FX turbo 4-stage hand pump disassembly and re-assembly steps

Disassembly Steps	Tools
Remove handlebar (22) and footplate (12)	hex key 3mm
Remove grub screws (26)	hex key 2.5mm
Tap off handle mount (7)	plastic mallet
Remove moisture ventilation screw (21)	-
Remove manometer (18)	10mm wrench
Remove adaptor	pipe wrench
Tape over holes on pump base (11)	-
Loosen 28mm tube (9) a few turns to elevate ~ 8 mm	-
With pump base in vise, remove main valve housing (13)	vise, 28mm wrench
Disconnect valve pipe (16) from main housing (13)	28mm wrench, pipe wrench
Remove spring (15) and main valve (14)	-
Remove 28mm tube (9)	-
Clamp 18mm tube (6) in vise, remove big piston (8)	vise, rubber strips, pipe wrench
Clamp 10mm tube (4) in vise, remove middle piston (5)	vise, rubber strips, pipe wrench
Tap 5mm rod (1) to push inlet valve head (2) out of 18mm tube (6)	brass or plastic punch
Remove valve head pin (25) and rubber ball (31)	-
Unscrew 10mm tube (4) from main valve housing (13)	
Remove all O-rings	-
Remove silicon beads from pump base, wash and dry	-
Clean all threads	wire brush, dentist pick
Clean pistons and valves	pipe-cleaner, Q-tips, rags
Clean all tubes and the rod (1, 4, 6, 9)	degreaser, rags, cleaning rods

Notes

Avoid scratching the sliding surfaces of rod (1) and tubes (4, 6, 9). Use rubber sheets with vise and pipe wrench, e.g. sheets cut from old bicycle inner tubes, then roughened with sandpaper. This worked well to grip the workpiece. If they get mangled or perforated, discard and cut fresh ones!

Re-assembly steps	Tools
Install and lightly lube all O-rings	pin, toothpick
Lightly grease interior of 28mm tube (9)	brush or rag
Install and lube O-rings (32) and (34)	-
Put clean, dry silicon beads back into main valve housing (13)	-
Reassemble main valve housing (13) with all O-rings and parts **	vise, rubber strips, pipe wrench
Attach main valve housing (13) to pump base (11) **	vise, 28mm wrench
Pass 5mm rod (1) up through middle piston (5) *	-
Insert 5mm rod (1) into 10mm tube (4) *	-
Screw middle piston (5) onto 10mm tube (4) **	vise, rubber strips, pipe wrench
Lube O-ring (30) on middle piston (5), insert into 18mm tube (6) *	-
Extend 5mm rod (1) from middle piston (5)	-
Attach inlet valve head (2) to 5mm rod (1), tap into 18mm tube (6)	plastic mallet
Screw big piston (8) onto 18mm tube (6) **	vise, rubber strips, pipe wrench
Extend 10mm tube (4) from bottom of 18mm tube (6)	-
Screw 10mm tube (4) into main valve housing (13) **	vise, rubber strips, pipe wrench
Lube O-ring (36) on big piston	-
Slide 28mm tube (9) over 18mm tube (6)	-
Tap Handle mount onto 18mm tube	plastic mallet
Tighten grub screws (26)	hex key 2.5mm
Attach handle bar and footplate	hex key 3mm

Notes

*- Ensure a thin layer of grease gets spread over the sliding surfaces of the rod and tubes. The recommended Lubricant is FUCHS RENOLIT RHF1.

**- Apply Loctite 242 or 243 to threads prior to attaching.