

Size range: 2" - 12"



Profit gate valves type GNRSL are resilient seated gate valves with grooved ends and a non-rising stem, that provides 100% net passage. Typically used in fire protection systems as a manual operated isolation valve.

Characteristics

- Indoor & outdoor use.
- Suitable for use in vertical and horizontal piping.
- Anti-corrosion protection: high grade polyester powder coating, meets or exceed AWWA C550 standards.
- Meets or exceeds the requirements of NFPA24 standard.
- Grooved ends to AWWAC606 standard.
- The cast iron body has a ductile iron wedge with vulcanised rubber lining. Equipped with a triple O-ring stem seal to be secured from leakage.
- The Profit NRSL valves 2½" - 12" are available on request with handwheel or top cap operated.
- The Profit NRSL valves 4" - 12" are available with a top cap to fit Profit indicator post type WINPO and VINPO. Both these valves act as a external visual indicator with a protected window of open or closed position of the NRS valve.

Working pressure

2,07 MPa / 20,7 bar / 300 psi.



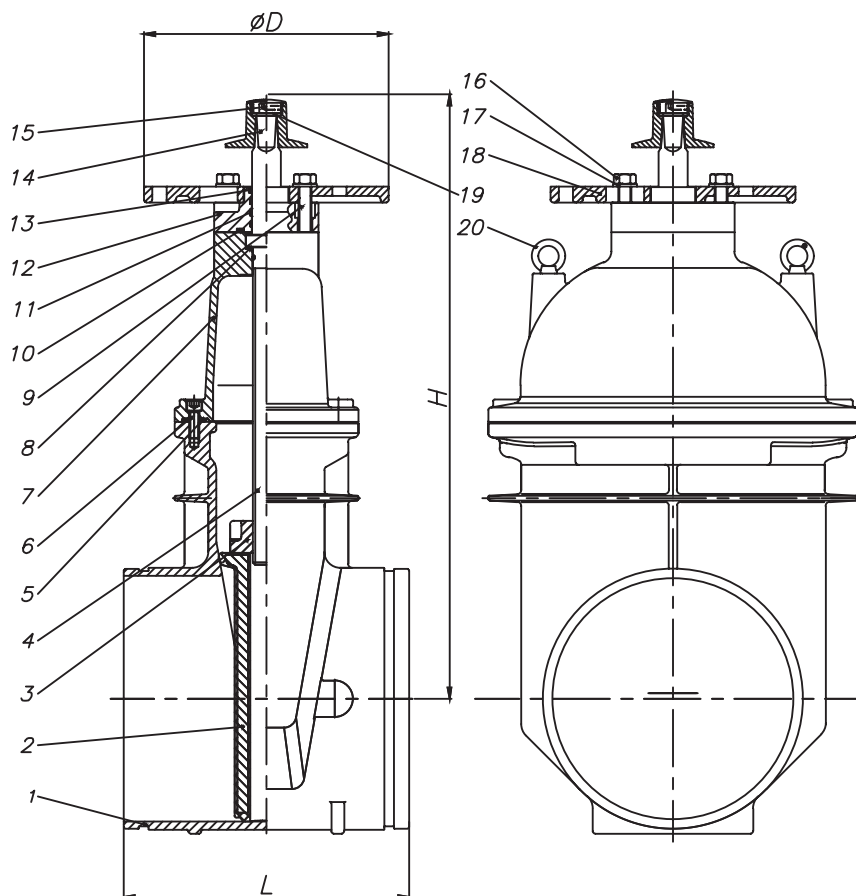
Approvals

- FM approved to FM standard 1120 & 1130.
- UL 262 listed.

Working temperature

+1°C to +60°C.

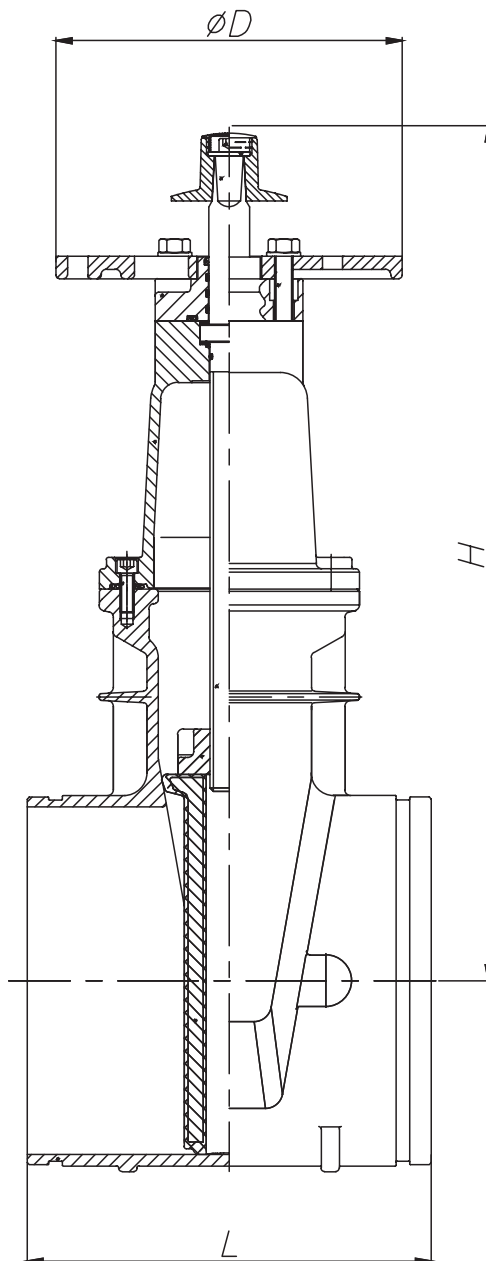
Material specifications



N°	Component	Specification	European standard	ASTM standard
1	Body	Ductile iron	EN-GJS-450-10	A536 Grade 65-45-12
2	Wedge	Ductile iron, EPDM fully encapsulated		
3	Wedge nut	Bronze	/	B148 C95200
4	Stem	Stainless steel	X5 Cr Ni 1810	A276 Type 304
5	Gasket	Rubber	EPDM	D2000 EPDM
6	Screw	Carbon steel	ISO 898-1/4-6	A307 Grade B
7	Bonnet	Ductile iron	EN-GJS-450-10	A536 Grade 65-45-12
8	Washer	Brass	/	B124 C37700
9	Bolt	Stainless steel	X5 Cr Ni 1810	F593 Grade 304
10	O-ring	Rubber	NBR	D2000 NBR
11	O-ring	Rubber	NBR	D2000 NBR
12	Gland	Ductile iron	EN-GJS-450-10	A536 Grade 65-45-12
13	Seal ring	Rubber	NBR	D2000 NBR
14	Operating nut	Ductile iron	EN-GJS-450-10	A536 Grade 65-45-12
15	Screw	Stainless steel	X5 Cr Ni 1810	F593 Grade 304
16	Nut	Stainless steel	1.4401	A4
17	Washer	Stainless steel	X5 Cr Ni 1810	A276 Type 304
18	Post flange	Ductile iron	EN-GJS-450-10	A536 Grade 65-45-12
19	Washer	Stainless steel	X5 Cr Ni 1810	A276 Type 304
20	Eye bolt	Carbon steel	ISO 898-1/4-6	A307 Grade B

Dimensions

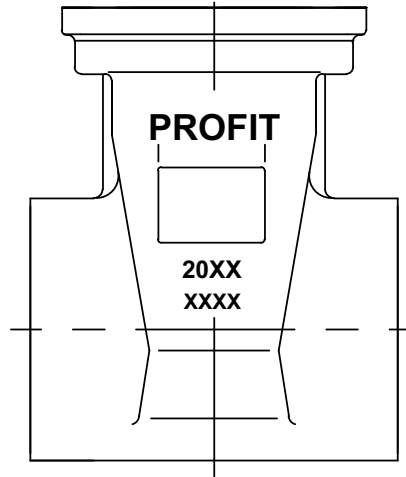
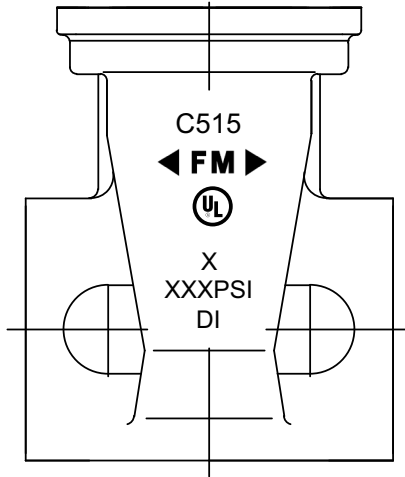
Dimensions (mm/inch)										
Size	inch	2"	2½"	3"	4"	5"	6"	8"	10"	12"
	mm	DN50	DN65	D80	DN100	DN125	DN150	DN200	DN250	DN300
L1	mm/inch	178 / 7,0	191 / 7,5	203 / 8,0	229 / 9,0	254 / 10,0	267 / 11,5	292 / 11,5	330 / 13,0	356 / 14,0
H	mm/inch	277 / 10,9	295 / 11,6	336 / 13,2	361 / 14,2	432 / 17,0	472 / 18,6	570 / 22,4	665 / 26,2	747 / 29,4
D	mm/inch	305 / 12,0	305 / 12,0	305 / 12,0	305 / 12,0	305 / 12,0	305 / 12,0	305 / 12,0	305 / 12,0	305 / 12,0
Weight (kg)	kg	10	11	16	23	32	40	55	103	123



Marking

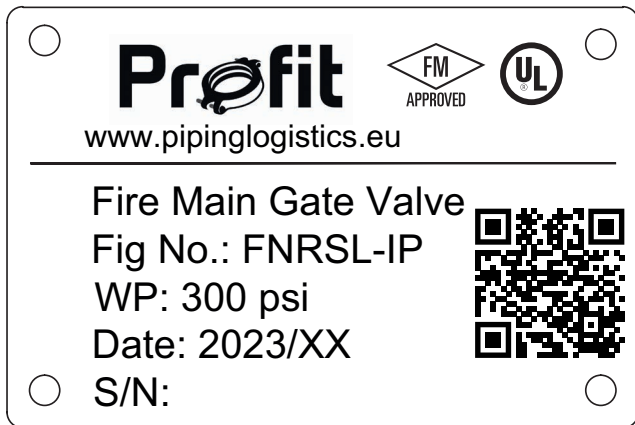
Body:

Please note that GNRSL2-IP is not UL listed.



Marking plate:

Please note that GNRSL2-IP is not UL listed.



Performances

Cv/Kv-values:

Definition / formulas:

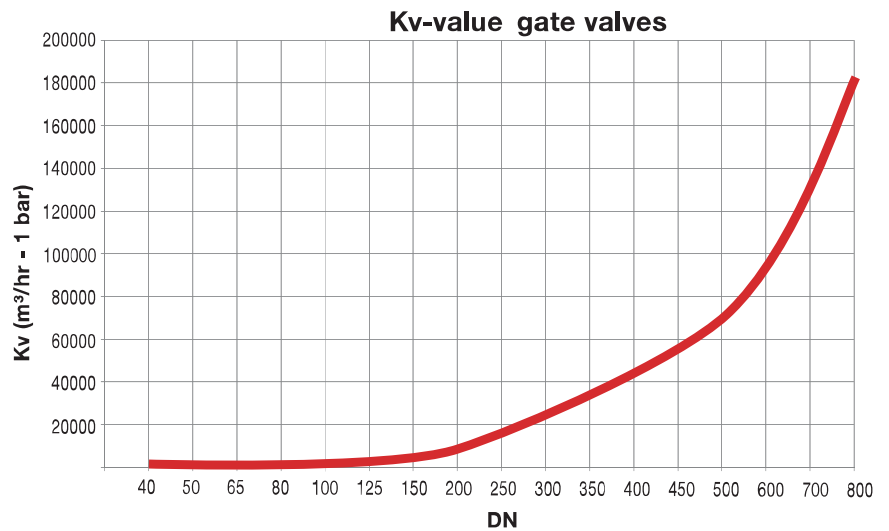
Kv-Value: actual flow of water (m³/hr)
creating pressure loss of 1 bar.

Pressure loss coefficient **Zeta (K) value:**
ratio of static and dynamic pressure loss.

Pressure loss coefficient,
Zeta (K-value) = Diff pressure / (500 X V²)
Diff pressure (Pa)
V: water flow velocity (m/sec)
Actual diff pressure (bar) = (Q/Kv)²

Zeta values:

DN 40-125: 0,06
DN 150-250: 0,04
DN 300-800: 0,02



Flow velocity (m/sec)	Q m3/h					
	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300
1.0	28.3	44.2	63.6	113.1	176.7	254.5
1.5	42.4	66.3	95.4	169.6	265.1	381.7
2.0	56.5	88.4	127.2	226.2	353.4	508.9
2.5	70.7	110.4	159.0	282.7	441.8	636.2
3.0	84.8	132.5	190.9	339.3	530.1	763.4
3.5	99.0	154.6	222.7	395.8	618.5	890.6
4.0	113.1	176.7	254.5	452.4	706.9	1,017.9
4.5	127.2	198.8	286.3	508.9	795.2	1,145.1
5.0	141.4	220.9	318.1	565.5	883.6	1,272.3

Opening %	CV/KV											
	DN 100		DN 125		DN 150		DN 200		DN 250		DN 300	
	cv	kv	cv	kv	cv	kv	cv	kv	cv	kv	cv	kv
10%	75	64	143	122	158	135	343	293	448	383	583	498
20%	186	159	278	238	319	273	642	549	904	773	1290.5	1103
									1459	1247	2015	1722
									2187	1869	2952	2523
									3195	2731	4006	3424
									6230	5325	8286	7082
									16842	14395	29844	25508

Certifications

Size		FM	UL
DN	NPS		
DN 50	2"	Up to 2,07 MPa / 20,7 bar / 300 psi	<i>not UL listed</i>
DN 65	2½"	Up to 2,07 MPa / 20,7 bar / 300 psi	Up to 2,07 MPa / 20,7 bar / 300 psi
DN 80	3"	Up to 2,07 MPa / 20,7 bar / 300 psi	Up to 2,07 MPa / 20,7 bar / 300 psi
DN 100	4"	Up to 2,07 MPa / 20,7 bar / 300 psi	Up to 2,07 MPa / 20,7 bar / 300 psi
DN 125	5"	Up to 2,07 MPa / 20,7 bar / 300 psi	Up to 2,07 MPa / 20,7 bar / 300 psi
DN 150	6"	Up to 2,07 MPa / 20,7 bar / 300 psi	Up to 2,07 MPa / 20,7 bar / 300 psi
DN 200	8"	Up to 2,07 MPa / 20,7 bar / 300 psi	Up to 2,07 MPa / 20,7 bar / 300 psi
DN 250	10"	Up to 2,07 MPa / 20,7 bar / 300 psi	Up to 2,07 MPa / 20,7 bar / 300 psi
DN 300	12"	Up to 2,07 MPa / 20,7 bar / 300 psi	Up to 2,07 MPa / 20,7 bar / 300 psi



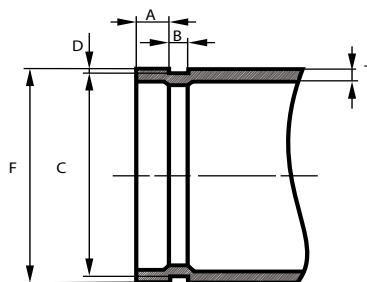
Storage and handling

- Each valve should be unloaded carefully, it should not be dropped.
Never lift valves by the stem, operating nut or handwheel.
- The valves should be inspected at the time of receipt for damage in shipment.
The initial inspection should verify compliance with valves specifications.
- The gate valves should be stored in a manner that protects them from the environment, preferably indoors. When stored outside, protect the valves from weather conditions and avoid accumulation of water, dirt, or debris.
- The valves should be stored with the wedges in the nearly closed position to prevent unnecessary compression of the rubber compound.
- Valves stored outside should be stored with the wedges in the vertical position. If the valves are stored in the horizontal or flat position, rainwater may accumulate in the valve cavity, then freeze and crack the castings.



Installation

1. Check the groove dimension (with groove-gauge) in the adjacent pipework.



Nominal pipe size		Outside diameter			Gasket seat A	Groove width B	Groove diameter C		Groove depth* D	Maximum outspread F
NPS (DN)		Size mm	+ mm	- mm	Tolerance +0,4 / -0,8 mm	Tolerance +0,8 / -0,4 mm	Size mm	Tolerance mm	mm	mm
1	25	33,7	0,41	0,68	15,9	7,1	30,2	+0/-0,3	1,6	34,5
1¼	32	42,4	0,50	0,60	15,9	7,1	39,0	+0/-0,4	1,6	43,3
1½	40	48,3	0,44	0,52	15,9	7,1	45,1	+0/-0,4	1,6	49,4
2	50	60,3	0,61	0,61	15,9	8,7	57,2	+0/-0,4	1,6	62,2
2½	65	76,1	0,76	0,76	15,9	8,7	72,3	+0/-0,4	2,0	77,7
3	80	88,9	0,89	0,79	15,9	8,7	84,9	+0/-0,4	2,0	90,6
4	100	114,3	1,14	0,79	15,9	8,7	110,1	+0/-0,5	2,2	116,2
5	125	139,7	1,40	0,79	15,9	8,7	135,5	+0/-0,5	2,2	141,7
6	150	168,3	1,60	0,79	15,9	8,7	164,0	+0/-0,6	2,2	170,7
8	200	219,1	1,60	0,79	19,1	11,9	214,4	+0/-0,6	2,4	221,5
10	250	273,0	1,60	0,79	19,1	11,9	268,3	+0/-0,7	2,4	275,4
12	300	323,9	1,60	0,79	19,1	11,9	318,3	+0/-0,8	2,8	328,2

According to standard AWWA C606-06

2. Check that the available length between the pipes matches the total length of the valve.
 3. Please use at least one rigid coupling. When 2 flexible couplings are used, additional support may be required to prevent valve from rotating.
 4. Please check the couplings installation instructions. We recommend using Profit GKS/GKA/Fitpro as a rigid coupling, and GKF as a flexible coupling. Follow the installation instructions for these couplings included in this datasheet.
- Operation of the valve:
 1. The valve is opened by turning the operating nut or indicator post counter clockwise rotation.
 2. The valve is closed by turning the operating nut or indicator post clockwise rotation.
 3. Turn the valve fully open before filling and pressurizing the system.

Notes

When the valve is closed at a temperature higher than 60°C and then cooled, the wedge may become tight in the valve and prove difficult to open.

Conversely, a valve closed at room temperature can be difficult to open if there is an increase in fluid temperature up to 80°C causing a linear expansion of the stem, which tightens the wedge further into the body seats.

The valve should only be used in the open or closed position. The gate valves are not intended to be used for regulating or throttling services.

COUPLING INSTALLATION INSTRUCTIONS

GENERAL INFO

- Installers should be trained or experienced to install and understand the product.
- Read and understand all technical datasheets and installation instructions before attempting to install, remove or adjust any Profit piping products.
- Depressurise and drain the sprinkler installation system before attempting to install, remove or adjust any Profit piping products.
- Never work on piping systems that are pressurised and / or filled with water.
- Piping Logistics reserves the right to change specifications, designs and / or standard equipment without notice and without incurring in any obligations.
- Use the necessary Personal Protection Equipment (PPE) to avoid personal injury (helmet, safety shoes and goggles, Profit gloves).



- Use appropriate tooling:
 - Profit groove meter and / or center punch tool
 - Impact-wrench and torque-wrench
 - Correct socket size and depth:

Bolt size	Recommended torque	Socket
	Nm	mm
M8 (¼)	25-30	13
M10 (⅜)	44-54	15
M12 (½)	90-100	18
M14 (⅝)	135-150	21
M16 (¾)	200-230	24
M20 (¾)	270-300	30

Failure to follow these instructions could result in death or serious injury and property damage.

We advise to always store our products in closed and dry environments, the products do not need any specific maintenance once installed on an aboveground sprinkler installation.

INSTALLATION INSTRUCTIONS

1

Check the end of the pipe, after the groove, to make sure that there are no bumps, holes or loose coating particles. Remove these first, in order to prevent leaks. Always check the rubber gasket to ensure that it is suitable for the intended service.



2

The outer diameter of the housing and the groove diameter must match the specifications provided by Profit; please review the page with groove specifications.

3

Unscrew the pre-assembled coupling using an impact wrench.



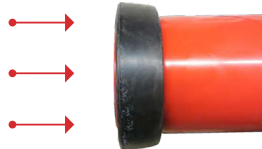
4

Apply PROFIT lubricant onto the sealing lips of the gasket. Also apply lubricant to the interior side of the housings.



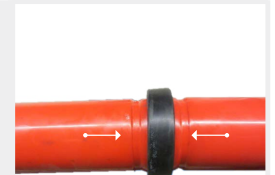
5

Slide the gasket over the end of the pipe and make sure that it covers the end completely.



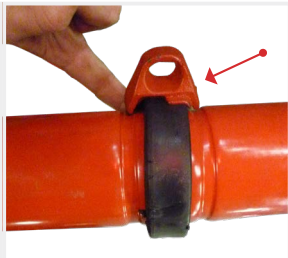
6

Bring the two pipe ends together without misalignments and pull the gasket over the end of the pipe. Make sure that the gasket is in the middle and that it covers both pipe ends.



7

Place one coupling shell around the gasket. Once it is placed over the gasket, you shall see that the housing fits in the groove.



8

Stick a bolt through the housing. Make sure that the head of the bolt perfectly fits in the housing.



9

Place the second housing over the bolt and turn the nut finger-tight on the bolt. Then place the second bolt and tighten it finger-tight.



10

Tighten the bolts alternately using an impact wrench with suitable socket wrench until the coupling is completely closed. For proper sealing, bolt-torque standards must be respected (see table). A torque too big cannot improve the sealing property of the coupling; on the contrary it may damage the bolts and/or the housing and can even cause disconnection of the pipes. A torque too small will lead to leakage.



REVISION TABLE

Date	△	Notes
24/06/2024	A	Page 2 - Addition of the European standards.
25/06/2024	B	Page 1 - The approvals have been added.