

Operating and Maintenance Manual

Delta DF-7X & DF-7XP Foam Branchpipes



1. General Description

The Delta DF-7X low-expansion foam branchpipes are designed for ease of operational use and combine a compact, lightweight design with exceptional performance capabilities over a wide spectrum of risk scenarios. The DF-7X & DF-7XP can be used with all Fluorine-Free foams including high viscosity types. Very high viscosity concentrates may require a different calibration orifice plate (details on request).

2. Application

Intended for use with any proprietary low-expansion foam compounds (including fluorine-free types) the DF-7X is ideally suited for use on hydrocarbon fires as commonly found within refineries, aviation sectors and the marine industries. The DF-7X produces fully aspirated foam which is first expanded and then accelerated through the discharge tube to provide a throw range of up to 24 metres ensuring operatives are able to remain at a safe distance.

3. Functionality

The DF-7X can be supplied either with or without a 3m foam pick-up tube depending on the preferred method of foam induction. The DF-7X provides the operator with the ability to select between 3 foam induction settings via the 'Foam Induction Selector Dial'. If the foam concentrate is being introduced via the 3-metre foam pick-up tube (optional extra) the operator can choose between '3%' or '6%' settings to match the foam being used.

Alternatively if the foam is being generated via an in-line foam inductor or round-the-pump proportioner then the operator can select the 'Pre-Mix' setting.

4. General Operation

The DF-7X is designed for use with inlet pressures of between 3 and 10 bar and the optimum flow through the branchpipe should be 225lpm @ 5.5 bar which will produce approximately 2,300 lpm of finished, fully aspirated foam.

Based on an optimum inlet pressure of 5.5 bar the DF-7X branchpipe will consume approximately 7 lpm of foam at the 3% setting and 14 lpm of foam at the 6% setting.

5. Using the Pre-Mix Setting

If a pre-mix foam solution is to be provided to the branchpipe via an in-line foam inductor, round-the-pump proportioner or other foam proportioning system then the operator must first select the 'Pre-Mix' setting on the 'Foam Induction Selector Dial'. This dial is easily operated - simply depress and turn the dial to the desired setting. Release the dial and the required position will be locked into place. The branchpipe is now ready for use.

6. Using with 3m Foam Pick-Up Tube

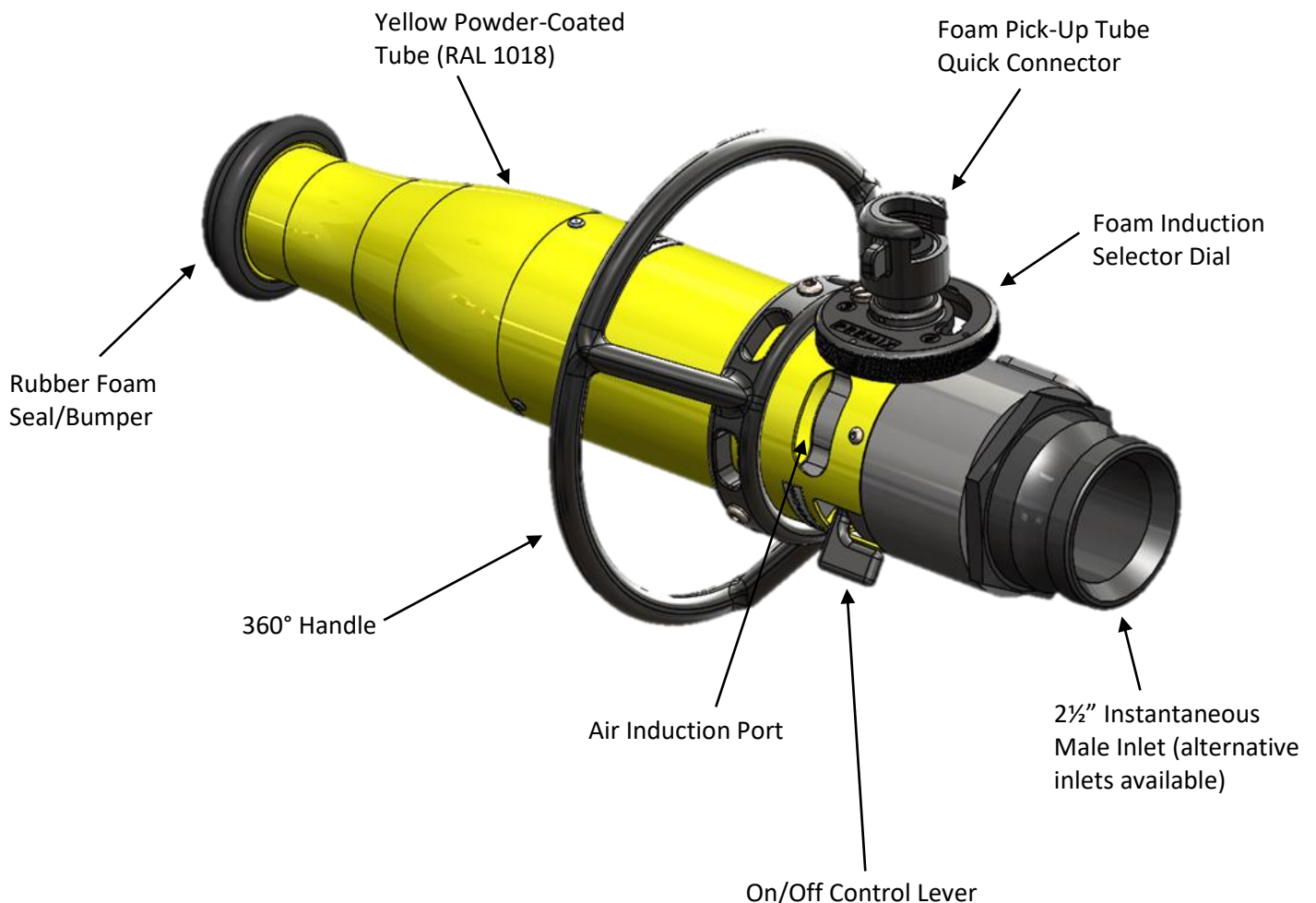
If foam is to be provided directly from a foam drum via the 3m foam pick-up tube the operator must first select either the '3%' or '6%' setting on the 'Foam Induction Selector Dial' to match the percentage of the foam being used. Once the correct induction position has been selected the stainless steel foam pick-up tube should be inserted into the foam drum ready for operation.

7. Construction

The Delta DF-7X foam branchpipes are manufactured in the UK to exacting standards under an ISO9001:2015 Quality Management Standard.

Consisting of two primary parts – (i) the main Body/Tube assembly and (ii) optional 3m Foam Pick-Up Tube, the DF-7X is available in two models – the DF-7XP which incorporates an ergonomic pistol grip and 360° handle and the DF-7X which is supplied with the 360° handle only.

The body is manufactured from highly durable anodised cast aluminium and the discharge tube is manufactured in hard-anodised lightweight aluminium. Both parts are powder-coated in RAL 1018 hi-viz yellow (or RAL 2002 orange on request) providing additional protection and ease of visibility in low light conditions. All machined parts are manufactured in either hard anodised aluminium or 316 stainless steel to ensure long service life and minimal maintenance requirements.



8. Models

Product Code	Inlet	Flow (LPM @ 5½ bar)	Model	Colour	Material
FEP181032	2½" BSP Female	225	DF-7X (No pistol grip)	RAL 1018 Yellow	Anodised Aluminium
FEP181062	2½" BSP Female	225	DF-7X (No pistol grip)	RAL 2002 Orange	Anodised Aluminium
FEP191032	2½" BSP Female	225	DF-7XP (Inc pistol grip)	RAL 1018 Yellow	Anodised Aluminium
FEP191062	2½" BSP Female	225	DF-7XP (Inc pistol grip)	RAL 2002 Orange	Anodised Aluminium
FEP180032	2½" Light Alloy Instantaneous Male	225	DF-7X (No pistol grip)	RAL 1018 Yellow	Anodised Aluminium
FEP180062	2½" Light Alloy Instantaneous Male	225	DF-7X (No pistol grip)	RAL 2002 Orange	Anodised Aluminium
FEP190032	2½" Light Alloy Instantaneous Male	225	DF-7XP (Inc pistol grip)	RAL 1018 Yellow	Anodised Aluminium
FEP190062	2½" Light Alloy Instantaneous Male	225	DF-7XP (Inc pistol grip)	RAL 2002 Orange	Anodised Aluminium
FEP180031	2½" Gunmetal Instantaneous Male	225	DF-7X (No pistol grip)	RAL 1018 Yellow	Anodised Aluminium
FEP180061	2½" Gunmetal Instantaneous Male	225	DF-7X (No pistol grip)	RAL 2002 Orange	Anodised Aluminium
FEP190031	2½" Gunmetal Instantaneous Male	225	DF-7XP (Inc pistol grip)	RAL 1018 Yellow	Anodised Aluminium
FEP190061	2½" Gunmetal Instantaneous Male	225	DF-7XP (Inc pistol grip)	RAL 2002 Orange	Anodised Aluminium
FEPM00006	3m Pick-Up Stick c/w special DF-7X quick-connection	N/A	Stainless Steel Drum Piercer / 3/4" Pick-Up Tube c/w Gunmetal Quick-Connector		
FEP160032	2½" Light Alloy Instantaneous Male	225	For Pre-Mix Foam use only		
FEP161032	2½" BSP Male	225	For Pre-Mix Foam use only		

9. Technical Data

Model	DF250-SX	DF250-PX
Operating Pressure Range	3 bar to 10 bar	3 bar to 10 bar
Optimum Flow Range	225 lpm @ 5.5 bar	225 lpm @ 5.5 bar
Foam Output	Circa 2,300 lpm	Circa 2,300 lpm
Selectable Calibration Options	3% / 6% / Pre-Mix	3% / 6% / Pre-Mix
Foam Concentrates	Suitable for all types	Suitable for all types
Foam Consumption	@ 3% - 7 lpm / @ 6% 14 lpm	@ 3% - 7 lpm / @ 6% 14 lpm
Maximum Throw (m)	20m - 24m (still air conditions)	20m - 24m (still air conditions)
Length (mm)	467	467
Diameter (mm)	210	210
Weight (Kg)	2.0	2.2

10. Maintenance

The DF-7X branchpipes are designed to require very little maintenance but it is essential that the branchpipe and any other associated equipment used in the production of the foam are thoroughly flushed through with fresh water post-use.

Some foams, particularly the more thixotropic varieties, are prone to residue build-up over time if not flushed through after use. This can lead to blockages in the orifice plate or within the waterway that may restrict foam induction and negatively impact performance.

Once flushing has been completed the branchpipe and associated equipment should be dried and stored appropriately ready for next use.

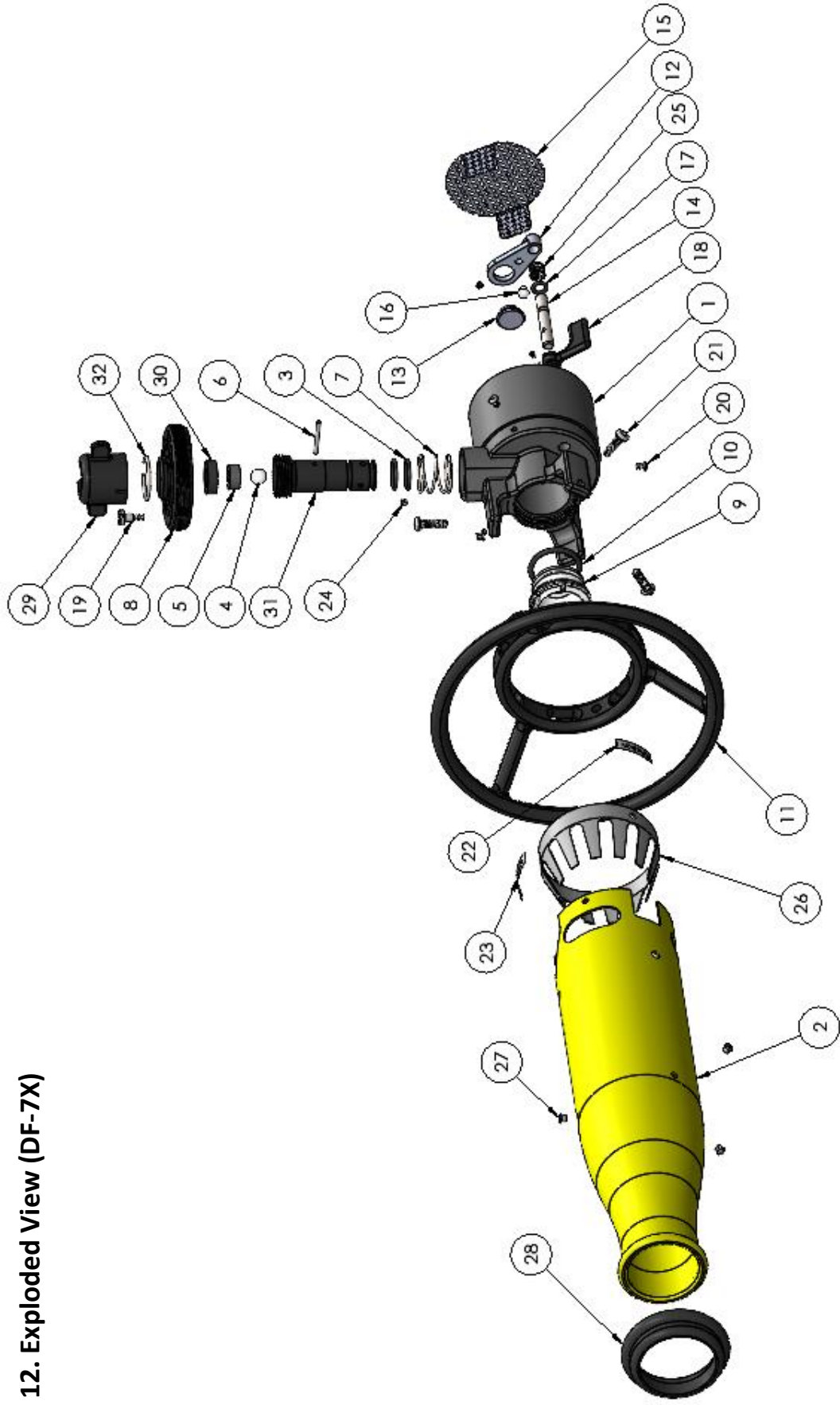
A pre-use visual inspection is recommended to ensure all waterways are clear and all moving parts (dials/levers etc) are functioning properly without restriction. Periodic cleaning of these parts to remove debris or grit is advisable.

11. Bill of Materials (DF-7X)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	XFEP18005	DELTA BRANCHPIPE BODY	1
2	XFEP18010	DELTA BRANCHPIPE OUTLET TUBE	1
3	XOR000002	2.5 X 18 O-RING	2
4	XFEP18015	7/16ths NYLON BALL	1
5	XFEP18020	BRANCHPIPE BALL VALVE TRAP	1
6	XFEP18025	3 X 30 STAINLESS STEEL DOWEL PIN	1
7	XFEP18030	RETURN SPRING	1
8	XFEP18035	BRANCHPIPE PREMIX DIAL	1
9	XFEP18040	BRANCHPIPE VENTURI JET	1
10	XOR000004	3.53 X 31.34 O-RING	1
11	XFEP18045	BRANCHPIPE HANDLE	1
12	XFEP18050	BRANCHPIPE SHUT OFF	1
13	XFEP18055	SHUTOFF INSERT	1
14	XFEP18060	SHUT OFF PIVOT BAR	1
15	XFEP18065	INLET FILTER	1
16	XFEP18070	POSITION CLICK	1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
17	XOR000003	3.6 X 2.4 O-RING	1
18	XFEP18075	SHUT OFF PADDLE	1
19	XFEP18080	LIMIT SCREW	1
20	XSC040601	M4 X 6 SHBS	3
21	XSC062001	M6 X 12 SOCKET BUTTON HEAD SCREW	3
22	XFEP18090	SHUT - OPEN LABEL	1
23	XFEP18095	DELTA FIRE LABEL	1
24	XSC040403	M4 X 4 SCKT GRUB SCREW A4/316	4
25	XFEP18100	CLICK SPRING	1
26	XFEP18105	TUBE INSERT	1
27	XFEP18110	5mm RIVET	3
28	XFEP18115	BRANCHPIPE BUMPER	1
29	XFEP18120	WINGED CAP	1
30	XFEP18125	13.5 X 6.25 O-RING	1
31	XFEP18130	BRACHPIPE FLOW SPINDLE	1
32	XFEP18135	WINGED CAP RETAINING SPRING	1

12. Exploded View (DF-7X)



13. Bill of Materials (DF-7XP)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	XFEP18005	DELTA BRANCHPIPE BODY	1
2	XFEP18010	DELTA BRANCHPIPE OUTLET TUBE	1
3	XOR000002	2.5 X 18 O-RING	2
4	XFEP18015	7/16ths NYLON BALL	1
5	XFEP18020	BRANCHPIPE BALL VALVE TRAP	1
6	XFEP18025	3 X 30 STAINLESS STEEL DOWEL PIN	1
7	XFEP18030	RETURN SPRING	1
8	XFEP18035	BRANCHPIPE PREMIX DIAL	1
9	XFEP18040	BRANCHPIPE VENTURI JET	1
10	XOR000004	3.53 X 31.34 O-RING	1
11	XFEP18045	BRACHPIPE HANDLE	1
12	XFEP18050	BRANCHPIPE SHUT OFF	1
13	XFEP18055	SHUTOFF INSERT	1
14	XFEP18060	SHUT OFF PIVOT BAR	1
15	XFEP18065	INLET FILTER	1
16	XFEP18070	POSITION CLICK	1
17	XOR000003	3.6 X 2.4 O-RING	1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
18	XFEP18075	SHUT OFF PADDLE	1
19	XFEP18080	LIMIT SCREW	1
20	XSC040601	M4 X 6 SHBS	3
21	XSC062001	M6 X 12 SOCKET BUTTON HEAD SCREW	3
22	XFEP18090	SHUT - OPEN LABEL	1
23	XFEP18095	DELTA FIRE LABEL	1
24	XSC040403	M4 X 4 SCKT GRUB SCREW A4/316	4
25	XFEP18100	CLICK SPRING	1
26	XFEP18105	TUBE INSERT	1
27	XFEP18110	5mm RIVET	3
28	XP0000002	PISTOL GRIP HANDLE (BLACK)	1
29	XFEP18115	BRANCHPIPE BUMPER	1
30	XSC101602	M10 X 16 CHS	1
31	XFEP18120	WINGED CAP	1
32	XFEP18125	13.5 X 6.25 O-RING	1
33	XFEP18130	BRACHPIPE FLOW SPINDLE	1
34	XFEP18135	WINGED CAP RETAINING SPRING	1

14 .Exploded View (DF-7XP)

