T & S Equipment Company
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Revised 2-97

*A company dedicated to solving ergonomic and material handling problems since 1953.*

# OWNER'S MANUAL SUPPLEMENT

**For lifts equipped with a single-speed or two-speed hydraulic foot pump**
**MODEL 1-SPEED / 2-SPEED FOOT PUMP**

**Contents**



## WARNINGS & SAFETY INSTRUCTIONS

***Read owner's manual completely before operating unit!***

* Remove weight before working on unit.
* Use only maintenance parts supplied or approved by the manufacturer.
* Do not change pressure relief valve setting.
* Do not clamp pump in a vise as you may distort barrel.
* Do not continue to pump if unit is not raising.
* Relieve system pressure by slowly depressing lowering valve.
* Do not use hydraulic oils, brake fluids or jack oils. Use AW-32 or equal.

## RECEIVING INSTRUCTIONS

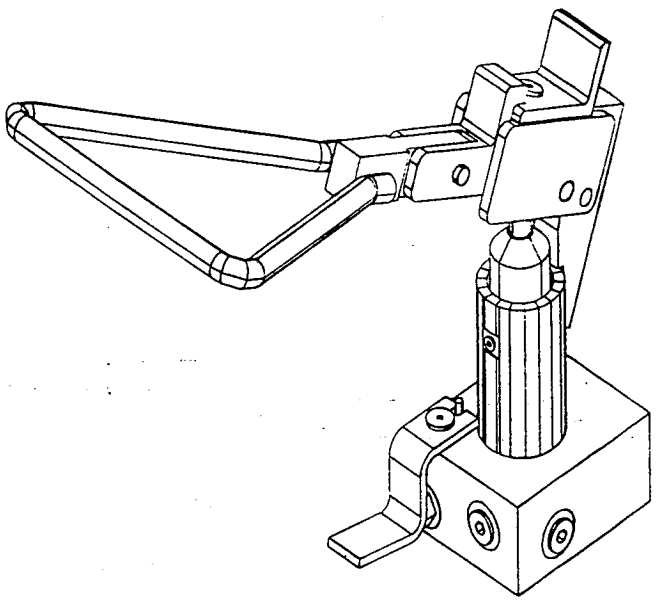
Every unit is thoroughly tested and inspected prior to shipment. However, it is possible that the unit may incur damage during transit. If you see damage when unloading make a note of it on the SHIPPER RECEIVER.

Remove all packing and strapping material and inspect unit for damage. IF DAMAGE IS EVIDENT, FILE A CLAIM WITH THE CARRIER IMMEDIATELY!

Also, check the unit size, type of power unit, etc., to see that the unit is correct for the intended application.

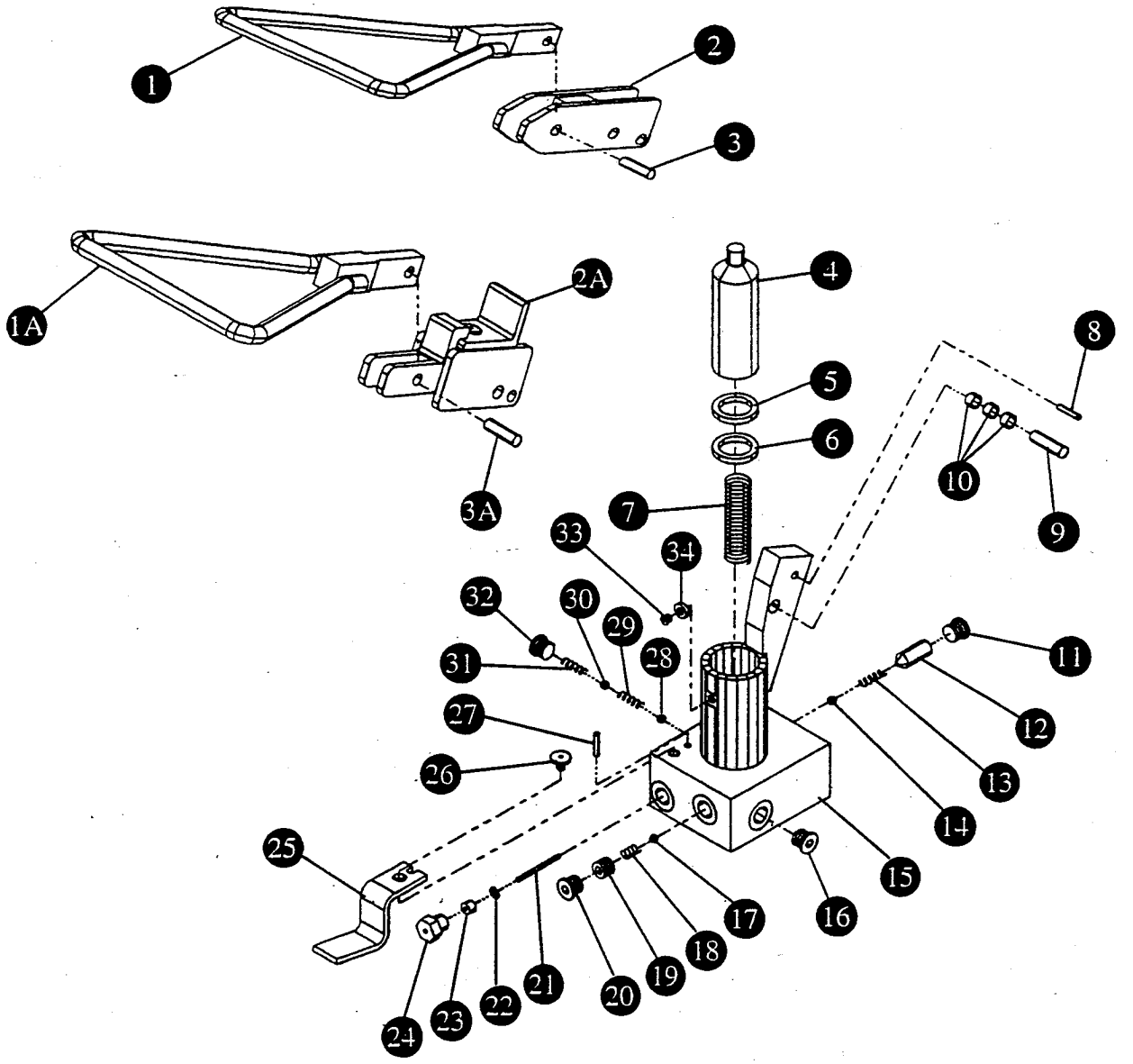
## MODEL NUMBER AND CAPACITY

The model number and capacity is located on the name-plate. Please remember to include these numbers in any correspondence with your dealer or the factory.



**(2-Speed Foot Pump Shown)**

# Parts Diagram for Single and Two-Speed Hydraulic Foot Pumps




## *Operating Instructions*

**Features:**
Your new lift equipment has been supplied with an exclusive single-speed or two-speed foot pump. The internal features of your pump include a primary pressure relief, pressure compensated return flow control valve, and an integrated lowering valve. Replaceable bushings, valve components, and seals have been utilized in the construction of the pump in the event that replacements are necessary.

**Operating Instructions:**
Stay clear of moving parts. The platform will rise as the foot pedal is pumped. Depressing the release lever will lower the table at a controlled rate of descent.

In the event the platform has been overloaded, the pressure relief will open because of excessive pressure build-up in the hydraulic system. Oil will bypass into the reservoir. **Never** increase the pressure relief setting more than necessary. **Do not** exceed the rated capacity of your lift equipment.

**Two-Speed Selection:**
The two-speed hydraulic foot pump offers two "speeds". The low speed produces *low volume/high pressure.* The high speed produces *high volume/low pressure.* The operator has the option of selecting the optimum pump speed for the application at hand. Pump speeds are selected by sliding the "lock collar"(Item # 2 on the parts identification) in or out. An occasional drop of oil will keep the collar working freely.

# Parts Identification for Single and Two-Speed Hydraulic Foot Pumps

| | ITEM NUMBER | DESCRIPTION | PART NUMBER | QUANTITY |
|---|---|---|---|---|
| | 1 | Assembly, lever delta foot pedal, double speed | 01-540-003 | 1 |
| | 1A | Assembly, lever delta foot pedal, single speed | 01-540-004 | 1 |
| | 2 | Linkage for single-speed foot pump | NFP-LNK1 | 1 |
| | 2A | Linkage for two-speed foot pump | NFP-LNK2 | 1 |
| | 3 | 3/8" x 1-3/4" dia. detent pin | 01-130-004 | 1 |
| | 3A | 3/8" x 1-1/4" dia. detent pin | 01-130-005 | 1 |
| | 4 | Pump plunger | 01-041-004 | 1 |
| [A] | 5 | Piston wiper seal | 550110 | 1 |
| [A] | 6 | Piston U-cup seal | 532101 | 1 |
| | 7 | Piston return spring | 01-146-004 | 1 |
| | 8 | 1/4" x 1-1/2" spring pin | 64251 | 1 |
| | 9 | 3/8" x 1-3/4" dia. Driv-Loc pin | 01-130-004 | 1 |
| | 10 | Sleeve sintered bronze bearing | 01-111-038 | 3 |
| | 11 | Fitting, "O"-ring plug | 01-116-007 | 1 |
| | 12 | Pressure compensated flow control valve | 01-127-007 | 1 |
| | 13 | Release check spring | 01-146-002 | 1 |
| | 14 | 5/16" dia. steel ball | 01-145-001 | 1 |
| | 15 | Pump body/manifold | NFP-BDYMAN | 1 |
| | 16 | Fitting, "O"-ring plug | 01-116-007 | 1 |
| | 17 | 3/8" dia. chrome steel ball | 01-145-003 | 1 |
| | 18 | Pressure relief spring | 01-146-005 | 1 |
| [A] | 19 | Fitting, pressure adjustment plug | 01-116-006 | 1 |
| | 20 | Fitting, "O"-ring plug | 01-116-007 | 1 |
| | 21 | Release pin | 01-112-016 | 1 |
| [A] | 22 | Release pin seal retaining ring | 565011 | 1 |
| [A] | 23 | Release rod U-cup seal | 01-144-002 | 1 |
| | 24 | Fitting, hydraulic plug | 01-116-004 | 1 |
| | 25 | Release lever | 01-040-001 | 1 |
| | 26 | Release lever retaining screw | 01-119-001 | 1 |
| | 27 | 3/16" x 1-1/8" spring pin | 64134 | 1 |
| | 28 | 5/16" dia. chrome steel ball | 01-145-001 | 1 |
| | 29 | Inlet check spring | 01-146-001 | 1 |
| | 30 | 7/16" dia. chrome steel ball | ~~01-145-004~~ | 1 |
| | 31 | Outlet check spring | 01-146-001 01-146-001 | 1 |
| | 32 | Fitting, "O"-ring plug | ~~01-116-007~~ -007 | 1 |
| | 33 | 1/4" -20 x 1/4" socket head cap screw | 562008 | 1 |
| [A] | 34 | 1/4" sealing washer (copper with rolled core) | 577004 | 1 |
| | [A] | Foot Pump rebuild kit (includes items 5, 6, 19, 22, 23, & 34) | 01-136-403 | 1 |

[X] Kit item *(included with purchase of kit)*

## *Air Bleed Procedure*

Whether your pump is a new installation, or has been recently serviced, air has likely entered the hydraulic system. The design of this pump includes an "air bleed screw" which will aid in the removal of unwanted air from the foot pump area of the hydraulic system. Use the following steps to remove this air from the system.

1) Check all fittings to be sure they are tight. Ensure that the oil is filled to within 1" of the top of the reservoir when the lift is in the fully lowered position.

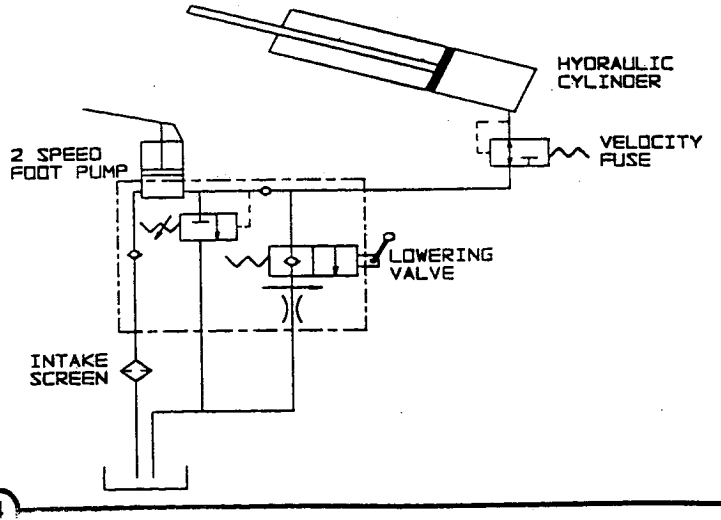
2) Locate the "air bleed screw"( Item # 34 on the pump body) and loosen appoximately 1/2 turn couterclockwise. As soon as you have loosened the screw, slowly depress the foot pedal. This will force the air out of the pump chamber. Before you let the pump pedal return to the "up" or "home" position, tighten the air bleed screw. This will prevent air form re-entering the pump chamber. Repeat the above procedure until the pump chamber is completely filled with oil and a "spongy" feel is no longer present. If the air bleeding procedure has been successful, the feel of the pump pedal will be firm and the complete stroke of the pump will produce fluid flow.

Air can also become trapped in the hydraulic cylinder(s). Review your owner's manual for air removal instructions.

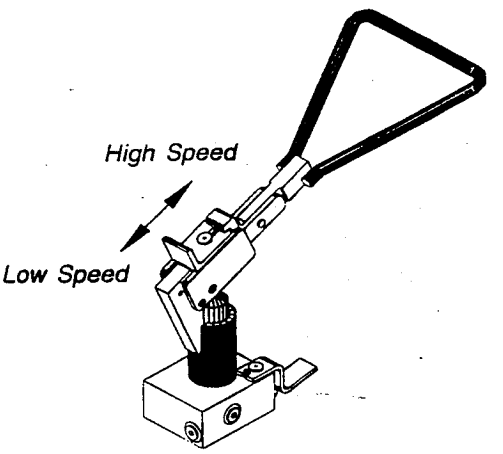
# Trouble shooting Guide for Single and Two-speed Hydraulic Foot Pump

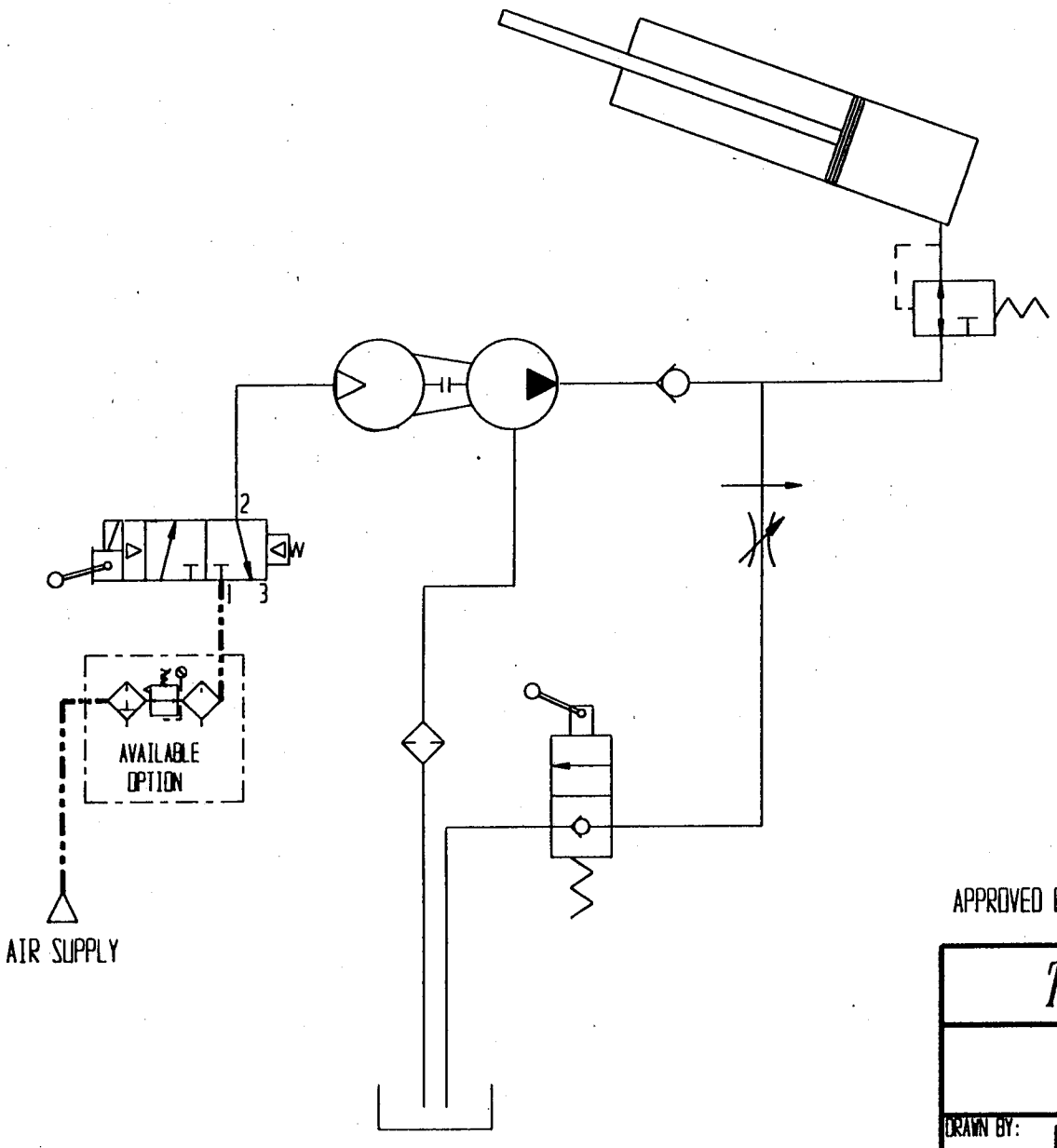
| Observation | Possible Cause | Remedy *Refer to exploded view |
|---|---|---|
| .) Deck does not raise | a. Excessive load<br>b. Oil is low<br>c. Pinched hose<br>d. Relief valve set too low | a. Remove part of the load<br>b. Fill oil to within one inch of the top of the reservoir<br>c. Correct as necessary<br>d. Increase only as necessary |
| .) Foot pedal goes down hard but deck does not raise | a. Particle of dirt under the pressure relief<br>b. Particle of dirt under inlet check | a. Lower deck- Disassemble, clean and reas semble pressure relief*<br>b. Lower deck- Disassemble, clean and reas semble inlet check vlave* |
| .) Unit will pump under no load or when rapidly stroked, or pedal will stroke with out pumping | a. Pump is air locked<br>b. Inlet check valve has foreign material on seat<br>c. Relief setting is out of adjustment<br>d. Foreign material on relief valve seat | a. Bleed air from system inlet<br>b. Remove and clean inlet ball and seat<br>c. Adjust relief setting higher<br>d. Lowering valve has foreign material on the seat or is stuck in the open position |
| .) Platform raises when the pump is stroked but lowers on return stroke | a. Outlet check is leaking | a. Clean foreign material from ball and seat |
| .) Deck raises but takes too much effort | a. Change pump displacement speed | a. Slide locking collar back |
| .) Deck raises but is too slow | a. Change pump displacement speed<br>b. Intake filter clogged<br>c. Foreign material stuck under pressure relief valve or under inlet check valve | a. Slide locking collar forward<br>b. Lower deck- drain reservoir, clean and flush debris, refill with clean oil<br>c. Lower deck- Disassemble, clean and reas semble pressure relief* |
| 7.) Spongy or jerky operation | a. Check for foreign material stuck in the deck or frame rails<br>b. Oil is low | a. Correct as necessary<br>b. Fill oil to within one inch of the top of the reservoir |
| 8.) Deck lowers too slowy | a. Pinched hose<br>b. Intake filter clogged<br>c. Foreign material lodged in velocity fuse<br>d. Foreign material lodged in pressure compensated flow control valve | a. Correct as necessary<br>b. Correct as necessary<br>c. Lower deck- Disassemble, clean and reassemble*<br>d. Lower deck- Disassemble, clean and reas semble pressure relief* |
| 9.) Deck lowers too fast | a. Foreign material lodged in pressure compensted flow control valve | a. Lower deck- Disassemble, clean and reas semble pressure relief* |
| 10.) Deck raises but does not lower | a. Foreign material lodged in pressure compensated flow control valve<br>b. Release pin bent or missing<br>c. Foreign object blocking roller travel<br>d. Velocity fuse is locked | a. Lower deck- Disassemble, clean and reas semble pressure relief*<br>b. Replace as necessary<br>c. Correct as necessary<br>d. Remove air from hydraulic system, to un lock, repressurize system (refer to hydraulic section in manual) |

## HYDRAULIC SCHEMATIC




## Speed Selection for Two-Speed Hydraulic Foot Pump






## *SPECIFICATIONS:*

___ 1 GPM PUMP
___ 3000 PSI MAXIUM
___ 2.8 HP MODEL AIR MOTOR
___ LUBRICATION RATE: 10-12 DROPS PER MIN
___ MINIMUM AIR PRESSURE 80 PSI
___ MINIMUM 70 CFM (CUBIC FEET PER MINUTE)
___ MANUAL RAISE/LOWER CONTROLS

___ MINIMUM LINE SIZE 3/4" FOR THE LAST 50 FT. OF PIPE RUN

___ THE AIR SUPPLY MUST BE CLEAN AND RELATIVELY DRY. AN AIR LINE FILTER AND LUBRICATOR MUST BE FITTED IN THE AIR SUPPLY LINE AND LOCATED BEFORE THE FIRST CONTROL VALVE.

___ **OPERATION OF THIS MACHINE WITHOUT A FILTER/LUBRICATOR WILL VOID THE WARRANTY**

APPROVED BY:_____ DATE:_____

-·-·- AIR LINE

——— HYDRAULIC LINES (SUPPLIED)

# *T & S EQUIPMENT COMPANY*

ROTARY AIR/HYDRAULIC POWER UNIT
WITH MANUAL CONTROL

| | | |
|---|---|---|
| DRAWN BY: B YEAKLE | SCALE: NONE | CHK'D: |
| MATERIAL: | DATE: 3/12/92 | DRAWING NO: AIRAPPRV |
| | APP'D: | |