PIERCE

PULLING FOR YOU

Owner's Manual:
2T DUMP KIT

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2 T Dump Kit Installation Overview

The 2 Ton Dump Kit is powerful and must be used with extreme care. Deviating from the instructions may cause personal injury. You may lose your warranty if you do not follow the precautions and guidelines outlined in this overview. A 150 amp breaker is provided and required to ensure safety. Keep this guide in a safe place to reference safety and installation instructions, maintenance guidelines and operating recommendations. **Each kit offers unique parts and may require a different installation process. This guide is intended to help customers determine if they would like to install the kit on their own or refer to a fabrication shop.**

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Shipment Contents

1 – Left Hinge
1 – Right Hinge
1 – Left Hinge Arm
1 – Right Hinge Arm
1 – Gas Filler Bracket
1 – Stiffener Plate
1 – Strap
1 – 44” Hydraulic Hose
1 – 3/8” x ¼1/4” Elbow
1 – Hardware Kit
1 – Electrical Kit
1 – 12 V Hydraulic Pump and Motor
1 – 150 amp breaker
1 – Lower Frame Angle
1 – Pump Bracket
2 – Cylinder Shafts
4 – Cotter Pins
2 – Clips
1 – Scissor Assembly with Cylinder
1 – Base Assembly
1 – Owner’s Manual

2T Specifications

Load capacity : 2 tons
Maximum angle: 45 degrees
Dumping time: 10 sec.
Pump pressure: 2,250 psi
Replacement Pump: Power Up / Grav. Down PM319
Replacement Cylinder: P046C

Recommended Tools

3/8” and ½” Portable Electric Drills and Bits
Impact Wrench
Hoist or Cherry Picker
Metal Cutting Saw
Drop Light
Extension Cord
Hammer
Sockets
Screwdrivers
Wrenches
Grinder
Welder
Cutting torch
C-Clamps
Visegrips
Tape Measure
Grommet
Zip Ties
One Hole Straps
3 quarts of Dextron 3 or Hydraulic Fluid
Red and Black Electrical Tape
Cardboard
Safety Glasses
First Aid Kit
Gloves
Teflon Tape

Which kit fits my truck?

Make	Year	Bed	Note	Part Number	Weight
Ford	to ‘98	6’ - 8’	Standard	P046UK	170 lbs.
	‘99 - ‘13	6’	Superduty	P046UFSBK	173 lbs.
	‘99 - ‘13	8’	Superduty	P046UFLBK	177 lbs.
	1997		F150, new body	Not available	
Dodge	to ‘77		16” frame	P046UK	170 lbs.
	‘78 - ‘83	6’ - 8’	‘83 frame	P046UK	170 lbs.
	‘84 - ‘93	6’ - 8’		P046UDK or P046UDK17	171 lbs.
	• Measure the distance between the bed crossmembers. If it is 16 3/8” then order the P046UDK. If it measures 17” order the P046UDK17.				
	‘94 - ‘02	6’	Standard cab	P046UDNSBK	186 lbs.
	‘94 - ‘02	8’	Standard cab	P046UDNK	190 lbs.
	‘94 - ‘02	8’	Extended cab	P046NELBK	192 lbs.
	‘03 +			Not available unless you have a channel crossmember.	
Chevy/ GMC	to ‘87	6’ - 8’		P046UK	170 lbs.
	‘88 - ‘98	8’		P046UCK	206 lbs.
	‘88 - ‘98	6’		P046UCSBK	171 lbs.
	• True ‘88 - ‘98 trucks have a main frame crossmember that opens up. • Some GM ‘99 - ‘01 models require the P046UK due to their downward facing crossmember. • Check your crossmember before purchasing.				
	‘99 - ‘03	8’		P046UCLBK	176 lbs.
	• True ‘99 trucks have a 3” round crossmember. Look at the rear wheel opening while standing beside the truck to see the 3’ round hole where the crossmember attaches to the forward section of the frame. • Some GM ‘99 - ‘01 models require the P046UCK for long beds or the P046UCSBK for short beds due to the upward facing crossmember. • Check your crossmember before purchasing. • All P046UCKBK kits require bed reinforcements.				
	‘04 - ‘10	8’		P046UCLBK	176 lbs.
	• All P046UCKBK kits require bed reinforcements.				
	‘99 - ‘10	6’		In progress.	
	‘11 - ‘13	8’	1500 series	P046UCLBK	176 lbs.
	‘11 - ‘13	8’	2500 and 3500	In progress.	
	• All P046UCKBK kits require bed reinforcements.				

How do I determine cargo weight?

L: load (lbs)
W: density of load (lb. / cu. ft.)
Y: depth of load (in.)

TO FIND THE WEIGHT OF THE LOAD (L)

L = (3.5 cu. ft. / in.) x (W) x (Y)

Example: Determine the weight of an 8” deep dry clay. Use the chart to find the density of the load.

L = (3.5 cu. ft. / in.) x (63 lb. / cu. ft.) x (8 in.)
L = 1,764 lbs

TO FIND THE DEPTH OF THE LOAD (Y)

$$\mathbf{Y = \frac{L}{(3.5\ cu.\ ft.\ /\ in.) \times (W)}}$$

Example: Determine the depth of dry clay. The weight cannot exceed 2,400 lbs. Use the chart to find the density of the load.

$$Y = \frac{2{,}400\ lbs}{(3.5\ cu.\ ft.\ /\ in.) \times (63\ lb.\ /\ cu.\ ft.)}$$

$$Y = \frac{2{,}400\ lbs}{220.5\ lbs\ /\ in.}$$

$$Y = 10.88\ in.$$

Material Load	Density (lb. / cu. ft.)
Aluminum	165
Antimony	414
Asbestos	153
Ashes	43
Birch	43
Brick Masonry	118
Bronze	509
Cement	94
Charcoal	34
Oats	27
Hay	20
Lead	710
Nickel	547
Yellow Pine	41
Potatoes	42
Salt	48
Sawdust	13
Slate	175
Steel	482
Tile	113

Material Load	Density (lb. / cu. ft.)
Dry Clay	63
Moist Clay	110
Coal	98
Concrete	97
Copper	556
Earth	78
Flour	47
Glass	160
Solid Granite	165
Wheat	48
Ice	20
Marble	168
Paper	58
White Pine	27
Dry Sand	99
Sandstone	144
Snow	10
Tar	69
Tin	457

SAFETY PRECAUTIONS

Read the following safety information carefully before attempting to operate or install your dump kit. Keep this manual for future reference.

DRESS PROPERLY
- DO NOT wear loose fitting clothing or jewelry.
- Tie back long hair.
- Wear leather gloves.
- Wear non-skid footwear.
- Wear eye and ear protection during operation and installation.

KEEP A SAFE DISTANCE
- All onlookers must keep away from the work area.
- Use appropriate equipment
- Use UIL grounded electrical cords and tools.
- Use grade 5 or better bolts and screws.

GENERAL SAFETY INFORMATION

USE PROPER EQUIPMENT
- Use correctly sized lifting equipment to raise the bed of your truck.
- Use grade 5 or better bolts.

DO NOT MISUSE YOUR DUMP KIT
- Keep the weight of the load evenly dispersed on the dump kit.
- DO NOT dump the contents of your load when your truck is on an incline. Your truck must be level.

DO NOT OVERWORK YOUR DUMP KIT
- Consider the limitations of your dump kit and do not exceed its maximum pull allowance.
- Maintain your dump kit
- Periodically clear debris and mud from the dump.
- Remember: your gas tank is positioned near the scissor assembly. Clean any debris or spills with water. Keep this area clear of sparks.
- Grease pins and oil moving components monthly.

TRUCK BUMPER
- Grease pins and oil moving components monthly.
- **Once the kit is installed, the bumper will not be used for towing purposes. Please place the sticker provided on your truck bumper to remind you or the following owner not to tow.**

Operation Recommendations

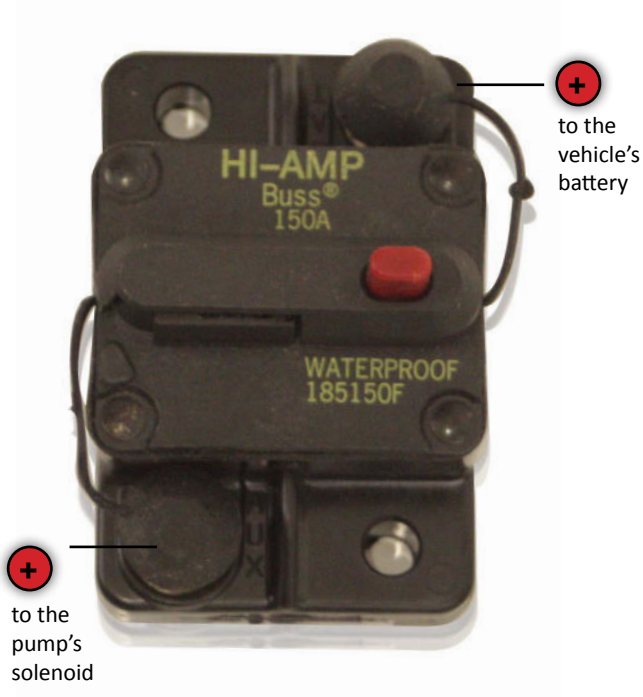
- Do not exceed the cargo capacity as listed by the truck manufacturer.
- Operation must take place on a flat surface.
- The truck should not be driven with the bed in the lifted position.
- The bumper is no longer recommended for towing.
- Level the load in your bed before operation.
- Grease pins and oil moving parts components monthly.
- Tow trailers only with a receiver hitch.

Electrical Installation Recommendations

- Use a grommet when drilling holes for electrical wire routing to prevent contact with sharp edges and electrical connections.
- Use UIL electrical cords and tools.

Breaker Connections

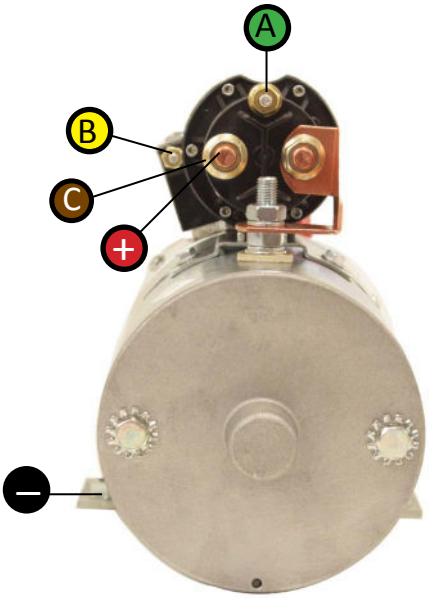
Installation of a breaker is required for your equipment's safety. We use a 150 amp breaker.
- The breaker has two positive connections that connect to pump's solenoid and the battery.



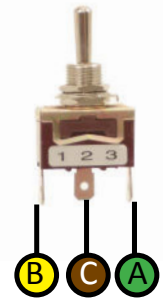
Pump Installation

PM319 - Power Up / Gravity Down Bucher Pump

- All Pierce dump kits come with a power up / gravity down Bucher pump.
  PUMP SPECIFICATIONS
  - Three quart steel tank
  - 1.25 gpm at 1750 psi
  - Horizontal mount
- Installation of a PS025 safety cut off switch is highly recommended (**fig. 1**).
- Use #4 cable for all connections.
- Secure the battery cable with zip ties every 12”.
- A power up / power down up is available (see below for wiring).
- NOTE: DO NOT GROUND THE TERMINAL ON THE MOTOR. IT IS NOT A GROUND CONNECTION.



PM319



PS525

fig. 1

A GREEN to the small solenoid post

B YELLOW to the pump coil

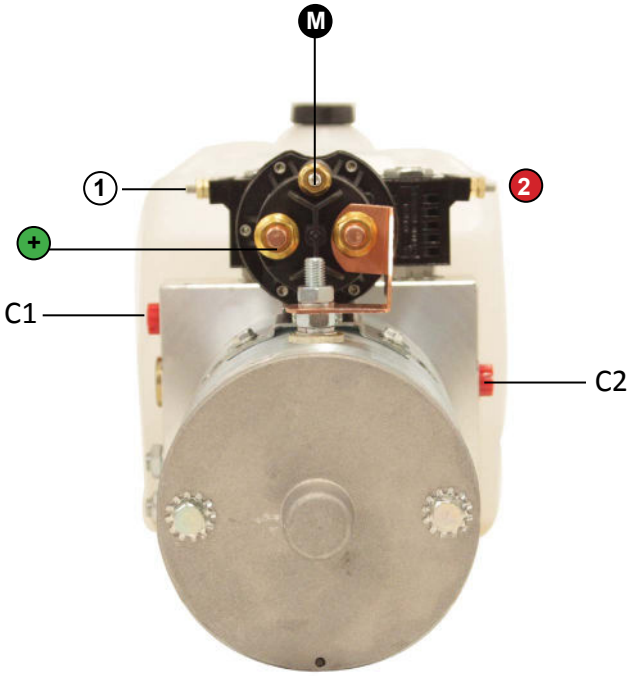
C BROWN to the positive solenoid post

\+ RED to the + battery

– BLACK to the - battery

PM3551 - Power Up / Power Down Bucher Pump

- For applications requiring a dual action pump, the PM3551 offers:
  - 6.7” x 6.7” x 20” poly reservoir (540 cu. in. usable)
  - 9/16th’s SAE o-ring ports
  - Adjustable relief at 2,500 psi
  - Low pressure relief at 600 psi
  - 2.00 gpm PCFC to control down speed
  - Horizontal mount
  - Delivers 1.25 gpm at 1750 psi
- Use #16 or #18 cable for all connections.
- Secure the battery cable with zip ties every 12”.
- C1 is the high pressure port. The main relief is set at 2500 psi. C2 is the low pressure port, and that relief is set at 500 psi. See **fig. 2**.
- Compatible with the 38901155 remote (**fig. 3**). The PS525 toggle switch included in the kit will not work.



PM3551

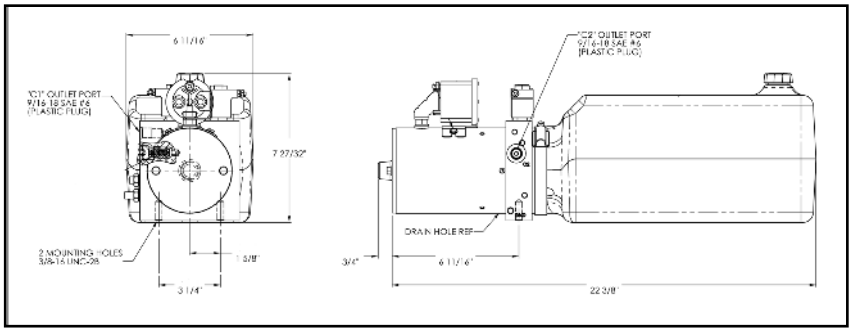


fig. 2

fig. 3

\+ 12V

1 Coil 1

2 Coil 2

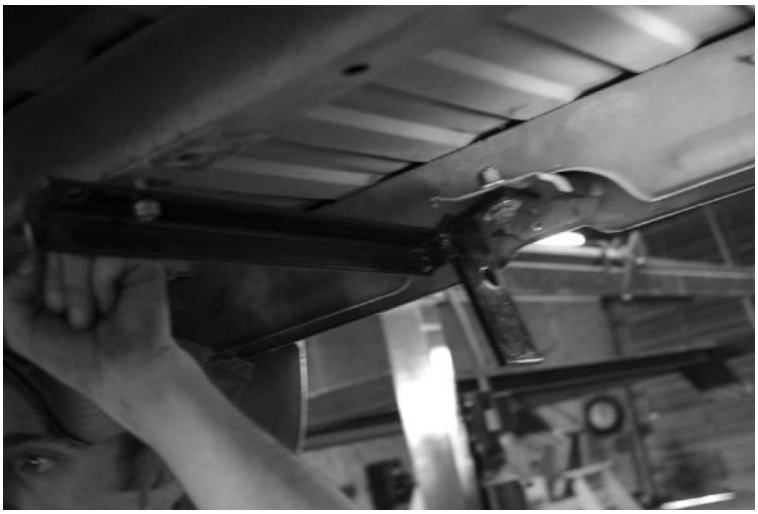
M Master

Preparation

1. Read all safety instructions.
2. Check the parts list.
3. Disconnect the battery cable.
4. Disconnect or remove wiring between the frame and the bed.
5. Remove all gas filler hoses from the bed (above).
6. Remove the bed bolts.

7. Remove the bed. Note: It is not necessary to completely remove your bed. It must be raised high enough in the rear to install the hinges safely.
8. Remove the gooseneck attachment, if equipped.
9. Remove the bumper.
10. Remove any spare tire lowering device interfering with the bed rotation.
11. If dirty, wash with a power washer and let dry.

Bed Modifications



1. Prepare the rear frame hinges for the bed. They bolt to the stock holes in the rear of the bed. You may need to alter the rear holes so the hinges fit flush with the mount.
2. Bolt the rear frame hinges to the second hole from the rear of the bed.

5. Mark the upper bracket holes on the bed for drilling. (Keep in mind, the upper bracket must match the location of the scissors. Before drilling, be sure your equipment is aligned).

3. Bolt the angle to the back crossmember.

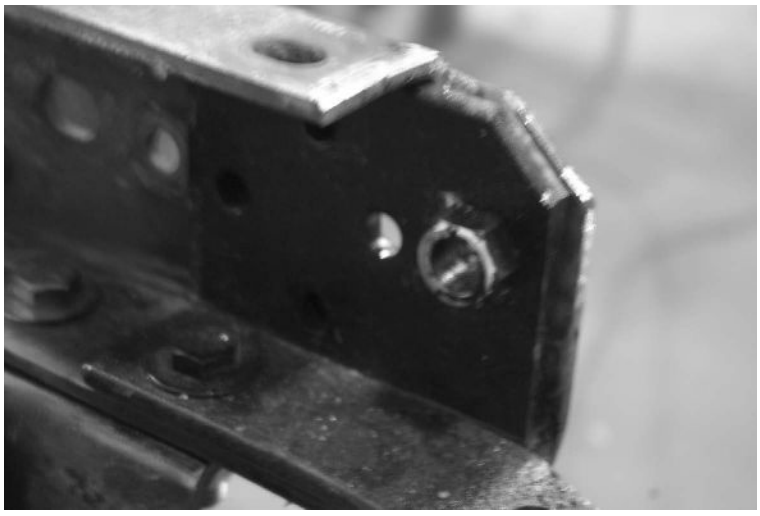
4. Lift the upper bracket and fit between the second and third crossmembers of the pick up bed.

6. Drill two holes in the second crossmember and two holes in the third crossmember. Then bolt the upper bracket into place.

Frame Modifications

1. Notch the frame in order to make room for the rear hinge by measuring 2 inches from the rear frame and bring a line diagonally so the bearing nut rests on the cut of the frame.

2. Cut through the diagonal mark.



3. Your notch should look like the above photo.

4. Fit the rear hinges.

5. Mark the four hinge holes. Drill the holes then bolt into place.

6. Clamp the lower frame angle under the chassis to the middle and front crossmember of the frame at the rear of the cab.

7. Drill two holes through the middle crossmember to match the holes on the lower frame angle.

12. Check your work: periodically check the fit of the bed to the frame to ensure proper contact is made between the scissor and upper bracket.

8. Drill two holes through the front crossmember to match the holes on the lower frame angle.
9. Ensure the lower frame angle is level and center with the truck frame then bolt into place.

13. Connect the hydraulic hose to the cylinder. Then connect the hydraulic hose to the pump using the elbow fitting. Ensure the hose is clear from all exhaust and moving components such as the drive shaft.

14. Return to the rear of the truck and bolt the rear hinges to the frame using three washers (two between the hinges and one between the bolt and outer hinge).

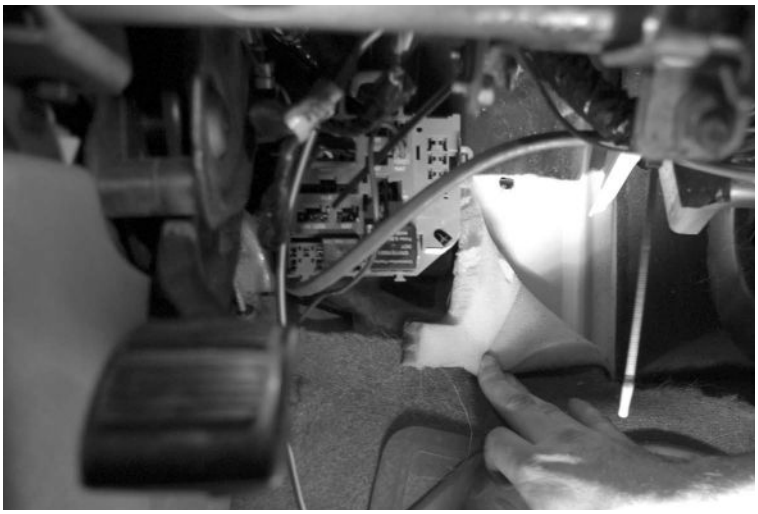
10. Connect the scissor to the lower frame angle by sliding in the greased pin.
11. Thread the cotter pins through the end of the pin on the scissor and wrap it around the pin.

15. Lower the bed until the scissor and upper bracket are aligned.
16. Connect the scissor to the upper bracket using the pin and secure with a cotter pin.

Electrical Connections

1. Use the pump bracket and bolt the pump to the passenger side frame rail approx. behind the cab. (A spacer between the pump bracket and frame may be needed to clear the truck spring hangers). If the pump is mounted more than 10 feet from the battery use #2 cable.

5. Zip tie the switch electrical wire under the dash.
6. Run the wire from the firewall to the passenger side of the truck frame to the pump.



2. Find an accessible location for your switch on the dash that operates your pump.
3. Drill a small hole in the firewall. Use a grommet to eliminate sharp edges.
4. Install your 150 amp breaker. Connect one positive connection to the solenoid and the other to the pump.

7. Crimp the eyes to the #4 cable and connect to the positive side of the battery. Run the cable down the passenger side of the truck frame to the pump. Secure to prevent chaffing and ensure proper clearance to prevent contact with the exhaust or any moving parts.

Completed Project

Pierce Arrow Product Limited Warranty

Pierce Arrow Inc. warrants to the original purchaser only (whether a wholesale, OEM or retail customer) that the goods, equipment, and merchandise manufactured by Pierce Arrow are free from defects in material and workmanship. The Pierce Arrow limited warranty on parts covers such items for a period of one year on mechanical and electrical from the date of shipment by Pierce Arrow. All warranties cover only the product or product parts, and are nontransferable.

OBTAINING WARRANTY SERVICE

Pierce Arrow must be notified promptly in writing, about the defect before any means of repair have been made. The merchandise must be delivered by the purchaser to Pierce Arrow in Henrietta, Texas at the purchaser's expense. Pierce Arrow reserves the right to repair or replace the merchandise proved to be defective. The purchaser is responsible for the cost of repairs made by Pierce Arrow if the repairs are not covered by the Pierce Arrow warranty.

EXCLUSIONS

The Pierce Arrow warranty is not intended to cover normal maintenance parts, including but not limited to: wear pads, bushings, mud flaps, fender flares, light bulbs, oil filters and remote holdings. Nor is the warranty intended to cover any change or defect due to accident; misuse; improper, inadequate or unauthorized repair; failure to provide maintenance or uses for which the equipment was not intended; and normal deterioration due to weather or road conditions. Reference the owner's manual for safety, installation, operation and maintenance guidelines.

The warranty does not bear the cost of labor, transportation, shipping damages, claimed down time, loss of profit or goodwill, or any other special, incidental, indirect, or consequential damages, concerning or related to any product or part, whether based upon negligence, strict liability, breach of contract, breach of warranty, misrepresentation, or any other legal theory.

Merchandise sold by Pierce Arrow, but not manufactured by it, is not warranted by Pierce Arrow and is subject to the manufacturer's warranty only. The manufacturer's warranty is available upon request.

Pierce Arrow makes no warranty, expressed or implied, to finished products manufactured or supplied by other manufacturers, and supplied from Pierce Arrow to the purchaser, including but not limited to, any vehicle to which our products is affixed to, and any accessories.

Merchandise manufactured by Pierce Arrow is not designed or intended for the movement of people and are not to be used in the operation of elevators or other improper uses. Any improper use of the product may void the warranty.

Please contact Pierce Arrow with any questions:

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