FUEL SHUT-OFF VALVE
INAIL (I.S.P.E.S.L.) COMPLIANT
N143 SERIES

N143

Description

Positive action safety valves, not enabled by external energy, designed to intercept the flow of fuel to the burner in order to prevent the water temperature in the system delivery circuit from reaching the boiling temperature value. The valve closes with:

• the perforation or cutting of the capillary pipe and/or the sensor bulb. As these are positive action valves, they cannot be reset in this case.

• the rising water temperature, when it reaches the calibration point. In this case, the valve can be reset but only if the temperature falls to at least 11±2 °C.

The N143 valves comply with "PED" directive 2014/68/EU, and are calibrated and approved by INAIL (in accordance with "R" collection - Technical application specifications of Title II of Ministerial Decree 01/12/1975). Each valve is supplied with an original copy of the calibration report. This document contains not only the technical data of the valve, but also the serial number (also shown on the seal on the valve itself). The document is stamped and validated by the INAIL technician who witnessed the calibration operation.

Note.
The calibration report must be stored with great care; copies cannot be issued if the original is lost.

Versions and product codes

Product code	Size	Calibration temp.	Connections type
N143Y003	1/2"	98 °C	Threaded connections
N143Y004	3/4"		
N143Y005	1"		
N143Y006	1"1/4		
N143Y007	1"1/2		
N143Y008	2"		
N143Y033	1/2"	110 °C	
N143Y034	3/4"		
N143Y035	1"		
N143Y036	1"1/4		
N143Y037	1"1/2		
N143Y038	2"		
N143Y106	DN65	98 °C	Flanged connections
N143Y108	DN80		
N143Y110	DN100		
N143Y112	DN125		
N143Y115	DN150		
N143Y136	DN65	110 °C	
N143Y138	DN80		
N143Y140	DN100		
N143Y142	DN125		
N143Y145	DN150		

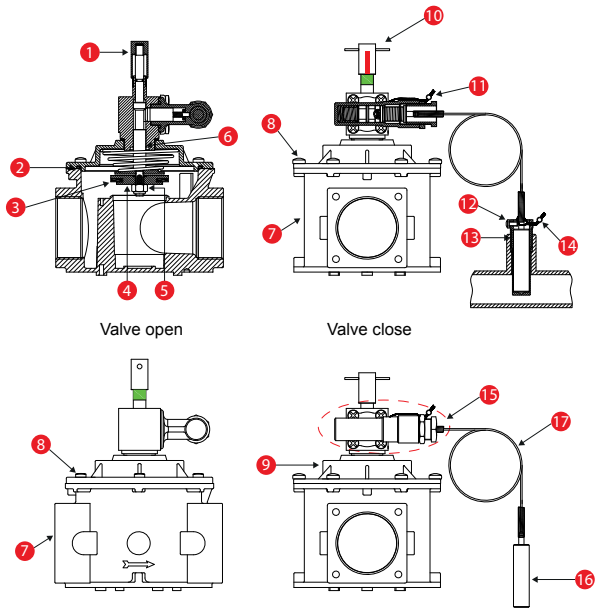
Technical data

- Valve temperature range: -15÷70 °C
- Max. valve working pressure: 1 bar
- Calibration temperature: 98 °C (+0 -5 °C)
  110 °C (+0 -5 °C)
- Use: gas (methane, city gas, LPG), diesel oil and fuel oil
- Rp threaded connections (body in brass): (1/2" - 3/4" - 1") in accordance with EN 10226
- Rp threaded connections: (1 1/4" - 1 1/2" - 2") in accordance with EN 10226
- PN16 flanged connections: (DN65 ÷ DN150) in accordance with ISO 7005
- Housing connection: G 1/2"
- Capillary pipe length: 5 m
- Valve mechanical resistance: Group 2 (in accordance with EN 13611:2007)

Materials

- Body and covers DN15÷25: brass OT-58 (UNI EN 12164)
- Body and covers DN32÷150: die-cast aluminium (UNI EN 1706)
- Internal components: aluminium 11S (UNI 9002-5), stainless steel 430 F (UNI EN 10088), brass OT-58 (UNI EN 12164)
- Housing: brass OT-58 (UNI EN 12164)
- Seal elements: rubber FKM (UNI 7702)

Components



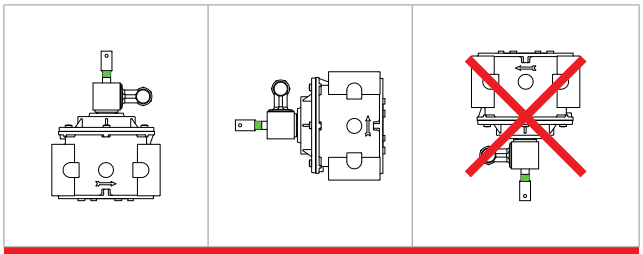
Legend

1. Reset knob
2. O-Ring (cover seal)
3. Seal washer
4. Shutter
5. Fixing nut
6. Central pin
7. Body
8. Cover fixing screws
9. Cover
10. Green label (valve open)
11. Release unit seal
12. Bulb fixing screw
13. Housing
14. Bulb seal
15. Release unit
16. Bulb
17. Capillary pipe

Installation

Warning.
Installation/wiring/maintenance operations must be carried out by qualified personnel.

- It is necessary to close the gas/fuel flow before installing.
- Check the line pressure IS NO GREATER than the maximum pressure declared on the product label.
- They are usually installed downstream from the regulation elements. Install with the arrow (indicated on the body **(8)** of the device) facing towards the service supply. They can also be installed vertically, without jeopardising their functioning. They cannot be positioned upside down (with the knob **(1)** facing downwards).
- When installing, make sure no debris or metal residue enters the device.
- If the device is threaded, check that the pipe thread is not too long, as this could damage the device body during the threading phase. Do not use the knob as a lever when threading; use the appropriate tool.
- If the device is flanged, make sure the input/output counter-flanges are perfectly parallel so the body is not subjected to unnecessary mechanical stress. Calculate the space for inserting the gasket. If there is too much remaining space once the gasket has been inserted, do not try to fill it by over-tightening the device bolts.
- In any case, check the system seal after installing the device.
- The bulb **(16)** and its housing **(13)** must be immersed in the fluid flowing out of the boiler, no further than 1m from the boiler itself. Make sure there are no interception devices between the bulb **(16)** and the boiler.
- Fix the bulb **(16)** to the housing **(13)**, tightening the screw **(12)** and plumbing with the seal **(14)**.
- Fill the housing with paste or liquid (e.g. diathermic oil) with high thermal conductivity to ensure the perfect thermal contact between the inside of the pipe and the bulb **(16)**.
- Wind up the excess capillary pipe and position it near the body of the valve **(7)**. Make sure the capillary pipe is not damaged, crushed or too bent.
- Do not alter the position of the release unit **(15)** (plumbed with a seal **(11)** in the correct position during manufacture).



Allowed installation	Not allowed installation

Operation - manual reset

If the valve is triggered, you must wait until the water temperature falls to:
87 ±2 °C (for valves with 98 °C calibration temperature)
99 ±2 °C (for valves with 110 °C calibration temperature)
before attempting to reset it.
Before resetting the valve, check the reason why it was triggered.
Pull the reset knob (**1**) upwards and wait a moment until the pressure upstream and downstream from the valve is balanced.
Turn the knob 180° clockwise. Pull the reset knob (**1**) upwards, then turn the knob 180° clockwise again until it is connected (see figure 1).
If it is visible, the green label (**10**) below the reset knob (**1**) indicates that the fuel shut-off valve is open.

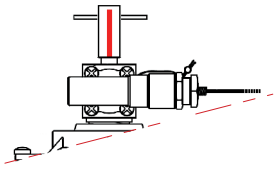
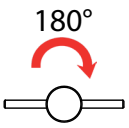
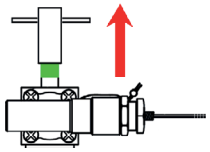
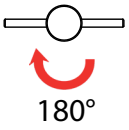
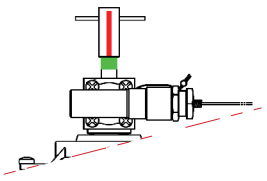
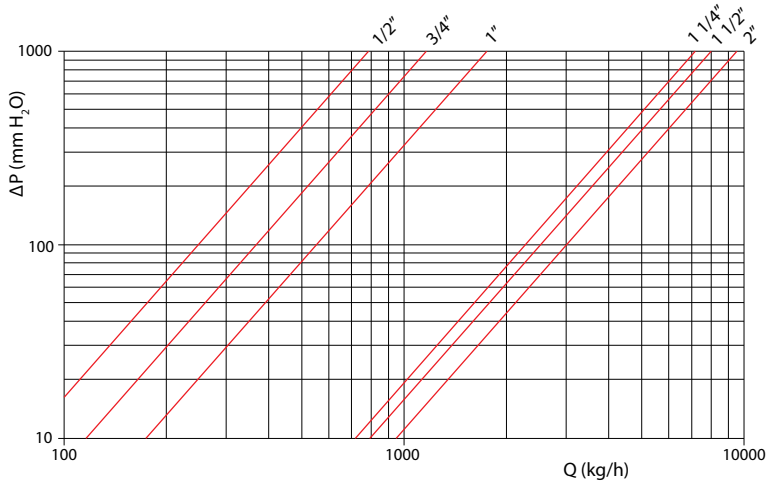
Valve closed	
Valve in closed position. Only the red label is visible.	
Reset operations	
1 - Turn the knob 180°	 *Seen from above*
2 - Pull the knob upwards	
3 - Turn the knob 180° again	 *Seen from above*
Valve open	
Valve in open position. Both the red and green labels are visible.	

Figure 1

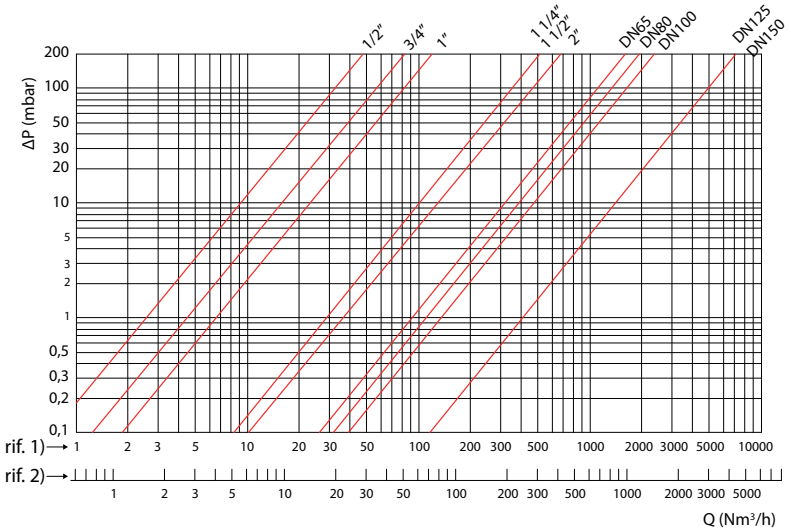
Note.
The reset operations must be carried out with the red label in line with the capillary pipe lockout (or release unit (15).

Losses of pressure

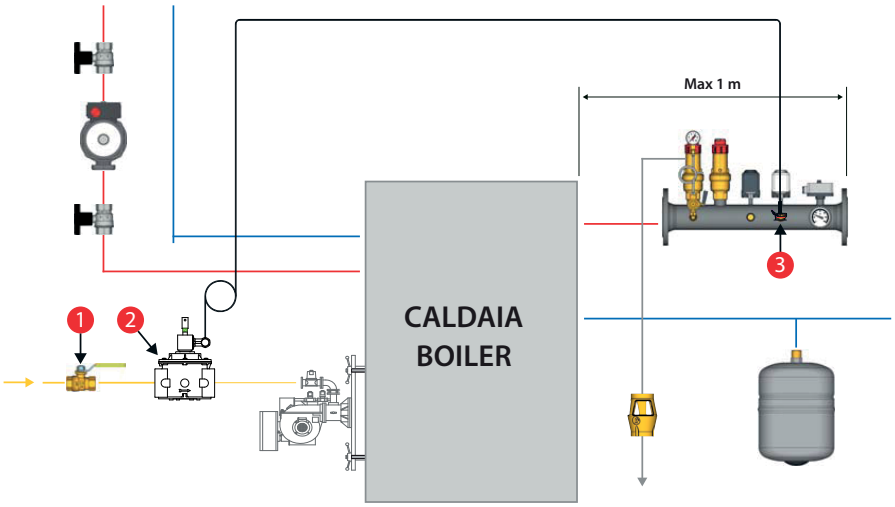
Diesel at 20 °C – Fuel oil (< 3 °E at 20 °C)



Methane (ref.1) – LPG (ref.2)



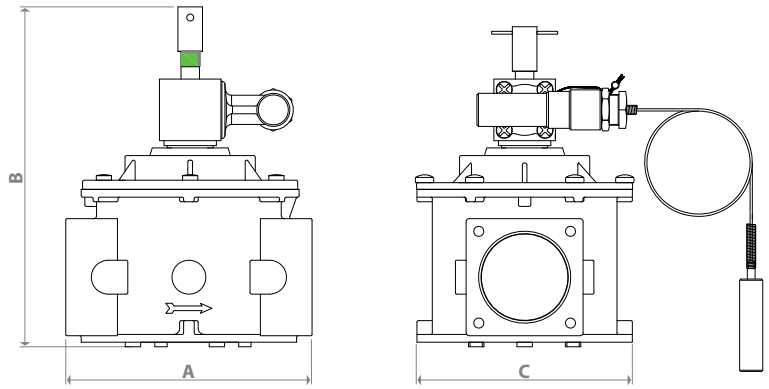
Application diagram



Legend

1) Manual shut-off valve	**2)** Fuel shut-off valve	**3)** Probe housing on tool holder manifold

Dimensions



Product code		Size	A [mm]	B [mm]	C [mm]
N143Y003	N143Y033	1/2"	66	109	34
N143Y004	N143Y034	3/4"	66	109	34
N143Y005	N143Y035	1"	82	122	44
N143Y006	N143Y036	1 1/4"	160	196	140
N143Y007	N143Y037	1 1/2"	160	196	140
N143Y008	N143Y038	2"	160	216	140
N143Y106	N143Y136	DN65	290	328	198
N143Y108	N143Y138	DN80	310	335	198
N143Y110	N143Y140	DN100	350	360	450
N143Y112	N143Y142	DN125	480	445	450
N143Y115	N143Y145	DN150	480	460	450

Product specifications

N143

Shut-off valve with positive action for gas (methane, city gas, LPG), diesel oil and fuel oil. Rp threaded connections (body in brass): 1/2", 3/4", 1" (in accordance with EN 10226). Rp threaded connections: 1 1/4", 1 1/2", 2" (in accordance with EN 10226). PN16 flanged connections: DN65 - DN150 (in accordance with ISO 7005). Housing connection: G 1/2". Body and covers DN15÷25: brass OT-58 (UNI EN 12164). Body and covers DN32÷100: die-cast aluminium (UNI EN 1706). Bodies DN125-150: Die-cast aluminium. Covers DN125-150: Galvanised steel (UNI EN 10088). Internal components: aluminium 11S (UNI 9002-5), stainless steel 430 F (UNI EN 10088), brass OT-58 (UNI EN 12164). Housing: brass OT-58 (UNI EN 12164). Seal elements: rubber FKM (UNI 7702). Calibration temperature: 98 °C (+0 -5 °C) or 110 °C (+0 -5 °C), depend on versions. Max. valve working pressure: 1 bar. Valve temperature range: -15 ÷ 70 °C. Capillary pipe length: 5 m. Valve mechanical resistance: Group 2 (in accordance with EN 13611:2007). Compliance with "PED" directive 2014/68/EU. INAIL (ISPESL) compliant.