

ATTACK 750 HIGH RISE PRO NOZZLE

Reference:
OMATTACK750HRPRO_NOZZLE
Rev: B

20th January 2021

Delta Fire Ltd

Wendover Road
Rackheath Industrial Estate
Norwich
NR13 6LH
UNITED KINGDOM



ASSISTANCE

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IMPROVEMENT, WE RESERVE THE RIGHT TO AMEND
ANY SPECIFICATION WITHOUT NOTICE



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WARNING

This manual is intended to provide the basic instructions for the operation and maintenance of Delta Nozzles. Please carefully study and understand these operating instructions before use since they contain important safety information.

Operating this Nozzle without understanding the manual and receiving proper training can be dangerous.

All Delta Nozzles should only be operated by trained personnel who are familiar with the potential hazards in using this type of equipment.

- The Delta Attack High Rise Pro Nozzle is suited to a wide range of firefighting scenarios and if maintained properly will provide the user with many years of trouble free service.
- For use with fresh water, sea water and standard fire fighting foam compound.
- Specially profiled Stainless Steel Ball Valve provides ease of rapid nozzle opening & closing (pulsing).
- Pattern Shaper/Front Bumper twists to adjust the stream pattern from wide spray to straight stream. Raised Pattern Indicator allows for ease of selecting 30 degree spray position aiding limited visibility operations.
- Raised stainless steel Flow Indicator.
- Stainless Steel Spinning Turbine Teeth producing high performance spray patterns.
- 'Click' setting ensures that the narrow spray angle is easily held and identified.
- An optional stainless steel inlet filter prevents debris entering the Nozzle. Finer particles can be eliminated by flush setting.

Low Maintenance

Stainless Steel Spinning Teeth

A Ten Year Warranty backed up by excellent customer service and support

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STAINLESS STEEL SPINNING TEETH

The stainless steel spinning teeth produce uniform dense spray with optimum droplet size for heat absorption. The stainless steel spinning teeth are not only extremely efficient in generating these high performance uniform sprays, are of rugged construction therefore reducing maintenance and downtime significantly over the life of the nozzle.

LOW MAINTENANCE & RUGGED CONSTRUCTION

The computer-aided design means that all Delta Attack Nozzles requires only minimal maintenance.

POWERFUL FOG PATTERN

Very fine central water droplets are carried by heavier outside droplets.

TEN YEAR WARRANTY

Manufactured in the United Kingdom under an ISO 9001 Quality System
Each Delta Nozzle is flow & pressure tested prior to shipment and is guaranteed against manufacturing defect for 10 years.

SPECIFICATION A750-HR

MAIN BODY / BARREL	ALUMINIUM HARD ANODISED			
SPINNING TEETH	STAINLESS STEEL			
FRONT BUMPER	SHOCKPROOF POLYURETHANE			
WEIGHT	2.4 Kg			
INLET TYPE	2.5" Inst Male	Other inlets available		
FLOW RATE	High Flow / Low Pressure 470 @ 2.5 bar Low Flow / High Pressure 270 @ 7 bar			
MAX USE PRESSURE	16 bar			
MAX ADVISED WORKING PRESSURE	12 bar			
MIN OPERATIONAL PRESSURE ¹	2 bar			

¹ Recommended only – Nozzle will function down to 1 bar



Use extra caution at higher pressures

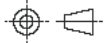
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This exploded view diagram illustrates the assembly of a 4x4 camera. The components are numbered 1 through 48. The main body (1) is the central black cylindrical component. The lens assembly (2-16) is attached to the front, featuring a lens element (2), a filter (3), and a lens cap (4). The viewfinder (5) is attached to the top. The battery pack (6) is attached to the bottom. The mounting bracket (7) is attached to the side. The camera is shown in a disassembled state, with the lens cap (4) and the battery pack (6) highlighted in red. The mounting bracket (7) is shown in black. The camera body (1) is shown in black. The lens assembly (2-16) is shown in black. The viewfinder (5) is shown in black. The battery pack (6) is shown in red. The mounting bracket (7) is shown in black. The camera is shown in a disassembled state, with the lens cap (4) and the battery pack (6) highlighted in red. The mounting bracket (7) is shown in black. The camera body (1) is shown in black. The lens assembly (2-16) is shown in black. The viewfinder (5) is shown in black. The battery pack (6) is shown in red. The mounting bracket (7) is shown in black.

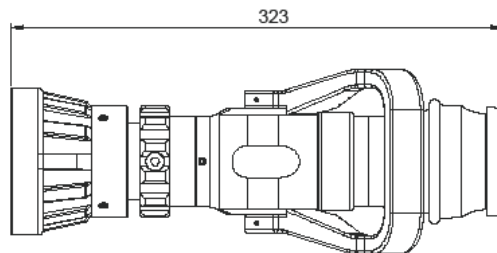
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	XNPF750098	A750 PRO BODY	1
2	XNPF100206	CONTROL HANDLE PTFE BEARING	2
3	XNPF500205L	CONTROL HANDLE DRIVE SPINDLE LH	1
4	XNPF500205R	CONTROL HANDLE DRIVE SPINDLE RH	1
5	XNAT750110	ATTACK 750 BALL VALVE	1
6	XNAT750105	FRONT 6.8MM PTFE SEAL	1
7	XNAT750106	REAR BALL SEAL 5.5mm	1
8	XNAT750107	ATTACK 750 REAR SEAL HOLDER	1
9	XNPF750201	A750 PRO CONTROL HANDLE	1
10	XOR000115	BODY BARREL O-RING 42 X 3	2
11	XOR000155	53.57 X 3.53 O-RING	1
12	XOR000015	HANDLE DRIVE SPINDLE O-RING 9.6 X 2.4	2
13	XPG000002	PISTOL GRIP HANDLE [BLACK]	1
14	XSC101602	M10 X 16 CHS	1
15	XCL000002	3/16" STAINLESS STEEL COUPLING BALL	64
16	XNAT750050	A750 2.5" BOOSTER COUPLING	1
17	XOR000135	45 X 3.0 O-RING	1
18	XSC060413	BALL PORT GRUB SCREW M6 X 4 A4	2
19	XSC060603	M6 X 1.0P X 6 GRUB SCREW	1
20	XOR000147	A750 PRO BODY/BARREL O-RING	1
21	XNPF750300	A750 PRO BARREL	1
22	XNAT750320	ATTACK 750 STEM	1
23	XNPF750298-2	A750 HR IBS 270 @7 bar & 470 @ 2.5 bar	1
24	XNPF750340	A750 PRO SHAPER - ALUMINIUM	1
25	XNPF7503361	ST REAR PTFE A750 PRO	1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
26	XNAT750336	ATTACK 750 SPINNING TEETH	1
27	XNAT7503361	ST FRONT BEARING PTFE	1
28	XNPF750337	ATTACK 750 PRO RETAINING RING	1
29	XNPF750339R	A750 PRO BUMPER - RED	1
30	XNAT750325	ATTACK 750 BAFFLE	1
31	XSC031002	M3 X 0.5P X 10mm CHS	3
32	XSC051201	M5 X 12 SHBS	1
33	XCL000008	3/32" X 1 1/4" SPRING TENSION PIN	2
34	XSC050503	BODY GRUB SCREW M5 X 5 A4	3
35	XNPF750330	A750 PRO SHAPER GUIDE	1
36	XNPF750343	ATTACK 750 PRO DIAL COLLAR	1
37	XNPF500344	DIAL COLLAR DRIVE PIN	1
38	XNPF500345	A500 PF DRIVE PIN BUSH	1
39	XCL000005	CLICK BALL 3/16TH TORLON	2
40	XCL000025	DIAL COLLAR CLICK SPRING	1
41	XCL000035	DIAL COLLAR CLICK HOLDER STANDARD	2
42	XOR000120	42.52 X 2.62 O-RING	1
43	XOR000085	35 X 2 O-RING	1
44	XNAT750295	A750 BARREL SPRING	1
45	XNPF7503351	A750 PRO SHAPER INSERT	1
46	XSC030602	M3 X 6 SOCKET HEAD SCREW	3
47	XCL000020	CLICK SPRING STANDARD C6605170	1
48	XNAT750296	A750 ANTI SPIN PIN	1
49	XNPF750341	A750 PRO SHAPER SPRING	1

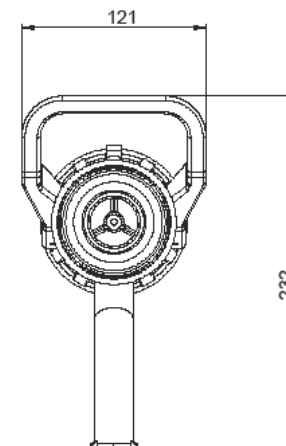
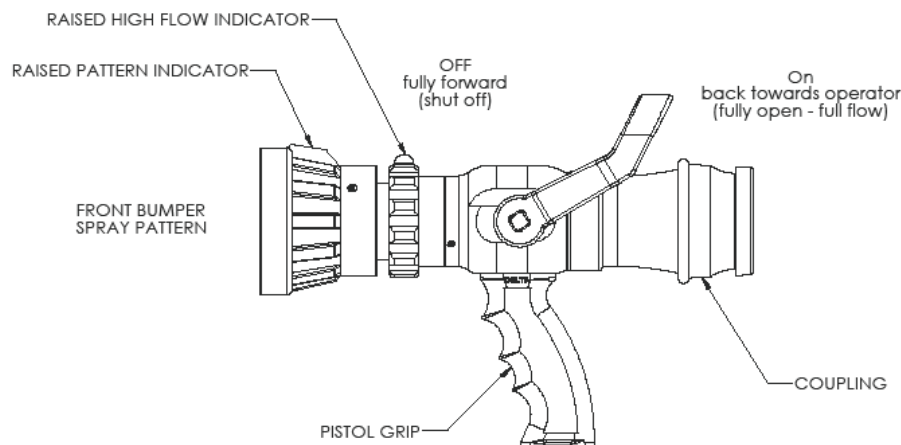
3rd ANGLE PROJECTION



A3



APPROXIMATE WEIGHT 2.1 KGS



A	Initial Release	1775	18/03/2021	PTJ
REV.	DESCRIPTION	ECR	DATE	SIG.



WENDOVER ROAD
RACKHEATH INDUSTRIAL ESTATE
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NR13 6LH
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FAX: (+44 (0)1603 735009)

MATERIAL
AS PARTS

DRAWN PTJ

DATE 18/03/2021

CHECKED PAF

FINISH

AS PARTS

TOLERANCES
(UNLESS OTHERWISE STATED)

0. - $\pm 0.2\text{mm}$

0.0 - $\pm 0.1\text{mm}$

0.00 - $\pm 0.05\text{mm}$

ANGULAR - $\pm 0.5^\circ$

TITLE

A750 PRO

DRAWING No.

N23S70704 - GA

REV.

A

(1) ALL BURRS AND SHARP EDGES TO BE REMOVED.
(2) DO NOT SCALE DRAWING.

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OF

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ANNEX C (normative)

Drawings for hand-held extinguishers for fire service use - Part 2 Combination Description PN16

General Data		Delta Fire Limited	
Manufacturer			
Type	Type 3 variable pattern at a selectable flow		
Type according to	Style		
	BS EN 15182-1:2019 type 3		
	BS EN 15182-2:2019 type 3		
Flow rate settings	A750-S		
	at (Pn) 6 bar		
	360-475-550-750		
	LPM		
Type of spray	Hollow Cone Spray <		
Operational Devices			
Filling System		Full Time restricted wheel	
Gripping Device		Pistol Grip	
Open / Shut-Off Device		Hand operated ball valve	
Jet / Spray System		Rotating element	
Flow Adjustment System		Rotating element	
Requirements			
Number of the relevant subclause of this part of this Standard	Item	A750-S	Test result at 6 bar
OPERATING AND HANDLING			
Dimension (mm) (max)		323 x 240 x 21	
Mass (kg)		2.1	
Torques needed for moving operating elements (Nm)			
Lever			
Valve Handle		1.6 Nm	
Flow adjustment element		0.7 Nm	
Jet adjustment element		0.7 Nm	
Rotating inlet element		1.2 Nm	
Flow adjustment (rotation from minimum - maximum flow)		95°	
Jet adjustment (rotation from straight jet to wide spray jet with a minimum spray angle of 100°)		165°	
PERFORMANCE			
Effective Throw (m)			
Spray Jet (m)		52m	
Wide spray jet angle		120°	
Narrow spray jet angle		30°	
PHYSICS			
Sensitivity to frost (°C)		Passed	
Sensitivity to heat (°C)		Passed	
Non-destruction test (mm)		Passed	
Burst pressure (Bar)		Passed	

BS EN 15182-1:2019
BS EN 15182-2:2019



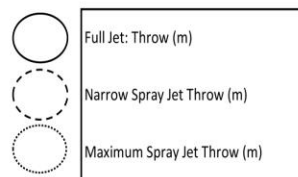
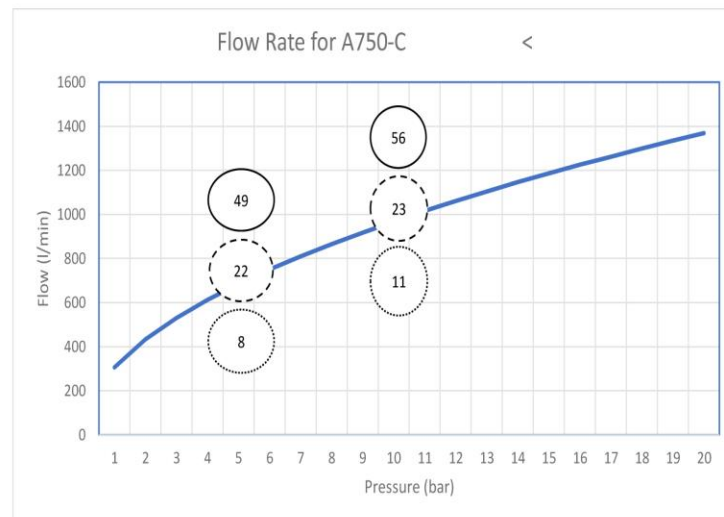
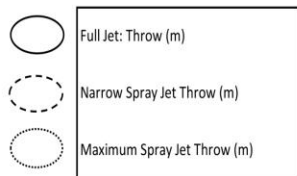
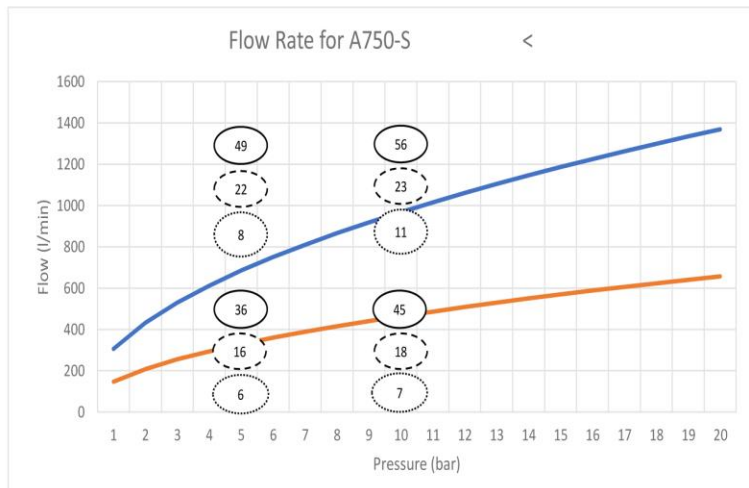
ANNEX C (normative)

Detachable for hand-held branchpipes for fire service use - Part 2 Combination Branchpipes PHL6

General Data		Delta Fire Limited	
Manufacturer		Type 2 variable pattern at a constant flow	
Type			
Type according to		Style	
		BS EN 15182-1:2019 type 2	
		BS EN 15182-2:2019 type 2	
Flow rate settings		A750-C	
		at (Pn) 6 bar	
		750 LPM	
Type of spray		Hollow Cone Spray <	
Operational Devices			
Fitting System		Full Time restricted swivel	
Gripping Device		Rigid Grip	
Open / Shut-Off Device		Hand operated ball valve	
Jet / Spray System		Rotating element	
Flow Adjustment System		Rotating element	
Requirements			
Number of the relevant subclause of this part of this Standard	Item	A750-C	Test result at 6 bar
OPERATING AND HANDLING			
Dimension (mm) (max)	323 x 240 x 21		
Mass (kg)	2.1		
Torques needed for moving operating elements (Nm)			
Lever			
Valve Handle	1.6 Nm		
Flow adjustment element	0.7 Nm		
Jet adjustment element	0.7 Nm		
Rotating inlet element	1.2 Nm		
Flow adjustment (rotation from minimum - maximum flow)	95°		
Jet adjustment (rotation from straight jet to wide spray jet with a minimum spray angle of 100°)	165°		
PERFORMANCE			
Effective Throw (m)			
Spray jet (m)	52m		
Wide spray jet angle	120°		
Narrow spray jet angle	30°		
PHYSICS			
Sensitivity to frost (°C)	Passed		
Sensitivity to heat (°C)	Passed		
Non-destruction test (mm)	Passed		
Burst pressure (bar)	Passed		

1.6 Annex C

EN15182-1 2019, EN15182-2 2019





PRODUCT CAUTIONS

For use with water or standard fire fighting foams only.

Flush immediately after use with fresh water after using with foam, salt or brackish water.

Delta Fire Nozzles are configured for optimum performance and must never be altered in any way unless authorized by the manufacturer in writing.



PRODUCT WARNINGS

The Nozzles should only be operated by trained personnel who are fully conversant with the reaction forces that all Nozzles with similar flows exhibit. Rapid charging with water may cause a pressure surge which has the potential to cause an injury and damage the Nozzle and associated equipment. Always aim the Nozzle in a safe direction before pressurizing with water.

Use extreme caution at higher pressures particularly near the maximum recommended use pressure.

DO NOT exceed the maximum pressure rating of the Nozzle. Exceeding this has the potential to cause an injury or damage the Nozzle.

Delta Attack Nozzles require an adequate supply of Nozzle pressure and / or flow in order to provide an effective fire fighting stream. An inadequate water supply will produce an ineffective water stream, and could result in injury, death or loss of property.

Water is a conductor of electricity and the application of water on to high voltage equipment can cause injury or death by electrocution. The amount of current that may be carried back to the Nozzle will depend on the following factors:

- Whether the stream is solid jet or broken spray pattern.
- The line voltage or equipment voltage.
- Distance from the Nozzle.
- Volume of the stream.

The purity of the water - foam solutions and brackish or salt water may be more conductive. Some guidance is given in BS EN 15182-1 : 2007.



Operatives should always inspect their Delta Attack Nozzle prior to and after each use; to ensure it is in good operating condition. See [Section 3.0 Field Maintenance](#) for further details.

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Flow Control Ring with Incorporated Flush

The Attack 750 HR is a dual flow nozzle designed to provide 470 lpm at just 2.5 bar pressure, ensuring that front-line firefighters have adequate water on upper floors when needed. A short rotation of the dial collar provides a secondary flow option of 270 lpm increasing the inlet pressure to ensure high performance in narrow angle spray gas cooling mode.

Flush Setting

Debris may become trapped in the branch which will affect both jet and spray patterns with shortened reach and reduced flow.

In order to remove trapped debris the branch can be flushed by rotating the flow control ring counter clockwise from the operator position into the flush position whilst maintaining water flow. The flush position should be entered when the branch is in a spray setting to reduce the potential change in branch reaction.

-  If large amounts of debris, or if for any reason the debris, is unflushable the operator may have to retreat to a safe area for the branch to be manually cleared.
-  Changes in spray pattern or flushing will also affect branch reaction. The branch operator must always be prepared and trained for these branch reaction changes. Failure to restrain the branch can cause fire fighter injury from loss of footing and/or stream projection.
-  The release of a trapped hose or the sudden kinking or unkinking of a hose can cause rapid changes in pressure and flow and resultant rapid changes in branch reaction which the operatives must always be ready to accommodate safely.

Nozzle Control & Operating Instructions

Front Bumper Spray Pattern

The Delta Nozzles have full water stream pattern control from straight stream to wide spray/fog.

- A. Delta Attack Nozzles have full pattern control from straight stream to wide fog. Turning the Bumper head clockwise (as seen from the operating position behind the Nozzle) moves the Nozzle to straight stream full jet position. Turning the Front Bumper counter clockwise will result in an increasingly wider spray pattern.
- B. The Nozzle reaction is greatest when the Nozzle is in the full jet position. The Nozzle operator must be prepared for a change in reaction as the pattern is changed.
- C. Special care should be taken when the branch is flushed to remove debris. It is recommended that personnel are trained to always flush the branch in a spray setting rather than the full jet position.
- D. If the Nozzle gets out of control or away from the operator, retreat from the Nozzle immediately and DO NOT attempt to regain control whilst flowing water.

Optional click positions can be incorporated to assist fire service personnel to locate and hold special spray angle positions. These angles can be specified by an individual fire brigade to suit operational techniques adopted by the brigade.

The jet reaction will vary with the inlet pressure and it is the responsibility of the individual Fire Service or equivalent agency to determine the physical capability and suitability of any individual to operate this Branch.

The volume of water delivered onto the fire is one of the key factors in extinguishing a fire, and this flow will vary with inlet pressure. This in turn is mainly dependent on the pump appliance pressure/flow output and the friction loss in the delivery hose(s) system. Changes in height relative to the pump will also produce pressure gains or losses according to change in the elevation. These factors should all be considered in the correct use of the branch and appropriate training given.

**WARNING**

Maintenance Checks

Operatives should always inspect their Delta Attack Nozzle prior to and after each use; to ensure it is in good operating condition.

All Delta Nozzles are designed to provide years of reliable low maintenance use and are designed to resist the rigors of operational use. However as a primary operational fire fighting tool on which fire fighter safety and life depends, they must be properly maintained and periodically inspected at intervals according to use and must always be inspected for proper function before each and every operational use.

As a minimum the following should always be checked before use:-

- ✓ There is no obvious damage such as missing, broken or loose parts, damaged labels etc.
- ✓ The Front Bumper Pattern Shaper turns freely and adjusts pattern through the full jet/spray range.
- ✓ No excessive wear or play on the controls.
- ✓ No water leaks.
- ✓ Dial Collar moves smoothly in & out of both click flow positions and enters and completes the flush position operation.
- ✓ The Branch flow is adequate + commensurate with the pump pressure & the Branch reaction is as expected.
- ✓ The Control Handle moves freely and shuts off flow completely.

If any of the above or any other abnormal characteristics are observed, or any controls are either inoperable or difficult to operate, then the Nozzle should be immediately withdrawn from service. The Nozzle must not be used in operational service until the problem has been corrected.

Additional periodic checks are also recommended.

**WARNING**

Delta Nozzles should always only be used for their intended purpose of water delivery and the following should be avoided:

- ☐ Using the Nozzle as a forcible entry tool.
- ☐ Operating above the maximum rated pressure.
- ☐ Prolonged exposures to temperatures above +55° C or below -25° C.
- ☐ Not draining and allowing water to freeze inside the Nozzle.
- ☐ Dropping the Nozzle from excessive height.
- ☐ Operating in a corrosive environment.

Any Nozzle removed from service for repair and or maintenance should be fully tested by a qualified Nozzle technician prior to placing the Nozzle back into service.

3.2 Maintenance

Routine Ongoing Maintenance & Inspection

The Delta Attack Pro Nozzle is manufactured in the UK to the very highest engineering standards under an ISO9001 Quality Management Standard and will provide years of valuable service with occasional inspection and service.

Delta Fire will fully maintain all Nozzles in a factory service at minimal cost.

INSPECTION

The Nozzle should always be examined before each operational use in accordance with the field inspection procedures described in section 4. In addition it is recommended that there is a routine inspection program which covers all these points in a secondary inspection which also ensures that the Nozzle is kept clean and all normal functions are checked.

CLEANING

Delta Nozzles should be kept clean by wiping off any dirt and grease. Diluted detergent in warm water may be used to assist removing external dirt and grease with a stiff brush but the Nozzle should never be soaked in detergent since this will remove all the internal lubrication. The Nozzle should be washed down with clean water and dried with a clean cloth.

Tar can be removed with non-hazardous commercial tar removers.

The Spinning Teeth can be cleaned by removal of the Spinning Teeth Retaining Ring. No lubrication is necessary.

Any other maintenance work should be carried out by trained personnel.

Additional guidance on the level of training required for each level is available from Delta Fire Technical Support Services. Support and comprehensive training courses are actively encouraged in order for Fire Services and other users to ensure the best performance of Delta Fire Nozzles.

3.2.2 Maintenance

Routine Ongoing Maintenance & Lubrication

The Nozzle should be fully inspected and serviced at least annually. It is unlikely that a full service will be required less than every 12 months, but depending on usage periodic lubrication may be required.

The Attack branch should be lubricated periodically according to use.

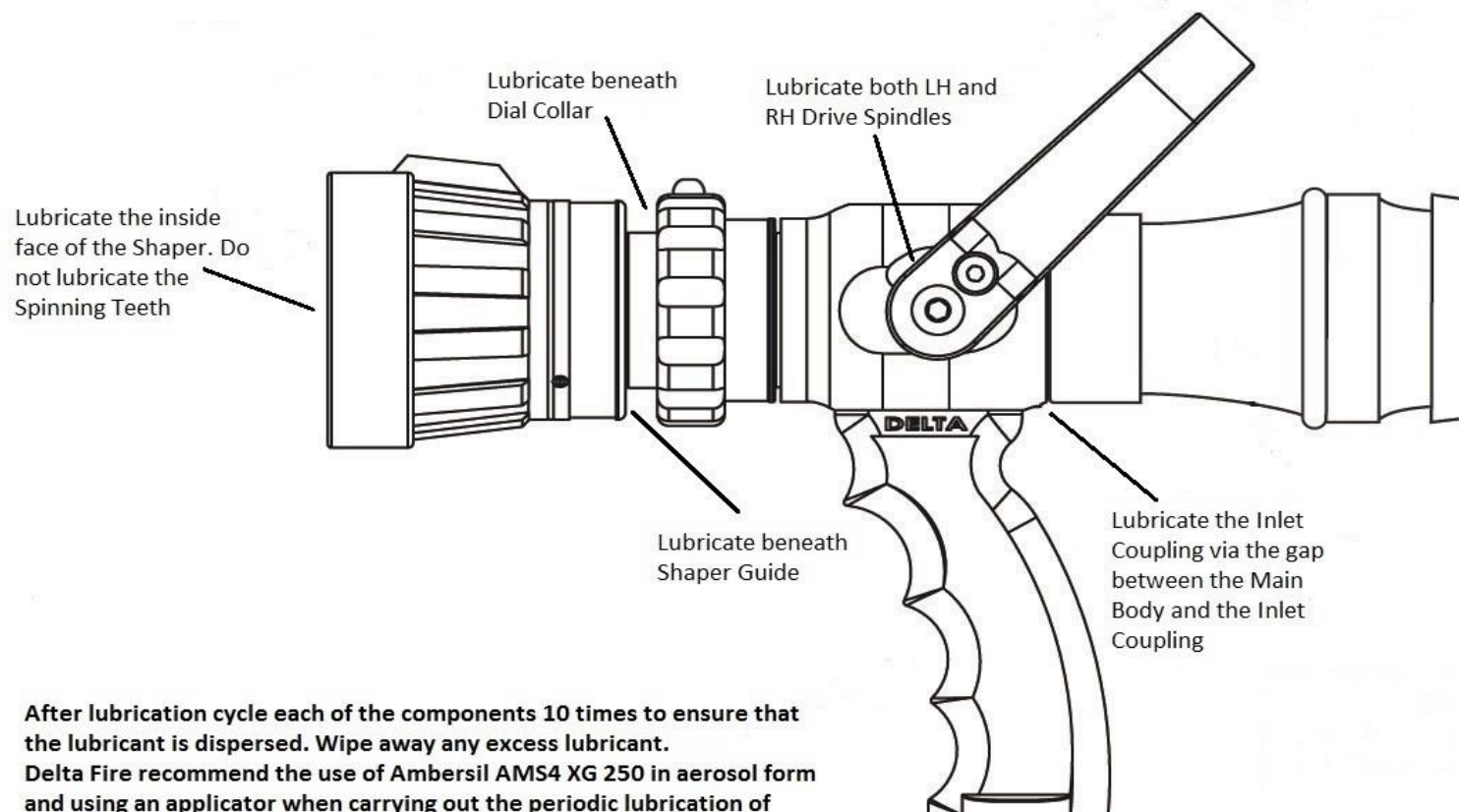
Delta Fire recommends the use of Silicon spray lubricant – Ambersil AMS4 or similar.

- Between the Inlet Coupling and the Main Body. Rotate the Inlet Coupling a few times to ensure that the lubricant is evenly distributed.
- Beneath the Control Handle where it fits over the Control Handle Drive Spindle. Move the Control Handle between the open and closed positions a few times. This action rotates the Control Handle Drive Spindle and ensures that the lubricant is evenly distributed.
- Between the Dial Collar and the Barrel. Rotate the Dial Collar a few times to ensure that the lubricant is evenly distributed around the O-Ring at the rear of the Inner Barrel Slider.
- Between the Shaper Guide and the Barrel. Rotate the Shaper Bumper a few times to ensure that the lubricant is evenly distributed.
- The tip of the Branch between the Shaper Bumper and the Inner Barrel Slider. Rotate the Dial Collar back and forth a few times to ensure that the lubricant is evenly distributed around the O-Ring at the front of the Inner Barrel Slider.

Always be sure to wipe off any excess lubricant.

3.2.2 Maintenance

Routine Ongoing Maintenance & Lubrication



After lubrication cycle each of the components 10 times to ensure that the lubricant is dispersed. Wipe away any excess lubricant. Delta Fire recommend the use of Ambersil AMS4 XG 250 in aerosol form and using an applicator when carrying out the periodic lubrication of moving components.

4.1 Full Service Procedure

Maintenance & Lubrication

Tools Required

- Allen Key No. 2
- Allen Key No. 2.5
- Allen Key No. 3
- Allen Key No. 5
- Allen Key No. 8
- Torque Driver
- 2.5mm Pin Punch
- Small / Medium Screwdriver
- Small Lightweight Hammer
- Rear Seal Holder Tool
- Loctite 222 Light Duty
- Silicone Grease Lubricant

All threads must be thoroughly degreased before re-applying Loctite

Unscrew 3 x M5 Grub Screw from the Main Body.
Unscrew M6 Grub Screw in the Main Body and remove all 32 Stainless Steel Balls. Remove O ring and discard.

Unscrew M6 Grub Screw from the Inlet Coupling.
Remove all 33 Stainless Steel Balls. Remove O ring and discard. Unscrew M6 Grub Screw until the Rear Seal Holder can be removed from the Main Body using the special tool.

Remove the Control Handle Retaining Pins and remove the Control Handle by carefully pulling the handle apart and lifting it off the Main Body.

Remove Stainless Steel Ball Valve and Control Drive Spindles and replace the O rings. Take note to identify the left and right Control Drive Spindle assemblies.

Re-fit a new Front PTFE Seal and check that the O ring is in position.



Clean and apply silicone grease to the left and right Control drive Spindle O rings and reposition inside the Main Body. Refit the Stainless Steel Ball Valve ensuring that the profiled part of the Ball Valve is at the bottom of the Main Body.



Refit the Control Handle ensuring that the orientation is correct. With the Control Handle fully open, reposition the Rear Seal Holder. Move the Control Handle to the closed position and tighten a further $\frac{1}{4}$ turn.



Apply Loctite 222 to the M6 Grub Screw. Tighten to 1.6Nm. Carefully replace the Control Handle Retaining Pins taking care not to damage the anodising.



Refit new O-Ring to the Rear Seal Holder, apply silicone grease and push Coupling into position. Secure Coupling by refitting 33 Stainless Steel Balls. Degrease threaded hole and new M6 Grub Screw. Apply Loctite 222 and refit M6 Grub Screw until slightly proud.



Remove the Baffle Screw. Separate the Baffle from the Stem. Unscrew the Indicator Drive Pin and the Click Holder from the Dial Collar and slide the Dial Collar off the Barrel Assembly.

Remove the Shaper Guide Screws and the Click Holder and slide the Shaper Guide off the Barrel Assembly.

Unscrew the Retaining Ring Screws and remove the Retaining Ring, Stainless Steel Spinning Teeth and both PTFE Bearings.

Apply light pressure to the Bumper to push it off of the Barrel Assembly. Remove Stainless Steel Retaining Band and the Shaper Drive Insert.

Remove the Shaper. Remove both the Brass Bush and the Anti Spin Pin. The Inner Barrel Slider can now be removed from the Barrel Assembly. Clean thoroughly and replace and re-grease both O rings. Re-grease the groove.



Align the slot in the Inner Barrel Slider with the hole in the Barrel for the Anti Spin Pin. Apply pressure to the Inner Barrel Slider and re-locate the Brass Bush and Anti Spin Pin.

Fit the Shaper to the Barrel and secure by refitting the Shaper Drive Insert and the Stainless Steel Retaining Band. The Shaper should now rotate smoothly.

Align the location keys on the Bumper with the recesses on the Shaper. Push the Bumper into position by sliding it over the Shaper ensuring that it's pushed fully forward.

Align the narrow spray indicator on the Shaper Guide with the raised bumper indicator. To secure the Shaper Guide, apply Loctite 222 to the 3 screws and tighten to 1.2Nm. Place firstly the Spring and then the Torlon Ball inside the Small Click Holder, apply Loctite 222 and refit.

Re-position the Dial Collar so that the larger hole is over the Brass Bush. Apply Loctite 222 to the Indicator Drive Pin and tighten to 2.5Nm. Place firstly the Spring and then the Torlon Ball inside the Standard Click Holder, apply Loctite 222 and refit.



4.2 Full Service Procedure

Refit both PTFE Bearings, Stainless Steel Spinning teeth and the Retaining Ring. Apply Loctite 222 to Retaining Ring screws and tighten to a torque of 1.6 Nm. Check that the Spinning Teeth rotate freely.

Reposition the Stem ensuring that it is seated in the recess of the Barrel correctly. Secure Baffle to Stem by applying Loctite 222 and tightening to 2.5Nm.

Fit a new Stem Stabilising Washer & push the assembled Front End into the Main Body and reintroduce 32 Stainless Steel Balls via the M6 hole. Apply Loctite 222 and refit the M6 Retaining Grub Screw.

Ensure that the high flow position and the narrow spray angle have been selected. Rotate the assembled front end until the Indicator Drive Pin and Bumper Indicator are correctly aligned with the Main Body. Secure in position by applying Loctite 222 to the 3 x M5 Grub Screws. Tighten screws to 2.5 Nm.

Leave to stand for 1 hour before performing a full test.



Delta Fire Ltd, Wendover Road, Rackheath Industrial Estate, Norwich, NR13 6LH, warrants the original purchaser of its Delta fire fighting Nozzles and to any beneficiary to whom legal title of the Nozzles is transferred, that the Nozzles shall be free from defect in either parts, material or workmanship for a period of ten years from the date of purchase.

The obligation of Delta Fire Ltd under this warranty is limited to the replacing or repairing of the Nozzles, at the option of Delta Fire Ltd, which are shown by the company to be in a defective condition through either a material or workmanship fault. In order to claim under this warranty the claimant must return the Nozzles for examination by Delta Fire Ltd within a reasonable period.

If Delta Fire Ltd determines that there is a defect attributable to Delta Fire Ltd then it shall repair or replace, at its option, the Nozzle within a reasonable time and assume the cost of the repair or replacement.

Delta Fire Ltd shall have no obligation under the limited warranty if the Nozzles have been misused or neglected. This includes failure to provide reasonable maintenance or if the Nozzles have been altered in any way without the permission of Delta Fire Ltd.

This is a limited express warranty only and Delta Fire Ltd disclaims any implied warranties of merchantability or of fitness for any particular purpose. Since Delta Fire Ltd cannot control the manner or use of its products after their sale, Delta Fire Ltd will not be responsible for any consequential or indirect damages whether to person and/or property due to improper service or misuse.

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