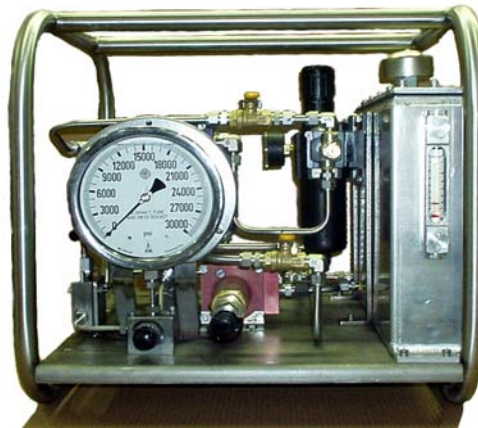




**AUTO TENSION
HTP-2000
STUD TENSIONERS POWER UNIT
WITH SUCTION PUMP**



Operation and Maintenance Manual

Keep for Your Records

TABLE OF CONTENTS

SAFETY PRECAUTIONS	4
INTRODUCTION	5
OPERATION INSTRUCTIONS	8
TESTING	10
PARTS LIST	11
STORAGE.....	13
TROUBLESHOOTING	14
WARRANTY.....	15
REPAIR AND SERVICE	15
HELP AND ASSISTANCE	15

SAFETY PRECAUTIONS

Always wear safety glasses.

Never pressurize the system with uncovered couplings.

Always have the power unit connected to the harness or a blank coupling.

Before connecting the air supply, ensure that the Pump Control Valve is closed and the Fluid Pressure Return Valve is open.

Connecting the air supply with the Pump Control Valve open and Fluid Pressure Return Valve closed will immediately start the pump and may lead to excessive system pressures; especially if the pump has not been prepared as stated.

Always ensure that all of the quick disconnect couplings are properly coupled before pressurization.

Never operate the pump without oil in the lubricator, as this will quickly damage the pump.

Minimize the amount of time the system is pressurized.

NEVER leave the system unattended while it is pressurized.

Never position yourself over a pressurized hydraulic stud tensioning device.

Ensure proper thread engagement between the puller and the stud.

Never exceed the maximum stroke of the tensioning load cell.

Never exceed Fastorq Bolting Systems, Inc, recommended pressures.

AIR DRIVEN **HYDRAULIC POWER UNIT**

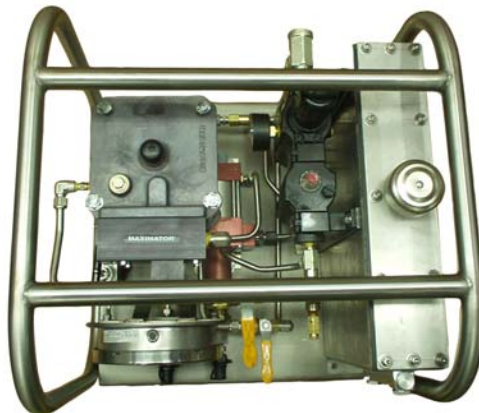
This high speed hydraulic unit is compact and simple to use. Measuring 21.5 in (54,6 cm) long by 19.5 in (49,5 cm) wide and 21.5 in (54,6 cm) high, the unit weighs 130 lb (54,4 Kg). The reciprocating piston pump converts 40 psi (2,75 Bar) of air into 30,000 psi (2.000 Bar) of hydraulic fluid pressure. The stainless steel tubular frame resists corrosion and protects all the components.



IMPORTANT NOTE
ALL POWER UNITS ARE DRAINED OF HYDRAULIC FLUID BEFORE LEAVING THE FACTORY.
USER MUST REFILL WITH A QUALITY

MAJOR COMPONENTS

- A. Air filter/regulator - One piece unit regulates the air pressure supplied to the main pump and ensures the air is clean and dry. Accumulated water should be drained from the bowl by turning the drain cock on the bottom counterclockwise.



- B. Air Lubricator - A mist-type lubricator mixes oil with the air to maintain proper lubrication of the internal parts of the main pump. It should be adjusted to supply one drop for every 40 strokes of the pump. Do not operate unit if reservoir is empty. Refill using light spindle oil 80-120 SSU @ 100°F.

NOTE: In order to maximize the efficiency of the Return Pump, the air lubricator is bypassed allowing the air supply to reach the return pump directly. Therefore, it is necessary to squirt the same type of light spindle oil in the air line leading to the return pump on a regular basis through the T-connection .

- C. Pump Control Valves - The brass valves control air supply to the main pump and the return pump to allow precise control of the pumps speed.



- D. Fluid Pressure Return Valve - The stainless steel valve releases the pressure of the system, and allows hydraulic fluid to return to the reservoir. To open turn handle counter-clockwise.

- E. Reservoir - A 2.5 gallon tank (9.5 l) with air breather cap and side mounted sight gauge. To ensure proper operation of the tensioning tools, make sure the level of hydraulic oil is at least half way up the sight gauge. Fill reservoir using a hydraulic oil with viscosity rating of ISO 32.



- F. Main Hydraulic Pump - A full breakdown detail for the 30,000 psi (2.000 Bar) pump is available upon request.
- G. Return Hydraulic Pump - A full breakdown detail for the pump is also available upon request.

- H. Pressure Gauge - The liquid filled pressure gauge measures hydraulic pressure output from 0 to 30,000 psi . (0 to 2.000 Bar).



- I. Hydraulic Pressure Supply Ports - Quick disconnect type sealing to prevent dirt penetration and oil leaks.



OPERATION OF HYDRAULIC POWER UNIT

It is recommended that the pump is regulated to stall at the hydraulic pressure required prior to operation of the tensioning device.

TO REGULATE THE PUMP PROCEED AS FOLLOWS:

- A. Check oil levels in reservoir and lubricator; fill as necessary.
- B. Check air filter bowl; drain if necessary.
- C. Attach a blank coupling to Hydraulic Supply Port.
- D. Close the Pump Control Valve, and open Fluid Pressure Return Valve.
- E. Connect air supply line to the inlet port of the Filter/Regulator.
- F. Set the pressure regulator to zero. To adjust the regulator press down on the knob as you turn.
- G. Close Return Pump Control Valve.
- H. Open Main Pump Control Valve. The pump should not operate because the regulator has been set to zero.
- I. Close Fluid Pressure Return Valve.
- J. Watching the Pressure Gauge, adjust the hydraulic pressure by increasing the air pressure at the Air Regulator.
- K. After setting the pump to the desired pressure, close the Pump Control Valve. Open Fluid Pressure Return Valve, slowly to release the pressure.
- L. The pump is now set to stall at the desired operating pressure and is ready to be coupled to the hydraulic harness.

OPERATING STUD TENSIONERS

TO ENERGISE THE STUD TENSIONERS;

Close the Fluid Pressure Return Valve.

Prepare the stud tensioners for the pump by following the instructions in the Stud Tensioners Manual.

Connect the pump to a predesignated stud tensioner at a suitable location.

Make sure the Return Pump Control Valve is closed.

Open the Pump Control Valve.

Watch the Pressure gauge. When the desired hydraulic pressure is reached, close the Pump Control Valve.

NOTE: If the pump is regulated to stall at a desired hydraulic pressure, it would have stalled at this point.

De-pressurize the system by opening the Fluid Pressure Return Valve.

TO RETRACT THE STUD TENSIONERS;

Disconnect the hydraulic feed hose from the hydraulic supply port of the main pump, and connect it to the port of the return pump.

Open the Fluid Pressure Return Valve.

Make sure the Main Pump Control Valve is closed.

Open the Return Pump Control Valve until the piston of the stud tensioner has fully retracted into the load cell.

TESTING

To extend the life of the HTP-2000, periodic testing should be performed. Fastorq Bolting Systems recommends testing your pump at least every six months. This test will keep the internal components of the HTP-2000 in proper working condition.

TO TEST THE PUMP PROCEED AS FOLLOWS:

- A. Check oil levels in reservoir and lubricator. Fill as necessary.
- B. Drain of any water from the air filter.
- C. Attach a blank coupling to Hydraulic Supply Port.
- D. Close the Return Pump Control Valve, and open the Fluid Pressure Return Valve.
- E. Slowly open the Main Pump Control Valve. This will start the pump cycling and circulate oil around the system.
- F. With the pump running check the “drip rate” from the air lubricator. If necessary adjust to allow one drop every 40 strokes of the pump.
- G. Set the air pressure regulator to zero.
- H. Close Fluid Pressure Return Valve.
- I. Adjust pressure regulator to allow the oil pressure to build up to 30,000 psi.
- J. Close control valve. Slowly open Fluid Pressure Return Valve.
- K. Disconnect air supply. Open Fluid Pressure Return Valve, then both air control valves.
- L. Drain off any water from the air filter.
- M. Store as detailed in “Storage of Pump Unit” section.

PARTS LIST

Item	Part #	Description	Qty
1	B97093	Aluminum Frame	1
2	B97093P	Base Plate	1
3	FHCS04-20X12SS	Flat Head Cap Screw for Base Plate	8
4	LW04SS	Lock Washer for above Screw	8
5	NT04SS	Nut for above Flat Head Cap Screw	8
6	B97092	Oil Tank	1
7	B97092L	Lid for above Tank	1
8	B97092G	Gasket for above Tank	1
9	SHCS04-20X16SS	Socket Head Cap Screw for Tank	14
10	LW04SS	Lock Washer for above Cap Screw	14
11	FW04SS	Flat Washer for above Hex Head Bolt	14
12	NT04SS	Nut for above Socket Head Cap Screw	4
13	CFSA-7B	Breather Cap for above Tank	1
14	G620-5A1	Level and Temperature Gauge	1
15	SK5L	Hydraulic Pump	1
16	6PG30	Pressure Gauge	1
17	316-F-0.13X1.00	Bracket for Pressure Gauge	2
18	HHB04-20X12SS	Hex Head Bolt for Gauge Bracket	2
19	NT04SS	Nut for above Hex Head Bolt	2
20	B97064	Gauge Mounting Block	1
21	SHCS04-20X32SS	Socket Head Cap Screw for Block	2
22	NT04SS	Nut for above Socket Head Cap Screw	2
23	10-116-6202	Male Quick Disconnect	2
24	09-125-1680	Adapter 1/4" male x 9/16"-18 Type M	2
25	30-11HF-4	Pressure Control Valve	1
26	FRL-.75	Filter Regulator Lubricator Unit	1
27	G160	Air Pressure Gauge	1
28	304-F-0.25X1.00	Stand for FRL	2
29	SHCS04-20X16SS	Socket Head Cap Screw for FRL	6
30	NT04SS	Nut for above Socket Head Cap Screw	6

PARTS LIST

Item	Part #	Description	Qty
31	FRL-BRACKET	Mounting Bracket for FRL	1
32	FRL-ADAPT0.75	3/4" Adapter for FRL	1
33	FRL-ADAPT0.38	3/8" Adapter for FRL	1
34	FRL-BLOCK	Block for FRL	3
35	BV6B	Air Shut Off 3/8" Ball Valve	2
36	2092-6-6	Male - 2xFemale T NPT Fitting	1
37	50265K13	Safety Valve	1
38	9802K3	1/4" NPT Inline Strainer	1
39	10-4000W003	Return Pump	1
40	NAN300-N03	3/8" Muffler	1
41	A98045	Pump Spacer	1
42	A99087	Bottom Mount for Main Pump	1
43	6JBU	3/8" Ferulock Tube Union "T"	1
44	30-21HF4NMD	1/4" HP Female, 1/2" Male NPT	2
45	2085-6-4	3/8" Male NPT, 1/4" Male NPT Elbow	1
46	2081-12-6	3/4" Male NPT, 3/8" Female Reducer	1
47	2092-12-12	3/4" Male NPT, 3/4" Female NPT "T"	1
48	NAN600-N10	1" Muffler	1
49	EL39SA-AS	1" Exhaust Elbow	1
50	MONEL-T-0.38	3/8" Monel Tube	4
51	6-8FBU	3/8" Ferulock to 1/2" Male NPT fitting	1
52	6-6FBU	3/8" Ferulock to 3/8" Male NPT fitting	10
53	6-4FBU	3/8" Ferulock to 1/4" Male NPT fitting	1
54	6-4CBU	3/8" Ferulock to 1/4" Male NPT elbow	2
55	6F5BU	3/8" Ferulock to 9/16" SAE O-ring	1
56	60HM4-2.75	1/4"OD x .083"ID x 2-3/4"L Nipple	1
57	60HM4-6.00	1/4"OD x .083"ID x 6" L Nipple	1
58	60-2HM4	60K Gland for 1/4" OD Tubing	4
59	60-2H4	60K Collar for 1/4" OD Tubing	4
60			

STORAGE OF EQUIPMENT

- A. Always store the pump upright.
- B. Leave the Fluid Pressure Return Valve, and both the air control valves in the open position.
- C. Always keep dust covers on all couplings and fittings.
- D. Wipe all hoses clean and apply light coating of oil or any suitable rust inhibitor to all couplings and fittings.

NOTE: Always bleed off the air supply line prior to removing from the pump. Shut off the air supply, and open both the Fluid Pressure Return Valve and the Main Pump Control Valve simultaneously for a short moment until the air is bled from the system.

TROUBLE SHOOTING GUIDE

Problem	Probable cause	Corrective action
Oil leaking from hydraulic connection	<ul style="list-style-type: none"> • Connection loose. Or • Connection too tight. 	<ul style="list-style-type: none"> • Tighten the hydraulic connection. • Replace the fitting.
Air operated pump running but not building up pressure with fluid pressure return valve closed	<ul style="list-style-type: none"> • Air in system. • Worn fluid pressure return valve. • Fluid check valve sticking 	<ul style="list-style-type: none"> • Run pump for short period with fluid pressure return valve open to remove air bubbles. • Replace fluid pressure return valve.
Hydraulic manifold hose will not couple together at “zero” pressure	<ul style="list-style-type: none"> • Slight hydraulic pressure still inside hose due to previous disassembly of hose before pressure. 	<ul style="list-style-type: none"> • Loosen fitting and bleed pressure in hoses.
Stud Tensioner will not retract	<ul style="list-style-type: none"> • Fluid Pressure Return Valve not open. • All couplings not properly connected. 	<ul style="list-style-type: none"> • Open Fluid Pressure Return Valve. • Ensure that all couplings are properly connected.
Nut not turning under bridge of tool with system under pressure	<ul style="list-style-type: none"> • Hydraulic manifold not properly connected to offending tool. • Damaged thread on nut or stud. 	<ul style="list-style-type: none"> • Release pressure and connect manifold properly. • Release pressure remove tool and stud-bolt and repair damage.

LIMITED WARRANTY

FASTORQ warrants its products against defects in workmanship and materials for 180 days from the date of delivery.

Warranty does not cover ordinary wear and tear, abuse, misuse, overloading, or altered products.

REPAIR AND SERVICE

FASTORQ, shall provide complete and prompt service on all its products.

It is recommended to return the unit to the factory in the event of a failure or a general maintenance requirement. Fastorq's trained and experienced technicians can properly inspect and repair the unit.

HELP AND ASSISTANCE

FASTORQ provides technical support and assistance to all its customers. Help is available 7 days a week, 24 hours a day.

Please contact us whenever you have a question or need assistance. We may be reached over the phone, through fax, electronic mail or regular mail.



P.O. Box 60869 A.M.F.
Houston, Texas 77205-0869
Ph. 281-449-6466 • Toll Free 1-800-225-1075
Email: sales@fastorq.com
www.fastorq.com

18914 East Industrial Parkway, New Caney, TX 77357