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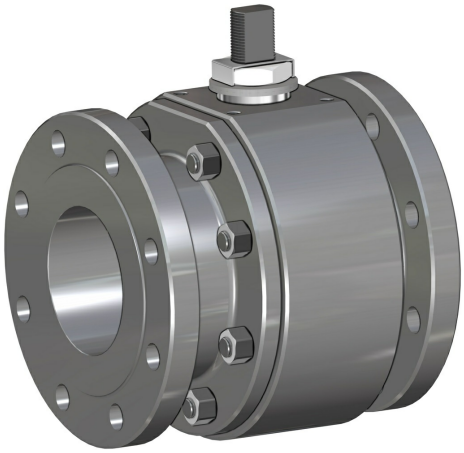
THOR Split Body PN 16-40 ANSI 150-300 stainless steel ball valve



Macro Ball valves

Category THOR

Subcategory THOR Split Body

Family THOR Split Body PN 16-40 ANSI 150-300

benefits

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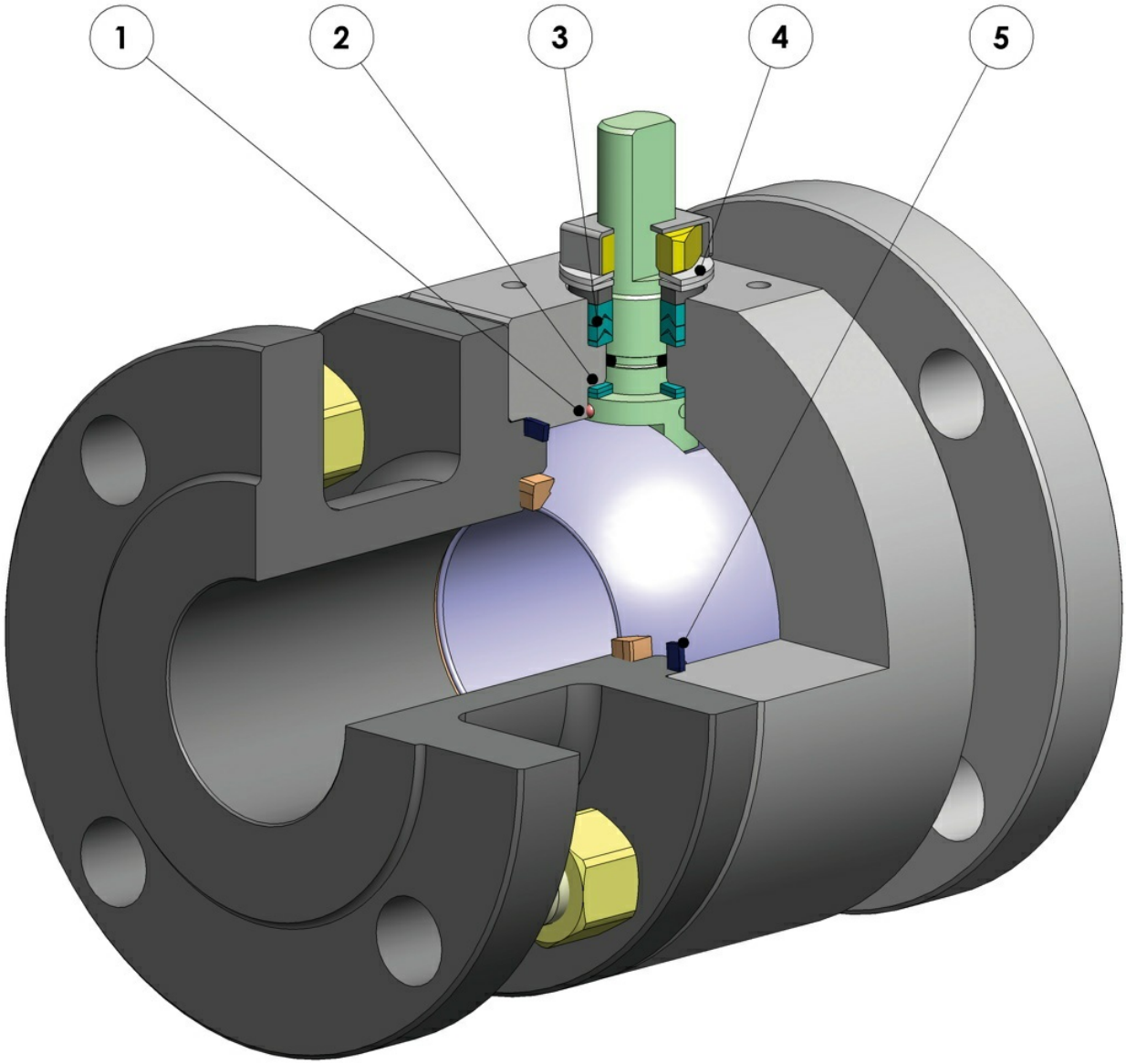

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1. Antistatic device (electrical continuity between ball, stem and body)
Static electricity is avoided which can cause sparks and fire in an inflammable/explosive environment
Contact safety throughout the entire life of the valve

2. Double antifriction washer
Less Breakaway Torque is granted
Less wear comparing with the execution with the single washer

3. "V" seals pack; 3 seals + o-ring
It ensures a perfect tightness even after a high number of cycles

4. Spring washer on the shaft seal
Guarantee of the recovery of the gap due to the wear caused by the rotational movement of the shaft avoiding leakage towards the outside part.
Allow to maintain energized the "chevron" seals (V), thus avoiding any leakage to the outside, against huge temperature excursions

5. Stretch Graphite seal
Tightness towards outside is granted, independently by the thermal excursions to which the valve is subjected

Greater precision in the alignment of axes due to a unique positioning in the process machining from raw material to finished valve
Longer lifetime of the valve
Less breakaway torque

Easy maintainance directly on site
Reduced maintainance costs

Valve body in carbon steel made with NACE certified material as standard
Greater corrosion resistance
Greater ductility of the material

100% in- house manufacturing process technology
Maximum control and accuracy in all the stages of the manufacturing process
Flexibility in supply quickly special executions requested by customers

"Fire safe" Certificate
Guarantees the tightness of the valve also in case of fire

ATEX Certificate
Installation is possible in a potential explosive environment

TA LUFT fugitive emission Certificate
High level of safety of the tightness towards the outside is granted

PED Certificate
Full compliance with European Safety Standards for Pressure Equipment

UP to SIL 3 certified
Guarantee of the high level of functional safety

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features

STANDARD FEATURES

- Floating ball, full bore. Available reduce bore version.
- Soft-seat seal Modified PTFE
- Standard for connecting flanges: EN 1092-1; ASME B16.5
- Operating temperature see temperature pressure diagram
- Pressure class: PN16-40 - ANSI 150-300
- Tightness Class: EN12266-1 rate A
- Intercepted fluid: air, water, gas, petroleum and petrochemical products, aggressive fluids
- Antistatic device EN12266-2
- Stem seal: Modified PTFE V-ring packing
- Additional seal on stem with FKM O-ring
- Anti Blow-out stem
- Actuator connection as per standard ISO 5211
- Closing angle >7°

FEATURES ON REQUEST

- For other flange types please contact our sales department.
- Sealing in: PTFE reinforced with glass (PTFE-GF), PTFE reinforced with carbongraphite (PTFE-CF). For other types of materials please contact our sales department
- Mono-directional version with pressure-relief hole in the ball
- Stainless steel lever
- Stainless steel Stem nuts and springs
- For special versions in materials different from the standard (body, ball, stem), please contact our sales department.
- ATEX marking and certificate ON REQUEST

CERTIFICATIONS

- In compliance with European Directive 2014/68/EU PED; Fugitive Emission ISO 15848 (ISO FE BH-C03-SSA 0); TA-LUFT VDI 2440; FIRE SAFE: ISO 10497 Third ed. 2010 / API 607 Sixth ed. 2010
- Safety integrity level up to SIL 3 according to the IEC 61508
- In compliance with ATEX 2014/34/EU Directive , ATEX certificate ON REQUEST.

ENGINEERING STANDARD

- Body thickness in compliance with: ASME B16.34, ASME VIII div.1, EN 12516
- API 6D ON REQUEST.
- Materials and rating in compliance with ASME B16.34 for ANSI valves and EN 12516 for PN valves

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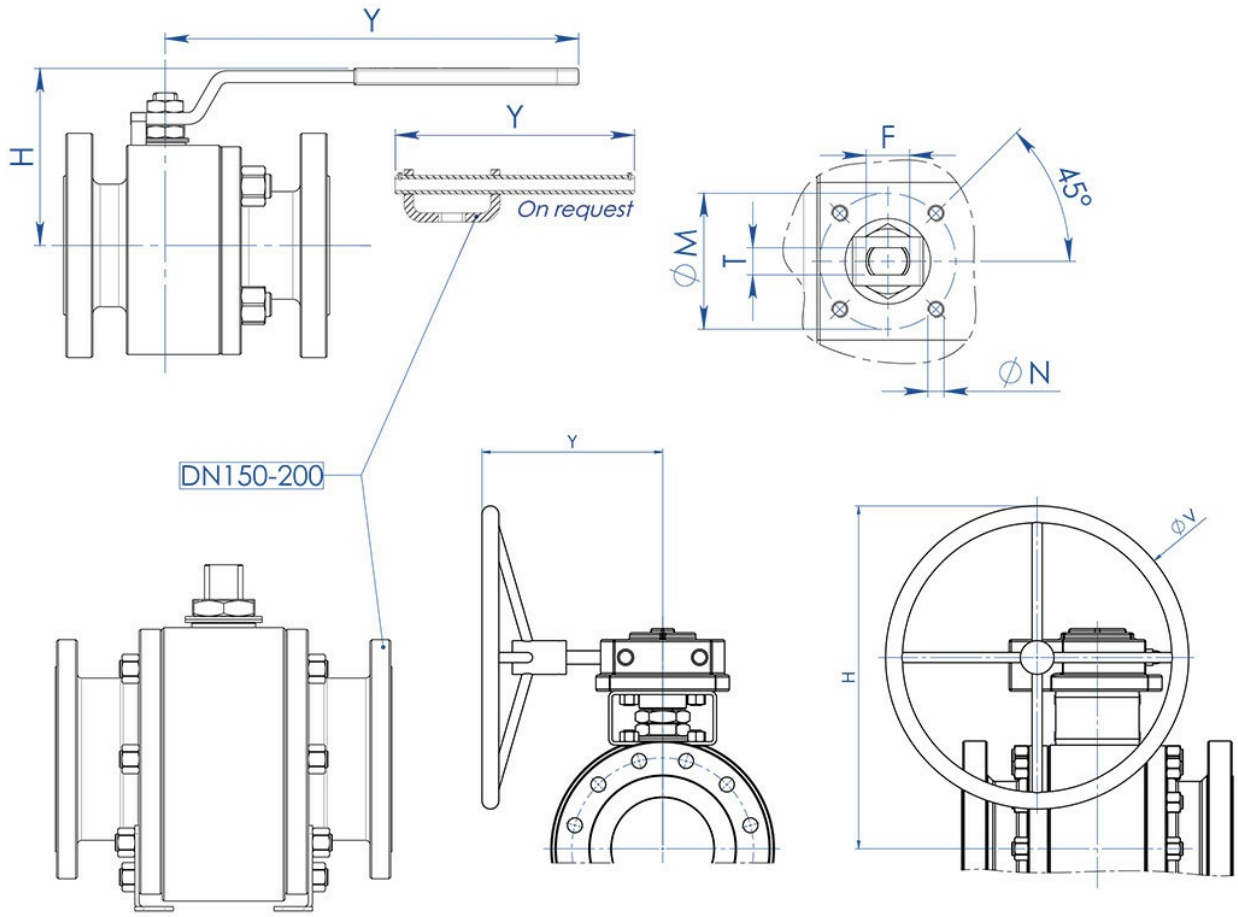
dimensions



DIMENSIONS									
SIZE		H	Y	øV	øM	øN	F/T	ATT. ISO	LEVER KIT
DN [mm]	[inch]								
DN 15	1/2"	71	140	---	36	M5	10/6	F03	KLV58004
DN 20	3/4"	73	140	---	36	M5	10/6	F03	KLV58004
DN 25	1"	87	150	---	42	M5	12/8	F04	KLV58006
DN 32	1" 1/4	91	150	---	42	M5	12/8	F04	KLV58006
DN 40	1" 1/2	108	275	---	50	M6	16/10	F05	KLV58008
DN 50	2"	118	275	---	50	M6	16/10	F05	KLV58008
DN 65	2" 1/2	143	350	---	70	M8	22/14	F07	KLV58010
DN 80	3"	150	350	---	70	M8	22/14	F07	KLV58010
DN 100	4"	198	450	---	102	M10	30/18	F10	KLV58012
DN 125	5"	208	450	---	102	M10	30/18	F10	KLV58012
DN 150 PN16 - ANSI150 (*)	6"	522	326	400	140	M16	45/30	F14	---
DN 150 PN25-40 - ANSI300	6"	522	347,5	600	140	M16	45/30	F14	---
DN 200 PN16-PN25-ANSI150 (*)	8"	516	347	500	140	M16	52/35	F14	---
DN 200 PN40	8"	614	348	500	140	M16	52/35	F14	---

STANDARD version with manual gearbox for DN150 and DN200.
(*) ON REQUEST version with manual lever.

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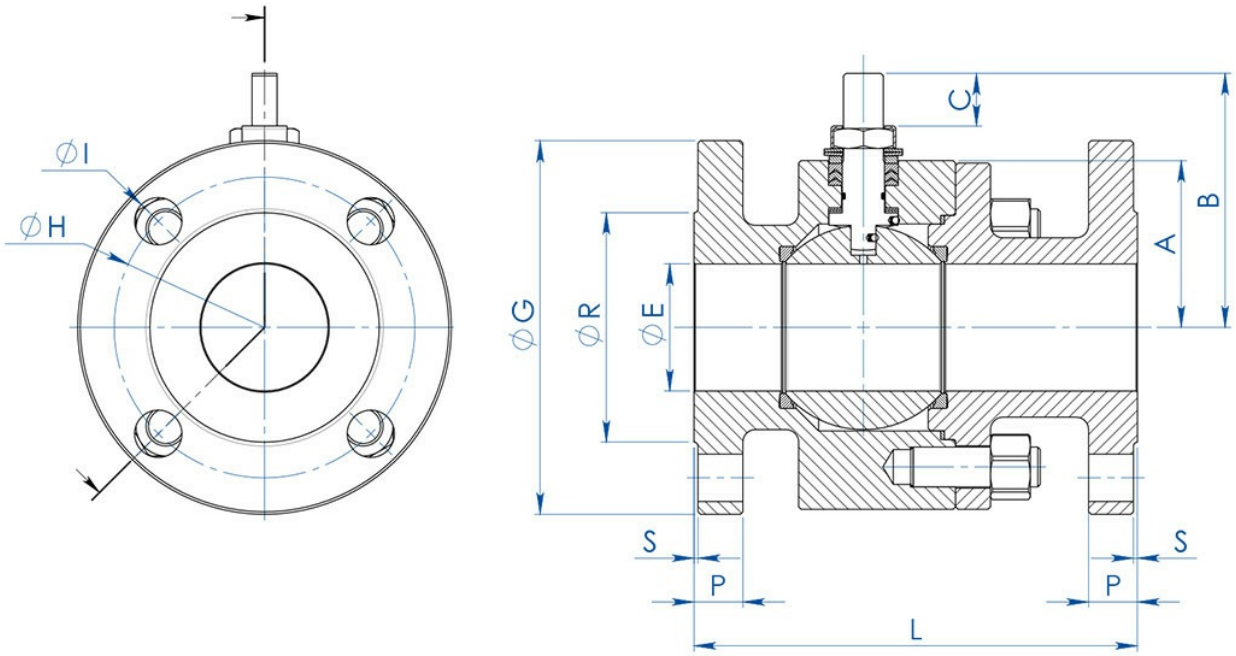

DIMENSIONS -PN-															
SIZE		øE	PN	A	B	C	øG	øR	S	P	øH	HOLES N°	øI	Kg	L	SEALS KIT
DN [mm]	[inch]															
DN 15	1/2"	13	PN 16-40	32	52	10	95	45	2	16	65	4	14	3,0	115 (1)	KGBV485040
DN 20	3/4"	19	PN 16-40	35	55	10	105	58	2	18	75	4	14	3,8	120 (1)	KGBV485050
DN 25	1"	25	PN 16-40	42	68	15	115	68	2	18	85	4	14	5,2	125 (1)	KGBV485060
DN 32	1" 1/4	32	PN 16-40	47	73	15	140	78	2	18	100	4	18	7,6	130 (1)	KGBV485070
DN 40	1" 1/2	38	PN 16-40	58	93	21	150	88	3	18	110	4	18	10	140 (1)	KGBV485080
DN 50	2"	51	PN 16-40	67	102	21	165	102	3	20	125	4	18	14,3	150 (1)	KGBV485090
DN 65	2" 1/2	64	PN 16	83	130,5	28,4	185	122	3	18	145	4	18	20,2	170 (1)	KGBV485100
DN 65	2" 1/2	64	PN 25-40	83	130,5	28,4	185	122	3	22	145	8	18	28,2	270 (2)	KGBV485100
DN 80	3"	76	PN 16-40	90	137,5	28,4	200	138	3	24	160	8	18	25,4	180 (1)	KGBV485110
DN 100	4"	102	PN 16	111	172	35	220	158	3	20	180	8	18	38	190 (1)	KGBV485120
DN 100	4"	102	PN 25-40	111	172	35	235	162	3	24	190	8	22	57,8	300 (2)	KGBV485120
DN 125	5"	118	PN 16	117	182	35	250	188	3	22	210	8	18	68	325 (2)	KGBV485130
DN 150(*)	6"	152	PN 16	154	227,5	40,5	285	212	3	23	240	8	22	121	350 (2)	KGBV485140
DN 150	6"	152	PN 25-40	154	227,5	40,5	300	218	3	28	250	8	26	125	350	KGBV48514D
DN 200(*)	8"	203	PN 16	188	274	44,8	340	268	3	24	295	12	22	198	400 (2)	KGBV485150
DN 200(*)	8"	203	PN 25	188	274	44,8	360	310	3	30	310	12	26	220	457	KGBV485150
DN 200	8"	203	PN 40	195	274	44,8	375	285	3	34	320	12	30	250	502	KGBV48515D

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DIMENSIONS -ANSI-															
SIZE		øE	ANSI	A	B	C	øG	øR	S	P	øH	HOLES N°	øI	Kg	L	SEALS KIT
DN [mm]	[inch]															
DN 15	1/2"	13	ANSI 150	32	52	10	90	35,1	1,6	11,4	60,5	4	16	3,0	108 (3)	KGBV485040
DN 15	1/2"	13	ANSI 300	32	52	10	95	35,1	1,6	14,5	66,5	4	16	2,7	140 (3)	KGBV485040
DN 20	3/4"	19	ANSI 150	35	55	10	100	42,9	1,6	13	69,8	4	16	3,1	117(3)	KGBV485050
DN 20	3/4"	19	ANSI 300	35	55	10	118	42,9	1,6	16,6	82,6	4	19	4,2	152(3)	KGBV485050
DN 25	1"	25	ANSI 150	42	68	15	110	50,8	1,6	14,5	79,2	4	16	4,5	127 (3)	KGBV485060
DN 25	1"	25	ANSI 300	42	68	15	125	50,8	1,6	18	88,9	4	19	5,9	165 (3)	KGBV485060
DN 32	1" 1/4	32	ANSI 150	47	73	15	118	63,5	1,6	16,1	88,9	4	16	6,2	140 (3)	KGBV485070
DN 32	1" 1/4	32	ANSI 300	47	73	15	135	63,5	1,6	19,5	98,6	4	19	8,7	178 (3)	KGBV485070
DN 40	1" 1/2	38	ANSI 150	58	93	21	128	73	1,6	18	98,6	4	16	9,4	165 (3)	KGBV485080
DN 40	1" 1/2	38	ANSI 300	58	93	21	155	73	1,6	21	114,3	4	22	12	190 (3)	KGBV485080
DN 50	2"	51	ANSI 150	67	102	21	153	91,9	1,6	19,6	120,6	4	19	13,3	178 (4)	KGBV485090
DN 50	2"	51	ANSI 300	67	102	21	165	91,9	1,6	22,6	127,0	8	19	16,5	216 (4)	KGBV485090
DN 65	2" 1/2	64	ANSI 150	83	130,5	28,4	180	104,6	1,6	22,6	139,7	4	19	23,1	191 (4)	KGBV485100
DN 65	2" 1/2	64	ANSI 300	83	130,5	28,4	190	104,6	1,6	26,1	149,4	8	22	27,3	241 (4)	KGBV485100
DN 80	3"	76	ANSI 150	90	137,5	28,4	190	127	1,6	24	152,4	4	19	27	203 (4)	KGBV485110
DN 80	3"	76	ANSI 300	96	137,5	28,4	210	127	1,6	29	168,1	8	22	38,1	282 (4)	KGBV485110
DN 100	4"	102	ANSI 150	111	172	35	230	157,2	1,6	24,6	190,5	8	19	46	229 (4)	KGBV485120
DN 100	4"	102	ANSI 300	111	172	35	255	157,2	1,6	32,6	200,2	8	22	67,7	305 (4)	KGBV485120
DN 125	5"	118	ANSI 150	117	182	35	255	185,7	1,6	24,5	215,9	8	22	62	254 (3)	KGBV485130
DN 125	5"	118	ANSI 300	125	182	35	280	185,7	1,6	36,6	235	8	22	94	381 (3)	KGBV485130
DN 150(*)	6"	152	ANSI 150	154	227,5	40,5	280	215,9	1,6	25,6	241,3	8	22	126	394 (4)	KGBV485140
DN 150	6"	152	ANSI 300	154	227,5	40,5	320	215,9	1,6	37,6	269,7	12	22	147	403	KGBV48514D
DN 200(*)	8"	203	ANSI 150	188	274	44,8	345	269,7	1,6	29,5	298,4	8	22	210	457 (4)	KGBV485150

STANDARD version with manual gearbox for DN150 and DN200.
(*) ON REQUEST version with manual lever.
(1) EN558 TAB. 2 COL. 14 / DIN 3202-1 F4 (2) EN558 TAB. 2 COL. 15 / DIN 3202-1 F5 (3) ANSI B16.10 (4) B16.10 / API6D

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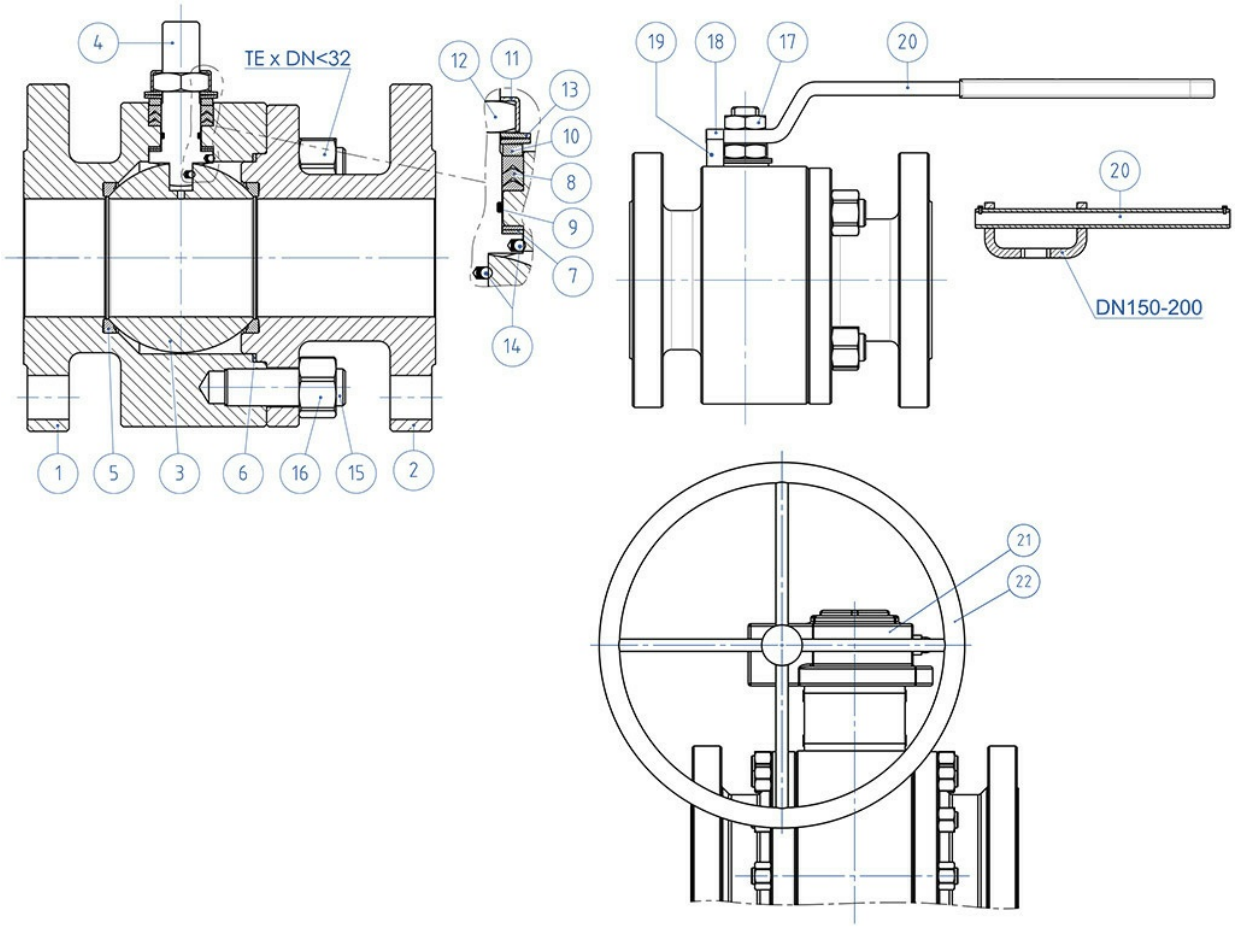
materials



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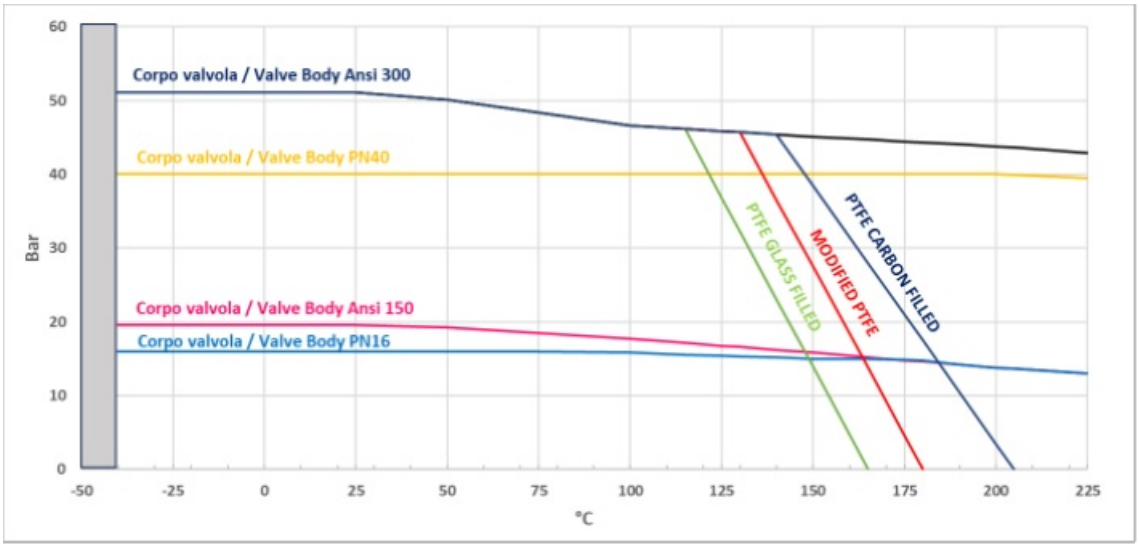
MATERIALS PN16-40 ANSI 150-300 FROM BAR		
N°	**Description**	**316 Stainless steel**
1	Body	ASTM A182 F316 / A479TP.316 (1.4401 / X5CrNiMo17-12-2)
2	Connector	
3	Ball	ASTM A351 CF8M (1.4408/GX5CrNiMo19-12-2)
4	Stem	A564 TP.630 (17-4PH)
5*	Seat	Modified PTFE (.) (2)
6*	Body-Connector gasket	GRAFOIL
7*	Stem lower sealing	Modified PTFE (.)
8*	Chevron seals	Modified PTFE (.)
9*	Stem o-ring	FKM (.)
10	Packing gland ring	304 S.S.
11	Stop nut plate	304 S.S.
12	Stem nut	Carbon steel galvanized (x)
13	Springs washer	Carbon steel galvanized (xx)
14	Antistatic device	316 S.S.
15	Stud bolt	ASTM A193-B8
16	Nut	ASTM A194-Gr.8
17	Lock nut	Carbon steel galvanized (x)
18	Holder screw	A2-70 (304 S.S.)
19	Holder screw	Carbon steel galvanized (x)
20	Lever	Fe37 galvanized (x)
21	Gear box	Cast iron (painted)
22	Handwheel	Carbon steel painted
* Components of seals kit		

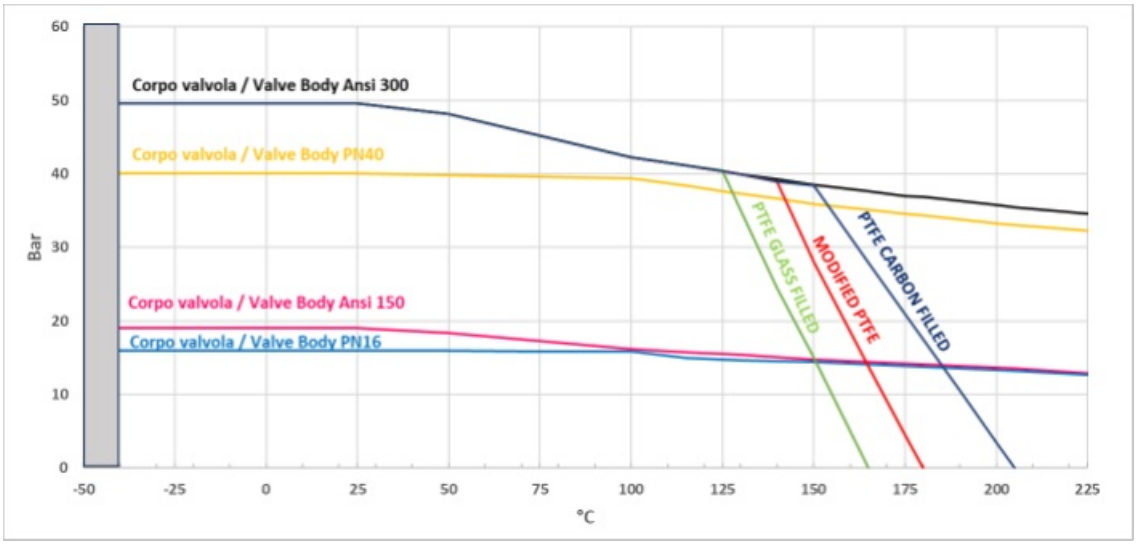
Available on request:
(x): 304 s.s.
(xx): 301 s.s.
(2) DEVLON for DN150 PN25-40 - ANSI300, DN200 PN40.
(.): Other materials available on request.

diagrams and breakaway torque

Temperature/pressure diagram for carbon steel valve



Temperature/pressure diagram for stainless steel valve



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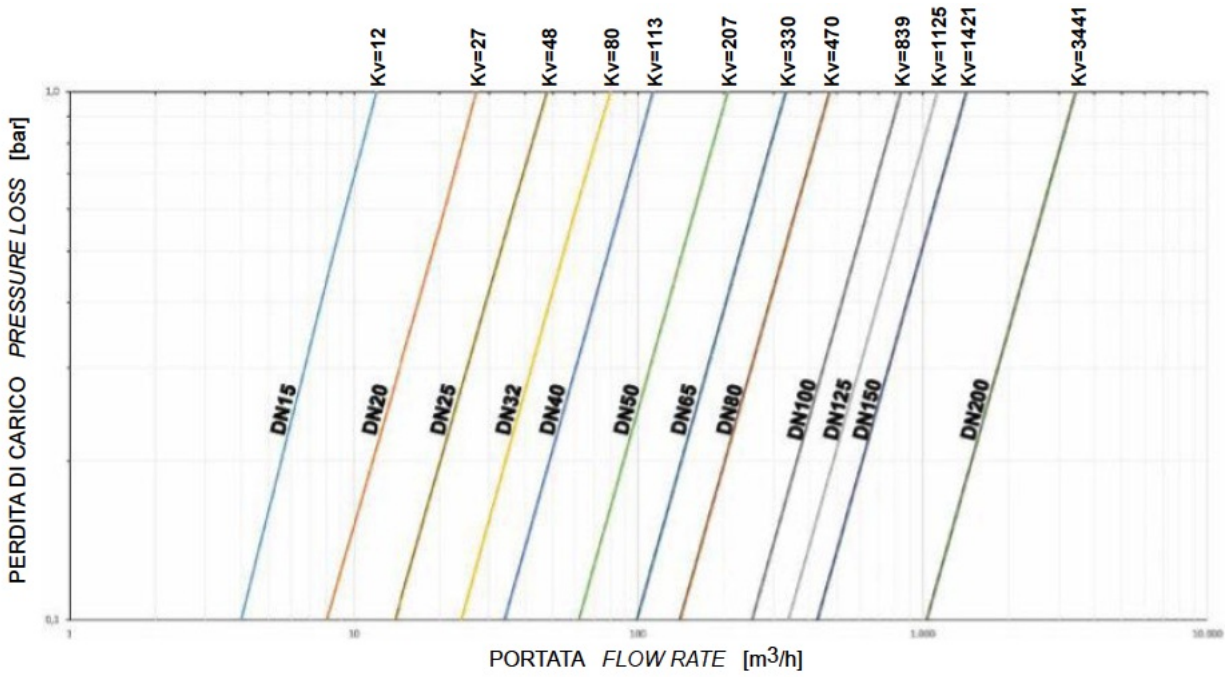
Flow/pressure loss diagram and Kv nominal coefficient



Kv is the coefficient, expressed in m3/h (with water at 15°C) causing a pressure loss of 1 bar.

BREAKAWAY TORQUE IN Nm WITH TFM 1600 SEAT AND WATER INTERCEPTED FLUID (*)												
SIZE	**DN 15**	**DN 20**	**DN 25**	**DN 32**	**DN 40**	**DN 50**	**DN 65**	**DN 80**	**DN 100**	**DN 125**	**DN 150**	**DN 200**
0 bar												
PN16 bar	8	13	19	28	42	61	85	128	220	245	405	690
PN25 bar	9,5	14,5	20	29	43	66	98	158	252	383		
PN40 bar	11	16	21	31	44	72	108	165	292	510		
ANSI 150-20 bar	9	14	19,5	30	43	65	96	153	243	360	480	750
ANSI 300-50 bar	12	18	22	32	46	80	115	180	302	570		

(*): If not lubricated fluids and/or fluids containing solid particles are intercepted, torques could be higher than those in the table.
Torque can vary depending on temperature and type of fluid, a safety factor 1.4 must be applied. Torque can drop on high frequency of operation.

The sizing of pneumatic actuators has been done considering a minimum supply pressure of 5,6 barg.

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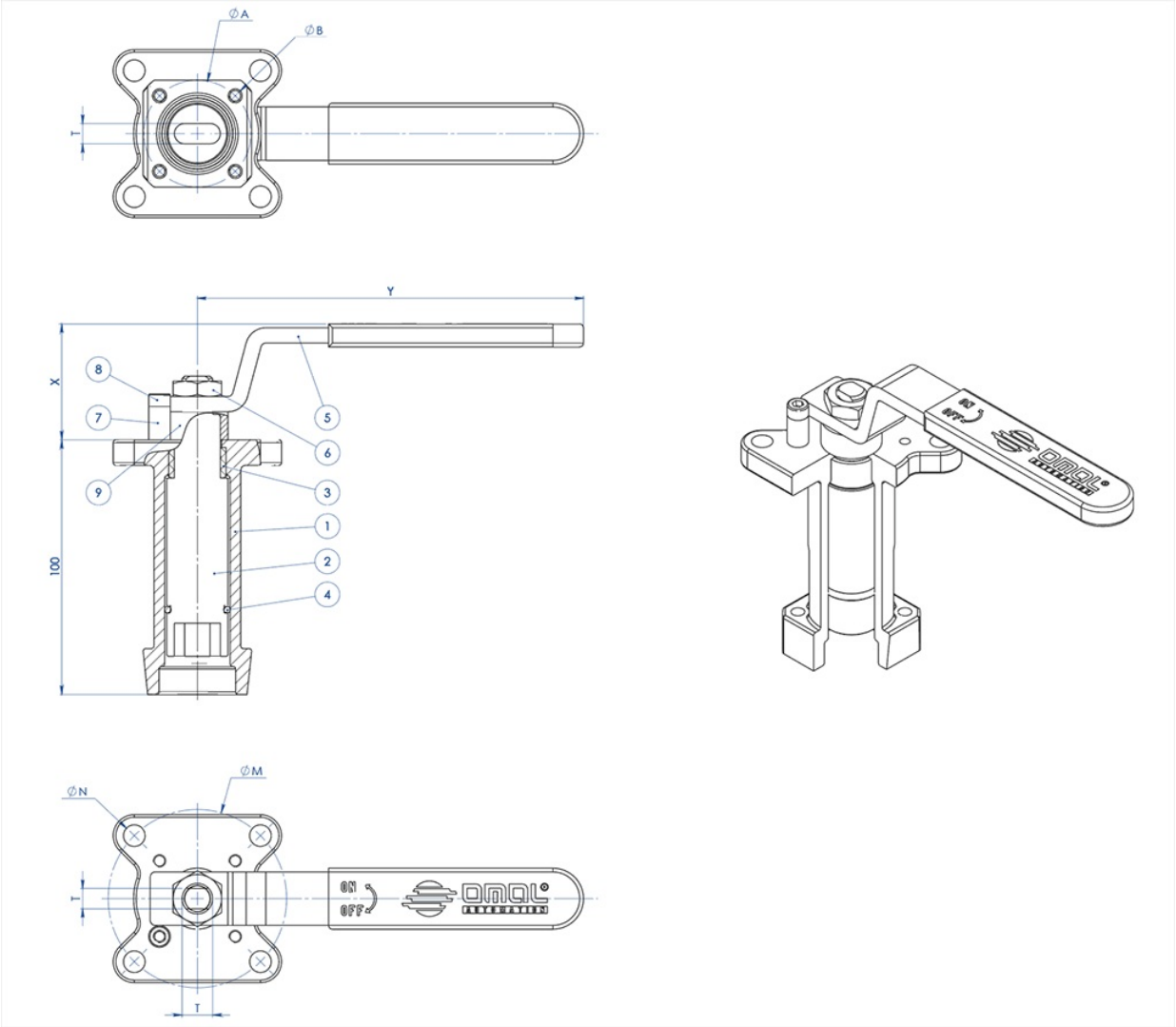
CASTING STEM EXTENSION WITH LEVER



MATERIALS		
PART. N°	**DESCRIPTION**	**MATERIAL**
1	Extension	AISI304 S.S.
2	Pin	AISI 430 F
3	Bush	DELRIN
4	O-RING	NBR
5	Lever	Fe 37 galvanized (*)
6	Nut	galvanized carbon steel (*)
7	Holder Lever	galvanized carbon steel (*)
8	Holder screw	A2-70
9	Spacer	PTFE Carbon Filled

(*): On request available in Aisi 304 s.s.

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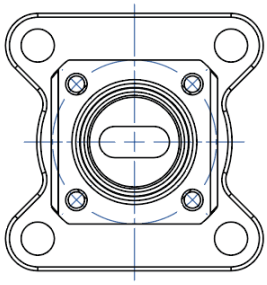
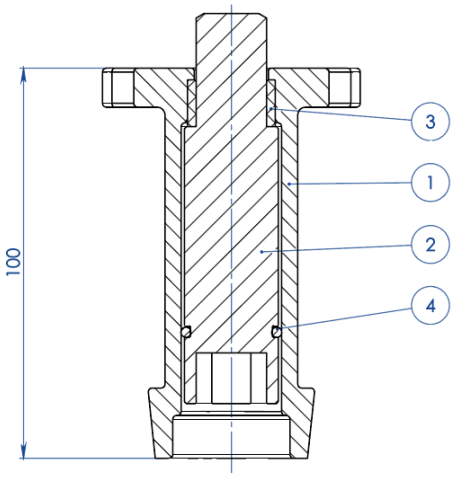
DIMENSIONS							
ISO VALVE	**ØA**	**ØB**	**ØM**	**ØN**	**F/T**	**X**	**Y**
F03	36	5,5	36	5,5	10/6	38,5	141,5
F04	42	5,5	42	M5	12/8	45,5	151,5
F05	50	6,5	50	6,5	16/10	48,5	276,5
F07	70	8,5	70	8,5	22/14	57,5	351,5
F10	102	11	102	11	30/18	79,5	451,5

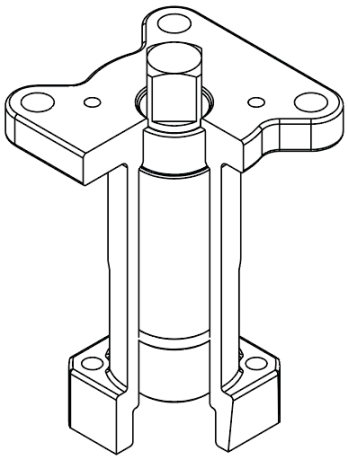
NOTE: Code of the spindle extension depending from drive's type and valve's connection; to be requested at the order.

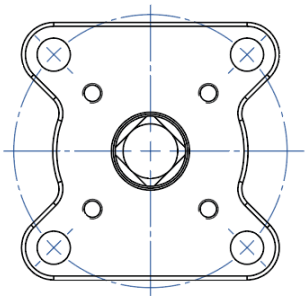
CASTING STEM EXTENSION FOR ACTUATORS



NOTA: Le dimensioni dipendono dalle dimensioni dell'attacco valvola
NOTE: Dimensions depending from valve's connection







NOTA: Le dimensioni dipendono dalla taglia dell'attuatore
NOTE: Dimensions depending from actuator's size

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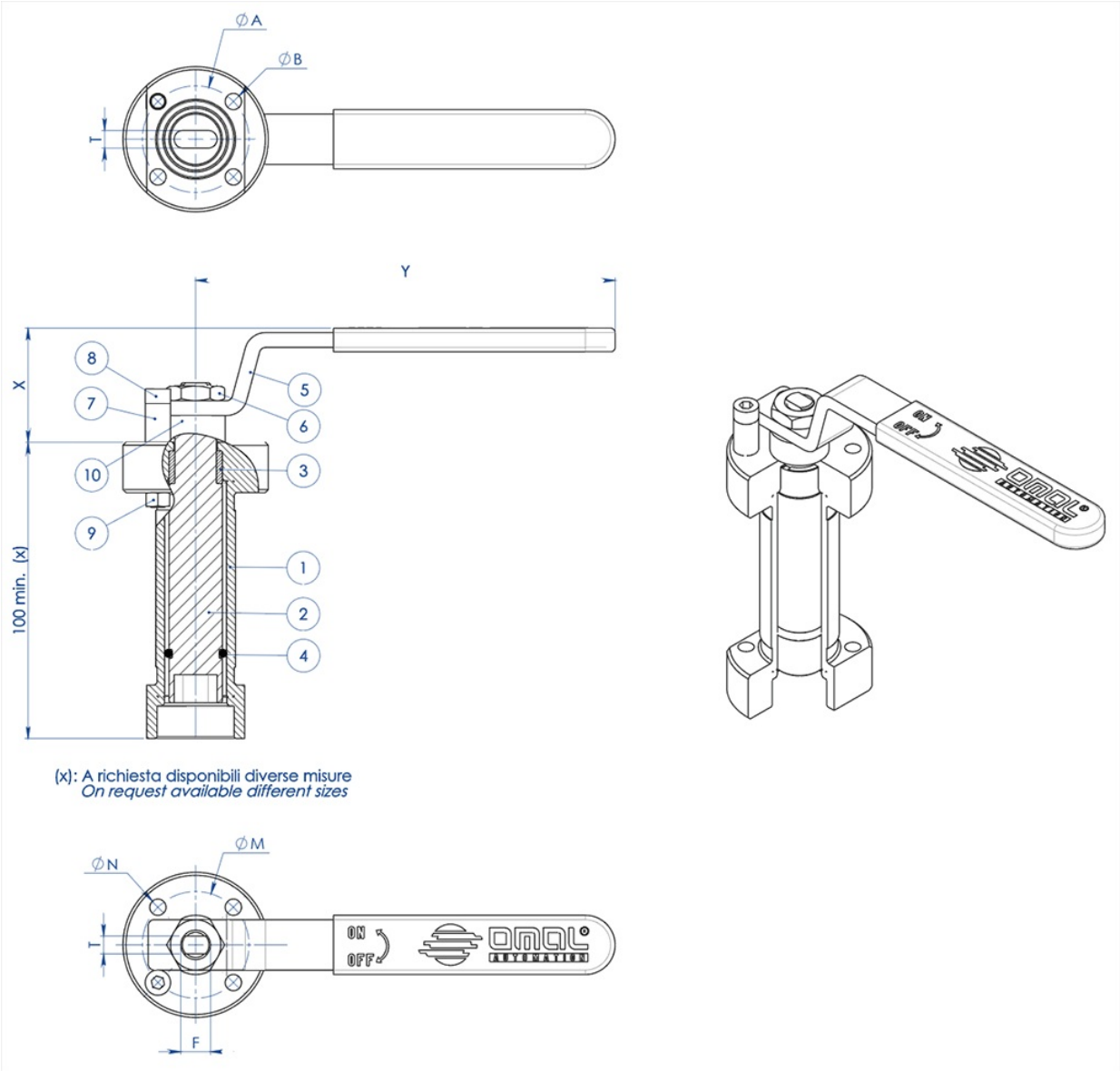
MATERIALS		
PART. N°	**DESCRIPTION**	**MATERIAL**
1	Extension	ASTM A351 CF8M
2	Pin	AISI 430 F
3	Bush	DELRIN
4	O-RING	NBR

NOTE: Code of the spindle extension depending from drive's type and valve's connection; to be requested at the order

WELDED STEM EXTENSION WITH LEVER



OMAL S.p.A. Società Benefit
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Production site: Via Brognolo 12, Passirano (Brescia) Italy
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MATERIALS		
PART. N°	**DESCRIPTION**	**MATERIAL**
1	Extension	304 s.s.
2	Pin	AISI 430 F
3	Bush	DELRIN
4	O-Ring	NBR
5	Lever	Fe 37 galvanized (*)
6	Nut	galvanized carbon steel (*)
7	Holder Lever	galvanized carbon steel (*)
8	Holder screw	A2-70
9	Holder nut	A2-70 (**)
10	Spacer	PTFE Carbon Filled

(*): On request available in Aisi 304 s.s.
(**): No available on valves with Iso connection F04

DIMENSIONS							
ISO VALVE	**ØA**	**ØB**	**ØM**	**ØN**	**F/T**	**X**	**Y**
F03	36	5,5	36	5,5	10/6	38,5	141,5
F04	42	5,5	42	M5	12/8	45,5	151,5
F05	50	6,5	50	6,5	16/10	48,5	276,5
F07	70	9	70	9	22/14	57,5	351,5
F10	102	11	102	11	30/18	79,5	451,5

NOTE: Code of the stem extension depending from drive's type and valve's connection; to be requested at the order.

WELDED STEM EXTENSION FOR ACTUATORS

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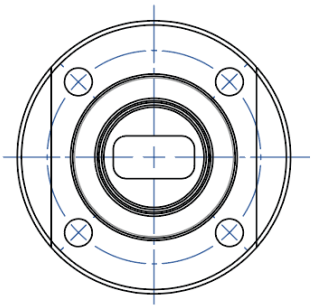
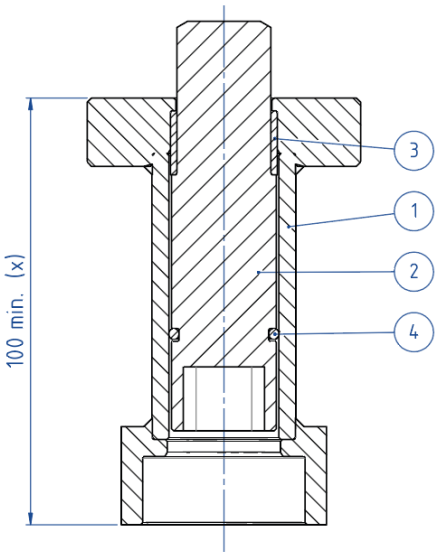
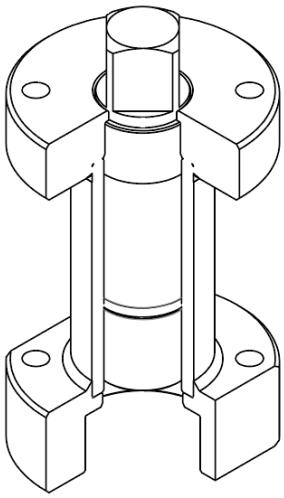
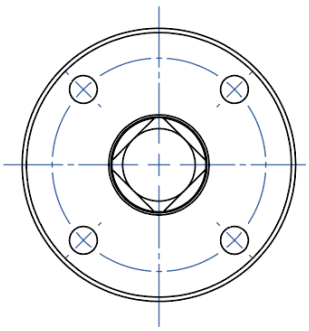


NOTA: Le dimensioni dipendono dalle dimensioni dell'attacco valvola
NOTE: Dimensions depending from valve's connection





(x): A richiesta disponibili diverse misure
On request available different sizes



NOTA: Le dimensioni dipendono dalla taglia dell'attuatore
NOTE: Dimensions depending from actuator's size

MATERIALS		
PART. N°	**DESCRIPTION**	**MATERIAL**
1	Extension	304 S.S.
2	Pin	AISI 430 F
3	Bush	DELRIN
4	O-RING	NBR

NOTE: Code of the stem extension depending from drive's type and valve's connection; to be requested at the order.

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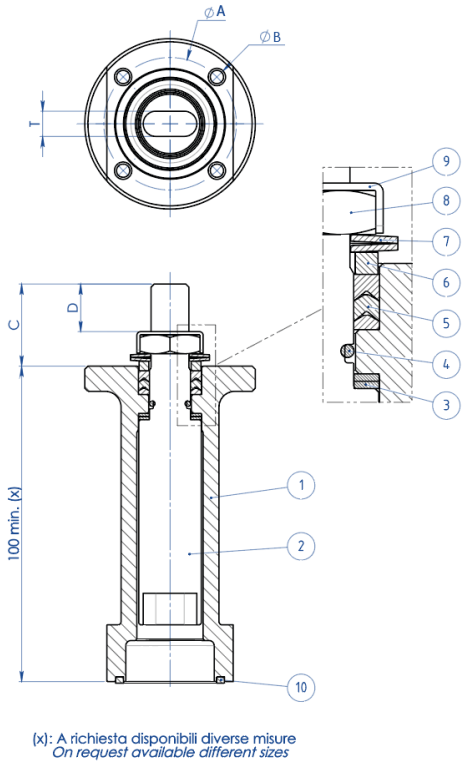
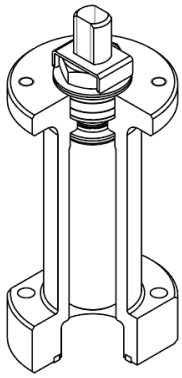
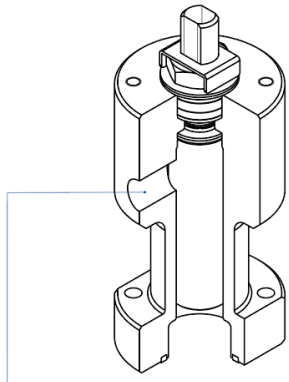
STEM EXTENSION WITH ADDITIONAL SEAL

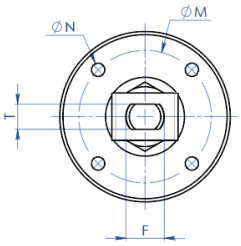


(x): A richiesta disponibili diverse misure
On request available different sizes





A richiesta disponibile anche la versione con presa per Sniffer
Stem extension with sniffer also available on request



MATERIALS		
PART. N°	**DESCRIPTION**	**MATERIAL**
1	Extension	304 s.s.
2	Pin	A564 TP.630 (17-4ph)
3	Bottom Sealing	TFM1600
4	O-Ring	FKM
5	Chevron Ring	TFM1600
6	Packing Gland Ring	304 s.s.
7	Spring Washer	50CrV4 Galvanized
8	Stem Nut	UNI 3740-1 6S Galvanized
9	Stop Nut Plate	304 s.s.
10	Gasket	GRAFOIL

DIMENSIONS							
ISO VALVE	**ØA**	**ØB**	**ØM**	**ØN**	**F/T**	**C**	**D**
F03	36	5,5	36	M5	10/6	20	10,2
F04	42	5,5	42	M5	12/8	26	15,1
F05	50	6,5	50	M6	16/10	35	21,2
F07	70	8,5	70	M8	22/14	47,5	28,4
F10	102	10,5	102	M10	30/18	61	35,2

NOTE: Code of the spindle extension depending from drive's type and valve's connection; to be requested at the order.

documents

Certificati

TA LUFT - MAGNUM & THOR
ATEX - Ball Valves
SIL IEC 61508 - MAGNUM & THOR
FUGITIVE EMISSION DN25 CL.300 T1-T2-T3-M1-M4-M5-M6
FUGITIVE EMISSION DN100 CL.300 T1-T2-T3-M1-M4-M5-M6
PED
FIRE SAFE - SPLIT BODY DN100-200 API6FA - ANSI
FIRE SAFE - SPLIT BODY DN50-100 API6FA - ANSI
FIRE SAFE - SPLIT BODY CL150-300 PN16-40 DN15-200 316
API Licence number 6D-1007
UKCA

Istruzioni

ISTRUZIONI ATEX 8_0486
ISTRUZIONI USO 8_0844-35

Manuali

MANUALE UMAH1000