizes from DA8 to DA360 can be provided with NAMUR plate on request

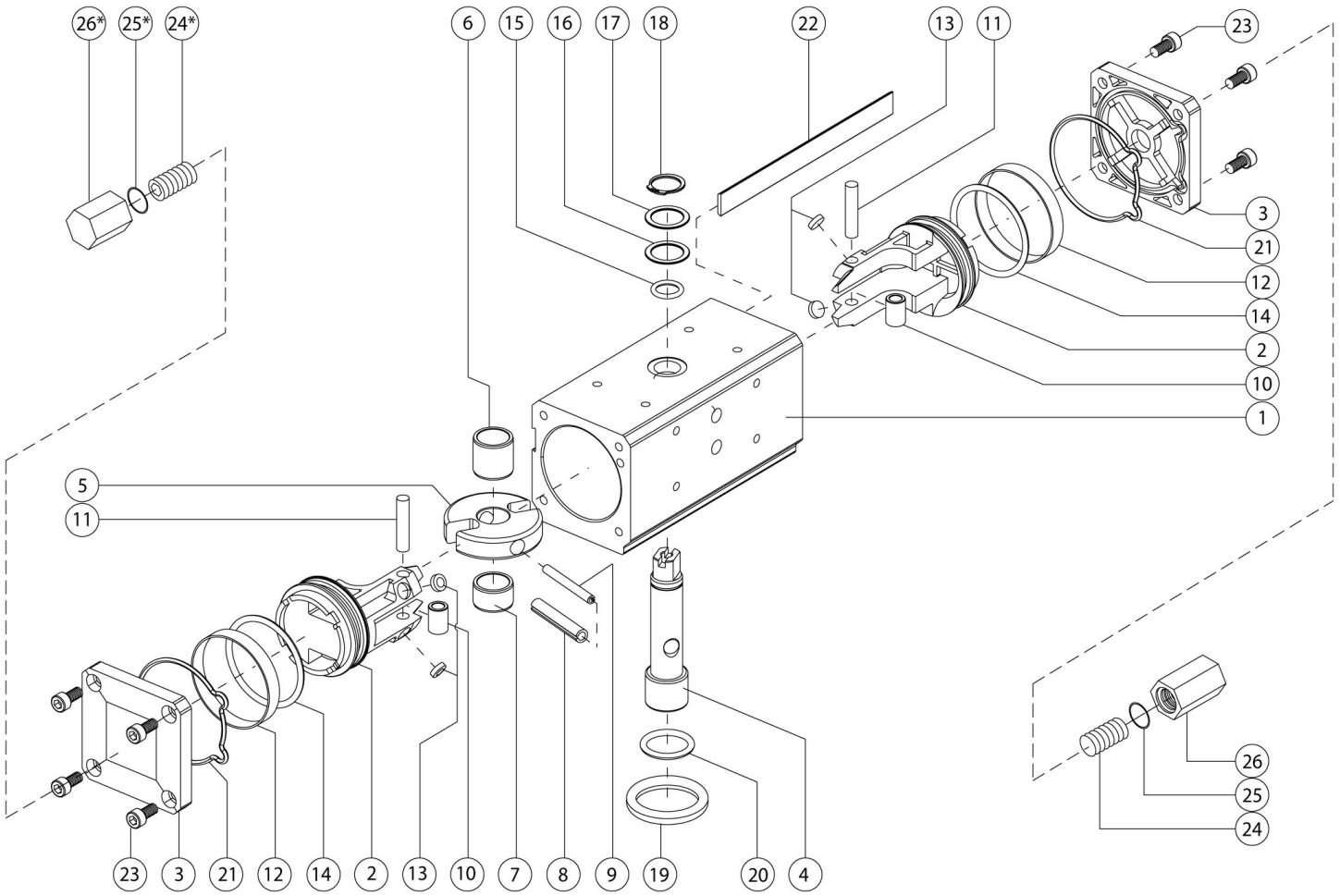
DIMENSION TABLE

code	DA030401S	DA045401S	DA045402S	DA060401S	DA060402S
code adj. 10°	DA030411S	DA045411S	DA045412S	DA060411S	DA060412S
Spare seals	KGDI0014	KGDI0015	KGDI0015	KGDI0016	KGDI0016
size	**DA 30 F03 - F05**	**DA 45 F04**	**DA 45 F03 - F05**	**DA 60 F04**	**DA 60 F03 - F05**
L mm.	130	144	144	152	152
L1 mm.	168	182	182	190	190
A mm.	80,4	85,7	85,7	90,4	90,4
B mm.	60	65,7	65,7	70	70
X mm.	55	60	60	65	65

C mm.	47,5	50	50	52,5	52,5
D mm.	32,7	35,7	35,7	37,7	37,7
E mm.	9	11	11	11	11
J mm.	10,2	12,2	12,2	12,2	12,2
G mm.	9	10	10	10	10
H mm.	10	13	13	13	13
N mm.	20	20	20	20	20
øM x depth. mm.	M 5x6	M 5x6	M 5x6	M 5x6	M 5x6
øO thread GAS	1/8"	1/8"	1/8"	1/8"	1/8"
P mm.	12	12,5	12,5	17,9	17,9
Q mm.	80	80	80	80	80
R mm.	25	25	25	20,5	20,5
S mm.	0	0	0	0	0
T mm.	70	70	70	70	70
øU mm.	50	---	50	---	50
øV mm.	36	42	36	42	36
øK mm.	25-35	30	25-35	30	25-35
F mm.	2	2	2	2	2
øY x depth. mm.	M 5x9	M 5x9	M 5x9	M 5x9	M 5x9
øW x depth. mm.	M 6x11	---	M 6x11	---	M 6x11
Z mm.	36	36	36	36	36
air dm^3/cycle	0,148	0,219	0,219	0,28	0,28
weight Kg.	1	1,25	1,25	1,56	1,56

code	DA090401S	DA120401S	DA180401S	DA240401S	DA360401S
code adj. 10°	DA090411S	DA120411S	DA180411S	DA240411S	DA360411S
Spare seals	KGDI0017	KGDI0018	KGDI0019	KGDI0020	KGDI0021
size	**DA 90 F05 - F07**	**DA 120 F05 - F07**	**DA 180 F05 - F07**	**DA 240 F05 - F07**	**DA 360 F07 - F10**
L mm.	169	184	212	242	264
L1 mm.	225	240	268	314	336
A mm.	97,5	116,4	126	136,4	148
B mm.	77,5	86	96	106	118
X mm.	75	80	90	100	112
C mm.	56,5	70	75	80	86
D mm.	41,5	46,4	51	56,4	62
E mm.	14	14	17	17	22
J mm.	16,3	16,3	19,3	19,3	24,3
G mm.	12	12	15	15	19
H mm.	13	13	16	17	19

N mm.	20	30	30	30	30
øM x depth. mm.	M 5x6	M 5x6	M 5x6	M 5x6	M 5x6
øO thread GAS	1/8"	1/8"	1/8"	1/8"	1/8"
P mm.	17,9	21	21	21	25
Q mm.	80	80	80	80	80
R mm.	20,5	25	25	25	25
S mm.	0	0	0	0	0
T mm.	70	70	70	70	70
øU mm.	70	70	70	70	102
øV mm.	50	50	50	50	70
øK mm.	35-55	35-55	35-55	35-55	55-70
F mm.	3	3	3	3	3
øY x depth. mm.	M 6x11	M 6x11	M 6x11	M 6x11	M 8x15
øW x depth. mm.	M 8x15	M 8x15	M 8x15	M 8x15	M 10x17
Z mm.	36	36	36	36	36
air dm^3/cycle	0,43	0,59	0,87	1,18	1,74
weight Kg.	1,85	2,8	3,4	5,3	7,2

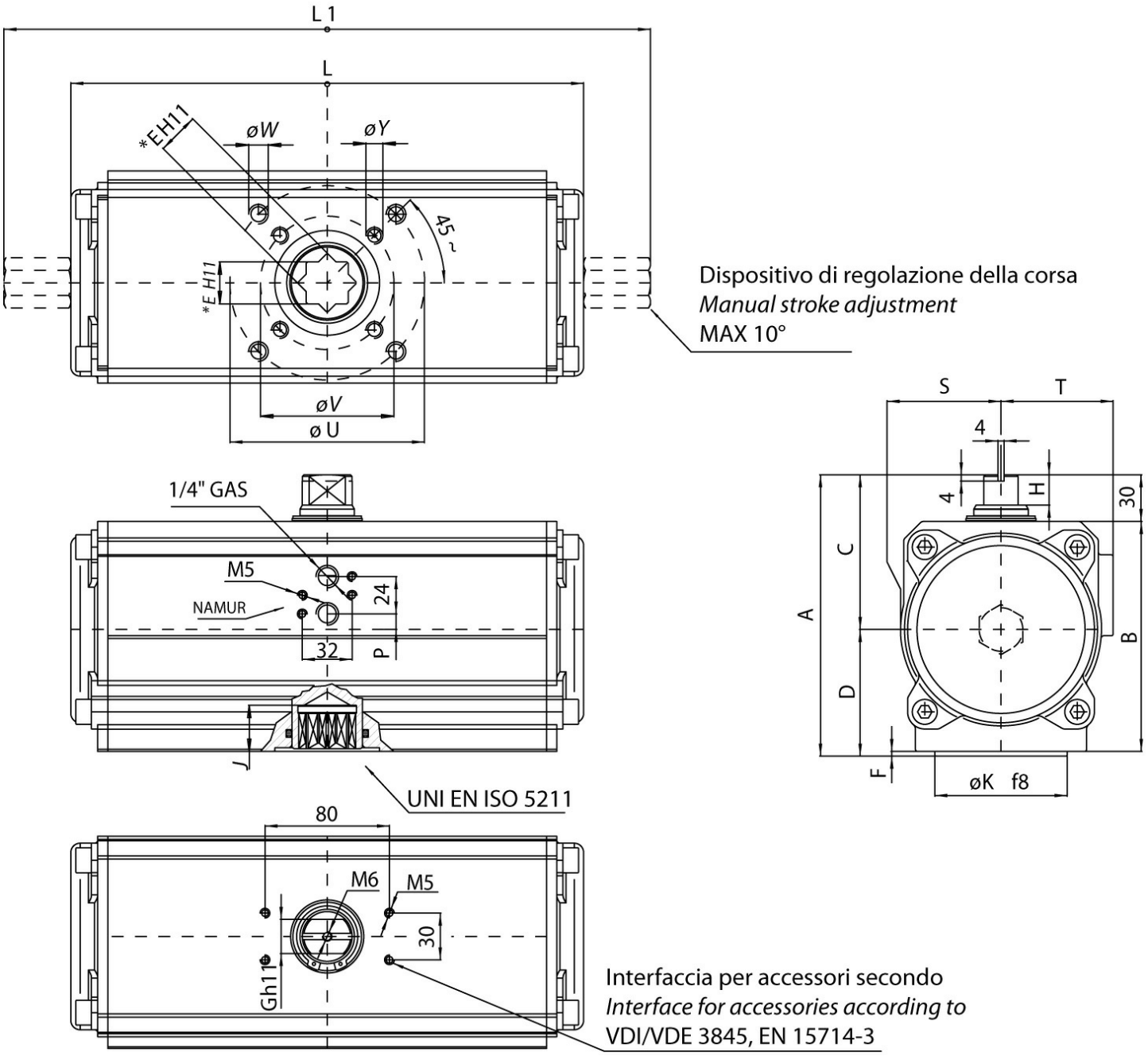


MATERIALS SPECIFICATION

Pos	Denomination	Q.ty	Material
1	Cylinder	1	Aluminium alloy

2	Piston	2	Aluminium alloy
3	Cap DA	2	Aluminium alloy
4	Shaft	1	Stainless steel
5	Scotch yoke	1	Steel alloy
6	Bush	1	Resina acetalica Acetalic resins
7	Bush	1	Resina acetalica Acetalic resins
8	Ext. elastic pin	1	Steel alloy
9	Int. elastic pin	1	Steel alloy
10	Bush	2	Steel alloy
11	Sleeve	2	Steel alloy
12**	Dynamic seal	2	Polyurethan
13**	suppoert disk	4	Carbo-graphite filled PTFE
14**	O-ring	2	NBR
15**	O-ring	1	FKM
16**	Ext.support ring	1	Resina acetalica Acetalic resins
17	Washer	1	Stainless steel
18	Seeger	1	Stainless steel
19	Center ring F03	1	Aluminium alloy
20**	O-ring	1	FKM
21**	O-ring	2	NBR
22	Plate	1	Aluminium
23	Screws	8	Stainless steel
24*	Grub screws	2	Stainless steel
25*	O-ring	2	Gomma nitrilica NBR
26*	Adjusting nut	2	Aluminium alloy
* Actuator with regulation Code: DA___411			

**Components of spare part kit



DIMENSION TABLE

code	DA480401S
code adj.10°	DA480411S
Spare seals	KGDI0022
size	**DA 480 F07-F10**
L mm.	295
L1 mm.	365
A mm.	160
B mm.	130
S mm.	57,7
T mm.	67

MATERIALS SPECIFICATION

Pos	Denomination	Q.TA'	Material
1	Steel bush	2	Steel alloy
2	Steel pin	2	Steel alloy
3	Regulation screw	1	Steel alloy
4	Left stop	1	Steel alloy
5*	O-ring	2	NBR
6	Protection cap	1	Aluminium
7	Antirotation washer	1	Steel alloy
8	Metal ring	1	Stainless steel
9*	O-ring	1	NBR
10	Carter	1	Aluminium
11	Screw	4	Steel alloy
12	Metal ring	1	Stainless steel
13	Right stop	1	Steel alloy
14	Screw	1	Steel alloy
15	Shaft	1	Steel alloy
16	Bearing (shaft bottom)	1	Acetalic resins
17	Interface F25	1	Aluminium
18	Screw	2	Steel alloy
19*	O-ring	1	FKM
20	Bearing shaft	1	Acetalic resins

21	Bearing (piston back)	4	Acetalic resins
22	Spring pin	2	Acciaio Steel alloy
23	Lateral cylinder	2	Aluminium
24*	O-ring	2	NBR
25	Cap	2	Aluminium
26	Cap screws	14	Steel alloy
27	Cap nut	28	Steel alloy
28	Nut	2	Steel alloy
29	Grub screws	2	Steel alloy
30*	O-ring	2	NBR
31*	Bearing (piston head)	2	Acetalic resins
32*	O-ring	2	NBR
33	Piston	2	Aluminium
34	Scotch yoke	1	Steel alloy
35	Bearing shaft	1	Acetalic resins
36*	O-ring	2	NBR
37*	O-ring	18	NBR
38	Body	1	Aluminium
39*	Bearing (shaft top)	1	Acetalic resins
40*	O-ring	1	FKM
41*	Thrust bearing	1	Resina acetalica
42	Washer	1	Steel alloy
43	Seeger	1	Steel alloy
44*	Gasket	1	NBR
45	Washer	1	Steel alloy
46	Seeger	2	Steel alloy
47	Flange	2	Aluminium
48	Screws	14	Steel alloy
49	Grub screw	2	Steel alloy
50	Flange	2	Aluminium
51*	O-ring	2	NBR

*Components of spare part kit