

OPTRAPONS 500 R - Hand nozzle with adjustable flow-rate and jet

DESCRIPTION

The **OPTRAPONS 500 R** is a DMR type fire hand nozzle with adjustable flow-rate and jet, for under pressure water diffusion for fire fighting.

The Optrapons hand nozzle is composed of the following parts :

- A full-time swivel inlet available with couplings (DSP, Storz, etc) or thread.
- Full bore ball-valve to open/shut off.
- A flow-rate selector, adjustable by rotation with positions : 125, 250, 500 l/mn at 6 bar and a flush position distinguishable by its position distant from the flow-rate positions.
- The jet selector allows adjusting continuously from straight jet to diffusion of protection with an angle of 130°. Equipped with a tactical and visual mark at the flash over position (narrow spray jet).

The **RT** model is equipped with spinning teeth. It adjusts water diffusion and improves its density by producing a multitude of droplets. It offers a perfect protection with a conical jet angle up to 130°.

The **RM** model is equipped with a double row of fixed teeth that insures a full conical jet with an angle up to 130° in order to combine attack and maximum protection.

The **Optrapons 500 R** can be used as a low-expansion foam nozzle with synthetic foam compounds (emulsifiers). It produces a low expansion foam of good quality.

The flow selector has two special positions : 200 l/mn and 400 l/mn to correspond to the specific flow of the inductor.



STANDARDS

Hand nozzle, **type 3**, in compliance with the **NF EN 15182-2** standards.

Half coupling in compliance with the **NF S 61.701** standard and other national standards.

DSP couplings have received the **NF certification**.



CONSTRUCTION

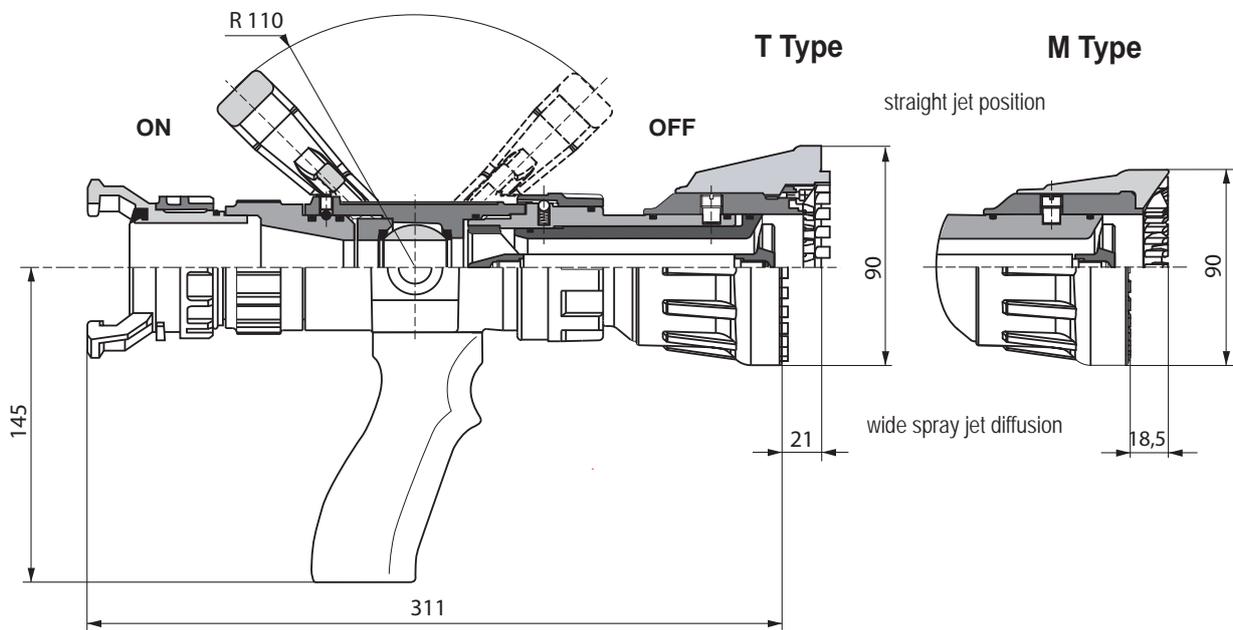
Aluminum alloys of first fusion with heat-treatment.

Protection against corrosion with black hard anodizing process.

Pistol grip and flow-rate selector in synthetic materials.

Ball-valve in nickel-plated brass mounted with PTFE rings.

Rings and gaskets in NBR rubber. Other parts in stainless steel.



CHARACTERISTICS AND PERFORMANCES

Inlet	Part numbers		Weight (kg)
	T Type	M Type	
DSP 40	3040.519RT	3040.519RM	2,4
DSP 65	-	3040.523RM	2,6
Female G 1½	3040.520RT	3040.520RM	2,2
Storz C.52	3040.517RT	3040.517RM	2,6
Inst. M. 2½	3040.516RT	3040.516RM	2,5
Gost 50	3040.525RTG	3040.525RMG	2,5
DSP 40	3040.519RTD	3040.519RMD	2,4
Female G 1½	3040.520RTD	-	2,2

Flow-rate (l/min)	Throw ranges with straight jet (m)				
	horizontal at 30°				vertical at 80°
	3 bar	4 bar	5 bar	6 bar	6 bar
125	13	15,5	15	20	17
250	21	24	25,5	27	22
500	27	32	35	41	32

Performances tested at 6 bar - Effective throw range in meters. Maximum pressure of use 16 bar.

OPTRAPONS 500 R - Hand nozzle with adjustable flow-rate and jet

CHOICE OF JET SELECTOR TYPE

The **OPTRAPONS 500R** hand nozzle is available in two different version of jet selector :

M type

The double row of fixed teeth (excepted on 150 type) produces a full and homogeneous water cone, constituted with very thin droplets, creating an unequalled dense fog .

With the wide spray jet position selected, the firefighter is totally protected by a large shield (130°), avoiding any fire-back.

T type

The combination between the row of fixed teeth and the spinning teeth (turbine) produces a full and homogeneous water cone, constituted with very thin droplets (Available only on 500 type).
 With the wide spray jet position selected, the firefighter is totally protected by a large shield (130°), avoiding any fire-back.

Narrow spray jet position (Flash-over)

Full fog, with an angle between 30° and 50°, providing an optimum extinguishing capacity an throw. The important mass of droplets fights the fire efficiently.

Straight jet position

Solid bore pattern offering a maximum throw and a power permitting the dissociation of materials.

KNEECAP DEVICE INLET

In option, this hand nozzle can be associated to a kneecap device to increase the comfort of handling. It permits to give easily any orientation, reducing the efforts to compensate the rigidity of the hose, therefore it's especially adapted for the introduction tests in order to avoid «**FLASH-OVER**» risks. The average angle in any direction is about 20°.

OPERATION ADVICES

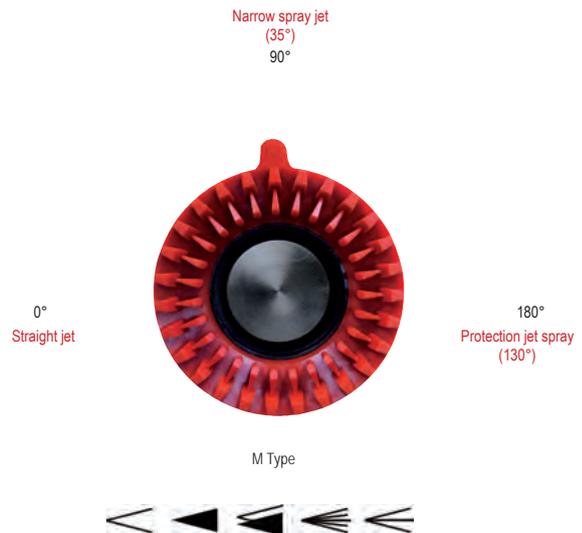
- The instructions of use have to be known and followed.
- The hand nozzle have to be operated by a person aware of the different positions, the recoil force and the force of impact of the straight jet.
- Always use this hand nozzle at the advised pressures and flow-rates and follow the instructions and operation rules for fire-fighters.
- Never us this hand nozzle with straight jet on electrical fire if it's not a **DMRS / HT model** (specific for fire of electric origin).

OPERATION INSTRUCTION

- (a) Connect the swiveling inlet coupling to a water supply hose of adapted diameter.
- (b) Open and shut off ball valve, with ergonomic handle in synthetic material of high resistance to heat and shocks.
- (c) Ergonomic pistol grip.
- (d) Selector device to adjust the flow-rate by rotation of a 90° toothed ring. Positions : 125 - 250 - 500 l/min.
The tactile mark, when on the vertical position, helps the operator to identify, whitout seeing, the position of the nominal flow-rate of the hand nozzle, that is to say 500 l/min at 6 bar.
- (e) Jet selector by a 180° rotation of the head. It has a tactile and audible marking to help the operator to know, even without seeing, on which flow-rate position the hand nozzle is set up.
 Adjustment possible from the straight jet position, to the flash-over position of 35° and to the diffusion of protection of 130°.
The tactile marking when on vertical position, corresponds to the flash-over position.

OTHER INFORMATION

- Frost sensitivity : - 35°C
- Heat sensitivity : 55°C
- Bursting pressure : 70 bar



OPTRAPONS 500 R - Hand nozzle with adjustable flow-rate and jet**PREVENTIVE MAINTENANCE**

 After each intervention, especially with liquids that may cause damages (sea water, foam compound, additives, etc ...):

- Rinse the branchpipe with clean water (inside and outside).
- Control the main functions of the branchpipe :
 - fitting swiveling inlet,
 - opening and closing of the valve,
 - flow-rate selector,
 - jet selector.

SAFETY

The Optrapons 500 has to be maintained against normal or exceptional wear (importance of the preventive maintenance) in order to guarantee the total safety of the user.

CORRECTIVE MAINTENANCE**The swiveling connection no longer rotates or leaks :**

Check that no foreign body is stuck between the coupling (Rep. 1) and the body (Rep. 26).

• Dismounting the coupling (Rep. 1) :

- Loosen and remove the screw (Rep. 4).
- Remove the balls (Rep. 27) by turning the coupling.

• Mounting the coupling (Rep. 1) :

- Change both seals (Rep. 3).
- Clean and lubricate the throat balls and the seals (Rep. 3) (Loctite 8104).
- Introduce the ball by rotating the coupling.
- Assemble and glue the screws (Rep. 4) (Loctite 225).

Check that the swiveling coupling moves freely.

The valve leaks on the «close» position :

Check that no foreign body is stuck in the ball (Rep. 32).

• Removing all tap :

- Disassemble the swivel coupling (Rep. 2) (see § : swiveling connection).
- Loosen and remove the ring (Rep. 5).
- Extract the ball (Rep. 32) on close position.

• Reassembling of the whole valve :

- Change the basis and/or the sphere if this one is not striped.
- Put the seat (Rep. 6) in place in the body (Rep. 26).
- Put the handle (Rep. 2) on close position, on the body (Rep. 26).
- Position the sphere (Rep. 32) on close position, between the pins.
- Mount the PTFE seat (Rep. 6) in the clamping ring (Rep. 5) and screw it (Rep. 5) against the sphere.

The jet selector in no longer rotating :

- Exit the sleeve type (Rep. 16 or 34) forward by identifying's position.
- Unscrew the skids (Rep. 12 and 18) paying attention to the spring (Rep. 13) and to the ball (Rep. 14).
- Pull out the jet selector (Rep. 15 or 33) forward.
- Clean the bearing surface.
- Change the seals (Rep. 7).
- Mount everything together by greasing the seals (ex : Loctite 8106) and pasting the skids (Rep. 12 et 18) (ex : Loctite 225).
- Handing back all and glue (Loctite 480).

The flow-rate selector in no longer rotating :

- Exit the jet selector (See § : The jet selector in no longer rotating).
- Note the position of the selector.
- Loosen the shoe (Rep. 9) and the axis (Rep. 10).
- Slide forward the selector (Rep. 22) paying attention to the spring (Rep. 13) and the ball (Rep. 14).
- Clean the bearing surface,
- Change the seal (Rep. 21) and grease (ex : Loctite 8106),
- Handing back all be in the same position as before disassembly, glue (ex : Loctite 225) between pins (Rep. 9-10 and 9-22).

COMPONENTS AND SPARE PARTS

Rep.	Qty.	Designation	Material	Rep.	Qty.	Designation	Material
1	1	Swivelling coupling (black hard anodized)	Alu	20	1	Stalk of the rectifier (black hard anodized)	Alu
2	1	Handle (red)	Pa	21	1	Ring I 36-32-2	Alu
3	2	Ring I 45-39-3	Nbr	22	1	Flow-rate selector Optrapons 500, anodized	Nbr
4	1	Screw St M6-6 flat head	Stainless steel	23	1	Ring I 52-47-2.5	Alu
5	1	Clamping ring (black hard anodized)	Alu	24	1	Screw, CHC M8x60 A4-80	Nbr
6	2	Basis 230 DN 25	PTFE	25	1	Pistol grip	Stainless steel
7	4	Rings I 48 -43 -2.5	Nbr	26	37	Stop valve body, anodized	Pur
8	1	Rectifier	Stainless steel	27	1	Ball Ø 4	Alu
9	1	Flow rate selector block	Bze	28	2	DSP 40 FM G 11/2B	Stainless steel
10	1	Flow rate selector axis	Stainless steel	29	2	Ring R9	Alu
11	1	Helical grooved body Optrapons 500 (black hard anodized)	Alu	30	2	Pin G07 3-22	Nbr
12	1	Jet Selector adjustable block	Bze	31	1	Pin Optra 500 (nickel plating)	Steel
13	2	Spring D5 d0. 8 H10	Stainless steel	32	1	Ball valve (chromium plating)	Brass
14	2	Ball D5	Stainless steel	33	1	Spinning teeth jet selector 130° (black hard anodized)	Brass
15	1	Jet selector M type 130° (black hard anodized)	Alu	34	1	T Type head 130° (red)	Pur
16	1	M type Head 130° (red)	Pur	35	3	Hold ring 120° (black hard anodized)	Alu
17	1	Cap (black hard anodized)	Alu	36	1	Screw CHC M2.5-5	Stainless steel
18	1	Jet selector block	Bze	37	1	Spinning teeth	PK
19	1	Sliding tube Optrapons 500 (black hard anodized)	Alu	E1	1	Valve sticker	
				E2	1	Flow-rate selector sticker	
				E3		Jet selector sticker	



OPTRAPONS 500 R - Hand nozzle with adjustable flow-rate and jet

