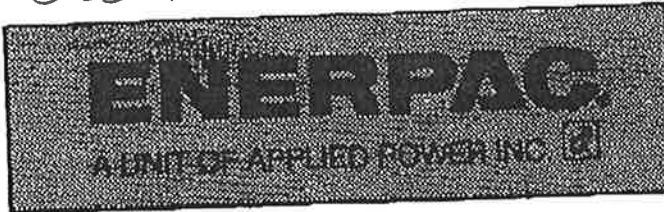


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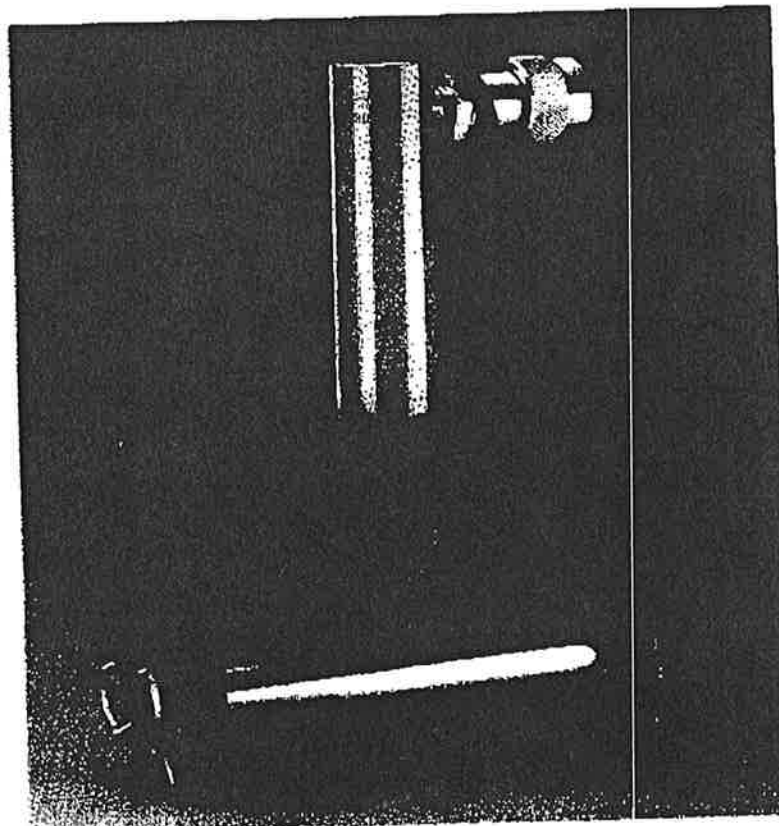
**Instruction Sheet**  
**FS-56, FS-56S, FS-109, FS-109S**

L-1511 REV. 0 12/92

**IMPORTANT RECEIVING INSTRUCTIONS:** Visually inspect all components for shipping damage. If any shipping damage is found, notify carrier at once. Shipping damage is NOT covered by warranty. The carrier is responsible for all repair or replacement cost resulting from damage in shipment.

**SAFETY FIRST**

Carefully plan your system by selecting components designed to perform the intended operation and which will adequately perform with existing equipment. Always check the product limitations regarding pressure ranges, load capacities and set-up requirements. The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Read all CAUTIONS, WARNINGS, and INSTRUCTIONS included with, or attached to, each product. Follow all safety precautions to avoid personal injury or property damage during the system operation. **ENERPAC CANNOT BE RESPONSIBLE FOR DAMAGE OR INJURY RESULTING FROM UNSAFE USE OF PRODUCT, LACK OF MAINTENANCE OR INCORRECT PRODUCT AND SYSTEM APPLICATION.** Contact ENERPAC when in doubt as to safety precautions, or applications.



TO PROTECT YOUR WARRANTY, USE ONLY ENERPAC HYDRAULIC OIL

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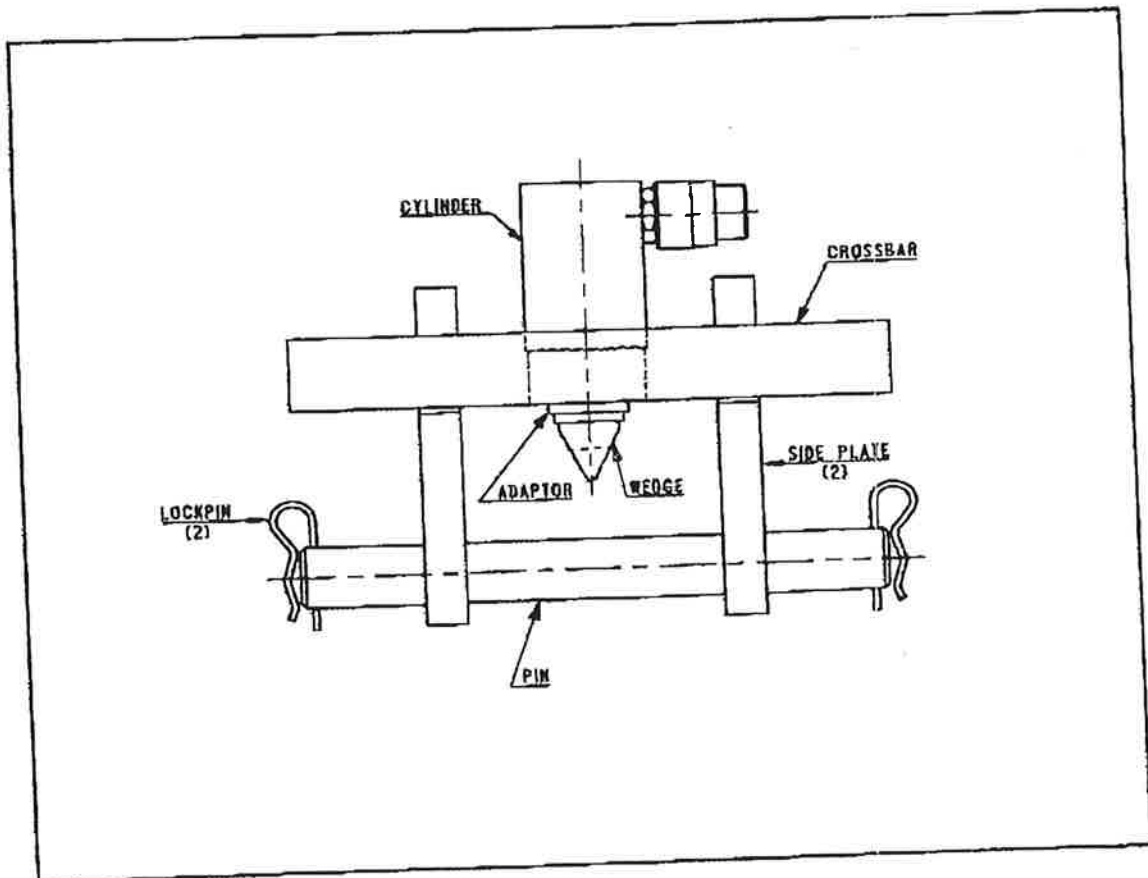


Hydr.Flanschsprelzer 10to

### Flange Spreader Selection Chart

Model #	Pump	Hose	Cylinder	Crossbar	Side Plate	Pin	Lock Pin	Adaptor	1/8"-1 1/8" Wedge	1 3/8"-2 3/8" Wedge	Wgt. Lb.
FS-56			RC-53ST	F56-2	(2) F56-3	F56-4	(2) F109-8	F56-5	F109-6	F109-7 (Optional)	11
FS-56S	P-142	HC-882			18						
FS-109			RC-102	F109-2	(2) F109-3	F109-4	(2) F109-8	F109-5	F109-6	F109-7 (Optional)	26
FS-109S	P-392	HC-913			39						

Metal box included with FS-56, FS-56S, FS-109 and FS-109S.



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## Assembly Instructions

1. Before assembly, identify all component parts included with the set. Refer to the Flange Spreader Selection Chart for identification of the component parts and to Figure A to aid in the assembly procedure.
2. Hand tighten the hydraulic cylinder into the crossbar making sure the cylinder collar threads are fully engaged. (For cylinder RC-102, first remove thread protector.)
3. Thread the adaptor (F56-5 or F109-5) into the end of the cylinder plunger until fully engaged, hand tighten only.
4. Thread the wedge provided (or the optional wedge, if desired) into the adaptor until fully engaged, hand tighten only.
5. Insert the small head one of the side plates through the slot in one end of the crossbar and rotate 90°. Repeat this procedure for the other side plate into the slot at the opposite end of the crossbar. The spreader is now ready to be slipped onto the flange.
6. Connect the hose assembly to the proper port on your pump. Use teflon tape on the pipe threads and tighten with a wrench.

**IMPORTANT NOTE:** Teflon tape is an excellent thread sealer. However, if the tape is not properly applied, pieces may enter the hydraulic system causing malfunctions and component damage. Use 1 1/2 wraps of tape on each connection, leaving the starting thread free of tape. Cut off all loose tape ends.

### WARNING

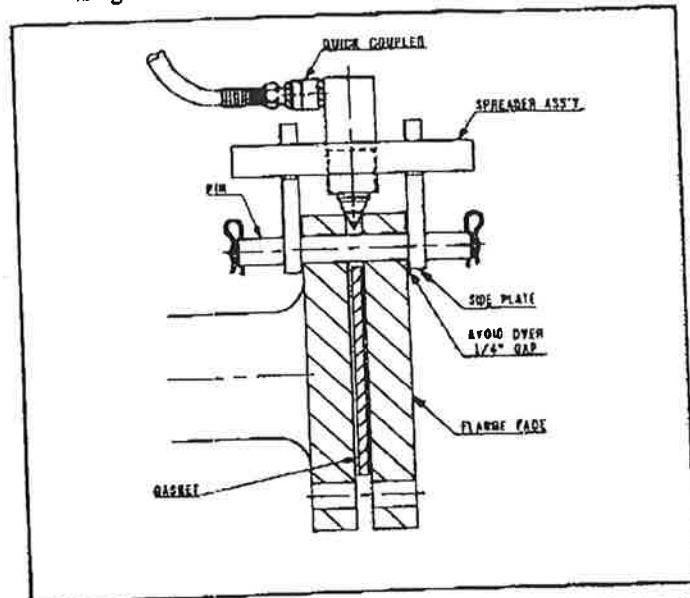
If an Enerpac pump is not used, be sure your pump does not exceed the rated capacity of the flange spreader. Failure to do so could result in personal injury or property damage.

## Operating Instructions

**IMPORTANT NOTE:** Prepare the flange by loosening all the bolts and removing one bolt for the insertion of the flange spreader pin. Removal of the remaining bolts may be necessary depending on your flange maintenance application. In some cases, leaving one or two loosened bolts in the flange may be helpful for realignment of the flange halves. Qualified personnel should determine the proper method of preparation.

1. Slip the assembled spreader onto the flange. Align the holes in the side plates with the flange bolt holes and insert the pin through the side plates and bolt holes as shown in Figure B. Insert the lockpins. Keep the side plates, pin and crossbar centered on the flange.

2. Rotate the wedge clockwise allowing the tapered sides to be forced between the flange faces. If the wedge cannot be rotated sufficiently in a clockwise direction for proper alignment, then rotate it counter-clockwise just enough to align it with the flange.



### WARNING

Keep side plates close to flange face while applying pressure. Exceeding 1/4 inch distance between side plate and flange face could result in personal injury or property damage.

3. Connect the quick coupler on the hose to the quick coupler on the cylinder and hand tighten.
4. Apply light pressure with the hand pump and check that all connections fit securely. If so, proceed with the flange spreading operation. If not, make needed adjustments before proceeding.

**NOTE:** A light coating of grease on the wedge tapers will make it easier for the wedge to be forced between the flange faces.

### CAUTION

Do not force the wedge between the flange faces beyond the maximum width of the tapered sides of the wedge or binding may occur.

5. If two flange spreaders are to be used to perform the task, they should be positioned 180° apart.
6. To remove the wedge, open the release valve of the hand pump. If the wedge binds, work the cylinder back and forth to help walk the wedge out of the gap.

Refer to chart on back page for matching flange spreaders to pipe sizes and ASA ratings.

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## Flange Spreader Matching Chart

ASA Rating (psi)	Pipe Size (inches)	
	FS-56	FS-109
150	5 - 20	22 - 42
300	2½ - 14	16 - 28
400	2½ - 12	14 - 24
500	2½ - 10	12 - 20
900	½ - 6	8 - 16
1500	½ - 3½	4 - 8
2500	½ - 2½	3 - 4

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