TASSALINI
PRECISION MADE GREAT, SINCE 1922

TECHNICAL DATA SHEET

check valve:
DIN-SMS-RJT BS- IDF ISS

Summary

COMPONENT DESCRIPTION AND APPLICATION

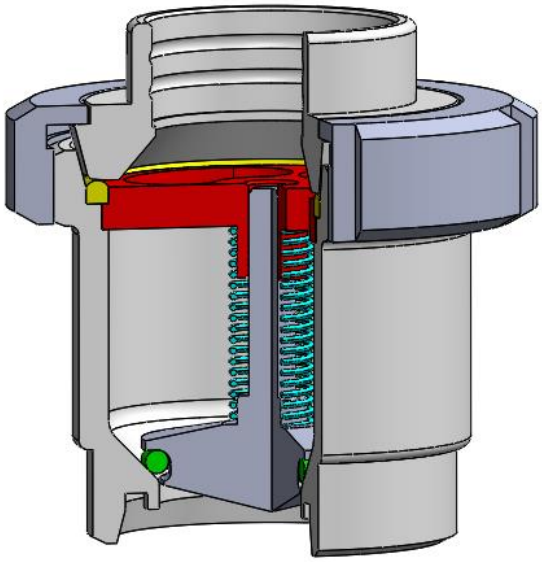
Check valves serve the purpose of preventing product backflow, ensuring unidirectional flow.

This technical data sheet presents two types of valves: **THREADED**, **WELDED** and **EXPANDING** end.

The valve opens as soon as the pressure acting on the plug exceeds the counterpressure exerted by a spring. When both pressures are balanced, the valve closes.

When the counterpressure is greater, the plug presses against the valve walls.

CHECK VALVE



- DN 25 – DN 100; according to DIN, SMS, RJT BS, IDF ISS
- Type of connection: **THREADED, WELDED** or **EXPANDING** end.
- Installation with vertical or horizontal axis
- Stainless steel valve body
- **Upon request, we can supply valves with a declaration of suitability for food contact material, as for Regulation F.C.M. (EC No. 1935/2004).**

COMPONENT DESCRIPTION AND APPLICATION

FEATURES

TASSALINI check valves are crafted from stainless steel semi-finished products

The wide diaphragm opening allows the passage of solid particles.

For low pressures, the springs ensure the proper operation of the valve in both horizontal and vertical directions.

The working pressure can be calibrated by adjusting the compression applied to the spring.

Each valve is equipped with a PTFE O-RING on the stem and an EPDM gasket between the two mating parts. Both can be made from EPDM, FPM/FKM, PTFE, VMQ, and are **FDA** approved.

The external surface is mirror-polished, while the internal surface is satin-finished with a roughness of Ra ≤ 0.8 µm.

Upon request, a Ra ≤ 0.3 µm can be achieved on the mirror-polished surface.

The valve can be used in both vertical and horizontal positions, although it is preferable to use it in a vertical position.

For clarification regarding the valve's application and the types of fluids with which it is compatible, please contact our technical department.

REGULATORY REFERENCES

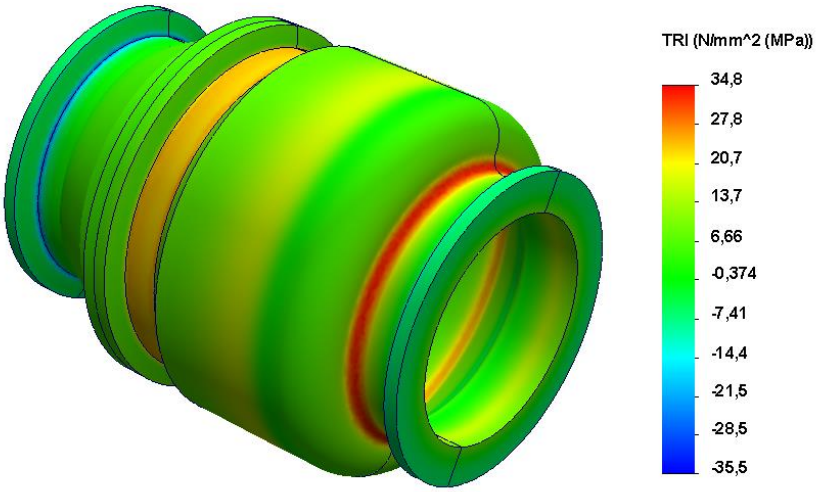
DESIGN

The valve body is designed and sized in accordance with **EN-13445**: Pressure vessels made of austenitic stainless steel not exposed to flames.

Reference standards for industrial and metal check valves: **EN-19, EN-16767**.

Standards for sizing the thickness of industrial valves: **EN-12516**.

Special FEM analyses with dedicated software have been performed on the valve body.



ACTUATOR MOUNTING BASE

- In accordance with EN ISO 5211

CLEARANCE DIMENSIONS

- In accordance with EN ISO 558
- ISO 5752,
- API 609

REGULATORY REFERENCES

EUROPEAN REFERENCE DIRECTIVES

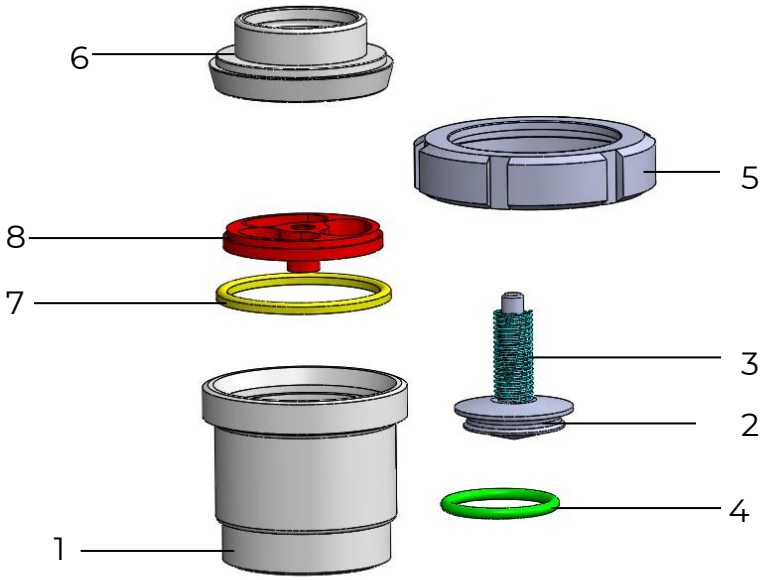
TASSALINI Check Valves are compliant with the following directive:

- **PED Directive (2014/68/EU)** for the design of pressure equipment.

The PED Directive (2014/68/EU) is applicable to the design, manufacturing, and conformity assessment of equipment subjected to a maximum allowable pressure exceeding 0.5 bar. Equipment used in water collection, distribution, and drainage networks is excluded. Depending on the type of pressure equipment, the maximum allowable pressure (PS), the nominal diameter (DN), the physical nature of the fluid (liquid, gas, or vapor), and the hazard level of the fluid (group 1/2)*, the directive categorizes the equipment into various categories (Article 4.3, I, II, III, IV), which are essential for the conformity assessment and CE marking. Equipment defined in Article 4.3 of the directive cannot bear the CE marking.

- Group 1: includes hazardous fluids (compliant with Directive 67/548/EEC), explosives, extremely flammable, easily flammable, flammable, highly toxic, toxic, and oxidizing.
- Group 2: includes all other fluids.

COMPONENTS AND MATERIALS



N° Description	Q.ty	Material	EN	ASTM
1 Body Valve	1	Stainless Steel	X2CrNi 17-12-2/ X2CrNi 18-9	Aisi 316L/ 304L
2 Plug	1	Stainless Steel	X2CrNi 17-12-2/ X2CrNi 18-9	Aisi 316L/ 304L
3 Spring	1	Stainless Steel	X5CrNi 17-12-2/ X2CrNi 18-10	Aisi 316/304
4 Plug Seal	1	PTFE-EPDM-VMQ-FPM/FKM	RIF. EN 13000-1:2021	-
5 Lock nut	1	Stainless Steel	X2CrNi 18-10	Aisi 304
6 Reducer	1	Stainless Steel	X2CrNi 17-12-2/ X2CrNi 18-9	Aisi 316L/ 304L
7 Seal	1	PTFE-EPDM-VMQ-FPM/FKM	RIF. EN 13000-1:2021	-
8 Diaphragm	1	Stainless Steel	X2CrNi 17-12-2/ X2CrNi 18-9	Aisi 316L/ 304L

INSTALLATION AND MAINTENANCE

Below are some observations to be considered during the installation and maintenance of the valve. For specific instructions, please refer to the user manual and maintenance manual of the specific product.

For any specific information, please contact our technical office.

GENERAL GUIDELINES: INSTALLATION

All installation operations must be carried out in accordance with local safety instructions and regulations. All components should be handled by experienced professionals.

Maintenance of check valves is the responsibility of technically trained and qualified personnel.

Before performing any operation, ensure that there is no pressurized fluid or high-temperature fluid in the pipeline. The operator should never be exposed to potential hazards.

Properly align the pipes to avoid subjecting the valve body to abnormal stress.

Check the compatibility of any connecting flanges with the operating pressure: the PN value of the flanges should be equal to or greater than the operating pressure.

GENERAL GUIDELINES: MAINTENANCE

Maintenance should be performed by experienced and qualified personnel.

All maintenance operations of any type should be carried out in accordance with local safety regulations.

Valves require specific maintenance to ensure their maximum service life.

TECHNICAL DATA

TASSALINI check valves are available in various types. As stated in the introduction of the following technical document, the valves presented here are available with different connections:

- **641 WE-WE:** body **WELDING END** reducer **WELDING END**
- **642 ME-EE:** body **MALE END** reducer **EXPANDING END**
- **643 ME-ME**: body **MALE END** reducer **MALE END**
- **644 ME-WE**: body **MALE END** reducer **WELDING END**

It is specified that the **643 VALVE** model is provided only upon specific customer request.

OPERATING CONDITIONS:

Description	Work T min / max [°C]	Work T min / max [°F]	Work P max. [bar]
Valve	-10 +95	+15 +205	10
PTFE	-10 +150	+15 +300	10
EPDM	-30 +140	-20 +280	10
SILICONE	-50 +200	-60 +390	10
FPM	-15 +220	+5 +430	10

INTERNAL FINISH: Ra Inf. = 0,8 µm

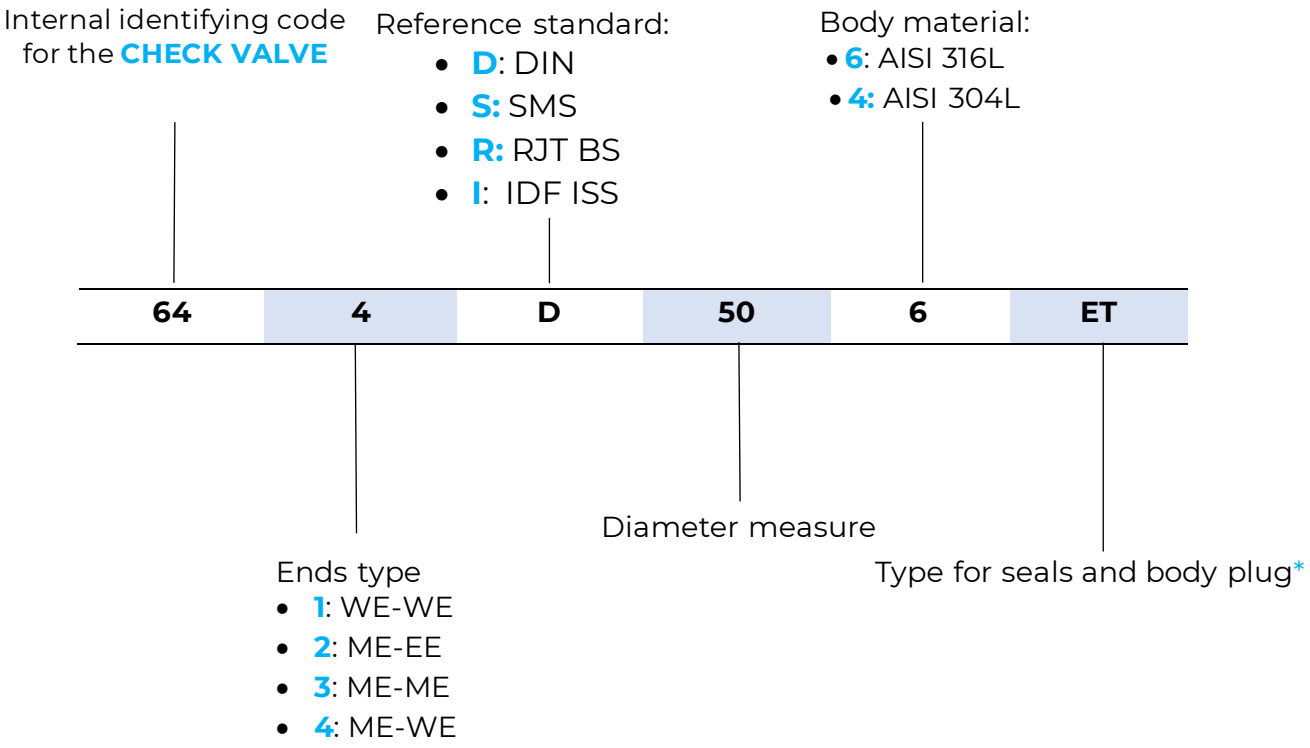
CLOSURE TEST: 0.7 bar

BODY TEST: 15 bar

TECHNICAL DATA

PRODUCT CODING FOR CHECK VALVE

Here is a user guide for the correct designation during the component selection phase.



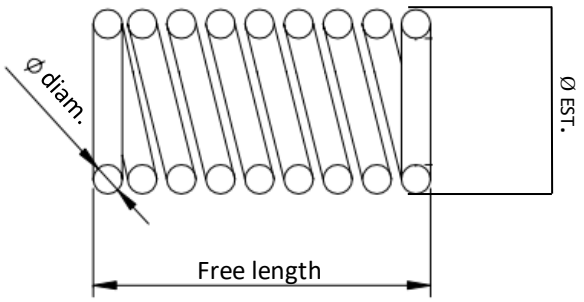
*Material combination: customer's choice

	BODY	PLUG
NT	NBR	PTFE
ET	EPDM	PTFE
E	EPDM	EPDM
S	VMQ	VMQ
V	FPM-FKM	FPM-FKM
T	PTFE	PTFE

TECHNICAL DATA

SPRING DIMENSIONS:

Springs made of **AISI 316** material supplied according to **EN 10204-3.1.**

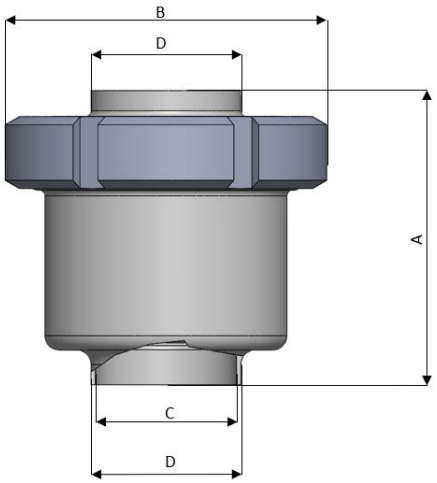


Valve Diameter	SPRING CODE	Ø EST [mm]	Ø WIRE [mm]	FREE LENGTH [mm]	Coil Number
12	640 12 # 03	12.6	0.8	44	20
19	640 19 # 03	14	0.9	60	16
25/34	640 25/34 # 03	17.5	1	72	17 3/4
38/40	640 38/40 # 03	18.1	1.3	70	18
51/52	640 51/52 # 03	18	1.3	72	15
63/70	640 63/70 # 03	18.5	1.5	72	18 1/2
76/80	640 76/80 # 03	24.4	2	70	16
101	640 101 # 03	25.1	2.3	82	16
125	640 125 # 03	33	3.5	100	10
150	640 150 # 03	36.4	3.2	115	10

TECHNICAL DATA - DIN STANDARD

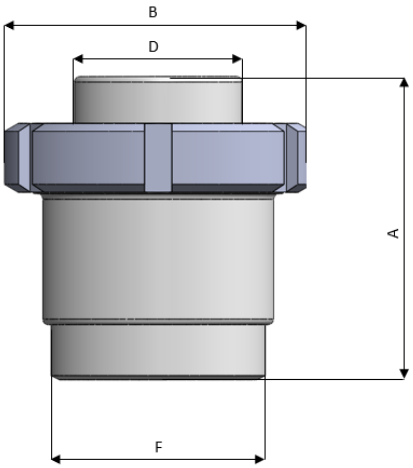
DIN TYPE VALVE:

641 D: ENDS WE-WE



DN	A [mm]	B [mm]	C [mm]	D [mm]	Weight [gr]
25	87.0	78.0	25.0	28.0	1100
32	89.0	92.0	31.0	34.0	1650
40	97.0	92.0	37.0	40.0	1530
50	101.5	112.0	49.0	52.0	2440
65	119.5	138.0	66.0	70.0	4010
80	132.0	148.0	81.0	85.0	5340
100	118.0	148.0	97.6	101.6	6330
104	118.0	148.0	100.0	104.0	6330

642 D: ENDS ME-EE

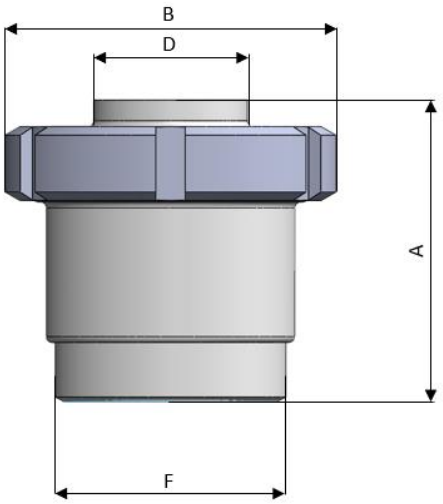


DN	A [mm]	B [mm]	D [mm]	F [mm]	Weight [gr]
25	89.0	78.0	35.0	52-6	1120
32	94.0	92.0	41.0	58-6	1670
40	105.0	92.0	48.0	65-6	1560
50	109.5	112.0	61.0	78-6	2500
65	132.5	138.0	79.0	95-6	4170
80	133.5	148.0	93.0	110-4	5500
100	126.0	158.0	114.0	130-4	7050
104	126.0	158.0	114.0	130-4	7050

TECHNICAL DATA - DIN STANDARD

DIN TYPE VALVE:

644 D: ENDS ME-WE

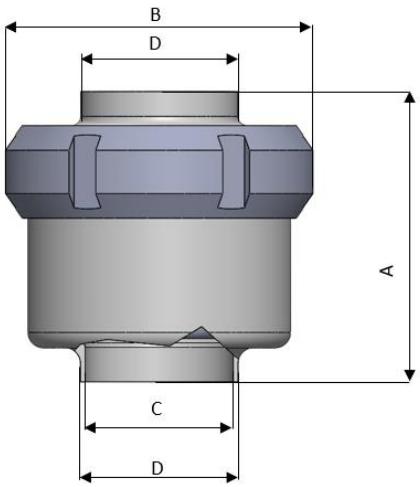


DN	A [mm]	B [mm]	D [mm]	F [mm]	Weight [gr]
25	87.0	78.0	28.0	52-6	1100
32	89.0	92.0	34.0	58-6	1650
40	97.0	92.0	40.0	65-6	1530
50	101.5	112.0	52.0	78-6	2440
65	119.5	138.0	70.0	95-6	4010
80	132.0	148.0	85.0	110-4	5340
100	118.0	148.0	101.6	130-4	6330
104	118.0	148.0	104.0	130-4	6330

TECHNICAL DATA - SMS STANDARD

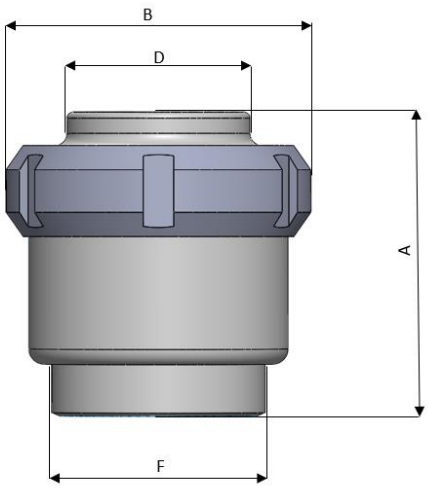
SMS TYPE VALVE:

641 S: ENDS WE-WE



DN	A [mm]	B [mm]	C [mm]	D [mm]	Weight [gr]
25	76.0	74.0	22.4	25.4	1100
38	98.0	84.0	35.1	38.1	1530
51	94.0	100.0	47.8	50.8	2440
63	108.0	114.0	60.5	63.5	4010
76	126.0	154.0	72.9	76.2	5340
101	118.0	154.0	97.6	101.6	6330

642 S: ENDS ME-EE

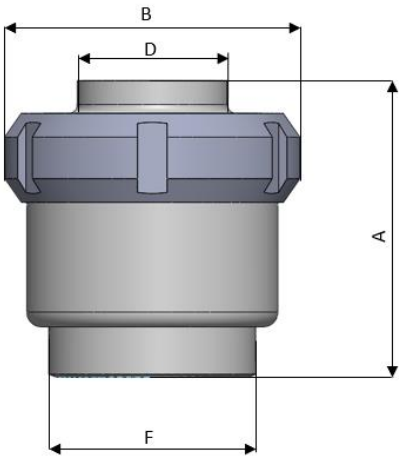


DN	A [mm]	B [mm]	D [mm]	F [mm]	Weight [gr]
25	79.5	74.0	32.0	40-6	1120
38	102.0	84.0	48.0	60-6	1560
51	100.0	100.0	61.0	70-6	2500
63	122.5	114.0	73.5	85-6	4170
76	132.0	154.0	86.0	98-6	5550
101	127.0	154.0	116.0	132-6	7050

TECHNICAL DATA - SMS STANDARD

SMS TYPE VALVE:

644 S: ENDS ME-WE

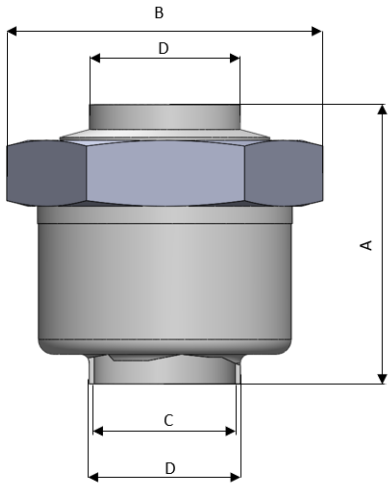


DN	A [mm]	B [mm]	D [mm]	F [mm]	Weight [gr]
25	79.5	74.0	25.4	40-6	1100
38	102.0	84.0	38.1	60-6	1530
51	100.0	100.0	50.8	70-6	2440
63	122.5	114.0	63.5	85-6	4010
76	132.0	154.0	76.2	98-6	5340
101	127.0	154.0	101.6	132-6	6330

TECHNICAL DATA - RJT BS STANDARD

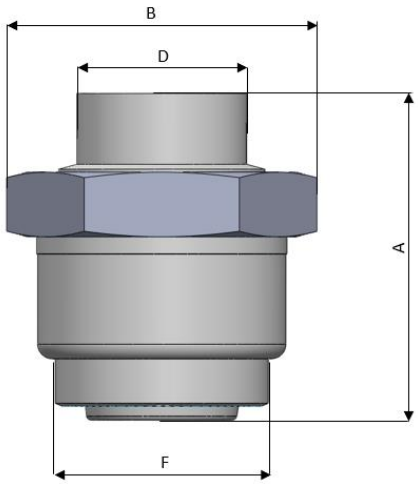
RJT BS TYPE VALVE:

641 B: ENDS WE-WE



DN	A [mm]	B [mm]	C [mm]	D [mm]	Weight [gr]
25	85.0	65.0	22.4	25.4	1100
38	94.0	80.0	35.1	38.1	1530
51	93.0	92.0	47.8	50.8	2440
63	106.0	104.0	60.5	63.5	4010
76	111.0	130.0	72.9	76.2	5340
101	118.0	130.0	97.6	101.6	6330

642 B: ENDS ME-EE

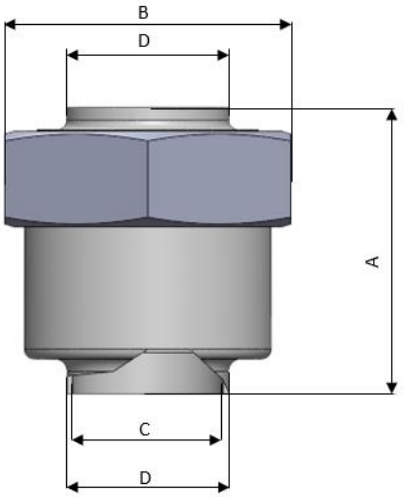


DN	A [mm]	B [mm]	D [mm]	F [mm]	Weight [gr]
25	92.0	65.0	32.5	46-8	1120
38	104.0	80.0	45.0	58-8	1560
51	106.0	92.0	58.0	73-6	2500
63	125.5	104.0	70.5	85-6	4170
76	128.0	130.0	83.5	98-6	5500
101	124.0	130.0	109.5	123-6	7050

TECHNICAL DATA - IDF ISS STANDARD

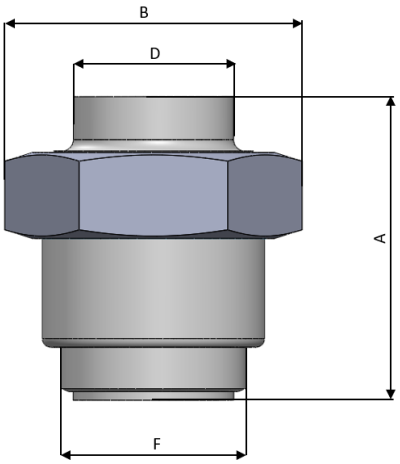
IDF ISS TYPE VALVE:

641 I: ENDS WE-WE



DN	A [mm]	B [mm]	C [mm]	D [mm]	Weight [gr]
25	83.0	60.0	22.4	25.4	1100
38	91.0	75.0	35.1	38.1	1530
51	106.0	90.0	47.8	50.8	2440
63	123.0	105.0	60.5	63.5	4010
76	130.5	134.0	72.9	76.2	5340
101	135.0	134.0	97.6	101.6	6330

642 I: ENDS ME-EE



DN	A [mm]	B [mm]	D [mm]	F [mm]	Weight [gr]
25	83.0	60.0	28.0	37-8	1120
38	91.0	75.0	42.5	50-8	1560
51	106.0	90.0	56.0	64-8	2500
63	123.0	105.0	69.5	77-8	4170
76	130.5	134.0	82.0	91-8	5500
101	135.0	134.0	108.4	118-8	7050

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