

Product brochure  
**INFINITY** resilient seated gate valve

**BELGICAST** RANGE



# WHO WE ARE

TALIS is a leading global provider of premium valves, hydrants and other solutions for water flow control.

With a varied range of products, we offer comprehensive solutions for the entire water cycle, from hydrants to butterfly valves, from knife-gate valves to needle valves. Our experience, innovative technology, global expertise and individual consultation process, form the basis for developing sustainable solutions for the efficient handling of the vital resource "water".

With over nine strong brands and 28 entities in Germany, France, Spain, Portugal, Italy, Great Britain, the Netherlands, Russia, Poland, Israel, China, the Middle East, Mexico, India, South Africa, Singapore, Peru and Brazil, TALIS is the largest supplier of valve technology and first choice when it comes to water valves and services for the whole water cycle.



1871

Foundation of  
ERHARD (D)  
Water taps

1874

Foundation of  
SCHMIEDING  
(D)  
Modern and  
market  
orientated  
solutions

1880

Foundation of  
BAYARD (FR)  
Beer taps and  
water  
fountains

1945

Foundation of  
LUDWIG FRISCHHUT  
(D)  
« in-house »  
foundry

1949

Foundation of  
RAPHAEL  
(ISR)  
Control  
valves

1957

Foundation of  
STRATE (D)  
Product and  
problem-solving  
competence  
Sewage industry

Foundation of  
BELGICAST (ES)  
Valve  
manufacturer  
for the naval  
industry

« WE PROVIDE SOLUTIONS. BELGICAST, as a company of TALIS Group, offers the widest range of technical solutions for water control. The aim is to offer a complete range of products and solutions for the efficient handling of the vital resource “water”. »

 Ignacio Ispizua  
SE Managing Director

29 000

DIFFERENT  
PRODUCTS IN  
CATALOGUE

Over  
50

SALES  
PARTNERS

SALES IN  
186  
COUNTRIES

13

FACTORIES  
WORLDWIDE

19 000

CUSTOMERS

1 300

EMPLOYEES



1974

Foundation of  
ATLANTIC PLASTIC (UK)  
Plastic fittings

1992

Foundation of  
UNIJOINT (NL)  
Adapters and  
extensions, pipe  
couplings, flange  
adapters and  
dismantling joints

2001

Acquisition  
by Tyco Waterworks

2010

Acquisition  
by Triton  
and creation of TALIS

2011/13

Russia (2011)  
China (2012)  
Brazil (2013)  
Middle East (2013)

2014

Launch of  
« Smart-Inside » solutions to  
make our products smarter  
-  
South Africa

2015/16

Peru (2015)  
Mexico (2015)  
Joint-Venture  
with Kc-Val (2016)  
India (2016)  
Singapore (2016)

# RESILIENT SEATED GATE VALVES

## INFINITY

The latest in TALIS's proven range of valves, the INFINITY represents a new generation of resilient seated gate valves [DN40-600]. As well as boasting of the latest technological advances and unique technical features, INFINITY has been 100% designed and manufactured in Europe using high quality materials and the latest manufacturing technologies, to guarantee, to our valuable customers, an extraordinary lifetime, outstanding operability and unique safety features.

### FUNCTIONS

Isolation resilient seated gate valves, with wedge fully encapsulated in elastomer, for ON/OFF duty.

### ADVANTAGES

- L **Low torque:** INFINITY and its new wedge and stem technology ensures smooth functionality with outstanding low torque values.
- L **Longer service life:** new guiding system for the wedge with male composite sliding skate in order to easily achieve the 2500 cycles endurance test required by European standards.
- L **Corrosion resistance:** high quality materials. Wide range of coatings available. Threadless bonnet up to DN300 that allows continuous coating.
- L **Low head loss:** clear way and straight bore design from DN40 up to DN600 in order to allow a free path without restriction of the fluid.
- L **Bubble tight shut off:** new wedge design with increased thickness of the elastomer at the sealing areas to improve tightness.



### APPLICATIONS



Water treatment



Water transmission



Water distribution network



Irrigation



Sewage network and treatment



Fire protection network



Dams and hydro power



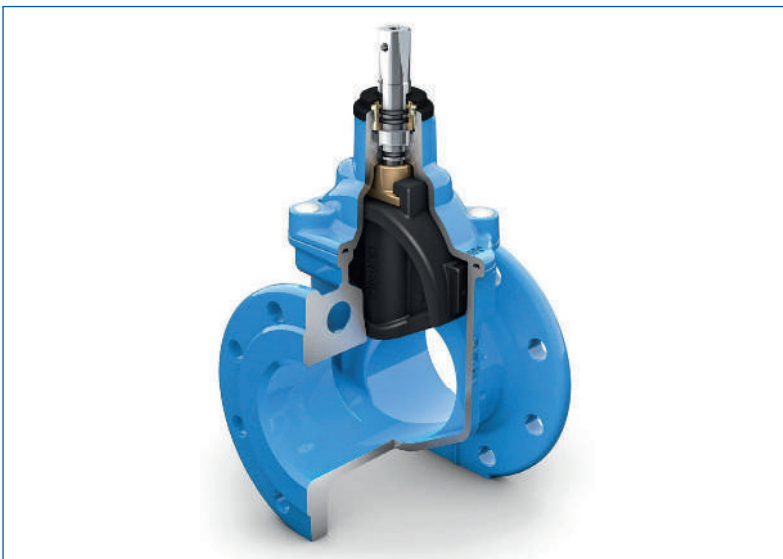
Industrial water applications

### USES

- L **On networks, gate valves can be:**
  - Used both as part of new works and renovations.
  - Installed outside, buried in the ground, in valves' room, or in buildings.
- L **The use of gate valves allows user:**
  - To balance the distribution of water at all points in the mesh network (in open or closed position).
  - To isolate control valves, fire hydrants, air valves, pumps, etc. for their maintenance.
  - To perform maintenance on the network (isolation of part of the network).
  - To stop the flow in the case of failure or pipe incident.
  - To drain water tanks or sections of the water network.

## CHARACTERISTICS

- └ Made of **high quality materials** according to the relevant standards.
  - └ **Clear way and straight bore**, so the flow is optimum with minimum head losses.
  - └ **Replaceable packing** under pressure.
  - └ **Bayonet** stuffing nut with three O-rings to guarantee the tightness throughout the stem (up to DN300).
  - └ **Patented\* three locking tab for bayonet system** to avoid self dismantling, leakage and blow up risk (up to DN300).
  - └ **Innovative dust guard** made of three O-rings integrated into one single piece that protects the valve from floods, salt spray and dust, and ensures full isolation (up to DN300).
  - └ Wedge **fully encapsulated** in EPDM for a better resistance to corrosion.
  - └ Integral male composite sliding skate as guiding system for **easy operation** under maximum differential pressure.
  - └ Body bonnet bolts are protected with hot melt glue.
  - └ **Rounded surfaces** of the body ensure a uniform coating and protection of the highest quality.
  - └ **Excellent corrosion resistance** thanks to the fully coated bonnet and the epoxy powder coating.
  - └ Stem in stainless steel.
  - └ Shell designed to withstand **64 bar** (VdS type).
  - └ **Maintenance free.**
  - └ **Prepared for actuator** version available.
  - └ **Approved** by major organizations worldwide for drinking water.
  - └ In conformity with **European standard** EN 1074-2 and EN 1171.
  - └ **100% tested** acc. to EN 12166-1 standard.
- (\* List of the countries on request.



## APPROVALS

- └ DVGW, NF, ACS, KIWA, OVGW, WRAS, VdS, ....

## OPTIONS/VARIANTS

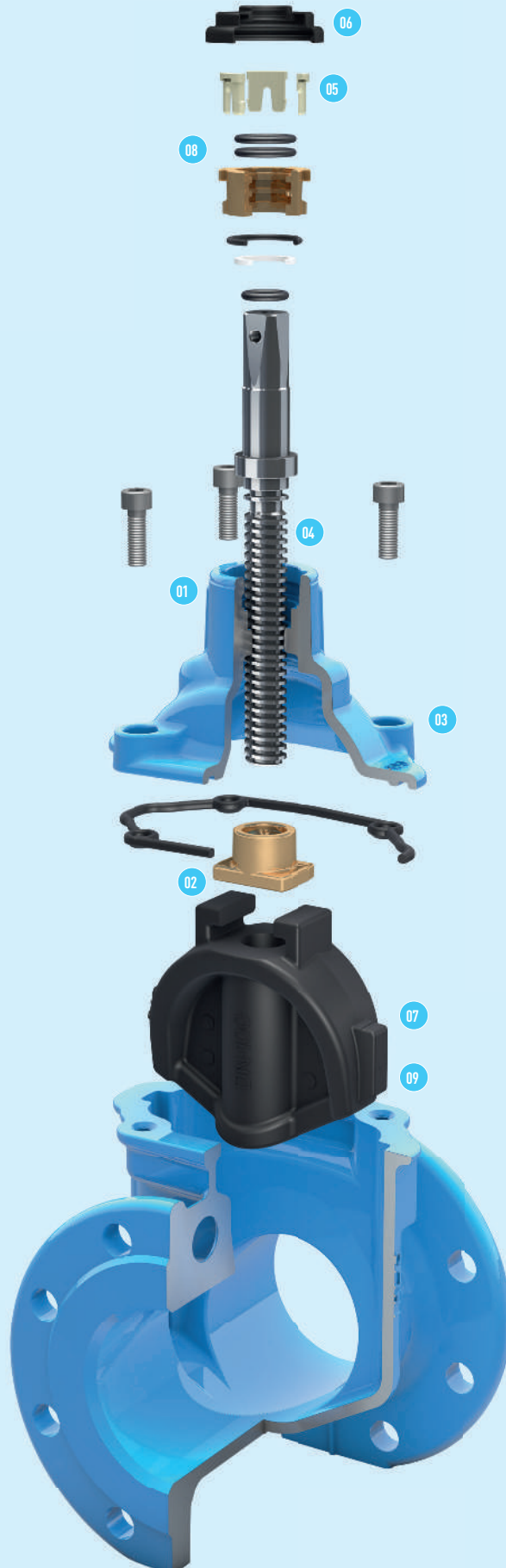
- └ Inside/Outside enamel coating on request.
- └ Different types of actuation methods.
- └ Electric Actuator or Pneumatic cylinder.
- └ Visual indicator with optional electrical limit switch.
- └ Configuration for sea water, sewage water and hot water.
- └ Valve complying to BS type A or B.
- └ Enamel coating.
- └ Wedge fully encapsulated in NBR or "heat" EPDM.

## TECHNICAL DATA

- └ **Nominal Diameter (DN):** DN40 to DN600.
- └ **Body length:** Long pattern (serie S15) and short pattern (serie S14), according to EN 558.
- └ **Closing direction:** Clockwise closing (CC) or anticlockwise closing (ACC) available.
- └ **Nominal Pressure (PN):** PN16.
- └ **Flange Drilling:** PN10 or PN16 according to EN 1092-2.
- └ **Medium Temperature:**
  - Epoxy coating: -10 to 50°C
  - Enamel coating: -10 to 50°C (up to 70°C with special EPDM)
- └ **Water tightness:** Rate A according to EN 12266-1.

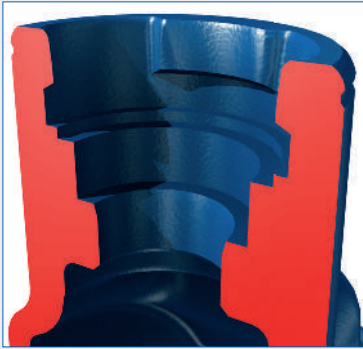
## TECHNICAL ADVANTAGES

- └ DURABILITY
- └ OPERABILITY
- └ SAFETY





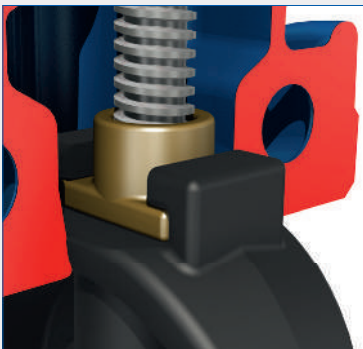
## TECHNICAL ADVANTAGES



**01:** Due to our PATENTED\* three locking tab bayonet system, The INFINITY gate valve has no threads, enabling a **continuous coating** and therefore avoiding corrosion problems.

Moreover, it is easy to remove the stuffing nut, with the valve under pressure and fully open, in order to change the O-ring.

\* List of the countries on request.



**02:** Free wedge nut, **reduces the stem bending forces** and at the same time enables it to be easily replaced.



**03:** The more compact new cap, reduces the water retention areas in order **to reduce the risk of bacterial growth**.



**04:** Stem and collar made in one piece in stainless steel for **better resistance to axial load and to withstand higher operating torques**. A polyamid washer (1) placed under the collar allows to reduce friction torque and protect coating inside the Bonnet.



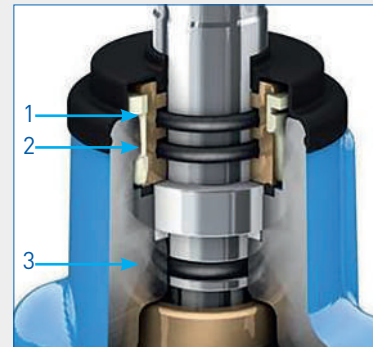
**05:** Our three locking tab for bayonet system prevents self-dismantling, caused mainly by over-torque, and therefore avoids leakage. Also **prevents incidents and ensures the safety of all personnel on site**.



**06:** Dust guard integrating three O-ring shape, **prohibiting the introduction of foreign bodies** at the stem.



**07:** Male guiding system with **composite sliding skate (1)** reduces the wear of the wedge against the body, allowing a smooth functionality and a longer life time of the valve. Furthermore, the increased thickness of the elastomer at the sealing areas improves product resilience to the usual small impurities encountered in networks.



**08:** Triple seal at the operating stem to ensure tightness with the test of time (2500 cycles).



**09:** Our new male composite sliding skate technology minimizes the wedge friction against the body ensuring a low operating torque even under high differential pressure and preventing damage or corrosion generated by the friction.

## COATING

### OPTIMUM PROTECTION

The INFINITY resilient seated gate valve has been designed with even more rounded surfaces and more ergonomic shapes that allow more uniform coating and ensure protection of the highest quality.

#### Corrosion protection with powder epoxy

BELGICAST valves are protected with epoxy powder both internally and externally, both the bonnet and the body in a continuous manner, as the model INFINITY with patented bayonet nut has no threads, thus ensuring complete corrosion protection.

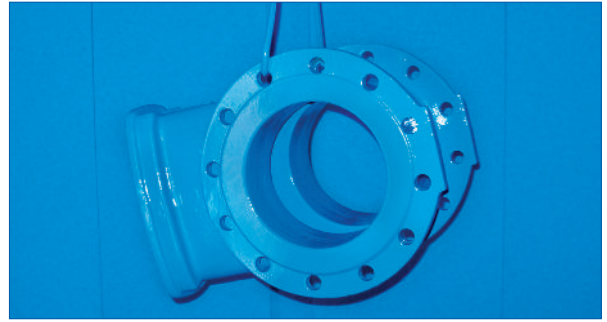
The epoxy powder used by BELGICAST is approved for use with potable water by the most prestigious institutions worldwide. Moreover, BELGICAST painting facilities are approved according to GSK standard (RAL Quality Mark). If you need your valves coated according to this process, please do not hesitate to enquire.



### TEMPERATURES

Depending on the applied anticorrosive coating, the INFINITY gate valve is suitable for the following continuous operating temperatures:

- └ Epoxy powder protection: -10 °C to 50°C
- └ Enamel protection: -10 °C to 70°C (with special elastomer)



#### Permanent protection with enamel

Optionally, BELGICAST can manufacture gate valves completely enamelled. Vitreous enamel is highly resistant to corrosion, abrasion, sunlight and sedimentation due to its low porosity and smooth surface. The enamel is vitrified at 720° C and forms a perfect and permanent bond at the foundry.

BELGICAST's extensive experience in the manufacture of gate valves, together with modern enamel equipment, allows production of the highest quality.







### VALVE TESTING ACCORDING TO EN 12266-1 - EN 1074

#### Testing pressures

- Shell tightness: 1.5 times the allowable pressure at room temperature.
- Seat tightness: 1.1 times the allowable pressure at room temperature.

#### Minimum test duration (in seconds)

Nominal diameter DN	Shell	Seat
Up to DN50 included	15	15
From DN65 up to DN150 included	60	60
From DN200 up to DN300 included	120	120
DN350 and above	300	120

#### Maximum allowable seat leakage

The criterion for seat leakage of BELGICAST resilient seated gate valves is Rate A: no visually detectable leakage for the duration of the test ("zero drops").

#### Quality control

- 100% of BELGICAST resilient seated gate valves are tested according to EN 12266-1, DIN 3230, or as per customer requirements.
- According to EN 1074 (2,500 cycles endurance resistance).

## MATERIALS & DIMENSIONS

F4/F5 - DN40/300 - PN10/16



Item	Description	N°	Material	Standard
1	Body	1	EN-GJS-500-7 <sup>2)</sup>	EN 1563
2	Bonnet	1	EN-GJS-500-7 <sup>2)</sup>	EN 1563
3	Wedge	1	EN-GJS-500-7	EN 1563
4	Wedge coating	1	EPDM <sup>1)</sup>	EN 681-1
5	Stem	1	1.4021	EN 10088
6	Wedge lock nut	1	Copper alloy CW617N	EN 12165
7	Body-bonnet gasket	1	EPDM <sup>1)</sup>	EN 681-1
8	Stem washer	1	POM	-
9	O-ring (stem)	1	EPDM <sup>1)</sup>	EN 681-1
10	Stuffing nut (bayonet)	1	Al-br CW307G	EN 12165
11	O-ring (stuffing nut)	2	NBR	ASTM D2000
12	O-ring (stuffing nut/bonnet)	1	NBR	ASTM D2000
13	Body bonnet bolting	acc/DN	Steel 12.9 Geomet coated	-
14	Dust guard	1	EPDM	EN 681-1
15	Handwheel	1	Stamped steel <sup>3)</sup>	-
16	Handwheel bolting	1	1.4301	EN 10088
17	Handwheel washer	1	1.4301	EN 10088
18	Square cap	1	EN-GJS-500-7 <sup>3)</sup>	EN 1563
19	Square cap bolting	1	1.4301	EN 10088
20	Square cap plug	1	Lupolen	-
21	Wedge sliding skate <sup>4)</sup>	2	PPS+40%GF	-
22	Locking tabs	3	Pa6+30%GF	-

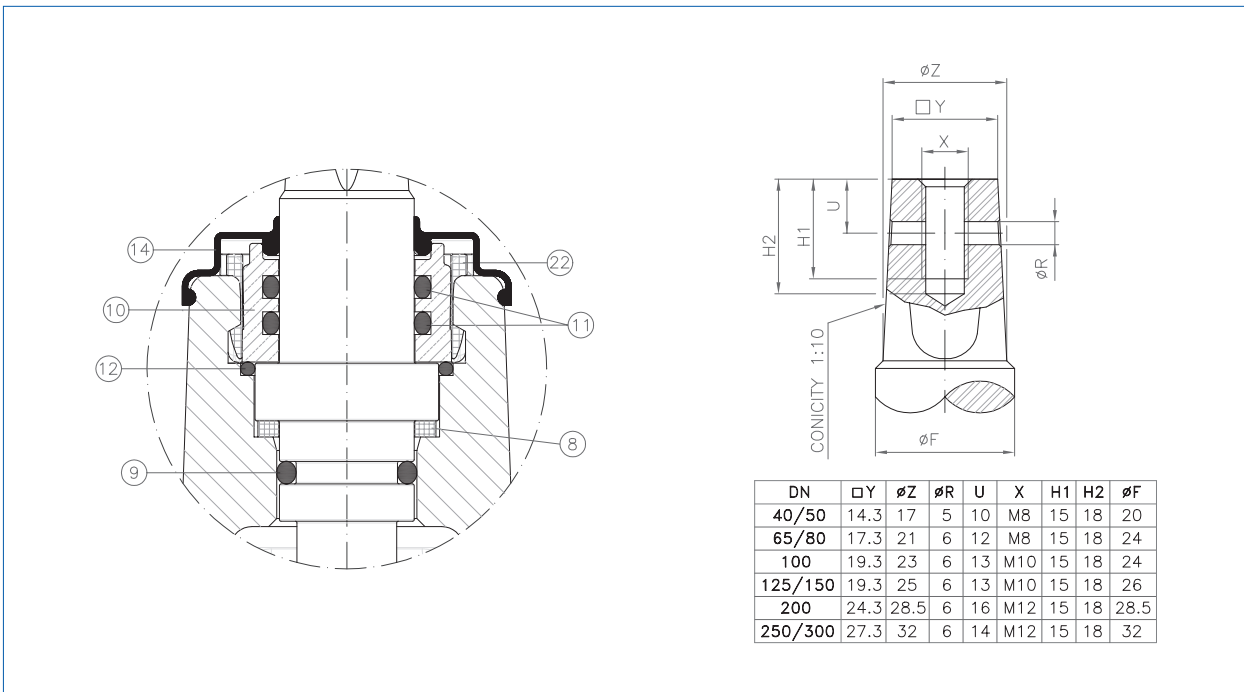
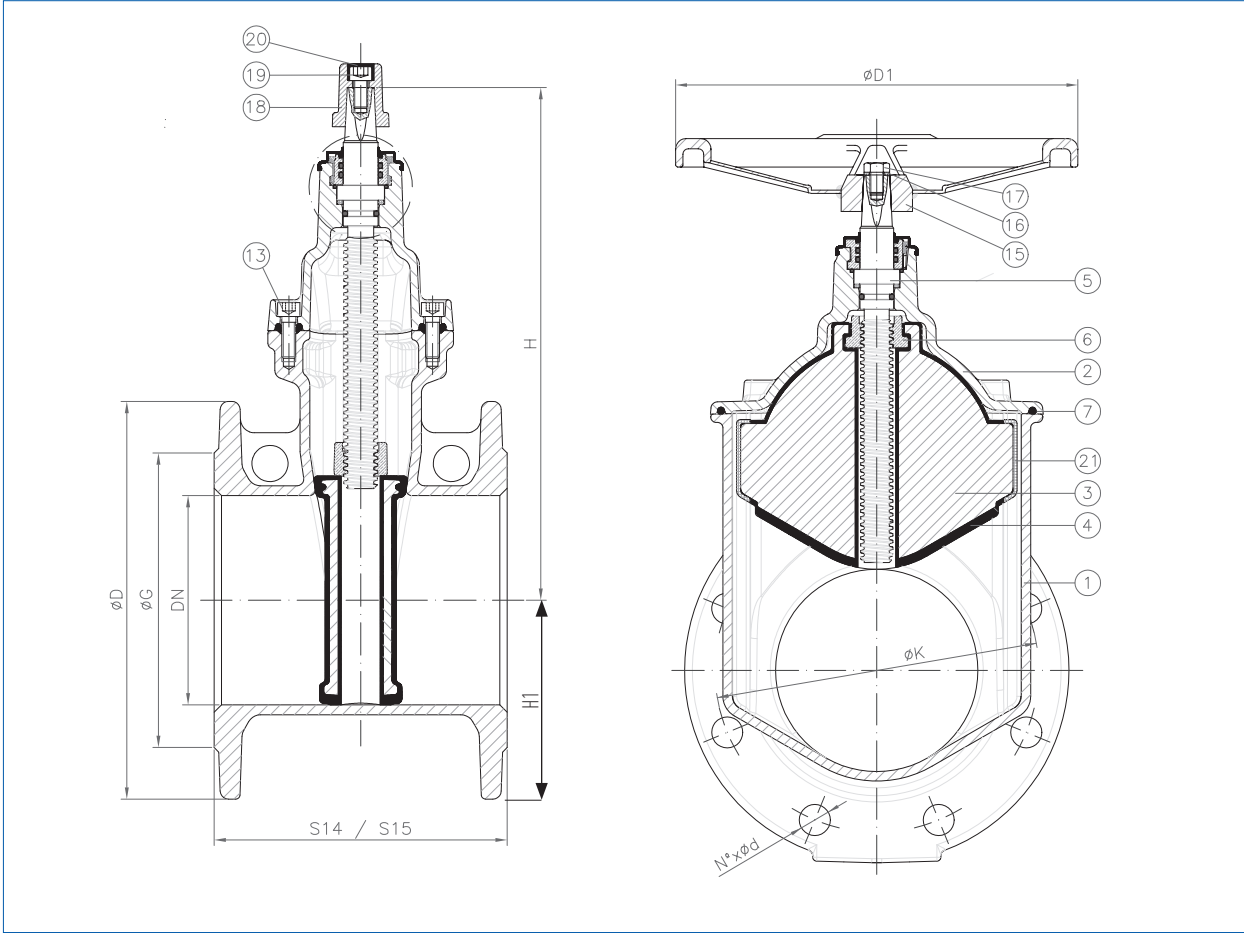
1) or NBR, depending on the approval and on the application. 2) blue coating (Ral 5015) with epoxy powder. 3) black epoxy coating. 4) DN40/50 without wedge sliding skates.

DN	øD (mm)	EN 1092-2 PN10			EN 1092-2 PN16			EN 558 (DIN 3202)		H (mm)	H1 (mm)	øD1 (mm)	No. of turns for closing	Weight (kg)	
		øK (mm)	øG (mm)	n°xd	øK (mm)	øG (mm)	n°xd	S14 (F4) (mm)	S15 (F5) (mm)					S14 (F4)	S15 (F5)
40	150	110	84	4x19	110	84	4x19	140	240	170	75	125	11,5	6,7	7,3
50	165	125	99	4x19	125	99	4x19	150	250	184,5	83	125	14	8,3	8,8
65*	185	145	118	4x19	145	118	4x19	170	270	227	93	150	14	12,3	13
80**	200	160	132	8x19	160	132	8x19	180	280	250	100	175	17	13,7	14,9
100	220	180	156	8x19	180	156	8x19	190	300	287	110	200	21,5	16,4	17,9
125	250	210	184	8x19	210	184	8x19	200	325	324	125	250	27	22,5	25,2
150	285	240	211	8x23	240	211	8x23	210	350	368	143	300	32	27,2	30,6
200	340	295	266	8x23	295	266	12x23	230	400	450	170	350	41,5	46,9	54,2
250	400	350	319	12x23	355	319	12x28	250	450	546	200	400	43,5	69,5	78,8
300	455	400	370	12x23	410	370	12x28	270	500	621	228	500	51	96,5	114,5

\* DN60 drilling on request. \*\* DN80 with 4 holes drilling on request.

The technical data and performance may be modified without prior notice depending on the technical advances.

F4/F5 - DN40/300 - PN10/16



DN	$\square Y$	$\phi Z$	$\phi R$	U	X	H1	H2	$\phi F$
40/50	14.3	17	5	10	M8	15	18	20
65/80	17.3	21	6	12	M8	15	18	24
100	19.3	23	6	13	M10	15	18	24
125/150	19.3	25	6	13	M10	15	18	26
200	24.3	28.5	6	16	M12	15	18	28.5
250/300	27.3	32	6	14	M12	15	18	32

## MATERIALS &amp; DIMENSIONS

## F4/F5 - DN350/700 - PN10/16



Item	Description	N°	Material	Standard
1	Body	1	EN-GJS-500-7 <sup>2)</sup>	EN 1563
2	Bonnet	1	EN-GJS-500-7 <sup>2)</sup>	EN 1563
3	Wedge	1	EN-GJS-500-7	EN 1563
4	Wedge coating	1	EPDM <sup>1)</sup>	EN 681-1
5	Stem	1	1.4021	EN 10080
6	Wedge lock nut	1	Copper alloy CW617N	EN 12165
7	Body bonnet gasket	1	EPDM <sup>1)</sup>	EN 681-1
8	Lower packing bushing	1	POM	-
9	O-ring (stem)	1	EPDM <sup>1)</sup>	EN 681-1
10	Packing gland	1	POM	-
11	O-ring int (packing gland)	2	NBR	ASTM D2000
12	O-ring ext (packing gland)	2	NBR	ASTM D2000
13	Body bonnet bolt	acc/DN	Steel 12.9 Geomet coated	-
14	Dust guard	1	EPDM	EN 681-1
15	Handwheel	1	Stamped steel <sup>3)</sup>	-
16	Handwheel bolt	1	1.4301	EN 10088
17	Handwheel washer	1	1.4301	EN 10088
18	Square cap	1	EN-GJS-500-7 <sup>3)</sup>	EN 1563
19	Square cap bolt	1	1.4301	EN 10088
20	Square cap plug	1	Lupolen	-
21	Wedge sliding skate	2	PPS+40%GF	-
22	Upper bonnet	1	EN-GJS-500-7 <sup>2)</sup>	EN 1563
23	O-ring (lower packing bushing)	1	EPDM <sup>1)</sup>	EN 681-1
24	Axial ball bearing	2	-	-
25	Bonnet-upper bonnet O-ring	1	NBR	ASTM D2000
26	Bonnet-upper bonnet bolt	4	Steel 12.9 Geomet coated	-
27	Eyebolt	2	Steel 8.8	EN 10088
28	Eyebolt O-ring	1	EPDM	EN 681-1
29	Cotter	1	Steel 8.8	EN 10088

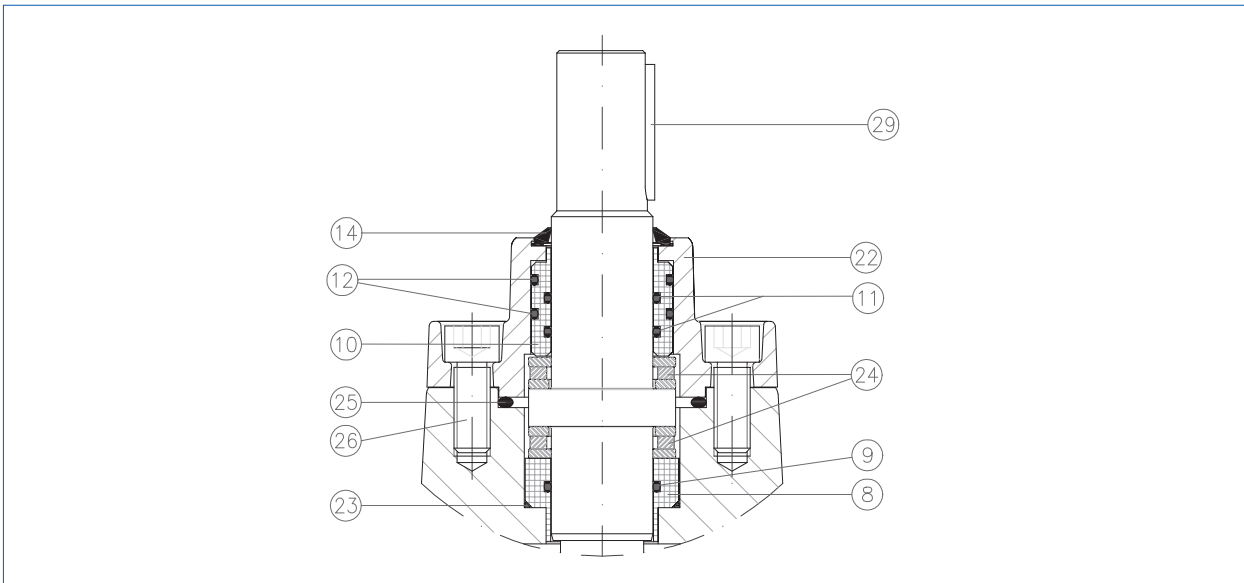
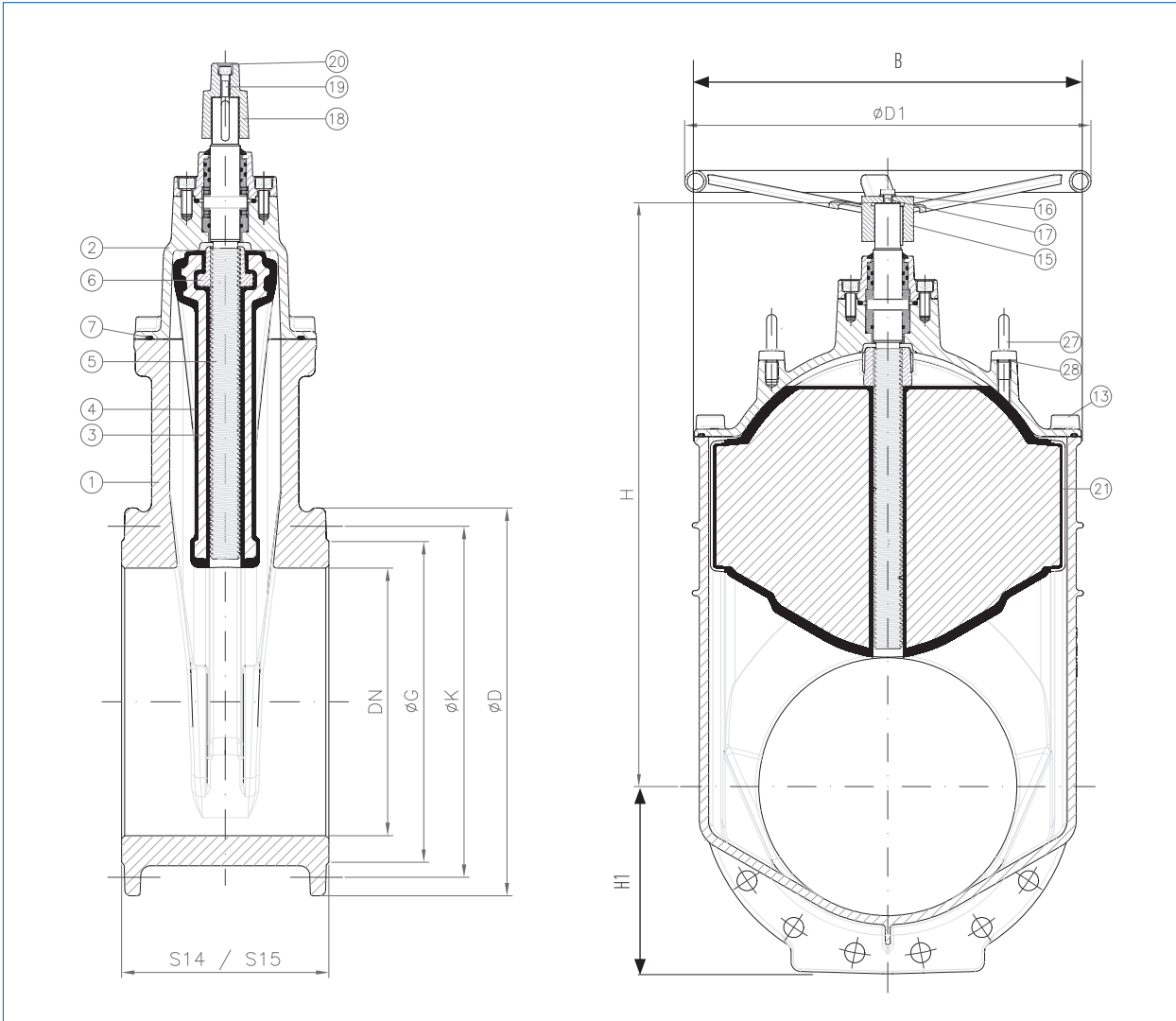
1) or NBR, depending on the approval and on the application. 2) blue coating (Ral 5015) with epoxy powder. 3) black epoxy coating.

DN	EN 1092-2 PN 10				EN 1092-2 PN 16				EN 558 (DIN 3202)		H (mm)	H1 (mm)	B (mm)	øD1 (mm)	No. of turns for closing	Weight kg			
	øD (mm)	øK (mm)	øG (mm)	no. x d	øD (mm)	øK (mm)	øG (mm)	no. x d	S14 (F4) (mm)	S15 (F5) (mm)						S14 (F4)		S15 (F5)	
																PN10	PN16	PN10	PN16
350	520	460	429	16x23	520	470	429	16x28	290	550	812	260	506	500	51	187	187	217	217
400	580	515	482	16x28	580	525	480	16x31	310	600	905	290	606	630	58	264	264	298	298
450	640	565	532	20x28	640	585	550	20x31	330	650	1002	320	672	630	65	319	319	372	372
500	715	620	585	20x28	715	650	609	20x34	350	700	1054	358	748	800	72	387	387	451	451
600	780	725	682	20x31	840	770	720	20x37	390	800	1285	390	955	800	87	580	680	795	795
700*	910	840	794	24x31	910	840	794	24x37	-	900	1285	455	955	800	87	-	-	976	1076

\* Reduced bore of 600 mm. Valves produced from DN600/S14 with flanged conical adapters bolted on each side.

The technical data and performance may be modified without prior notice depending on the technical advances.

F4/F5 - DN350/600 - PN10/16





## ACTUATION METHODS

TALIS offers a wide variety of actuation methods that will allow to choose the best option for each installation. The actuation can be made manually or by means of an electrical actuator with or without a gearbox. Also, we offer solutions for buried installations. Pneumatically actuated gate valves with a special design are also available for those installations where speed of actuation is a priority.



### MANUAL ACTUATION

In most cases, resilient seated gate valves are operated manually by means of a handwheel or a square cap top, using a T-key. TALIS offers handwheels with the right dimensions, according to the DN and operating torque. Our standard handwheels are made of pressed steel and we also offer ductile iron as an option. Regarding square cap tops, our products comply with the different national practices and standards.

A cap plug (1), inserted inside, indicates the closing direction. Blue color for clockwise closing direction, red color for anti-clockwise closing direction.



### BURIED INSTALLATIONS

One special case of manual actuation occurs when the valve is buried and the actuation has to be done from the surface. For those cases special stem extensions, fixed or telescopic, are offered to fit with different national practices and standards. We can offer customised solutions for each country when requested. For example, TALIS offers adapters to fit plastic or casting pipes for the French market and stem extensions according to GW 336 for the German market.



### ELECTRICAL ACTUATION

Another option is to operate the gate valve by means of an electric actuator. This solution also offers the possibility of installing a remote control, that allows the final user to monitor the operations of the valves. Special versions of the gate valves prepared for the actuator are equipped with top flanges according to ISO 5211. Actuators from different suppliers can be installed on this standard flange, which gives the customer the freedom to choose their actuator. TALIS can provide the operating torques of the gate valves as well as guidance in choosing the right actuator for each DN.

DN	From DN40 to DN200 included	From DN250 to DN500 included	DN600
Connecting flange ISO 5211	F10	F14	F16

## INSTALLATION AND OPERATION INSTRUCTIONS



### GOOD TO KNOW BEFORE INSTALLATION

#### Storage

- Leave the rubber wedge slightly open: if it is closed completely, the rubber suffers unnecessary compression. Remove the flange cover just before the installation.
- The gate valves should preferably be stored under cover. A long storage under extreme weather conditions can cause alterations of the coating and seals.

#### Assembly in pipe

- The assembly of the valve in the pipe is independent of the flow direction.
- When connecting the valve to the pipe, avoid the transmission of stress from the pipe to the valve body. For that, any pipe or pipe sections or valve not yet finally clamped in place must be provisionally supported to prevent abnormal stress on one or both sides of the valve.
- Tighten screws gradually in a star-shaped pattern, respecting the tightening torques.
- Once the valve is assembled, the threads of the bolts/rods should be greased with a graphite based waterproof grease (MOLYCOTE or similar) to prevent corrosion and facilitate subsequent dismantling operations.

#### Operation

- Each valve must be operated in respect of the operating torque by means of a handwheel or a square cap top, in the latter case a purpose-designed operating key must be used. Do not use the valves for regulating mode.
- Do not use the valves with EPDM rubber with gaseous fluids such as propane, butane, natural gas and also with hydrocarbons fluids like petrol, diesel, ...

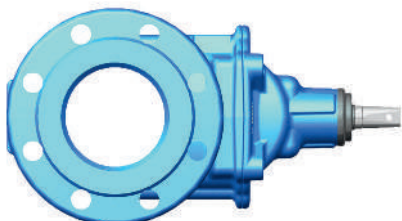
## RECOMMENDED POSITIONS

#### From DN40 up to DN300:

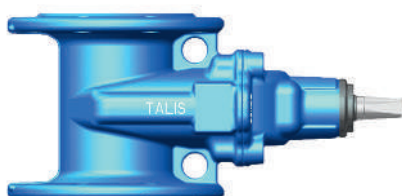
- 1) Ideal position:  
vertical stem,  
horizontal flow



- 2) Horizontal stem,  
horizontal flow



- 3) Horizontal stem,  
vertical flow

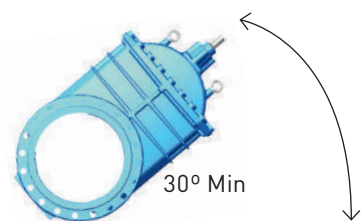


#### From DN350 up to DN700:

- 1) Ideal position:  
vertical stem,  
horizontal flow



- 2) Oblique stem,  
horizontal flow





[www.talis-group.com](http://www.talis-group.com)

TALIS is the undisputed Number One for water transport and water flow control. TALIS has the best solutions available in the fields of water and energy management as well as for industrial and communal applications. We have numerous products for comprehensive solutions for the whole water cycle – from hydrants, butterfly valves and knife gate valves through to needle valves. Our experience, innovative technology, global expertise and individual consultation processes form the basis for developing long-term solutions for the efficient treatment of the vitally important resource “water”.



#### **TALIS Management Holding**

Postfach 1280

D-89502 Heidenheim

Meeboldstrasse 22

D-89522 Heidenheim

**PHONE** +49 7321 320-0

**FAX** +49 7321 320-491

**E-MAIL** [info@talis-group.com](mailto:info@talis-group.com)

**INTERNET** [www.talis-group.com](http://www.talis-group.com)

 **TALIS**

Note: Information and specifications may be changed without notification at any time.  
Copyright: No copying without express written permission of TALIS  
TALIS is a Registered Trademark.