

SPXFLOW

>Power Team®

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Operating Instructions for:



HS2000
HS3000

Hydraulic Spreader

Max. Pressure: 690 bar (10,000 psi)
Unit Weight: HS2000 = 2.17 kg (4.8 lb)
HS3000 = 9.98 Kg (22 lb)



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Description

Hydraulic spreaders (HS2000 and HS3000) have been developed to separate heavy materials or rebar and straightening tasks alike. The HS2000 has a 19 cm (4 in.) jaw spread and rated at 690 bar (10,000 psi). The HS3000 has a 29 cm (11.5 in.) spread and also has 690 bar (10,000 psi) rating.



Figure 1. HS2000

HS2000 Hydraulic Spreader

See Figure 1. HS2000 Hydraulic Spreader is well suited for lifting, clamping, or spreading tasks.



Figure 2. HS3000

HS3000 Hydraulic Spreader

See Figure 2. HS3000 Hydraulic Spreader is well suited for lifting, clamping, or spreading tasks.

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 Symbols and Definitions

The safety signal word designates the degree or level of hazard seriousness.

⚠ DANGER: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION: Used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

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

⚠ WARNING



- The following procedures must be performed by qualified, trained personnel who are familiar with this equipment. Operators must read and understand all safety precautions and operating instructions included with the device. If the operator cannot read these instructions, operating instructions and safety precautions must be read and discussed in the operator's native language.

- These products are designed for general use in normal environments. These products are not designed for use in special work environments such as: explosive, flammable, or corrosive. Only the user can decide the suitability of this product in these conditions or extreme environments. Power Team will supply information necessary to help make these decisions. Consult your nearest Power Team facility.



- Safety glasses must be worn at all time by the operator and anyone within sight of the unit. Additional personal protection equipment may include: face shield, goggles, gloves, apron, hard hat, safety shoes, and hearing protection.



- The owner of this tool must verify that safety-related decals are installed, maintained, and replaced if they become hard to read.



- Shut OFF the motor before opening any connections in the system.
- The 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.

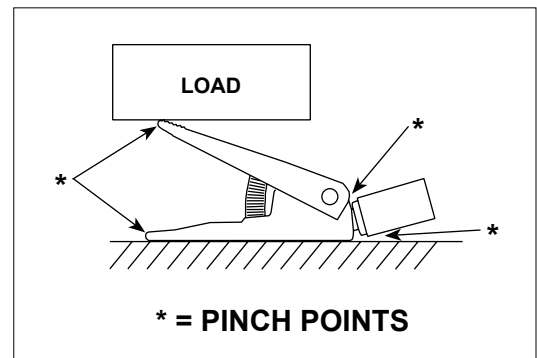
- Always support the base against a rigid, flat surface at least 75% as large as the hydraulic spreader base for stability.

Safety Precautions continued

- Avoid off-center loads which could damage the hydraulic spreader and/or cause loss of the load, possibly causing serious injury or death.
- Control the load at all times. Do not drop the load.

⚠ 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.
- Do not exceed the rated capacities of the spreader. Excess pressure can result in personal injury.
- 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.
- 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.
- 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.
- 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.
- 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.



Initial Setup

1. Remove all packing materials from the assembled unit.
2. Inspect the unit upon arrival. The carrier, not the manufacturer, is responsible for any damage resulting from shipment.

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 or transmission fluids.**
- **Always use protective covers on disconnected quick couplers.**
- **Limiting the stroke will prolong spring life of this tool.**
- **Limiting the stroke and pressure on spreaders will also 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

The hydraulic spreader, hoses, couplings and pump all must be rated for the maximum operating pressure of 690 bar (10,000 psi), correctly connected and compatible with the hydraulic fluid used. An unmatched system can cause the system to fail and serious injury. Please contact your nearest Power Team facility with any technical questions or clarifications as required.

Operating Instructions

Inspection

Before each use, visually inspect for the following items:

- Cracked or damaged spreader
- Excessive wear, bending, damage, or insufficient thread engagement
- Leaking hydraulic fluid
- Scored or damaged piston rod
- Loose bolts, pins, or fittings
- Modified, welded, or altered equipment
- Bent or damaged couplers or port threads

Note: If any of the above conditions are present, do not use the tool.

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.

Operation

Do not exceed the maximum lift and stroke of the tool.

Performance Specifications

	HS2000	HS3000
Maximum Rated Capacity	907 kg (1 ton)	1360 kg (1.5 ton)
Maximum Spread Capacity	10 cm (4 in.)	29.2 cm (11.5 in.)
Minimum Clearance Required	1.5 cm (.6 in.)	3.2 cm (1.25 in.)
Cubic CM. (cu.in) of Fluid Required	10.3 (0.63)	57.4 (3.5)

Table 1. HS2000 & HS3000 Specifications

General Maintenance

⚠ WARNING

- Repairs and maintenance are to be performed in a dust-free area by a qualified technician.

Inspection

See Figure 3 and Figure 4. Before each use, visually inspect for the following items:

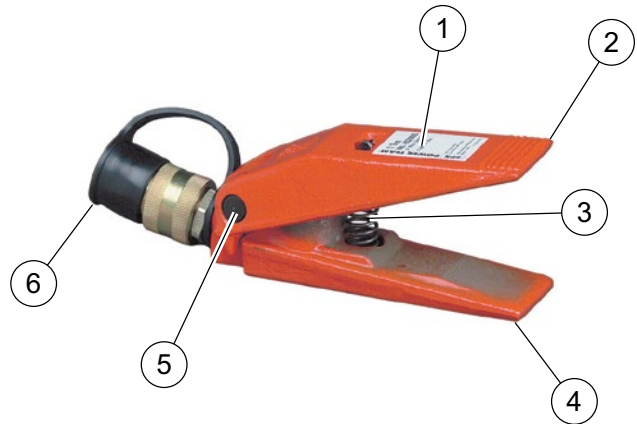
- Cracked or damaged spreader.
- Excessive wear, bending, damage, or insufficient thread engagement.
- Leaking hydraulic fluid.
- Scored or damaged piston rod.
- Loose bolts, pins, or fittings.
- Modified, welded, or altered equipment.
- Handle.

Preventive Maintenance

Visual examination by the operator or other designated personnel with a dated and signed equipment record should be done yearly (or sooner) if the spreader condition suggests damage.

Storage

Store the unit in a **dry**, well-protected area where it will not be exposed to corrosive vapors, debris, or other harmful elements. If a unit has been stored for an extended period of time, it must be thoroughly inspected before it is used.



Item	Description
1	Trade Name Decal
2	Upper Jaw
3	Extension Spring
4	Lower Jaw
5	Pivot Pin
6	Ram Half Coupler (w/Dust Cap)

Figure 3. HS2000 Components



Item	Description
1	Trade Name Decal
2	Upper Jaw
3	Extension Spring
4	Lower Jaw
5	Pin
6	Ram Half Coupler (w/Dust Cap)
7	Handle

Figure 4. HS3000 Components

Troubleshooting Guide

⚠ WARNING

- Repair work or troubleshooting must be performed by qualified personnel who are familiar with this equipment.



- Disconnect the power supply before removing the electrical cover. Electrical work should be performed by a qualified electrician.



- Check for system leaks by using a hand pump to apply pressure to the suspect area. Watch for leaking fluid and follow it back to its source. Never use your hand or other body parts to check for a possible leak.

Notes:

- For a detailed parts list or to locate a Power Team Authorized Hydraulic Service Center, contact your nearest Power Team facility.
- Plug the outlet ports of the pump when checking for leakage to determine if the leakage is in the pump, in the cylinder, or in the tool.

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 leaking in single-acting cylinders.	2. Replace worn packings. Check for excessive contaminations 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 packing.
Spreader does not move.	1. Loose couplers.	1. Tighten couplers. Make sure all couplers are fully screwed.
	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.

Troubleshooting Guide continued

Problem	Cause	Solution
Spreader extends only partially.	1. Pump reservoir is low on hydraulic fluid.	<i>1. Fill and bleed the system.</i>
	2. Load is above the capacity of the system.	<i>2. Use the correct equipment.</i>
	3. Piston rod binding.	<i>3. Check for dirt or leaks. Check for bent, misaligned, worn parts, or defective packing.</i>
Spreader moves slower than normal.	1. Loose connection or coupler.	<i>1. Tighten.</i>
	2. Restricted hydraulic line or fitting.	<i>2. Clean and replace if damaged.</i>
	3. Pump not working correctly.	<i>3. Check pump operating instructions.</i>
	4. Cylinder seals leaking.	<i>4. Replace worn seals. Check for excessive contamination or wear.</i>
Spreader moves but does not maintain pressure.	1. Leaky connection.	<i>1. Clean, reseal with thread sealant and tighten the connection.</i>
	2. Cylinder seals leaking.	<i>2. Replace worn seals. Check for excessive contaminated fluid as necessary.</i>
	3. Pump or valve malfunctioning.	<i>3. Check pump or valve operating instructions.</i>
	2. Loose connections.	<i>2. Clean, reseal with thread sealant and tighten connection. Make certain all connections are fully secured.</i>
Spreader will not retract or retracts slower than normal.	1. Pump release valve closed.	<i>1. Open pump release valve.</i>
	2. Loose couplers.	<i>2. Tighten couplers.</i>
	3. Blocked hydraulic lines.	<i>3. Clean and flush.</i>
	4. Weak or broken retraction springs.	<i>4. Send to service center for repair.</i>
	5. Spreader damaged internally.	<i>5. Send to service center for repair.</i>
	6. Pump reservoir too full.	<i>6. Drain hydraulic fluid to correct level.</i>

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Declaration of Conformity



English Original

EC DECLARATION OF CONFORMITY

We declare under our sole responsibility that our Hydraulic Spreader Model:

*** HS2000, HS3000**

to which this declaration relates are in conformity with the following:

<u>EN, EN-ISO, ISO standards</u>	<u>Title</u>
Per the provisions of the Machinery Safety Directive	2006/42 EC
EN_ISO 12100	Safety of machinery, basic concepts, general principles for design, risk assessment & risk reduction
EN 4413	Hydraulic Fluid Power – general rules and safety requirements for systems & their components

We hereby declare that the equipment specified under * conforms to the above quoted European Community Directive(s) and Standard(s) as per the currently valid revision. SPX Hydraulic Technologies is certified and registered to ISO 9001: 2015.

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