



HYDRAULIC TECHNOLOGIES

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Form No. 102925

Operating Instructions for:

B5090	B5135
B7090	B7135
B8090	B9180
B8090L	B11090

HYDRAULIC REBAR BENDERS

All cylinders are marked with maximum pressure setting

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.

SAFETY EXPLANATIONS

Two 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.



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.

SAFETY PRECAUTIONS



- When extending a cylinder or ram under load, always insure that the coupler(s) or port thread(s) has (have) not been damaged or do(es) 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 cylinder or ram resulting in the instantaneous release of high pressure hydraulic fluid, flying objects, and loss of the load. All of these possible results could cause serious injury or death.



- All WARNING statements must be carefully observed to help prevent personal injury.
- Before operating the pump, all hose connections must be tightened with the proper tools. Do not overtighten. Connections should only be tightened securely and leak-free. Overtightening can cause premature thread failure or high pressure fittings to split at pressures lower than their rated capacities.
- Should a hydraulic hose ever rupture, burst, or need to be disconnected, immediately shut off the pump and release all pressure. Never attempt to grasp a leaking pressurized hose with your hands. The force of escaping hydraulic fluid could cause serious injury.
- Do not subject the hose to potential hazard such as fire, sharp surfaces, extreme heat or cold, or heavy impact. Do not allow the hose to kink, twist, curl, crush, cut, or bend so tightly that the fluid flow within the hose is blocked or reduced. Periodically inspect the hose for wear, because any of these conditions can damage the hose and possibly result in personal injury.
- Do not use the hose to move attached equipment. Stress can damage the hose and possibly cause personal injury.
- Hose material and coupler seals must be compatible with the hydraulic fluid used. Hoses also must not come in contact with corrosive materials such as creosote-impregnated objects and some paints. Hose deterioration due to corrosive materials can result in personal injury. Consult the manufacturer before painting a hose. Never paint a coupler.
- The user must be a qualified operator familiar with the correct operation, maintenance, and use of the rebar benders. Lack of knowledge in any of these areas can lead to personal injury.
- Read and understand all safety and warning decals and instructions.
- Use only approved accessories and 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 cylinders. Excess pressure can result in personal injury.
- Inspect each cylinder 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.
- Do not use cylinders with bent or damaged couplers or damaged port threads.
- Avoid pinch points or crush points that can be created by the load or parts of the cylinder.
- Never use extreme heat to disassemble a hydraulic cylinder or ram. Metal fatigue and/or seal damage will result and can lead to unsafe operating conditions.
- The guide cannot cover every hazard or situation so always do the job with SAFETY FIRST.

SYSTEM EVALUATION

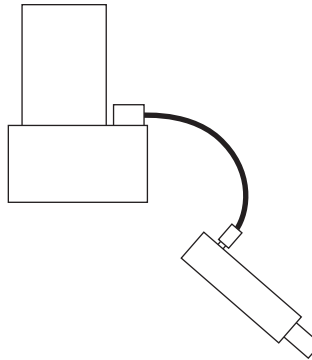
Your cylinder, hose(s), couplings and pump all must be rated for the same maximum operating pressure, correctly connected and compatible with the hydraulic fluid used. An improperly matched system can cause the system to fail and possibly cause serious injury. If you are in doubt, consult your nearest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

SETUP

BLEEDING THE SYSTEM

After all connections are made, the hydraulic system must be bled of any trapped air. Refer to the diagrams below.

With no load on the system and the pump vented and positioned higher than the cylinder or ram, cycle the system several times. If you are in doubt about venting your pump, read the operating instructions for your pump. Check the reservoir for possible low fluid level and fill to proper level with approved, compatible hydraulic fluid as necessary.



System with a single-acting cylinder

IMPORTANT: Some spring return cylinders or rams have a cavity in the rod which forms an air pocket. This type of cylinder or ram should be bled when positioned upside down or lying on its side with the port facing upward.

INSPECTION

Before each use, visually inspect for the following items:

1. Cracked or damaged cylinder or rebar bender
2. Excessive wear, bending, damage, or insufficient thread engagement
3. Leaking hydraulic fluid
4. Scored or damaged piston rod
5. Improperly functioning or damaged components
6. Loose bolts
7. Damaged or improperly assembled accessory equipment
8. Modified, welded, or altered equipment
9. Bent or damaged couplers or port threads

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

SPECIFICATIONS

(All the following rebar benders bend in compliance with ACI/CRSI standards)

B5090 Rebar bender with hydraulic cylinder, 10 ft hose, coupler, & two bending wheels.
Dimensions: 17" x 9" x 4 1/2", Weight: 31 lb.

- * Bends meet ACI standards for bending #5 rebar to 90 degrees
- * Meets CRSI requirements for #5 rebar
- * Also bends #4, #6 & #7 rebar to 90 degrees

Applications

- * Standard hook applications
- * Off-set "dog-leg" bends in all rebar sizes to #7
- * Straightens rebar sizes #4 to #7 (from less than 30 degree angles-
NOTE: check local safety and specification regulations before attempting to straighten rebar)
- * Suitable for heavy or light bending

Minimum bend

- * 5" from bottom of machine to top of 90 degree angle
- * Works on rebar spaced as close as 3" on center



B7090 Rebar bender with hydraulic cylinder, 10 ft hose, coupler, & two bending wheels.
Dimensions: 21 1/2" x 12 1/2" x 5 1/2", Weight: 60 lb.

- * Bends meet ACI standards for bending #7 rebar to 90 degrees
- * Meets CRSI requirements for #7 rebar
- * Also bends #6, #8 & #9 rebar

Applications

- * Standard hook applications (90 degrees)
- * Off-set "dog-leg" bends in rebar sizes to #11
- * Straightens rebar sizes #6 to #11 (from less than 30 degree angles-
NOTE: check local safety and specification regulations before attempting to straighten rebar)
- * Suitable for heavy or light bending

Minimum bend

- * 8" from bottom of machine to top of 90 degree angle
- * Works on rebar spaced as close as 3" on center



B8090 Rebar bender with hydraulic cylinder, 10 ft hose, coupler, & two bending wheels.
Dimensions: 27" x 14" x 5 1/2", Weight: 55 lb.

- * Bends meet ACI standards for bending #8 rebar to 90 degrees
- * Meets CRSI requirements for #8 rebar
- * Also bends #6, #7 & #9 rebar

Applications

- * Standard hook applications (90 degrees)
- * Off-set "dog-leg" bends in rebar sizes to #11
- * Straightens rebar sizes #6 to #11 (from less than 30 degree angles-
NOTE: check local safety and specification regulations before attempting to straighten rebar)
- * Suitable for heavy or light bending

Minimum bend

- * 8" from bottom of machine to top of 90 degree angle
- * Works on rebar spaced as close as 3" on center



B8090L Rebar bender with hydraulic cylinder, 10 ft hose, coupler, & two bending wheels.
Dimensions: 27" x 14" x 5 1/2", Weight: 47 lb.

- * Bends meet ACI standards for bending #8 rebar to 90 degrees
- * Meets CRSI requirements for #8 rebar
- * Also bends #6, #7 & #9 rebar

Applications

- * Standard hook applications (90 degrees)
- * Off-set "dog-leg" bends in rebar sizes to #9
- * Straightens rebar sizes #6 to #9 (from less than 30 degree angles-
NOTE: check local safety and specification regulations before attempting to straighten rebar)
- * Suitable for heavy or light bending

Minimum bend

- * 7" from bottom of machine to top of 90 degree angle
- * Works on rebar spaced as close as 3" on center

Note: Shaded areas
reflect last revision(s)
made to this form.



SPECIFICATIONS (CONTINUED)

B5135 Rebar bender with hydraulic cylinder, 10 ft hose, coupler & bending wheel.
Dimensions: 23" x 11" x 3 1/2", Weight: 22 lb.

- * Bends meet ACI standards for bending #5 rebar to 135 degrees
- * Meets CRSI requirements for #5 rebar
- * Also bends #4 rebar to 135 degrees

Applications

- * Caisson spirals, standard hook, stirrup and tie hook, seismic stirrup/tie hook applications
- * Works on rebar spaced as close as 2" on center



B7135 Rebar bender with hydraulic cylinder, 10 ft hose & coupler
Dimensions: 19" x 9" x 3", Weight: 40 lb.

- * Bends meet ACI standards for bending #7 rebar to 135 degrees
- * Meets CRSI requirements for #7 rebar
- * Also bends #6 rebar to 135 degrees

Applications

- * Caisson spirals, standard hook, stirrup and tie hook, seismic stirrup/tie hook applications
- * Works on rebar spaced as close as 2" on center



B9180 Rebar bender with hydraulic cylinder, 10 ft hose and coupler
Dimensions: 19" x 17" x 6", Weight: 108 lb.

- * Bends meet ACI standards for bending #9 rebar to 90 degrees or 180 degrees
- * Meets CRSI requirements for #9 rebar
- * Also bends #6, #7, #8 & #10 rebar 0 to 180 degrees

Applications

- * Standard hook 90 degree applications

Minimum bend

- * 11" from bottom of machine to top of bend
- * Works on rebar spaced as close as 3 1/2" on center



B11090 Rebar bender with hydraulic cylinder, 10 ft hose and coupler
Dimensions: 27" x 19" x 6", Weight: 115 lb.

- * Bends meet ACI standards for bending #11 rebar to 90 degrees
- * Meets CRSI requirements for #11 rebar
- * Also bends #9 & #10 rebar to 90 degrees

Applications

- * Standard hook 0 to 90 degree applications

Minimum bend

- * 14" from bottom of machine to top of bend
- * Works on rebar spaced as close as 3 1/2" on center



Note: Shaded areas
reflect last revision(s)
made to this form.

REBAR BENDER PRE-OPERATION CHECKOUT

Regular maintenance and visual checks of the rebar bender prior to use will minimize repairs and help ensure safe operation of the bender and hydraulic pump:

- Check for wear and damage to wheels, pin, nuts and bolts, clip, side plates and hydraulic ram.
- Clean, lubricate and replace as required.
- Use with standard hydraulic pump rated at 10,000 PSI. Refer to the pump's manual for operation and maintenance instructions.
- Check the pump fluid level.
- Check for proper electrical supply and connections.
- All hydraulic connections must be clean.
- Check the hydraulic hoses for cuts, holes, or excessive wear.
- Keep all fittings and couplers clean and fitted with dust caps.
- Couplings to pump and bender must be tightened securely.

HYDRAULIC PUMP OPERATION

Refer to the pump manufacturer's manual for operation and maintenance instructions:

1. Check that the pump switch is in the off position.
2. Place the pump valve in the neutral position.
3. Apply power to the pump.
4. Toggle switch on and off to determine proper operation.
5. Move pump valve to the pressurized position.
6. Activate the pump by moving the toggle switch (on the pump or on a remote hand control) to the ON position.
7. Release the pressure on the rebar bender by moving the pump valve to the neutral position.

HANDLING THE REBAR BENDER

As with all precision tools, rebar benders require special care and handling:

- Use the benders carrying handle.
- Avoid dropping and rough handling. Dents or cracks can cause binding or prevent full movement of the cylinder.
- Do not lay bender in dirt or gravel. Moving parts must remain clean for smooth operation.
- To avoid possible back injury, always use your leg muscles and keep your back straight when lifting a bender.

OPERATION OF THE REBAR BENDER

There are two methods to placing a bender on rebar. Use the most convenient method for your immediate application:

Method 1: Lift the bender onto the rebar and guide the rebar between the two wheels. Position a locking pliers on the rebar to hold the bender in place.

Method 2: Remove the pin and main wheel of the bender (wheel furthest from the cylinder). Insert the rebar into the bender and replace the wheel and pin. Position a locking pliers on the rebar to hold the bender in place.

Note: It is recommended that a weekly safety meeting be conducted on every job site.



WARNING: To help prevent possible injury, consult the ACI (American Concrete Institute) and CRSI (Concrete Reinforcing Steel Institute) requirements, rebar material specifications and the rebar bender model descriptions and applications on back of sheet 2 of 4 and front sheet 3 of 4 to determine the proper bend radius and bend angle for each use.

POSITIONING THE REBAR BENDER FOR BENDING

The bender will bend rebar over the top of the main wheel (the wheel furthest from the cylinder):

1. Position the bender on the rebar with the top of the main wheel at the required elevation of the bend.
2. Rotate the bender until the cylinder is the opposite direction of the desired bend.



WARNING: Keep hands, fingers, tools, objects and other workers away from the bender.

3. Stand at least six feet away and out of the path of the bend. Activate the pump and build pressure in the cylinder.
IMPORTANT: If you encounter problems with the bender returning, this can indicate binding in moving parts. Stop the operation and check for physical obstacles such as dirt or gravel, or excessive wear of parts, or inadequate lubrication of the bender that could cause blocking of the bending action. Take corrective action as needed.
4. After making a bend, release the pressure on the cylinder by moving the pump valve into the neutral position.
5. To remove the bender, either lift the bender over the end of the rebar or pull the clip, pin and main wheel and slide the bender off the rebar.

ADJUSTING THE BENDER FOR DIFFERENT SIZE REBAR

Some rebar bender models are adjustable:

NOTE: Rebar bender models B9180 & B11090 are NOT adjustable.

1. Loosen two adjustment bolts on side plates of bender. (On model B8090L, turn thumbscrew counterclockwise to loosen.)
2. Insert rebar into bender and turn adjustments until the cam touches the rebar.
3. Tighten both nuts and bolts. (On B8090L, turn thumbscrew clockwise to fit selected rebar.)

STRAIGHTENING BENT REBAR

Rebar can be straightened with bender models B5090, B7090, B8090, and B8090L only.

Note:

- Check building codes before straightening rebar.
- Never straighten rebar that is bent greater than 30°.

1. Before actually straightening any rebar a larger cell or space will be necessary to fit the bent rebar between the wheels. This is done by pulling the clip, pin and main wheel, installing a smaller wheel and replacing the pin and clip.
2. Mark the rebar as a guide and center the small main wheel on the bend to be straightened.
3. Position a locking pliers on the rebar to support the base of the bender.
4. Activate the pump momentarily and stop as the bender begins to lock on the rebar. Check for proper alignment.
5. If ready to proceed, stand back at least six feet and out of the path of the bend. Activate the pump and straighten rebar.



WARNING: Rebar is more likely to break when straightening than bending. Use all safety precautions and proceed slowly. If using puller models of benders, apply pressure briefly, insure that side guide wheels are firmly locked on the rebar, then proceed with the bend. Stand back at least six feet and out of the path of the bend.

PREVENTIVE MAINTENANCE

Preventive maintenance should be performed daily or on a weekly basis depending on the amount of use and working conditions. A higher than normal operating pressure could indicate a need for immediate maintenance. A clean, well lubricated bender will operate faster and smoother and allows more accurate readings from pump pressure gauges for a safer operation.

To clean and lubricate:

1. Remove side plates to expose moving parts of bender. Clean those moving parts with a clean rag and solvent.
2. Check the cylinder for any leaks.
3. Lubricate all moving parts with a high pressure grease.
4. For bender models with cables (Models B11090 & B9180), also:
 - a. Lubricate five grease fittings daily or after approximately fifty rebar bend operations.
 - b. Check the cables daily for any fraying.
5. For bender Models B5135 or B7135:
 - a. Check for dents or cracks in side plates.
 - b. Clean and lubricate two wheels to insure smooth rolling.
 - c. Check the cylinder for any damage or leaks.

POWER TEAM FACILITIES



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