

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

Hand Hydraulic Pallet Truck (PM5-2748)

Description

This hand hydraulic pallet truck is a manually operated industrial duty product designed to lift a maximum weight of 5,500 pounds by using a minimum number of handle strokes.

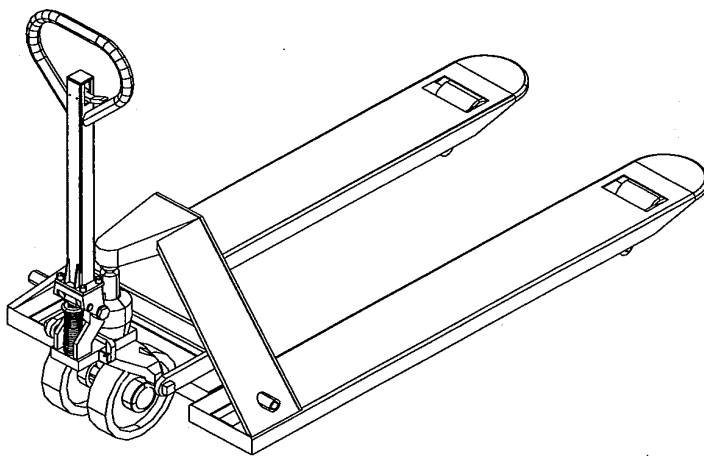


Figure 1

Safety features include an overload bypass valve and a pressure compensated flow valve for controlled lowering. A hand-actuated control lever for selecting "raise," "neutral," and "lower" positions is standard. The steering wheels articulate for uniform axle loading on uneven floors.

Failure to follow the proper operating instructions could result in injury and void the warranty.

Specifications

- Up/Down Control Hand Actuated
- 3 Front Wheels per Fork Entry Guide Wheel, Load Wheel, Exit Guide Wheel
- Steering Wheels Polyurethane-On-Steel w/Dust Covers
- Strokes to Raised Height 10
- Push Rods Solid Steel Construction, Adjustable Length
- Forks 7" Double Wrapped and Reinforced
- Steering Radius 180°
- Handle Return Automatic Return to Vertical

Dimensions

Load Capacity	Lowered Height of Forks	Raised Height	Overall Width Across Forks	Fork Width	Fork Length	Overall Length	Weight
5,500 lbs.	2-7/8"	7-3/4"	27"	7"	48"	62"	275 lbs.

Unpacking

After receiving the pallet truck, visually inspect the frame components and hydraulic unit for damage. If damage is evident, notify delivering carrier immediately and file necessary claims.

Assembly

1. Remove handle located just inside the top of the box. Unwrap the cardboard from the handle. Remove the four cap screws and grease paper located on the handle mounting pad.
2. Mount the steering handle from behind the pallet truck with the control lever pointed to the right. Feed the valve adjustment rod (See Figure 2) through the handle mounting pad between the chain roller and the reservoir. Using the previously removed cap screws, secure the handle to the mounting pad.
3. Valve adjustment: Place valve adjustment rod into the release lever. Adjust nut on rod until all trend functions of the unit operate correctly: Raise, Lower, and Neutral.
4. Verify that the oil plug (See Figure 2) is secured.
5. Test the pallet truck under load for proper operation. If hydraulic unit does not respond to movement of handle, move control lever into LOWER position and pump handle several times (air locks sometimes occur in many types of hydraulic systems during handling and transit).

NOTE: To insure proper valve adjustment, bleed hydraulic system by

T&S Equipment Company

2999 North Wayne Street, Angola, IN 46703

Phone: (219)665-9521 Fax: (219)665-1339 E-mail: sales@tseq.com Website: www.tseq.com

Hand Hydraulic Pallet Truck

Assembly (Continued)

holding control lever in the LOWER position and pump handle 3-4 times.

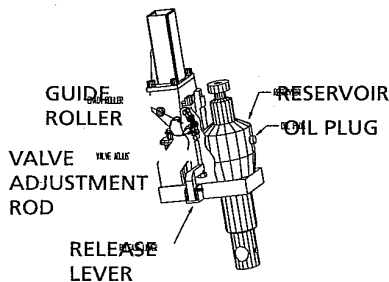


Figure 2 - Handle Installation Detail

General Safety Information

In order to have a trouble free pallet truck, it is important to take caution during usage to ensure a long service life.

1. Inspect the pallet truck for transit damage before operation. Carefully read all manuals included with this product *before* putting into service. Be thoroughly familiar with the controls and the proper use of the pallet truck.
2. Never overload the pallet truck. Stay within the rated capacity of 5,500 lbs.
3. Distribute the load evenly on the forks - do not concentrate loads at one point, or load one fork more than the other.
4. Be especially cautious when using the pallet truck to move or set machinery. It is very easy to make the mistake of lifting at points that will develop concentrated or unbalanced loads that can damage the pallet truck.
5. Do not allow loaded pallet truck to drop from one floor level to another. Even a drop of one inch, more than doubles the effective load momentarily and results in a "SHOCK" which can bend or break components.
6. The main thrust bearing has a zerk fitting to be greased every 60 days. All other bushings and bearings are of the pre-lubricated type and will last for a long period of time without further lubrication.
7. The pump piston rod and lifting rams are polished with a hardened chrome-plated finish to provide maximum seal life and minimum oil leakage. Do not allow these surfaces to be nicked or pitted by abuse. A slight oil wetting of the external part of the pistons is normal, as in all hydraulic systems in order to provide lubrication for highly polished surfaces and seals through which they pass. Do not be alarmed at a trace of oil, even on new units.
8. Always remove load before making repairs. Completely immobilize pallet truck before working on components that might pinch fingers or hands if movement were allowed.
9. Never allow anyone to ride a pallet truck "scooter style." All heavy material handling equipment should be operated with the utmost regard for the safety of oneself and others.
10. Never leave a loaded pallet truck unattended.
11. Always lower forks when trucking is completed.
12. Avoid abrasive or corrosive

environments and/or movement of abrasive or corrosive materials which may tend to spill onto pallet truck parts.

Operation

The three position control lever is operated as follows: (See Figure 3).

TO RAISE:

Insert the forks into the pallet. Move the control lever into RAISE position. With an up/down motion, pump the pallet jack up to desired height.

NEUTRAL:

When finished raising the pallet truck, move control lever into NEUTRAL or center position. Move the pallet truck to desired location.

TO LOWER:

Move the control lever into the LOWER position until desired height has been reached.

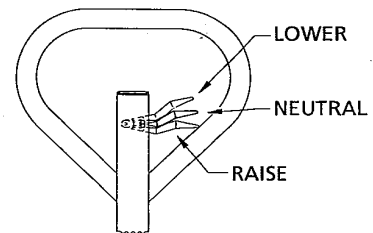


Figure 3 - Three Position Control Lever

Maintenance

All bushings and bearings are of the pre-lubricated type and will last for a long period of time without lubrication. To increase bearing life, it is recommended that a few drops of light machine oil be applied at each pivot point every 6 to 12 months.

Series PM5

Maintenance (Continued)

DAILY

Visually check and do not use if any of the following are visible:

1. Oil Leaks.
2. Structural deformation of arms, forks or any other component.
3. Unusual noise or binding of the lifting mechanism.

MONTHLY

1. Check oil level (more frequently for high use applications).

2. Check snap rings.
3. Verify that all labels are in place and in good condition.
4. Clean off dirt and debris.

YEARLY

Change oil (more frequently if color has substantially darkened or feels gritty or sticky).

NOTE: If hydraulic oil is milky white in color, water is in the hydraulic system. Change the hydraulic oil immediately.

ADDING HYDRAULIC OIL TO PUMP RESERVOIR



Use standard hydraulic oil.

1. Ensure forks are in lowered position.
2. Remove hydraulic oil reservoir plug and washer (part #PM-10P, PM-11P).
3. Add hydraulic oil until level of oil is at bottom of fill hole.
4. Replace hydraulic oil reservoir plug (part #PM-10P, PM-11P).

Limited Warranty

T&S Limited Warranty - Hydraulic unit, frame, and mechanical components for Series PM5 are warranted by T&S Equipment Company to the original user against defects in workmanship or material under normal use for 90 days after date of purchase.

T&S 90-Day Limited Warranty - Wheels, bearings, and bushings for Series PM5, are warranted by T&S Equipment Co. to the original user against defects in workmanship or materials under normal use for 90 days after date of purchase. For limited warranty claim procedures, see PROMPT DISPOSITION below. This limited warranty gives purchasers specific legal rights which vary from jurisdiction to jurisdiction. Any truck used under adverse conditions such as freezer applications, food service applications (stainless steel unit is recommended), or applications where the unit is operating in water or subjected to fluid or chemicals, is NOT covered under warranty.

Limitation of Liability. To the extent allowable under applicable law, T&S liability for consequential and incidental damages is expressly disclaimed. T&S liability in all events is limited to, and shall not exceed, the purchase price paid.

Warranty Disclaimer. T&S has made a diligent effort to provide product information and illustrate the product in this literature accurately; however, such information and illustrations are for the sole purpose of identification, and do not express or imply a warranty that the product is MERCHANTABLE, or FIT FOR A PARTICULAR PURPOSE, or that the product will necessarily conform to the illustrations or descriptions.

Except as provided below, no warranty or affirmation of fact, expressed or implied, other than as stated in "LIMITED WARRANTY" above is made or authorized by T&S Equipment Company.

Product Suitability. Many jurisdictions have codes and regulations governing sales, construction, installation, and/or use of products for certain purposes, which may vary from those in neighboring areas. While T&S attempts to assure that its products comply with such codes, it cannot guarantee compliance, and cannot be responsible for how the product is installed or used. Before purchase and use of a product, review the product applications, and all applicable national and local codes and regulations, and be sure that the product, installation, and use will comply with them.

Certain aspects of disclaimers are not applicable to consumer products e.g., (a) some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you; (b) also, some jurisdictions do not allow limitations on how long an implied warranty lasts, consequently the above limitation may not apply to you; and (c) by law, during the period of this Limited Warranty, any implied warranties of merchantability or fitness for a particular purpose applicable to consumer products purchased by consumer, may not be excluded or otherwise disclaimed.

Prompt Disposition. T&S will make a good faith effort for prompt correction or other adjustment with respect to any product which proves to be defective within limited warranty. For any product believed to be defective within limited warranty, first write or call dealer from whom product was purchased. Dealer will give additional directions. If unable to resolve satisfactorily, write to T&S at address below, giving dealer's name, address, date and number or dealer's invoice, and describe the nature of the defect. Title and risk of loss pass to buyer on delivery to common carrier. If product was damaged in transit to you, file claim with carrier.

Manufactured for T&S Equipment Company, P.O. Box 496, Angola, IN 46703 U.S.A.

For Replacement Parts, call 1-800-348-0860

Please provide following information:

- Model Number
- Serial Number
- Part description and number as shown in parts list

Address Correspondence to:

T&S Equipment Company
P.O. Box 496
2999 North Wayne Street
Angola, IN 46703

Alternative Design

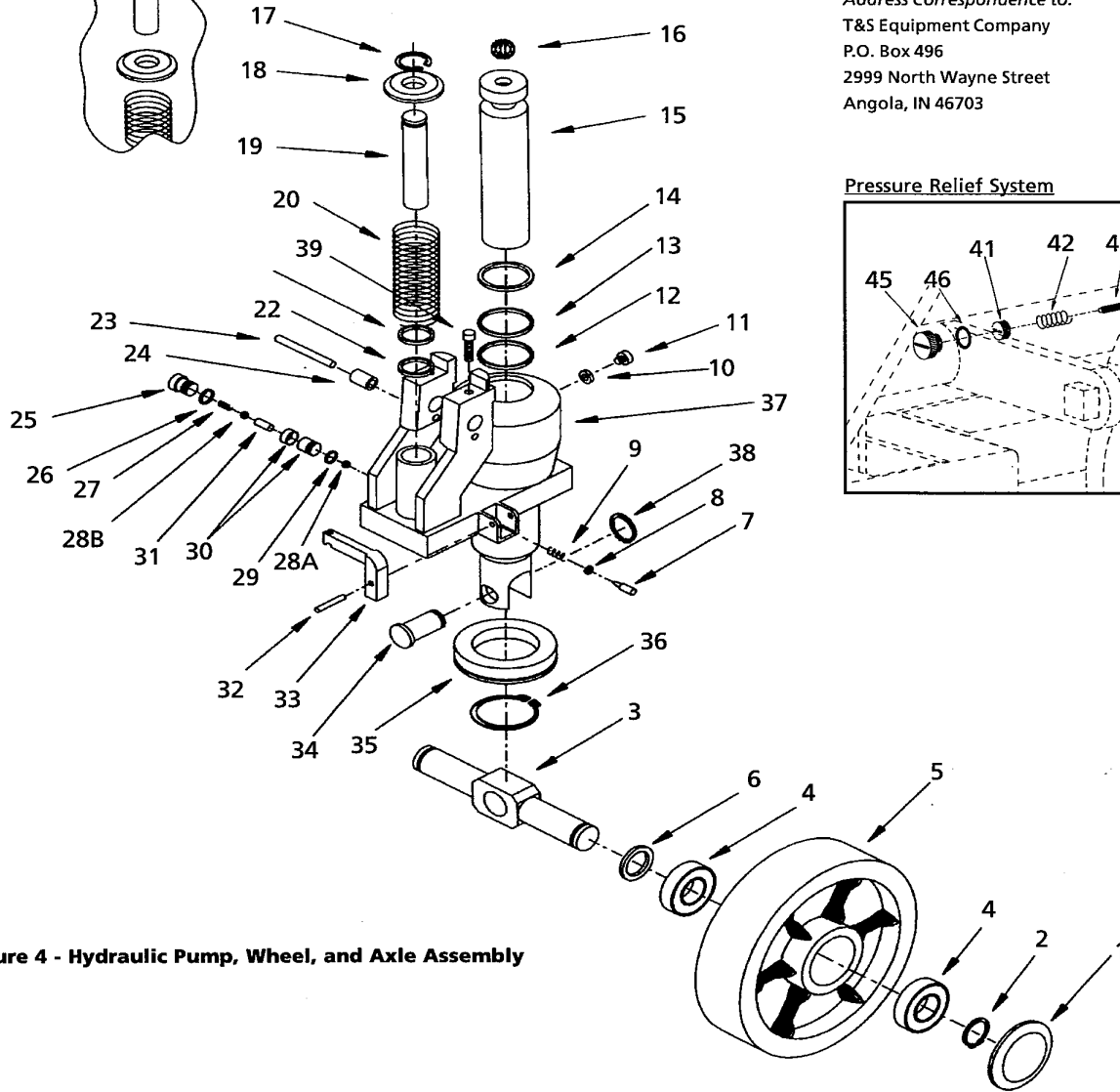
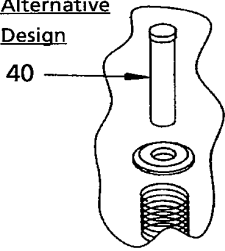


Figure 4 - Hydraulic Pump, Wheel, and Axle Assembly

KIT NO.	ITEM NO.	DESCRIPTION	PART NO.	QTY.
B	1	Hub Cap	PM-1P	2
B	2	Snap Ring	PM-2P	2
B	3	Axle	PM-3P	1
B	4	Ball Bearing	PM-4P	4
B	5	Steering Wheel	PM-5P	2
B	6	Washer	PM-6P	2
C,E	7	Release Valve	PM-7P	1
A,C,E	8	O-Ring	PM-8P	1
C,E	9	Spring	PM-9P	1
A,C,E	10	Nylon-Star Wahser	PM-10P	1
C,E	11	Oil Reservoir Plug	PM-11P	1
A,C,E	12	Seal	PM-12P	1
A,C,E	13	Seal	PM-13P	1
A,C,E	14	Wiper	PM-14P	1
E	15	Lift Piston	PM-15P	1
C,E	16	Ball	PM-16P	1
C,E	17	Cap Ring	PM-17P	1
C,E	18	Pump Piston Cap	PM-18P	1
C,E	19	Pump Piston	PM-19P	1
C,E	20	Spring	PM-20P	1
A,C,E	21	Wiper	PM-21P	1
A,C,E	22	Seal	PM-22P	1
C,E	23	Spilt Pin	PM-23P	1
C,E	24	Chain Roller	PM-24P	1
C,E	25	Plug Bolt	PM-25P	1
A,C,E	26	O-Ring	PM-26P	1
D,E	27	Spring	PM-27P	1
C,E	28A	Ball	PM-28AP	1
C,E	28B	Ball	PM-28BP	1
A,C,E	29	O-Ring	PM-29P	1
C,E	30	Ball Valve	PM-30P	1
C,E	31	Pin	PM-31P	1
C,E	32	Pin	PM-32P	1
C,E	33	Release Lever	PM-33P	1
B	34	Pin	PM-34P	1
B	35	Thrust Bearing	PM-35P	1
B	36	Thrust Washer	PM-36P	1
E	37	Welded Hyd. Reservoir	PM-37P	1
B	38	Snap Ring	PM-38P	1
	39	Set Screw	PM-39P	2
	40	Pump Piston	PM-40P	1
	41	Adjustment Plug	PM-41P	1
	42	Spring	PM-42P	1
	43	Plunger	PM-43P	1
	44	Check Ball	PM-44P	1
	45	Plug Bolt	PM-45P	1
	46	O-Ring	PM-46P	1
A		Seal Kit	PM-SK	1
B		Steering Wheel Kit (includes 1-6,34,35,36,38)	PM-SWK	1
C		Pump, Mechanical Kit (includes 7,9,11,16-20,23-5,27,28A,28B,30-33)	PM-PMK	1
E		Pump, Complete Assembly (includes 7-33,37)	PM-PCA	1

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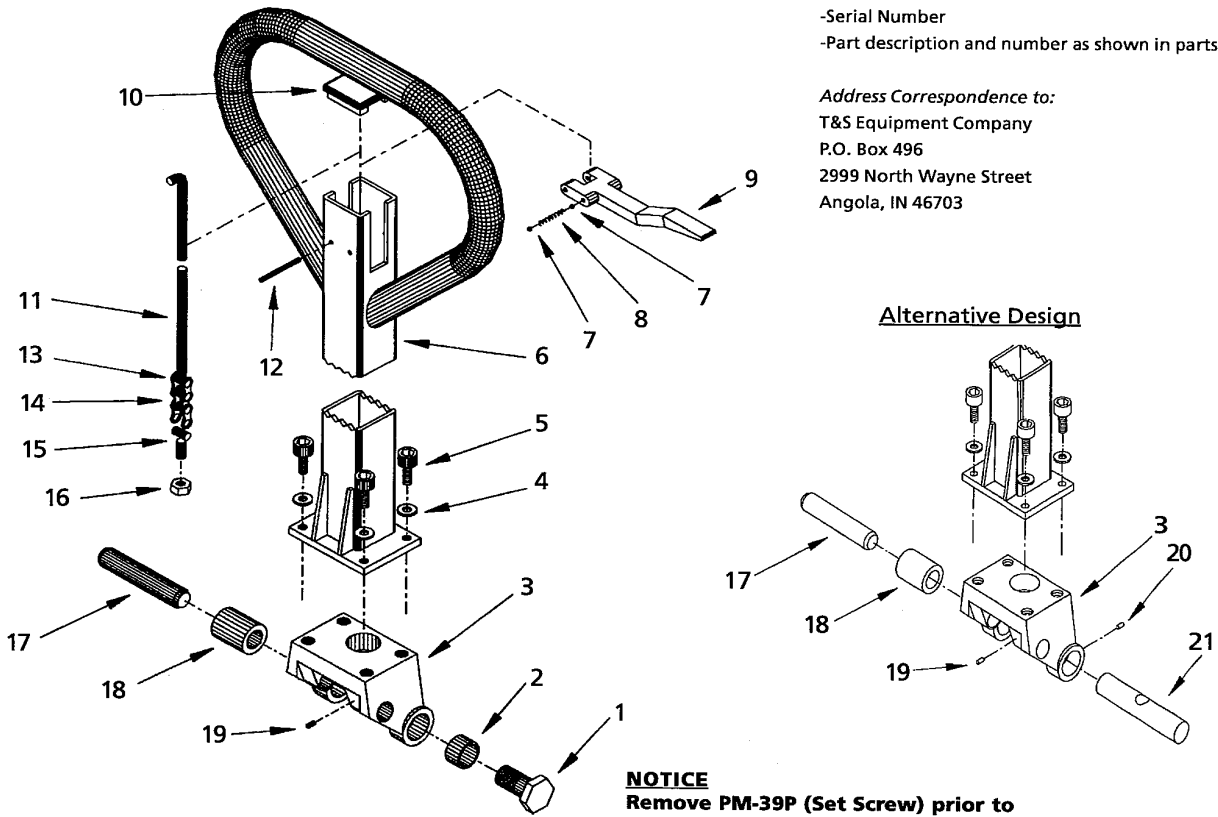


Figure 5 - Handle Assembly

Replacement Parts List for Handle Assembly

Kit No.	Ref. No.	Description	Part No.	Qty.
	1	Shoulder Bolt	PM-1H	2
	2	Bushing	PM-2H	2
	3	Bracket	PM-3H	1
G	4	Washer	PM-4H	4
G	5	Bolt	PM-5H	4
G	6	Handle	PM-6H	1
F,G	7	Ball	PM-7H	2
F,G	8	Spring	PM-8H	1
F,G	9	Control Lever	PM-9H	1
G	10	Cap	PM-10H	1
F,G	11	Release Rod	PM-11H	1
F,G	12	Pin	PM-12H	1

Kit No.	Ref. No.	Description	Part No.	Qty.
F,G	13	Pin	PM-13H	1
F,G	14	Chain	PM-14H	1
F,G	15	Valve Adjustment Rod	PM-15H	1
F,G	16	Nut	PM-16H	1
	17	Pin	PM-17H	1
	18	Roller	PM-18H	1
	19	Pin	PM-19H	1
	20	Set Pin (replaces #2H)	PM-20HA	1
	21	Roll Pin (replaces #1H)	PM-21HA	1
F		Control Lever Kit (includes 7-9, 11-16)	PM-CLK	1
G		Handle, Complete Assembly (includes 4-16)	PM-HCA	1

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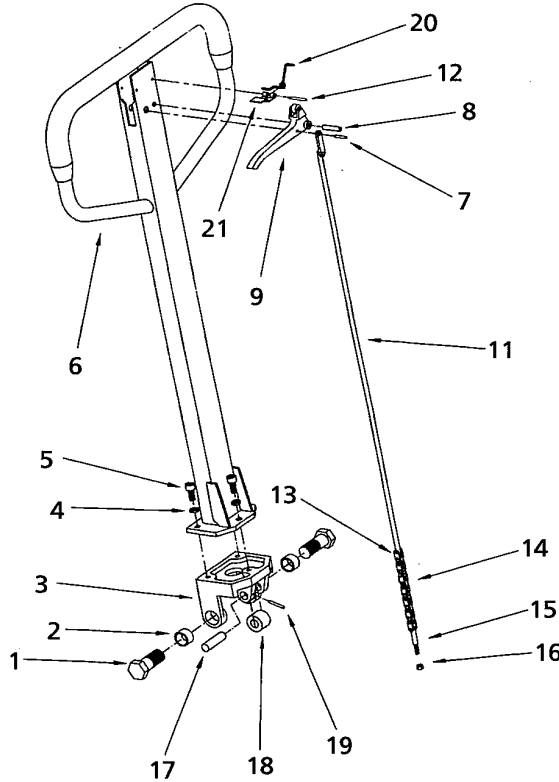


Figure 5 - Handle Assembly

Replacement Parts List for Handle Assembly

Kit No.	Ref. No.	Description	Part No.	Qty.	Kit No.	Ref. No.	Description	Part No.	Qty.
	1	Shoulder Bolt	PM-1HB	2	F,G	13	Link Pin	PM-13HB	1
	2	Bushing	PM-2HB	2	F,G	14	Chain	PM-14HB	1
	3	Bracket	PM-3HB	1	F,G	15	Valve Adjustment Rod	PM-15HB	1
G	4	Washer	PM-4HB	4	F,G	16	Nut	PM-16HB	1
G	5	Bolt	PM-5HB	4		17	Pin	PM-17HB	1
G	6	Handle	PM-6HB	1		18	Roller	PM-18HB	1
F,G	7	Small Roll Pin	PM-7HB	2		19	Pin	PM-19HB	1
F,G	8	Large Roll Pin	PM-8HB	1	F,G	20	Torsion Spring	PM-20HB	1
F,G	9	Control Lever	PM-9HB	1	F,G	21	Release Tab	PM-21HB	1
	10				F		Control Lever Kit	PM-CLK-B	1
F,G	11	Release Rod	PM-11HB	1			(includes 7-9, 11-16,20,21)		
F,G	12	Pin	PM-12HB	1	G		Handle, Complete	PM-HCA-B	1
							Assembly (includes 4-16,20,21)		

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Please provide following information:

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- Serial Number
- Part description and number as shown in parts list

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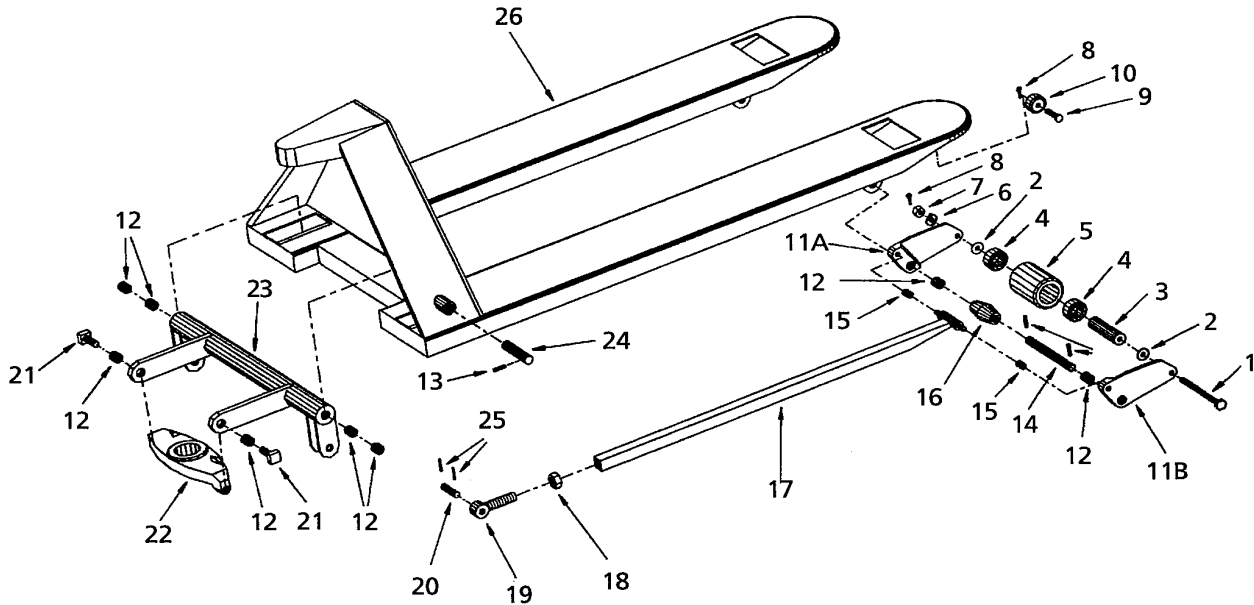


Figure 6 - Frame Assembly

Replacement Parts List for Frame Assembly

Kit No.	Ref. No.	Description	Part No.	Qty.	Kit No.	Ref. No.	Description	Part No.	Qty.
H	1	Bolt	PM-1F	2	H	14	Pin	PM-14F	2
H	2	Washer	PM-2F	4	H	15	Bushing	PM-15F	4
H	3	Roller Shaft	PM-3F	2	H	16	Exit Roller	PM-16F	2
H	4	Bearing	PM-4F	4	H	17	Push Rod	PM-17F	2
H	5	Load Roller	PM-5F	2	H	18	Lock Nut	PM-18F	2
H	6	Lock Washer	PM-6F	2	H	19	Eye bolt	PM-19F	2
H	7	Nut	PM-7F	2	H	20	Pin	PM-20F	2
H	8	Pin	PM-8F	4	H	21	Shoulder Bolt	PM-21F	2
H	9	Bolt	PM-9F	2	H	22	Thrust Plate	PM-22F	1
H	10	Entry Roller	PM-10F	2	H	23	Torsion Tube	PM-23F	1
H	11A	Lever Arms (Left)	PM-11AF	2	H	24	Pin	PM-24F	2
H	11B	Lever Arms (Right)	PM-11BF	2	H	25	Split Pin	PM-25F	4
H	12	Bushing	PM-12F	10	H	26	Chassis	PM-26F	1
H	13	Pin	PM-13F	6	H		Load Roller Kit (includes 1-10, 12-16)	PM-LRK	2

T&S Equipment Hand Hydraulic Pallet Truck

Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action
Tips of the forks do not raise simultaneously with the front of the pallet truck	Push rods are out of adjustment	<ol style="list-style-type: none"> 1. Remove split pins (PM-25F) with a 1/8" pinch 2. Remove pin (PM-20F) from bracket 3. Adjust eye bolt (PM-19F) as necessary 4. Replace pins (PM-20F) into bracket 5. Replace split pin (PM-25F) into pin 6. When properly adjusted, the forks should be 2.875" high when in the lowered position
Forks raise when control lever is in the NEUTRAL position	<ol style="list-style-type: none"> 1. Control lever is not in NEUTRAL position 2. Chain anchor mechanism is out of adjustment 	<ol style="list-style-type: none"> 1. Move control lever into the NEUTRAL position 2. Adjust nut (PM-16H) located on chain anchor mechanism clockwise until pumping action is not raising forks when control lever is in the NEUTRAL position
Unit will not raise when handle is pumped	<ol style="list-style-type: none"> 1. Control lever is not in the RAISE position 2. Air has entered the hydraulic system 3. Low oil level 4. Worn or damaged seals 5. Load exceeds capacity of unit 	<ol style="list-style-type: none"> 1. Move control lever into the RAISE position and pump handle 2. Move control lever into the LOWER position and pump handle several times to bleed air from the system 3. See Maintenance section for adding hydraulic oil 4. Order replacement seals PM-12P, PM-13P, and PM-22P and replacement wipers PM-14P and PM-23P 5. Ensure load does not exceed 5,500 lbs.

Hand Hydraulic Pallet Truck

Troubleshooting Chart (Continued)

Symptom	Possible Cause(s)	Corrective Action
Unit will not raise when handle is pumped (Continued)	Flow control valve is inoperative	<p>6a. The flow control valve is located on the left side of the jack unit. The flow control valve needs to be removed for the purpose of flushing debris from the hydraulic system</p> <p>6b. After flushing debris from system reinsert steel ball #28 - 8.1 mm</p> <p>6c. Install o-ring #31 on valve #30 then reinsert valve</p> <p>6d. Slide sleeve #30 onto valve inside of pump unit (use caution not to deform this sleeve or the flow control may not work properly)</p> <p>6e. Insert pin #29 into center of valve #30 inside unit</p> <p>6f. Install #28 - 7.9 mm ball</p> <p>6g. Install #26 o-ring onto #25 plug bolt</p> <p>6h. Place spring #27 onto the end of #25 plug bolt</p> <p>6i. Insert assembly with #25, #26, & #27 into pump unit</p> <p>6j. Tighten #25 plug bolt with large screwdriver</p> <p>6k. Refill oil to proper level</p>

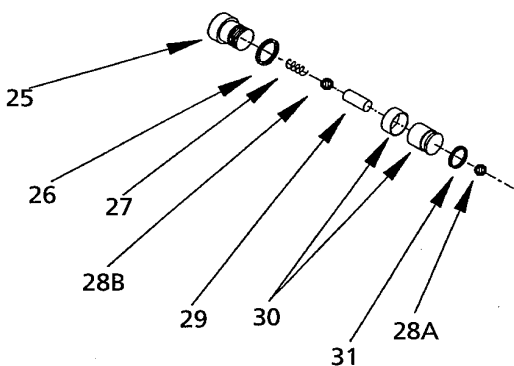
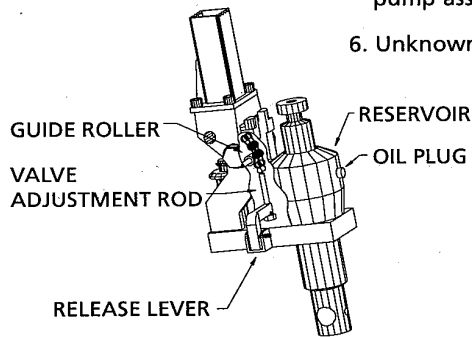


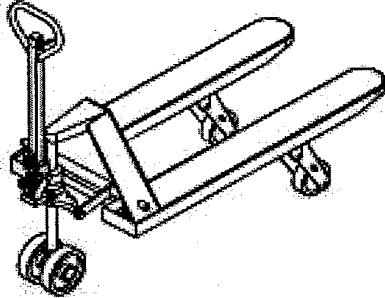
Figure 7 - Flow Control Valve Assembly

Forks drift down (will not hold load)	1. Air in hydraulic system	1. Hold control lever in lower position and rapidly pump handle several times.
	2. Release Valve Not Adjusted	2. Adjust release valve adjustment rod nut as necessary (see figure).
	3. Debris in hydraulic system	3. Remove flow control and flush hydraulic system. Reassemble and fill with 10W hydraulic oil (see figure).
	4. Hydraulic seals are worn out or torn	4. Replace seals. Call factory for seal kit availability.
	5. Defective/Damaged pump assembly	5. Replace pump assembly. Call factory for replacement pump availability.
	6. Unknown	6. Call to arrange for factory repair.

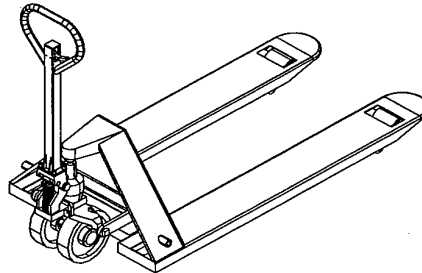


Specialty Pallet Trucks

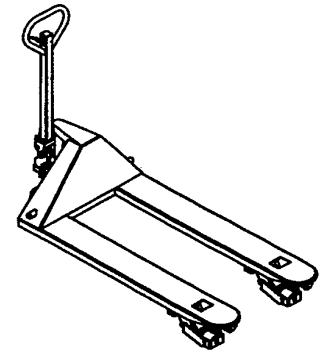
Deluxe Pallet Truck • Low Profile • Ergonomic Power Assist • Chrome Plated • Zinc Coated • Galvanized • Stainless Steel • Wheel Nose • Pallet Truck with Scale • Big Wheel • Side Winder • Skid Adaptor • Custom Sizes



**Big Wheel Pallet Truck
model BW-PJ**



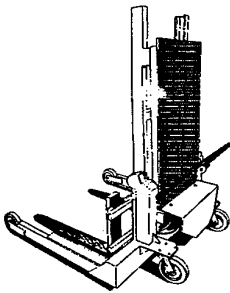
**Deluxe Pallet Truck
model PM5-2748**



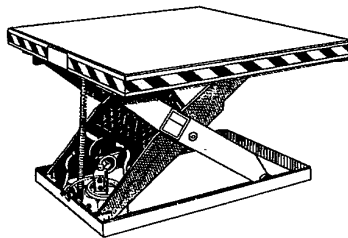
**Side Winder Pallet Truck
model SW-PJ**

Call for a free brochure

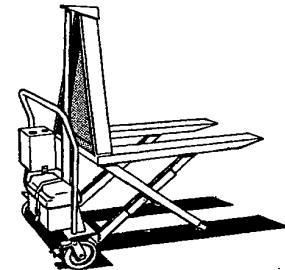
Material Handling Problem Solvers



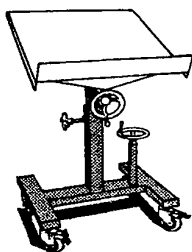
**Pallet Server
model PM/PS**



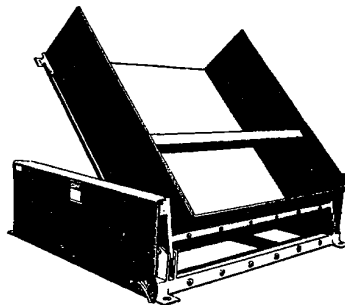
**Scissor Table
model EHLT**



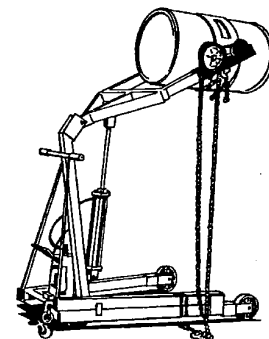
**High Rise Lift Truck
model HIPM**



**Mobile Lift & Tilt Work Stand
model WT-2424**



**Ground Tilter
model GLT-4000**



**Drum Carrier Rotator
model HIPM**