Eaton Contamination Control Products

FT1455-L4 Bench mount launcher operating instructions

Powering Business Worldwide

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Figure 1

Capabilities

- 7 nozzles: 1/8" (3.175 mm) I.D. through 1 1/4" (31.750 mm) I.D.
- Cycle Time: 1.2 seconds.

Specifications

- Dimensions: 5" (W) by 21" (L) by 8" (H) / 127mm (W) by 533.4mm (L) by 203.2mm (H).
- Weight: 17.0 pounds. (7.71kg).
- Pneumatic requirements:
  - 1/2" NPT Air Line.
  - 80 PSI - 110 PSI maximum.
  - Clean, dry, filtered air or inert gas source is required.

General Information

The Eaton® FT1455-L4 Bench Mount Launcher (Figure 1) was designed to shoot a projectile through hose and tube assemblies to strip out internal contamination such as rubber dust and metal particles from cutting processes, metal flash from crimping operations, and contaminated oil from hoses and tubes in hydraulic systems.

This cleanliness process results in reduced system downtime, extended filter life and reduced failure from premature wear due to system contamination.

The purpose of this manual is to present the basic operating, maintenance, and safety information for the Eaton Bench Mount Launcher.

Safety instructions

Read and understand the operator's manual before attempting to operate this machine. Failure to follow operating instructions could result in personal injury or property damage.

Prevent Unauthorized Operation: Do not permit anyone to operate this machine unless they have read and thoroughly understand this manual.

Wear Safety Glasses: Risk of eye injury! Eye protection is required at all times during the installation, operation and maintenance of this machine. Failure to wear safety glasses could result in personal injury.

Keep work area clean. Cluttered areas and benches invite accidents.

Never operate the Bench Mount unit with the cover removed.

Never point or fire the unit in the direction of any person.

Do not attempt to dislodge a projectile from the Bench Mount Launcher when air supply is connected to the launcher.

Do not place any objects into the launching tube other than Eaton Projectiles.

Launcher and projectiles are only to be used for cleaning hose and tubes rated for at least 110 PSI

Installation / Environment

When installing the bench mount projectile launcher make sure you use a filtered / regulated air or inert gas source.
NOTE: Never use oxygen. A ½" NPT . regulator with gauge and a 5 micron air filter should be installed in the supply line to ensure clean dry air.

The unit must be installed indoors on a level bench top surface, in a clean, dry environment and in a manor that meets consumer safety standards.

Maintenance

Visually inspect filter bowl for accumulation of water, particulate and oil from inlet air source. Clean as needed. Keep the hose assembly area clean to reduce recontamination of hose, tube and pipe assemblies.

Bench mount launcher set up

Step 1: Nozzle and projectile selection

Select nozzle and projectile from nozzle and projectile selection chart on pages 6, 7, 8 and 9.

Step 2: Foot switch connection

Connect the pneumatic foot switch's color coded twin line air tubing to the back of the Bench Mount Launcher as shown. (See Figure 2).

Figure 2

Step 3: Pneumatic connection

Connect a 1/2" I.D. air hose using the supplied Full Flow Quick Connect Coupling to the back of the launchers' 5 micron air filter as shown. (See Figure 3).

Figure 3

Step 4: Nozzle and projectile selection

Reference nozzle and projectile selection Chart to determine correct projectile and nozzle for each application. (Page 7-10). (See Figure 4).

Figure 4

Operation

Step 5: Nozzle installation

Remove the locking ring on the front of the launcher by turning it counter clockwise. Insert the nozzle through the back of the locking ring. Turn the locking ring with inserted nozzle clockwise onto the male thread. The locking ring and nozzle will seat against O-ring.

Note: Do not over tighten the locking ring.

Step 6: Projectile loading and firing

Hold the hose, assembly, tube or pipe tightly onto the nozzle. Drop the selected projectile horizontally into the load chute, depress the foot switch to launch the projectile, keep the foot switch depressed until projectile has exited the hose, assembly, tube or pipe. (See Figure 5, 6 & 7).

Figure 5

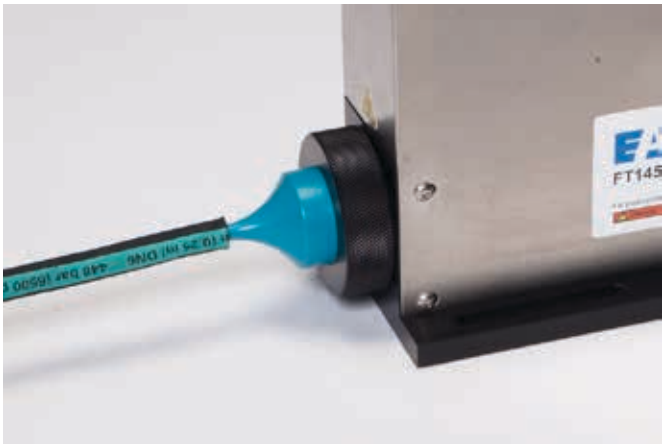

Figure 6

Figure 7

Troubleshooting

Dislodging stuck projectile in nozzle

Warning: Do not attempt to remove projectile with air supply connected

1. Unhook air supply from launcher. (Figure 8)

Figure 8

2. Remove locking ring and nozzle by rotating ring counter clockwise. (Figure 9)

Figure 9

3. Remove stuck or lodged projectile. Reinstall the nozzle and locking ring onto the launcher. (Figure 10)

Figure 10

4. Reconnect the 1/2" I.D. air line. (Figure 8)

Dislodging stuck projectile from behind the sealing ring

Warning: Do not attempt to remove projectile with air supply connected

1. Depress the foot switch to fire the launcher, remove air supply from the launcher with the foot switch in the depressed position. This will keep sealing ring and ram in the forward position and de-energize the unit. (Figure 11)

Figure 11

2. It is now safe to remove any projectiles that are stuck behind the sealing ring and ram.

Dislodging stuck projectile from behind the sealing ring continued...

1. Stuck projectiles will be visible in the loading chute. If projectile can not be removed through the loading chute, remove six allen head cap screws on each side of the stainless steel cover for additional access. (Figure 12, 13 & 14)

Figure 12

Figure 13

Figure 14

1. Once the obstruction is removed, use a air gun to blow out any remaining contamination that may be behind the sealing ring and ram.

2. Replace the stainless steel cover if removal was required before re-connecting the air supply. The sealing ring and ram will automatically return to load position when air supply is connected. (Figure 14 & 15).

Figure 15

Nozzle and projectile selection chart

Recommnedation for Hoses

Nominal diameter

Inches	mm	Nozzle part #	Cleaning projectile part #		
3/16	05	FT1455-N-H06	FT1355-H-06		
¼	06	FT1455-N-H06	FT1355-H-10	or	FT1355-H-12
5/16	08	FT1455-N-H08	FT1355-H-12	or	FT1355-H-14
3/8	10	FT1455-N-H10	FT1355-H-14	or	FT1355-H-16
½	13	FT1455-N-H13	FT1355-H-18	or	FT1355-H-20
5/8	16	FT1455-N-H16	FT1355-H-22		
¾	19	FT1455-N-H19	FT1355-H-26		
1	25	FT1455-N-H25	FT1355-H-33	or	FT1355-H-36
1-1/4	32	FT1455-N-H32	FT1355-H-40	or	FT1355-H-45
1-1/2	38	FT1455-N-H38	FT1355-H-50	or	FT1355-H-55
2	50	FT1455-N-H50	FT1355-H-60	or	FT1355-H-65
2-1/2	63	FT1455-N-U55	FT1355-H-75		
3	76	FT1455-N-U55	FT1355-H-85		
3-1/2	89	FT1455-N-U55	FT1355-H-100		
4	102	FT1455-N-45			
4-1/2	114	FT1455-N-45			

Figure 16

Recommendations for hose assemblies with ORS fittings

ORS fitting dash size	Nozzle part #	Cleaning projectile part #
-4	FT1455-4FFORX	FT1355-H-06 OR FT1355-H-07
-6	FT1455-N-H06	FT1355-H-12
-8	FT1455-N-H10	FT1355-H-16
-10	FT1455-N-H13	FT1355-H-22
-12	FT1455-N-H16	FT1355-H-26
-16	FT1455-N-H19	FT1355-H-33
-20	FT1455-N-H25	FT1355-H-40

Figure 17

Recommendations for hose assemblies with code 61 or 62 flanges

Code 61 or 62 flange dash Size	Nozzle part #	Cleaning projectile part #
-8	FT1455-N-H10	FT1355-H-16
-10	FT1455-N-H13	FT1355-H-22
-12	FT1455-N-H16	FT1355-H-26
-16	FT1455-N-H19	FT1355-H-33
-20	FT1455-N-H25	FT1355-H-40
-24	FT1455-N-H32	FT1355-H-50
-32	FT1455-N-H38	FT1355-H-60

Figure 18

Recommendations for projectiles for hose assemblies with JIC fittings

JIC fitting dash Size	Nozzle part #	Cleaning projectile part #
-4	FT1455-J-06	FT1355-H-06 OR FT1355-H-07
-6	FT1455-J-10	FT1355-H-12
-8	FT1455-J-13	FT1355-H-16
-10	FT1455-J-16	FT1355-H-22
-12	FT1455-J-19	FT1355-H-26
-16	FT1455-J-25	FT1355-H-33
-20	FT1455-J-32	FT1355-H40
-24	FT1455-J-38	FT1355-H-50
-32	FT1455-J-50	FT1355-H-60

Figure 19

**Use larger recommended Eaton Projectiles when cutting hose with an abrasive wheel. The above sizes are recommendations. Due to different types of fittings, and the amount of contamination in the line, the size projectile may need to be adjusted.

Tube sizing chart - nominal inch

Recommended nozzles and cleaning projectiles for tubes (inch)

Outside diameter x wall thickness	Nozzle part #	Cleaning projectile part #	Abrasive projectile part #	Tube projectile part #
1/8" X .030"	FT1455-NT-03	-	-	-
¼" X .035"	FT1455-NT-06	FT1355-H-10	FT1355-A-07	FT1355-T-06
¼" X .049"	FT1455-NT-06	FT1355-H-08	FT1355-A-07	FT1355-T-06
¼" X .065"	FT1455-NT-06	FT1355-H-07	-	FT1355-T-06
5/16" X .035"	FT1455-NT-08	FT1355-H-12	FT1355-A-10	FT1355-T-07
3/8" X .035"-.049"	FT1455-NT-10	FT1355-H-14	FT1355-A-12	FT1355-T-10
3/8" X .065"	FT1455-NT-10	FT1355-H-12	FT1355-A-10	FT1355-T-10
½" X .035"	FT1455-J-13	FT1355-H-16	FT1355-A-16	FT1355-T-14
½" X .049"	FT1455-J-13	FT1355-H-16	FT1355-A-16	FT1355-T-12
½" X .065"	FT1455-J-13	FT1355-H-16	FT1355-A-14	FT1355-T-12
½" X .083"	FT1455-J-13	FT1355-H-14	FT1355-A-12	FT1355-T-12
5/8" X .049"	FT1455-J-16	FT1355-H-22	FT1355-A-20	FT1355-T-16
5/8" X .065"	FT1455-J-16	FT1355-H-20	FT1355-A-18	FT1355-T-16
5/8" X .083"	FT1455-J-16	FT1355-H-20	FT1355-A-18	FT1355-T-14
¾" X .049"-.065"	FT1455-J-19	FT1355-H-26	FT1355-A-24	FT1355-T-20
¾" X .095"	FT1455-J-19	FT1355-H-22	FT1355-A-20	FT1355-T-18
7/8" X .049"	FT1455-J-25	FT1355-H-33	FT1355-A-30	FT1355-T-26
7/8" X .065"	FT1455-J-25	FT1355-H-30	FT1355-A-28	FT1355-T-22
7/8" X .095"	FT1455-N-H16	FT1355-H-28	FT1355-A-26	FT1355-T-22
1" X .065"	FT1455-J-32	FT1355-H-33	FT1355-A-30	FT1355-T-28
1" X .083"-.095"	FT1455-J-32	FT1355-H-33	FT1355-A-30	FT1355-T-26
1" X .120"	FT1455-J-32	FT1355-H-30	FT1355-A-28	FT1355-T-26
1-1/4" X .065"	FT1455-NT-32	FT1355-H-40	FT1355-A-40	FT1355-T-33
1-1/4" X .083"	FT1455-NT-32	FT1355-H-40	FT1355-A-36	FT1355-T-33
1-1/4" X .095"	FT1455-NT-32	FT1355-H-40	FT1355-A-36	FT1355-T-33
1-1/4" X .109"	FT1455-NT-32	FT1355-H-36	FT1355-A-36	FT1355-T-33
1-1/4" X .120"	FT1455-NT-32	FT1355-H-36	FT1355-A-33	FT1355-T-33
1-1/2" X .065"-.120"	FT1455-J-38	FT1355-H-50	FT1355-A-45	FT1355-T-40
1-1/2" X .134"-.148"	FT1455-J-38	FT1355-H-45	FT1355-A-40	FT1355-T-40
2" X .065"-.120"	FT1455-J-50	FT1355-H-60	FT1355-A-55	FT1355-T-50
2" X .134"-.188"	FT1455-J-50	FT1355-H-55	FT1355-A-50	FT1355-T-50
1-1/2" X .134"-.148"	FT1455-J-38	FT1355-H-45	FT1355-A-40	FT1355-T-40
2" X .065"-.120"	FT1455-J-50	FT1355-H-60	FT1355-A-55	FT1355-T-50
2" X .134"-.188"	FT1455-J-50	FT1355-H-55	FT1355-A-50	FT1355-T-50

Figure 20

Note: Tubing must be deburred prior to firing projectiles. Depending on the type of contamination present in the tube, abrasive projectiles may be used to remove rust and scale. Always use an Eaton projectile after the use of an abrasive projectile. Tube projectiles should be used to remove mandrel lubricants, grease and oil.

Recommended sizing chart - metric tubing

Recommended nozzles and cleaning projectiles for tubes (metric)

Outside diameter x Wall thickness	Nozzle part #	Cleaning projectile part #	Abrasive projectile part #	Tube projectile part #
6 X 1.0	FT1455-NT-06x1.5	FT1355-H-07	FT1355-A-06	FT1355-T-06
6 X 1.5	FT1455-NT-06x1.5	FT1355-H-07	FT1355-A-06	#N/A
8 X 1.0	FT1455-NT-08x1.5	FT1355-H-10	FT1355-A-07	FT1355-T-07
8 X 1.5	FT1455-NT-08x1.5	FT1355-H-10	FT1355-A-07	FT1355-T-07
10 X 1.0	FT1455-NT-10x1.5	FT1355-H-14	FT1355-A-12	FT1355-T-12
10 X 1.5	FT1455-NT-10x1.5	FT1355-H-14	FT1355-A-12	FT1355-T-12
12 X 1.0	FT1455-NT-12x2.0	FT1355-H-16	FT1355-A-14	FT1355-T-14
12 X 1.5	FT1455-NT-12x2.0	FT1355-H-16	FT1355-A-14	FT1355-T-14
12 X 2.0	FT1455-NT-12x2.0	FT1355-H-14	FT1355-A-12	FT1355-T-12
14 X 1.0	FT1455-NT-14x2.0	FT1355-H-18	FT1355-A-16	FT1355-T-16
14 X 1.5	FT1455-NT-14x2.0	FT1355-H-16	FT1355-A-14	FT1355-T-14
14 X 2.0	FT1455-NT-14x2.0	FT1355-H-16	FT1355-A-14	FT1355-T-14
15 X 1.0	FT1455-NT-15x2.0	FT1355-H-20	FT1355-A-18	FT1355-T-16
15 X 1.5	FT1455-NT-15x2.0	FT1355-H-18	FT1355-A-16	FT1355-T-16
15 X 2.0	FT1455-NT-15x2.0	FT1355-H-16	FT1355-A-14	FT1355-T-14
16 X 1.0	FT1455-NT-16x2.5	FT1355-H-22	FT1355-A-20	FT1355-T-18
16 X 1.5	FT1455-NT-16x2.5	FT1355-H-20	FT1355-A-18	FT1355-T-16
16 X 2.0	FT1455-NT-16x2.5	FT1355-H-18	FT1355-A-16	FT1355-T-16
16 X 2.5	FT1455-NT-16x2.5	FT1355-H-16	FT1355-A-14	FT1355-T-14
18 X 1.0	FT1455-NT-18x2.5	FT1355-H-24	FT1355-A-22	FT1355-T-20
18 X 1.5	FT1455-NT-18x2.5	FT1355-H-24	FT1355-A-20	FT1355-T-18
18 X 2.0	FT1455-NT-18x2.5	FT1355-H-22	FT1355-A-20	FT1355-T-18
18 X 2.5	FT1455-NT-18x2.5	FT1355-H-20	FT1355-A-18	FT1355-T-16
20 X 1.5	FT1455-NT-20x3.0	FT1355-H-26	FT1355-A-24	FT1355-T-22
20 X 2.0	FT1455-NT-20x3.0	FT1355-H-24	FT1355-A-22	FT1355-T-20
20 X2.5	FT1455-NT-20x3.0	FT1355-H-24	FT1355-A-20	FT1355-T-18
20 X3	FT1455-NT-20x3.0	FT1355-H-22	FT1355-A-20	FT1355-T-18
22 X1	FT1455-NT-22x2.0	FT1355-H-30	FT1355-A-28	FT1355-T-26
22 X1.5	FT1455-NT-22x2.0	FT1355-H-30	FT1355-A-28	FT1355-T-26
22 X2	FT1455-NT-22x2.0	FT1355-H-30	FT1355-A-28	FT1355-T-26
25 X2	FT1455-NT-25x3.0	FT1355-H-33	FT1355-A-30	FT1355-T-28
25 X2.5	FT1455-NT-25x3.0	FT1355-H-30	FT1355-A-28	FT1355-T-26
25 X3	FT1455-NT-25x3.0	FT1355-H-30	FT1355-A-28	FT1355-T-26
28 X2	FT1455-NT-28x2.5	FT1355-H-36	FT1355-A-33	FT1355-T-33
28 X2.5	FT1455-NT-28x2.5	FT1355-H-36	FT1355-A-33	FT1355-T-30
30 X2	FT1455-NT-30x4.0	FT1355-H-36	FT1355-A-33	FT1355-T-33
30 X2.5	FT1455-NT-30x4.0	FT1355-H-36	FT1355-A-33	FT1355-T-30
30 X3	FT1455-NT-30x4.0	FT1355-H-36	FT1355-A-33	FT1355-T-30
30 X4	FT1455-NT-30x4.0	FT1355-H-36	FT1355-A-33	FT1355-T-30
35 X2	FT1455-NT-35x3.0	FT1355-H-45	FT1355-A-40	FT1355-T-40
35 X3	FT1455-NT-35x3.0	FT1355-H-40	FT1355-A-36	FT1355-T-36
35 X4	FT1455-N-H25	FT1355-H-40	FT1355-A-36	FT1355-T-33
35 X5	FT1455-N-H25	FT1355-H-36	FT1355-A-33	FT1355-T-30
38 X2.5	FT1455-NT-38x5.0	FT1355-H-50	FT1355-A-45	FT1355-T-40
38 X3	FT1455-NT-38x5.0	FT1355-H-50	FT1355-A-45	FT1355-T-40
38 X4	FT1455-NT-38x5.0	FT1355-H-45	FT1355-A-40	FT1355-T-40
38 X5	FT1455-NT-38x5.0	FT1355-H-40	FT1355-A-36	FT1355-T-36
42 X2	FT1455-NT-42x3.0	FT1355-H-55	FT1355-A-50	FT1355-T-50
42 X3	FT1455-NT-42x3.0	FT1355-H-50	FT1355-A-50	FT1355-T-45
50 X3	FT1455-NT-50x5.0	FT1355-H-60	FT1355-A-55	FT1355-T-55
50 X5	FT1455-NT-50x5.0	FT1355-H-55	FT1355-A-55	FT1355-T-50
50 X6	FT1455-NT-50x5.0	FT1355-H-55	FT1355-A-50	FT1355-T-50

Figure 21

Tubing must be deburred prior to firing projectiles. Depending on the type of contamination present in the tube, abrasive projectiles may be used to remove rust and scale. Always use an Eaton projectile after the use of an abrasive projectile.

Pipe sizing chart

Recommended nozzles and cleaning projectiles for pipes (inch)

SCH 40	Nozzle part #	Cleaning projectile part #	Abrasive projectile part #
1/4"	FT1455-N-H08	FT1355-H-14	FT1355-A-12
3/8"	FT1455-N-H13	FT1355-H-18	FT1355-A-16
1/2"	FT1455-N-H16	FT1355-H-20	FT1355-A-18
3/4"	FT1455-N-H19	FT1355-H-30	FT1355-A-26
1"	FT1455-N-H25	FT1355-H-36	FT1355-A-33
1-1/4"	FT1455-N-H32	FT1355-H-45	FT1355-A-40
1-1/2"	FT1455-N-H38	FT1355-H-55	FT1355-A-50
2"	FT1455-N-H50	FT1355-H-65	-
2-1/2"	FT1455-N-U55	FT1355-H-75	-
3"	FT1455-N-U55	FT1355-H-85	-
3-1/2"	FT1455-N-U55	FT1355-H-100	-

SCH 80	Nozzle part #	Cleaning projectile part #	Abrasive projectile part #
1/4"	FT1455-N-H06	FT1355-H-12	FT1355-A-10
3/8"	FT1455-N-H10	FT1355-H-16	FT1355-A-14
1/2"	FT1455-N-H13	FT1355-H-20	FT1355-A-16 or FT1355-A-18
3/4"	FT1455-N-H19	FT1355-H-26	FT1355-A-22
1"	FT1455-N-H25	FT1355-H-36	FT1355-A-30
1-1/4"	FT1455-N-H32	FT1355-H-45	FT1355-A-40
1-1/2"	FT1455-N-H38	FT1355-H-50	FT1355-A-45
2"	FT1455-N-H38	FT1355-H-60	FT1355-A-55
2-1/2"	FT1455-N-H50	FT1355-H-70	-
3"	FT1455-N-U55	FT1355-H-85	-
3-1/2"	FT1455-N-U55/90	FT1355-H-110	FT1355-A-110
4"	FT1455-N-4.5LN	FT1355-H-115	FT1355-A-110

SCH 160	Nozzle part #	Cleaning projectile part #	Abrasive projectile part #
1/2"	FT1455-N-H10	FT1355-H-16	FT1355-A-14
3/4"	FT1455-N-H16	FT1355-H-20	FT1355-A-18
1"	FT1455-N-H19	FT1355-H-30	FT1355-A-26
1-1/4"	FT1455-N-H25	FT1355-H-36	FT1355-A-33
1-1/2"	FT1455-N-H32	FT1355-H-45	FT1355-A-40
2"	FT1455-N-H38	FT1355-H-55	FT1355-A-45 or FT1355-A-50
2-1/2"	FT1455-N-H50	FT1355-H-65	FT1355-A-60
3"	FT1455-N-U55	FT1355-H-75	
4"	FT1455-N-U55	FT1355-H-100	

Figure 22

Abrasive projectiles may be used when there is a build-up of contamination, surface rust or scale. For pipe applications where there is a greater build-up of contamination, surface rust or scale, use a grinding projectile. Pipe must be straight for this projectile.

Note: To ensure cleanliness, an Eaton projectile must be used after abrasive. Please call if you need help in sizing your application for the correct nozzles and projectiles.

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