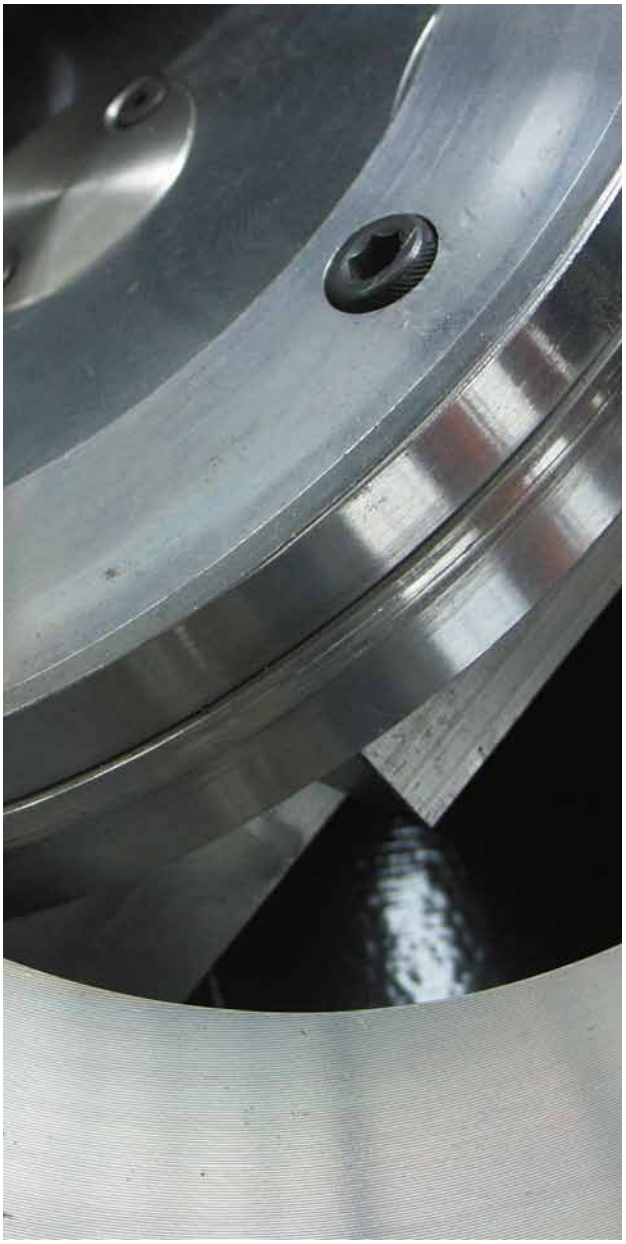
EN ASME



Triple Offset Butterfly Valves

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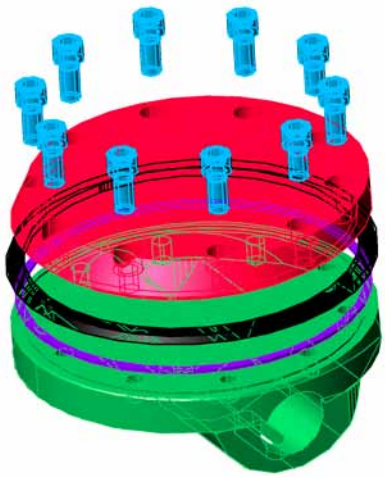
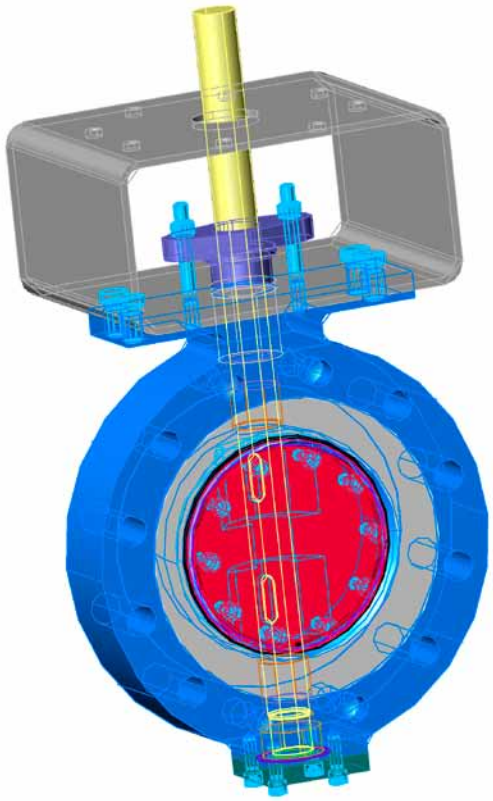
Company Profile

Since from our foundation in the year 1947, we produce valves for industrial applications.
The standard production range covers the sizes from DN 50 (NPS 2") up to DN 1000 (NPS 40") for pressure rating up to PN 320.(class 2500)
A long experience in making valve with the most advanced technologies guarantees a top quality product with a wide range of solutions for many different applications.
For these reasons, today, the valves produced by us are widely used in chemical, petrochemical, food, gases, power generation, water treatment and distribution plants in many countries.
The design, experiment, manufacturing, and test of the products are done under one roof in strict accordance with the relevant national standards and engineering rules to ensure an easy installation, maintenance, replacing and as guarantee of a high product quality and long durability.
The quality system established is in compliance whit the EN ISO 9001 standard and has been approved since the year 1993.
The company energies and resources have always been addressed to the research of new solutions and to the acquisition of most advanced technologies offered by the market, in order to achieve a constant evolution of the valve performance and quality. Project innovations, performances and confidence improvement, assurance and easy maintenance are criteria always applied in the production.
A special program for environmental protection guarantee the design and the manufacturing of products with the lowest impact for the environment obtainable with the technologies now available.

Engineering

We provide the complete design of all the products in his studios whit the most advanced technologies.
All the valves are accurately designed totally according to last editions of DIN, EN and ISO standards. With the new releases of reference standards the products are updated to meet the new requirements.
A CAD - CAM system aid the technicians to develop the project and to produce the detailed drawings of the complete valve and subparts: on request we can provide quickly to our customer all the drawings that they need. All the characteristics are obtained and verified with multiple calculation to reach the optimal performances.
A specific software developed according to the current engineering rules (DIN 3840 o EN 12516) allow the technicians to determine in advance the pressure effects on valves body: the stress and the forces generated are calculated to verify the material resistance in working conditions.
The prototype of a new product is subject





to several and intensive test:

- the quality of the casting is verified whit X-ray and with magnetic particle or dye liquids, to determine if the heating method is correct and the final quality level is in compliance whit the requirements;
- the behaviour of the valve material is verified in standard working conditions during a long time period whit an intensive pressure test;
- the resistance of all valve components is verified in standard working conditions with multiple operations.

Manufacturing

We make our products on latest production equipment.
The CNC machines are used in making of both valve bodies and inner parts. This is a guarantee for an accurate and precise realisation in accordance with design characteristics and a perfect interchangeability and substitutability of all valve components.
These machining systems permit to reach the top quality of the products: the finish and the precision of machined surfaces are the best that can be obtained whit latest technologies.

Our technicians survey with attention the assembly step to ensure that each components have no defects, each valve is correctly assembled, and the final product is totally in accordance with design characteristics.
Also the bolts tightening is performed in controlled condition: each bolt is tightened to the exactly required torque to guarantee the perfect tightness of the bolted connection. All our technicians and workers are well qualified and experienced and guarantee together with up to date equipment a high and constant quality of the product.

The welding process is totally automated, to obtain the best quality of chemical and mechanical characteristics. Stainless steels, duplex, stellite, Monel, Hastelloy, Inconel and all other alloyed materials are overlay welded on the seats maintaining on the seats maintaining they characteristics of resistance to corrosion and temperature with the highest hardness.
The easy and quick assembly is the main target of all other steps: a short assembly time is also a guarantee for the customer of a low cost and easy maintenance.

Warehouse

In our warehouse a big stock of raw materials and work in progress is stored. A large covered area is used only to store the materials.
All arriving goods are subject to rigid tests and controls according to Quality Assurance Manual to guarantee that no defective material shall be used in the production.
The stock level is constantly monitored and the acquired customer's orders are considered for the requirement of row materials. The orders to the qualified suppliers are placed on the basis of MRP (Manufacturing Requirements Program) results produced by the data elaboration of the bill of materials, the minimum programmed stock levels and the suppliers standard delivery times.

The availability of row material and the status of work in progress are updated every day with the orders received from the customers and the data from the production: in this way we can inform the customer in each moment about the order situation, and we can guarantee a punctual delivery. The raw materials are stored by appropriate methods to preserve their quality for a long time and their conditions and conservation are constantly monitored.
All the stored materials, after the inspections, are correctly identified to prevent an improper use. With these methods the traceability for each valve component and the related material certificates is guaranteed.

Testing & Checking

During the stages of manufacturing process, all components are subjected to rigid quality controls according to Quality Control Plans and DIN, EN and ISO applicable standards.
All completed valves, before leaving the factory have undergone to several tests on up to date equipment.
The testing equipment are regularly calibrated according to formal procedures with the reference to samples certified by official testing laboratories (Sit, Namas,etc.).
These equipment permits to our technicians to perform all the required tests like dimensional checks, strength tests and tightness tests.
By these methods we can guarantee that 100% of the valves delivered to the customers are completely in conformity with the requirements of Quality Control Plans and reference standards.

Apposite Quality Control Plans are predisposed for valves ordered for special applications (ex. gas, flammable fluids, etc.) or subject particular regulations (TRB, TRD, TRbF, etc.).
The know how of our personnel employed in the tests is verified and certified by an independent authority according to the current regulations.
All the performed tests are certified according to EN 10204.

Quality System

We have done of the total quality one of its firm missions. Since the year 1993 the Quality Assurance System have been certified according to EN ISO 9001 standards.
Well-qualified personnel are employed in each stage of the production process, from the reception of row materials up to delivery of the products. Periodically the personnel are subjected to refresher courses and his technical capabilities are verified.
All the stored materials, after the inspections, are correctly identified to prevent an improper usage.
During the production the material identification and traceability is guaranteed by appropriate methods. The origin certificates of row material are recorded to guarantee the traceabilty for each valve component. The goods conformity to the applicable standards and to the customer's technical specifications are guaranteed and certified according to EN 10204. The order situation, availability and the advancing state of work are brought up to date in real time.
The Quality System is approved and certified by independent authorities also as suitable in the production of valves for special application like steam or dangerous fluids.


CERTIFICATO

R.T. VALVOLE INDUSTRIALI S.r.l.

UNI EN ISO 9001:2008


CERTIFICATE

R.T. VALVOLE INDUSTRIALI S.R.L

AD 2000-Merkblatt HP 0 / HP100R / A4 and EN ISO 3834-3

Pressure Equipment Directive 97/23/EC

APPROVALS

Reference standard	Issuing body
ISO 9001:2008	TUV
AD 2000 – M. A4	TUV
AD 2000 – M. HP 0	TUV
PED	TUV

Environment

On request we can supply valves certified by TUV in accordance with the new standard ISO 15848 and with directive TA-Luft 2002. The standard ISO 15848 fix restrictive limits for fugitive emissions from valve sealings to make possible to use these valves also with very dangerous or polluting fluids.
To meet these high performance requirements, these valves are provided with special sealings and additional devices expressly designed to limit the fugitive emissions.
The qualified range cover the diameters from DN 50 up to DN 800 and the pressure classes from PN 6 up to PN 100
These valves are available in three versions to meet the customer's needs in all possible application ranges with three different


TÜV

CERTIFICATE

R.T. VALVOLE INDUSTRIALI S.r.l.
PN 100 DN 125 Gate Valve

COMPANY	R.T. VALVOLE INDUSTRIALI S.r.l. – Turbigo (MI)
TEST LOCATION	R.T. VALVOLE INDUSTRIALI S.r.l. - Produzione alle Turbigo (MI)
TIME OF TESTING	From 13th to 21st November 2002
TESTED VALVE	Nominal diameter 125, nominal pressure PN 100, flanged RF
REQUIREMENTS	Equivalence criteria of body to bonnet and shaft sealing systems according to TA LUFT ed. July 2002 under Point 5.2.6.3 and 5.2.6.4 Endurance test: 1.500 cycles (ADIN) at ambient temperature with actuator type AUMA SA 07.5 B3 and a stroke of 125 mm.
LEAK DETECTION METHOD	Helium Leak Detector (Vacuum Method)/ Mass Spectrometer Balzers HLT 250
PACKING MATERIAL AND PACKING SEALING CONFIGURATION	Body-bonnet seals and Spring Loaded Packing as described in the drawing No. 260.125.100.CC.00 and No. 260.125.100.TL.00
TEST RESULTS	The described valve body-bonnet and shaft sealing system satisfy the TA LUFT equivalence criteria after 2500 cycles with only one torque adjustment after 200 cycles.

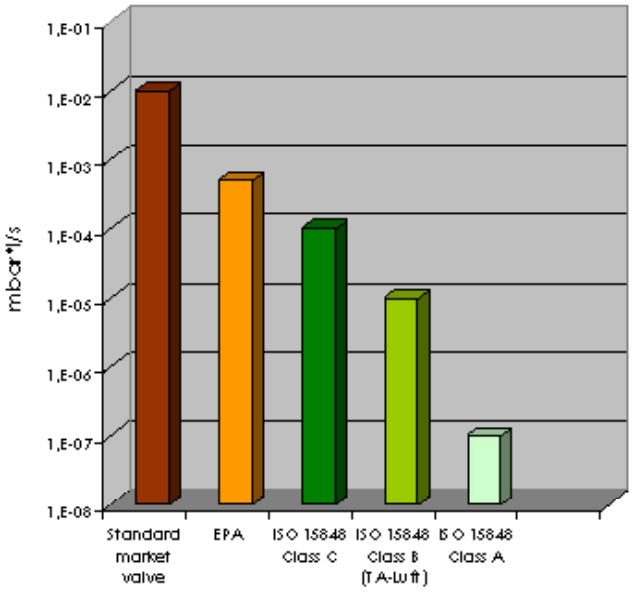
IMPORTANT:
This certificate must be referred to the LQS Laboratory Report LT-R-079/02 and the LQS procedure CND 064/PSM.

Date of issue: 10/12/2002
Place of issue: Cinisello Balsamo (MI)

TÜV ITALIA

The Inspector
Ing. H. Oberhofer

Leak rate in helium test



performance levels according to ISO 15848 definitions

- AH - CO2 - SS0 - RT: fugitive emissions up to a 10^{-6} mg*s^{-1}*m^{-1} He maximum during 1500 cycles with any packing setup
- BH – CO2 – SS0 – RT : fugitive emissions up to a 10^{-4} mg*s^{-1}*m^{-1} He maximum during 1500 cycles with any packing setup
- BH – CO2 – SS1 - RT : fugitive emissions up to a 10^{-4} mg*s^{-1}*m^{-1} He maximum during 1500 cycles with one packing setup

The class AH-CO2-SS0 is generally suitable for all kind of application also with dangerous, toxic or polluting liquids or gas and guarantee a high safety level.
The class BH-CO2-SS0 is generally suitable polluting liquid or gases and can guarantee excellent performances also in case of infrequent maintenance.
The class BH-CO2-SS1 is suitable for polluting liquids and can guarantee a low emission level.

CE Mark

All valves produced by us are designed, produced and certified according to European Directive 93/23/EC (also know as Pressure Equipment Directive or PED).
Since May 2001 we have been qualified according to the PED requirement by the Notified Body TÜV SÜDDEUTSCHLAND according to module H (full quality assurance).
This qualification permit to use our valves for dangerous or not dangerous fluids (as specified in the directive 67/548/EC), without limitations for service pressure and temperature and falling in categories I, II or III of PED classification.
The pressure bearing parts are always made with materials specified in EN harmonized standards or qualified according to specific PMA procedures. These base materials are purchased only from qualified factories according to Annex I art. 4 of 97/23/EC.


CERTIFICATO
CERTIFICATE
L'Ente di Certificazione TÜV Italia Srl
Organismo Notificato Pressure Equipment Directive
R.T. VALVOLE INDUSTRIALI S.r.l.
Via alle Cave 25/29
I - 20029 TURBIGO (MI)
PROGETTAZIONE E PRODUZIONE DI VALVOLE A SARACINESCA, A RITEGNO E A FARFALLA DA DN40 A DN1200
DESIGN AND MANUFACTURE OF GATE, CHECK AND BUTTERFLY VALVES FROM DN40 TO DN1200
CE 0948

To meet the requirement of PED directive the valves are always supplied as CE marked with a tag plate indicating the service limits for the specific model based on body material, options and device installed.
With the delivered products are always supplied also:

- the declaration of conformity according to Annex VII of European Directive 97/23/EC
- the operating instructions according to Annex I point 3.4 of European Directive 97/23/EC and EN 764-6

On request we can supply to our customers all details contained in the technical file for each single valve model including desing data, calculations and risk analysis.

Atex

On request we can supply valves designed and produced to meet the requirement of European Directive 94/9/EC for equipment and protective system intended for use in explosive atmospheres, also know as Atex directive. The valves in this special configuration are designed to meet the requirement for equipment Category II Group 2 GD then to work controlling the risk of ignition in potentially explosive atmosphere. The valves in this group / category are certificated to not represent an ignition source under normal operation but also in case of expected malfunctioning in presence of gas or dust. According to Atex directive the valves meeting the requirement of Category II Group 2 GD can be used in the following zones:

- Zone 1 (an area in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist is likely to occur in normal operation occasionally)
- Zone 21 (an area in which an explosive atmosphere in the form of a cloud of combustible dust in air is likely to occur in normal operation occasionally)
- Zone 2 (an area in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only)
- Zone 22 (an area in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation but, if it does occur, will persist for a short period only)


ZERTIFIKAT ◆ CERTIFICATE ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

EC-Certificate

No. EX9 06 05 59808 001

Holder of Certificate: RT Valvole Industriali S.r.l.

Name of Object: Nonelectrical devices and components group 2

provided with:

- Ex marking and tag plate with the equipment category and group classification (II 2 GD)
- Specific and additional installation maintenance and use instructions for use in potentially explosive atmospheres

On customer request we can supply also the details of the file with desing data, calculations and risk analysis. In case of additional device to be installed on the valve (electric actuators, pneumatic actuators, gearboxes, limit switches etc.) also these equipments will be provided in compatible Atex versions.

II 2 GD

The valves supplied in Atex version are

Triple Offset Buttefly Valves

APPLICATIONS

The triple offset butterfly valves are used for shut of and regulating purposes.
Typical applications are:

- water
- chemicals
- petrochemicals
- district heating
- gases
- liquid gases (cryogenic service)

CONSTRUCTION DETAILS

Body

The body geometry is designed as the result of stress calculations according to current engineering standard and rules.
The body material is high quality steel.
The seats surface is covered by a wear resistance stainless steel deposited by welding overlay. On request the seat surface can be covered also with stellite or other special material overlays.
The body desing can be wafer or lug or flanged or butt welding ends type.

Disc

The disc is designed to reduce at the minimum possible the pressure drop and the cavitation effects. In full open position the disc is rotated by 90° in respect of full close position.
The disc seat is made with a metallic and graphoil composite ring that can be replaced. This sealing don't contain PTFE, rubber or other plastic components that

can be susceptible to high temperatures limiting the use of the valve only in the allowable range for the body material.
The triple offset design of the disc seats permits a friction free operation and a superior tightness performance without the need of a resilient seat. This feature guarantees a long life of the seat with reduced maintenance.
This full metal construction of the seat make the valve inherently fire safe then the ideal choice to handle flammable fluids.

Shaft

The shaft is one piece and full length type permitting to use the valve also for high differential pressure. Different shaft materials are available for all kind of applications or service condition.
The shaft is supported by two long length bearings that reduce the torque and increase the reliability. To avoid any leakage the stem has a high finish degree and a strict diametrical clearance.
The torque is transmitted from the stem to the disc means two or more keys to assure a high resistance to static and dynamic force.

Gaskets

The standard gaskets used for sealing are in pure graphite stainless steel reinforced. This type of gasket is suitable for many different applications. For special applications (cryogenic gases, high corrosion acids etc.) we can supply special gaskets designed for the specific application or according to customer specifications.

Triple Offset Buttefly Valves

Packing

The standard packing is made of four or more pure graphite rings with square section. The first and the last ring are reinforced with stainless steel to avoid the extrusion.
Other materials like PTFE are available on request. The graphite is always treated with special corrosion inhibitors to prevent the corrosion of ferritic stainless steel stem due to galvanic cell action.
For special applications (cryogenic gases, high corrosion acids, etc.) we can supply special packings designed for the specific application or according to customer requirements.
To meet the TA-Luft requirements, on request, we can supply valves with special design of stem and packing. The stuffing box housing is produced with a high finish degree and a strict clearance to guarantee a perfect tight of the packing.

Bracket

The standard valves are provided bracket with ISO 5211 connection suitable to apply on the valve a quarter turn gearbox or an actuators. On request we can provide a full range of gearbox already assembled on the valve suitable for all service conditions. One or more keys transmit the torque from the operator to the stem.

WARNINGS

- The triple offset butterfly valves are not suitable for media that tend to produce high sedimentation or encrustation, as well as fluids containing

foreign solids that, due to their hardness, present the risk to damage the seat faces.

- The triple offset butterfly valves are not suitable for media that can be solidified due to temperature variations.
- In case of gas service please advise always the type of the medium and the service condition for a correct choice of the valve design.
- The triple offset butterfly valves can be installed in all positions but optimal performances are achieved when the valves are installed with horizontal shaft in horizontal pipelines.
- Triple offset butterfly valves can be supplied also for bi-directional service: this feature is enclosed only if expressly requested
- The triple offset butterfly valves can be used also for regulating purposes if supplied in suitable version with appropriate operating devices: please ask always for "regulating version" in such cases.

INSTALLATION

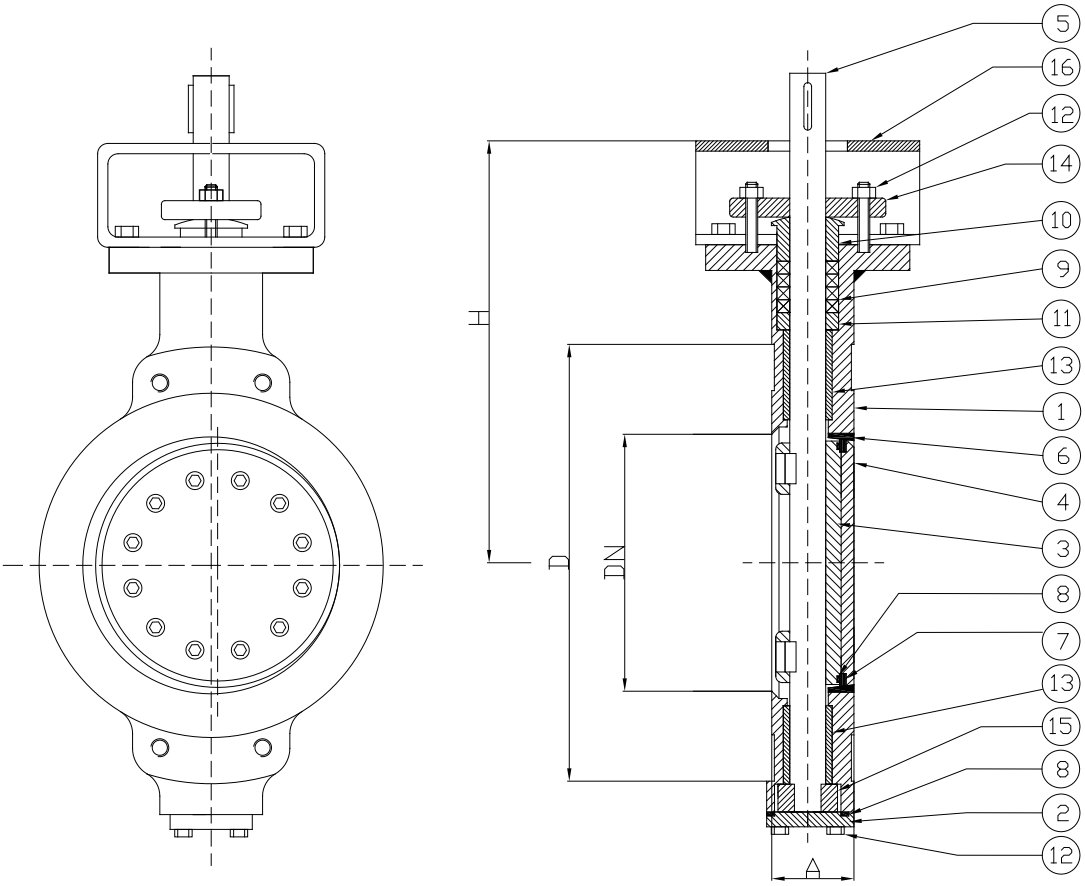
The best installation position for triple offset butterfly valves is with the stem horizontal to the ground. This installation position reduce the deposit of particles in the bearing area and permits to obtain the best tightness performances because avoid the adverse influence of the gravity on the disc.

Triple Offset Butterfly Valve

PN 25 DN 80 - DN 1000

Wafer type drilling PN 25 or PN 16 or PN 10

Fig. 142W-542W



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Standard features:

☑ Design	EN 12516
	EN 593
☑ Face to face	ISO 5752 series 25
	EN 558-1 series 25
	DIN 3202 K2
☑ Materials	EN 10025
	EN 10028
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	EN 593
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 142W	FIG. 242W	FIG. 342W	FIG. 342W-J	FIG. 442W	FIG. 542W
1		Body	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
2		Cover	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
3	x	Disc	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
4		Retainer flange	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
5	x	Shaft	1.4021 (1)	1.4021 (1)	1.4401 (1)	1.4301 (1)	1.4021 (1)	1.4021 (1)
6		Body seats	1.4502 (2)	1.4502 (2)	1.4401 (2)	1.4301 (2)	1.4502 (2)	1.4502 (2)
7	x	Seal ring	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)
8	O	Gasket	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
9	O	Packing	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
10	x	Gland	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
11	x	Spacer	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
12		Bolts & Screws	8.8 (4)	1.7225 (4)	1.4301 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
12		Nuts	8.8 (4)	1.1191 (4)	1.4301 (4)	1.4301 (4)	1.1191 (4)	1.1191 (4)
12		Screws (wetted)	8.8 (4)	1.7225 (4)	1.4401 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
13	x	Bush	1.0402 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT
14		Gland flange	1.0425	1.0425	1.4301	1.4301	1.0352	1.0488
15		Autolock	1.0402	1.0402	1.4401	1.4301	1.4021	1.0402
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request 1,4571, 1.4301, 1.3964, Hastelloy, or other materials.
(2) Also available on request stellite, 1.4462 (duplex), 1.4430, 1.4316, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request 1.7225 / 1.1191, 1.7711 / 1.7225, 1.4401, 1.4301, A4-70 or other materials.
(5) Also available on request Graphite + 1.4462 (duplex), PTFE + 1.4401, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. 1.0619 can replace 1.0425 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	A	D	H	Kg	Δp1 (6)	Δp2 (6)
PN 25	80	49	200	250	14	25	10
	100	56	235	280	18	25	10
	125	64	270	305	23	25	10
	150	70	300	315	25	25	10
	200	71	360	380	40	25	10
	250	76	425	420	50	25	10
	300	83	485	480	85	25	10
	350	92	555	515	120	25	10
	400	102	620	540	160	25	10
	450	114	670	570	200	25	10
	500	127	730	630	260	25	10
	600	154	845	680	380	25	10
	700	165	960	830	580	25	10
	800	190	1085	895	890	25	10
	900	203	1185	1015	1130	25	10
	1000	216	1320	1070	1420	25	10

(6) Δp1 maximium differential pressure with shaft in 1.4021 or 1.3964. Δp2 maximium differential pressure with shaft in 1.4401 or 1.4571 or 1.4301.

Pressure Temperature Ratings (°C / bar)

	PN	-195	-150	-100	-50	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 142W	25					25.0	25.0	24.7	23.3	21.4	19.4	17.8	16.1										
Fig. 242W	25					25.0	25.0	24.7	23.3	21.4	19.4	17.8	16.1	15.0	14.4	11.8	9.2						
Fig. 342W(8)	25			25.0	25.0	25.0	25.0	24.1	20.6	19.2	17.8	16.9	16.1	15.3	14.4	14.2	13.9	13.6	13.3	13.1	12.8		
Fig. 342W-J	25	25.0	25.0	25.0	25.0	25.0	25.0	23.6	17.8	15.8	13.9	13.1	12.2										
Fig. 442W(8)(9)	25					25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	23.9	22.2	15.7	9.2	11.1	13.0	9.6	6.1		
Fig. 542W	25				25.0	25.0	25.0	24.4	22.2	21.1	20.0	19.4	18.9										

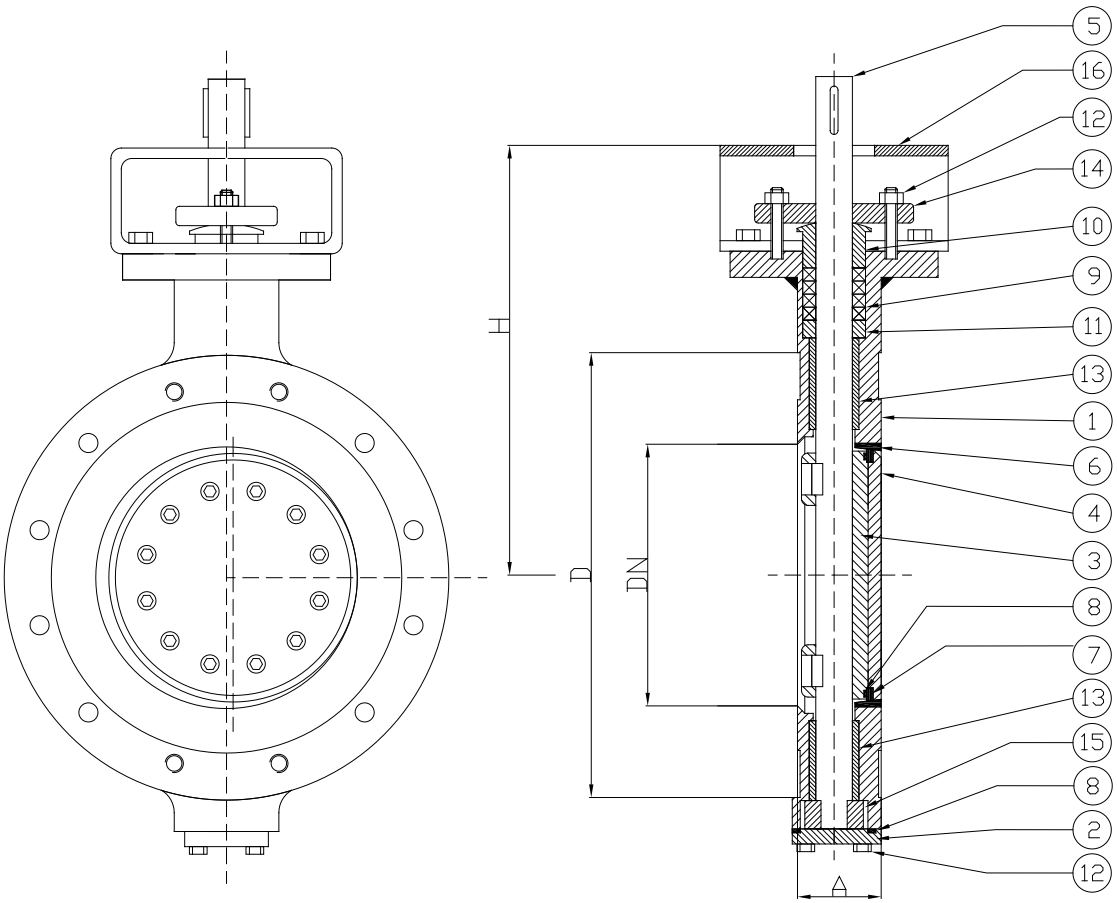
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
If the valves are provided with connection PN 16 or PN 10 the maximum allowable pressure should be proportionally reduced.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with 1.3964 shaft.

Triple Offset Butterfly Valve

PN 25 DN 80 - DN 1000

Lug - single flange type drilling PN 25 or PN 16 or PN 10

Fig. 142L-542L



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Standard features:

☑ Design	EN 12516
	EN 593 (Fig. 3b)
☑ Face to face	ISO 5752 series 25
	EN 558-1 series 25
	DIN 3202 K2
☑ Materials	EN 10025
	EN 10028
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	EN 593
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices
- ☐ All tapped holes (EN 593 Fig. 3d)
- ☐ Lightweight lug type (EN 593 Fig. 3a or 3c)

Material Specification

		DESCRIPTION	FIG. 142L	FIG. 242L	FIG. 342L	FIG. 342L-J	FIG. 442L	FIG. 542L
1		Body	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
2		Cover	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
3	x	Disc	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
4		Retainer flange	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
5	x	Shaft	1.4021 (1)	1.4021 (1)	1.4401 (1)	1.4301 (1)	1.4021 (1)	1.4021 (1)
6		Body seats	1.4502 (2)	1.4502 (2)	1.4401 (2)	1.4301 (2)	1.4502 (2)	1.4502 (2)
7	x	Seal ring	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)
8	O	Gasket	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
9	O	Packing	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
10	x	Gland	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
11	x	Spacer	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
12		Bolts & Screws	8.8 (4)	1.7225 (4)	1.4301 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
12		Nuts	8.8 (4)	1.1191 (4)	1.4301 (4)	1.4301 (4)	1.1191 (4)	1.1191 (4)
12		Screws (wetted)	8.8 (4)	1.7225 (4)	1.4401 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
13	x	Bush	1.0402 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT
14		Gland flange	1.0425	1.0425	1.4301	1.4301	1.0352	1.0488
15		Autolock	1.0402	1.0402	1.4401	1.4301	1.4021	1.0402
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request 1,4571, 1.4301, 1.3964, Hastelloy, or other materials.
(2) Also available on request stellite, 1.4462 (duplex), 1.4430, 1.4316, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request 1.7225 / 1.1191, 1.7711 / 1.7225, 1.4401, 1.4301, A4-70 or other materials.
(5) Also available on request Graphite + 1.4462 (duplex), PTFE + 1.4401, or other materials.
Equivalent or superior materials can be supplied if the listed material is not available (e.g. 1.0619 can replace 1.0425 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	A	D	H	Kg	Δp1 (6)	Δp2 (6)
PN 25	80	49	200	250	19	25	10
	100	56	235	280	20	25	10
	125	64	270	305	24	25	10
	150	70	300	315	26	25	10
	200	71	360	380	40	25	10
	250	76	425	420	55	25	10
	300	83	485	480	90	25	10
	350	92	555	515	125	25	10
	400	102	620	540	170	25	10
	450	114	670	570	205	25	10
	500	127	730	630	280	25	10
	600	154	845	680	395	25	10
	700	165	960	830	690	25	10
	800	190	1085	895	1010	25	10
	900	203	1185	1015	1260	25	10
	1000	216	1320	1070	1680	25	10

(6) Δp1 maximium differential pressure with shaft in 1.4021 or 1.3964. Δp2 maximium differential pressure with shaft in 1.4401 or 1.4571 or 1.4301.

Pressure Temperature Ratings (°C / bar)

	PN	-195	-150	-100	-50	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 142L	25					25.0	25.0	24.7	23.3	21.4	19.4	17.8	16.1										
Fig. 242L	25					25.0	25.0	24.7	23.3	21.4	19.4	17.8	16.1	15.0	14.4	11.8	9.2						
Fig. 342L (8)	25			25.0	25.0	25.0	25.0	24.1	20.6	19.2	17.8	16.9	16.1	15.3	14.4	14.2	13.9	13.6	13.3	13.1	12.8		
Fig. 342L-J	25	25.0	25.0	25.0	25.0	25.0	25.0	23.6	17.8	15.8	13.9	13.1	12.2										
Fig. 442L (8) (9)	25					25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	23.9	22.2	15.7	9.2	11.1	13.0	9.6	6.1		
Fig. 542L	25				25.0	25.0	25.0	24.4	22.2	21.1	20.0	19.4	18.9										

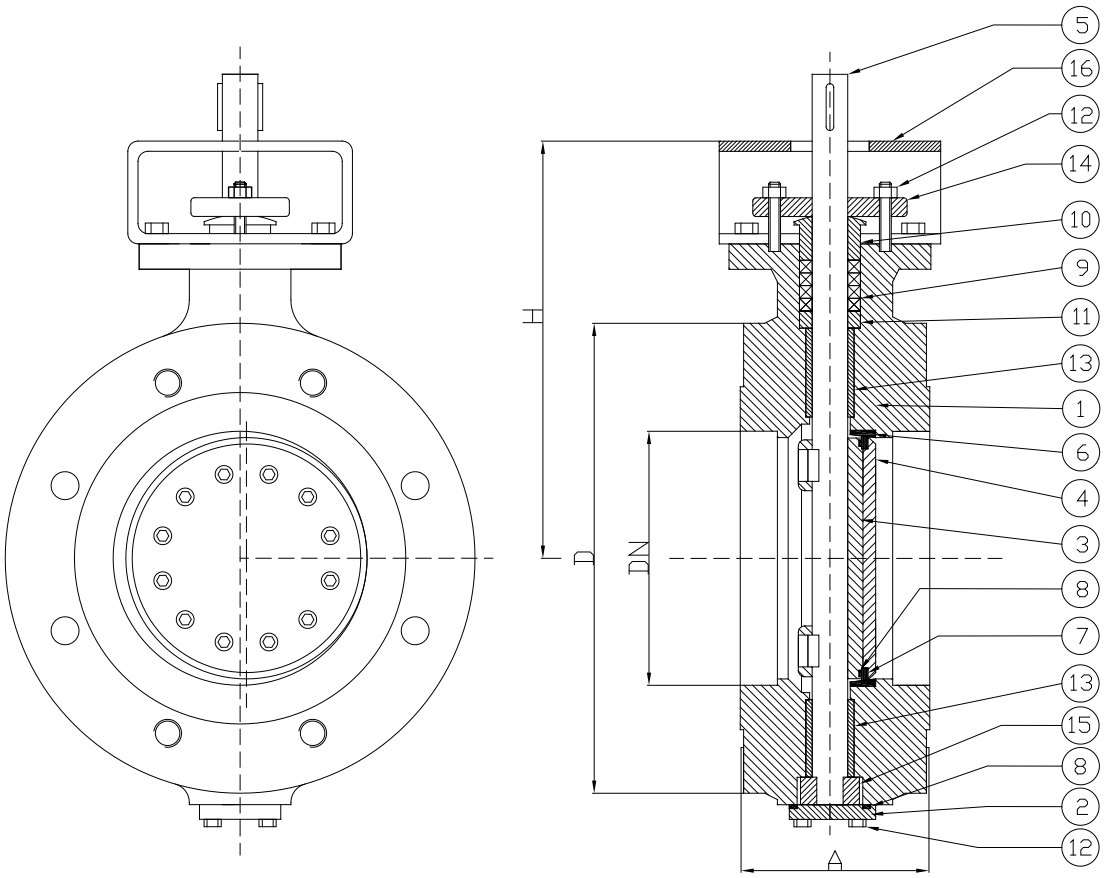
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
If the valves are provided with connection PN 16 or PN 10 the maximum allowable pressure should be proportionally reduced.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with 1.3964 shaft.

Triple Offset Butterfly Valve

PN 25 DN 80 - DN 1000

Flanged PN 25 or PN 16 or PN 10

Fig. 142F-542F



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Standard features:

☑ Design	EN 12516
	EN 593
☑ Face to face	ISO 5752 series 13
	EN 558-1 series 13
	BS 2080 series 13
☑ Flanges	EN 1092-1/21/B1
☑ Materials	EN 10213
	EN 10025 / EN 10028
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	EN 593
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 142F	FIG. 242F	FIG. 342F	FIG. 342F-J	FIG. 442F	FIG. 542F
1		Body	1.0044	1.0619	1.4581	1.4308	1.7357	1.1138
2		Cover	1.0044	1.0425	1.4571	1.4301	1.7335	1.0488
3	x	Disc	1.0044	1.0425	1.4571	1.4301	1.7335	1.0488
4		Retainer flange	1.0044	1.0425	1.4571	1.4301	1.7335	1.0488
5	x	Shaft	1.4021 (1)	1.4021 (1)	1.4571 (1)	1.4301 (1)	1.4021 (1)	1.4021 (1)
6		Body seats	1.4502 (2)	1.4502 (2)	1.4571 (2)	1.4301 (2)	1.4502 (2)	1.4502 (2)
7	x	Seal ring	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)
8	O	Gasket	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
9	O	Packing	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
10	x	Gland	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
11	x	Spacer	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
12		Bolts & Screws	8.8 (4)	1.7225 (4)	1.4301 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
12		Nuts	8.8 (4)	1.1191 (4)	1.4301 (4)	1.4301 (4)	1.1191 (4)	1.1191 (4)
12		Screws (wetted)	8.8 (4)	1.7225 (4)	1.4401 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
13	x	Bush	1.0402 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT
14		Gland flange	1.0425	1.0425	1.4301	1.4301	1.0352	1.0488
15		Autolock	1.0402	1.0402	1.4571	1.4301	1.4021	1.0402
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request 1,4571, 1.4301, 1.3964, Hastelloy, or other materials.
(2) Also available on request stellite, 1.4462 (duplex), 1.4430, 1.4316, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request 1.7225 / 1.1191, 1.7711 / 1.7225, 1.4401, 1.4301, A4-70 or other materials.
(5) Also available on request Graphite + 1.4462 (duplex), PTFE + 1.4401, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. 1.0619 can replace 1.0425 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	A	D	H	Kg	Δp1(6)	Δp2(6)
PN 25	80	114	200	250	22	25	10
	100	127	235	280	28	25	10
	125	140	270	305	32	25	10
	150	140	300	315	34	25	10
	200	152	360	380	65	25	10
	250	165	425	420	94	25	10
	300	178	485	480	132	25	10
	350	190	555	515	180	25	10
	400	216	620	540	225	25	10
	450	222	670	570	260	25	10
	500	229	730	630	345	25	10
	600	267	845	680	490	25	10
	700	292	960	830	940	25	10
	800	318	1085	895	1350	25	10
	900	330	1185	1015	1810	25	10
	1000	410	1320	1070	2350	25	10

(6) Δp1 maximium differential pressure with shaft in 1.4021 or 1.3964. Δp2 maximium differential pressure with shaft in 1.4401 or 1.4571 or 1.4301.

Pressure Temperature Ratings (°C / bar)

	PN	-195	-150	-100	-50	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 142F	25					25.0	25.0	24.7	23.3	21.4	19.4	17.8	16.1										
Fig. 242F	25					25.0	25.0	24.7	23.3	21.4	19.4	17.8	16.1	15.0	14.4	11.8	9.2						
Fig. 342F(8)	25			25.0	25.0	25.0	25.0	24.1	20.6	19.2	17.8	16.9	16.1	15.3	14.4	14.2	13.9	13.6	13.3	13.1	12.8		
Fig. 342F-J	25	25.0	25.0	25.0	25.0	25.0	25.0	23.6	17.8	15.8	13.9	13.1	12.2										
Fig. 442F(8)(9)	25					25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	23.9	22.2	15.7	9.2	11.1	13.0	9.6	6.1		
Fig. 542F	25				25.0	25.0	25.0	24.4	22.2	21.1	20.0	19.4	18.9										

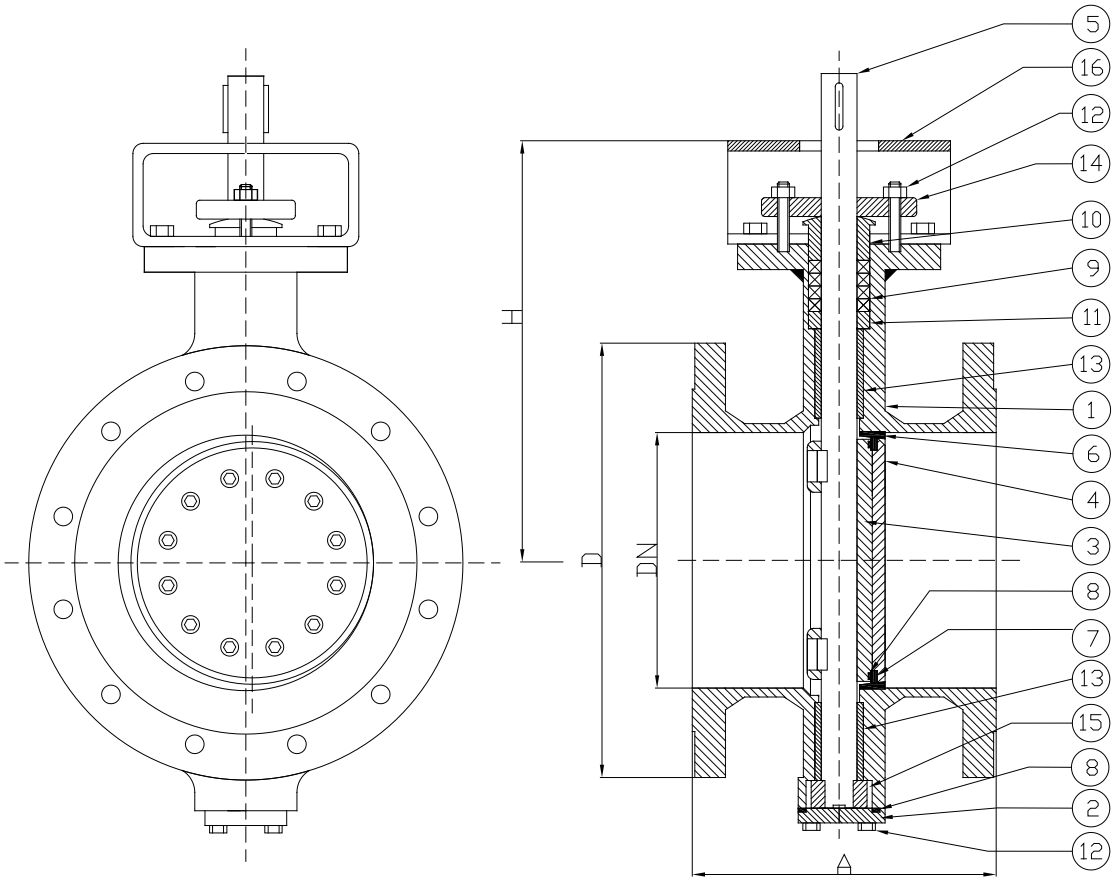
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
If the valves are provided with flanged connection PN 16 or PN 10 the maximum allowable pressure should be proportionally reduced.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with 1.3964 shaft.

Triple Offset Butterfly Valve

PN 25 DN 80 - DN 1000

Flanged PN 25 or PN 16 or PN 10

Fig. 142G-542G



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Standard features:

☑ Design	EN 12516
	EN 593
☑ Face to face	EN 558-1 series 14
	ISO 5752 series 14
	DIN 3202 F4
☑ Flanges	EN 1092-1/21/B1
☑ Materials	EN 10213
	EN 10025 / EN 10028
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	EN 593
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 142G	FIG. 242G	FIG. 342G	FIG. 342G-J	FIG. 442G	FIG. 542G
1		Body	1.0044	1.0619	1.4581	1.4308	1.7357	1.1138
2		Cover	1.0044	1.0425	1.4571	1.4301	1.7335	1.0488
3	x	Disc	1.0044	1.0425	1.4571	1.4301	1.7335	1.0488
4		Retainer flange	1.0044	1.0425	1.4571	1.4301	1.7335	1.0488
5	x	Shaft	1.4021 (1)	1.4021 (1)	1.4571 (1)	1.4301 (1)	1.4021 (1)	1.4021 (1)
6		Body seats	1.4502 (2)	1.4502 (2)	1.4571 (2)	1.4301 (2)	1.4502 (2)	1.4502 (2)
7	x	Seal ring	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)
8	O	Gasket	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
9	O	Packing	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
10	x	Gland	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
11	x	Spacer	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
12		Bolts & Screws	8.8 (4)	1.7225 (4)	1.4301 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
12		Nuts	8.8 (4)	1.1191 (4)	1.4301 (4)	1.4301 (4)	1.1191 (4)	1.1191 (4)
12		Screws (wetted)	8.8 (4)	1.7225 (4)	1.4401 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
13	x	Bush	1.0402 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT
14		Gland flange	1.0425	1.0425	1.4301	1.4301	1.0352	1.0488
15		Autolock	1.0402	1.0402	1.4571	1.4301	1.4021	1.0402
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request 1,4571, 1.4301, 1.3964, Hastelloy, or other materials.
(2) Also available on request stellite, 1.4462 (duplex), 1.4430, 1.4316, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request 1.7225 / 1.1191, 1.7711 / 1.7225, 1.4401, 1.4301, A4-70 or other materials.
(5) Also available on request Graphite + 1.4462 (duplex), PTFE + 1.4401, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. 1.0619 can replace 1.0425 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	A	D	H	Kg	Δp1 (6)	Δp2 (6)
PN 25	80	180	200	250	22	25	10
	100	190	235	280	28	25	10
	125	200	270	305	32	25	10
	150	210	300	315	34	25	10
	200	230	360	380	65	25	10
	250	250	425	420	102	25	10
	300	270	485	480	145	25	10
	350	290	555	515	195	25	10
	400	310	620	540	245	25	10
	450	330	670	570	265	25	10
	500	350	730	630	380	25	10
	600	390	845	680	510	25	10
	700	430	960	830	815	25	10
	800	470	1085	895	1230	25	10
	900	510	1185	1015	1550	25	10
	1000	550	1320	1070	2090	25	10

(6) Δp1 maximium differential pressure with shaft in 1.4021 or 1.3964. Δp2 maximium differential pressure with shaft in 1.4401 or 1.4571 or 1.4301.

Pressure Temperature Ratings (°C / bar)

	PN	-195	-150	-100	-50	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 142F	25					25.0	25.0	24.7	23.3	21.4	19.4	17.8	16.1										
Fig. 242F	25					25.0	25.0	24.7	23.3	21.4	19.4	17.8	16.1	15.0	14.4	11.8	9.2						
Fig. 342F(8)	25			25.0	25.0	25.0	25.0	24.1	20.6	19.2	17.8	16.9	16.1	15.3	14.4	14.2	13.9	13.6	13.3	13.1	12.8		
Fig. 342F-J	25	25.0	25.0	25.0	25.0	25.0	25.0	23.6	17.8	15.8	13.9	13.1	12.2										
Fig. 442F(8)(9)	25					25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	23.9	22.2	15.7	9.2	11.1	13.0	9.6	6.1		
Fig. 542F	25				25.0	25.0	25.0	24.4	22.2	21.1	20.0	19.4	18.9										

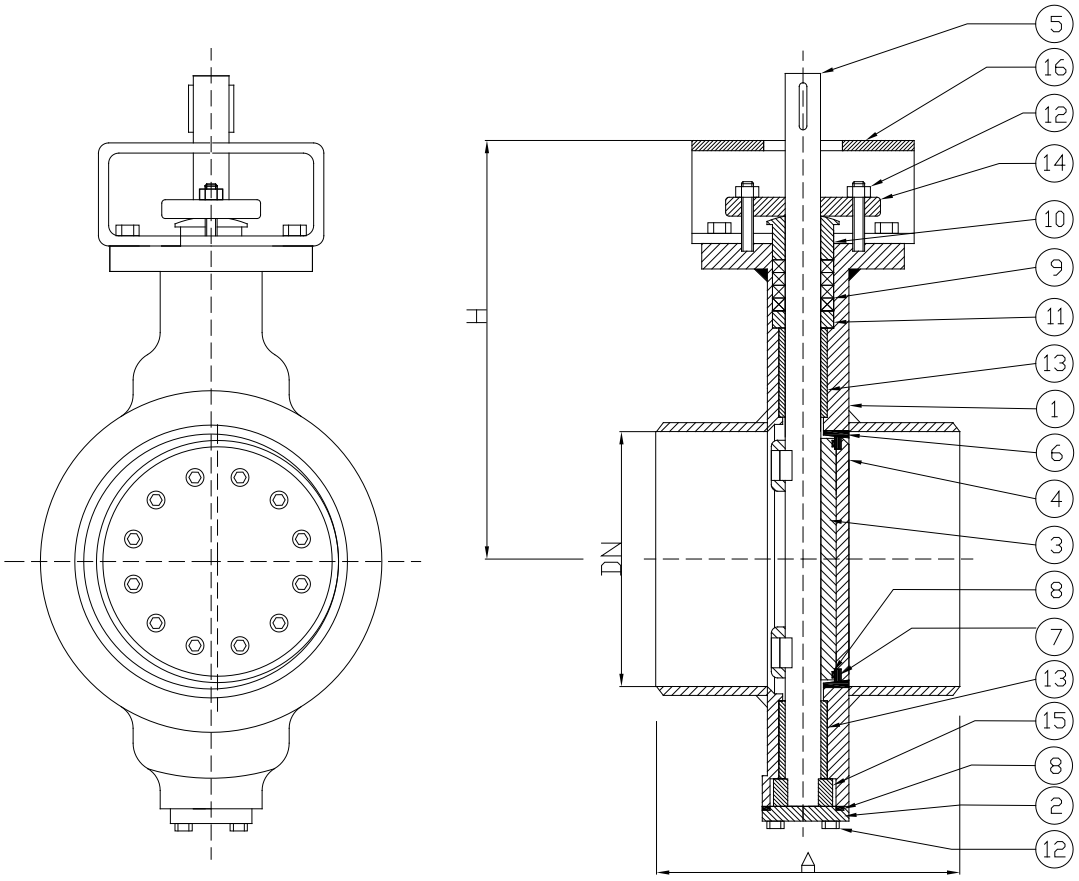
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
If the valves are provided with flanged connection PN 16 or PN 10 the maximum allowable pressure should be proportionally reduced.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with 1.3964 shaft.

Triple Offset Butterfly Valve

PN 25 DN 80 - DN 1000

Butt Welding Ends type

Fig. 142B-542B



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Standard features:

☑ Design	EN 12516
	EN 593
☑ Face to face	EN 12982 series 66
☑ Butt welding ends	EN 12627
☑ Materials	EN 10025
	EN 10028
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 142B	FIG. 242B	FIG. 342B	FIG. 342B-J	FIG. 442B	FIG. 542B
1		Body	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
2		Cover	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
3	x	Disc	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
4		Retainer flange	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
5	x	Shaft	1.4021 (1)	1.4021 (1)	1.4401 (1)	1.4301 (1)	1.4021 (1)	1.4021 (1)
6		Body seats	1.4502 (2)	1.4502 (2)	1.4401 (2)	1.4301 (2)	1.4502 (2)	1.4502 (2)
7	x	Seal ring	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)
8	O	Gasket	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
9	O	Packing	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
10	x	Gland	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
11	x	Spacer	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
12		Bolts & Screws	8.8 (4)	1.7225 (4)	1.4301 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
12		Nuts	8.8 (4)	1.1191 (4)	1.4301 (4)	1.4301 (4)	1.1191 (4)	1.1191 (4)
12		Screws (wetted)	8.8 (4)	1.1191 (4)	1.4401 (4)	1.4301 (4)	1.1191 (4)	1.1191 (4)
13	x	Bush	1.0402 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT
14		Gland flange	1.0425	1.0425	1.4301	1.4301	1.0352	1.0488
15		Autolock	1.0402	1.0402	1.4401	1.4301	1.4021	1.0402
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request 1,4571, 1.4301, 1.3964, Hastelloy, or other materials.
(2) Also available on request stellite, 1.4462 (duplex), 1.4430, 1.4316, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request 1.7225 / 1.1191, 1.7711 / 1.7225, 1.4401, 1.4301, A4-70 or other materials.
(5) Also available on request Graphite + 1.4462 (duplex), PTFE + 1.4401, or other materials.
Equivalent or superior materials can be supplied if the listed material is not available (e.g. 1.0619 can replace 1.0425 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	A	H	Kg	Δp1(6)	Δp2(6)
PN 25	80	180	250	18	25	10
	100	190	280	23	25	10
	125	200	300	26	25	10
	150	210	315	29	25	10
	200	430	380	58	25	10
	250	450	420	82	25	10
	300	470	480	120	25	10
	350	490	515	175	25	10
	400	510	540	205	25	10
	450	530	570	245	25	10
	500	550	630	320	25	10
	600	590	680	440	25	10
	700	630	830	750	25	10
	800	670	895	1050	25	10
	900	710	1015	1320	25	10
	1000	750	1070	1910	25	10

(6) Δp1 maximium differential pressure with shaft in 1.4021 or 1.3964. Δp2 maximium differential pressure with shaft in 1.4401 or 1.4571 or 1.4301.

Pressure Temperature Ratings (°C / bar)

	PN	-195	-150	-100	-50	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 142B	25					25.0	25.0	24.7	23.3	21.4	19.4	17.8	16.1										
Fig. 242B	25					25.0	25.0	24.7	23.3	21.4	19.4	17.8	16.1	15.0	14.4	11.8	9.2						
Fig. 342B(8)	25			25.0	25.0	25.0	25.0	24.1	20.6	19.2	17.8	16.9	16.1	15.3	14.4	14.2	13.9	13.6	13.3	13.1	12.8		
Fig. 342B-J	25	25.0	25.0	25.0	25.0	25.0	25.0	23.6	17.8	15.8	13.9	13.1	12.2										
Fig. 442B(8)(9)	25					25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	23.9	22.2	15.7	9.2	11.1	13.0	9.6	6.1		
Fig. 542B	25				25.0	25.0	25.0	24.4	22.2	21.1	20.0	19.4	18.9										

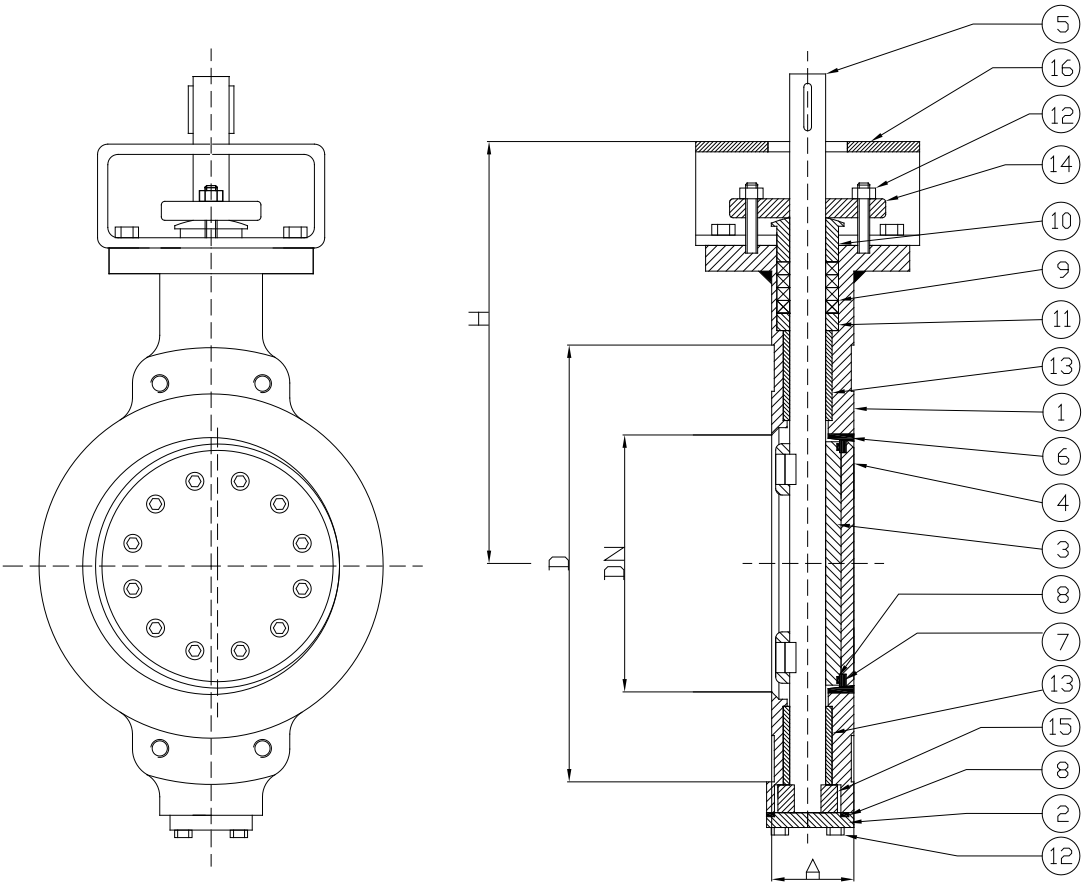
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with 1.3964 shaft.

Triple Offset Butterfly Valve

Class 150 NPS 3" - NPS 40"

Wafer type

Fig. 143W-543W



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Standard features:

☑ Design	API 609
	EN 12516
	EN 593
☑ Face to face	API 609 CL 150
☑ Materials	ASME B 16.34
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 143W	FIG. 243W	FIG. 343W	FIG. 343W-J	FIG. 443W	FIG. 543W
1		Body	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
2		Cover	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
3	x	Disc	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
4		Retainer flange	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
5	x	Shaft	A 420 (1)	A 420 (1)	A 316 (1)	A 304 (1)	A 420 (1)	A 420 (1)
6		Body seats	A 430 (2)	A 430 (2)	A 316 (2)	A 304 (2)	A 430 (2)	A 430 (2)
7	x	Seal ring	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)
8	O	Gasket	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
9	O	Packing	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
10	x	Gland	M 1023	M 1023	A 316	A 304	M 1023	M 1023
11	x	Spacer	M 1023	M 1023	A 316	A 304	M 1023	M 1023
12		Bolts & Screws	8.8 (4)	A193 B7 (4)	A 193 B8 (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
12		Nuts	8.8 (4)	A194 2H (4)	A 194 8 (4)	A 194 8 (4)	A194 2H (4)	A194 7 (4)
12		Screws (wetted)	8.8 (4)	A193 B7 (4)	A 193 B8M (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
13	x	Bush	M1023 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT
14		Gland flange	A 105 N	A 105 N	A 304	A 304	A 105 N	A 516 Gr. 60
15		Autolock	M 1023	M 1023	A 316	A 304	A 420	M 1023
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request A 316, A 304, XM 19, Hastelloy, or other materials.
(2) Also available on request stellite, UNS S 31803 (duplex), A 316L, A 304L, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request A 193 B16 / A 194 Gr. 7, A 193 L7 / A 194 Gr. 7, A193 B8M / A193 Gr. 8M, A193 B8 / A193 Gr. 8 or other materials.
(5) Also available on request Graphite + UNS S 31803 (duplex), PTFE + A 316, or other materials.
Equivalent or superior materials can be supplied if the listed material is not available (e.g. WCB can replace A515 Gr. 60 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	NPS	A	D	H	Kg	Δp1 (6)	Δp2 (6)
ANSI 150	80	3	48	165	250	14	20	10
	100	4	54	220	280	18	20	10
	150	6	57	285	315	25	20	10
	200	8	64	340	380	40	20	10
	250	10	71	395	420	50	20	10
	300	12	81	445	480	85	20	10
	350	14	92	505	515	120	20	10
	400	16	102	565	540	160	20	10
	450	18	114	615	570	200	20	10
	500	20	127	670	630	260	20	10
	600	24	154	780	680	380	20	10
	700	28	165	890	830	540	20	10
	750	30	190	984	870	790	20	10
	800	32	190	1060	895	925	20	10
	900	36	203	1168	1015	1180	20	10
	1000	40	216	1289	1070	1520	20	10

(6) Δp1 maximium differential pressure with shaft in A420 or XM 19. Δp2 maximium differential pressure with shaft in A316 or A304.

Pressure Temperature Ratings (°C / bar)

	Class	-195	-150	-100	-46	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 143W	150					20.2	19.8	19.8	18.3	17.8	17.3	16.5	15.3										
Fig. 243W	150					20.2	19.8	19.8	18.3	17.8	17.3	16.5	15.3	14.6	13.6	11.3							
Fig. 343W (8)	150			19.6	19.6	19.6	19.6	19.6	16.7	15.2	14.1	13.2	12.5	12.0	11.8	11.5	11.4	11.3	10.8	10.0	9.4		
Fig. 343W-J	150	19.6	19.6	19.6	19.6	19.6	19.6	19.6	16.1	14.7	13.6	12.8	12.1										
Fig. 443W (8) (9)	150					20.4	20.4	20.4	20.3	19.6	18.9	18.2	16.9	15.9	14.4	13,8	13,3	12,5	10.0	7.2	5.0		
Fig. 543W	150				20.2	20.2	19.8	19.8	18.3	17.8	17.3	16.5	15.3	14.6	13.6	11.3							

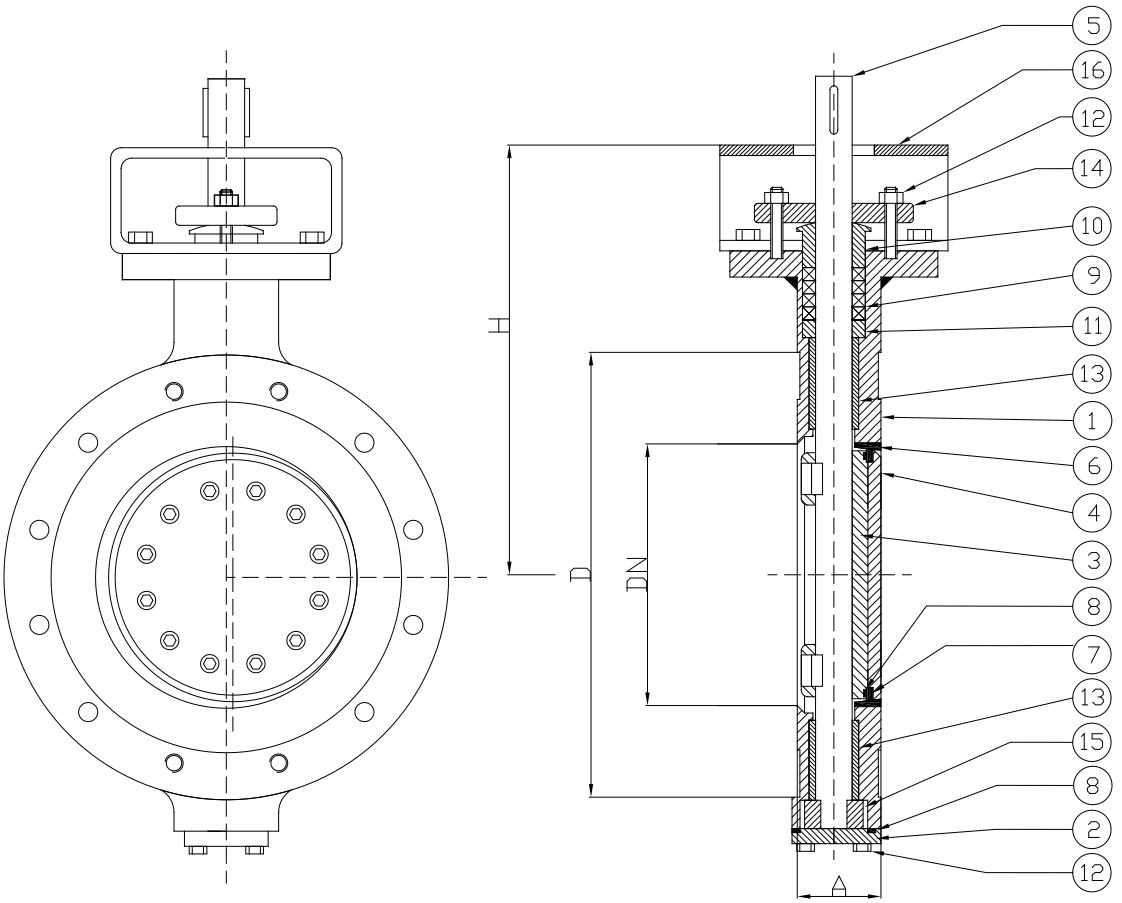
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with XM 19 shaft.

Triple Offset Butterfly Valve

Class 150 NPS 3" - NPS 40"

Lug - single flange type

Fig. 143L-543L



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Standard features:

☑ Design	API 609
	EN 12516
	EN 593 (Fig. 3b)
☑ Face to face	API 609 CL 150
☑ Materials	ASME B 16.34
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices
- ☐ All tapped holes (EN 593 Fig. 3d)
- ☐ Lightweight lug type (EN 593 Fig. 3a or 3c)

Material Specification

		DESCRIPTION	FIG. 143L	FIG. 243L	FIG. 343L	FIG. 343L-J	FIG. 443L	FIG. 543L
1		Body	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
2		Cover	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
3	x	Disc	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
4		Retainer flange	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
5	x	Shaft	A 420 (1)	A 420 (1)	A 316 (1)	A 304 (1)	A 420 (1)	A 420 (1)
6		Body seats	A 430 (2)	A 430 (2)	A 316 (2)	A 304 (2)	A 430 (2)	A 430 (2)
7	x	Seal ring	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)
8	O	Gasket	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
9	O	Packing	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
10	x	Gland	M 1023	M 1023	A 316	A 304	M 1023	M 1023
11	x	Spacer	M 1023	M 1023	A 316	A 304	M 1023	M 1023
12		Bolts & Scews	8.8 (4)	A193 B7 (4)	A 193 B8 (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
12		Nuts	8.8 (4)	A194 2H (4)	A 194 8 (4)	A 194 8 (4)	A194 2H (4)	A194 7 (4)
12		Scews (wetted)	8.8 (4)	A193 B7 (4)	A 193 B8M (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
13	x	Bush	M1023 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT
14		Gland flange	A 105 N	A 105 N	A 304	A 304	A 105 N	A 516 Gr. 60
15		Autolock	M 1023	M 1023	A 316	A 304	A 420	M 1023
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request A 316, A 304, XM 19, Hastelloy, or other materials.
(2) Also available on request stellite, UNS S 31803 (duplex), A 316L, A 304L, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request A 193 B16 / A 194 Gr. 7, A 193 L7 / A 194 Gr. 7, A193 B8M / A193 Gr. 8M, A193 B8 / A193 Gr. 8 or other materials.
(5) Also available on request Graphite + UNS S 31803 (duplex), PTFE + A 316, or other materials.
Equivalent or superior materials can be supplied if the listed material is not available (e.g. WCB can replace A515 Gr. 60 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	NPS	A	D	H	Kg	Δp1 (6)	Δp2 (6)
ANSI 150	80	3	48	165	250	19	20	10
	100	4	54	220	280	20	20	10
	150	6	57	285	315	26	20	10
	200	8	64	340	380	40	20	10
	250	10	71	395	420	55	20	10
	300	12	81	445	480	90	20	10
	350	14	92	505	515	125	20	10
	400	16	102	565	540	170	20	10
	450	18	114	615	570	205	20	10
	500	20	127	670	630	280	20	10
	600	24	154	780	680	395	20	10
	700	28	165	890	830	560	20	10
	750	30	190	984	870	810	20	10
	800	32	190	1060	895	950	20	10
	900	36	203	1168	1015	1210	20	10
	1000	40	216	1289	1070	1550	20	10

(6) Δp1 maximium differential pressure with shaft in A420 or XM 19. Δp2 maximium differential pressure with shaft in A316 or A304.

Pressure Temperature Ratings (°C / bar)

	Class	-195	-150	-100	-46	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 143L	150					20.2	19.8	19.8	18.3	17.8	17.3	16.5	15.3										
Fig. 243L	150					20.2	19.8	19.8	18.3	17.8	17.3	16.5	15.3	14.6	13.6	11.3							
Fig. 343L(8)	150			19.6	19.6	19.6	19.6	19.6	16.7	15.2	14.1	13.2	12.5	12.0	11.8	11.5	11.4	11.3	10.8	10.0	9.4		
Fig. 343L-J	150	19.6	19.6	19.6	19.6	19.6	19.6	19.6	16.1	14.7	13.6	12.8	12.1										
Fig. 443L(8)(9)	150					20.4	20.4	20.4	20.3	19.6	18.9	18.2	16.9	15.9	14.4	13,8	13,3	12,5	10.0	7.2	5.0		
Fig. 543L	150				20.2	20.2	19.8	19.8	18.3	17.8	17.3	16.5	15.3	14.6	13.6	11.3							

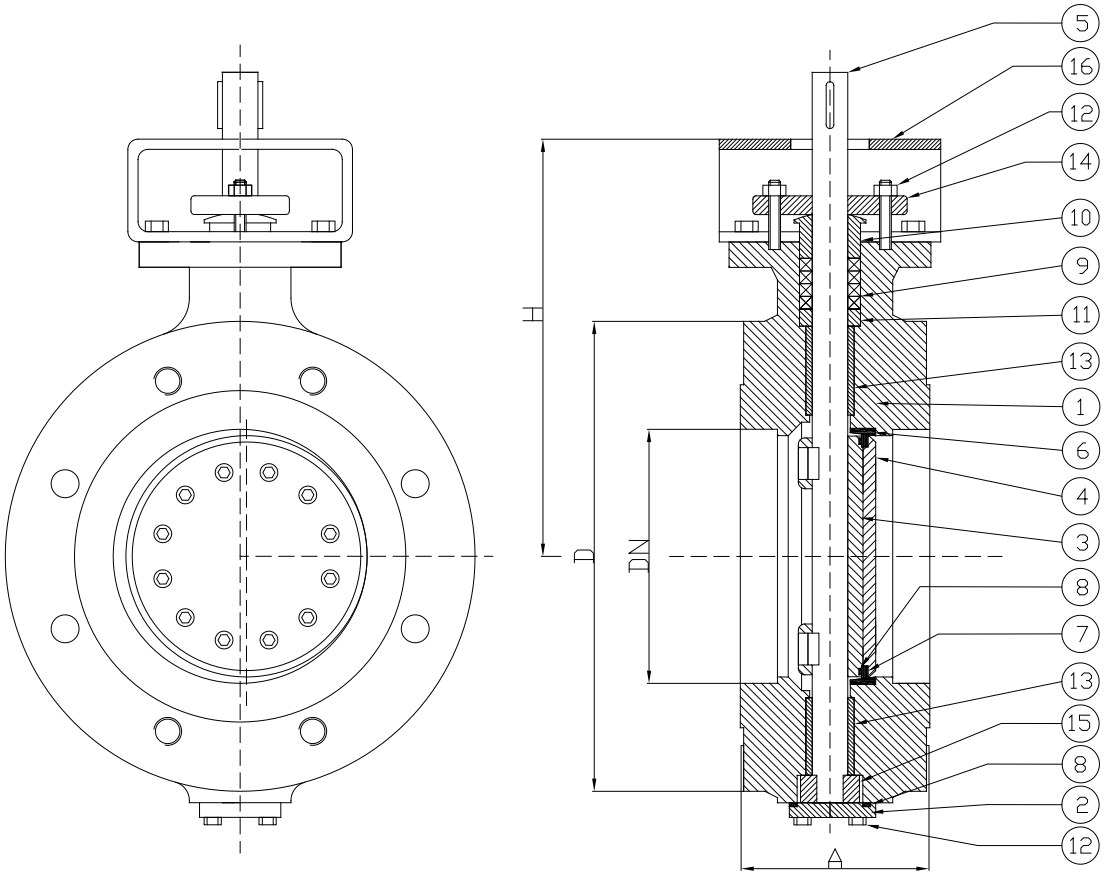
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with XM 19 shaft.

Triple Offset Butterfly Valve

Class 150 NPS 3" - NPS 40"

Flanges ANSI Class 150

Fig. 143F-543F



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Standard features:

☑ Design	ASME B 16.34
	EN 12516
	EN 593
☑ Face to face	ISO 5752 series 13
	EN 558-1 series 13
	BS 2080 series 13
☑ Flanges	ASME B 16.5 (EN 1759-1)
☑ Materials	ASME B 16.34
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 143F	FIG. 243F	FIG. 343F	FIG. 343F-J	FIG. 443F	FIG. 543F
1		Body	A 36	A 216 WCB	A 351 CF8M	A 351 CF8	A 216 WC6	A 352 LCC
2		Cover	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
3	x	Disc	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
4		Retainer flange	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
5	x	Shaft	A 420 (1)	A 420 (1)	A 316 (1)	A 304 (1)	A 420 (1)	A 420 (1)
6		Body seats	A 430 (2)	A 430 (2)	A 316 (2)	A 304 (2)	A 430 (2)	A 430 (2)
7	x	Seal ring	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)
8	O	Gasket	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
9	O	Packing	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
10	x	Gland	M 1023	M 1023	A 316	A 304	M 1023	M 1023
11	x	Spacer	M 1023	M 1023	A 316	A 304	M 1023	M 1023
12		Bolts & Screws	8.8 (4)	A193 B7 (4)	A 193 B8 (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
12		Nuts	8.8 (4)	A194 2H (4)	A 194 8 (4)	A 194 8 (4)	A194 2H (4)	A194 7 (4)
12		Screws (wetted)	8.8 (4)	A193 B7 (4)	A 193 B8M (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
13	x	Bush	M1023 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT
14		Gland flange	A 105 N	A 105 N	A 304	A 304	A 105 N	A 516 Gr. 60
15		Autolock	M 1023	M 1023	A 316	A 304	A 420	M 1023
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request A 316, A 304, XM 19, Hastelloy, or other materials.
(2) Also available on request stellite, UNS S 31803 (duplex), A 316L, A 304L, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request A 193 B16 / A 194 Gr. 7, A 193 L7 / A 194 Gr. 7, A193 B8M / A193 Gr. 8M, A193 B8 / A193 Gr. 8 or other materials.
(5) Also available on request Graphite + UNS S 31803 (duplex), PTFE + A 316, or other materials.
Equivalent or superior materials can be supplied if the listed material is not available (e.g. WCB can replace A515 Gr. 60 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	NPS	A	D	H	Kg	Δp1 (6)	Δp2 (6)
ANSI 150	80	3	114	190	250	22	20	10
	100	4	127	229	280	28	20	10
	150	6	140	279	315	34	20	10
	200	8	152	343	380	65	20	10
	250	10	165	406	420	94	20	10
	300	12	178	483	480	132	20	10
	350	14	190	433	515	180	20	10
	400	16	216	597	540	225	20	10
	450	18	222	635	570	260	20	10
	500	20	229	698	630	345	20	10
	600	24	267	813	680	490	20	10
	700	28	292	890	830	940	25	10
	750	30	318	984	870	1250	25	10
	800	32	318	1060	895	1350	25	10
	900	36	330	1168	1015	1810	25	10
	1000	40	410	1289	1070	2350	25	10

(6) Δp1 maximium differential pressure with shaft in A420 or XM 19. Δp2 maximium differential pressure with shaft in A316 or A304.

Pressure Temperature Ratings (°C / bar)

	Class	-195	-150	-100	-46	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 143F	150					20.2	19.8	19.8	18.3	17.8	17.3	16.5	15.3										
Fig. 243F	150					20.2	19.8	19.8	18.3	17.8	17.3	16.5	15.3	14.6	13.6	11.3							
Fig. 343F(8)	150			19.6	19.6	19.6	19.6	19.6	16.7	15.2	14.1	13.2	12.5	12.0	11.8	11.5	11.4	11.3	10.8	10.0	9.4		
Fig. 343F-J	150	19.6	19.6	19.6	19.6	19.6	19.6	19.6	16.1	14.7	13.6	12.8	12.1										
Fig. 443F(8)(9)	150					20.4	20.4	20.4	20.3	19.6	18.9	18.2	16.9	15.9	14.4	13,8	13,3	12,5	10.0	7.2	5.0		
Fig. 543F	150				20.2	20.2	19.8	19.8	18.3	17.8	17.3	16.5	15.3	14.6	13.6	11.3							

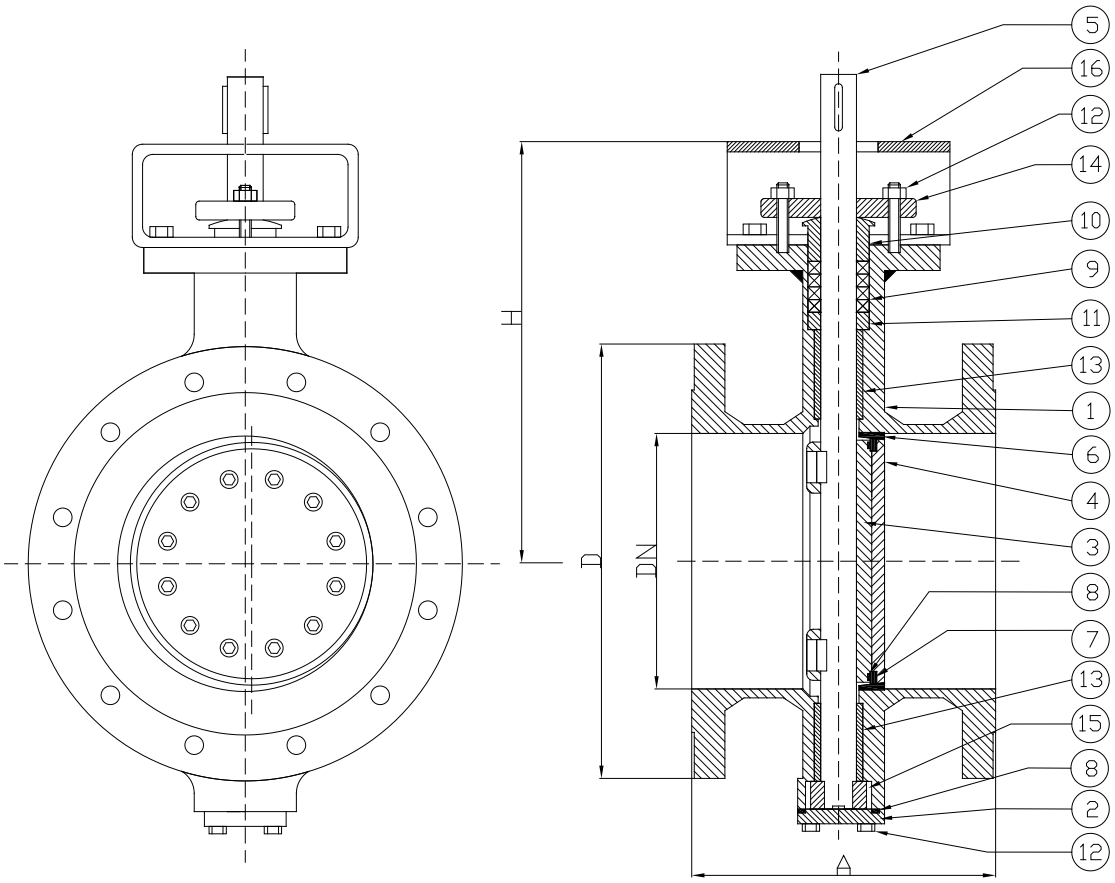
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with XM 19 shaft.

Triple Offset Butterfly Valve

Class 150 NPS 3" - NPS 40"

Flanges ANSI Class 150

Fig. 143G-543G



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Standard features:

☑ Design	ASME B 16.34
	EN 12516
	EN 593
☑ Face to face	ISO 5752 series 3
	ANSI B16.10 Tab.1 Col.7
	EN 558-1 series 3
☑ Flanges	ASME B 16.5 (EN 1759-1)
☑ Materials	ASME B 16.34
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 143G	FIG. 243G	FIG. 343G	FIG. 343G-J	FIG. 443G	FIG. 543G
1		Body	A 36	A 216 WCB	A 351 CF8M	A 351 CF8	A 216 WC6	A 352 LCC
2		Cover	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
3	X	Disc	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
4		Retainer flange	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
5	X	Shaft	A 420 (1)	A 420 (1)	A 316 (1)	A 304 (1)	A 420 (1)	A 420 (1)
6		Body seats	A 430 (2)	A 430 (2)	A 316 (2)	A 304 (2)	A 430 (2)	A 430 (2)
7	X	Seal ring	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)
8	O	Gasket	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
9	O	Packing	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
10	X	Gland	M 1023	M 1023	A 316	A 304	M 1023	M 1023
11	X	Spacer	M 1023	M 1023	A 316	A 304	M 1023	M 1023
12		Bolts & Screws	8.8 (4)	A193 B7 (4)	A 193 B8 (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
12		Nuts	8.8 (4)	A194 2H (4)	A 194 8 (4)	A 194 8 (4)	A194 2H (4)	A194 7 (4)
12		Screws (wetted)	8.8 (4)	A193 B7 (4)	A 193 B8M (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
13	X	Bush	M1023 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT
14		Gland flange	A 105 N	A 105 N	A 304	A 304	A 105 N	A 516 Gr. 60
15		Autolock	M 1023	M 1023	A 316	A 304	A 420	M 1023
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request A 316, A 304, XM 19, Hastelloy, or other materials.
(2) Also available on request stellite, UNS S 31803 (duplex), A 316L, A 304L, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request A 193 B16 / A 194 Gr. 7, A 193 L7 / A 194 Gr. 7, A193 B8M / A193 Gr. 8M, A193 B8 / A193 Gr. 8 or other materials.
(5) Also available on request Graphite + UNS S 31803 (duplex), PTFE + A 316, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. WCB can replace A515 Gr. 60 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	NPS	A	D	H	Kg	Δp1(6)	Δp2(6)
ANSI 150	80	3	203	190	250	31	20	10
	100	4	229	229	280	38	20	10
	150	6	267	279	315	45	20	10
	200	8	292	343	380	85	20	10
	250	10	330	406	420	115	20	10
	300	12	356	483	480	162	20	10
	350	14	381	433	515	205	20	10
	400	16	406	597	540	265	20	10
	450	18	432	635	570	305	20	10
	500	20	437	698	630	390	20	10
	600	24	503	813	680	560	20	10
	700	28	610	890	830	1075	25	10
	750	30	610	984	870	1415	25	10
	800	32	660	1060	895	1512	25	10
	900	36	711	1168	1015	2010	25	10
	1000	40	811	1289	1070	2570	25	10

(6) Δp1 maximium differential pressure with shaft in A420 or XM 19. Δp2 maximium differential pressure with shaft in A316 or A304.

Pressure Temperature Ratings (°C / bar)

	Class	-195	-150	-100	-46	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 143G	150					20.2	19.8	19.8	18.3	17.8	17.3	16.5	15.3										
Fig. 243G	150					20.2	19.8	19.8	18.3	17.8	17.3	16.5	15.3	14.6	13.6	11.3							
Fig. 343G(8)	150			19.6	19.6	19.6	19.6	19.6	16.7	15.2	14.1	13.2	12.5	12.0	11.8	11.5	11.4	11.3	10.8	10.0	9.4		
Fig. 343G-J	150	19.6	19.6	19.6	19.6	19.6	19.6	19.6	16.1	14.7	13.6	12.8	12.1										
Fig. 443G(8)(9)	150					20.4	20.4	20.4	20.3	19.6	18.9	18.2	16.9	15.9	14.4	13,8	13,3	12,5	10.0	7.2	5.0		
Fig. 543G	150				20.2	20.2	19.8	19.8	18.3	17.8	17.3	16.5	15.3	14.6	13.6	11.3							

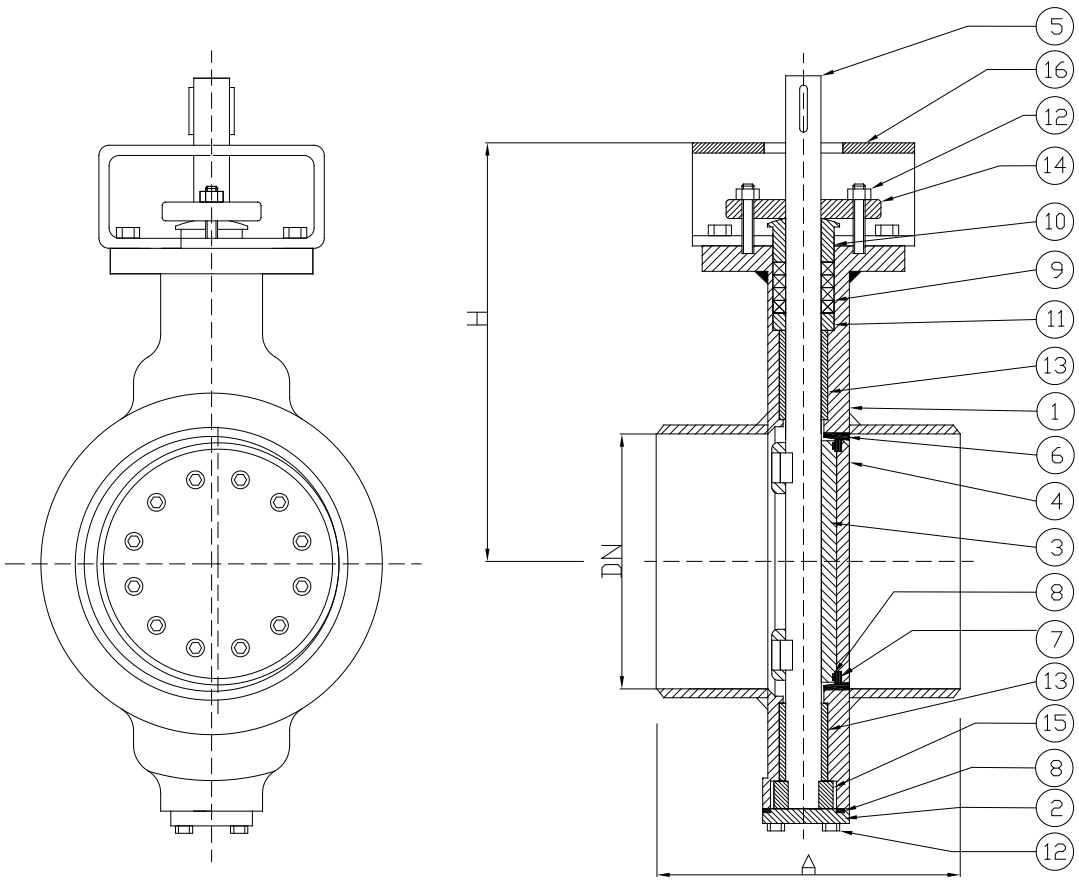
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with XM 19 shaft.

Triple Offset Butterfly Valve

Class 150 NPS 3" – NPS 40"

Butt Welding Ends type

Fig. 143B-543B



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Standard features:

☑ Design	ASME B 16.34
	EN 12516
	EN 593
☑ Face to face	EN 12982 series 66
☑ Butt welding ends	ASME B 16.25
☑ Materials	ASME B 16.34
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 143B	FIG. 243B	FIG. 343B	FIG. 343B-J	FIG. 443B	FIG. 543B
1		Body	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
2		Cover	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
3	x	Disc	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
4		Retainer flange	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
5	x	Shaft	A 420 (1)	A 420 (1)	A 316 (1)	A 304 (1)	A 420 (1)	A 420 (1)
6		Body seats	A 430 (2)	A 430 (2)	A 316 (2)	A 304 (2)	A 430 (2)	A 430 (2)
7	x	Seal ring	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)
8	O	Gasket	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
9	O	Packing	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
10	x	Gland	M 1023	M 1023	A 316	A 304	M 1023	M 1023
11	x	Spacer	M 1023	M 1023	A 316	A 304	M 1023	M 1023
12		Bolts & Screws	8.8 (4)	A193 B7 (4)	A 193 B8 (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
12		Nuts	8.8 (4)	A194 2H (4)	A 194 8 (4)	A 194 8 (4)	A194 2H (4)	A194 7 (4)
12		Screws (wetted)	8.8 (4)	A193 B7 (4)	A 193 B8M (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
13	x	Bush	M1023 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT
14		Gland flange	A 105 N	A 105 N	A 304	A 304	A 105 N	A 516 Gr. 60
15		Autolock	M 1023	M 1023	A 316	A 304	A 420	M 1023
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request A 316, A 304, XM 19, Hastelloy, or other materials.
(2) Also available on request stellite, UNS S 31803 (duplex), A 316L, A 304L, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request A 193 B16 / A 194 Gr. 7, A 193 L7 / A 194 Gr. 7, A193 B8M / A193 Gr. 8M, A193 B8 / A193 Gr. 8 or other materials.
(5) Also available on request Graphite+ UNS S 31803 (duplex), PTFE + A 316, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. WCB can replace A105 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	NPS	A	H	Kg	Δp1(6)	Δp2(6)
ANSI 150	80	3	180	250	18	20	10
	100	4	190	280	23	20	10
	150	6	210	315	29	20	10
	200	8	430	380	58	20	10
	250	10	450	420	82	20	10
	300	12	470	480	120	20	10
	350	14	490	515	175	20	10
	400	16	510	540	205	20	10
	450	18	530	570	245	20	10
	500	20	550	630	320	20	10
	600	24	590	680	470	20	10
	700	28	630	830	750	20	10
	750	30	670	895	980	20	10
	800	32	710	895	1050	20	10
	900	36	750	1015	1320	20	10
	1000	40	200	1070	1910	20	10

(6) Δp1 maximium differential pressure with shaft in A420 or XM 19. Δp2 maximium differential pressure with shaft in A316 or A304.

Pressure Temperature Ratings (°C / bar)

	Class	-195	-150	-100	-46	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 143B	150					20.2	19.8	19.8	18.3	17.8	17.3	16.5	15.3										
Fig. 243B	150					20.2	19.8	19.8	18.3	17.8	17.3	16.5	15.3	14.6	13.6	11.3							
Fig. 343B(8)	150			19.6	19.6	19.6	19.6	19.6	16.7	15.2	14.1	13.2	12.5	12.0	11.8	11.5	11.4	11.3	10.8	10.0	9.4		
Fig. 343B-J	150	19.6	19.6	19.6	19.6	19.6	19.6	19.6	16.1	14.7	13.6	12.8	12.1										
Fig. 443B(8)(9)	150					20.4	20.4	20.4	20.3	19.6	18.9	18.2	16.9	15.9	14.4	13,8	13,3	12,5	10.0	7.2	5.0		
Fig. 543	150				20.2	20.2	19.8	19.8	18.3	17.8	17.3	16.5	15.3	14.6	13.6	11.3							

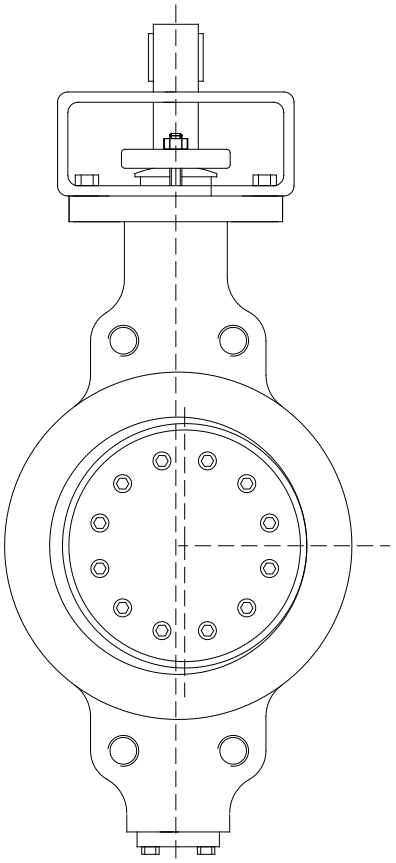
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with XM 19 shaft.

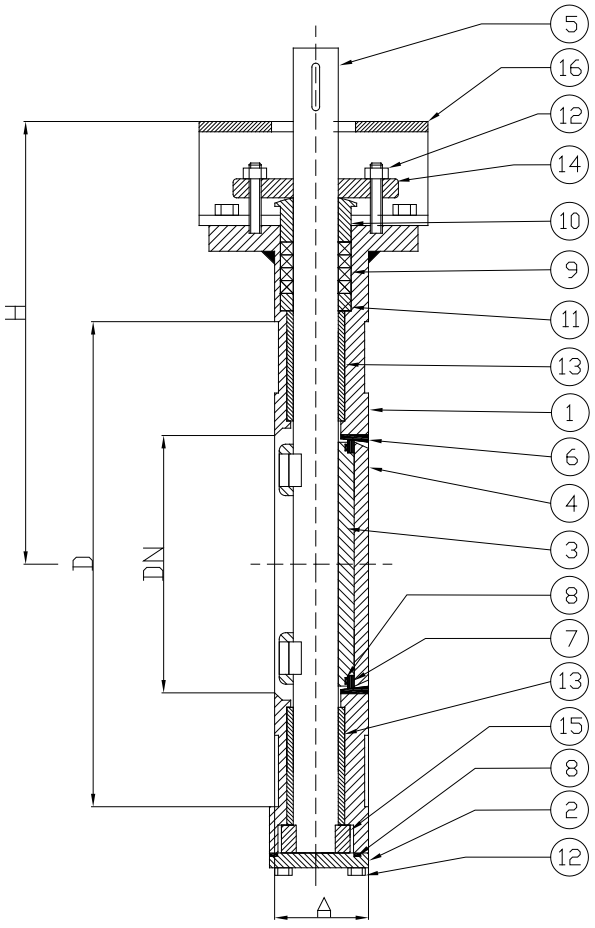
Triple Offset Butterfly Valve

PN 63 DN 80 - DN 800

Wafer type drilling PN 63 or PN 40

Fig. 152W-552W





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Standard features:

☑ Design	EN 12516
	EN 593
☑ Face to face	ISO 5752 series 16
	EN 558-1 series 16
	DIN 3202 K3
☑ Materials	EN 10213
	EN 10025 / EN 10028
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	EN 593
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 152W	FIG. 252W	FIG. 352W	FIG. 352W-J	FIG. 452W	FIG. 552W
1		Body	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
2		Cover	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
3	x	Disc	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
4		Retainer flange	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
5	x	Shaft	1.4021 (1)	1.4021 (1)	1.4401 (1)	1.4301 (1)	1.4021 (1)	1.4021 (1)
6		Body seats	1.4502 (2)	1.4502 (2)	1.4401 (2)	1.4301 (2)	1.4502 (2)	1.4502 (2)
7	x	Seal ring	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)
8	O	Gasket	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
9	O	Packing	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
10	x	Gland	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
11	x	Spacer	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
12		Bolts & Screws	8.8 (4)	1.7225 (4)	1.4301 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
12		Nuts	8.8 (4)	1.1191 (4)	1.4301 (4)	1.4301 (4)	1.1191 (4)	1.1191 (4)
12		Screws (wetted)	8.8 (4)	1.7225 (4)	1.4401 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
13	x	Bush	1.0402 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT
14		Gland flange	1.0425	1.0425	1.4301	1.4301	1.0352	1.0488
15		Autolock	1.0402	1.0402	1.4401	1.4301	1.4021	1.0402
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request 1,4571, 1.4301, 1.3964, Hastelloy, or other materials.
(2) Also available on request stellite, 1.4462 (duplex), 1.4430, 1.4316, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request 1.7225 / 1.1191, 1.7711 / 1.7225, 1.4401, 1.4301, A4-70 or other materials.
(5) Also available on request Graphite + 1.4462 (duplex), PTFE + 1.4401, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. 1.0619 can replace 1.0425 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	A	D	H	Kg	Δp1(6)	Δp2(6)
PN 63	80	64	215	225	24	63	26
	100	64	250	285	26	63	26
	125	70	295	325	42	63	26
	150	76	345	350	49	63	26
	200	89	415	420	65	63	26
	250	114	470	460	85	63	26
	300	114	530	510	140	63	26
	350	127	600	570	205	63	26
	400	140	670	590	285	63	26
	450	152	685	680	370	63	26
	500	152	800	720	425	63	26
	600	178	930	810	610	63	26
	700	229	1045	1150	820	63	26
	800	241	1164	1320	980	63	26

(6) Δp1 maximium differential pressure with shaft in 1.4021 or 1.3964. Δp2 maximium differential pressure with shaft in 1.4401 or 1.4571 or 1.4301.

Pressure Temperature Ratings (°C / bar)

	PN	-195	-150	-100	-50	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 152W	63					63,0	63,0	62,2	58,8	53,9	49,0	44,8	40,6										
Fig. 252W	63					63,0	63,0	62,2	58,8	53,9	49,0	44,8	40,6	37,8	36,4	29,8	23,2						
Fig. 352W(8)	63			63,0	63,0	63,0	63,0	60,8	51,8	48,3	44,8	42,7	40,6	38,5	36,4	35,7	35,0	34,3	33,6	32,9	32,2		
Fig. 352W-J	63	63,0	63,0	63,0	63,0	63,0	63,0	59,4	44,8	39,9	35,0	32,9	30,8										
Fig. 452W(8)(9)	63					63,0	63,0	63,0	63,0	63,0	63,0	63,0	63,0	60,2	56,0	54,6	53,2	43,0	32,8	24,1	15,4		
Fig. 552W	63				63,0	63,0	63,0	61,6	56,0	53,2	50,4	49,0	47,6										

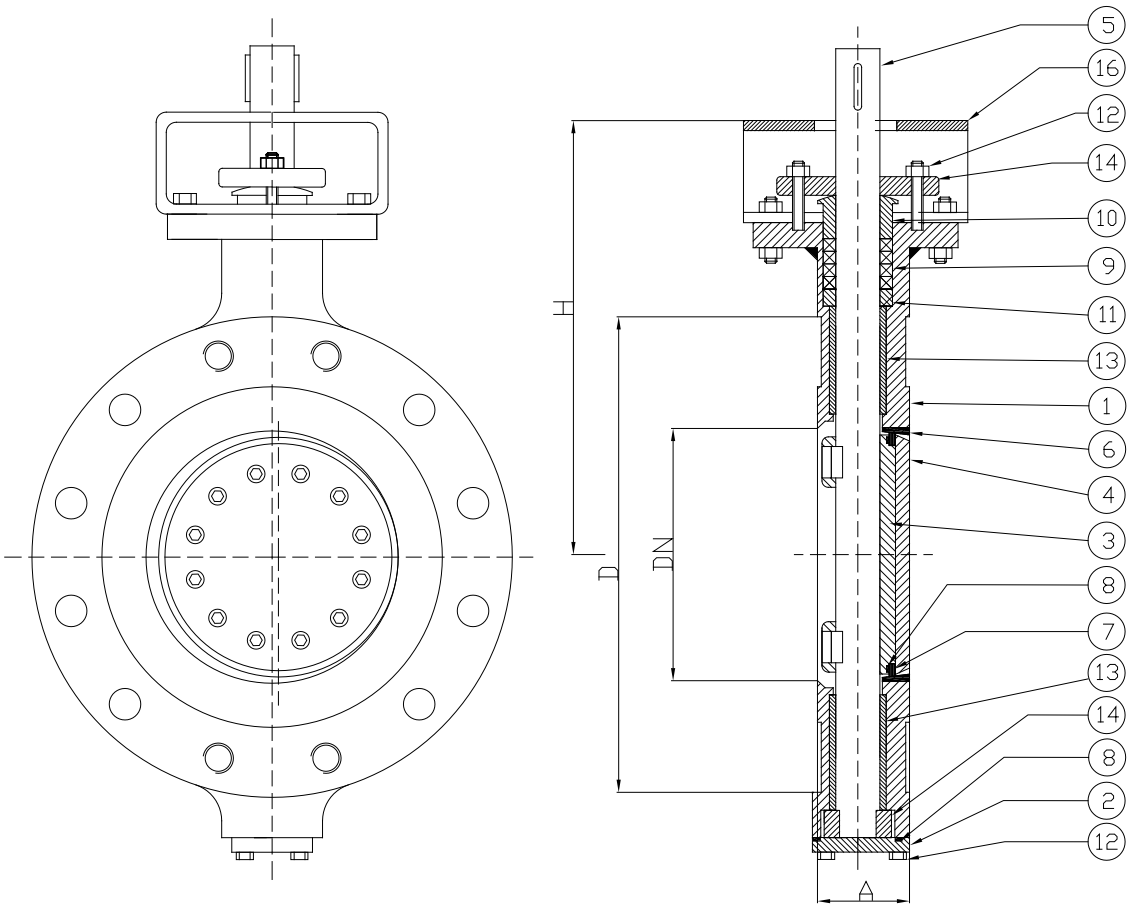
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
If the valves are provided with connection PN 40 the maximum allowable pressure should be proportionally reduced.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with 1.3964 shaft.

Triple Offset Butterfly Valve

PN 63 DN 80 - DN 800

Lug - single flange type drilling PN 63 or PN 40

Fig. 152L-552L



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Standard features:

☑ Design	EN 12516
	EN 593 (Fig. 3b)
☑ Face to face	ISO 5752 series 16
	EN 558-1 series 16
	DIN 3202 K3
☑ Materials	EN 10025
	EN 10028
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	EN 593
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices
- ☐ All tapped holes (EN 593 Fig. 3d)
- ☐ Lightweight lug type (EN 593 Fig. 3a or 3c)

Material Specification

		DESCRIPTION	FIG. 152L	FIG. 252L	FIG. 352L	FIG. 352L-J	FIG. 452L	FIG. 552L
1		Body	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
2		Cover	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
3	x	Disc	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
4		Retainer flange	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
5	x	Shaft	1.4021 (1)	1.4021 (1)	1.4401 (1)	1.4301 (1)	1.4021 (1)	1.4021 (1)
6		Body seats	1.4502 (2)	1.4502 (2)	1.4401 (2)	1.4301 (2)	1.4502 (2)	1.4502 (2)
7	x	Seal ring	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)
8	O	Gasket	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
9	O	Packing	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
10	x	Gland	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
11	x	Spacer	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
12		Bolts & Screws	8.8 (4)	1.7225 (4)	1.4301 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
12		Nuts	8.8 (4)	1.1191 (4)	1.4301 (4)	1.4301 (4)	1.1191 (4)	1.1191 (4)
12		Screws (wetted)	8.8 (4)	1.7225 (4)	1.4401 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
13	x	Bush	1.0402 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT
14		Gland flange	1.0425	1.0425	1.4301	1.4301	1.0352	1.0488
15		Autolock	1.0402	1.0402	1.4401	1.4301	1.4021	1.0402
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request 1,4571, 1.4301, 1.3964, Hastelloy, or other materials.
(2) Also available on request stellite, 1.4462 (duplex), 1.4430, 1.4316, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request 1.7225 / 1.1191, 1.7711 / 1.7225, 1.4401, 1.4301, A4-70 or other materials.
(5) Also available on request Graphite + 1.4462 (duplex), PTFE + 1.4401, or other materials.
Equivalent or superior materials can be supplied if the listed material is not available (e.g. 1.0619 can replace 1.0425 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	A	D	H	Kg	Δp1 (6)	Δp2 (6)
PN 63	80	64	215	225	25	63	26
	100	64	250	285	30	63	26
	125	70	295	325	48	63	26
	150	76	345	350	55	63	26
	200	89	415	420	71	63	26
	250	114	470	460	95	63	26
	300	114	530	510	155	63	26
	350	127	600	570	295	63	26
	400	140	670	590	360	63	26
	450	152	685	680	540	63	26
	500	152	800	720	580	63	26
	600	178	930	810	890	63	26
	700	229	1045	1150	1060	63	26
	800	241	1164	1320	1110	63	26

(6) Δp1 maximum differential pressure with shaft in 1.4021 or 1.3964. Δp2 maximum differential pressure with shaft in 1.4401 or 1.4571 or 1.4301.

Pressure Temperature Ratings (°C / bar)

	PN	-195	-150	-100	-50	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 152L	63					63,0	63,0	62,2	58,8	53,9	49,0	44,8	40,6										
Fig. 252L	63					63,0	63,0	62,2	58,8	53,9	49,0	44,8	40,6	37,8	36,4	29,8	23,2						
Fig. 352L(8)	63			63,0	63,0	63,0	63,0	60,8	51,8	48,3	44,8	42,7	40,6	38,5	36,4	35,7	35,0	34,3	33,6	32,9	32,2		
Fig. 352L-J	63	63,0	63,0	63,0	63,0	63,0	63,0	59,4	44,8	39,9	35,0	32,9	30,8										
Fig. 452L(8)(9)	63					63,0	63,0	63,0	63,0	63,0	63,0	63,0	63,0	60,2	56,0	54,6	53,2	43,0	32,8	24,1	15,4		
Fig. 552L	63				63,0	63,0	63,0	61,6	56,0	53,2	50,4	49,0	47,6										

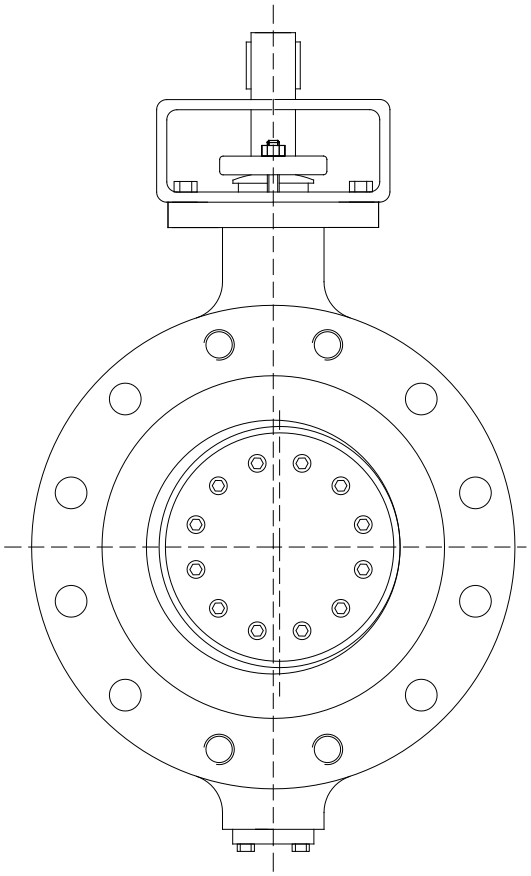
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
If the valves are provided with connection PN 40 the maximum allowable pressure should be proportionally reduced.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with 1.3964 shaft.

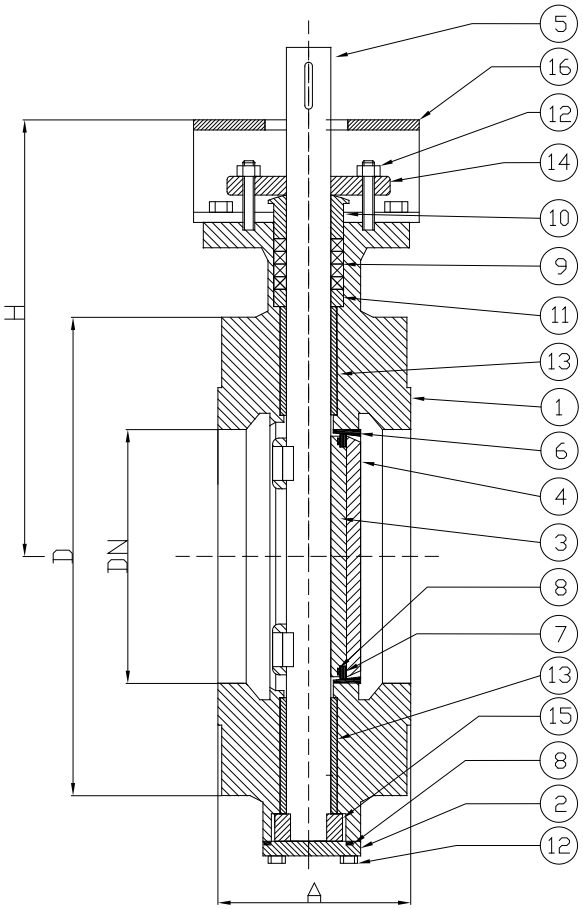
Triple Offset Butterfly Valve

PN 63 DN 80 - DN 800

Flanged PN 63 or PN 40

Fig. 152F-552F





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Standard features:

☑ Design	EN 12516
	EN 593
☑ Face to face	ISO 5752 series 13
	EN 558-1 series 13
	BS 2080 series 13
☑ Flanges	EN 1092-1/21/B2
☑ Materials	EN 10213
	EN 10025 / EN 10028
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	EN 593
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 152F	FIG. 252F	FIG. 352F	FIG. 352F-J	FIG. 452F	FIG. 552F
1		Body	1.0044	1.0619	1.4581	1.4308	1.7357	1.1138
2		Cover	1.0044	1.0425	1.4571	1.4301	1.7335	1.0488
3	x	Disc	1.0044	1.0425	1.4571	1.4301	1.7335	1.0488
4		Retainer flange	1.0044	1.0425	1.4571	1.4301	1.7335	1.0488
5	x	Shaft	1.4021 (1)	1.4021 (1)	1.4571 (1)	1.4301 (1)	1.4021 (1)	1.4021 (1)
6		Body seats	1.4502 (2)	1.4502 (2)	1.4571 (2)	1.4301 (2)	1.4502 (2)	1.4502 (2)
7	x	Seal ring	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)
8	O	Gasket	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
9	O	Packing	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
10	x	Gland	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
11	x	Spacer	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
12		Bolts & Screws	8.8 (4)	1.7225 (4)	1.4301 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
12		Nuts	8.8 (4)	1.1191 (4)	1.4301 (4)	1.4301 (4)	1.1191 (4)	1.1191 (4)
12		Screws (wetted)	8.8 (4)	1.7225 (4)	1.4401 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
13	x	Bush	1.0402 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT
14		Gland flange	1.0425	1.0425	1.4301	1.4301	1.0352	1.0488
15		Autolock	1.0402	1.0402	1.4571	1.4301	1.4021	1.0402
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request 1,4571, 1.4301, 1.3964, Hastelloy, or other materials.
(2) Also available on request stellite, 1.4462 (duplex), 1.4430, 1.4316, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request 1.7225 / 1.1191, 1.7711 / 1.7225, 1.4401, 1.4301, A4-70 or other materials.
(5) Also available on request Graphite + 1.4462 (duplex), PTFE + 1.4401, or other materials.
Equivalent or superior materials can be supplied if the listed material is not available (e.g. 1.0619 can replace 1.0425 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	A	D	H	Kg	Δp1(6)	Δp2(6)
PN 63	80	114	215	225	30	63	26
	100	127	250	285	42	63	26
	125	140	295	325	61	63	26
	150	140	345	350	72	63	26
	200	152	415	420	102	63	26
	250	165	470	460	115	63	26
	300	178	530	510	205	63	26
	350	190	600	570	320	63	26
	400	216	670	590	390	63	26
	450	222	685	680	580	63	26
	500	229	800	720	610	63	26
	600	267	930	810	920	63	26
	700	292	1045	1150	1100	63	26
	800	318	1164	1320	1350	63	26

(6) Δp1 maximium differential pressure with shaft in 1.4021 or 1.3964. Δp2 maximium differential pressure with shaft in 1.4401 or 1.4571 or 1.4301.

Pressure Temperature Ratings (°C / bar)

	PN	-195	-150	-100	-50	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 152F	63					63.0	63.0	62.2	58.8	53.9	49.0	44.8	40.6										
Fig. 252F	63					63.0	63.0	62.2	58.8	53.9	49.0	44.8	40.6	37.8	36.4	29.8	23.2						
Fig. 352F(8)	63			63.0	63.0	63.0	63.0	60.8	51.8	48.3	44.8	42.7	40.6	38.5	36.4	35.7	35.0	34.3	33.6	32.9	32.2		
Fig. 352F-J	63	63.0	63.0	63.0	63.0	63.0	63.0	59.4	44.8	39.9	35.0	32.9	30.8										
Fig. 452F(8)(9)	63					63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	60.2	56.0	54.6	53.2	43.0	32.8	24.1	15.4		
Fig. 552F	63				63.0	63.0	63.0	61.6	56.0	53.2	50.4	49.0	47.6										

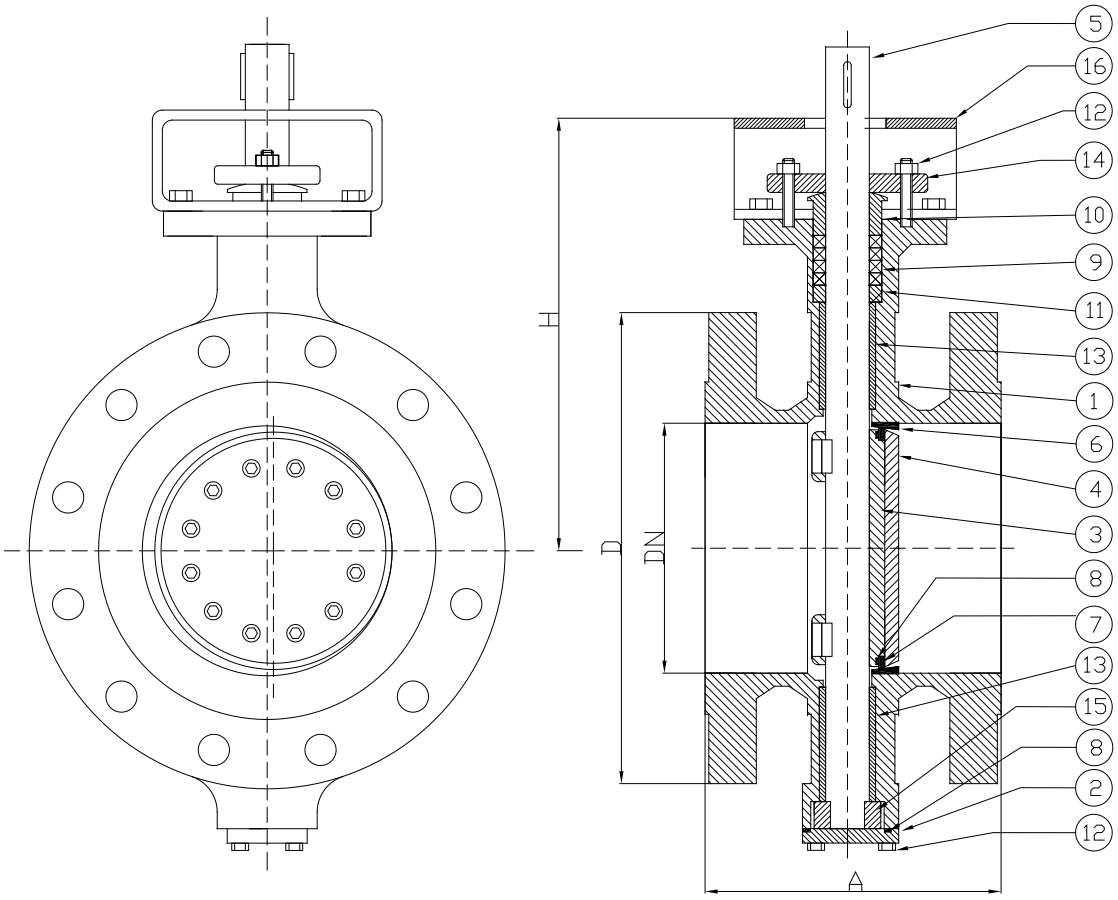
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
If the valves are provided with flanged connection PN 40 the maximum allowable pressure should be proportionally reduced.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with 1.3964 shaft.

Triple Offset Butterfly Valve

PN 63 DN 80 - DN 800

Flanged PN 63 or PN 40

Fig. 152G-552G



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Standard features:

☑ Design	EN 12516
	EN 593
☑ Face to face	ISO 5752 series 14
	EN 558-1 series 14
	DIN 3202 F4
☑ Flanges	EN 1092-1/21/B2
☑ Materials	EN 10213
	EN 10025 / EN 10028
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	EN 593
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 152G	FIG. 252G	FIG. 352G	FIG. 352G-J	FIG. 452G	FIG. 552G
1		Body	1.0044	1.0425	1.4581	1.4301	1.7335	1.0488
2		Cover	1.0044	1.0425	1.4571	1.4301	1.7335	1.0488
3	x	Disc	1.0044	1.0425	1.4571	1.4301	1.7335	1.0488
4		Retainer flange	1.0044	1.0425	1.4571	1.4301	1.7335	1.0488
5	x	Shaft	1.4021 (1)	1.4021 (1)	1.4571 (1)	1.4301 (1)	1.4021 (1)	1.4021 (1)
6		Body seats	1.4502 (2)	1.4502 (2)	1.4571 (2)	1.4301 (2)	1.4502 (2)	1.4502 (2)
7	x	Seal ring	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)
8	O	Gasket	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
9	O	Packing	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
10	x	Gland	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
11	x	Spacer	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
12		Bolts & Screws	8.8 (4)	1.7225 (4)	1.4301 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
12		Nuts	8.8 (4)	1.1191 (4)	1.4301 (4)	1.4301 (4)	1.1191 (4)	1.1191 (4)
12		Screws (wetted)	8.8 (4)	1.7225 (4)	1.4401 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
13	x	Bush	1.0402 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT
14		Gland flange	1.0425	1.0425	1.4301	1.4301	1.0352	1.0488
15		Autolock	1.0402	1.0402	1.4571	1.4301	1.4021	1.0402
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request 1,4571, 1.4301, 1.3964, Hastelloy, or other materials.
(2) Also available on request stellite, 1.4462 (duplex), 1.4430, 1.4316, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request 1.7225 / 1.1191, 1.7711 / 1.7225, 1.4401, 1.4301, A4-70 or other materials.
(5) Also available on request Graphite + 1.4462 (duplex), PTFE + 1.4401, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. 1.0619 can replace 1.0425 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	A	D	H	Kg	Δp1(6)	Δp2(6)
PN 63	80	180	215	225	32	63	26
	100	190	250	285	45	63	26
	125	200	295	325	67	63	26
	150	210	345	350	78	63	26
	200	230	415	420	110	63	26
	250	250	470	460	120	63	26
	300	270	530	510	210	63	26
	350	290	600	570	330	63	26
	400	310	670	590	405	63	26
	450	330	685	680	600	63	26
	500	350	800	720	630	63	26
	600	390	930	810	950	63	26
	700	430	1045	1150	1120	63	26
	800	470	1164	1320	1380	63	26

(6) Δp1 maximum differential pressure with shaft in 1.4021 or 1.3964. Δp2 maximum differential pressure with shaft in 1.4401 or 1.4571 or 1.4301.

Pressure Temperature Ratings (°C / bar)

	PN	-195	-150	-100	-50	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 152F	63					63,0	63,0	62,2	58,8	53,9	49,0	44,8	40,6										
Fig. 252F	63					63,0	63,0	62,2	58,8	53,9	49,0	44,8	40,6	37,8	36,4	29,8	23,2						
Fig. 352F(8)	63			63,0	63,0	63,0	63,0	60,8	51,8	48,3	44,8	42,7	40,6	38,5	36,4	35,7	35,0	34,3	33,6	32,9	32,2		
Fig. 352F-J	63	63,0	63,0	63,0	63,0	63,0	63,0	59,4	44,8	39,9	35,0	32,9	30,8										
Fig. 452F(8)(9)	63					63,0	63,0	63,0	63,0	63,0	63,0	63,0	63,0	60,2	56,0	54,6	53,2	43,0	32,8	24,1	15,4		
Fig. 552F	63				63,0	63,0	63,0	61,6	56,0	53,2	50,4	49,0	47,6										

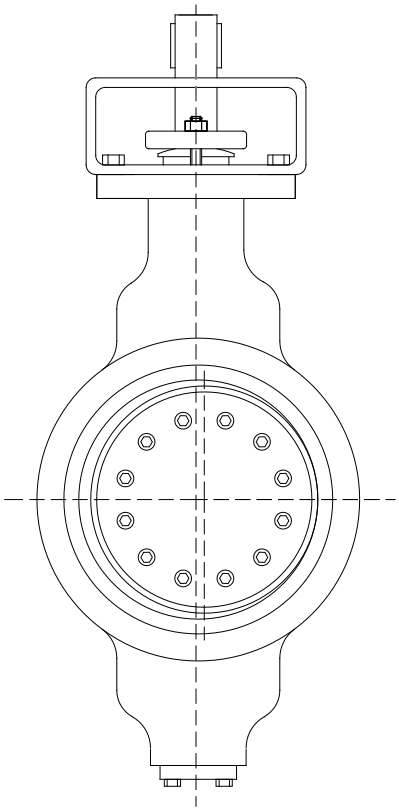
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
If the valves are provided with flanged connection PN 40 the maximum allowable pressure should be proportionally reduced.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with 1.3964 shaft.

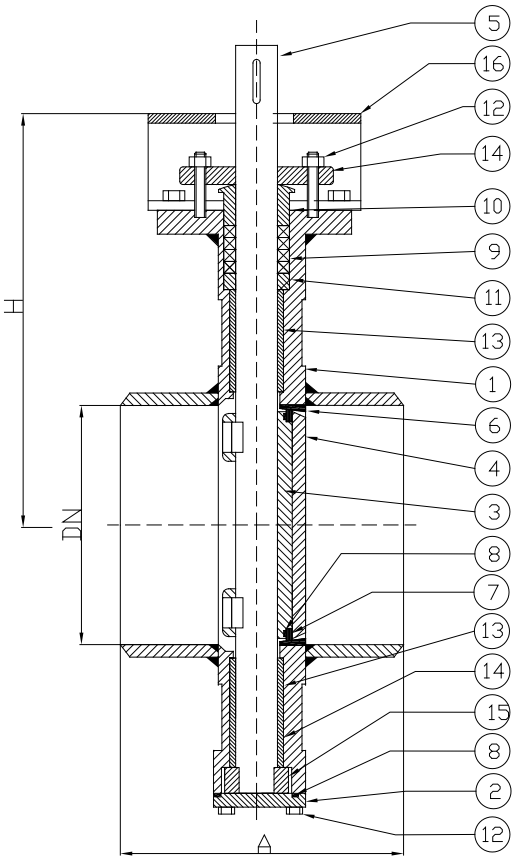
Triple Offset Butterfly Valve

PN 63 DN 80 - DN 800

Butt Welding Ends type

Fig. 152B-552B





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Standard features:

☑ Design	EN 12516
	EN 593
☑ Face to face	EN 12982 series 66
☑ Butt welding ends	EN 12627
☑ Materials	EN 10025
	EN 10028
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 152B	FIG. 352B	FIG. 352B	FIG. 352B-J	FIG. 452B	FIG. 552B
1		Body	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
2		Cover	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
3	x	Disc	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
4		Retainer flange	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
5	x	Shaft	1.4021 (1)	1.4021 (1)	1.4401 (1)	1.4301 (1)	1.4021 (1)	1.4021 (1)
6		Body seats	1.4502 (2)	1.4502 (2)	1.4401 (2)	1.4301 (2)	1.4502 (2)	1.4502 (2)
7	x	Seal ring	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)
8	O	Gasket	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
9	O	Packing	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
10	x	Gland	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
11	x	Spacer	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
12		Bolts & Screws	8.8 (4)	1.7225 (4)	1.4301 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
12		Nuts	8.8 (4)	1.1191 (4)	1.4301 (4)	1.4301 (4)	1.1191 (4)	1.1191 (4)
12		Screws (wetted)	8.8 (4)	1.7225 (4)	1.4401 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
13	x	Bush	1.0402 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT
14		Gland flange	1.0425	1.0425	1.4301	1.4301	1.0352	1.0488
15		Autolock	1.0402	1.0402	1.4401	1.4301	1.4021	1.0402
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request 1,4571, 1.4301, 1.3964, Hastelloy, or other materials.
(2) Also available on request stellite, 1.4462 (duplex), 1.4430, 1.4316, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request 1.7225 / 1.1191, 1.7711 / 1.7225, 1.4401, 1.4301, A4-70 or other materials.
(5) Also available on request Graphite + 1.4462 (duplex), PTFE + 1.4401, or other materials.
Equivalent or superior materials can be supplied if the listed material is not available (e.g. 1.0619 can replace 1.0425 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	A	H	Kg	Δp1(6)	Δp2(6)
PN 63	80	180	225	25	63	26
	100	190	285	28	63	26
	125	200	325	35	63	26
	150	210	350	38	63	26
	200	430	420	65	63	26
	250	450	460	90	63	26
	300	470	510	130	63	26
	350	490	570	185	63	26
	400	510	590	220	63	26
	450	530	680	260	63	26
	500	550	720	340	63	26
	600	590	810	490	63	26
	700	630	1150	820	63	26
	800	670	1320	1100	63	26

(6) Δp1 maximium differential pressure with shaft in 1.4021 or 1.3964. Δp2 maximium differential pressure with shaft in 1.4401 or 1.4571 or 1.4301.

Pressure Temperature Ratings (°C / bar)

	PN	-195	-150	-100	-50	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 152B	63					63,0	63,0	62,2	58,8	53,9	49,0	44,8	40,6										
Fig. 252B	63					63,0	63,0	62,2	58,8	53,9	49,0	44,8	40,6	37,8	36,4	29,8	23,2						
Fig. 352B(8)	63			63,0	63,0	63,0	63,0	60,8	51,8	48,3	44,8	42,7	40,6	38,5	36,4	35,7	35,0	34,3	33,6	32,9	32,2		
Fig. 352B-J	63	63,0	63,0	63,0	63,0	63,0	63,0	59,4	44,8	39,9	35,0	32,9	30,8										
Fig. 452B(8)(9)	63					63,0	63,0	63,0	63,0	63,0	63,0	63,0	63,0	60,2	56,0	54,6	53,2	43,0	32,8	24,1	15,4		
Fig. 552B	63				63,0	63,0	63,0	61,6	56,0	53,2	50,4	49,0	47,6										

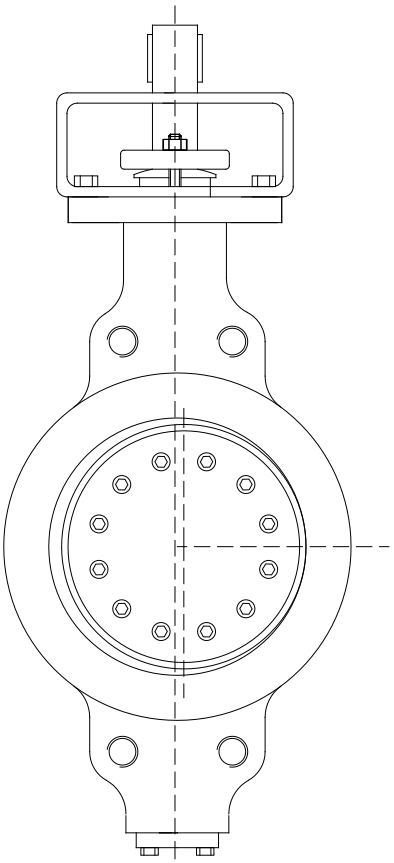
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with 1.3964 shaft.

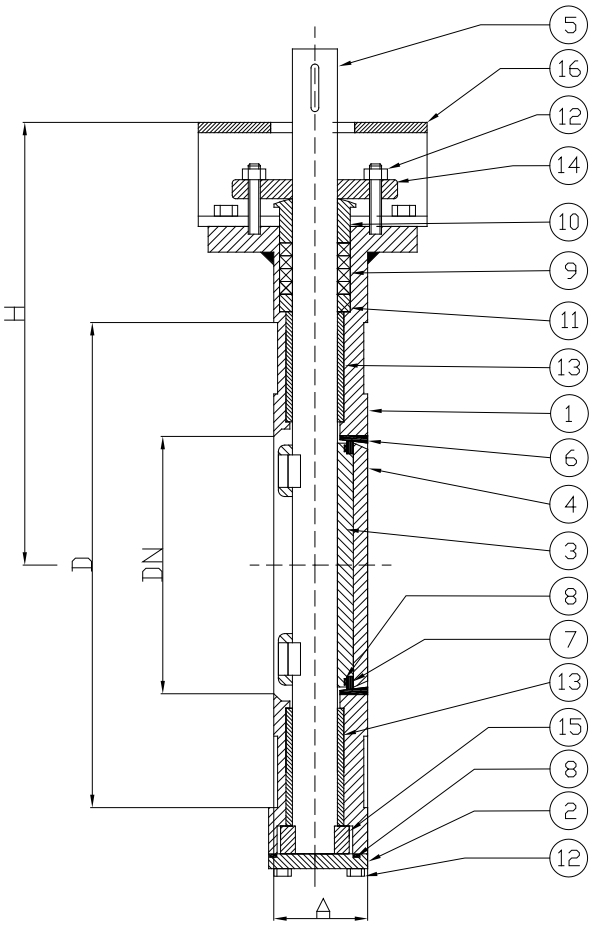
Triple Offset Butterfly Valve

Class 300 NPS 3" - NPS 24"

Wafer type

Fig. 153W-553W





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Standard features:

☑ Design	API 609
	EN 12516
	EN 593
☑ Face to face	API 609 CL 300
☑ Materials	ASME B 16.34
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 153W	FIG. 253W	FIG. 353W	FIG. 353W-J	FIG. 453W	FIG. 553W
1		Body	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
2		Cover	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
3	x	Disc	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
4		Retainer flange	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
5	x	Shaft	A 420 (1)	A 420 (1)	A 316 (1)	A 304 (1)	A 420 (1)	A 420 (1)
6		Body seats	A 430 (2)	A 430 (2)	A 316 (2)	A 304 (2)	A 430 (2)	A 430 (2)
7	x	Seal ring	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)
8	O	Gasket	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
9	O	Packing	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
10	x	Gland	M 1023	M 1023	A 316	A 304	M 1023	M 1023
11	x	Spacer	M 1023	M 1023	A 316	A 304	M 1023	M 1023
12		Bolts & Screws	8.8 (4)	A193 B7 (4)	A 193 B8 (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
12		Nuts	8.8 (4)	A194 2H (4)	A 194 8 (4)	A 194 8 (4)	A194 2H (4)	A194 7 (4)
12		Screws (wetted)	8.8 (4)	A193 B7 (4)	A 193 B8M (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
13	x	Bush	M1023 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT
14		Gland flange	A 105 N	A 105 N	A 304	A 304	A 105 N	A 516 Gr. 60
15		Autolock	M 1023	M 1023	A 316	A 304	A 420	M 1023
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request A 316, A 304, XM 19, Hastelloy, or other materials.
(2) Also available on request stellite, UNS S 31803 (duplex), A 316L, A 304L, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request A 193 B16 / A 194 Gr. 7, A 193 L7 / A 194 Gr. 7, A193 B8M / A193 Gr. 8M, A193 B8 / A193 Gr. 8 or other materials.
(5) Also available on request Graphite + UNS S 31803 (duplex), PTFE + A 316, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. WCB can replace A515 Gr. 60 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	NPS	A	D	H	Kg	Δp1 (6)	Δp2 (6)
ANSI 300	80	3	48	210	250	22	50	26
	100	4	54	254	280	24	50	26
	150	6	59	318	350	45	50	26
	200	8	73	381	420	60	50	26
	250	10	83	444	460	80	50	26
	300	12	92	521	510	130	50	26
	350	14	117	584	570	195	50	26
	400	16	133	648	590	270	50	26
	450	18	149	711	680	355	50	26
	500	20	159	775	720	405	50	26
	600	24	181	914	810	605	50	26
	700	28	229	1045	1150	800	50	26
	800	32	241	1164	1320	960	50	26

(6) Δp1 maximum differential pressure with shaft in A420 or XM 19. Δp2 maximum differential pressure with shaft in A316 or A304.

Pressure Temperature Ratings (°C / bar)

	Class	-195	-150	-100	-46	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 153W	300					51.1	50.1	46.4	45.2	43.8	41.7	38.7	37.0										
Fig. 253W	300					51.1	50.1	46.4	45.2	43.8	41.7	38.7	37.0	36.5	34.5	28.7							
Fig. 353W (8)	300			49.6	49.6	49.6	49.6	49.6	42.2	38.5	35.7	33.4	31.6	30.5	29.4	29.1	28.8	28.7	27.4	25.3	23.9		
Fig. 353W-J	300	49.6	49.6	49.6	49.6	49.6	49.6	49.6	40.9	37.2	34.5	32.5	30.7										
Fig. 453W (8) (9)	300					51.7	51.7	51.7	51.5	49.7	48.0	46.2	42.9	40.2	36.6	35.1	33.8	31.7	25.2	18.2	12.7		
Fig. 553W	300				51.1	51.1	50.1	46.4	45.2	43.8	41.7	38.7	37.0										

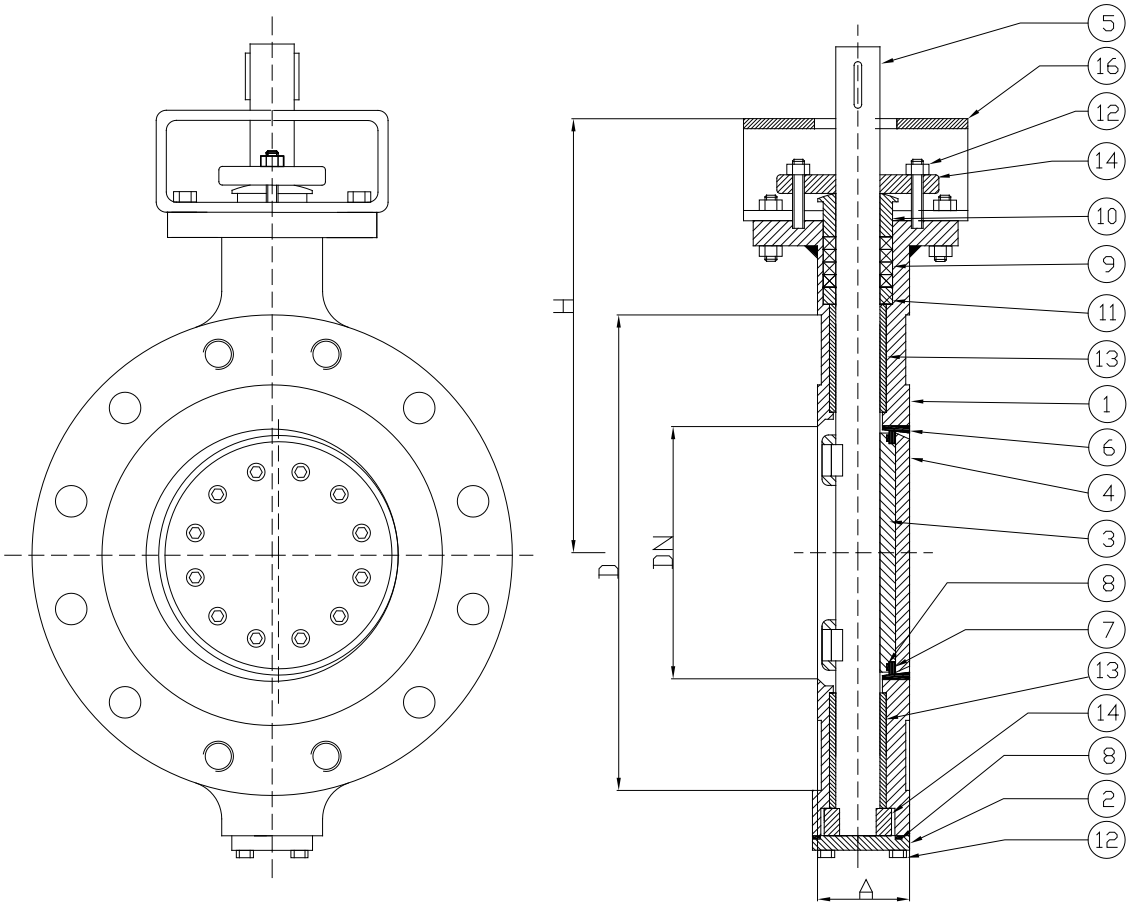
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with XM 19 shaft.

Triple Offset Butterfly Valve

Class 300 NPS 3" - NPS 32"

Lug - single flange type

Fig. 153L-553L



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Standard features:

☑ Design	API 609
	EN 12516
	EN 593 (Fig. 3b)
☑ Face to face	API 609 CL 300
☑ Materials	ASME B 16.34
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices
- ☐ All tapped holes (EN 593 Fig. 3d)
- ☐ Lightweight lug type (EN 593 Fig. 3a or 3c)

Material Specification

		DESCRIPTION	FIG. 153L	FIG. 253L	FIG. 353L	FIG. 353L-J	FIG. 453L	FIG. 553L
1		Body	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
2		Cover	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
3	x	Disc	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
4		Retainer flange	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
5	x	Shaft	A 420 (1)	A 420 (1)	A 316 (1)	A 304 (1)	A 420 (1)	A 420 (1)
6		Body seats	A 430 (2)	A 430 (2)	A 316 (2)	A 304 (2)	A 430 (2)	A 430 (2)
7	x	Seal ring	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)
8	O	Gasket	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
9	O	Packing	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
10	x	Gland	M 1023	M 1023	A 316	A 304	M 1023	M 1023
11	x	Spacer	M 1023	M 1023	A 316	A 304	M 1023	M 1023
12		Bolts & Scews	8.8 (4)	A193 B7 (4)	A 193 B8 (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
12		Nuts	8.8 (4)	A194 2H (4)	A 194 8 (4)	A 194 8 (4)	A194 2H (4)	A194 7 (4)
12		Scews (wetted)	8.8 (4)	A193 B7 (4)	A 193 B8M (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
13	x	Bush	M1023 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT
14		Gland flange	A 105 N	A 105 N	A 304	A 304	A 105 N	A 516 Gr. 60
15		Autolock	M 1023	M 1023	A 316	A 304	A 420	M 1023
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request A 316, A 304, XM 19, Hastelloy, or other materials.
(2) Also available on request stellite, UNS S 31803 (duplex), A 316L, A 304L, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request A 193 B16 / A 194 Gr. 7, A 193 L7 / A 194 Gr. 7, A193 B8M / A193 Gr. 8M, A193 B8 / A193 Gr. 8 or other materials.
(5) Also available on request Graphite + UNS S 31803 (duplex), PTFE + A 316, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. WCB can replace A515 Gr. 60 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	NPS	A	D	H	Kg	Δp1 (6)	Δp2 (6)
ANSI 300	80	3	48	210	225	23	50	26
	100	4	54	254	285	28	50	26
	150	6	59	318	350	53	50	26
	200	8	73	381	420	68	50	26
	250	10	83	444	460	90	50	26
	300	12	92	521	510	148	50	26
	350	14	117	584	570	285	50	26
	400	16	133	648	590	350	50	26
	450	18	149	711	680	525	50	26
	500	20	159	775	720	565	50	26
	600	24	181	914	810	875	50	26
	700	28	229	1045	1150	1060	50	26
	800	32	241	1164	1320	1110	50	26

(6) Δp1 maximium differential pressure with shaft in A420 or XM 19. Δp2 maximium differential pressure with shaft in A316 or A304.

Pressure Temperature Ratings (°C / bar)

	Class	-195	-150	-100	-46	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 153L	300					51.1	50.1	46.4	45.2	43.8	41.7	38.7	37.0										
Fig. 253L	300					51.1	50.1	46.4	45.2	43.8	41.7	38.7	37.0	36.5	34.5	28.7							
Fig. 353L(8)	300			49.6	49.6	49.6	49.6	49.6	42.2	38.5	35.7	33.4	31.6	30.5	29.4	29.1	28.8	28.7	27.4	25.3	23.9		
Fig. 353L-J	300	49.6	49.6	49.6	49.6	49.6	49.6	49.6	40.9	37.2	34.5	32.5	30.7										
Fig. 453(8)(9)	300					51.7	51.7	51.7	51.5	49.7	48.0	46.2	42.9	40.2	36.6	35.1	33.8	31.7	25.2	18.2	12.7		
Fig. 553	300				51.1	51.1	50.1	46.4	45.2	43.8	41.7	38.7	37.0										

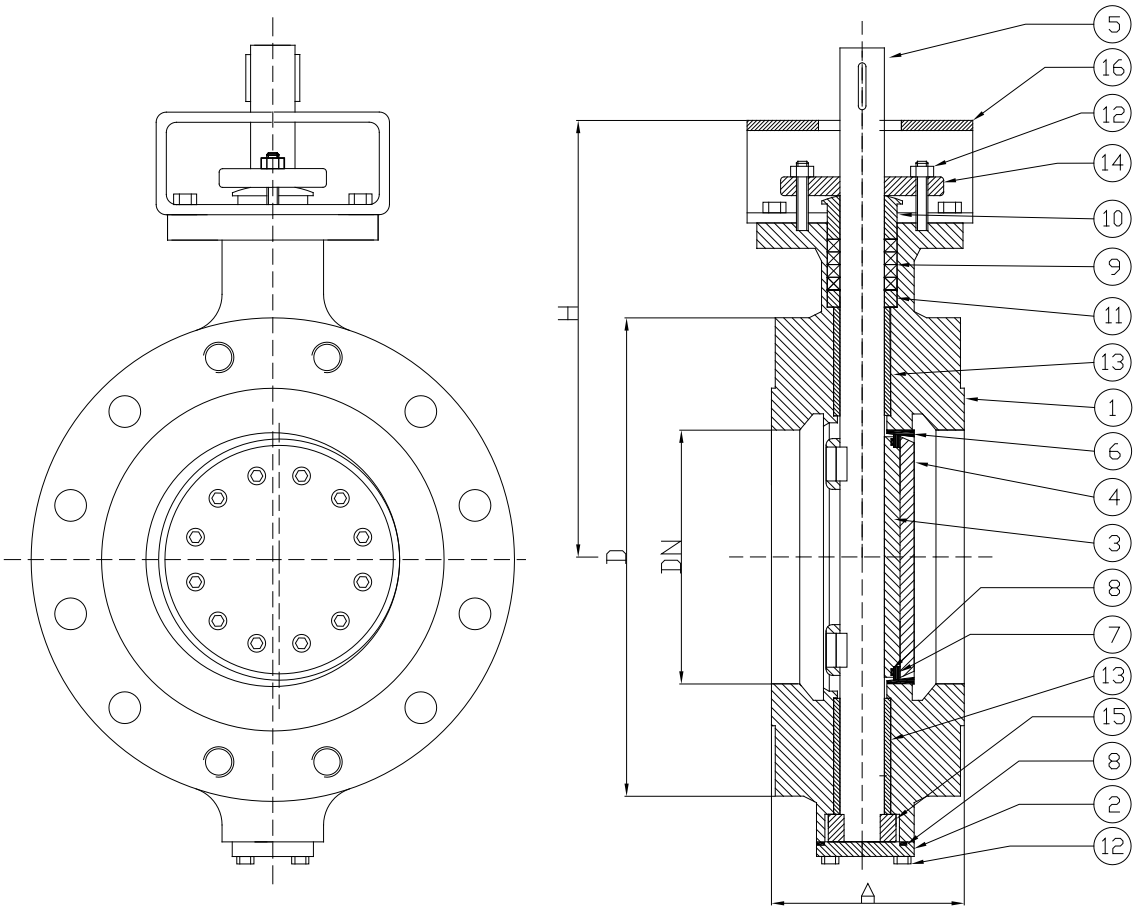
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with XM 19 shaft.

Triple Offset Butterfly Valve

Class 300 NPS 3" - NPS 32"

Flanges ANSI Class 300

Fig. 153F-553F



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Standard features:

☑ Design	ASME B 16.34
	EN 12516
	EN 593
☑ Face to face	ISO 5752 series 13
	EN 558-1 series 13
	BS 2080 series 13
☑ Flanges	ASME B 16.5 (EN 1759-1)
☑ Materials	ASME B 16.34
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 153F	FIG. 253F	FIG. 353F	FIG. 353F-J	FIG. 453F	FIG. 553F
1		Body	A 36	A 216 WCB	A 351 CF8M	A 351 CF8	A 216 WC6	A 352 LCC
2		Cover	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
3	x	Disc	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
4		Retainer flange	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
5	x	Shaft	A 420 (1)	A 420 (1)	A 316 (1)	A 304 (1)	A 420 (1)	A 420 (1)
6		Body seats	A 430 (2)	A 430 (2)	A 316 (2)	A 304 (2)	A 430 (2)	A 430 (2)
7	x	Seal ring	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)
8	O	Gasket	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
9	O	Packing	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
10	x	Gland	M 1023	M 1023	A 316	A 304	M 1023	M 1023
11	x	Spacer	M 1023	M 1023	A 316	A 304	M 1023	M 1023
12		Bolts & Screws	8.8 (4)	A193 B7 (4)	A 193 B8 (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
12		Nuts	8.8 (4)	A194 2H (4)	A 194 8 (4)	A 194 8 (4)	A194 2H (4)	A194 7 (4)
12		Screws (wetted)	8.8 (4)	A193 B7 (4)	A 193 B8M (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
13	x	Bush	M1023 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT
14		Gland flange	A 105 N	A 105 N	A 304	A 304	A 105 N	A 516 Gr. 60
15		Autolock	M 1023	M 1023	A 316	A 304	A 420	M 1023
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request A 316, A 304, XM 19, Hastelloy, or other materials.
(2) Also available on request stellite, UNS S 31803 (duplex), A 316L, A 304L, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request A 193 B16 / A 194 Gr. 7, A 193 L7 / A 194 Gr. 7, A193 B8M / A193 Gr. 8M, A193 B8 / A193 Gr. 8 or other materials.
(5) Also available on request Graphite + UNS S 31803 (duplex), PTFE + A 316, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. WCB can replace A515 Gr. 60 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	NPS	A	D	H	Kg	Δp1 (6)	Δp2 (6)
ANSI 300	80	3	114	210	225	30	50	26
	100	4	127	254	285	42	50	26
	150	6	140	318	350	72	50	26
	200	8	152	381	420	102	50	26
	250	10	165	444	460	115	50	26
	300	12	178	521	510	205	50	26
	350	14	190	584	570	320	50	26
	400	16	216	648	590	390	50	26
	450	18	222	711	680	580	50	26
	500	20	229	775	720	610	50	26
	600	24	267	914	810	920	50	26
	700	28	292	1035	1150	1100	50	26
	800	32	318	1022	1320	1350	50	26

(6) Δp1 maximum differential pressure with shaft in A420 or XM 19. Δp2 maximum differential pressure with shaft in A316 or A304.

Pressure Temperature Ratings (°C / bar)

	Class	-195	-150	-100	-46	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 153F	300					51.1	50.1	46.4	45.2	43.8	41.7	38.7	37.0										
Fig. 253F	300					51.1	50.1	46.4	45.2	43.8	41.7	38.7	37.0	36.5	34.5	28.7							
Fig. 353F(8)	300			49.6	49.6	49.6	49.6	49.6	42.2	38.5	35.7	33.4	31.6	30.5	29.4	29.1	28.8	28.7	27.4	25.3	23.9		
Fig. 353F-J	300	49.6	49.6	49.6	49.6	49.6	49.6	49.6	40.9	37.2	34.5	32.5	30.7										
Fig. 453F(8)(9)	300					51.7	51.7	51.7	51.5	49.7	48.0	46.2	42.9	40.2	36.6	35.1	33.8	31.7	25.2	18.2	12.7		
Fig. 553F	300				51.1	51.1	50.1	46.4	45.2	43.8	41.7	38.7	37.0										

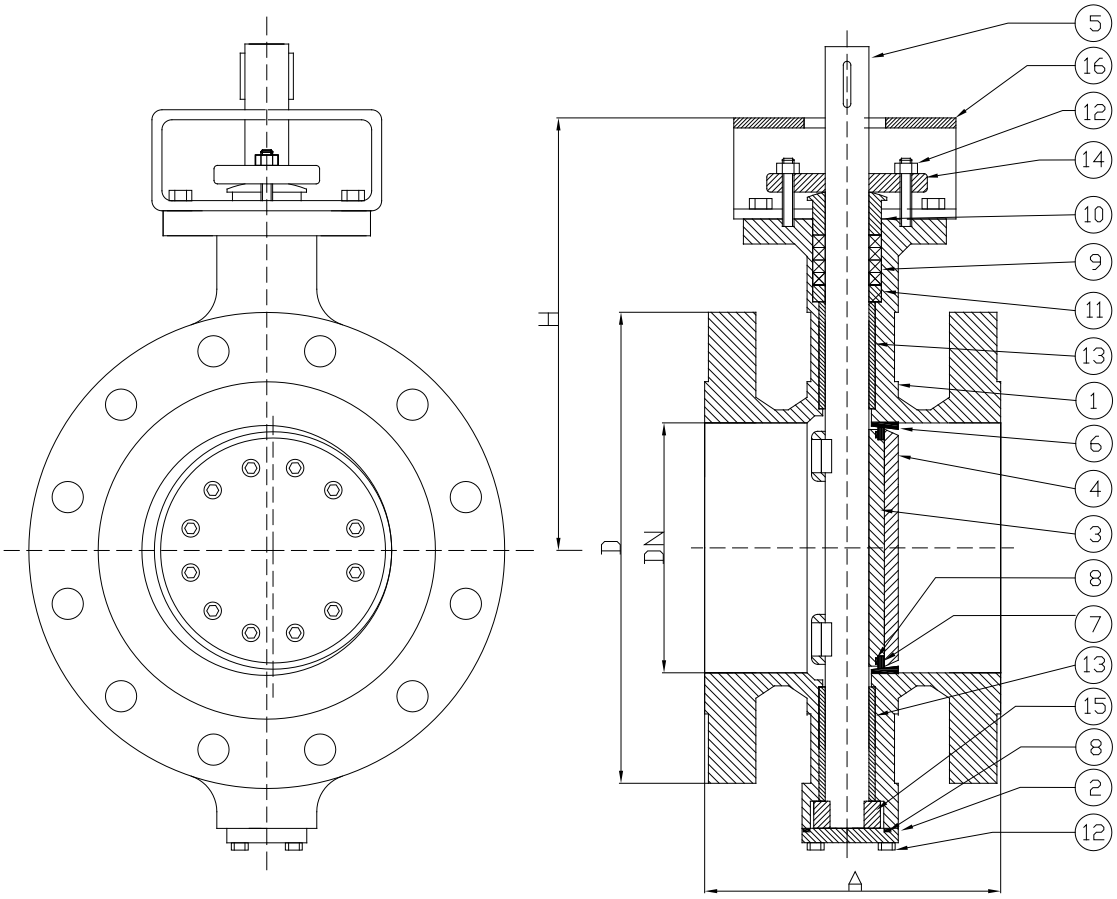
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with XM 19 shaft.

Triple Offset Butterfly Valve

Class 300 NPS 3" - NPS 32"

Flanges ANSI Class 300

Fig. 153G-553G



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Standard features:

☑ Design	ASME B 16.34
	EN 12516
	EN 593
☑ Face to face	ISO 5752 series 4
	ASME B16.10 Tab.2 Col.10
	EN 558-1 series 4
☑ Flanges	ASME B 16.5 (EN 1759-1)
☑ Materials	ASME B 16.34
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 153G	FIG. 253G	FIG. 353G	FIG. 353G-J	FIG. 453G	FIG. 553G
1		Body	A 36	A 216 WCB	A 351 CF8M	A 351 CF8	A 216 WC6	A 352 LCC
2		Cover	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
3	x	Disc	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
4		Retainer flange	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
5	x	Shaft	A 420 (1)	A 420 (1)	A 316 (1)	A 304 (1)	A 420 (1)	A 420 (1)
6		Body seats	A 430 (2)	A 430 (2)	A 316 (2)	A 304 (2)	A 430 (2)	A 430 (2)
7	x	Seal ring	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)
8	O	Gasket	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
9	O	Packing	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
10	x	Gland	M 1023	M 1023	A 316	A 304	M 1023	M 1023
11	x	Spacer	M 1023	M 1023	A 316	A 304	M 1023	M 1023
12		Bolts & Screws	8.8 (4)	A193 B7 (4)	A 193 B8 (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
12		Nuts	8.8 (4)	A194 2H (4)	A 194 8 (4)	A 194 8 (4)	A194 2H (4)	A194 7 (4)
12		Screws (wetted)	8.8 (4)	A193 B7 (4)	A 193 B8M (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
13	x	Bush	M1023 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT
14		Gland flange	A 105 N	A 105 N	A 304	A 304	A 105 N	A 516 Gr. 60
15		Autolock	M 1023	M 1023	A 316	A 304	A 420	M 1023
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request A 316, A 304, XM 19, Hastelloy, or other materials.
(2) Also available on request stellite, UNS S 31803 (duplex), A 316L, A 304L, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request A 193 B16 / A 194 Gr. 7, A 193 L7 / A 194 Gr. 7, A193 B8M / A193 Gr. 8M, A193 B8 / A193 Gr. 8 or other materials.
(5) Also available on request Graphite + UNS S 31803 (duplex), PTFE + A 316, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. WCB can replace A515 Gr. 60 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	NPS	A	D	H	Kg	Δp1(6)	Δp2(6)
ANSI 300	80	3	282	210	225	35	50	26
	100	4	305	254	285	50	50	26
	150	6	403	318	350	90	50	26
	200	8	419	381	420	130	50	26
	250	10	457	444	460	150	50	26
	300	12	502	521	510	270	50	26
	350	14	762	584	570	435	50	26
	400	16	838	648	590	540	50	26
	450	18	914	711	680	785	50	26
	500	20	991	775	720	840	50	26
	600	24	1143	914	810	1242	50	26

(6) Δp1 maximium differential pressure with shaft in A420 or XM 19. Δp2 maximium differential pressure with shaft in A316 or A304.

Pressure Temperature Ratings (°C / bar)

	Class	-195	-150	-100	-46	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 153G	300					51.1	50.1	46.4	45.2	43.8	41.7	38.7	37.0										
Fig. 253G	300					51.1	50.1	46.4	45.2	43.8	41.7	38.7	37.0	36.5	34.5	28.7							
Fig. 353G(8)	300			49.6	49.6	49.6	49.6	49.6	42.2	38.5	35.7	33.4	31.6	30.5	29.4	29.1	28.8	28.7	27.4	25.3	23.9		
Fig. 353G-J	300	49.6	49.6	49.6	49.6	49.6	49.6	49.6	40.9	37.2	34.5	32.5	30.7										
Fig. 453G(8)(9)	300					51.7	51.7	51.7	51.5	49.7	48.0	46.2	42.9	40.2	36.6	35.1	33.8	31.7	25.2	18.2	12.7		
Fig. 553G	300				51.1	51.1	50.1	46.4	45.2	43.8	41.7	38.7	37.0										

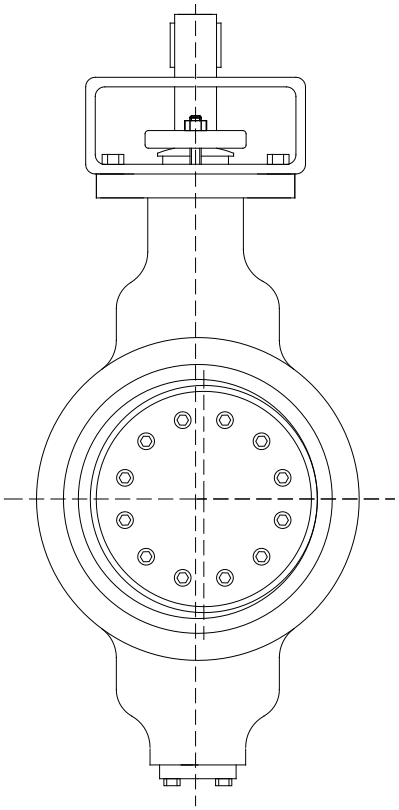
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with XM 19 shaft.

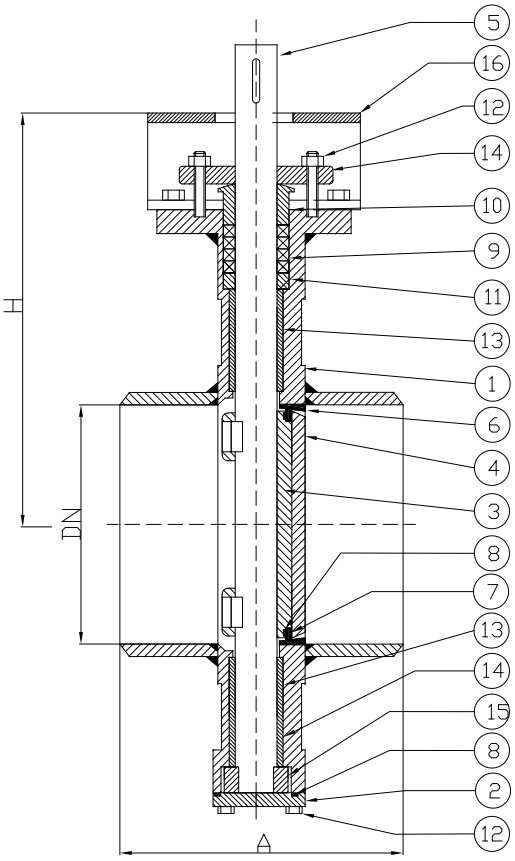
Triple Offset Butterfly Valve

Class 300 NPS 3" - NPS 32"

Butt Welding Ends type

Fig. 153B-553B





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Standard features:

☑ Design	ASME B 16.34
	EN 12516
	EN 593
☑ Face to face	EN 12982 series 66
☑ Butt welding ends	ASME B 16.25
☑ Materials	ASME B 16.34
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 153B	FIG. 253B	FIG. 353B	FIG. 353B-J	FIG. 453B	FIG. 553B
1		Body	A36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
2		Cover	A36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
3	x	Disc	A36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
4		Retainer flange	A36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
5	x	Shaft	A 420 (1)	A 420 (1)	A 316 (1)	A 304 (1)	A 420 (1)	A 420 (1)
6		Body seats	A 430 (2)	A 430 (2)	A 316 (2)	A 304 (2)	A 430 (2)	A 430 (2)
7	x	Seal ring	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)
8	O	Gasket	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
9	O	Packing	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
10	x	Gland	M 1023	M 1023	A 316	A 304	M 1023	M 1023
11	x	Spacer	M 1023	M 1023	A 316	A 304	M 1023	M 1023
12		Bolts & Screws	8.8 (4)	A193 B7 (4)	A 193 B8 (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
12		Nuts	8.8 (4)	A194 2H (4)	A 194 8 (4)	A 194 8 (4)	A194 2H (4)	A194 7 (4)
12		Screws (wetted)	8.8 (4)	A193 B7 (4)	A 193 B8M (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
13	x	Bush	M1023 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT
14		Gland flange	A 105 N	A 105 N	A 304	A 304	A 105 N	A 516 Gr. 60
15		Autolock	M 1023	M 1023	A 316	A 304	A 420	M 1023
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request A 316, A 304, XM 19, Hastelloy, or other materials.
(2) Also available on request stellite, UNS S 31803 (duplex), A 316L, A 304L, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request A 193 B16 / A 194 Gr. 7, A 193 L7 / A 194 Gr. 7, A193 B8M / A193 Gr. 8M, A193 B8 / A193 Gr. 8 or other materials.
(5) Also available on request Graphite + UNS S 31803 (duplex), PTFE + A 316, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. WCB can replace A 515 Gr. 60 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	NPS	A	H	Kg	Δp1 (6)	Δp2 (6)
ANSI 300	80	3	180	225	25	50	26
	100	4	190	285	28	50	26
	150	6	200	325	35	50	26
	200	8	210	350	38	50	26
	250	10	430	420	65	50	26
	300	12	450	460	90	50	26
	350	14	470	510	130	50	26
	400	16	490	570	185	50	26
	450	18	510	590	220	50	26
	500	20	530	680	260	50	26
	600	24	550	720	340	50	26
	700	28	590	810	490	50	26
	800	32	630	1150	820	50	26

(6) Δp1 maximium differential pressure with shaft in A420 or XM 19. Δp2 maximium differential pressure with shaft in A316 or A304.

Pressure Temperature Ratings (°C / bar)

	Class	-195	-150	-100	-46	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 153B	300					51.1	50.1	46.4	45.2	43.8	41.7	38.7	37.0										
Fig. 253B	300					51.1	50.1	46.4	45.2	43.8	41.7	38.7	37.0	36.5	34.5	28.7							
Fig. 353B(8)	300			49.6	49.6	49.6	49.6	49.6	42.2	38.5	35.7	33.4	31.6	30.5	29.4	29.1	28.8	28.7	27.4	25.3	23.9		
Fig. 353B-J	300	49.6	49.6	49.6	49.6	49.6	49.6	49.6	40.9	37.2	34.5	32.5	30.7										
Fig. 453B(8)(9)	300					51.7	51.7	51.7	51.5	49.7	48.0	46.2	42.9	40.2	36.6	35.1	33.8	31.7	25.2	18.2	12.7		
Fig. 553B	300				51.1	51.1	50.1	46.4	45.2	43.8	41.7	38.7	37.0										

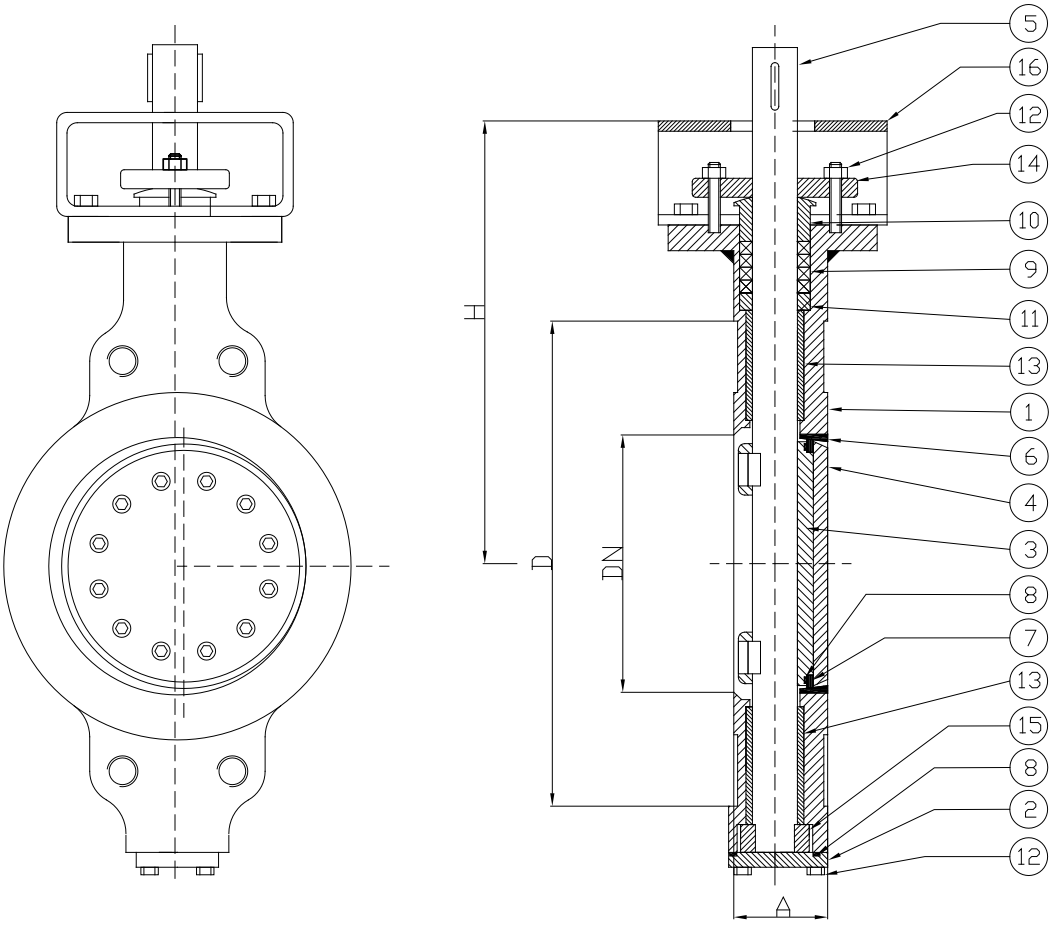
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with XM 19 shaft.

Triple Offset Butterfly Valve

PN 100 DN 80 - DN 350

Wafer type drilling PN 100

Fig. 162W-562W



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Standard features:

☑ Design	EN 12516
	EN 593
☑ Face to face	API 609 CL 600
☑ Materials	EN 10025
	EN 10028
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	EN 593
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 162W	FIG. 262W	FIG. 362W	FIG. 362W-J	FIG. 462W	FIG. 562W
1		Body	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
2		Cover	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
3	x	Disc	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
4		Retainer flange	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
5	x	Shaft	1.4021 (1)	1.4021 (1)	1.4401 (1)	1.4301 (1)	1.4021 (1)	1.4021 (1)
6		Body seats	1.4502 (2)	1.4502 (2)	1.4401 (2)	1.4301 (2)	1.4502 (2)	1.4502 (2)
7	x	Seal ring	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)
8	O	Gasket	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
9	O	Packing	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
10	x	Gland	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
11	x	Spacer	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
12		Bolts & Screws	8.8 (4)	1.7225 (4)	1.4301 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
12		Nuts	8.8 (4)	1.1191 (4)	1.4301 (4)	1.4301 (4)	1.1191 (4)	1.1191 (4)
12		Screws (wetted)	8.8 (4)	1.7225 (4)	1.4401 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
13	x	Bush	1.0402 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT
14		Gland flange	1.0425	1.0425	1.4301	1.4301	1.0352	1.0488
15		Autolock	1.0402	1.0402	1.4401	1.4301	1.4021	1.0402
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request 1,4571, 1.4301, 1.3964, Hastelloy, or other materials.
(2) Also available on request stellite, 1.4462 (duplex), 1.4430, 1.4316, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request 1.7225 / 1.1191, 1.7711 / 1.7225, 1.4401, 1.4301, A4-70 or other materials.
(5) Also available on request Graphite + 1.4462 (duplex), PTFE + 1.4401, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. 1.0619 can replace 1.0425 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	A	D	H	Kg	Δp1(6)	Δp2(6)
PN 100	80	64	230	260	25	100	42
	100	64	265	280	30	100	42
	125	78	315	305	52	100	42
	150	78	355	315	60	100	42
	200	102	430	380	70	100	42
	250	117	505	420	95	100	42
	300	140	585	480	145	100	42
	350	155	655	515	285	100	42

(6) Δp1 maximium differential pressure with shaft in 1.4021 or 1.3964. Δp2 maximium differential pressure with shaft in 1.4401 or 1.4571 or 1.4301.

Pressure Temperature Ratings (°C / bar)

	PN	-195	-150	-100	-50	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 162W	100					100	100	98,7	93,3	85,6	77,8	71,1	64,4										
Fig. 262W	100					100	100	98,7	93,3	85,6	77,8	71,1	64,4	60,0	57,8	47,3	36,9						
Fig. 362W(8)	100			100	100	100	100	96,4	82,2	76,7	71,1	67,8	64,4	61,1	57,8	56,7	55,6	54,4	53,3	52,2	51,1		
Fig. 362W-J	100	100	100	100	100	100	100	94,2	71,1	63,3	55,6	52,2	48,9										
Fig. 462W(8)(9)	100					100	100	100	100	100	100	100	100	95,6	88,9	86,7	84,4	68,2	52,0	38,2	24,4		
Fig. 562W	100				100	100	100	97,8	88,9	84,4	80,0	77,8	75,6										

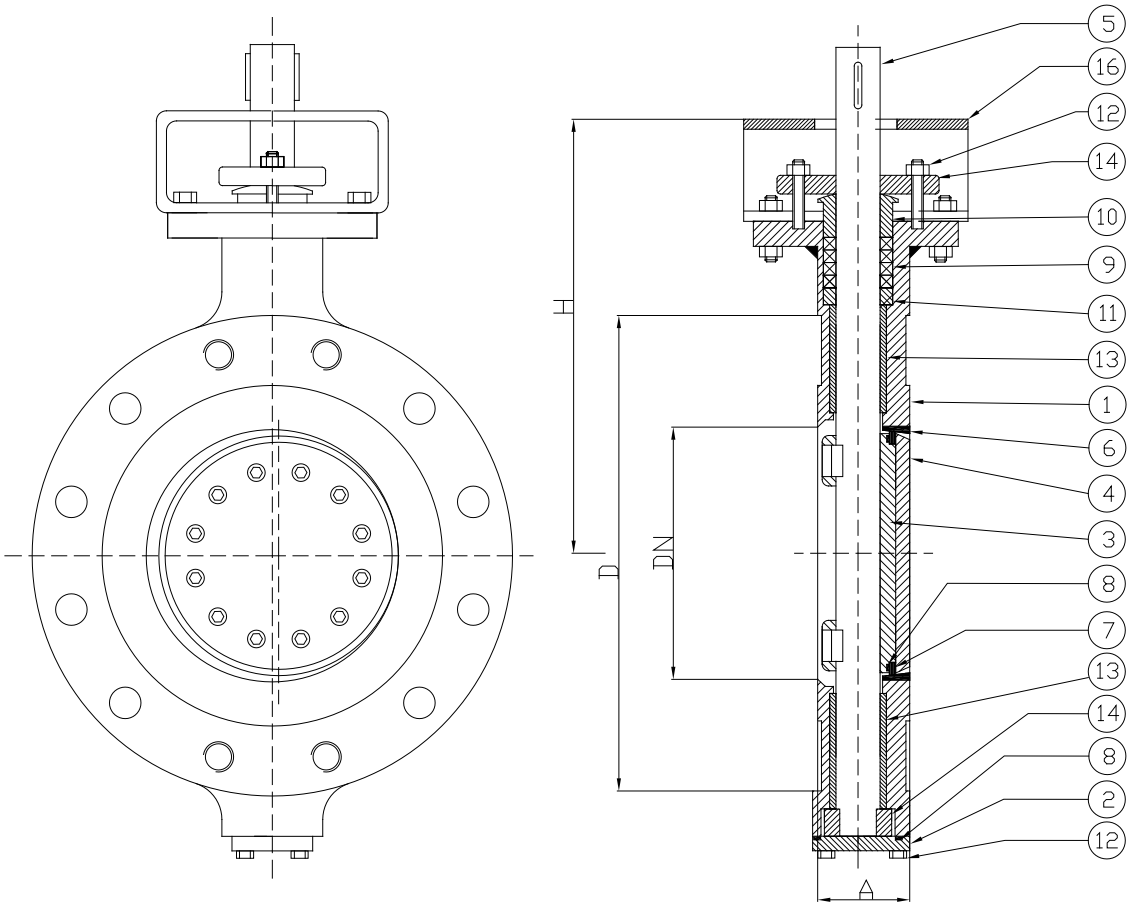
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with 1.3964 shaft.

Triple Offset Butterfly Valve

PN 100 DN 80 - DN 350

Lug - single flange drilling PN 100

Fig. 162L-562L



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Standard features:

☑ Design	EN 12516
	EN 593 (Fig. 3b)
☑ Face to face	API 609 CL 600
☑ Materials	EN 10025
	EN 10028
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	EN 593
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices
- ☐ All tapped holes (EN 593 Fig. 3d)
- ☐ Lightweight lug type (EN 593 Fig. 3a or 3c)

Material Specification

		DESCRIPTION	FIG. 162L	FIG. 262L	FIG. 362L	FIG. 362L-J	FIG. 462L	FIG. 562L
1		Body	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
2		Cover	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
3	x	Disc	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
4		Retainer flange	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
5	x	Shaft	1.4021 (1)	1.4021 (1)	1.4401 (1)	1.4301 (1)	1.4021 (1)	1.4021 (1)
6		Body seats	1.4502 (2)	1.4502 (2)	1.4401 (2)	1.4301 (2)	1.4502 (2)	1.4502 (2)
7	x	Seal ring	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)
8	O	Gasket	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
9	O	Packing	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
10	x	Gland	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
11	x	Spacer	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
12		Bolts & Screws	8.8 (4)	1.7225 (4)	1.4301 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
12		Nuts	8.8 (4)	1.1191 (4)	1.4301 (4)	1.4301 (4)	1.1191 (4)	1.1191 (4)
12		Screws (wetted)	8.8 (4)	1.7225 (4)	1.4401 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
13	x	Bush	1.0402 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT
14		Gland flange	1.0425	1.0425	1.4301	1.4301	1.0352	1.0488
15		Autolock	1.0402	1.0402	1.4401	1.4301	1.4021	1.0402
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request 1,4571, 1.4301, 1.3964, Hastelloy, or other materials.
(2) Also available on request stellite, 1.4462 (duplex), 1.4430, 1.4316, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request 1.7225 / 1.1191, 1.7711 / 1.7225, 1.4401, 1.4301, A4-70 or other materials.
(5) Also available on request Graphite + 1.4462 (duplex), PTFE + 1.4401, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. 1.0619 can replace 1.0425 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	A	D	H	Kg	Δp1(6)	Δp2(6)
PN 100	80	64	230	260	28	100	42
	100	64	265	280	35	100	42
	125	78	315	305	60	100	42
	150	78	355	315	70	100	42
	200	102	430	380	80	100	42
	250	117	505	420	110	100	42
	300	140	585	480	160	100	42
	350	155	655	515	300	100	42

(6) Δp1 maximium differential pressure with shaft in 1.4021 or 1.3964. Δp2 maximium differential pressure with shaft in 1.4401 or 1.4571 or 1.4301.

Pressure Temperature Ratings (°C / bar)

	PN	-195	-150	-100	-50	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 162L	100					100	100	98,7	93,3	85,6	77,8	71,1	64,4										
Fig. 262L	100					100	100	98,7	93,3	85,6	77,8	71,1	64,4	60,0	57,8	47,3	36,9						
Fig. 362L(8)	100			100	100	100	100	96,4	82,2	76,7	71,1	67,8	64,4	61,1	57,8	56,7	55,6	54,4	53,3	52,2	51,1		
Fig. 362L-J	100	100	100	100	100	100	100	94,2	71,1	63,3	55,6	52,2	48,9										
Fig. 462L(8)(9)	100					100	100	100	100	100	100	100	100	95,6	88,9	86,7	84,4	68,2	52,0	38,2	24,4		
Fig. 562L	100				100	100	100	97,8	88,9	84,4	80,0	77,8	75,6										

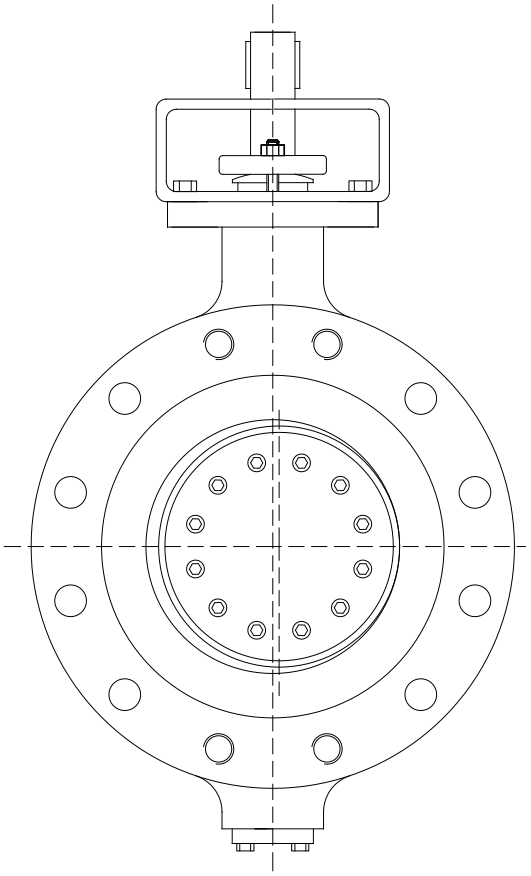
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with 1.3964 shaft.

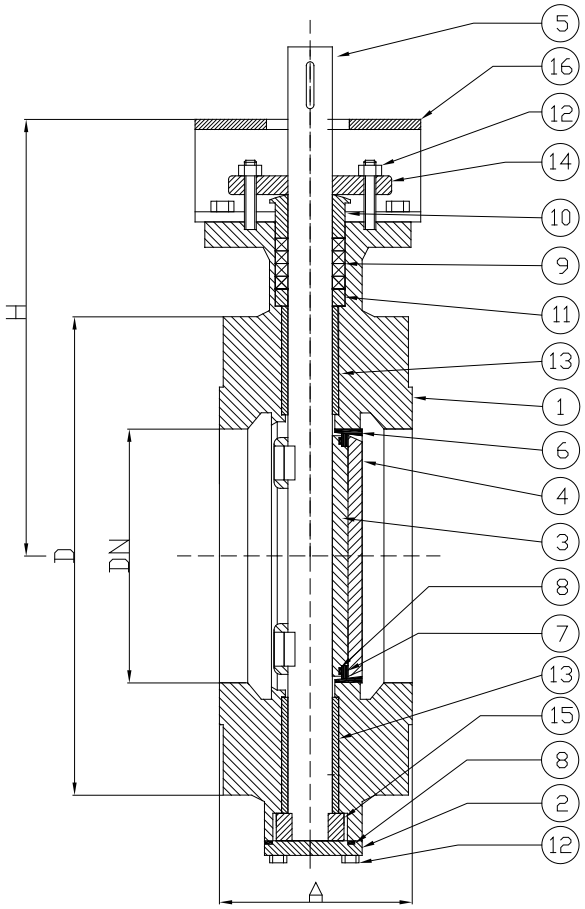
Triple Offset Butterfly Valve

PN 100 DN 80 - DN 600

Flanged PN 100

Fig. 162F-562F





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Standard features:

☑ Design	EN 12516
	EN 593
☑ Face to face	ISO 5752 series 14
	EN 558-1 series 14
	DIN 3202 F4
☑ Flanges	EN 1092-1/21/B2
☑ Materials	EN 10213
	EN 10025/ EN 10028
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	EN 593
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 162F	FIG. 262F	FIG. 362F	FIG. 362F-J	FIG. 462F	FIG. 562F
1		Body	1.0044	1.0425	1.4581	1.4301	1.7335	1.0488
2		Cover	1.0044	1.0425	1.4571	1.4301	1.7335	1.0488
3	x	Disc	1.0044	1.0425	1.4571	1.4301	1.7335	1.0488
4		Retainer flange	1.0044	1.0425	1.4571	1.4301	1.7335	1.0488
5	x	Shaft	1.4021 (1)	1.4021 (1)	1.4571 (1)	1.4301 (1)	1.4021 (1)	1.4021 (1)
6		Body seats	1.4502 (2)	1.4502 (2)	1.4571 (2)	1.4301 (2)	1.4502 (2)	1.4502 (2)
7	x	Seal ring	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)	Graphite + 1.4401 (5)
8	O	Gasket	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
9	O	Packing	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)	Graphite + 1.4401 (3)
10	x	Gland	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
11	x	Spacer	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
12		Bolts & Screws	8.8 (4)	1.7225 (4)	1.4301 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
12		Nuts	8.8 (4)	1.1191 (4)	1.4301 (4)	1.4301 (4)	1.1191 (4)	1.1191 (4)
12		Screws (wetted)	8.8 (4)	1.7225 (4)	1.4401 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
13	x	Bush	1.0402 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT
14		Gland flange	1.0425	1.0425	1.4301	1.4301	1.0352	1.0488
15		Autolock	1.0402	1.0402	1.4571	1.4301	1.4021	1.0402
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request 1,4571, 1.4301, 1.3964, Hastelloy, or other materials.
(2) Also available on request stellite, 1.4462 (duplex), 1.4430, 1.4316, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request 1.7225 / 1.1191, 1.7711 / 1.7225, 1.4401, 1.4301, A4-70 or other materials.
(5) Also available on request Graphite + 1.4462 (duplex), PTFE + 1.4401, or other materials.
Equivalent or superior materials can be supplied if the listed material is not available (e.g. 1.0619 can replace 1.0425 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	A	D	H	Kg	Δp1 (6)	Δp2 (6)
PN 100	80	180	230	250	28	100	42
	100	190	265	280	33	100	42
	125	200	315	305	55	100	42
	150	210	355	315	65	100	42
	200	230	430	380	90	100	42
	250	250	505	420	105	100	42
	300	270	585	480	180	100	42
	350	290	655	515	290	100	42
	400	310	715	540	340	100	42
	450	330	745	570	480	100	42
	500	350	870	630	520	100	42
	600	390	990	680	625	100	42

(6) Δp1 maximium differential pressure with shaft in 1.4021 or 1.3964. Δp2 maximium differential pressure with shaft in 1.4401 or 1.4571 or 1.4301.

Pressure Temperature Ratings (°C / bar)

	PN	-195	-150	-100	-50	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 162F	100					100	100	98,7	93,3	85,6	77,8	71,1	64,4										
Fig. 262F	100					100	100	98,7	93,3	85,6	77,8	71,1	64,4	60,0	57,8	47,3	36,9						
Fig. 362F(8)	100			100	100	100	100	96,4	82,2	76,7	71,1	67,8	64,4	61,1	57,8	56,7	55,6	54,4	53,3	52,2	51,1		
Fig. 362F-J	100	100	100	100	100	100	100	94,2	71,1	63,3	55,6	52,2	48,9										
Fig. 462F(8)(9)	100					100	100	100	100	100	100	100	100	95,6	88,9	86,7	84,4	68,2	52,0	38,2	24,4		
Fig. 562F	100				100	100	100	97,8	88,9	84,4	80,0	77,8	75,6										

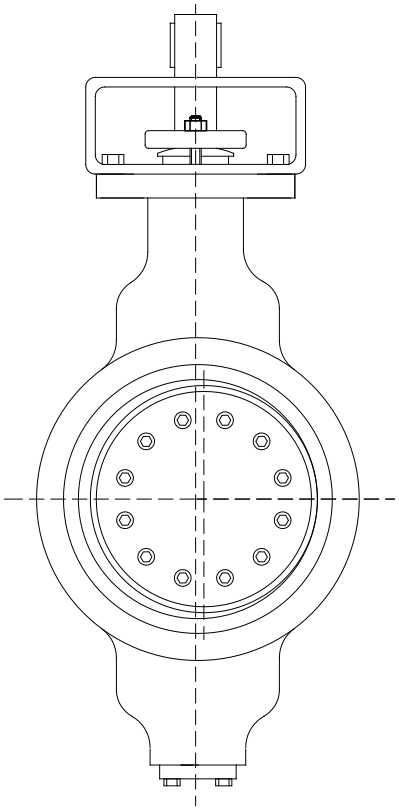
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with 1.3964 shaft.

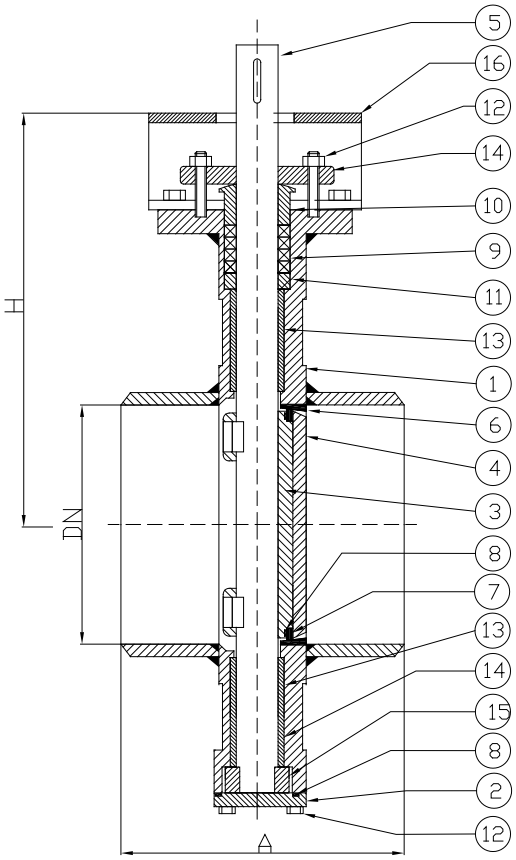
Triple Offset Butterfly Valve

PN 100 DN 80 - DN 600

Butt Welding Ends type

Fig. 162B-562B





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Standard features:

☑ Design	EN 12516
	EN 593
☑ Face to face	EN 12982 series 66
☑ Butt welding ends	EN 12627
☑ Materials	EN 10025
	EN 10028
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 162B	FIG. 362B	FIG. 362B	FIG. 362B-J	FIG. 462B	FIG. 562B
1		Body	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
2		Cover	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
3	x	Disc	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
4		Retainer flange	1.0044	1.0425	1.4401	1.4301	1.7335	1.0488
5	x	Shaft	1.4021 (1)	1.4021 (1)	1.4401 (1)	1.4301 (1)	1.4021 (1)	1.4021 (1)
6		Body seats	1.4502 (2)	1.4502 (2)	1.4401 (2)	1.4301 (2)	1.4502 (2)	1.4502 (2)
7	x	Seal ring	Graphite +1.4401 (5)	Graphite +1.4401 (5)	Graphite +1.4401 (5)	Graphite +1.4401 (5)	Graphite +1.4401 (5)	Graphite +1.4401 (5)
8	O	Gasket	Graphite +1.4401 (3)	Graphite +1.4401 (3)	Graphite +1.4401 (3)	Graphite +1.4401 (3)	Graphite +1.4401 (3)	Graphite +1.4401 (3)
9	O	Packing	Graphite +1.4401 (3)	Graphite +1.4401 (3)	Graphite +1.4401 (3)	Graphite +1.4401 (3)	Graphite +1.4401 (3)	Graphite +1.4401 (3)
10	x	Gland	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
11	x	Spacer	1.0402	1.0402	1.4401	1.4301	1.0402	1.0402
12		Bolts & Screws	8.8 (4)	1.7225 (4)	1.4301 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
12		Nuts	8.8 (4)	1.1191 (4)	1.4301 (4)	1.4301 (4)	1.1191 (4)	1.1191 (4)
12		Screws (wetted)	8.8 (4)	1.7225 (4)	1.4401 (4)	1.4301 (4)	1.7225 (4)	1.7225 (4)
13	x	Bush	1.0402 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT	1.4401 NHT
14		Gland flange	1.0425	1.0425	1.4301	1.4301	1.0352	1.0488
15		Autolock	1.0402	1.0402	1.4401	1.4301	1.4021	1.0402
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request 1,4571, 1.4301, 1.3964, Hastelloy, or other materials.
(2) Also available on request stellite, 1.4462 (duplex), 1.4430, 1.4316, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request 1.7225 / 1.1191, 1.7711 / 1.7225, 1.4401, 1.4301, A4-70 or other materials.
(5) Also available on request Graphite + 1.4462 (duplex), PTFE + 1.4401, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. 1.0619 can replace 1.0425 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	A	H	Kg	Δp1(6)	Δp2(6)
PN 100	80	180	250	28	100	42
	100	190	280	33	100	42
	125	200	300	40	100	42
	150	210	345	45	100	42
	200	430	410	75	100	42
	250	450	450	105	100	42
	300	470	480	140	100	42
	350	490	540	205	100	42
	400	510	570	235	100	42
	450	530	655	280	100	42
	500	550	690	360	100	42
	600	590	780	510	100	42

(6) Δp1 maximium differential pressure with shaft in 1.4021 or 1.3964. Δp2 maximium differential pressure with shaft in 1.4401 or 1.4571 or 1.4301.

Pressure Temperature Ratings (°C / bar)

	PN	-195	-150	-100	-50	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 162B	100					100	100	98,7	93,3	85,6	77,8	71,1	64,4										
Fig. 262B	100					100	100	98,7	93,3	85,6	77,8	71,1	64,4	60,0	57,8	47,3	36,9						
Fig. 362B(8)	100			100	100	100	100	96,4	82,2	76,7	71,1	67,8	64,4	61,1	57,8	56,7	55,6	54,4	53,3	52,2	51,1		
Fig. 362B-J	100	100	100	100	100	100	100	94,2	71,1	63,3	55,6	52,2	48,9										
Fig. 462B(8)(9)	100					100	100	100	100	100	100	100	100	95,6	88,9	86,7	84,4	68,2	52,0	38,2	24,4		
Fig. 562B	100				100	100	100	97,8	88,9	84,4	80,0	77,8	75,6										

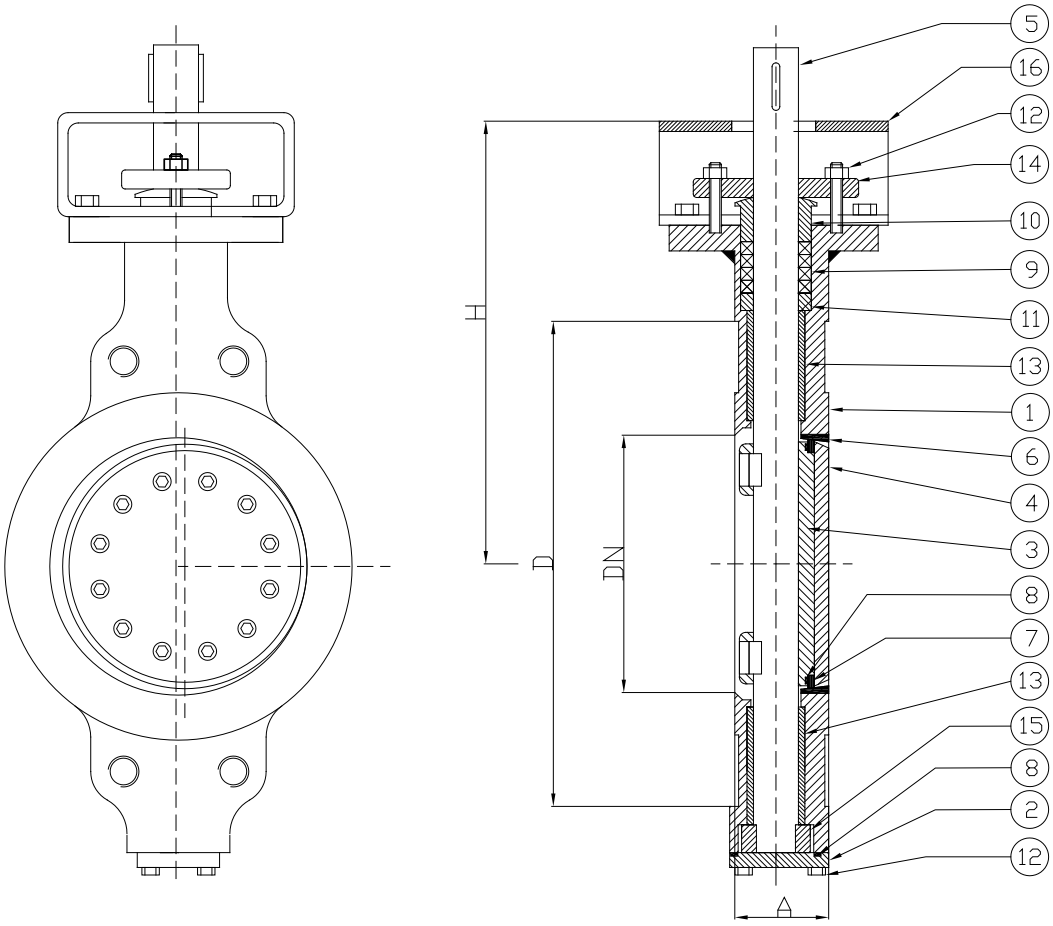
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with 1.3964 shaft.

Triple Offset Butterfly Valve

Class 600 NPS 3" - NPS 14"

Wafer type

Fig. 163W-563W



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Standard features:

☑ Design	API 609
	EN 12516
	EN 593
☑ Face to face	API 609 CL 600
☑ Materials	ASME B 16.34
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 163W	FIG. 263W	FIG. 363W	FIG. 363W-J	FIG. 463W	FIG. 563W
1		Body	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
2		Cover	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
3	x	Disc	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
4		Retainer flange	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
5	x	Shaft	A 420 (1)	A 420 (1)	A 316 (1)	A 304 (1)	A 420 (1)	A 420 (1)
6		Body seats	A 430 (2)	A 430 (2)	A 316 (2)	A 304 (2)	A 430 (2)	A 430 (2)
7	x	Seal ring	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)
8	O	Gasket	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
9	O	Packing	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
10	x	Gland	M 1023	M 1023	A 316	A 304	M 1023	M 1023
11	x	Spacer	M 1023	M 1023	A 316	A 304	M 1023	M 1023
12		Bolts & Screws	8.8 (4)	A193 B7 (4)	A 193 B8 (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
12		Nuts	8.8 (4)	A194 2H (4)	A 194 8 (4)	A 194 8 (4)	A194 2H (4)	A194 7 (4)
12		Screws (wetted)	8.8 (4)	A193 B7 (4)	A 193 B8M (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
13	x	Bush	M1023 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT
14		Gland flange	A 105 N	A 105 N	A 304	A 304	A 105 N	A 516 Gr. 60
15		Autolock	M 1023	M 1023	A 316	A 304	A 420	M 1023
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request A 316, A 304, XM 19, Hastelloy, or other materials.
(2) Also available on request stellite, UNS S 31803 (duplex), A 316L, A 304L, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request A 193 B16 / A 194 Gr. 7, A 193 L7 / A 194 Gr. 7, A193 B8M / A193 Gr. 8M, A193 B8 / A193 Gr. 8 or other materials.
(5) Also available on request Graphite + UNS S 31803 (duplex), PTFE + A 316, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. WCB can replace A515 Gr. 60 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	NPS	A	D	H	Kg	Δp1 (6)	Δp2 (6)
ANSI 600	80	3	54	210	260	25	100	42
	100	4	64	273	280	30	100	42
	150	6	78	356	315	60	100	42
	200	8	102	419	380	70	100	42
	250	10	117	508	420	95	100	42
	300	12	140	559	480	145	100	42
	350	14	155	603	515	285	100	42

(6) Δp1 maximum differential pressure with shaft in A420 or XM 19. Δp2 maximum differential pressure with shaft in A316 or A304.

Pressure Temperature Ratings (°C / bar)

	Class	-195	-150	-100	-46	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 163W	600					102	102	102	93.7	90.4	87.6	83.4	77.4										
Fig. 263W	600					102	102	102	93.7	90.4	87.6	83.4	77.4	73.9	69.0	57.5							
Fig. 363W (8)	600			99.3	99.3	99.3	99.3	99.3	84.4	77.0	71.3	66.8	63.2	60.9	58.9	58.3	57.7	57.3	54.7	50.6	47.8		
Fig. 363W-J	600	99.3	99.3	99.3	99.3	99.3	99.3	99.3	81.7	74.3	69.0	65.0	61.3										
Fig. 463W (8) (9)	600					103	103	103	103	99.5	95.9	92.3	85.7	80.4	73.1	70.2	67.6	63.3	50.4	36.3	25.4		
Fig. 563W	600				102	102	102	102	93.7	90.4	87.6	83.4	77.4	73.9	69.0	57.5							

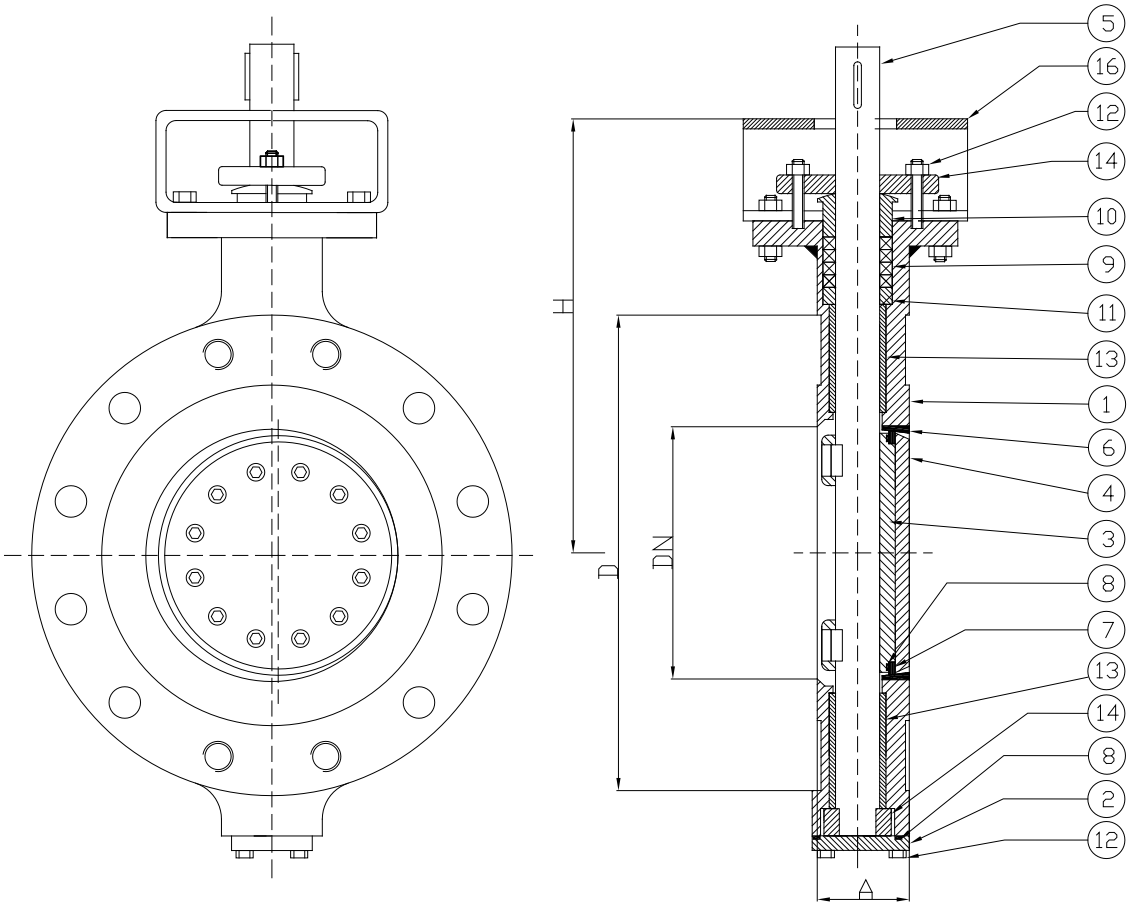
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with XM 19 shaft.

Triple Offset Butterfly Valve

Class 600 NPS 3" - NPS 14"

Lug - single flange type

Fig. 163L-563L



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Standard features:

☑ Design	API 609
	EN 12516
	EN 593 (Fig. 3b)
☑ Face to face	API 609 CL 600
☑ Materials	ASME B 16.34
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices
- ☐ All tapped holes (EN 593 Fig. 3d)
- ☐ Lightweight lug type (EN 593 Fig. 3a or 3c)

Material Specification

		DESCRIPTION	FIG. 163L	FIG. 263L	FIG. 363L	FIG. 363L-J	FIG. 463L	FIG. 563L
1		Body	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
2		Cover	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
3	x	Disc	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
4		Retainer flange	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
5	x	Shaft	A 420 (1)	A 420 (1)	A 316 (1)	A 304 (1)	A 420 (1)	A 420 (1)
6		Body seats	A 430 (2)	A 430 (2)	A 316 (2)	A 304 (2)	A 430 (2)	A 430 (2)
7	x	Seal ring	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)
8	O	Gasket	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
9	O	Packing	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
10	x	Gland	M 1023	M 1023	A 316	A 304	M 1023	M 1023
11	x	Spacer	M 1023	M 1023	A 316	A 304	M 1023	M 1023
12		Bolts & Scews	8.8 (4)	A193 B7 (4)	A 193 B8 (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
12		Nuts	8.8 (4)	A194 2H (4)	A 194 8 (4)	A 194 8 (4)	A194 2H (4)	A194 7 (4)
12		Scews (wetted)	8.8 (4)	A193 B7 (4)	A 193 B8M (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
13	x	Bush	M1023 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT
14		Gland flange	A 105 N	A 105 N	A 304	A 304	A 105 N	A 516 Gr. 60
15		Autolock	M 1023	M 1023	A 316	A 304	A 420	M 1023
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request A 316, A 304, XM 19, Hastelloy, or other materials.
(2) Also available on request stellite, UNS S 31803 (duplex), A 316L, A 304L, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request A 193 B16 / A 194 Gr. 7, A 193 L7 / A 194 Gr. 7, A193 B8M / A193 Gr. 8M, A193 B8 / A193 Gr. 8 or other materials.
(5) Also available on request Graphite+ UNS S 31803 (duplex), PTFE + A 316, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. WCB can replace A515 Gr. 60 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	NPS	A	D	H	Kg	Δp1(6)	Δp2(6)
ANSI 600	80	3	54	210	260	28	100	42
	100	4	64	273	280	35	100	42
	150	6	78	356	315	70	100	42
	200	8	102	419	380	80	100	42
	250	10	117	508	420	110	100	42
	300	12	140	559	480	160	100	42
	350	14	155	603	515	300	100	42

(6) Δp1 maximium differential pressure with shaft in A420 or XM 19. Δp2 maximium differential pressure with shaft in A316 or A304.

Pressure Temperature Ratings (°C / bar)

	Class	-195	-150	-100	-46	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 163L	600					102	102	102	93.7	90.4	87.6	83.4	77.4										
Fig. 263L	600					102	102	102	93.7	90.4	87.6	83.4	77.4	73.9	69.0	57.5							
Fig. 363L(8)	600			99.3	99.3	99.3	99.3	99.3	84.4	77.0	71.3	66.8	63.2	60.9	58.9	58.3	57.7	57.3	54.7	50.6	47.8		
Fig. 363L-J	600	99.3	99.3	99.3	99.3	99.3	99.3	99.3	81.7	74.3	69.0	65.0	61.3										
Fig. 463L(8)(9)	600					103	103	103	103	99.5	95.9	92.3	85.7	80.4	73.1	70.2	67.6	63.3	50.4	36.3	25.4		
Fig. 563L	600				102	102	102	102	93.7	90.4	87.6	83.4	77.4	73.9	69.0	57.5							

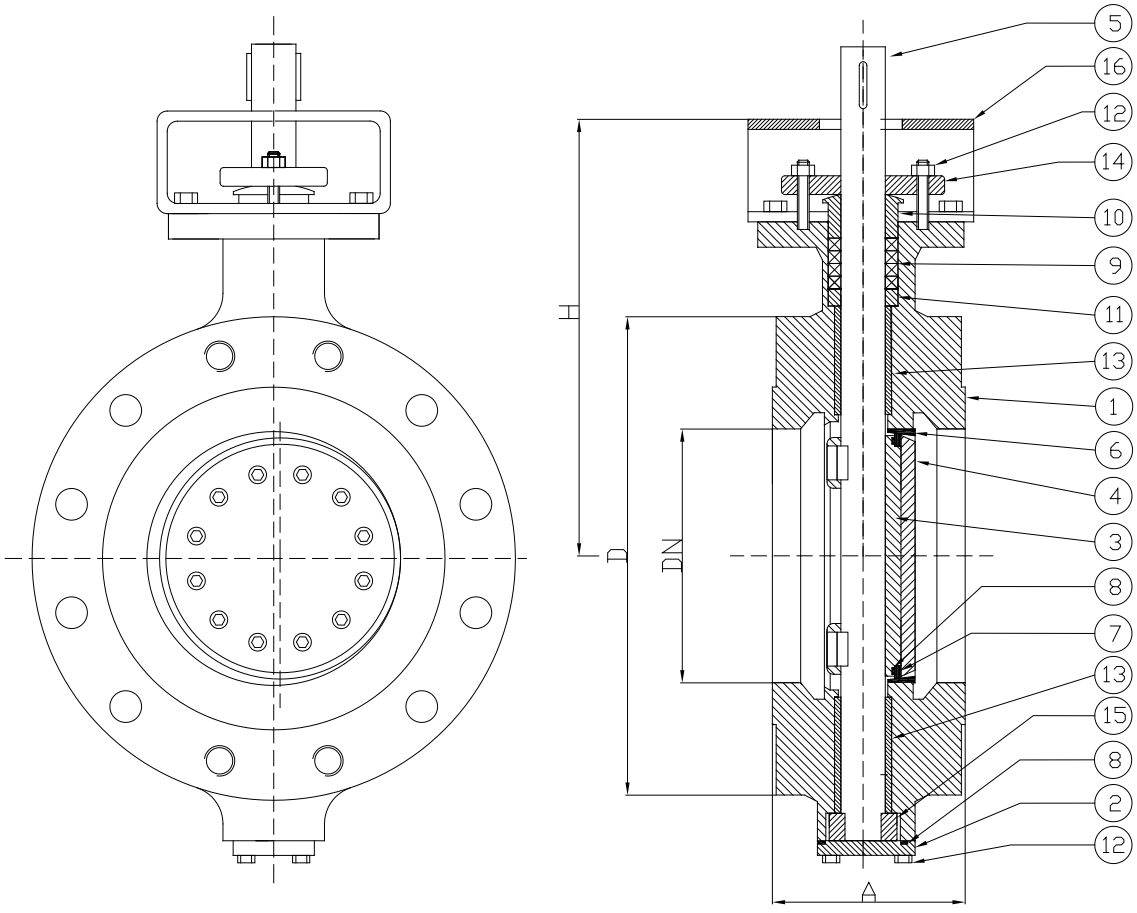
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with XM 19 shaft.

Triple Offset Butterfly Valve

Class 600 NPS 3" - NPS 24"

Flanges ANSI Class 600

Fig. 163F-563F



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Standard features:

☑ Design	ASME B 16.34
	EN 12516
	EN 593
☑ Face to face	ISO 5752 series 14
	EN 558-1 series 14
	DIN 3202 F4
☑ Flanges	ASME B 16.5 (EN 1759-1)
☑ Materials	ASME B 16.34
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 163F	FIG. 263F	FIG. 363F	FIG. 363F-J	FIG. 463F	FIG. 563F
1		Body	A 36	A 216 WCB	A 351 CF8M	A 351 CF8	A 216 WC6	A 352 LCC
2		Cover	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
3	x	Disc	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
4		Retainer flange	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
5	x	Shaft	A 420 (1)	A 420 (1)	A 316 (1)	A 304 (1)	A 420 (1)	A 420 (1)
6		Body seats	A 430 (2)	A 430 (2)	A 316 (2)	A 304 (2)	A 430 (2)	A 430 (2)
7	x	Seal ring	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)
8	O	Gasket	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
9	O	Packing	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
10	x	Gland	M 1023	M 1023	A 316	A 304	M 1023	M 1023
11	x	Spacer	M 1023	M 1023	A 316	A 304	M 1023	M 1023
12		Bolts & Screws	8.8 (4)	A193 B7 (4)	A 193 B8 (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
12		Nuts	8.8 (4)	A194 2H (4)	A 194 8 (4)	A 194 8 (4)	A194 2H (4)	A194 7 (4)
12		Screws (wetted)	8.8 (4)	A193 B7 (4)	A 193 B8M (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
13	x	Bush	M1023 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT
14		Gland flange	A 105 N	A 105 N	A 304	A 304	A 105 N	A 516 Gr. 60
15		Autolock	M 1023	M 1023	A 316	A 304	A 420	M 1023
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request A 316, A 304, XM 19, Hastelloy, or other materials.
(2) Also available on request stellite, UNS S 31803 (duplex), A 316L, A 304L, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request A 193 B16 / A 194 Gr. 7, A 193 L7 / A 194 Gr. 7, A193 B8M / A193 Gr. 8M, A193 B8 / A193 Gr. 8 or other materials.
(5) Also available on request Graphite + UNS S 31803 (duplex), PTFE + A 316, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. WCB can replace A515 Gr. 60 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	NPS	A	D	H	Kg	Δp1 (6)	Δp2 (6)
ANSI 600	80	3	180	210	250	21	100	42
	100	4	190	273	280	33	100	42
	150	6	210	356	315	58	100	42
	200	8	230	419	380	84	100	42
	250	10	250	508	420	98	100	42
	300	12	270	559	480	175	100	42
	350	14	290	603	515	280	100	42
	400	16	310	686	540	335	100	42
	450	18	330	743	570	480	100	42
	500	20	350	813	630	530	100	42
	600	24	390	940	680	830	100	42

(6) Δp1 maximium differential pressure with shaft in A420 or XM 19. Δp2 maximium differential pressure with shaft in A316 or A304.

Pressure Temperature Ratings (°C / bar)

	Class	-195	-150	-100	-46	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 163F	600					102	102	102	93.7	90.4	87.6	83.4	77.4										
Fig. 263F	600					102	102	102	93.7	90.4	87.6	83.4	77.4	73.9	69.0	57.5							
Fig. 363F(8)	600			99.3	99.3	99.3	99.3	99.3	84.4	77.0	71.3	66.8	63.2	60.9	58.9	58.3	57.7	57.3	54.7	50.6	47.8		
Fig. 363F-J	600	99.3	99.3	99.3	99.3	99.3	99.3	99.3	81.7	74.3	69.0	65.0	61.3										
Fig. 463F(8)(9)	600					103	103	103	103	99.5	95.9	92.3	85.7	80.4	73.1	70.2	67.6	63.3	50.4	36.3	25.4		
Fig. 563F	600				102	102	102	102	93.7	90.4	87.6	83.4	77.4	73.9	69.0	57.5							

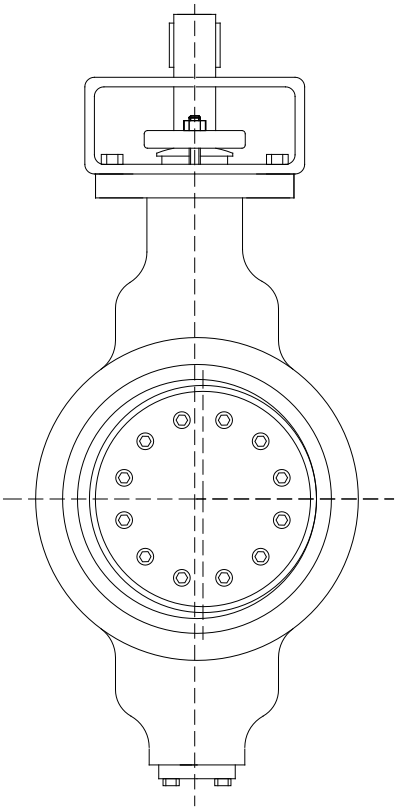
Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with XM 19 shaft.

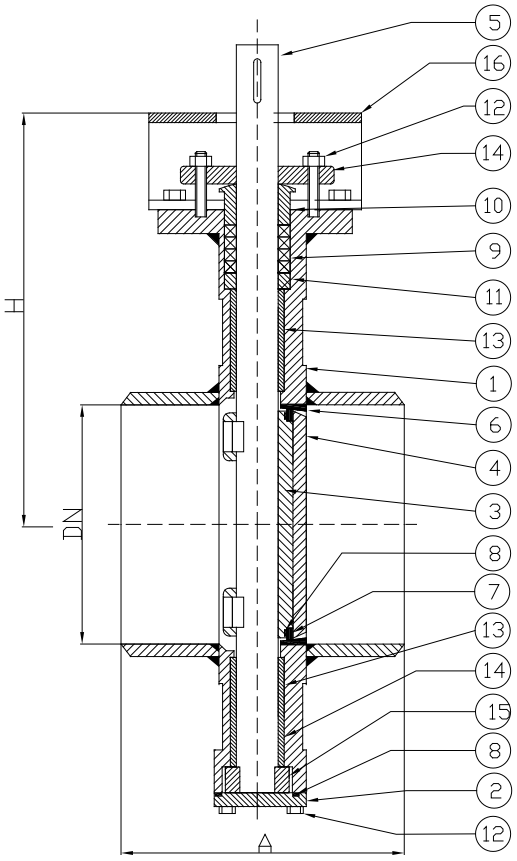
Triple Offset Butterfly Valve

Class 600 NPS 3" - NPS 24"

Butt Welding Ends type

Fig. 163B-563B





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Standard features:

☑ Design	ASME B 16.34
	EN 12516
	EN 593
☑ Face to face	EN 12982 series 66
☑ Butt welding ends	ASME B 16.25
☑ Materials	ASME B 16.34
	EN 1503
☑ Bolts and nuts	EN 1515-1
☑ Welding overlay	AD-M HP 0
☑ Testing	EN 12266
	API 598
☑ Marking	EN 19
☑ Certificates	EN 10204

Optional versions:

- ☐ AD 2000 – A4
- ☐ TRD 110
- ☐ ATEX compliant
- ☐ TA-Luft
- ☐ ISO 15848
- ☐ With special devices

Material Specification

		DESCRIPTION	FIG. 163B	FIG. 263B	FIG. 363B	FIG. 363B-J	FIG. 463B	FIG. 563B
1		Body	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
2		Cover	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
3	x	Disc	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
4		Retainer flange	A 36	A 515 Gr. 60	A 316	A 304	A 182 F11	A 516 Gr. 60
5	x	Shaft	A 420 (1)	A 420 (1)	A 316 (1)	A 304 (1)	A 420 (1)	A 420 (1)
6		Body seats	A 430 (2)	A 430 (2)	A 316 (2)	A 304 (2)	A 430 (2)	A 430 (2)
7	x	Seal ring	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)	Graphite + A 316 (5)
8	O	Gasket	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
9	O	Packing	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)	Graphite + A 316 (3)
10	x	Gland	M 1023	M 1023	A 316	A 304	M 1023	M 1023
11	x	Spacer	M 1023	M 1023	A 316	A 304	M 1023	M 1023
12		Bolts & Screws	8.8 (4)	A193 B7 (4)	A 193 B8 (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
12		Nuts	8.8 (4)	A194 2H (4)	A 194 8 (4)	A 194 8 (4)	A194 2H (4)	A194 7 (4)
12		Screws (weeted)	8.8 (4)	A193 B7 (4)	A 193 B8M (4)	A 193 B8 (4)	A193 B7 (4)	A193 L7 (4)
13	x	Bush	M1023 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT	A 316 NHT
14		Gland flange	A 105 N	A 105 N	A 304	A 304	A 105 N	A 516 Gr. 60
15		Autolock	M 1023	M 1023	A 316	A 304	A 420	M 1023
16		Bracket	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel	Pressed steel

(1) Also available on request A 316, A 304, XM 19, Hastelloy, or other materials.
(2) Also available on request stellite, UNS S 31803 (duplex), A 316L, A 304L, Hastelloy, or other materials.
(3) Also available on request PTFE, Gore-tex, graphite, or other materials and different desing (e.g. cam-profile).
(4) Also available on request A 193 B16 / A 194 Gr. 7, A 193 L7 / A 194 Gr. 7, A193 B8M / A193 Gr. 8M, A193 B8 / A193 Gr. 8 or other materials.
(5) Also available on request Graphite + UNS S 31803 (duplex), PTFE + A 316, or other materials.

Equivalent or superior materials can be supplied if the listed material is not available (e.g. WCB can replace A105 for some sizes).

O recommended spare parts for 2 years standard service; x recommended spare parts for 5 years standard service.

Dimensions

	DN	NPS	A	H	Kg	Δp1 (6)	Δp2 (6)
ANSI 600	80	3	180	250	28	100	42
	100	4	190	280	33	100	42
	150	6	210	345	45	100	42
	200	8	430	410	75	100	42
	250	10	450	450	105	100	42
	300	12	470	480	140	100	42
	350	14	490	540	205	100	42
	400	16	510	570	235	100	42
	450	18	530	655	280	100	42
	500	20	550	690	360	100	42
	600	24	590	780	510	100	42

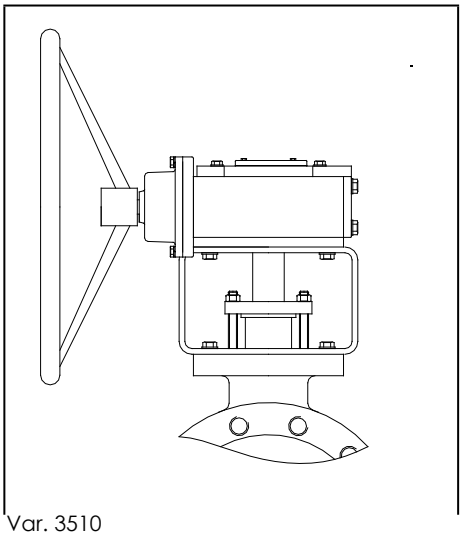
(6) Δp1 maximium differential pressure with shaft in A420 or XM 19. Δp2 maximium differential pressure with shaft in A316 or A304.

Pressure Temperature Ratings (°C / bar)

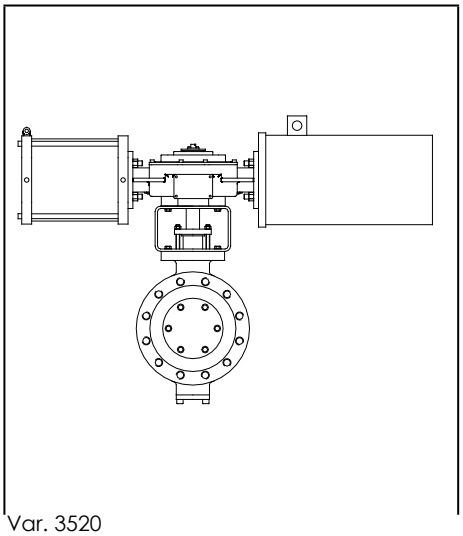
	Class	-195	-150	-100	-46	-10	0	20	100	150	200	250	300	350	400	425	450	475	500	525	550	575	600
Fig. 163B	600					102	102	102	93.7	90.4	87.6	83.4	77.4										
Fig. 263B	600					102	102	102	93.7	90.4	87.6	83.4	77.4	73.9	69.0	57.5							
Fig. 363B (8)	600			99.3	99.3	99.3	99.3	99.3	84.4	77.0	71.3	66.8	63.2	60.9	58.9	58.3	57.7	57.3	54.7	50.6	47.8		
Fig. 363B-J	600	99.3	99.3	99.3	99.3	99.3	99.3	99.3	81.7	74.3	69.0	65.0	61.3										
Fig. 463B (8) (9)	600					103	103	103	103	99.5	95.9	92.3	85.7	80.4	73.1	70.2	67.6	63.3	50.4	36.3	25.4		
Fig. 563B	600				102	102	102	102	93.7	90.4	87.6	83.4	77.4	73.9	69.0	57.5							

Please, in the inquiry and in the order, specify always the maximum service temperature when it's over 100 °C.
(7) Suitable over 450 °C only if provided with stellited seat. (8) Suitable over 530 °C only if provided with XM 19 shaft.

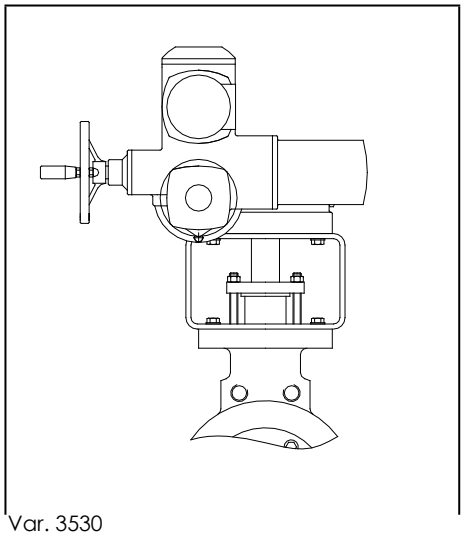
Variants & Devices



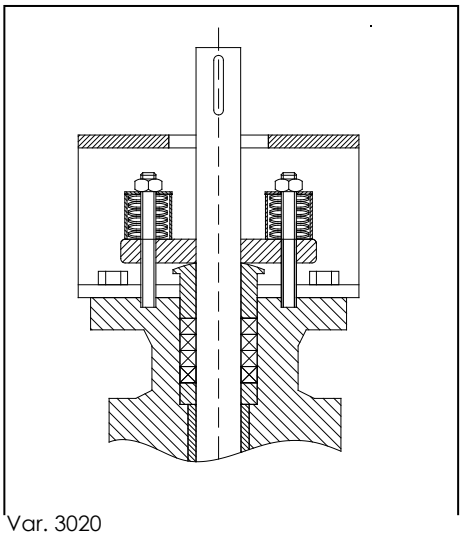
Var. 3510
Worm gear box



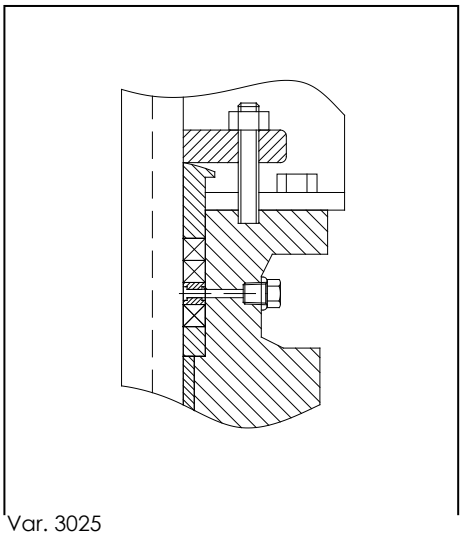
Var. 3520
Pneumatic or hydraulic actuator



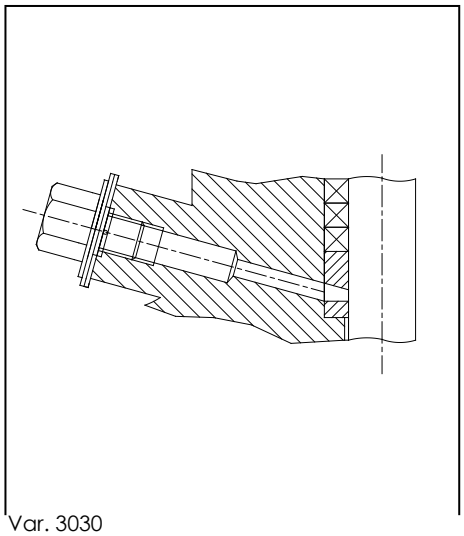
Var. 3530
Electric actuator



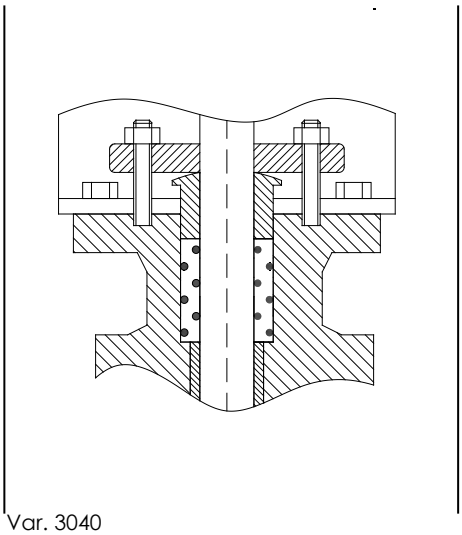
Var. 3020
Live loading packing



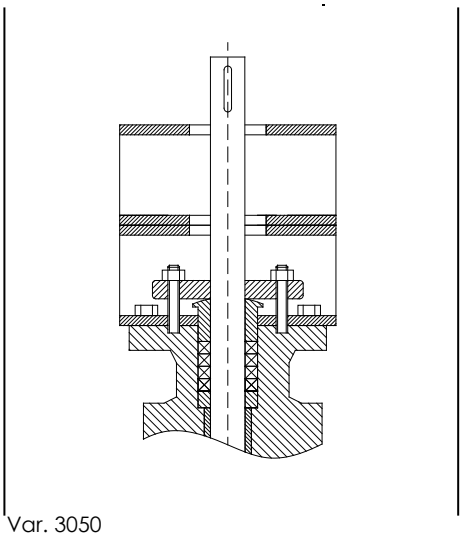
Var. 3025
Lantern ring



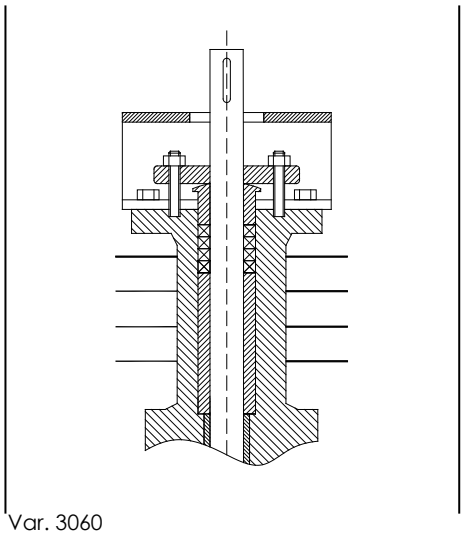
Var. 3030
Packing extraction system



Var. 3040
O - ring packing



Var. 3050
Stem extension



Var. 3060
Cryogenic extension

The drawings of the executions contained in this page are purely indicative, not binding and they can be subjected to change without notice.

Handling & Stocking

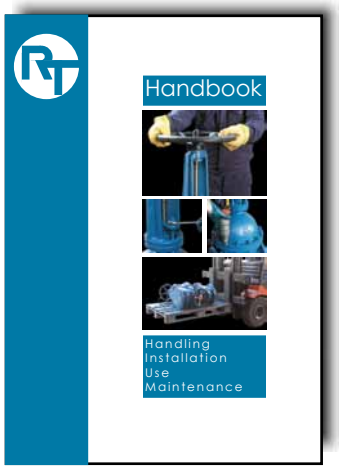
HANDLING

1) Don't lift the valves mean the handwheel or the operation device.
2) To lift the valve hook up them by the bracket or / and by the flange holes.
3) In all cases never drag the valve along the floor.
4) During the handling avoid damaging the coating with scratches.
5) If the valve is delivered on a pallet or in a crate don't remove it from the package and handle using an appropriate device (transpallet and / or cranes).

INSTALLATION & MAINTENANCE

1) Please refer always to the "Operting Instructions" supplied with the valves before to proceed with the installation.
2) For maintenance works follow strictly the "Operating Instructions" supplied with the valve and avoid absolutely improper operations: in case of doubt don't hesitate to contact our customer service and refer to the "Handbook" for more details.

STOCKING



1) Stock the valves in an ambient with low humidity and protected from the wind.
2) Stock the valves in the original package and don't remove the original caps from the flanges.
3) Stock the valves in closed position.
4) Don't expose the valves to the sun, heat or rain.
5) If possible grease the shaft and the every 3 months.
6) In presence of sand or dust cover the valve, protect the shaft and remove the plastic caps only in the moment of the installation.
7) After a stocking period of 18 months or more it's required to replace the gaskets and the shaft packing before to install the valve.
8) If the valve is provided with an operation device (ex. electric actuator) don't remove the device protections until the installation.
9) Care the "Operating Instructions" for the valve and for the operation device (if present) with the valve until the moment of the effective installation.
10) The certificates, if enclosed in the packages under separate cover, should be removed and delivered to the Quality Assurance Department before to stock the valve.
11) If the valve is delivered in a crate for sea transport, after a period of 12 months it's required to open the package and to substitute the anti-humidity salts.
12) Remember always that improper stocking conditions can reduce the life of the valve and in some cases can cause also damages.

Sale & Delivery Conditions

1) The contract is closed only after the receipt by the Buyer of written order confirmation issued by RT Valvole Industriali according to the terms and conditions specified therein. Subsequent order modifications are valid only if accepted by R.T. Valvole Industriali Srl with written confirmation.
2) If not differently agreed in the order confirmation the acceptance of order by R.T. Valvole Industriali Srl is subjected to the acceptance of the following conditions by the Buyer. Any other clause or condition specified in the inquiry or in the order by the Buyer have to be considered null and void and don't have any application also partial if not accept by written confirmation issued by RT Valvole Industriali Srl.
3) All the offered quantities are intended subject to prior sale and the delivery time stated in the offer or in the order confirmation, is to be intended from the order date and ex works Turbigo (according to INCOTERM 2012).
4) The prices indicated in the price list and in the offers are not binding. R.T. Valvole Industriali Srl have the right to change the prices in any moment before the order confirmation without notice.
5) The information contained in the catalogue or in other commercial documents are not binding. R.T. Valvole Industriali Srl have the right to change in any moment all the material or construction details, which are not expressly specified in the order confirmation, without notice and without the Buyer approval.
6) RT Valvole Industriali Srl have the right to refuse the order in all the cases if the conditions stated in the order (prices, quantities, delivery or other details) make not economically profitable or convenient the supply and this right is valid for all the products also if listed in catalogue as available.
7) If not differently agreed in the order confirmation, the confirmed delivery time is not binding and in all cases it's admitted a minimum tolerance of 30 days on the agreed delivery time. In case of delay over 30 days on the confirmed delivery time the Buyer will have the only right to cancel the order. The right to cancel the order is loss in case of materials ordered out of this catalogue or with special executions or special devices that make the product different form the standard version or for valves produced with body material different from 1.0619 or with nominal diameter (DN) over 300 mm or with nominal pressure (PN) over 63.
8) If not differently agreed in the order confirmation with a written acceptance signed by R.T. Valvole Industriali Srl, no compensation or penalty for the damages caused by a (partial or total) delayed delivery will be accepted.
9) In all the cases R.T. Valvole Industriali Srl can't be considered responsible for a delay caused by a delay in the supply of row materials or components, or by an act of God.
10) If not differently agreed in the order confirmation the goods are always supplied "ex works" Turbigo according to INCOTERM 2012 packing excluded.
11) The goods, in all the cases, also if delivered free destination, travel on account and risk of the buyer.
12) If not differently stated in the catalogue or agreed in the order confirmation the "Technical conditions of delivery for valves" specified in the standards DIN 3230 part 1 and part 2 (current editions) are valid as formal contractual clauses.
13) All the valves ordered in the actuator predisposed version are supplied provided with connection flange according to ISO 5210 (if not differently specified) but without yoke sleeve or other necessary parts to assemble the actuator but not expressly requested in the order.
14) The certificates are supplied on request according to EN 10204 type 2.1. Other types (ex. 3.1, 3.2 etc.) will be delivered only if expressly required in the order with extra costs debited to Buyer as specified in the current price list. The certificates type 3.2 for the materials test can be supplied only if clearly and expressly requested by the Buyer in the order: the costs for the third party inspection, for materials, workmanship and use of testing devices necessary to issue these certificates will be completely on Buyer charge.
15) In case of inspection by the Buyer or a third party, and not differently agreed in the order confirmation, all the costs for the tests performed during the inspection and the necessary workmanship, will be debited to the Buyer. In all the cases the Buyer, or his authorised inspectors, will have the right to inspect the goods only if they will have advised R.T. Valvole Industriali Srl, about the visit, one week in advance at least. The execution, during the Buyer inspection, of supplementary tests or checks non originally specified in the order it's excluded.
16) All the quoted prices are with packing excluded. The cost of the packing will be invoiced to the Buyer according to current price list. If not differently agreed in the order confirmation the goods are packed in the most convenient way in the opinion of R.T. Valvole Industriali Srl.
17) If not differently agreed in the order confirmation the valves will be provided with external row surfaces sandblasted or machined or grinded. The necessary production weldings are grinded and not necessarily sandblasted. The valves in carbon or low alloyed steels are painted with a coating suitable to protect the valves against the rust up to the installation and in all cases for a period not longer than 12 months if kept on stock sheltered from the weather. No other surface treatment or coating will be provided if not differently specified in the order confirmation.
18) Orders with amount less than 1000 EURO will be charged for bookkeeping costs according to the current price list.
19) All the products are guaranteed against production defects according to the terms specified in the guarantee terms enclosed in the catalogue.
20) In all the cases R.T. Valvole Industriali Srl is not responsible for the quality, the suitability and the integrity of the products supplied by the Buyer to complete an order.
21) The certificates, if required, are delivered in single copy with the goods or by separate cover sent by mail or email.
22) The invoices will be delivered in single copy with the goods or by separate cover sent by mail or by email.
23) If not differently agreed in the order confirmation all the goods will be invoiced in EURO currency.
24) If not differently agreed in the order confirmation or in the invoice, the payment term is at goods ready for shipping.
25) In case of delayed payment R.T. Valvole Industriali Srl will be authorised to debit the Buyer the interest calculated on the total amount of the supply. The minimum interest rate applied will be equal to the statutory rate established by the European Directive 2000/35/EC Art. 3, subject to major damages.
26) For all goods and services supplied by RT Valvole Industriali is valid the retention title as established by the European Directive 2000/35/EC Art. 4, this means that the goods until the complete payment of the due amount will remain exclusive propriety of RT Valvole Industriali Srl.
27) For all the litigation or dispute about the sale and delivery conditions it is valid the Italian law only.
28) For all the litigation or dispute about the sale and delivery conditions it is competent the court of Busto Arsizio (VA – Italy).

Product Guarantee

Guarantee

By this Guarantee, RT Valvole Industriali Srl guarantees his products to be free of visible defects on materials and workmanship at the time of its original purchase for the period of 12 months from the installation or 18 months from the purchase from RT Valvole Industriali Srl. If during this period of guarantee the product proves defective due to improper workmanship or material defects, RT Valvole Industriali Srl will, without charge the Buyer for labour and spare parts, repair or (at the discretion of RT Valvole Industriali Srl) replace this product or its defective parts or reimburse the Buyer the amount invoiced on the conditions explained hereafter. On RT Valvole Industriali Srl request the Buyer is obliged to send back the product supposed defective FCA Turbigo, Italia (according INCOTERM 2000) as completely drained and vented from service fluid (if the retuned product is not completely drained and vented from service fluid RT Valvole Industriali Srl have the right refuse the guarantee service). The request by RT Valvole Industriali Srl to return back the product supposed defective can't be considered in any case as an acknowledgement of defect existence.

Producer responsibility limitation

This guarantee is the only responsibility for products defects or not conformities. For this reason they are excluded all other conventional or legal, implicit or explicit responsibilities. After the expiration of this guarantee the Buyer will cannot make any other request for reimbursement or compensation or price reduction or contract resolution or remedy. Except fraud or gross negligence by RT Valvole Industriali Srl, the compensation for all damages occurred to the Buyer can't be grater than the total value of the defective and / or not conform products.

Responsibility for putting in circulation the products

All responsibilities that can arise for the putting in circulation the products, enclosed therein possible damages to people and / or things will be on exclusive charge of the Buyer that get mixed up to discharge RT Valvole Industriali Srl from all possible requests from thirty party. The Buyer, moreover, get mixed up also to assure in a proper way against all risks coming from the use and the ownership of the products, without recourse right against RT Valvole Industriali Srl.

Conditions

1) The guarantee will be granted only if the claim is explained sending a copy of this guarantee with the complete data of the Buyer and of the defective product. RT Valvole Industriali Srl reserves the right to refuse guarantee service if the mark RT or the heat number or the size or the pressure rating or the CE tag plate have been removed from the valve or modified.
2) A valve will be never considered defective in materials or workmanship if it need to be adapted, changed or adjusted to conform it to the national or local technical or safety standards in force in any country which are different than EN ones. This guarantee shall not reimburse (a) such adaptations, changes, or adjustments or attempts to do so, whether properly performed or not, nor (b) any damage resulting from them.
3) This guarantee covers none of the following:
   A) periodic check-up, maintenance, and repair or replacement of parts due to normal wear and tear;
   B) the risks of transport relating directly or indirectly to the guarantee of these products;
   C) damages to these products resulting from:
      i) abuse and misuse, included but not limited to (a) the use of the products outside of the limits specified in the CE tag plate or outside of the material temperature / pressure ratings, or (b) the use the products outside of their normal purposes (as specified in the order or order confirmation according to DIN 3230 part 1 and part 2 standards or, if not detailed in these ones, for pure water at 20°C at speed of 1 m/sec and pressure equal to nominal pressure for sectionalising service) or, (c) the use of the products contrarily to RT Valvole Industriali Srl instructions on the proper use and maintenance, (d) the installation or the use of the products in a manner inconsistent with the technical or safety regulations in force in the country were these products are used or inconsistent with EN standards and RT Valvole Industriali Srl instructions;
      ii) repair done by other than RT Valvole Industriali Srl;
      iii) accident, acts of God, or any cause beyond the control of RT Valvole Industriali Srl, including but not limited to lightning, water, fire, and public disturbances;
      iv) improper storing conditions care of the Buyer or other than RT Valvole Industriali Srl;
   D) hidden defects in the materials not detectable with the standard tests and checks required by the European Directive 97/23/EC and with the tests and checks required in the order.
4) The durability of all parts subjected to wear or natural ageing as (but not only) gaskets, packings, roll bearings, yoke sleeves and coating is not covered by this guarantee.
5) If not differently confirmed by RT Valvole Industriali Srl with written acceptance the correct functioning of the valve is not guaranteed in these situations:
   a) free discharge service or in all cases for service different from simple sectionalising service
   b) installation in different positions than those specified as allowable in the installation use and maintenance instructions
   c) use outside of the limits specified in the CE tag plate or for service in class IV according to Directive 97/23/EC
   d) use for corrosive or toxic or dangerous fluids for which they have not been specified in the inquiry and in the order the maximal operating temperature and pressure and the chemical composition.
6) If not differently agreed in the order confirmation, the final coating suitable for the specific application is on Buyer responsibility and it must be applied for a correct protection against the corrosion before the use. The standard painting applied by RT Valvole Industriali Srl is intended to protect the valves during the transport and the stocking periods during maximum 12 months from the delivery, and no guarantee is given for the suitability and the durability of this painting for the specific operating conditions (temperature, humidity, etc). In all the cases, also if the coating is provided according to Buyer specifications, it have to be considered as part subject to wear and for this reason his durability is not covered by this guarantee.
7) The Buyer right of exercise this guarantee is loosed if the products are manumitted or repaired or modified by other than RT Valvole Industriali Srl.
8) In all the cases the compensation for the expenses to repair a defective product is excluded.
9) In all the cases the compensation of direct or indirect damage of any nature at things or people for the use or the use interruption of RT Valvole Industriali Srl products is excluded.
10) For all litigations or disputes about the terms or the conditions or the exercise of the guarantee is valid only the Italian law.
11) For all litigations or disputes about the terms or the conditions or the exercise of the guarantee it's competent the court of Busto Arsizio (VA – Italy).

Comparison of Standards

Steel No. (EN)	EN (DIN - UNI - BS – AFNOR)	AISI – SAE - ASTM	AFNOR (old name)	BS (old name)	JIS	GOST
1.0044	S275JR	A 570 Gr 40 / A 36	E 28-2	Fe 430 B	SM 400 B	St4ps
1.0352	P245GH	A 105 N	XC18	-	-	-
1.0402	C22	M 1023	AF42C20	055 M 15	S 20 C	20
1.0425	P265GH	A 515 Gr 60	A42-CP	1501-161 400	SB 410	-
1.0460	C22.8	-	-	-	-	-
1.0478	P285QH	A350 LF2	A42CP	1501 Gr 161-400	SPV315	16K
1.0486	P275N	A 106 / A 234 WPB	-	-	SM 400 A	-
1.0487	P275NH	A 516 Gr 60	-	224 – 400 A	-	-
1.0488	P275NL1	A516 Gr 60	A42AP	1501-224 400	SGV 410	-
1.0511	C40	1040	1 C 40	080 M 40	-	-
10562	P355N	A 350 LF1 / A 516 Gr70	A 510 AP	225 – 490 A	SM 490 A	-
1.0565	P355NH	A 516 Gr 70	A510 AP	225 – 490 A		
1.0566	P355NL1	A 516 Gr 70	A510 FP	225 – 490 A	STK 490	-
1.0619	GP240GHN	A 216 WCB	A480CP-M	1504-161 Gr B	-	-
1.1104	P275NL2	-	A 510 AP	224 – 400 A	STK 400	-
1.1106	P355NL2	-	-	225 – 490 A	STK 490	-
1.1131	G17Mn5	-	-	-	-	-
1.1138	GS21Mn5	A 352 LCC	-	-	-	-
1.1156	GSCk24	A 352 LCB	-	-	-	-
1.1181	C35E	-	-	-	-	-
1.1191	C45E	A 194 2H	AF65C45	162	-	-
1.3964	X2CrNiMnMoNNb21-16-5-3	A479 XM-19	-	-	-	-
1.4021	X20Cr13	A 420	Z20C13	420 S 37	SUS420J1	20Ch13
1.4107	GX8CrNi12	-	-	-	-	-
1.4301	X5CrNi18-9	A 304 / B8	Z7CN18-09	304S31	SUS304	08Ch18N10
1.4305	X12CrNiS18-8	A 303	Z8CNF18-09	303S31	SUS303	-
1.4306	X2CrNi19-11	A 304L	Z1CN19-11	304S11	SUS304L	03Ch18N11
1.4308	GX5CrNi18-9	A 351 CF8	Z6CN18-10M	304C15	SCS13	07Ch18N9L
1.4309	GX2CrNi19-11	A 351 CF3	Z3CN19-9M	-	-	-
1.4311	X2CrNiN18-10	A 304 LN	Z3CN18-10Az	304S61	SUS 304LN	-
1.4317	GX4CrNi13-4	A 352 CA6NM	-	425 C11	-	-
1.4362	X2CrNiN23-4	S32304 (2304)	Z2CN23-04AZ	-	-	-
1.4401	X5CrNiMo17-12-2	A 316 / B8M	Z7CND17-11-02	316S31	SUS316	-
1.4404	X2CrNiMo17-13-2	A 316L	Z3CND17-11-02	316S11	SUS316L	-
1.4405	GX4CrBiMo16-5	-	-	-	-	-
1.4408	GX5CrNiMo19-11-2	A 351 CF8M	-	316 C 16	SCS 14	07Ch18N10G2S2M2L
1.4409	GX2CrNiMo19-11-2	A 351 CF3M	Z2CND18-12-3M	-	-	-
1.4410	X2CrNiMoN25-7-4	A 182 F53 (2507)	Z5CND20.10M	-	SCS 14A	-
1.4430	X2CrNiMo19-12	AWS A5.9 ER 316L	Z2CND20.10	316S92	-	-
1.4458	GX2NiCrMo28-20-2	-	-	-	-	-
1.4462	X2CrNiMoN22-5-3	A 182 F51 (2205)	Z3 CND 25-06-3	318 S13	-	-
1.4469	GX2CrNiMo26-7-4	A890 Gr 5A (2507)	-	-	-	-
1.4470	GX2CrNiMoN22-5-3	A890 Gr 4A (2205)	-	-	-	-
1.4500	GX7NiCrMoCuNb25-20	Uranus B6M	Z3CNUD25-20M	-	-	-
1.4502	X8CrTi18	AWS A5.9 ER 430	Z8CT17	-	-	-
1.4517	GX3CrNiMoCuN25-6-3-3	A890 Gr 1A	-	-	-	-
1.4529	X1CrMoCuN25-20-6	A744CK3MCuN (254SMO)	-	-	-	-
1.4539	X1NiCrMoCu25-20-5	UNS N08 904 L	Z1NCDU25-20	-	SUS329J3L	-
1.4541	X6CrNiTi18-10	A 321	Z6CNT18-10	321S31	SUS321	06Ch18N10T

All the correspondence here indicated are purely indicative. They can be used only as guideline in the choice of different material. In all the cases RT valves will not be responsible for any choice based on these data.

Steel No. (EN)	EN (DIN - UNI - BS – AFNOR)	AISI – SAE - ASTM	AFNOR (old name)	BS (old name)	JIS	GOST
1.4550	X6CrNiNb18-10	A 347	A6CNNb18-10	347S31	SUS347	-
1.4552	GX5CrNiNb19-11	A 351 CF8C	Z6CNNb18-10M	347C17	SCS21	-
1.4563	X1NiCrMoCu31-27-4	Sanicro 28	-	-	-	-
1.4571	X6CrNiMoTi17-12-2	A 316Ti	Z6CNDT17-12	320S17	-	10Ch17N13M2T
1.4580	X6CrNiMoNb17-12-2	A 316Cb	Z6CNDNb18-12	318S17		
1.4581	GX5CrNiMoNb19-11-2	-	Z4 CNDNb18-12M	318C17	SCS 22	OTA 10NbMoNiCr170
1.4903	X10CrMoVNb9-1	A 182 F91	-	-	-	-
1.4931	GX23CrMoV12-1	-	-	-	-	-
1.5415	16Mo3	A 204 Gr A	15 D 3	-	-	-
1.5419	G20Mo5	A 217 WC1	-	-	-	-
1.5422	G18Mo5	-	-	-	-	-
1.5636	G9Ni10	-	-	-	-	-
1.5637	12Ni14	A 203 Gr D / A350 LF3	12 N 14	503	SL3N255	
1.5638	G10Ni14	A 352 LC3	-	-	-	-
1.5662	X8Ni9	A 333 Gr 8 / A533 Gr I	9 Ni	502 - 650	SL9N520	-
1.5680	X12Ni5	A 2515 / A 645	5 Ni	-	SL5N590	-
1.6220	G20Mn5	A 352 LCC	-	-	-	-
1.6228	15NiMn6	-	15 N 6	-	-	-
1.6781	G17NiCrMo13-6	-	-	-	-	-
1.6982	GX3CrNi13-4	-	-	-	-	-
1.7219	26CrMo4	-	-	-	-	-
1.7225	42CrMo4	A 193 B7 / L7 / 7 / 4	42CD4			
1.7258	24CrMo5	-	-	-	-	-
1.7219	G26CrMo4	A 352 LC1	FC1-M	-	-	-
1.7335	13CrMo4-5	A182 F11	15CD4-05	620-470	SFVA F 12	15ChM
1.7353	G12CrMo19-5	A 217 C5	Z13CD5	-	-	-
1.7357	G17CrMo5-5	A 217 WC6	15CD4-05-M	-	-	-
1.7362	12CrMo19-5	A182 F5	-	-	-	-
1.7365	GX15CrMo5	-	-	625	-	-
1.7379	G19CrMo9-10	A 217 WC9	-	-	-	-
1.7380	10CrMo9-10	A182 F22	12 CD 9.10	1501-622	SFVA F22 A	12Ch8
1.7383	11CrMo9-10	A182 F22	15 CD 4.05	-	-	-
1.7389	G-X12CrMo10-1	A217 C12	-	B6	-	-
1.7706	G17CrMoV5-10	A 356 Gr 9	-	-	SPCH 23	-
1.7709	21CrMoV5-7	-	-	-	-	-
1.7711	40CrMoV4-6	A 193 B16	42CDV4	670-860	-	-
1.7720	G12MoCrV5-2	-	-	-	-	-
2.4066	Ni 99.2	CZ100 (Nickel 200)	-	-	-	-
2.4360	NiCu30Fe	M-35-1 (Monel 400)	-	-	-	-
2.4537	NiMo16CrW	CW-12M (Hastelloy C)	-	-	-	-
2.4602	NiCr21Mo14W	Hastelloy C22	-	-	-	-
2.4617	NiMo28	Hastelloy B2	-	-	-	-
2.4810	NiMo30	N-7M (Hastelloy B)	-	-	-	-
2.4816	NiCr15Fe	CY40 (Inconel 600)	-	-	-	-
2.4819	NiMo16Cr15W	Hastelloy C276	-	-	-	-
2.4856	NiCr22Mo9Nb	CW6MC (Inconel 625)	-	-	-	-
2.4858	NiCr21Mo	Incolloy 825	-	-	-	-

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Photo Gallery

Butterfly valves DN 500 PN 25 with lelectric actuator (Fig. 142L Var. 3530)

Butterfly valve NPS 28" CL 300 double flanged (Fig. 253F) with nickel plated trim

Photo Gallery

A 904L butterfly valves NPS 3" CL 150 wafer type (Fig. 643W) with electric actuator (Var 3530)

RT valvole Industriali Srl
Via Alle Cave 25 / 29
20029 Turbigo (MI)
ITALY

Phone: +39 0331 891060
Fax: +39 0331 891068

URL: http://www.rtvalves.com
e-mail: info@rtvalves.com