

# 783-4-5-6 Z VALVES WITH AP-RE PNEUMATIC ACTUATOR

## FEATURES

The stainless steel 3-way 783-5+AP-RE (L-port) 7 and 784-6 +AP-RE (T-port) steel and stainless steel ball valves provide the mixing, distribution or automatic discharge functions for pipes with non-loaded industrial fluids. Floating ball construction for DN 25 to 80, and for trunnion ball for DN 100 to 150. The 783-4-5-6 valve is EC- and ATEX-approved. The ISO 5211 mounting pad allows the actuator to be directly assembled. The pneumatic motorisation is available in double and Spring-return with numerous options.

## AVAILABLE MODELS

Ref.	Material	Shape	Function
783	1.0619 carbon steel	L	Distribution
784	1.0619 carbon steel	T	Mixture
785	1.4408 SS	L	Distribution
786	1.4408 SS	T	Mixture

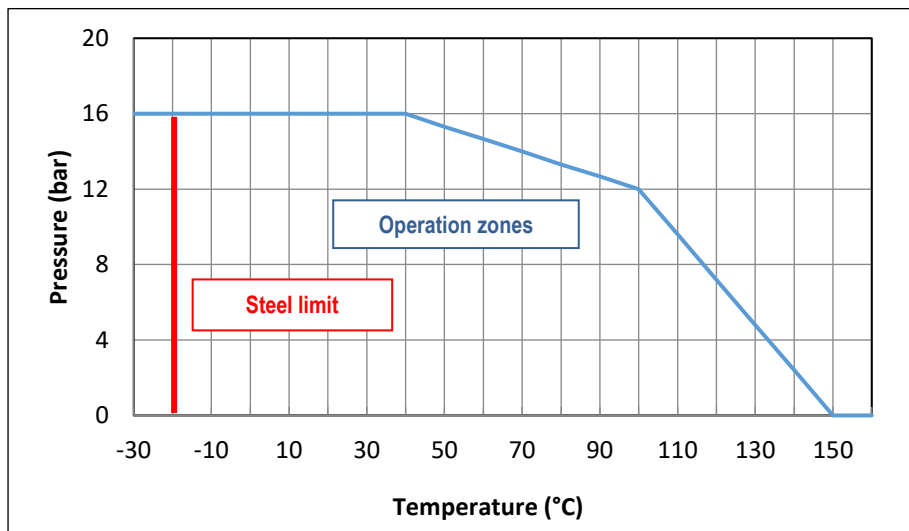
DN 25 to DN 150 diameters.

PN16 RF flange connections.

Double and spring-return actuator.

## LIMITS OF USE

Fluid pressure: PS	16 bar (20°C)
Fluid temperature: WT°	Steel: -20°C / +150°C Stainless steel: -30°C / +150°C
Ambient temperature	-20°C / +80°C
Motor compressed air	mini 6 bar / maxi 10 bar



Information given as an indication only, and subject to possible modifications

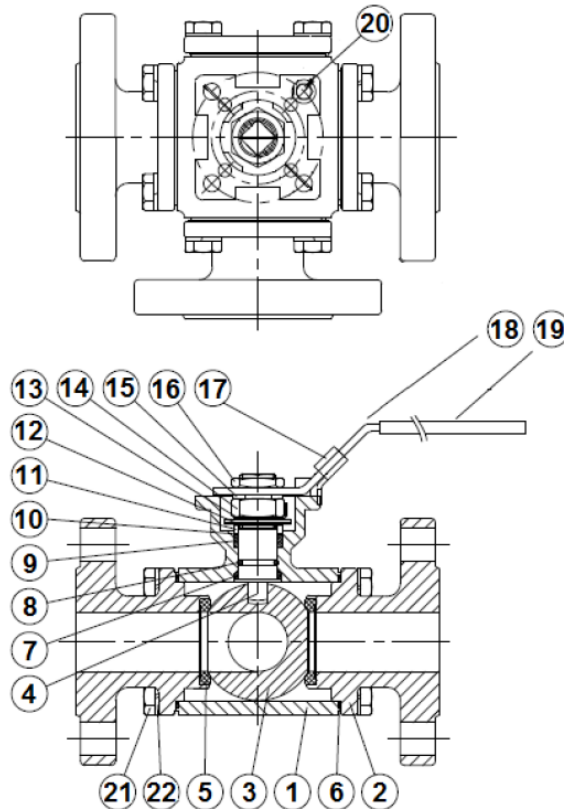
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## DIRECTIVES AND MANUFACTURING STANDARDS

OBJECT	Standard	ON	OBJECT	Standard
Pressure Equipment Directive 2014/68/EC	category II	0035	Material certificate	EN 10204
Size	EN 12516-1		Steel grades	EN 1503-1
Flange dimensions	EN 1092-1		Final test	EN 12266
Connection Motorisation	ISO 5211:		Actuator pilot connection	NAMUR
ATEX Directive	II 2G/D Tx zones 1,2,21 and 22		Switch box connection	VDI/VDE 3845
	EN 13463-1		SIL 3 level (the actuator alone)	EN 61508

## CONSTRUCTION DN25 to DN40



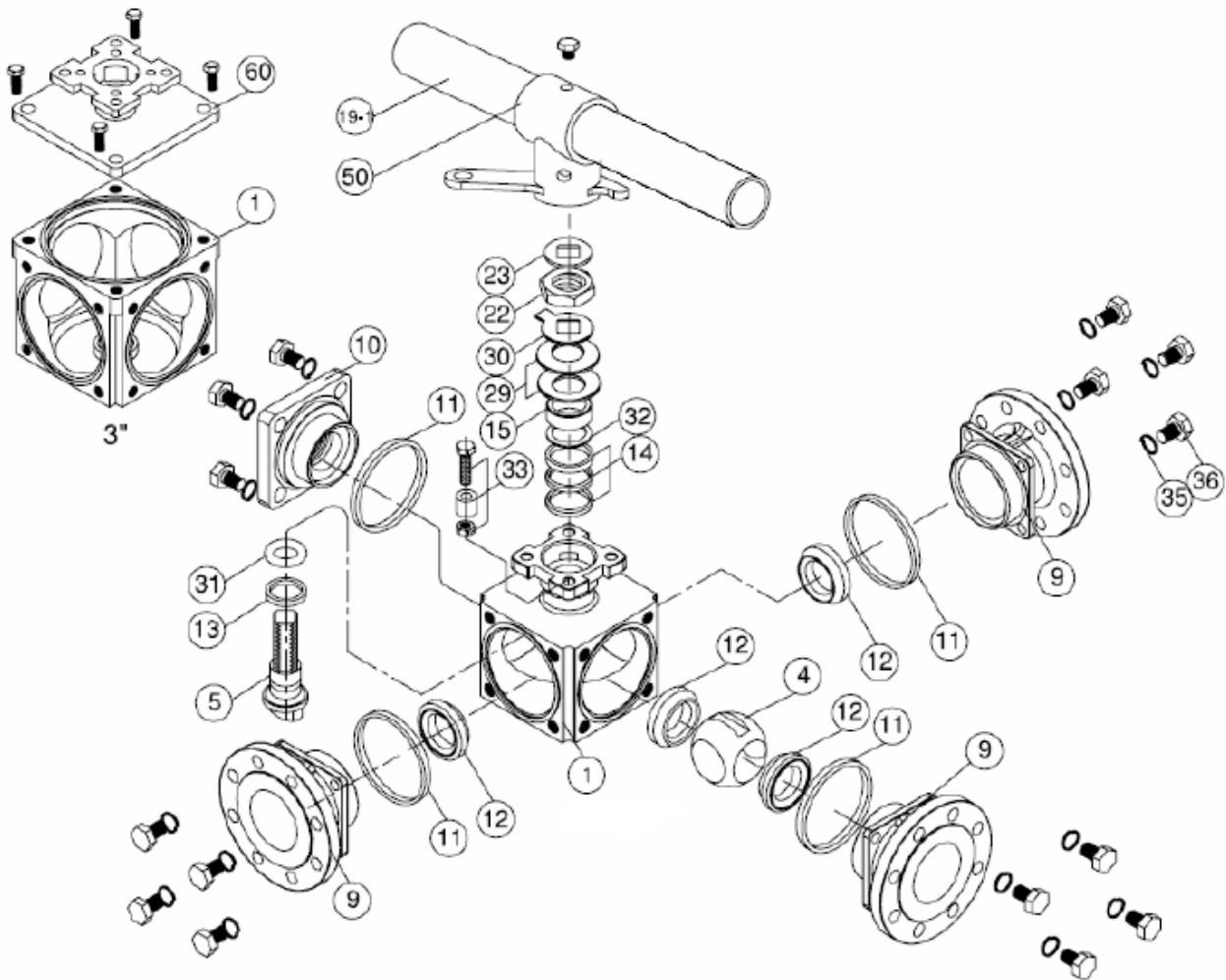
No.	Name	Steel 783-784	785-786 SS	No.	Name	Material
1	Body	1.0619 steel	1.4408 SS	12	Belleville washers	410 SS
2	Ends	1.0619 steel	1.4408 SS	13	Lock washer	304 SS
3	Ball	1.4308 SS	1.4408 SS	14	GC nut	304 SS
4	Stem	304 SS	316 SS	15	Handle washer	304 SS
5	Seat	PTFE+15% GF		16	Grip nut	304 SS
6	Body gasket	PTFE		17	Padlocking system	304 SS
7	Washer	PTFE		18	Handle	304 SS
8	O-ring	FKM		19	Handle sheath	Plastic
9	Packing gland	PTFE		20	Pointer	304 SS
10	GC gasket	PTFE+25% graphoil		21	End screw	304 SS
11	Gland follower	304 SS		22	End washer	304 SS

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## CONSTRUCTION DN50 to DN80



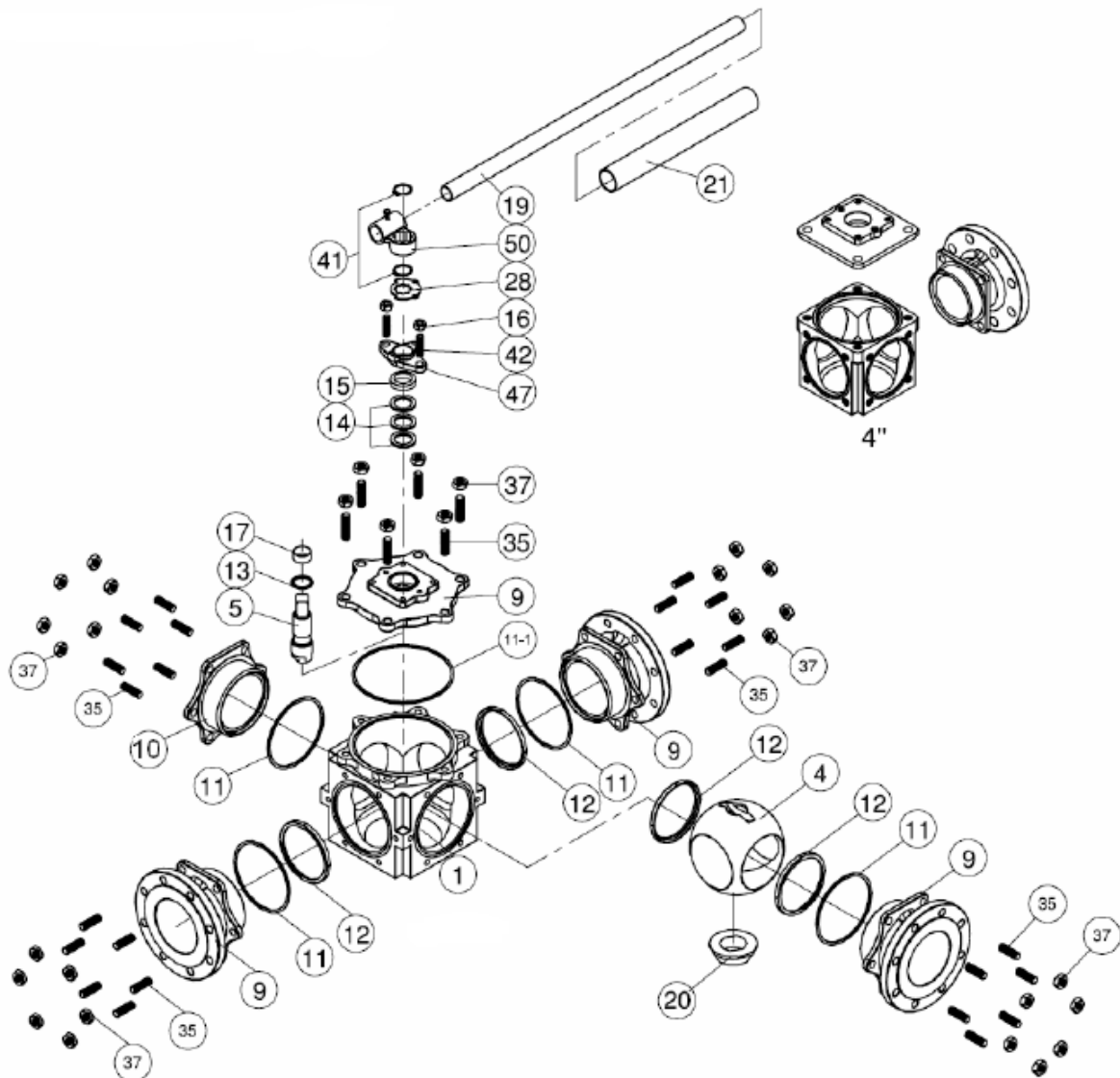
No.	Name	Steel 783-784	785-786 SS	No.	Name	Material
1	Body	1.0619 steel	1.4408 SS	22	CG nut	304 SS
4	Ball	1.4308 SS	1.4408 SS	23	Washer	304 SS
5	Stem	304 SS	316 SS	29	Bellevile washers	301 SS
9	Ends	1.0619 steel	1.4408 SS	30	Lock washer	304 SS
10	Cover	1.0619 steel	1.4408 SS	31	O-ring	FKM
11	Body gasket	PTFE		32	CG gasket	PTFE+15% graphoil
12	Seat	PTFE + +15% GF		33	Pointer	304 SS
13	Ring	PTFE		35	Washer	304 SS
14	Packing gland	PTFE		36	Screw	304 SS
15	Attachment ring	304 SS		50	Handle adaptor	304 SS
19	Handle	Steel				

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## CONSTRUCTION DN100 to DN150



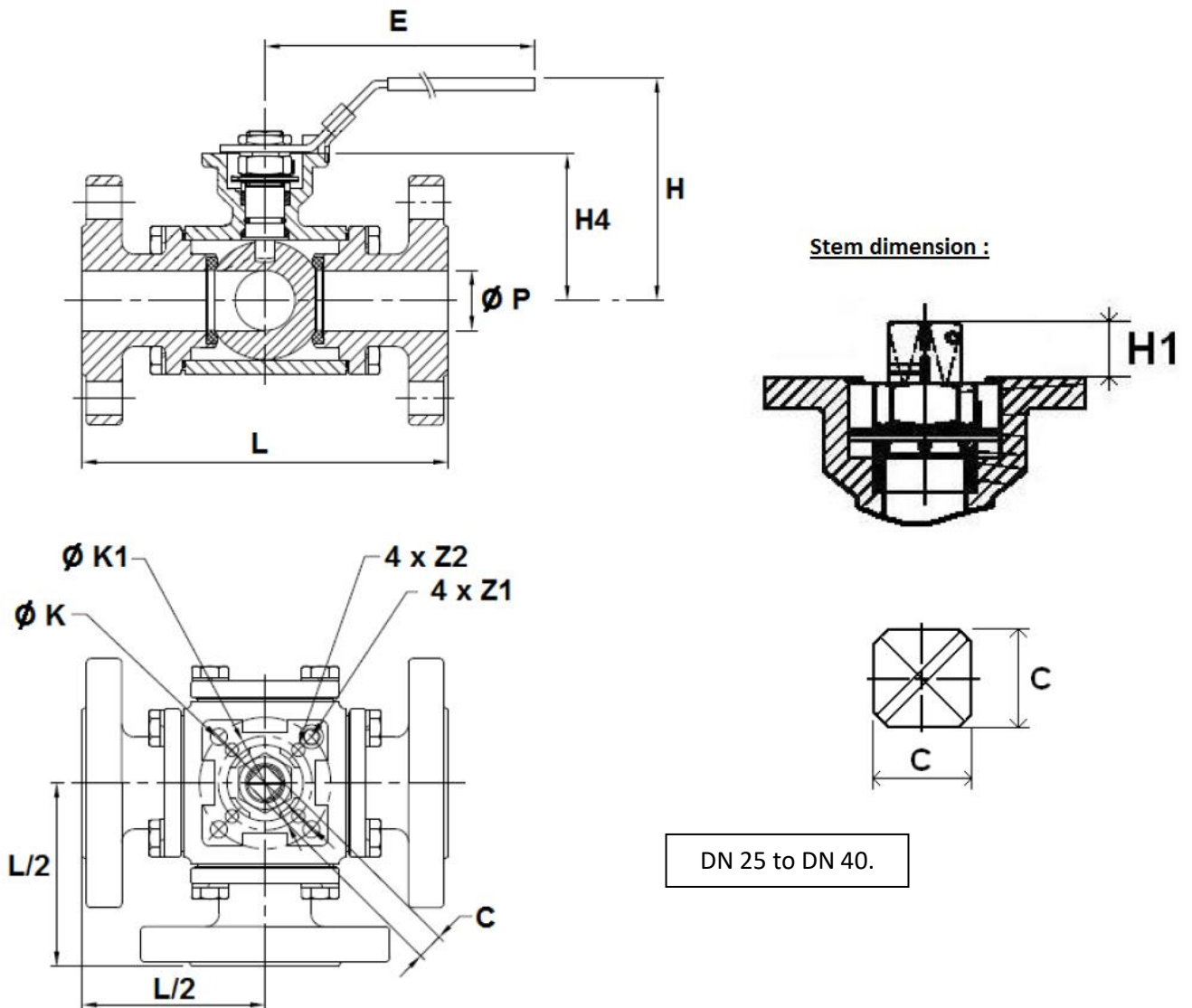
No.	Name	Steel 783-784	785-786 SS	No.	Name	Material
1	Body	1.0619 steel	1.4408 SS	17	Stem gasket	PTFE
4	Ball	1.4308 SS	1.4408 SS	19	Handle	Steel
5	Stem	304 SS	316 SS	20	Guiding screw	304 SS
9	Ends	1.0619 steel	1.4408 SS	21	Handle sheath	PVC
10	Cover	1.0619 steel	1.4408 SS	28	Padlocking	304 SS
11	Body gasket	PTFE		35	Tie-bolt	304 SS
11-1	Upper gasket	PTFE		37	Tie-bolt nut	304 SS
12	Seat	PTFE + +15% GF		41	Handle washer	304 SS
13	Ring	PTFE		42	CG screw	304 SS
14	Packing gland	PTFE		47	CG plate	1.4308 SS
15	Attachment ring	304 SS		50	Handle adaptor	304 SS
16	CG nut	304 SS				

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## DIMENSIONS (mm)

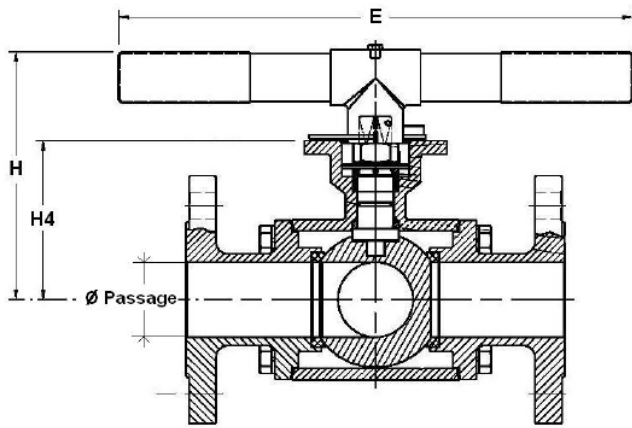


DN	25	32	40
ØP	25	32	38
L	185	195	232
L/2	92.5	97.5	116
E	218	235	235
H	102	118.5	127
H1	11.5	15.2	14.3
H4	64	79	88.5
C	11	14	14
ØK	50	70	70
ØK1	-	50	50
4 x Z1	4x7	4x9	4x9
4 x Z2	-	4x7	4x7
Weight (kg)	7.5	10.9	14.9

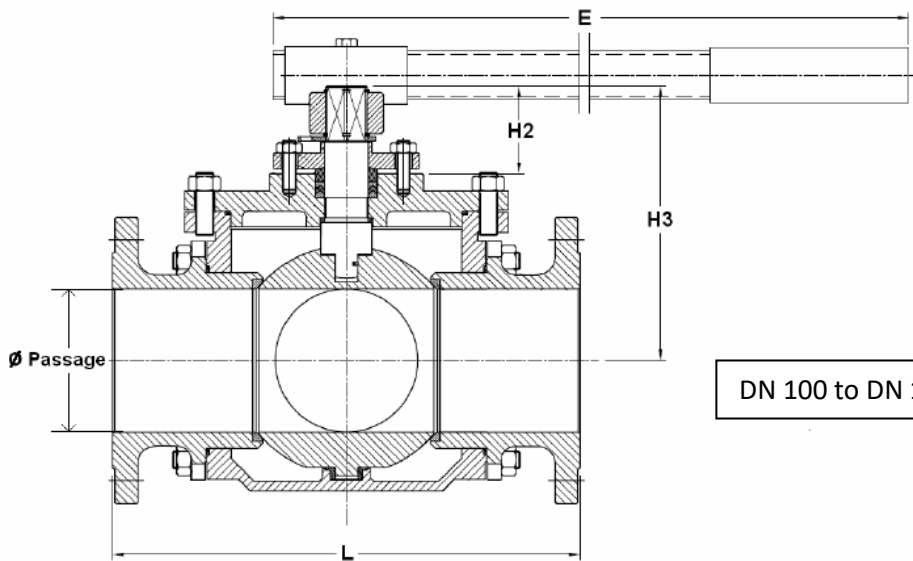
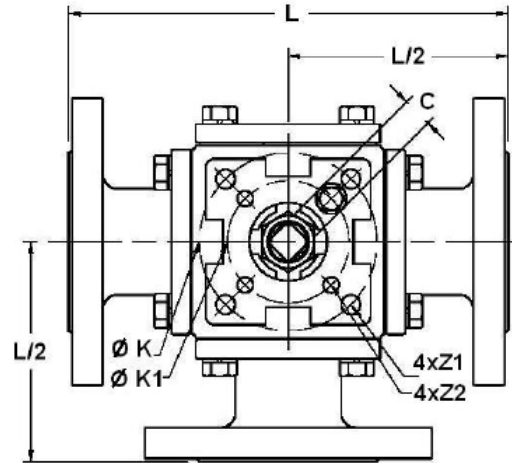
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DN 50 to DN 80.



DN 100 to DN 150.

DN	50	65	80
Ø	49	64	76
L	253	278	292.2
L/2	126.5	139	146.1
E	300	300	300
H	156.6	168.9	178
H1	17.8	17.5	17.5
H4	105.8	117.3	128
C	17	17	17
Ø K	102	102	102
Ø K1	70	70	70
4 x Z1	4x11	4x11	4x11
4 x Z2	4x9	4x9	4x9
Weight (kg)	19	23.8	34.5

DN	100	125	150
Ø	99	125	150
L	360	416	473
L/2	180	208	236
E	600	600	800
H1	33	33	43.5
H2	70	70	77.5
H3	193	233	266
C	27	27	36
Ø K	125	125	140
4xZ	4x12	4x12	4x16
Weight (kg) L	67.4	95	124
Weight (kg) T	61.8	95	127

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## AP-RE PNEUMATIC MOTORISATION

The ALPHAIR motorisation proposed as standard comprises:

- rack and pinion actuator of anodised aluminium
- a safety coefficient of 1.3 minimum compared to the nominal torque of the valve.
- air non-lubricated dry motor, minimum 6 bar pressure.
- an upstream / downstream pressure difference  $\Delta P=10$  bar max.

The actuator assembly is direct up to DN80 included.

DN	Double-effect	V (litres)	Time (s)*	Single-effect	V (litres)	Time (s)*
25	RE 64	0.45	1	RES 76/6	0.61	1
32	RE 76	0.61	1	RES 86/6	0.98	1
40	RE 76	0.61	1	RES 101/6	1.80	2
50	RE 86	0.98	1	RES 116/6	2.80	2
65	RE 101	1.80	1	RES 126/6	3.70	2
80	RE 116	2.80	2	RES 146/6	4.90	3
100	RE 126	3.70	2	RES 161/6	08:00	3
125	RE 146	4.90	3	RES 181/6	11.1	5
150	RE 161	08:00	3	RES 201/6	14.2	6

For any other operating conditions, please contact us.

\*indicative time of the no-load actuator for opening or closing.

## MOTORISATION OPTIONS

There are many options, so please contact our sales service for more information on these:

1	actuators dimensioned for a compressed air pressure of 3, 4 or 5 bar
2	actuator dimensioned for an upstream / downstream pressure difference $\Delta P$ greater than 10 bar
3	actuator with special coatings, stainless steel actuator
4	Actuator for very low ( $-60^{\circ}\text{C}$ ) or very high ( $+150^{\circ}\text{C}$ ) ambient temperatures.
6	special version for ATEX zones
7	manual override with declutchable gear box
8	compressed air filter regulator
9	All types of piloting solenoid valves
10	all types of switch boxes
11	all types of positioner
12	quick exhaust
13	flow-rate limiters - exhaust brakes
14	air lock



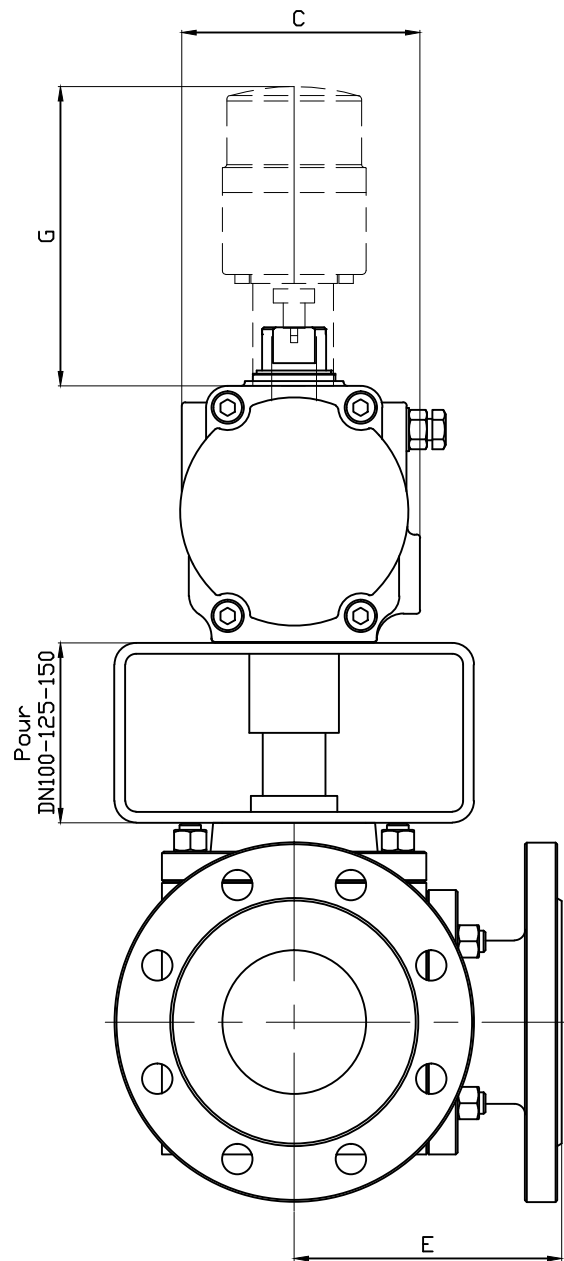
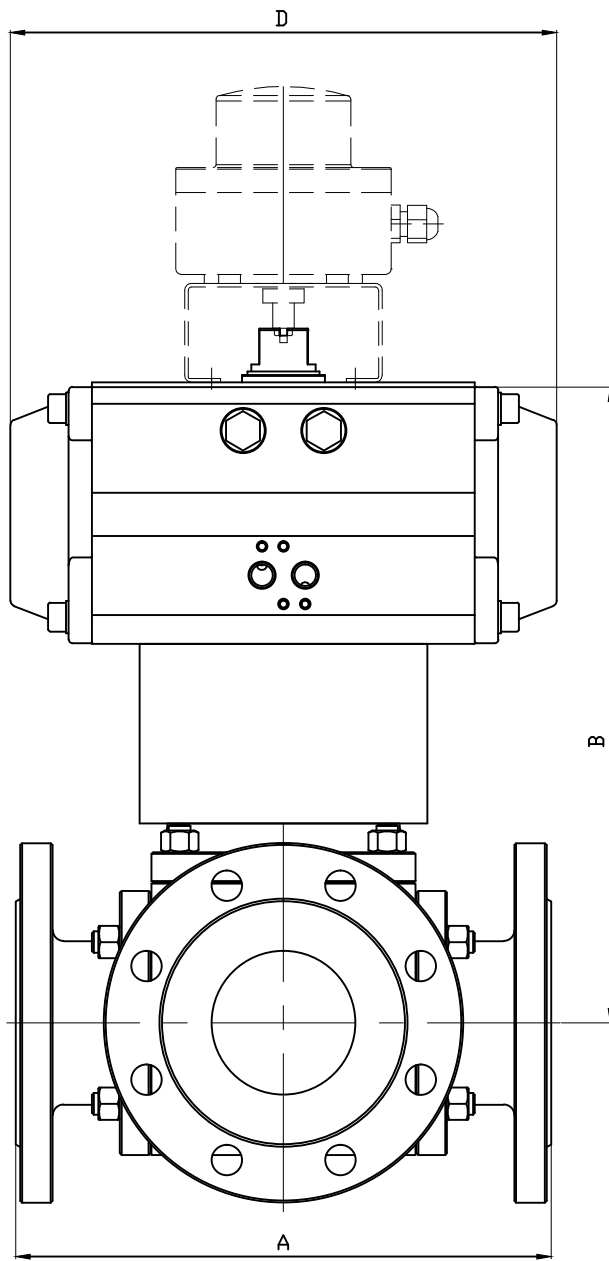
## INSTALLATION IN AN ATEX ZONE

For 783-4-5-6+AP-RE automatic valves to be installed in ATEX 1, 2, 21 or 22 zones, this has to be specified when ordering. Our services will check of the assembly, the installation of an earthing braid, and will issue an assembly certificate. Our authorised technicians carry out these operations in the workshop. Please contact us.

The special assembly and maintenance instructions for motorised valves in the ATEX zones must be followed.

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DN	25		32		40		50		65		80		100		125		150	
ALPHAIR	RE64	RES76	RE76	RES86	RE76	RES101	RE86	RES116	RE101	RES126	RE116	RES146	RE126	RES161	RE146	RES181	RE161	RES201
A	185		195		232		253		270		292.2		360		416		473	
B	150	166	181	191	190.5	215.5	217.8	251.3	244.3	274.8	273.5	305	380.5*	419*	440*	483*	484.5*	534.5*
C	86	94	94	104	94	120	104	133.5	120	144.5	133.5	164.5	144.5	182	164.5	203.5	182	222
D	155	203	203	239	203	261	239	304	261	333	304	398	333	424	398	482	424	528
E	95.5		97.5		116		126.5		135		146.1		180		208		236.5	
G	154.5		154.5		154.5		154.5	164.5	154.5	164.5	164.5		164.5	184.5	164.5	184.5	184.5	
KG	9.3	10.84	13.85	15.65	17.85	21.6	26.2	32.1	37.85	45.1	45.7	57.1	73.6	86.1	111.2	118.2	139.8	166.2

\* Montage avec platine H=100mm

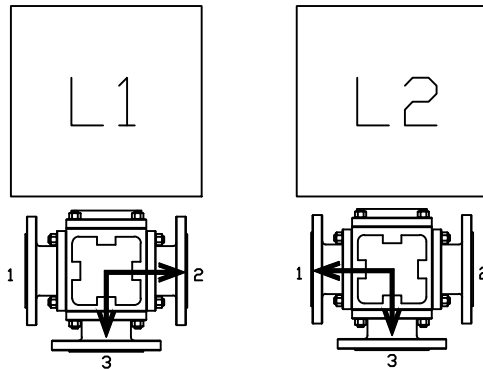
Informations données à titre indicatif et sous réserve de modifications éventuelles  
data subject to alteration

Ech: /	Date :11/06/2019	Dessiné par : E.D.	Tolérances générales : +/- 0.2	Modifications	Date	REV.
ROBINET A TOURNANT SPHERIQUE 783-786 / BALL VALVE 783-786 + ACTIONNEUR ALPHAIR RE + BFC / ALPHAIR ACTUATOR RE + LIMIT SWITCH BOX				Matière :		
 45, Rue du Ruisseau 38297 SAINT QUENTIN FALLAVIER				Poids <Kg> :		
				Traitement : SANS		
				Plan n° Ens 1358		



## 783-785 PERÇAGE EN L 783-785 L PORT

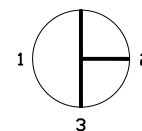
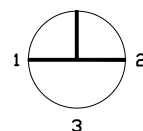
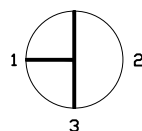
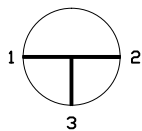
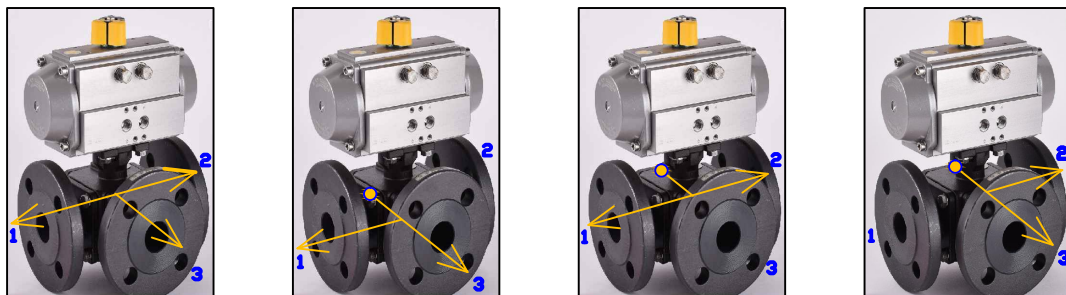
Pour commander indiquer 2 positions successives  
Indicate the 2 successive positions when ordering



ACTIONNEUR SIMPLE EFFET : Fermeture dans le sens horaire,  
sens inverse: plus value,nous consulter.  
SPRING-RETURN : Clockwise closure,  
for counterclockwise closure additional price, please contact us.


## 783-785 PERÇAGE EN T 783-786 T PORT

Pour commander indiquer 2 positions successives  
Indicate the 2 successive positions when ordering



ACTIONNEUR SIMPLE EFFET : Fermeture dans le sens horaire,  
sens inverse: plus value,nous consulter.  
SPRING-RETURN : Clockwise closure,  
for counterclockwise closure additional price, please contact us.

Informations données à titre indicatif et sous réserve de modifications éventuelles  
Data subject to alteration

Ech: /	Date 18/07/2019	Dessiné par : E.D.	Tolérances générales : +/- 0,2	Modifications	Date	REV.
ROBINET A TOURNANT SPHERIQUE 783-784-785-786/BALL VALVE 783-784-785-786 POSITIONS POUR COMMANDE/POSITIONS WHEN ORDERING				Matière :		
				Poids <Kg> :		
 45, Rue du Ruisseau 38297 SAINT QUENTIN FALLAVIER				Traitement : SANS		
				Plan n° Ens 1370		



# RE SERIES

**PNEUMATIC ACTUATORS  
WITH EXTERNAL ADJUSTMENT**

**ROTATION 90°**



English edition

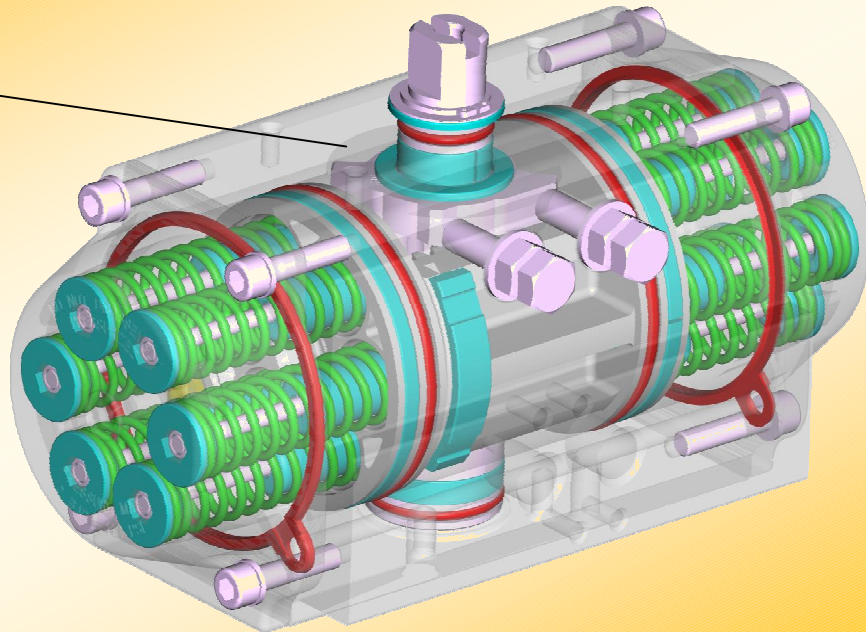
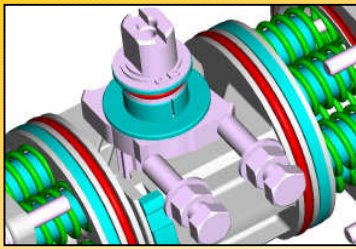


**Alphaair**

Distributed in FRANCE by  
**SECTORIEL**

**2017**

# ALPHAIR PNEUMATIC ACTUATORS EXTERNAL ADJUSTMENT New "RE" SERIES



The new series of ALPHAIR Pneumatic Actuators with special "External Adjustment" system meets every quality and precision requirement.

The new "External Adjustment" system guarantees maximum precision on rotation adjusting, for normal and heavy conditions, in any application field.

Suitable for every requirement, ALPHAIR Pneumatic Actuators with special "External Adjustment" system are carefully designed for maximum torque rating and maximum lifetime.

More compact, heavy and reliable, ALPHAIR Pneumatic Actuators with special "External Adjustment" system can be easily assembled on every kind of valve.

## STANDARD VERSION FEATURES

- **EN AW 6063 extruded aluminium Body**, inside surface finishing Ra= 0,4-0,6. 25 µ Hard Anodizing.
- **EN AB 46100 die-cast aluminium alloy Pistons**, 15 micron Anodizing.
- **EN AB 46100 die-cast aluminium alloy Covers**, painted with 60-80 µ polyester powder.
- **Carbon steel Shaft**, 20 µ nickel-plated. Stainless Steel AISI 304 (A2) or AISI 316 (A4) as Optional.
- **External adjusting gear, made of Stainless Steel AISI 316 (A4).**
- **AISI 316 (A4) Stainless Steel Screws.**
- **NBR nitrile rubber seals.** FPM/FKM or SILICONE on request.
- Acetalic resin + 20% PTFE bearings, for low friction, easily replaceable for maintenance. PA66 or LEXAN on request.
- Pre-compressed Spring Cartridges, easily replaceable for maintenance, 60-80 micron polyester painted.
- High performances Syntetic Grease as standard grease. Special grease supplied for HIGH/LOW/VERY LOW temperatures.
- Several special protections available for chemical, pharmaceutical, food and industrial environments.
- Rotation adjustment  $\pm 5^\circ$  in both opening and closing position. Assembly precision  $\pm 1^\circ$ , made by electronic devices.
- Double lower drilling for valve fastening and centering, according to ISO 5211-DIN 3337 Standards.
- Double square lower female shaft key (starlike), according to ISO 5211-DIN 3337 Standards for assembly on valves with square key on line ( $0^\circ$ ) and diagonal key ( $45^\circ$ ).
- Solenoid connections according to NAMUR VDI\VDE-3845 Standards.
- Top drilling for accessories fastening, and upper shaft end according to NAMUR VDI\VDE-3845 Standards.
- Position indicator on request, enabling switch-box assembly on top.
- Aluminium adhesive nameplates, with progressive serial number punched.
- Lubrication carried out by the manufacturer, guaranteed for min. 1.000.000 operations.
- Running test and 100% seal test carried out with electronic equipment and certification of every individual product.
- Standard execution for temperatures from  $-20^\circ\text{C}$  to  $+80^\circ\text{C}$  (optional, special execution for extreme temperatures).
- Conformity for use in explosive environment; Ex II 2 GD "c" protection type.
- According to EN 15714-3 design and manufacture standard requirements.

FEEDING	TEMPERATURE RANGE	SUPPLY PRESSURE	ROT. ADJUSTMENT
Dry or lubricated 50 um filtered compressed air	Standard $-20^\circ +80^\circ\text{C}$ ( $-4 +175^\circ\text{F}$ ) HIGH Temperature $-20^\circ +150^\circ\text{C}$ ( $-4 +300^\circ\text{F}$ ) LOW Temperature $-40^\circ +80^\circ\text{C}$ ( $-40 +175^\circ\text{F}$ ) VERY LOW Temperature $-60^\circ +80^\circ\text{C}$ ( $-76 +175^\circ\text{F}$ )	8 bar/120 psi Continuous working - 10 bar/142 psi MAXIMUM	$\pm 5^\circ$ in both OPENING and CLOSING position

**DOUBLE ACTING TORQUES IN Nm**

TYPE	AIR SUPPLY PRESSURE (bar)									
	1	2	3	4	5	6	7	8	9	10
RE 043	-	-	6,5	8,7	10,9	<b>13,0</b>	15,2	17,3	19,5	21,7
RE 051	3,3	6,7	10,0	13,4	16,7	<b>20,1</b>	23,4	26,8	30,1	33,5
RE 064	5,9	11,8	17,8	23,7	29,6	<b>35,5</b>	41,4	47,4	53,3	59,2
RE 076	11,8	23,5	35,3	47,1	58,9	<b>70,6</b>	82,4	94,2	105,9	117,7
RE 086	17,2	34,5	51,7	68,9	86,1	<b>103,4</b>	120,6	137,8	155,0	172,3
RE 101	27,5	54,9	82,4	109,8	137,3	<b>164,8</b>	192,2	219,7	247,1	274,6
RE 116	43,7	87,4	131,1	174,9	218,6	<b>262,3</b>	306,0	349,7	393,4	437,1
RE 126	56,6	113,3	169,9	226,5	283,2	<b>339,8</b>	396,4	453,0	509,7	566,3
RE 146	88,4	176,7	265,1	353,4	441,8	<b>530,1</b>	618,5	706,9	795,2	883,6
RE 161	114,9	229,7	344,6	459,5	574,3	<b>689,2</b>	804,1	918,9	1034	1149
RE 181	156,6	313,1	469,7	626,3	782,9	<b>939,4</b>	1096	1253	1409	1565
RE 201	215,3	430,6	646,0	861,3	1077	<b>1292</b>	1507	1723	1938	2153
RE 241	372,5	745,0	1118	1490	1863	<b>2235</b>	2608	2980	3353	3725
RE 271	539,2	1078	1617	2157	2696	<b>3235</b>	3774	4314	4853	5392
RE 331	911,5	1823	2734	3646	4558	<b>5469</b>	6835	7292	8204	9115
RE 421	1671	3342	5013	6684	8354	<b>10025</b>	11696	13367	-	-

**SINGLE ACTING TORQUES IN Nm**

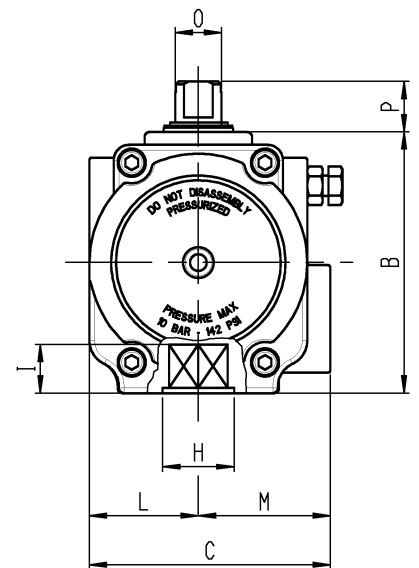
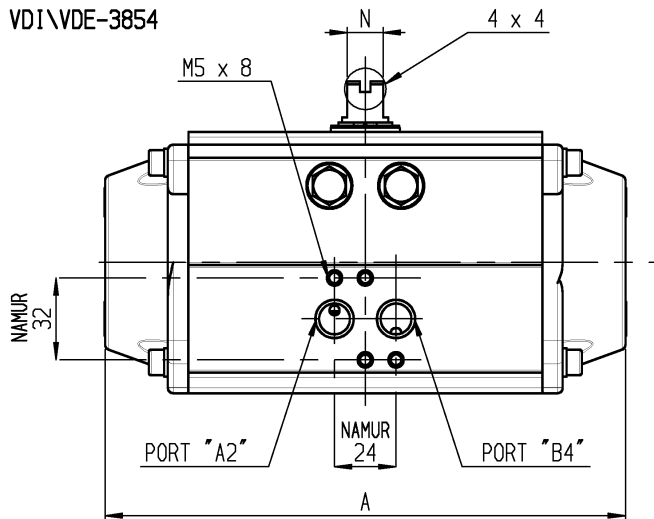
TYPE	SPRING SET	AIR SUPPLY PRESSURE (bar)												SPRING TORQUE	
		3		4		5		6		7		8		90°	0°
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°		
RE 043	SR 3/3	-	-	-	-	<b>7,1</b>	<b>4,1</b>	9,3	6,3	11,5	8,5	13,7	10,7	<b>6,8</b>	<b>3,8</b>
	SR 4/4	-	-	-	-	<b>8,1</b>	<b>4,1</b>	10,2	6,2	12,4	8,4	<b>9,0</b>	<b>5,0</b>		
RE 051	SR 3/3	<b>5,8</b>	<b>4,3</b>	9,1	7,6	12,5	10,9	15,8	14,3	19,2	17,6	22,5	21,0	<b>5,8</b>	<b>4,3</b>
	SR 4/4	4,4	2,3	<b>7,8</b>	<b>5,7</b>	11,1	9,0	14,4	12,3	17,8	15,7	21,1	19,0	<b>7,8</b>	<b>5,7</b>
	SR 5/5			6,3	3,7	<b>9,7</b>	<b>7,1</b>	13,0	10,4	16,4	13,8	19,7	17,1	<b>9,7</b>	<b>7,1</b>
	SR 6/6			8,2	5,1	<b>11,6</b>	<b>8,5</b>	14,9	11,8	18,3	15,2	<b>11,6</b>	<b>8,5</b>		
RE 064	SR 3/3	<b>10,7</b>	<b>7,1</b>	16,6	13,0	22,5	18,9	28,5	24,8	34,4	30,8	40,3	36,7	<b>10,7</b>	<b>7,1</b>
	SR 4/4	8,4	3,5	<b>14,3</b>	<b>9,4</b>	20,2	15,4	26,1	21,3	32,0	27,2	38,0	33,1	<b>14,3</b>	<b>9,4</b>
	SR 5/5			11,9	5,9	<b>17,8</b>	<b>11,8</b>	23,8	17,7	29,7	23,6	35,6	29,6	<b>17,8</b>	<b>11,8</b>
	SR 6/6			15,5	8,2	<b>21,4</b>	<b>14,1</b>	27,3	20,1	33,2	26,0	<b>21,4</b>	<b>14,1</b>		
RE 076	SR 3/3	<b>21,1</b>	<b>14,3</b>	32,8	26,0	44,6	37,8	56,4	49,6	68,1	61,3	79,9	73,1	<b>21,1</b>	<b>14,3</b>
	SR 4/4	16,3	7,2	<b>28,1</b>	<b>19,0</b>	39,8	30,8	51,6	42,5	63,4	54,3	75,2	66,1	<b>28,1</b>	<b>19,0</b>
	SR 5/5			23,3	12,0	<b>35,1</b>	<b>23,8</b>	46,9	35,5	58,6	47,3	70,4	59,1	<b>35,1</b>	<b>23,8</b>
	SR 6/6			30,3	16,7	<b>42,1</b>	<b>28,5</b>	53,9	40,3	65,6	52,0	<b>42,1</b>	<b>28,5</b>		
RE 086	SR 3/3	<b>33,8</b>	<b>17,8</b>	51,1	35,1	68,3	52,3	85,5	69,5	102,7	86,7	120,0	104,0	<b>33,8</b>	<b>17,8</b>
	SR 4/4	27,9	6,6	<b>45,1</b>	<b>23,8</b>	62,3	41,0	79,6	58,2	96,8	75,5	114,0	92,7	<b>45,1</b>	<b>23,8</b>
	SR 5/5			39,2	12,5	<b>56,4</b>	<b>29,7</b>	73,6	47,0	90,8	64,2	108,1	81,4	<b>56,4</b>	<b>29,7</b>
	SR 6/6			50,4	18,5	<b>67,7</b>	<b>35,7</b>	84,9	52,9	102,1	70,1	<b>67,7</b>	<b>35,7</b>		
RE 101	SR 3/3	<b>50,1</b>	<b>32,3</b>	77,5	59,7	105,0	87,2	132,5	114,7	159,9	142,1	187,4	169,6	<b>50,1</b>	<b>32,3</b>
	SR 4/4	39,3	15,6	<b>66,8</b>	<b>43,0</b>	94,2	70,5	121,7	98,0	149,2	125,4	176,6	152,9	<b>66,8</b>	<b>43,1</b>
	SR 5/5			56,0	26,4	<b>83,5</b>	<b>53,8</b>	110,9	81,3	138,4	108,7	165,9	136,2	<b>83,5</b>	<b>53,8</b>
	SR 6/6			72,7	37,1	<b>100,2</b>	<b>64,6</b>	127,6	92,0	155,1	119,5	<b>100,2</b>	<b>64,6</b>		
RE 116	SR 3/3	<b>80,7</b>	<b>50,5</b>	124,4	94,2	168,1	137,9	211,8	181,6	255,5	225,3	299,3	269,0	<b>80,7</b>	<b>50,5</b>
	SR 4/4	63,9	23,5	<b>107,6</b>	<b>67,3</b>	151,3	111,0	195,0	154,7	238,7	198,4	282,4	242,1	<b>107,6</b>	<b>67,3</b>
	SR 5/5			90,8	40,4	<b>134,5</b>	<b>84,1</b>	178,2	127,8	221,9	171,5	265,6	215,2	<b>134,5</b>	<b>84,1</b>
	SR 6/6			117,7	57,2	<b>161,4</b>	<b>100,9</b>	205,1	144,6	248,8	188,3	<b>161,4</b>	<b>100,9</b>		
RE 126	SR 3/3	<b>105,0</b>	<b>64,9</b>	161,6	121,5	218,2	178,2	274,9	234,8	331,6	291,4	388,1	348,0	<b>105,0</b>	<b>64,9</b>
	SR 4/4	83,3	29,9	<b>140,0</b>	<b>86,5</b>	196,6	143,2	253,2	199,8	309,9	256,4	366,5	313,0	<b>140,0</b>	<b>86,6</b>
	SR 5/5			118,3	51,5	<b>175,0</b>	<b>108,2</b>	231,6	164,8	288,2	221,4	344,8	278,1	<b>175,0</b>	<b>108,2</b>
	SR 6/6			153,3	73,2	<b>210,0</b>	<b>129,8</b>	266,6	186,4	323,2	243,1	<b>210,0</b>	<b>129,8</b>		
RE 146	SR 3/3	<b>162,5</b>	<b>102,6</b>	250,8	190,9	339,2	279,3	427,5	367,7	515,9	456,0	604,3	544,4	<b>162,5</b>	<b>102,6</b>
	SR 4/4	128,3	48,4	<b>216,6</b>	<b>136,8</b>	305,0	225,1	393,3	313,5	481,7	401,9	570,1	490,2	<b>216,6</b>	<b>136,8</b>
	SR 5/5			182,4	82,6	<b>270,8</b>	<b>171,0</b>	359,1	259,3	447,5	347,7	535,9	436,0	<b>270,8</b>	<b>171,0</b>
	SR 6/6			236,6	116,8	<b>324,9</b>	<b>205,2</b>	413,3	293,5	501,7	381,9	<b>325,0</b>	<b>205,2</b>		
RE 161	SR 3/3	<b>202,7</b>	<b>141,9</b>	317,5	256,8	432,4	371,6	547,3	486,5	662,1	601,4	777,0	716,2	<b>202,7</b>	<b>141,9</b>
	SR 4/4	155,3	74,3	<b>270,2</b>	<b>189,2</b>	385,1	304,1	499,9	418,9	614,8	533,8	729,7	648,7	<b>270,2</b>	<b>189,2</b>
	SR 5/5			222,9	121,6	<b>337,8</b>	<b>236,5</b>	452,6	351,4	567,5	466,2	682,4	581,1	<b>337,8</b>	<b>236,5</b>
	SR 6/6			290,4	168,9	<b>405,3</b>	<b>283,8</b>	520,2	398,6	635,0	513,5	<b>405,3</b>	<b>283,8</b>		
RE 181	SR 3/3	<b>281,6</b>	<b>188,2</b>	438,1	344,7	594,7	501,3	751,3	657,9	907,8	814,5	1064	971,0	<b>281,6</b>	<b>188,2</b>
	SR 4/4	218,8	94,3	<b>375,4</b>	<b>250,9</b>	532,0	407,5	688,5	564,0	845,1	720,6	1002	877,2	<b>375,4</b>	<b>250,9</b>
	SR 5/5			312,7	157,0	<b>469,3</b>	<b>313,6</b>	625,8	470,2	782,4	626,8	939,0	783,3	<b>469,3</b>	<b>313,6</b>
	SR 6/6			406,5	219,8	<b>563,1</b>	<b>376,3</b>	719,7	532,9	876,2	689,5	<b>563,1</b>	<b>376,3</b>		
RE 201	SR 3/3	<b>386,2</b>	<b>259,8</b>	601,5	475,13	816,8	690,5	1032	905,8	1247	1121	1436	1336	<b>386,2</b>	<b>259,8</b>
	SR 4/4	299,6	131,1	<b>514,9</b>	<b>46,4</b>	730,2	561,8	945,5	777,1	1160	992,4	1376	1208	<b>514,9</b>	<b>346,4</b>
	SR 5/5			428,3	217,7	<b>643,6</b>	<b>433,0</b>	858,9	648,4	1074	863,7	1290	1079	<b>643,6</b>	<b>433,0</b>
	SR 6/6			557,0	304,3	<b>772,3</b>	<b>519,6</b>	987,6	735,0	1203	950,3	<b>772,3</b>	<b>519,6</b>		
RE 241	SR 3/3	<b>664,0</b>	<b>453,6</b>	1037	826,2	1409	1199	1782	1571	2154	1944	2527	2316	<b>664,0</b>	<b>453,6</b>
	SR 4/4	521,8	232,3	<b>885,4</b>	<b>604,8</b>	1258	977,4	1630	1350	2003	1722	2376	2095	<b>885,4</b>	<b>604,8</b>
	SR 5/5			734,2	383,5	<b>1107</b>	<b>756,0</b>	1479	1129	1852	1501	2224	1874	<b>1107</b>	<b>756,0</b>
	SR 6/6			955,5	534,7	<b>1328</b>	<b>907,2</b>	1701	1280	2073	1653	<b>1328</b>	<b>907,2</b>		
RE 271	SR 3/3	<b>912,5</b>	<b>705,1</b>	1452	1244	1991	1783	2530	2323	3069	2862	3608	3401	<b>912,5</b>	<b>705,1</b>
	SR 4/4	677,5	400,8	<b>1217</b>	<b>940,2</b>	1756	1479	2295	2019	2834	2558	3373	3097	<b>1217</b>	<b>940,1</b>
	SR 5/5			981,7	635,8	<b>1521</b>	<b>1175</b>	2060	1714	2599	2144	3138	2793	<b>1521</b>	<b>1175</b>
	SR 6/6			1286	871,0	<b>1825</b>	<b>1410</b>	2364	1954	2903	2489	<b>1825</b>	<b>1410</b>		
RE 331	SR 3/3	<b>1626</b>	<b>1108</b>	2538	2020	3450	2931	4361	3843	5273	4755	6184	5666	<b>1626</b>	<b>1108</b>
	SR 4/4	1257	565,8	<b>2168</b>	<b>1477</b>	3080	2389	3992	3301	4903	4212	5815	5123	<b>2168</b>	<b>1477</b>
	SR 5/5			1799	935,2	<b>2711</b>	<b>1847</b>	3622	2759	4534	3670	5445	4582	<b>2711</b>	<b>1847</b>
	SR 6/6			2341	1305	<b>3253</b>	<b>2216</b>	4165	3128	5076	4040	<b>3253</b>	<b>2216</b>		
RE 421	SR 3/3	<b>2999</b>	<b>2014</b>	4670	3685	6340	5356	8011	7026	9682	8697	11353	10368	<b>2999</b>	<b>2014</b>
	SR 4/4	2327	1014	<b>3998</b>	<b>2685</b>	5669	4356	7340	6027	9011	7698	9369	8369	<b>3998</b>	<b>2685</b>
	SR 5/5			3327	1685	<b>4998</b>	<b>3356</b>	6669	5027	8340	6698	8369	8369	<b>4998</b>	<b>3356</b>
	SR 6/6			4327	2357	<b>5997</b>	<b>4028</b>	7668	5698	7369	7369	<b>5997</b>	<b>4028</b>		

Torque by air

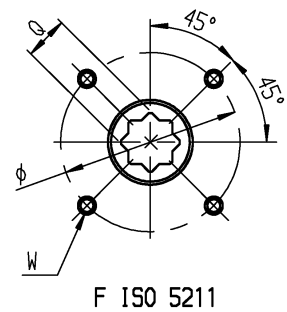
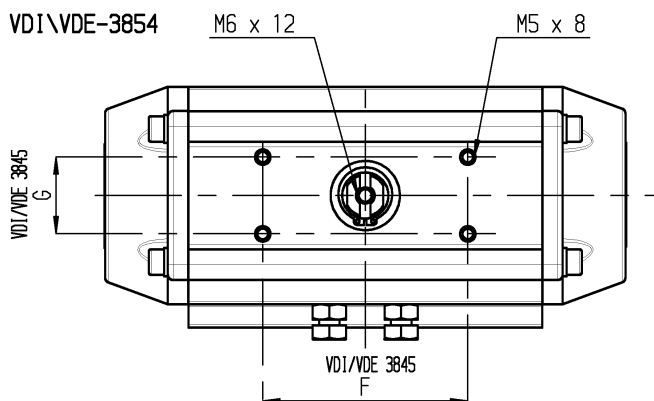
Torque by springs

**DIMENSIONS – European Sizes in millimetres**

VDI/VDE-3854



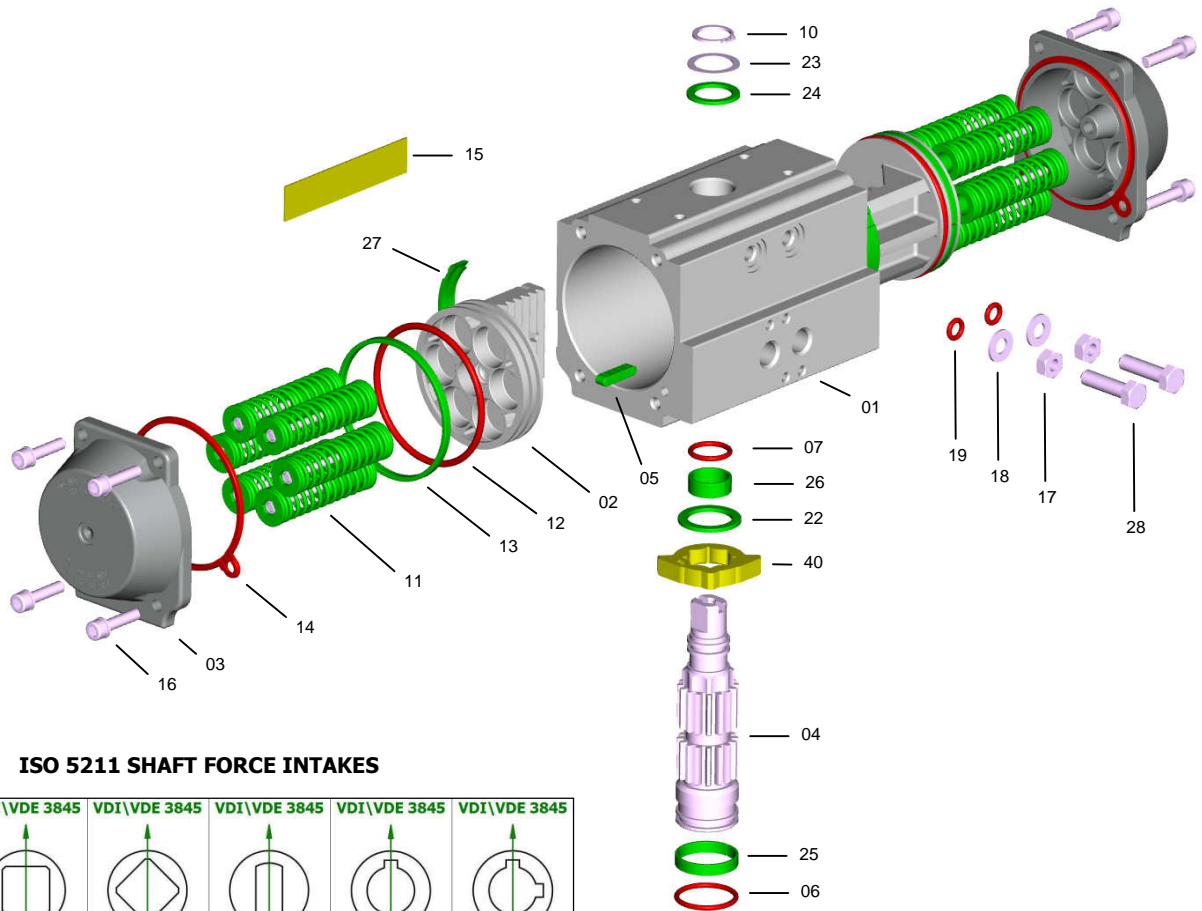
VDI/VDE-3854



POSITION	TYPE															
	RE 043	RE 051	RE 064	RE 076	RE 086	RE 101	RE 116	RE 126	RE 146	RE 161	RE 181	RE 201	RE 241	RE 271	RE 331	RE 421
<b>A</b>	141	138	155	203	239	261	304	333	398	424	482	528	604	684	850	940
<b>B</b>	62	69	86	102	112	127	145,5	157,5	177	196	220	246	298	332	414	542
<b>C</b>	63,5	75	86	94	104	120	133,5	144,5	164,5	182	203,5	222	300	352	400	528
<b>VDI/VDE 3845 F x G</b>	80 x 30 50 x 25	80 x 30					80 x 30 130 x 30			130 x 30						200 x 50
<b>L</b>	27	33,5	38	42,5	49	55	63,5	69,5	80,5	89	99,5	110	150	176	190	234
<b>M</b>	36,5	41,5	48	51,5	55	65	70	75	84	93	104	112	150	176	210	294
<b>Port A Port B DIN 259</b>	1/8" GAS-NPT			1/4" GAS-NPT									1/2" GAS-NPT			
<b>N x O</b>	8 x 12			14 x 18			27 x 36			32 x 42		42 x 60	55 x 80			
<b>P</b>	20						30			50						80
<b>Q x I</b>	9 x 10 11 x 13	9 x 10 11 x 13	9 x 10 11 x 13 14 x 16	11 x 13 14 x 16 17 x 20	14 x 16 17 x 20	14 x 16 17 x 20 22 x 25	17 x 20 22 x 25	17 x 20 22 x 25 27 x 29	22 x 25 27 x 29	22 x 25 27 x 29	27 x 29 36 x 39	27 x 29 36 x 39	36 x 39 46 x 50	36 x 39 46 x 50	*46 x 50 55 x 60	*55 x 60 75 x 80
<b>F ISO 5211</b>	F04	F04	F05/07	F05/07	F05/07	F07/10	F07/10	F07/10	F10/12	F10/12	F10/12	F14	F14	F16	F16/25	F25/30
<b>Optional</b>	F03/05	F03/05	F3/5/7			F5/7/10		F7/10/12			F14	F10/12	F(12)/16	F(12)/16		F(16)
<b>Volume DE</b>	0,180 lt	0,300 lt	0,500 lt	0,700 lt	1,000 lt	1,800 l	2,900 lt	3,700 lt	6,100 lt	7,900 lt	11,2 lt	14,4 lt	19,2 lt	32,2 lt	62,8 lt	131 lt
<b>Volume SE</b>	0,072 lt	0,120 lt	0,200 lt	0,280 lt	0,400 lt	0,720 l	1,160 lt	1,480 lt	2,440 lt	3,160 lt	4,480 lt	5,760 lt	7,680 lt	12,9 lt	25,1 lt	52,4 lt

POSITION	F ISO 5211											
	F03	F04	F03/05	F05	F05/07	F5/7/10	F07/10	F10/12	F14	F16	F25	F30
<b>Ø (W)</b>	Ø 36 (M5x8)	Ø 42 (M5x8)	Ø 36 (M5x8) Ø 50 (M6x9)	Ø 50 (M6x9)	Ø 50 (M6x9) Ø 70 (M8x12)	Ø 50 (M6x9) Ø 70 (M8x12) Ø 102 (M10x15)	Ø 70 (M8x12) Ø 102 (M10x15)	Ø 102 (M10x15) Ø 125 (M12x18)	Ø 140 (M16x24)	Ø 165 (M20x30)	Ø 254 (M16x24) N°8 FORI	Ø 298 (M20x35) N°8 FORI
<b>H</b>	25	30	25	35	35 (RE 086=40)	40	55	85 (RE 161=75)	100	130	200	200

# CONSTRUCTION PARTS – SPECIFICATIONS



## ISO 5211 SHAFT FORCE INTAKES

VDI\VDE 3845	VDI\VDE 3845	VDI\VDE 3845	VDI\VDE 3845	VDI\VDE 3845	VDI\VDE 3845
STANDARD ALPHAIR S = L/D	L	D	H	V	W

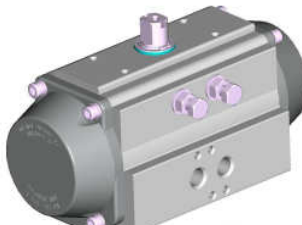
PART	QUANTITY	DESCRIPTION	MATERIAL	SPECIFICATION	PROTECTION
1	1	Body	Extruded aluminium alloy	EN AW 6063 T6	A - N - TF
2	2	Piston	Aluminium alloy	EN AB 46100 T6	A
3	2	Cover	Aluminium alloy	EN AB 46100 T6	N - V - TF
4	1	Shaft	Carbon steel Stainless Steel – optional	ASTM A-105 AISI 304 (A2) AISI 316 (A4)	N
5 *	2	Antiejection key	Acetalic resin – PA66 – PA66 – LEXAN		
6 *	1	Lower shaft O-Ring	NBR – FPM\FKM – Silicone – Silicone		
7 *	1	Upper shaft O-Ring	NBR – FPM\FKM – Silicone – Silicone		
10 *	1	Seeger ring	Carbon steel		N
11	0 ... 12	Spring cartridge	Carbon steel, PA 66, Stainless Steel	C-98	V
12 *	2	Piston O-Ring	NBR – FPM\FKM – Silicone – Silicone		
13 *	2	Piston head bearing	Acetalic resin – PA66 – PA66 – LEXAN		
14 *	2	Cover gasket	NBR – FPM\FKM – Silicone – Silicone		
15	1	Nameplate	Aluminium		
16	4 + 4	Cover fastening screw	Stainless Steel	AISI 304 (A2)	
17	2	Nut	Stainless Steel	AISI 304 (A2)	
18	2	Washer	Stainless Steel	AISI 304 (A2)	
19 *	2	O-Ring	NBR – FPM\FKM – Silicone – Silicone		
22 *	1	Gear antifriction washer	Acetalic resin – PA66 – PA66 – LEXAN		
23 *	1	Shaft thrust washer	Stainless Steel	AISI 304 (A2)	
24 *	1	Shaft antifriction washer	Acetalic resin – PA66 – PA66 – LEXAN		
25 *	1	Lower shaft pilot ring	Acetalic resin – PA66 – PA66 – LEXAN		
26 *	1	Upper shaft pilot ring	Acetalic resin – PA66 – PA66 – LEXAN		
27 *	2	Piston bearing	Acetalic resin – PA66 – PA66 – LEXAN		
28	2	Adjusting gear screw	Stainless Steel	AISI 304 (A2)	
40	1	Adjusting gear	Stainless Steel	AISI 316 (A4)	

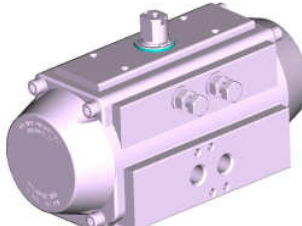
\* SPARE PARTS SET: Standard, Special HIGH Temperatures, Special LOW Temperatures, Special EXTRA LOW Temperatures

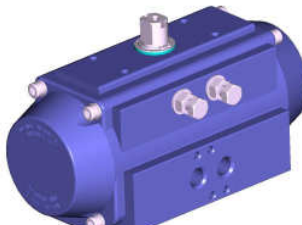
### PROTECTIONS

A = Anodizing   N = chemical Nickel-plating   V = Painting   TF = Anodizing+PTFE

## COATINGS – MATERIAL TREATMENTS

	<b>AV</b>	<b>DESCRIPTION</b>				<b>APPLICATION FIELD</b>	
		<b>Body</b>	<b>Covers</b>	<b>Pistons</b>	<b>Shaft</b>		
	standard	Anodizing	Polyester painting	Anodizing	High phosphorous nickel-plating (12%) opt. AISI 304 (A2) opt. AISI 316 (A4)		- Industry, general use.
	Colour	Gray	Gray	Brown	Polished steel		
Thickness	25 µ	60/80 µ	15 µ	20 µ			

	<b>NN</b>	<b>DESCRIPTION</b>				<b>APPLICATION FIELD</b>	
		<b>Body</b>	<b>Covers</b>	<b>Pistons</b>	<b>Shaft</b>		
	standard	High phosphorous nickel-plating (12%)	High phosphorous nickel-plating (12%)	Anodizing	High phosphorous nickel-plating (12%) opt. AISI 304 (A2) opt. AISI 316 (A4)		- Industry, general use. - Caustic soda. - Detergents. - Low alkaline solutions.
	Colour	Polished steel	Polished steel	Brown	Polished steel		
Thickness	20 µ	20 µ	15 µ	20 µ			

	<b>TF TF</b>	<b>DESCRIPTION</b>				<b>APPLICATION FIELD</b>	
		<b>Body</b>	<b>Covers</b>	<b>Pistons</b>	<b>Shaft</b>		
	standard	Anodizing + PTFE coating	Anodizing + PTFE coating	Anodizing	High phosphorous nickel-plating (12%) opt. AISI 304 (A2) opt. AISI 316 (A4)		- Industry, general use. - Low alkaline and low acid solutions. - Marine environments. - High temperatures.
	Colour	Blue	Blue	Brown	Polished steel		
Thickness	Anodizing 25 µ PTFE 15 µ	Anodizing 15 µ PTFE 15 µ	15 µ	20 µ			

### ANODIZING

Anodizing is an electrolytic process that produces anodic coating on aluminum, called alumine, with high thickness. Alumine is one of the most hard known materials, with resistance values up to 400-600 HV (45-65 HRC); properties and features of Anodizing (alumine thickness 25 micron) are well know and appreciated both for mechanical and chemical resistance.

- **Best friction and corrosion resistance, best surface hardness, good thermic and electrical insulation.**

### ELECTROLESS NICKEL-PLATING

Chemical nickel-plating is an electroless coating process that gives nickel layers at extremely constant thickness also on sharp angles, blind-holes, threads and grooves recess. During the process, nickel is combined with phosphor at a percentage of 12% (high-phosphor). The obtained surface hardness is about 400-480 HV (45-55 HRC).

- **Best friction and corrosion resistance, best surface hardness, best external appearance similar to S.S., increased resistance to alcali and detergents in sanitary and food applications.**

### POLYESTER PAINTING

Polyester painting is obtained through powder coatings on polarized parts, by means of light differences in electrical potentials. After applications, parts are baked in order to polymerize and let the painting be spread to avoid micro-porosity. The best elasticity can be obtained at 60/80 micron thickness; a satisfactory adhesion can be assured by sandblasting or brushing, and by special degreasing baths of the rough pieces to be treated.

- **Better corrosion resistance, protection against crashes, better external appearance and several available colours, resistance to chemicals.**

### ANODIZING + PTFE COATING

As further improvement of the hard anodising treatment on aluminium alloys, protective coatings made of PTFE are used; this material is known for its particular chemical and physical features. On these double treated surfaces, oxide hardness and low roughness (internal slipping parts) is summed to the chemical resistance and the excellent qualities as a thermic barrier of PTFE (external surface, subject to corrosion).

- **Better corrosion resistance, protection against high temperatures and crashes, extreme resistance to chemicals and in marine environments.**

### AISI 304 (A2) OR AISI 316 (A4) STAINLESS STEEL SHAFT - OPTIONAL

AISI 304 (A2) and AISI 316 (A4) Stainless Steel shafts, with their great corrosion resistance, are recommended for special applications such as: marine and chemical environments, food and pharmaceutical industry, high temperature applications.



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