

1645 Lemonwood Dr. Santa Paula, CA 93060 USA Toll Free 1 (800) 253-2363 Tel: 1 (805) 933-9970

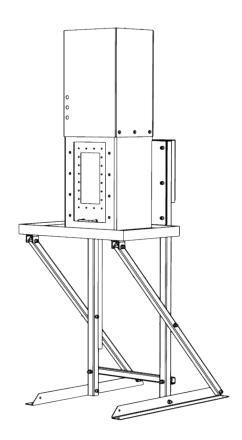
rangerproducts.com

# High-Speed Oil Filter Crusher Installation and Operation Manual

Manual P/N 5900392 — Manual Revision C2 — June 2021

## Models:

- RP-50FC
- RP-50FC-E



Designed and engineered by BendPak Inc. in Southern California, USA. Made in China.



Read the *entire* contents of this manual *prior* to setup or operation. Failure to follow the instructions and safety precautions in this manual can result in serious injury or death. Make sure all other operators also read this manual. *Keep the manual near the product for reference. By proceeding with setup and operation, you agree that you fully understand the contents of this manual and assume full responsibility for product use.* 

**Manual.** RP-50 Series of High-Speed Oil Filter Crushers, *Installation and Operation Manual*, Manual P/N 5900392, Manual Revision C2, Released June 2021.

**Copyright.** Copyright © 2021 by BendPak Inc. All rights reserved. You may make copies of this document if you agree that: you will give full attribution to BendPak Inc., you will not make changes to the content, you do not gain any rights to this content, and you will not use the copies for commercial purposes.

**Trademarks.** BendPak, the BendPak logo, Ranger, and the Ranger logo are registered trademarks of BendPak lnc. All other company, product, and service names are used for identification only. All trademarks and registered trademarks mentioned in this manual are the property of their respective owners.

**Limitations.** Every effort has been made to ensure complete and accurate instructions are included in this manual. However, product updates, revisions, and/or changes may have occurred since this manual was published. BendPak Ranger reserves the right to change any information in this manual without incurring any obligation for equipment previously or subsequently sold. BendPak Ranger is not responsible for typographical errors in this manual.

**Warranty.** The BendPak Ranger warranty is more than a commitment to you: it is also a commitment to the value of your new product. For full warranty details and to register your new BendPak Ranger product, contact your nearest BendPak Ranger dealer or visit **www.bendpak.com/support/warranty**.

**Safety.** Your new product was designed and manufactured with safety in mind. Your safety also depends on proper training and thoughtful operation. Do not set up, operate, maintain, or repair the unit without reading and understanding this manual and the labels on the unit.

**Owner Responsibility.** In order to maintain your product properly and to ensure operator safety, it is the responsibility of the product owner to read and follow these instructions:

- Follow all setup, operation, and maintenance instructions.
- Make sure product setup conforms to all applicable local, state, and federal codes, rules, and regulations, such as state and federal OSHA regulations and electrical codes.
- Read and follow all safety instructions. Keep them readily available for operators.
- Make sure all operators are properly trained, know how to safely operate the unit, and are properly supervised.
- Do not operate the product until you are certain that all parts are in place and operating correctly.
- Carefully inspect the product on a regular basis and perform all maintenance as required.
- Service and maintain the unit only with approved replacement parts.
- Keep the manual with the product and make sure all labels are clean and visible.

Unit Information. Enter the Model Number, Serial
Number, and the Date of Manufacture from the label or
your unit. This information is required for part or
warranty issues.

Model:	
Serial:	
Date of Manufacture: _	



## **Table of Contents**

Introduction	3	Operation	24
Shipping Information	4	Maintenance	25
Safety Considerations	4	Troubleshooting	26
Specifications	6	Parts Diagrams	27
Components	7	Wiring Diagram	31
Setup	8		

# Introduction

This manual describes the RP-50 series of high-speed oil filter crushers from Ranger Products, which apply up to 25 tons of electric hydraulic pressing power to flatten just about any used oil filter to approximately 20 percent of its size while removing up to 95 percent of the residual oil.

This manual describes these models:

- **RP-50RC**: High-speed oil filter crusher that uses a 208–230 VAC, 60 Hz, single phase motor. This motor is suitable for use in the United States.
- **RP-50RC-E**: High-speed oil filter crusher that uses a 380–415 VAC, 50 Hz, three phase motor. This motor is suitable for use *outside* the United States.



BendPak Ranger requires using a *licensed, certified electrician* to wire your motor to the power source. Wiring the motor incorrectly could result in serious injury or product damage.

More information about the full line of Ranger Products is available at **rangerproducts.com**.

**This manual is mandatory reading for all users** of the RP-50FC and the RP-50FC-E, including anyone who sets them up, operates them, maintains them, or repairs them. You can always find the latest version of the manual on the **BendPak website**.



Be very careful when setting up, operating, maintaining, or repairing this equipment; failure to do so could result in property damage, product damage, injury, or (in very rare cases) death. Make sure only authorized personnel operate this equipment. All repairs must be performed by an authorized technician. Do not make modifications to the unit; this voids the warranty and increases the chances of injury or property damage. Make sure to read and follow the instructions on the labels on the unit.

Keep this manual on or near the equipment so that anyone who uses or services it can read it.

Technical support and service for your oil filter crusher is available directly from your distributor or by calling the **Ranger Products Hotline at 1 (805) 933-9970**. You may also contact the Hotline for consultation on parts replacement (please have the serial number and model number of your unit available).

# **Shipping Information**

Your equipment was carefully checked before shipping. Nevertheless, you should thoroughly inspect the shipment *before* you sign to acknowledge that you received it.

When you sign the bill of lading, it tells the carrier that the items on the invoice were received in good condition. *Do not sign the bill of lading until after you have inspected the shipment.* If any of the items listed on the bill of lading are missing or damaged, do not accept the shipment until the carrier makes a notation on the bill of lading that lists the missing or damaged goods.

If you discover missing or damaged goods **after** you receive the shipment and have signed the bill of lading, notify the carrier at once and request the carrier to make an inspection. If the carrier will not make an inspection, prepare a signed statement to the effect that you have notified the carrier (on a specific date) and that the carrier has failed to comply with your request.

It is difficult to collect for loss or damage after you have given the carrier a signed bill of lading. If this happens to you, file a claim with the carrier promptly. Support your claim with copies of the bill of lading, freight bill, invoice, and photographs, if available. Our willingness to assist in helping you process your claim does not make us responsible for collection of claims or replacement of lost or damaged materials.

# **Safety Considerations**

**Read this manual carefully before using your new product.** Do not set up or operate the product until you are familiar with all operating instructions and warnings. Do not allow anyone else to operate the product until they are also familiar with all operating instructions and warnings.

## **Safety Information**

Please note the following:

- The product is a high-speed oil filter crusher. **Use it only for its intended purpose.**
- The product should only be operated by authorized personnel. Keep children and untrained personnel away from the product.
- Do not crush aerosol cans, compressed gas, fuel filters, or flammable liquids or solvents.
- Do not open the door while the unit is operating; always wait for the end of the cycle.
- Do not stack filters or cans inside the crushing chamber.
- When using the product, wear appropriate work clothes, ANSI-approved safety goggles, and industrial gloves. Do not wear loose clothing or jewelry. Keep hair and clothing away from moving parts.
- Prior to using the press, make sure all debris and tools are removed from inside the Press area.
- Keep the work area clean and well-lighted. Cluttered benches and dark areas increase the risks of injury to persons.
- Clean up any spilled oil immediately so it will not cause a slipping hazard.
- When the product is in use, keep all body parts away from it.
- To prevent the Power Unit components from overheating, we recommend taking 2-3 minute breaks after every half hour of use. The Power Unit's Motor is **not** constant duty; it cannot be run continuously.
- Do not use the product while tired or under the influence of drugs, alcohol, or medication.

- Do not use the product in the presence of cigarette smoke, dust, or flammable liquids or gases; the Press can create sparks resulting in the ignition of the dust or fumes. Use the product indoors in a well-ventilated area.
- Do not make any modifications to the product.
- Secure the unit to a dry, clean, flat concrete surface; do not install it on asphalt or wood.
- Make sure all operators read and understand the *Installation and Operation Manual*. Keep the manual near the device at all times.
- Avoid using an extension cord; they can overheat. If you must use an extension cord, make sure it is No. 14 AWG *minimum*.
- Make a visual inspection of the product before using it. Do not use the product if you find any missing or damaged parts. Instead, contact an authorized repair facility, your distributor, or the Ranger Products Hotline at 1 (805) 933-9970.
- BendPak Ranger recommends making a **thorough** inspection of the product at least once a year. Replace any damaged or severely worn parts, decals, or warning labels.

#### **Symbols**

Following are the symbols used in this manual:

⚠ DANGER Calls attention to a hazard that will result in death or injury.

MARNING Calls attention to a hazard or unsafe practice that could result in death or injury.

CAUTION Calls attention to a hazard or unsafe practice that could result in personal injury, product damage, or property damage.

- Tip Calls attention to information that can help you use your unit better.

# **Liability Information**

BendPak Ranger assumes **no** liability for damages resulting from:

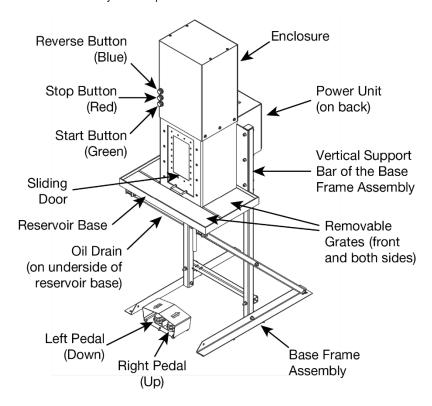
- Use of the equipment for purposes other than those described in this manual.
- Modifications to the equipment without prior, written permission from BendPak Ranger.
- Injury or death caused by modifying, disabling, or removing safety features.
- Damage to the equipment from external influences.
- Incorrect operation of the equipment.

# **Specifications**

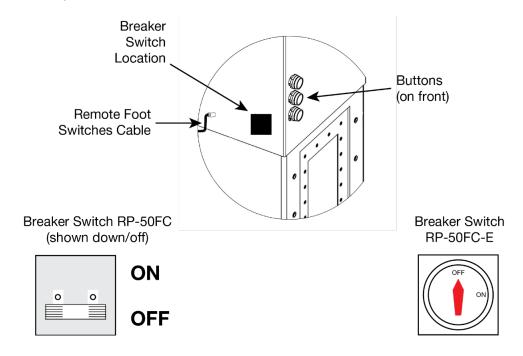
Height	88.5" (7.3 feet) / 2,248 mm
Width	32.5" (2.7 feet) / 825.5 mm
Depth	31.5" (2.6 feet) / 800 mm
Chamber height	17.5" / 444.5 mm
Chamber width	9.75" / 247.6 mm
Chamber depth	11.75" / 298.4 mm
Average cycle time	8 to 15 seconds
Weight	415 lbs / 188 kg
Power units	<b>RP-50RC</b> : 208–230 VAC, 60 Hz, 1 Ph <b>RP-50RC-E</b> : 380–415 VAC, 50 Hz, 3 Ph

# **Components**

The following figure shows the major components of the unit.



There are also components on the left side of the enclosure.



# **Setup**

This section describes how to get your oil filter crusher up and running.



Most of the setup procedure is the same for both models, with the exception being the wiring of the power unit. There are separate wiring procedures for each model; make sure to pick the correct procedure for the model you are setting up.

## **Tools and Supplies**

You need to provide the following:

- Wrenches and screwdrivers appropriate for assembling the unit.
- A drill and concrete drill bit to mount the unit to the floor, if desired.
- A plug to connect to the power unit's electrical cord.

## **Unpacking**

Use caution when unpacking the components from their shipping containers. You do not want to damage or misplace anything.



Tip

Consider unpacking the components in the area where you are going to assemble the unit.

#### **Screws**

Assembling the unit requires the use of several different types of screws:

- Socket head cap screws (14), M12 by 1.75 by 80, referred to as Screw A
- Socket head cap screw (4), M12 by 1.75 by 120, referred to as Screw B
- HHB MM 8 by 35 (4), referred to as Screw C

## **Assembly**

Your oil filter crusher comes disassembled (to protect the components during shipping). Once the components are unloaded, they are your responsibility to move around. As the unit includes a number of heavy pieces, the closer you unload them to the installation location, the better off you are.

The assembly process happens in multiple phases. Perform them in the order shown.

#### **⚠** CAUTION

Some of the Oil Filter Crusher components are heavy; improper handling can result in product damage, property damage, or personal injury. Use extreme care when moving the components.

#### **Assembling the Stand:**

1. Connect the left and right base frame support bars to the reservoir base. Use Screw A with washer and nut. Do not tighten nuts at this time.



2. Bolt the base frame vertical support bars to the reservoir base. Use Screw A with washer and nut. Do not tighten nuts at this time.



3. Bolt the base frame support bars to the vertical support bars. Use Screw B with washer and nut. Do not tighten nuts at this time.



4. Bolt the base frame legs to the vertical support bars. Use Screw A with washer and nut. Do not tighten nuts at this time.



5. Stand up the base frame assembly and the reservoir base. *Tighten all nuts*.



The Stand Assembly and Reservoir Base are now assembled.

#### Mounting the Enclosure to the Stand:

- 1. Remove the top of the enclosure, exposing the eye hitch.
- 2. Use the eye hitch to lift the enclosure onto the reservoir base.



3. Bolt the enclosure onto the base frame and reservoir.



4. Bolt the enclosure to the vertical support bars on both sides. Use Screw A with one flat washer, two ridged washers, and one nut.



The enclosure is now mounted to the base frame.

#### **Connecting the equipment:**

1. Remove the rear panel of the enclosure.



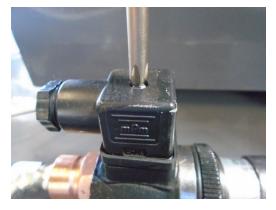
2. Connect the cylinder hose to the pressure switch. Tighten the hose to the cylinder at the top.



- Tip To make it easier to connect the cylinder hose, remove the top connector on the pressure switch; this allows it to be move around more freely.
- 3. Screw down the pressure switch.







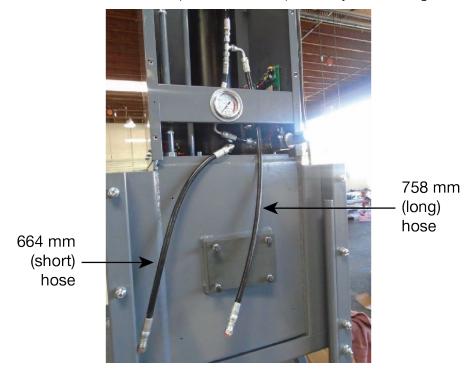
4. Connect the **anti-vibration pad and the motor at the same time** to the back of the enclosure.

Use Screw C and two washers per screw to attach the anti-vibration pad.

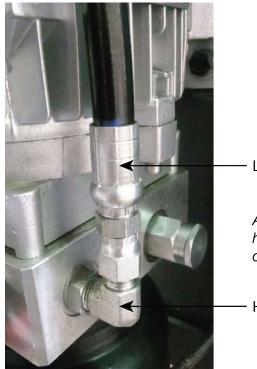




- 5. Attach the hydraulic fitting to the left and right sides of the motor.
- 6. Attach the 664 mm hose (on the left below) to the hydraulic fitting on the left side of the motor.



7. Attach the long 758 mm hose (on the right) to the hydraulic fitting on the right side of the motor.



Long (758 mm) hose

Attach short (644 mm) hose to hydraulic fitting on left side of motor

Hydraulic fitting

Right side of motor

8. Add hydraulic oil to the motor. The tank holds up to 3.1 gallons (12 liters).

Approved fluids are any general purpose ISO-32, ISO-46, or ISO-68 hydraulic oil or approved ATF fluids such as Dexron III, Dexron VI, Mercon V, Mercon LV, or any Synthetic Multi-Vehicle ATF.



#### Wiring the RP-50RC to 220 VAC, 60 Hz, single phase:

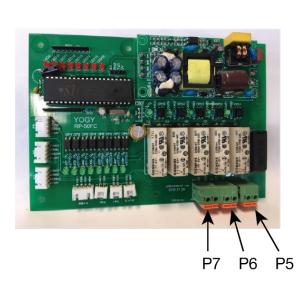
**⚠** CAUTION

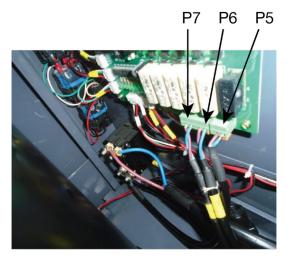
Wiring is different for the RP-50RC and the RP-50RC-E. Make sure to use the correct procedure for the model you have. Using the wrong procedure for your model could damage it.

**⚠** DANGER

All electrical work **must be done by a licensed, certified Electrician** in accordance with all applicable local electrical codes. Damage caused by improper electrical installation may void your warranty.

1. Wires labeled P6 and P7 connect to the control board and to terminals on the motor.







**Left Side of Power Unit** 

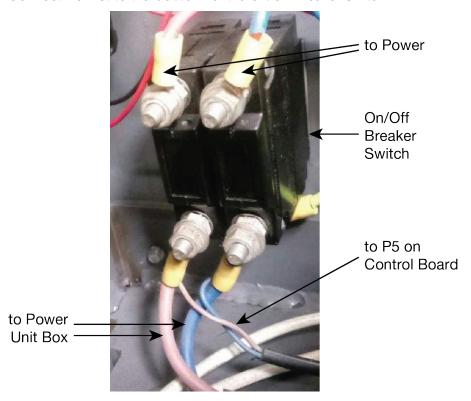
Connect one end of P7 to the Control Board, the other end to the Solenoid on the left side of the Power Unit.



**Right Side of Power Unit** 

Connect one end of P6 to the Control Board, the other end to the Solenoid on the right side of the Power Unit. 3. The P5 wire attaches differently than P6 and P7.

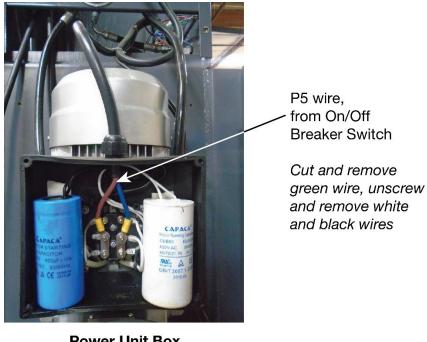
Connect P5 first to the **bottom** of the On/Off Breaker Switch.



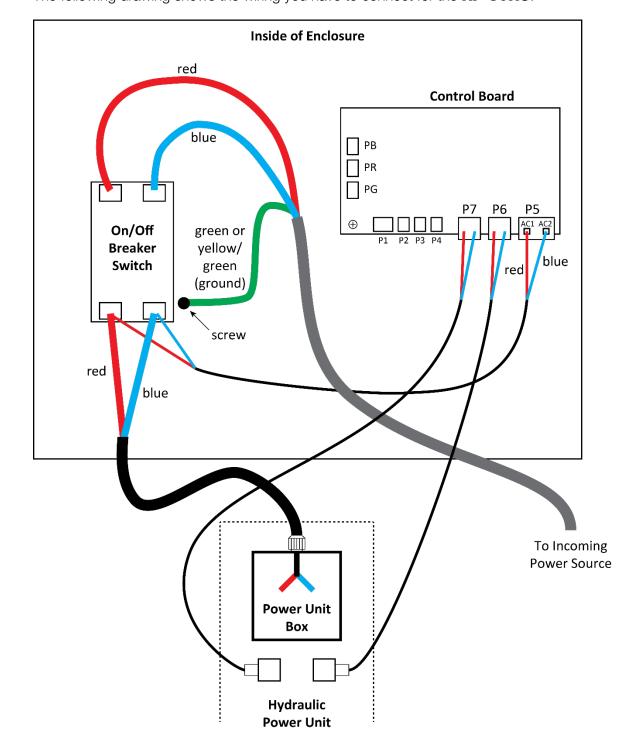
The smaller two wires connect to P5 on the Control Board.

4. Connect the longer, bigger red and blue wires to the Power Unit Box on the Power Unit.

Note: You have to remove the screws on the Power Unit Box to connect the P5 wire.



Power Unit Box (cover removed)



The following drawing shows the wiring you have to connect for the **RP-50RC**.

Not to scale. Many components **not** shown, for clarity. Multiple views combined into a single view.

5. Connect one end of the power cord to **the top of the On/Off Breaker Switch**, including the ground wire.

6. Slide the other end of the power cord through the top of the tube on the vertical support bar (part of the frame) all the way through to the bottom, then connect it to an appropriate plug.



7. Attach the plug on the end of the power unit cord to an appropriate power source.



8. Connect the foot pedal to the remote foot switches cable on the left side of the unit.



9. Install the left, right, and center grates into the reservoir base.

The unit is now ready for operation.

#### Wiring the RP-50RC-E to 380 VAC, 50 Hz, three phase:

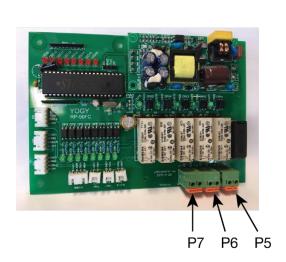
**⚠** CAUTION

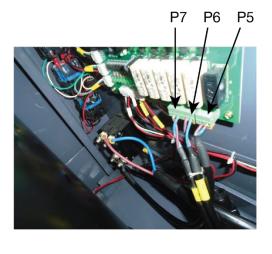
Wiring is different for the RP-50RC and the RP-50RC-E. Make sure to use the correct procedure for the model you have. Using the wrong procedure for your model could damage it.

**⚠** DANGER

All electrical work **must be done by a licensed, certified Electrician** in accordance with all applicable local electrical codes. Damage caused by improper electrical installation may void your warranty.

1. Wires labeled P6 and P7 connect to the control board and to terminals on the motor.







Left side of motor

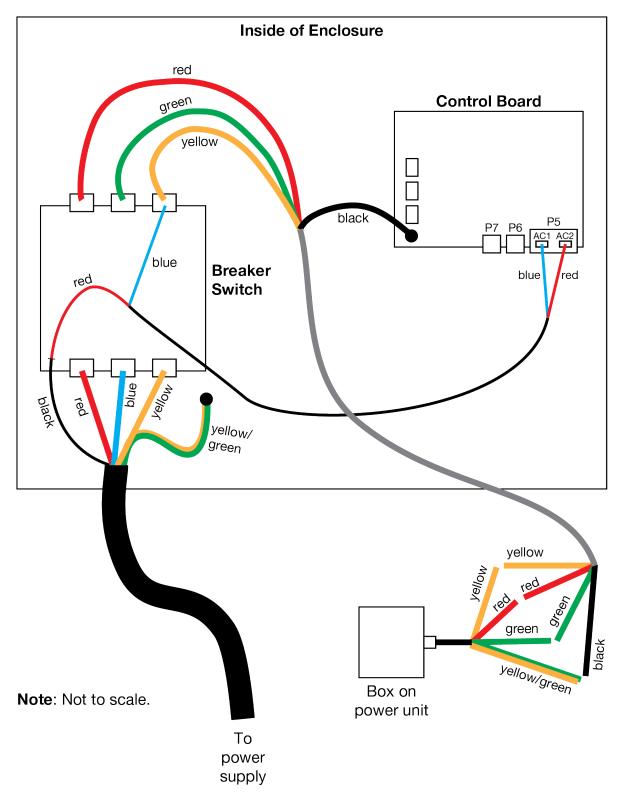
Connect one end of P7 to the control board, the other end to the left terminal shown above.



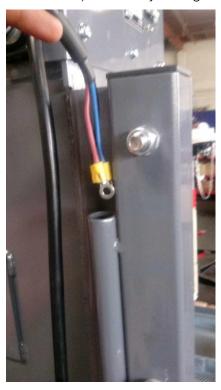
Right side of motor

Connect one end of P6 to control board, the other end to the right terminal shown above.

2. Connect P5 on the control board, the breaker switch, the cable to the power supply, and the box on the Power Unit as shown in the drawing of the *RP-50RC-E* wiring below.



3. Slide the other end of the power cord through the top of the tube on the vertical support bar (part of the frame) all the way through to the bottom, then connect it to an appropriate plug.



4. Attach the plug on the end of the power unit cord to an appropriate power source.



5. Connect the foot pedal to the remote foot switches cable on the left side of the unit.



6. Install the left, right, and center grates into the reservoir base.

The unit is now ready for operation.

# **Operation**

The correct way to press any of the three control buttons is to press firmly and then release. Pressing *and holding* the control buttons can cause damage to the unit.

There are three control buttons on the oil filter crusher:

- **Reverse button, blue**. Returns the press ram to its original starting position.
- Stop button, red. Stops all movement of the press ram if it is in use. *The red button is your emergency stop.*
- **Start button, green**. Activates the automatic pressing cycle. When an automatic pressing cycle is started, the press ram moves down, contacting the item you are crushing. When it reaches maximum crushing depth, the press ram automatically stops and returns to the starting position.

## **⚠ WARNING**

Avoid off-center loads. If the press ram seems to be laboring more than usual or the filter/can is unusually hard to press, stop operation. Do not operate the press ram if the filter/can tilts or binds during the downward movement of the press head.

#### To operate your oil filter crusher:

- 1. Place an approved waste oil container under the oil drain (which is on the underside of the reservoir base).
- 2. Lift the sliding door firmly and place an empty filter or paint can in the center of the chamber, *open end down*.



Hold the sliding door open when placing filters in, or retrieving filters from, the chamber. Do not operate the crusher with the door open. Do not stack filters or cans inside the crushing chamber.

3. Close the sliding door.

#### **A** CAUTION

You cannot crush an item until the sliding door is fully closed.

4. Press and release the green button; an automatic cycle begins.

#### When the automatic cycle starts, step back from the unit.

The press ram will move downwards, crush the item, return to the original starting position, and then shut off.

5. To remove the crushed filter, open the sliding door and pull out the crushed item.

## **⚠** CAUTION

Do not get distracted when removing a crushed filter. Use industrial gloves to prevent from scratching, cutting, or puncturing your skin on the sharp edges of the crushed filter. Watch for leaking oil.

# **WARNING**

Do not attempt to remove a stuck filter or paint can until you stop the automatic pressing cycle using the red Stop button.

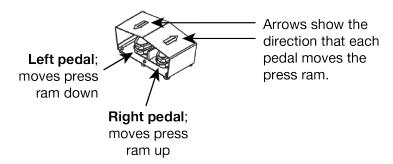
6. Put the breaker switch (on the left side of the unit) to the off position when the unit is not in use.

## **⚠** CAUTION

To prevent the Power Unit components from overheating, we recommend taking 2-3 minute breaks after every half hour of use. The Power Unit's Motor is **not** constant duty; it cannot be run continuously.

## **Using the Foot Pedals**

The foot pedals operate differently than the control buttons.



#### To manually operate the oil filter crusher using the foot pedals:

- 1. Make sure the remote foot pedals cable is connected on the left side of the enclosure (see **Components** for more information).
- 2. Press and hold the left pedal to move the press ram downwards.
  - If you stop pressing the left pedal, the press ram stops moving. You must hold it down to continue the press ram moving downwards.
- 3. Press and hold the right pedal to move the press ram up towards the starting position. If you stop pressing the right pedal, the press ram stops moving.



Either foot pedal can also serve as an emergency stop: press on a pedal and then stop pressing; the press ram stops moving.

# **Maintenance**

⚠ WARNING: Set the breaker switch to off and unplug the unit from its power source before performing any maintenance!

#### To maintain your oil filter crusher:

- If you need work done on your power unit, you must use a qualified electrician.
- Make sure to keep the press clean and free of debris and dirt. These can cause failure in the hydraulic system.
- All exposed machine surfaces of the press should be brushed clean and wiped with a lubricant, such as WD-40<sup>®</sup> for example, on a regular basis.
- Regularly clean the press chamber to remove any accumulated sludge, metal particles, or other debris that could affect operation.
- Keep the breather hole and oil drain (on underside of reservoir base) free of accumulation of debris; remove any materials that may be clogging the drain.
- Inspect for leaks and drain the approved waste oil container in accordance with all local, state, and federal regulations.
- Lubricate the sliding door on a regular basis to prevent the door from binding.
- Keep the red Stop button clean and in working order.

- Change or replace the hydraulic oil with SAE-10W or 20W non-foaming hydraulic oil every 5000 cycles (or about once each year), depending on the degree of usage and the cleanliness of the work environment. Verify that the ram is completely retracted during oil change service.
- During oil change service, remove the oil reservoir and clean away any dirt or other abrasive materials around the filler cap. With the oil reservoir removed, clean away dirt or other abrasive materials that have accumulated on the oil suction tube filter.
- Cycle the pump and ram without building pressure. Retract the ram and check the oil level in the pump reservoir. Fill reservoir until the oil level is one inch from the bottom of the fill port.

# **Troubleshooting**

This section describes how to troubleshoot you Oil Filter Crusher. All repair work must be done by qualified personnel.



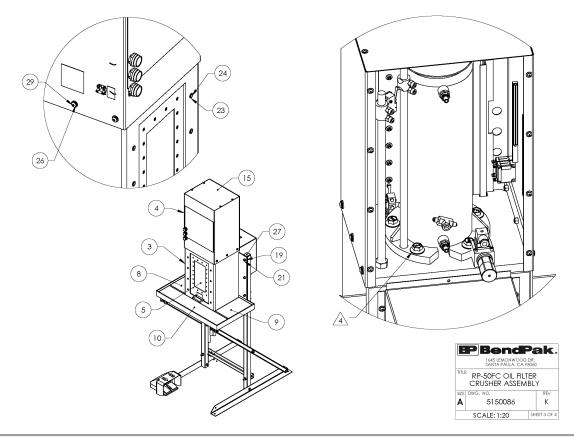
**Only use factory-supplied parts as replacement parts**. If you use parts from a different source, you void your warranty and compromise the safety of everyone who uses this unit.

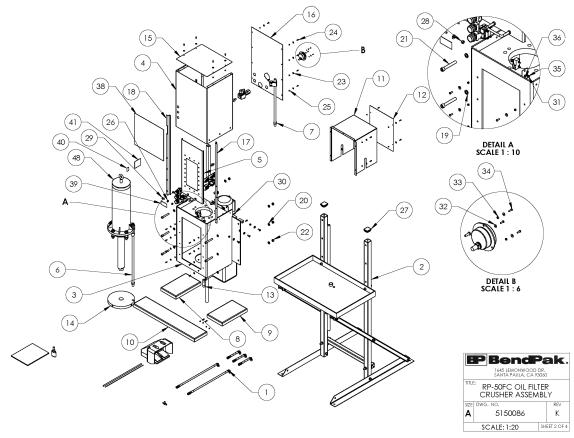
**Note**: If your Oil Filter Crusher is not functioning correctly, you *must* stop using it until it is fixed.

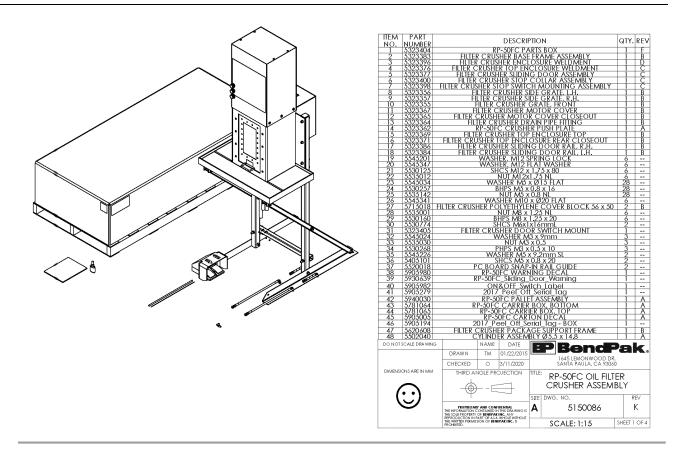
Issue	Action to Take
Press ram does not move when buttons or foot pedals are pressed.	<ol> <li>Check the connections to the power source.</li> <li>Check the Hydraulic Fluid levels.</li> </ol>
	Make sure all equipment connections and wiring are set up correctly.
	4. Make sure the sliding door is fully closed. If the sliding door is not fully closed, the safety switch does not activate, which prevents the ram from working.
	5. Make sure the breaker on the left side of the unit (when looking at it from the front) is set to on. Note that the breakers for the two oil filter crusher models work slightly differently.
Ram moves sluggishly.	<ol> <li>Check to see if air is trapped in the hydraulic system.</li> <li>If there is air, <i>carefully</i> loosen, but do not remove, the hose fittings at the ram and run the pump until you see a steady flow of oil that is free of air bubbles escaping from the loosened fittings. Retighten the hose fittings.</li> </ol>
Cycle stops before completing.	Press the red Stop button to end the cycle.
	2. Check to see if the item being crushed is stuck; if so, remove the item and start again.
	3. Check to see if the item being crushed is off center. If so, center the load and start again.
The green Start button works, but the right Down pedal does not.	Make sure the foot pedals are connected to the remote foot switches cable on the left side of the unit.

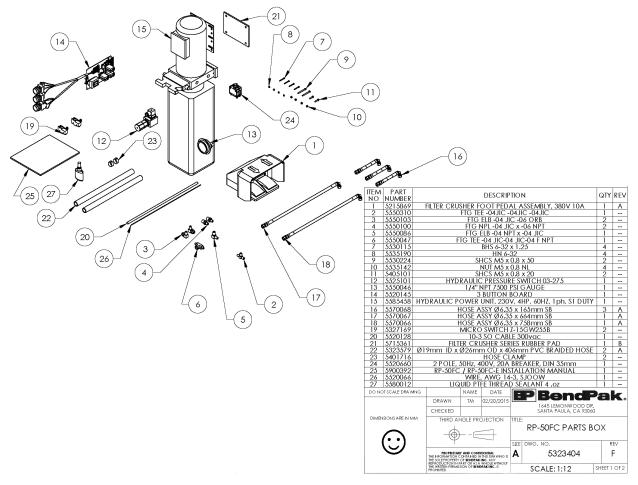
If you continue to have an issue, visit **bendpak.com/support** or contact BendPak Technical Support, call (888) 856-5820, or email **support@bendpak.com**.

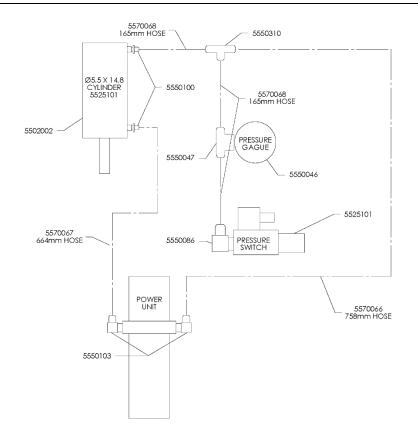
# **Parts Diagrams**



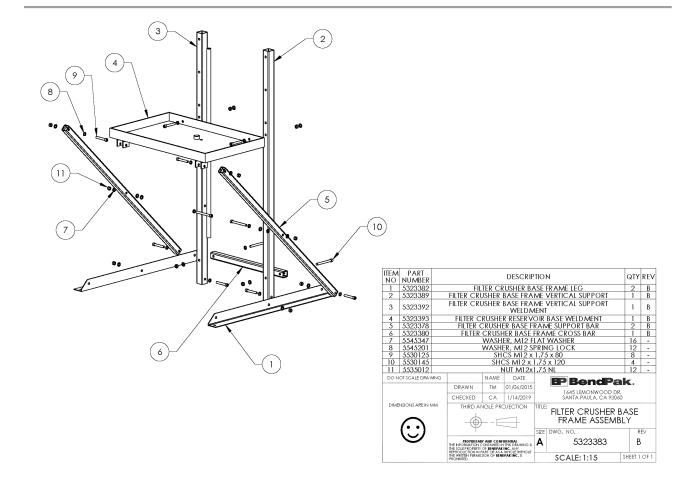


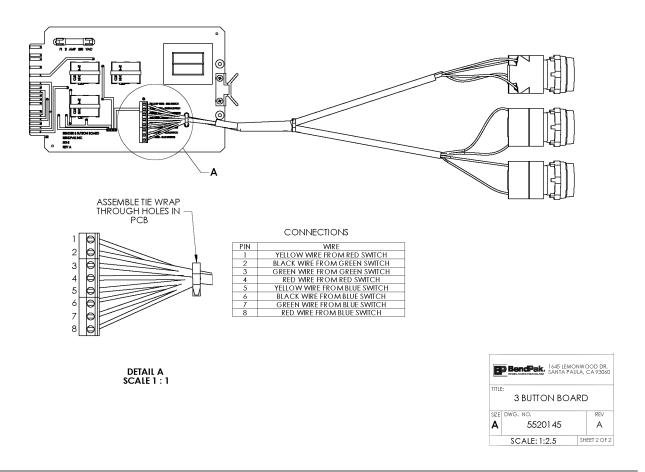


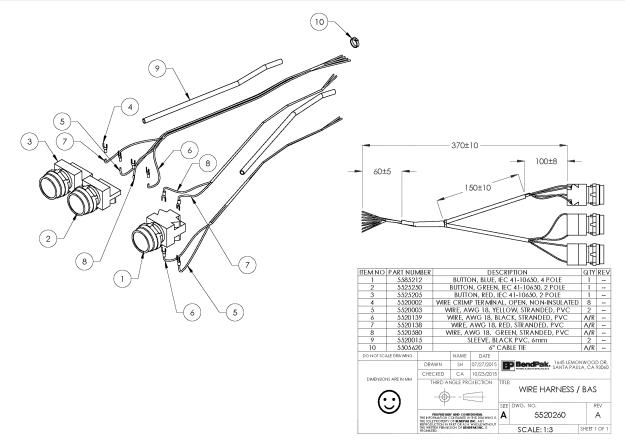












# **Wiring Diagram**

#### RP-50FC-E

