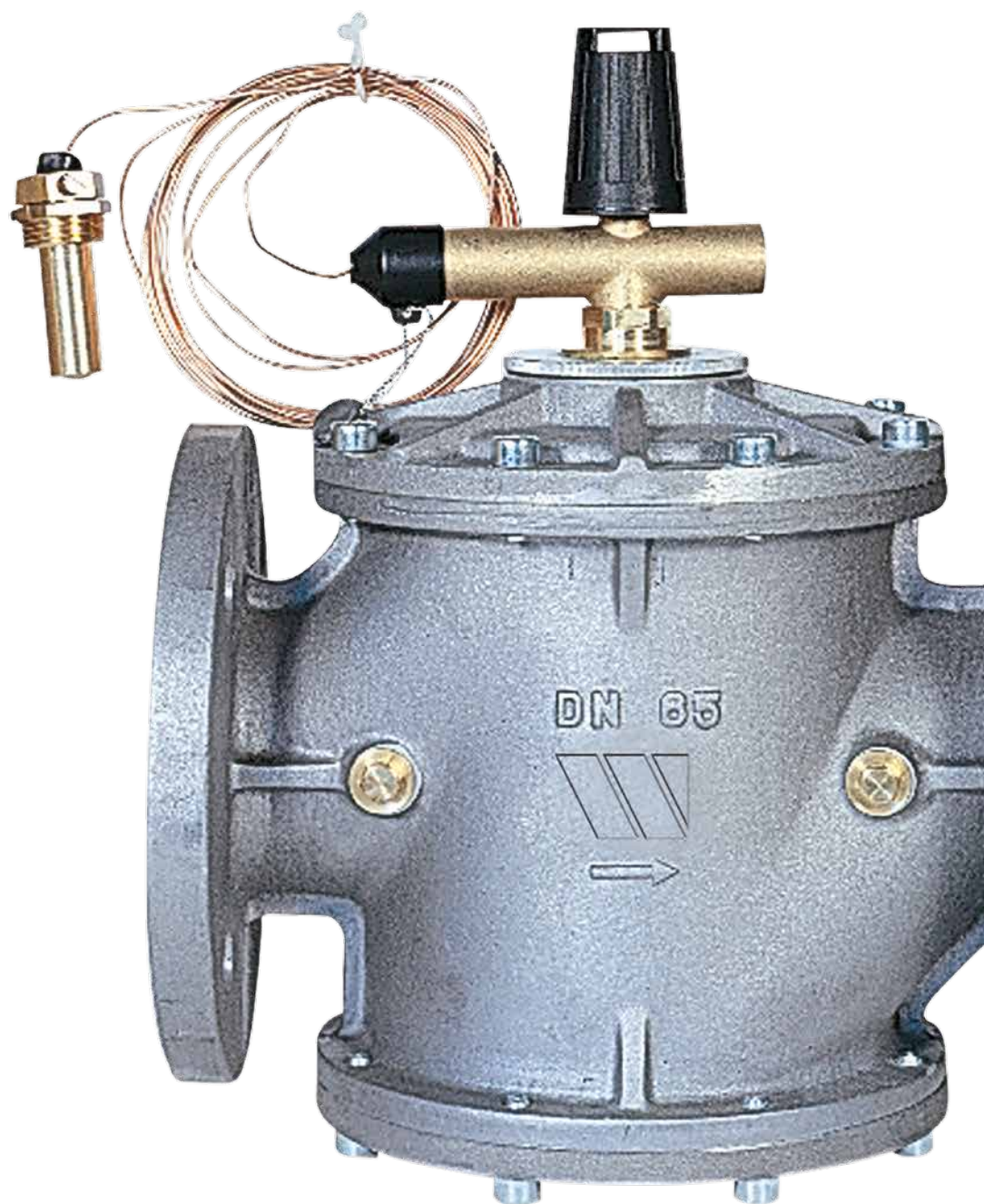


Serie NVFN

Flamstop fuel shut-off valves

Technical Data Sheet



Description



NVFN

FLAMSTOP

Liquid/gaseous fuel shut-off valves 1/2' and 3/4' suitable for vegetable oil or 'biodiesel'. Positive-action, with manual reset. Liquid-expansion thermostatic element. Space-saving sensor. Sensor sheath connection 1/2 'M (complete with 1/2 "F x 3/4 "M nipple). INAIL approved and calibrated. **Complies with PED Directive 2014/68/EU, ATEX Directive 2014/34/EU.**

| Type | Part No. | DN | bar |
|------|----------|-----------|-----|
| NVFN | 0231415 | 1/2" FF | 10 |
| NVFN | 0231420 | 3/4" FF | 10 |
| NVFN | 0231425 | 1" FF | 10 |
| NVFN | 0231432 | 1.1/4" FF | 10 |
| NVFN | 0231440 | 1.1/2" FF | 10 |
| NVFN | 0231450 | 2" FF | 10 |
| NVFN | 0231465 | 65 | 10 |
| NVFN | 0231480 | 80 | 10 |

Technical features

| | |
|------------------------------|--|
| Calibration temperature | 97°C (±3°C) |
| Max. temperature sensor side | 120°C |
| Max. valve-side temperature | 50°C |
| Max. operating pressure | 6 bar (NVFN 15÷25) - 1 bar (NVFN 32÷80) |
| Fuels | Diesel, fuel oil, methane, propane, butane |
| Capillary length | 5 m |
| Min. storage temperature | -40°C |
| Working range | 10-100°C |
| Min. valve-side temperature | -5°C |
| Min. temperature sensor side | -15°C |

N.B. Models NVFN15 and NVFN20 with FPM rubber seals can also be used for environmentally friendly diesel (vegetable oil).

Construction features

| | |
|-------------------------------------|---|
| Body | Die-cast aluminium (NVFN 15÷50) - Cast aluminium (NVFN 65-80) |
| Seals | FPM rubber (NVFN 15-20) - NBR rubber (NVFN 25-80) |
| Shutter spring | Stainless steel AISI304 |
| Capillary | Electrolytic copper |
| Temperature-sensitive element | Liquid expansion |
| Connections (models 1/2' to 2') | Gas threaded FF (ISO 228/1) |
| Connections (models DN65 and DN80) | Flanged PN16 (UNI 2223) |
| Pressure tapping (1/2'÷2' models) | Nr. 2 from 1/4' |
| Pressure taps (DN65 and DN80) | Nr. 4 from 1/4' |
| Sensitive element sheath connection | G 1/2"M (ISO 228/1) |

Approvals

CE marking - PED

The NVF Series safety valves meet the requirements of the Pressure Equipment Directive 2014/68/EU (PED). The valves fall under category IV as safety accessories and bear the CE marking followed by the identification number of the approval body.

CE marking - ATEX


NVF valves comply with Directive 2014/34/EU (ATEX) as group II, category 2G equipment and bear the CE mark followed by the identifying number of the approval body.

Il prodotto è marcato:

The product is marked:

Attestato archiviazione fascicolo tecnico:

Technical file recording certificate:

 II 2 G Ex h IIA T4 Gb

n. 0425 ATEX 004190-00 - ICIM (0425)
Milano

INAIL

Approval according to Collection R (Edition 2009). **Bench calibration certificate issued by INAIL.** The INAIL regulation (Collection R Edition 2009) that regulates systems with heat generators with a thermal capacity greater than 35 kW, provides in some cases for the use, as an alternative to the thermal discharge valve, of the fuel shut-off valve, which it defines as follows (Chapter R.1.B point 9.4): 'Positive action valve that automatically intercepts the flow of fuel in the event of a rise in water temperature so as to prevent the pre-set safety temperature from being exceeded. **The fuel shut-off valve** is a self-operated (operating without any external energy input) positive-acting safety device.

Application

The valve can be used to intercept the following fluids: methane gas, LPG, fuel oil, diesel oil.

According to the provisions of Collection R Ed. 2009, technical application specification of Title II of Ministerial Decree 1/12/75 pursuant to art. 26 of the same decree, concerning 'central heating systems using pressurised hot water with a temperature not exceeding 110°C and maximum total rated power of the fireboxes (or maximum total heat output of the fireboxes) greater than 35 kW', the use of the fuel shut-off valve is envisaged in the following cases: systems with a closed expansion vessel (Chap. R.3 B., Point 1.b); systems with a closed expansion vessel with heat exchangers supplied on the primary side with fluids having a temperature greater than 110°C (Chap. R.3.D., Point 2.2.1.g); systems with modular heat generators (Chap. R.3.F.).

The device does not constitute an effective ignition source of explosive gas mixtures of group IIA in zones 1 and 2, according to Directive 1999/92/EC. For further details, please refer to the ATEX marking.

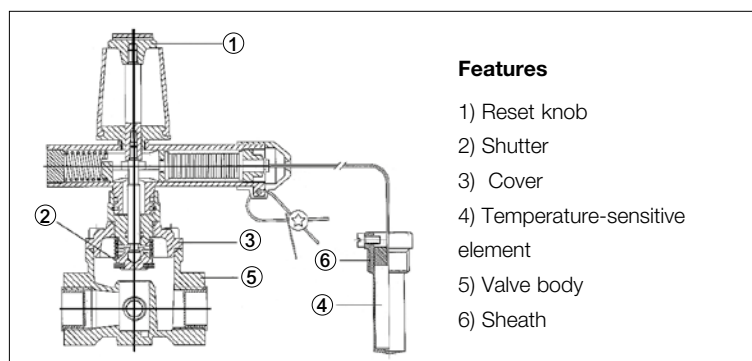
Operation

When the set temperature is reached, the thermo-sensitive element **(4)** causes the grooved piston on which the stem integral with the plug **(2)** rests to move and the stem itself to fall, with consequent closure of the valve. The closing of the valve is not gradual but takes place by jerk when the set temperature is reached, so that there are no bottlenecks in the passage of fuel. Only after the water temperature has fallen below 85°C will it be possible to reset the valve.

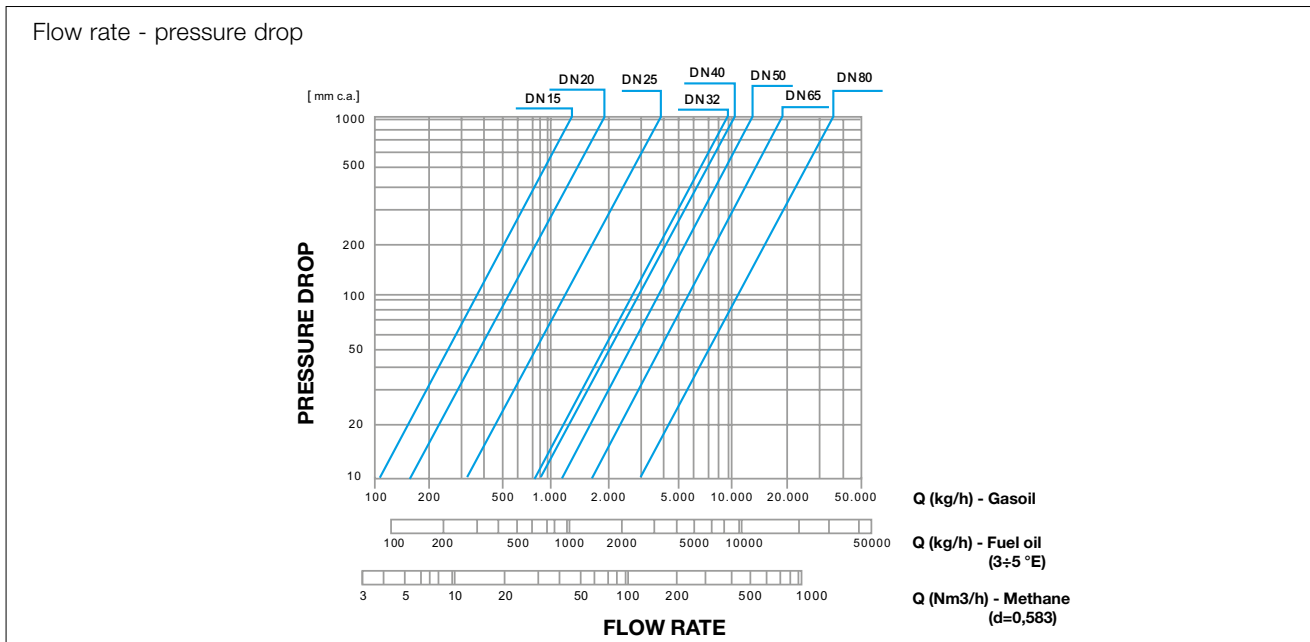
CAUTION

As the NVF/N fuel shut-off valve is a positive-acting safety valve, in the event of failure of the sensing element or breakage of the capillary tube, resetting is no longer permitted and the entire valve must be replaced.

N.B. To check the opening position of the valve, check that the green reset knob is visible inside the upper openings of the protection cap.

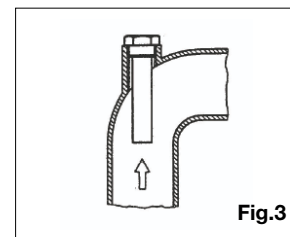
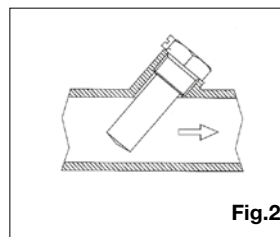
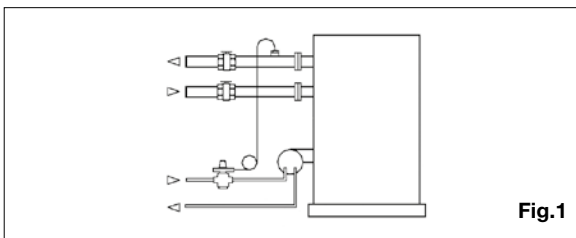


Nomogram



Installation

The fuel shut-off valve shall be inserted on the fuel supply line between the strainer and the burner, in the direction indicated by the arrow on the body. The valve sensing element 'shall be immersed in the hot water flow of the outlet pipe within 1 m of the generator upstream of any shut-off device and plumbed by the installer.' (Ref. Collection R, Chapter R.2.A.4.2) (**Fig.1**). The conduit sleeve must be welded in such a way that the conduit itself is immersed as far as possible in the hot water, in one of the positions indicated above. Depending on the size of the pipe diameter, the conduit sleeve can be welded, in relation to the pipe, in a straight position, inclined (**Fig.2**) or on a bend when possible (**Fig.3**).



Assembly

To install the **NVFN-series** fuel shut-off valve, proceed as follows:

1. screw the sheath of the temperature-sensitive element onto the sleeve;
2. insert the thermosensitive element's bulb completely into the sleeve;
3. connect the valve to the burner supply line, observing the direction of flow indicated on the body;
4. carefully unwind the copper capillary, taking care that it does not rest against the hot elements or the generator doors;
5. push the plastic protection sleeve at the end of the capillary tube towards the inside of the sheath and then tighten the screw positioned on the hexagonal head of the sheath.

CAUTION

Use only the sheath supplied with the appliance

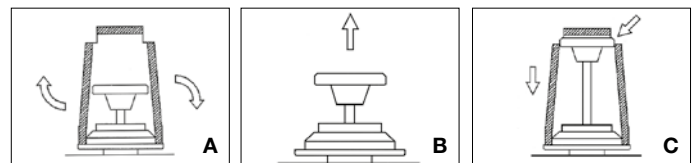
The valve is supplied in the closed position: ARM AFTER INSTALLATION

N.B. The control unit, located above the cap, can be rotated 360° to facilitate the assembly of the valve and the laying of the capillary.

Resetting the valve

To reset the valve, proceed as follows:

- A)** release the black protective cap;
- B)** pull the green reset knob upwards;
- C)** re-engage the black protective cap.



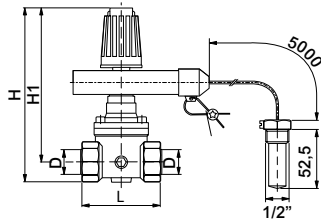
To check the opening of the valve, check that the green reset knob appears in the upper inspection windows of the protective cover.

Maintenance

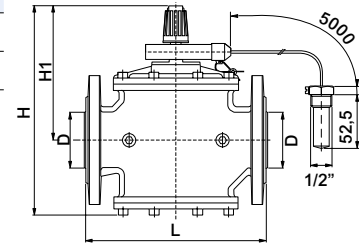
There is no routine maintenance of the NVF/N fuel shut-off valves.

Overall dimensions (mm)

| DN | L | H | H1 |
|--------|-----|-----|-----|
| 1/2" | 70 | 155 | 138 |
| 3/4" | 70 | 163 | 141 |
| 1" | 90 | 196 | 169 |
| 1.1/4" | 150 | 204 | 169 |
| 1.1/2" | 150 | 204 | 169 |
| 2" | 170 | 222 | 179 |



| DN | L | H | H1 |
|----|-----|-----|-----|
| 65 | 260 | 310 | 200 |
| 80 | 310 | 351 | 234 |



Disclaimer

The products are intended for professional use.

The installation of the valves must be carried out by qualified technical personnel in accordance with the applicable technical standards and the contents of this manual. For direct or indirect damage caused by non-compliance with legal, technical and installation instructions or improper use, the manufacturer is not liable.

Specification text

NVFN Series

WATTS branded FLAMSTOP **NVFN Series** liquid/gaseous fuel shut-off valve. Positive action, with manual reset. Liquid expansion thermostatic element. Capillary length 5m. Space-saving sensor. Aluminium body, stainless steel springs. NBR seals (1/2' - 3/4' FPM). Sensor sheath connection 1/2 'M (complete with 1/2 "F x 3/4 "M nipple). Calibration temperature 97°C±3°C. Maximum operating pressure: 6 bar (DN 15÷25) - 1 bar (DN 32÷80). Maximum temperature on sensor side 120°C. Maximum valve-side temperature 50°C. 1/2' and 3/4' suitable for vegetable oil or 'biodiesel'. INAIL approved and calibrated. Complies with PED Directive 2014/68/EU, ATEX Directive 2014/34/EU.



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