HRD CONTAINER WITH EXTINGUISHING MEDIUM – NFPA TYPE

DATASHEET

FLAMMER

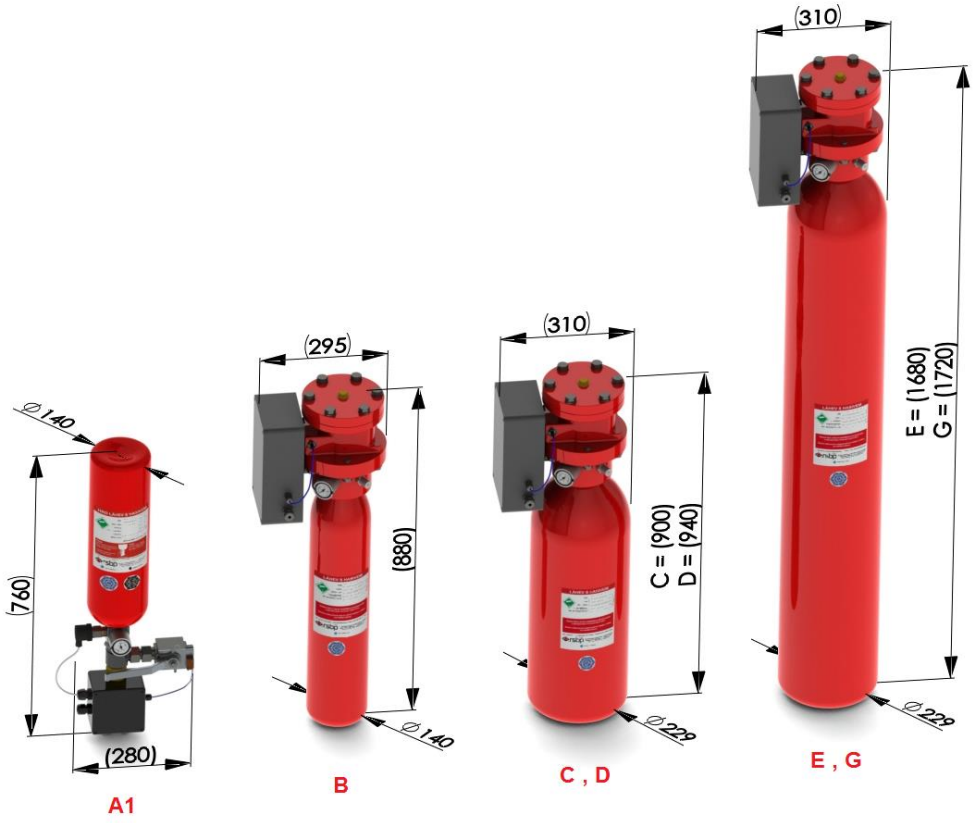
rsbp

An HRD container with extinguishing medium is a cylinder designed to apply fire extinguishing medium to a protected device to prevent or suppress a potential explosion.

The complete HRD container assembly consists of a pressure vessel, an HRD valve with a pressure generator and other accessories.

When an explosion occurs and detects, the pressure generator is fired and initialized to release the belaying element and the HRD vessel valve is opened. This makes it possible to flow the extinguishing medium carried by the compressed carrier gas through the valve from the pressure vessel to the protected device.

This NFPA type HRD container is equipped with a pressure drop sensor and mechanical lock including sensor for locked position indication.



TECHNICAL PARAMETERS							
Container type	A1	A2	B	C	D	E	G
Volume [l]	5,34	5,34	8	20	20	50	50
Weight (inc. extinguishing agent) [kg]	14	15	45	75	90	120	135
Valve size	¾“	¾“	3“	3“	4“	3“	4“
Working pressure [bar]	120	50					
Operating temperature [°C]	-20 to +60						

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HRD NOZZLE DN 20

The HRD nozzle is used to introduce the extinguishing agent into the duct. It is installed in combination with the HRD barrier.

Application of this nozzle is up to maximum pipe diameter of 200 mm.

CLASSIFICATION

Material of outer body	Carbon steel with anti-corrosion coating
Material of membrane	PTFE
Temperature resistant of nozzle	-30 °C to +230 °C

THE PROCESS OF WELDING THE NOZZLE:

In a particular application site is drilled a hole 37 mm in diameter into the technology. The nozzle DN20 is welded around the perimeter to the protected device by a 3 mm welding fitting according to EN ISO 4063 (see Fig. 1). The distance of the nozzle from the axis of the bottle must be chosen with regard to the available length of the connecting hoses (400 mm or 700 mm) and their minimum permissible bending radius is 240 mm.

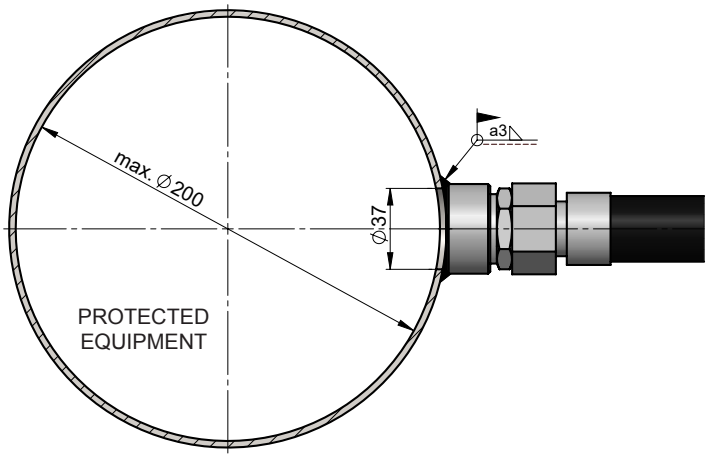

Fig. 1

NOTICE:

The DN20 nozzle assembly must be dismantled prior to welding to prevent internal nozzle parts (seals, diaphragms) from breaking. The DN20 nozzle is disassembled by unscrewing the hexagonal outer body and welding the inner nozzle body to the technology (see Fig.). After welding, reassemble the nozzle.

The corner weld must be welded intermittently to avoid deformation of the nozzle! However, the perimeter weld must be solid, gas-tight and resistant to pressure! All weld joints need to be coated with a suitable coating.

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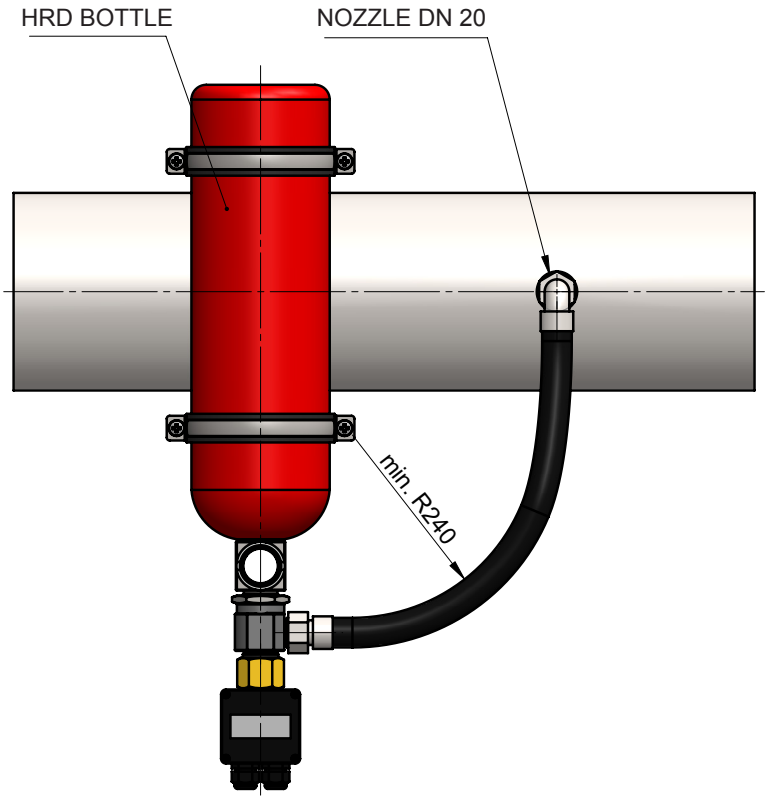

PROCESS OF MOUNTING THE NOZZLE:

In a particular application site is drilled a hole 37 mm in diameter in technology. The DN 20 nozzle is mounted on the protected device via a flange using 4 pieces of M10 screws ISO 4762 (galvanized, strength 10.9) and rivet nuts (Fig. 2).

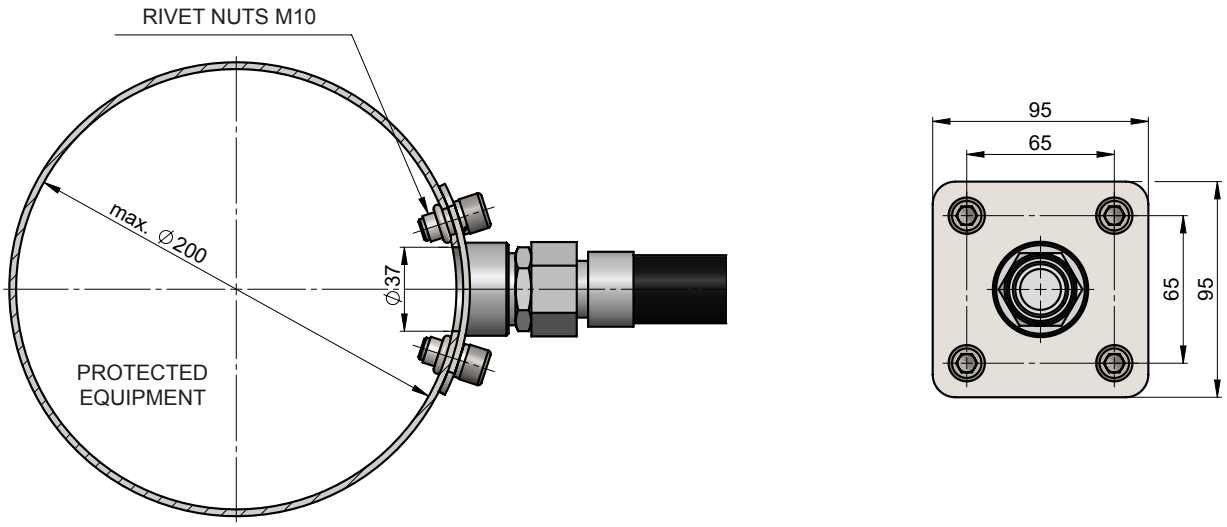

Fig. 2

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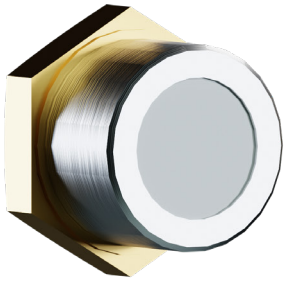
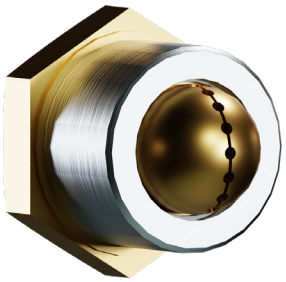
HRD NOZZLE DN 50

Used to insert the extinguishing powder into a protected technology to suppress an explosion. Disk nozzles are used to suppress the explosion (most commonly used for extinguishing on elevators), which extends the cone-shaped extinguishing medium.

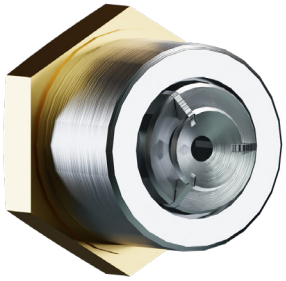
In the HRD barrier to prevent explosion transmission, fan nozzles are used which extend the extinguishing medium in the form of a flat aperture (so-called fan).



CLOSE NOZZLE



OPEN FAN NOZZLE



OPEN DISK NOZZLE

TECHNICAL PARAMETERS

Material of outer body	stainless steel or construction steel
Nozzle material	brass (fun nozzle) or stainless steel (disk nozzle)
Material of diaphragm	stainless steel
Temperature resistant of nozzle	-20 °C to +200 °C

WELDED VARIATION

There is drilled a hole 82 mm diameter in protected technology. The nozzle DN 50 is welded around the perimeter to the protected device by a 3 mm welding fitting according to EN ISO 4063 (see fig. 1). The distance of the nozzle from the axis of the HRD container unit must be chosen taking into account the available length of the connecting hoses (400 or 700 mm) and minimum permissible bending radius of 240 mm.

NOTICE

The DN 50 nozzle assembly must be dismantled prior to welding to prevent internal nozzle parts from being broken. DN 50 nozzle removal is done as follows:

a) enable and unscrew nut with wrench 90 mm
b) pull out the nozzle
c) remove the inner nozzle body
d) remove the O-ring and the diaphragm from the nozzle

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Only the outer nozzle body with the nut is welded to the technology to avoid deformation of the outer body. The corner weld must be welded intermittently to avoid deformation of the outer body! However, the perimeter weld must be solid, gas-tight and resistant to pressure! All weld joints need to be coated with a suitable coating.

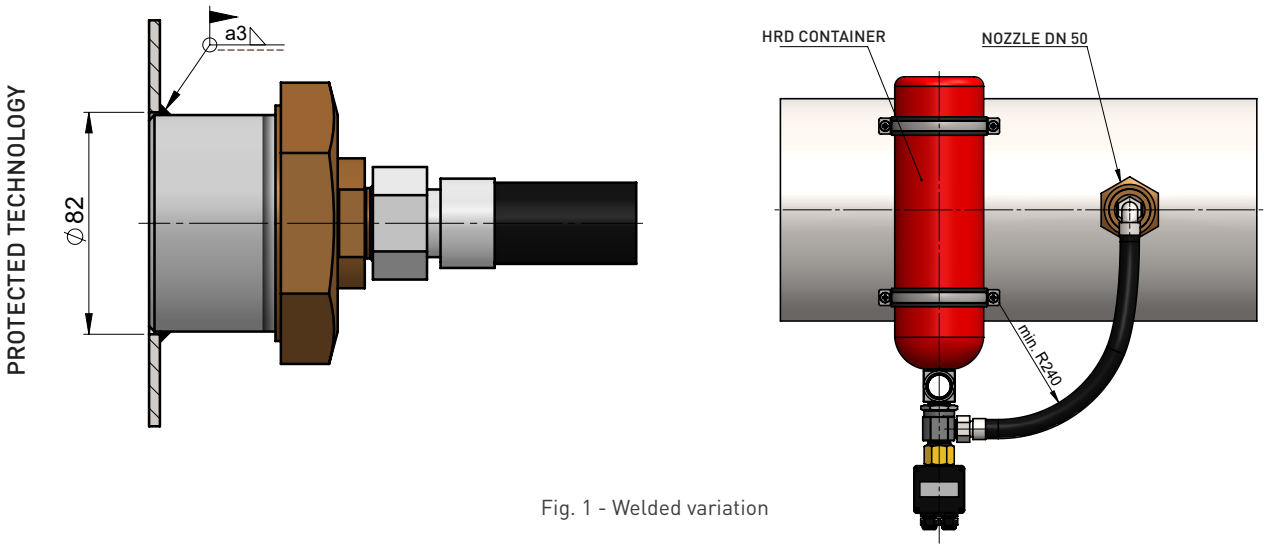

Fig. 1 - Welded variation

SCREWING VARIATION

There is drilled a hole 82 mm diameter in protected technology. The DN 50 nozzle is mounted on the protected technology via a flange using 4 pieces of M10 screws ISO 4762 (galvanized, strength min. 10.9) and rivet nuts (see fig. 2). The distance of the nozzle from the axis of the HRD container unit must be chosen taking into account the available length of the connecting hoses (400 or 700 mm) and minimum permissible bending radius of 240 mm.

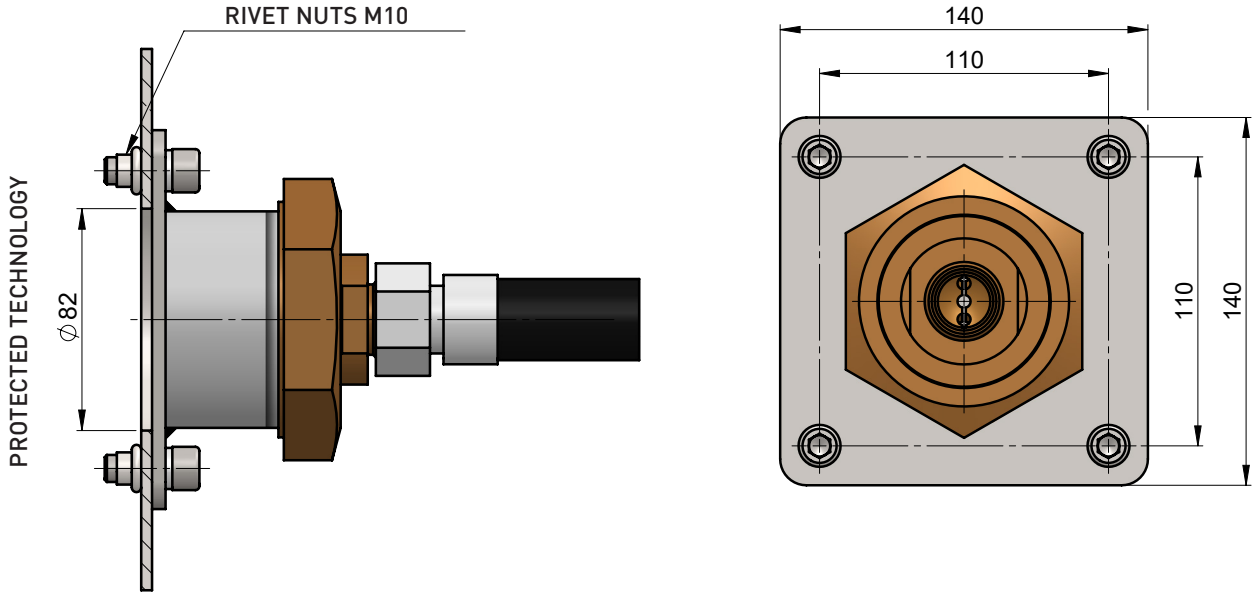

Fig. 2 - Screwing variation

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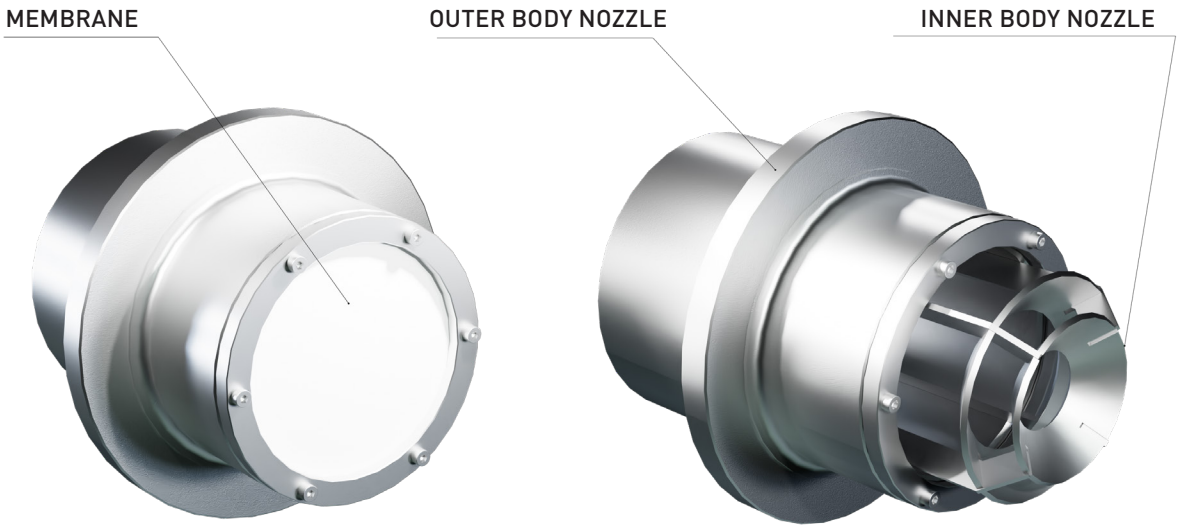
HRD NOZZLE DN 80

A nozzle used to insert the extinguishing powder into a protected technology to suppress an explosion. Part of this nozzle is the so-called HRD adapter, which used to attach the nozzle to the protected technology.

The HRD nozzle is also available in a food version, which is suitable for use in the food industry.



BEFORE ACTIVATING

AFTER ACTIVATING

TECHNICAL PARAMETERS

Outer body material	stainless steel or construction steel
Nozzle material	stainless steel
Material of membrane	PTFE or stainless steel
Temperature resistant of nozzle	-30 °C to +240 °C

WELDED VARIATION

There is drilled a hole 170 mm diameter in protected technology. The HRD nozzle adapter DN 80 is welded around the perimeter to the protected technology by a 5 mm welding fitting according to EN ISO 4063 (see Fig. 1). The HRD nozzle adapter must be welded to the vertical axis according to the Fig 1.

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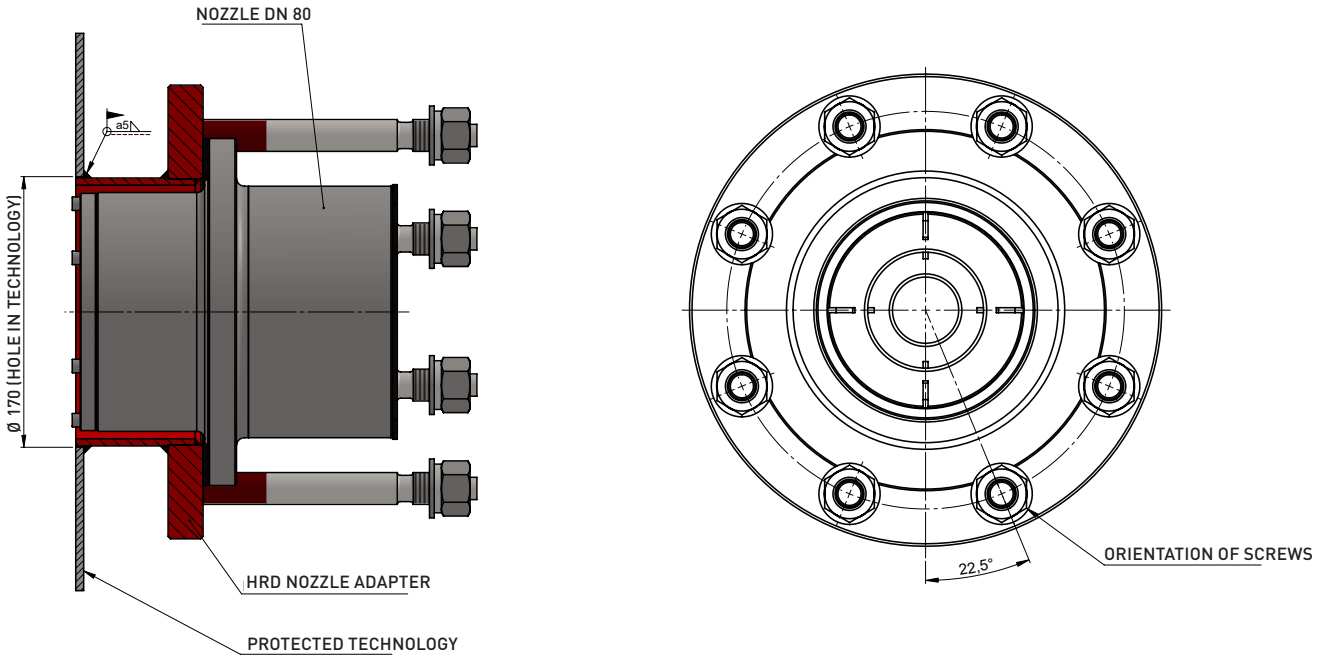

Fig. 1 - Welded variation

NOTICE

The corner weld must be welded intermittently to avoid deformation of the outer body! However, the perimeter weld must be solid, gas-tight and resistant to pressure! All weld joints need to be coated with a suitable coating.

SCREWING VARIATION

There is drilled a hole 160 mm diameter in protected technology. The HRD nozzle adapter DN 80 is mounted on the protected technology via a flange using 8 pcs of M12 screws (galvanized, strength min. 10.9) on a 215 mm pitch circle (see Fig. 2). The HRD nozzle adapter must be welded to the vertical axis according to the Fig 2.

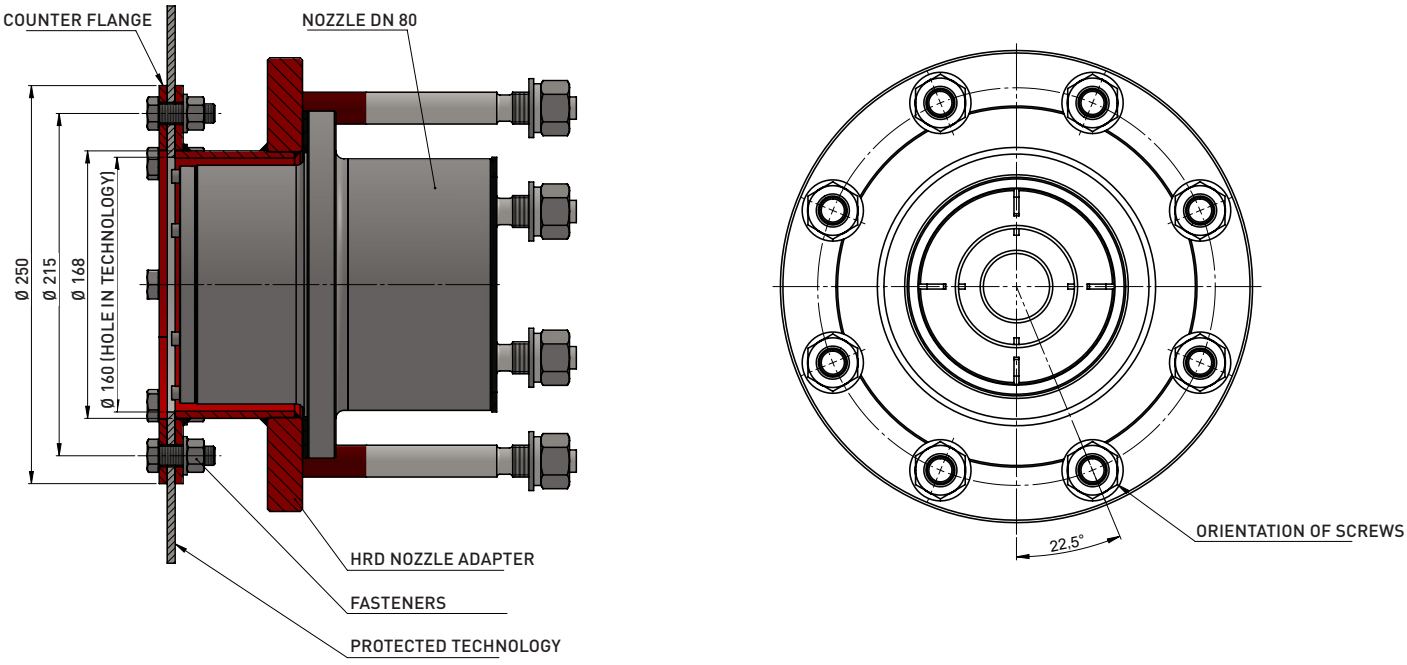

Fig. 2 - Screwing variation

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HRD NOZZLE VIBRO S2

A nozzle that is used to inject powder into a protected technology to suppress an explosion. It is used in technologies with pulsations (vibrating troughs, etc.).

It consists of the bottom part (1) which is welded to the protected technology. The upper part (2) which is attached to the bracket piece (3) and the two parts are connected by a compensator (4). The figure shows the maximum feed rates of the vibrating device in each axis.

TECHNICAL PARAMETERS

Nozzle material		AISI 304 (alternative AISI 316L)
Material of membrans		PTFE (FDA)
Temperature resistance of nozzle		-30 °C to +240 °C
Temperature resistance of compensator		-25 °C to +110 °C (short term 120 °C)
Length of compensator	for amplitude ±40 mm	L = 200 mm
	for amplitude ±50 mm	L = 250 mm
Distance between upper and lower hoop		W = 150 mm

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Fig. 1 - Nozzle position before activating HRD

Fig. 2 - Nozzle position after activating HRD

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