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Form No. 103525

Operating Instructions for:

CE

HS2000
HS3000

HYDRAULIC SPREADER

Max. Pressure: 10,000 PSI (700 BAR)
Unit Weight: HS2000 = 4.8 LBS. (2.17 Kg)
HS3000 = 22 LBS. (9.98 Kg)

Definition: Hydraulic tool used for lifting, clamping, or spreading.

NOTE:

- **For a detailed parts list or to locate a Power Team Authorized Hydraulic Service Center, contact your nearest Power Team facility. A list of all Power Team facilities is located at the end of this document.**
- **Carefully inspect the tool upon arrival. The carrier, not the manufacturer, is responsible for any damage resulting from shipment.**

SAFETY DEFINITIONS

Safety symbols are used to identify any action or lack of action that can cause personal injury. Your reading and understanding of these safety symbols is very important.

DANGER - Danger is used only when your action or lack of action will cause serious human injury or death.

WARNING - Warning is used to describe any action or lack of action where a serious injury can occur.

IMPORTANT - Important is used when action or lack of action can cause equipment failure, either immediate or over a long period of time.

SAFETY PRECAUTIONS

These instructions are intended for end-user application needs. Many problems with new equipment are caused by improper operation or installation. For a detailed parts list or to locate a Power Team Authorized Hydraulic Service Center contact your nearest Power Team facility. A list of all Power Team facilities is located at the end of this document.

WARNING: It is the operator's responsibility to read and understand the following safety statements,

- **Only qualified operators should install, operate, adjust, maintain, clean, repair, or transport this machinery.**
- **These components are designed for general use in normal environments. These components are not specifically designed for lifting and moving people, agri-food machinery, certain types of mobile machinery or special work environments such as: explosive, flammable or corrosive. Only the user can decide the suitability of this machinery in these conditions or extreme environments. Power Team will supply information necessary to help make these decisions.**

Rev. 2 Date: 18 Jan 2011

SAFETY PRECAUTIONS (CONTINUED)

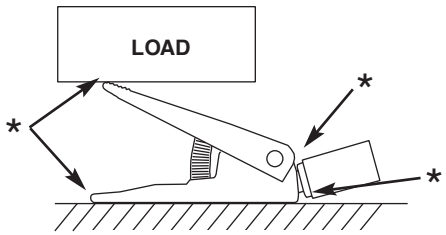
- **Only qualified operator's should install, operate, adjust, maintain, clean, repair, or transport these components. Read and understand all safety precautions, warning decals, operating instructions, and A.N.S.I. B30.1.**
- **This guide cannot cover every hazard or situation so always do the job with SAFETY FIRST!**

⚠ DANGER

- ⚠ **When extending a spreader under load, always insure that the coupler(s) or port thread(s) have not been damaged or do not come in contact with any rigid obstruction. If this condition does occur, the coupler's attaching threads may become stripped or pulled from the spreader resulting in instant release of high pressure hydraulic fluid, flying objects, and loss of the load. All of these conditions could cause serious injury or death. Never use a spreader with bent or damaged couplers or damaged port threads.**
- ⚠ **A spreader must be on a stable base which is able to support the load while pushing or lifting. To help prevent personal injury, use shims, friction material or constraints to prevent slippage of the base or load. Always support the base against a rigid, flat surface at least 75% as large as the hydraulic spreader base for stability.**
- ⚠ **Avoid off-center loads which could damage the hydraulic spreader and/or cause loss of the load, possibly causing serious injury or death. Do not set poorly-balanced or off-center loads on a spreader. The load can tip or the spreader can "kick-out" and cause personal injury.**
- ⚠ **Control the load at all times. If this component is used to lift, lower, or separate loads, be certain that the load is under operator control at all times and that others are clear of the load. Do not drop the load. As the load is lifted, use blocking or cribbing to guard against a falling load or a load that will come together after being spread apart. All personnel must be clear of the load before lowering.**

⚠. WARNING

- **The user must be a qualified operator familiar with the correct operation, maintenance, and use of the spreader. Lack of knowledge in any of these areas can lead to personal injury.**
- **Wear safety glasses at all times.**
- **Read and understand all safety and warning decals and instructions.**
- **Use only approved hydraulic fluid. Hoses, seals and all components used in a system must be compatible with the hydraulic fluid used.**



*** = PINCH POINTS**

- ⚠ **Do not exceed the rated capacities of the spreader. Excess pressure can result in personal injury. To help prevent material fatigue if the spreader is to be used in a continuous application, the load should not exceed 85% of the rated capacity or stroke. Hydraulic spreaders should not be continuously operated to the stops without a load.**
- **Inspect each spreader and coupler before each shift or usage to prevent unsafe conditions from developing. Do not use cylinders if they are damaged, altered or in poor condition. Never use extreme heat to disassemble a hydraulic spreader. Metal fatigue and/or seal damage will result and can lead to unsafe operating conditions.**
- **Avoid pinch points or crush points that can be created by the load or parts of the spreader.**

SAFETY PRECAUTIONS (CONTINUED)

IMPORTANT:

- **Keep the spreader clean at all times.**
- **While at a job site, when the spreader is not in use, keep the piston rod fully retracted and upside down.**
- **Use an approved, high-grade pipe thread sealant to seal all hydraulic connections. Teflon tape can be used if only one layer of tape is used and it is applied carefully (two threads back) to prevent the tape from being pinched by the coupler and broken off inside the pipe end. Any loose pieces of tape could travel through the system and obstruct the flow of fluid or cause jamming of precision-fit parts.**
- **Use only Power Team hydraulic fluid. Never use brake fluid or transmission oil.**
- **Always use protective covers on disconnected quick couplers.**
- **Limiting the stroke will prolong spring life.**
- **Limiting the stroke and pressure on spreaders will prolong their life.**

INTRODUCTION

These instructions are written to help you, the user, more effectively use and maintain your hydraulic spreader. If any questions, please call your nearest Power Team facility (see listing).

NOTE: For a detailed parts list or to locate a Power Team Authorized Hydraulic Service Center, contact your nearest Power Team facility. A list of all Power Team facilities is located at the end of this document.

Some of the information included in these instructions was selected from A.N.S.I. B30.1 and applies to the construction, installation, operation, inspection and maintenance of hydraulic spreaders. It is strongly recommended that you read A.N.S.I. B30.1 to answer any questions not covered in these instructions. The complete A.N.S.I. B30.1 standard which contains additional information can be obtained at a nominal cost from the American Society of Mechanical Engineers, United Engineering Center, 345 East 47th, New York, New York 10017.

An inspection checklist (Form No. 105503) is available on request from your nearest Power Team facility.

SYSTEM EVALUATION

Your spreader, hose(s), couplings and pump all must be rated for the same maximum operating pressure, correctly connected and compatible with the hydraulic fluid used. An improperly matched system can cause the system to fail and possibly cause serious injury. If you are in doubt, consult your nearest Power Team facility.

SET-UP

INSPECTION

Before each use, visually inspect for the following items:

1. Cracked or damaged spreader
2. Excessive wear, bending, damage, or insufficient thread engagement
3. Leaking hydraulic fluid
4. Scored or damaged piston rod
5. Loose bolts, pins, or fittings
6. Modified, welded, or altered equipment
7. Bent or damaged couplers or port threads

Preventive Maintenance (yearly or sooner, if the spreader condition suggests damage) - Visual examination by the operator or other designated personnel with a dated and signed equipment record.

SPREADER MAINTENANCE

- **Always operate with clean, approved hydraulic fluid.**
- **If a spreader has been exposed to rain, snow, sand, grit-laden air, or any corrosive environment it must be cleaned, lubricated, and protected immediately after exposure.**

PERIODIC CLEANING

A routine should be established to keep the hydraulic system as free from dirt as possible. All unused couplers must be sealed with dust covers. All hose connections must be free of dirt and grime. Any equipment attached to the spreader must be kept clean.

STORAGE

Spreaders should be stored in a ***dry***, well-protected area where they will not be exposed to corrosive vapors, dust or other harmful elements.

When a spreader has not been used for a period of three (3) months it should be connected to a pump and be fully extended and then retracted. This cycle will lubricate the internal parts, thereby reducing the potential for rust formation on the piston.

TROUBLE-SHOOTING GUIDE

IMPORTANT:

- **The following trouble-shooting and repair procedures should be performed by qualified personnel familiar with this equipment. Use the proper equipment when trouble-shooting!**

PROBLEM	CAUSE	SOLUTION
Erratic action	1. Air in system or pump cavitation	1. Add fluid, bleed air and check for leaks
	2. Internal leakage in double-acting cylinders or external leakage in single-acting cylinders	2. Replace worn packings. Check for excessive contamination or wear. Replace contaminated fluid as necessary.
	3. Spreader sticking or binding	3. Check for dirt or leaks. Check for bent, misaligned, worn parts or defective packings.
Spreader does not move	1. Loose couplers	1. Tighten couplers.Make sure all couplers are fully coupled.
	2. Faulty coupler	2. Verify that female coupler is not locked up (ball wedged into seat). Replace both female and male couplers.
	3. Improper valve position	3. Close release valve or shift to new position
	4. Low or no hydraulic fluid in pump reservoir	4. Fill and bleed the system
	5. Air-locked pump	5. Prime pump per pump operating instructions
	6. Pump not operating	6. Check pump's operating instructions
	7. Load is above the capacity of the system	7. Use the correct equipment
Spreader extends only partially	1. Pump reservoir is low on hydraulic fluid	1. Fill and bleed the system
	2. Load is above the capacity of the system	2. Use the correct equipment
	3. Piston rod binding	3. Check for dirt or leaks. Check for bent, misaligned, worn parts or defective packings.
Spreader moves slower than normal	1. Loose connection or coupler	1. Tighten
	2. Restricted hydraulic line or fitting	2. Clean and replace if damaged
	3. Pump not working correctly	3. Check pump operating instructions
	4. Cylinder seals leaking	4. Replace worn seals. Check for excessive contamination or wear

TROUBLE-SHOOTING GUIDE (CONTINUED)

PROBLEM	CAUSE	SOLUTION
Spreader moves but does not maintain pressure	1. Leaky connection	1. Clean, reseal with thread sealant and tighten connection
	2. Cylinder seals leaking	2. Replace worn seals. Check for excessive contamination or wear. Replace contaminated fluid as necessary.
	3. Pump or valve malfunctioning	3. Check pump or valve operating instructions
Spreader leaks hydraulic fluid	1. Worn or damaged seals	1. Replace worn seals. Check for excessive contamination or wear. Replace contaminated fluid as necessary.
	2. Loose connections	2. Clean, reseal with thread sealant and tighten connection Make sure all couplers are fully coupled.
Spreader will not retract or retracts slower than normal	1. Pump release valve closed	1. Open pump release valve
	2. Loose couplers	2. Tighten couplers
	3. Blocked hydraulic lines	3. Clean and flush
	4. Weak or broken retraction springs	4. Send to service center for repair
	5. Spreader damaged internally	5. Send to service center for repair
	6. Pump reservoir too full	6. Drain hydraulic fluid to correct level

POWER TEAM FACILITIES

POWER TEAM

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