

Owner's Manual & Safety Instructions

Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

20h

PITTSBURGH[®] AUTOMOTIVE

60406

20,000 lb Capacity Super Heavy Duty Hydraulic Equipment Kit



Visit our website at: <http://www.harborfreight.com>
Email our technical support at: productsupport@harborfreight.com





When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

⚠ WARNING

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.

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WARNING SYMBOLS AND DEFINITIONS	
	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
 DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE CAUTION	Addresses practices not related to personal injury.

IMPORTANT SAFETY INFORMATION

WARNING

Read all safety warnings and instructions.

Failure to follow the warnings and instructions may result in serious injury.

Save all warnings and instructions for future reference.

The warnings and precautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

Work area

- 1. Turn off the engine, set the parking brake, and block the tires before working on a vehicle.**
- 2. Keep the work area clean and well lighted.** Cluttered benches and dark areas increase the risk of injury to persons.
- 3. Keep bystanders and children away while operating the tool.** Distractions can result in loss of control of the tool.

Personal safety

1. **Stay alert. Watch what you are doing and use common sense when operating the tool. Do not use the tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating the tool increases the risk of injury to persons.
2. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair increases the risk of injury to persons as a result of being caught in moving parts.
3. **Use safety equipment.** Wear ANSI-approved safety goggles and heavy-duty work gloves during use.

Tool use and care

1. **Do not force the tool.** Use the correct tool for the application. The correct tool will do the job better and safer at the rate for which the tool is designed.
2. **Store the tool when it is idle out of reach of children and other untrained persons.** A tool is dangerous in the hands of untrained users.
3. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that affects the tool's operation.** If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.
4. **Use only accessories that are identified by the manufacturer for the specific tool model.** Use of an accessory not intended for use with the specific tool model, increases the risk of injury to persons.
5. **Avoid off-center loads.** If the Pump seems unusually hard to operate, immediately stop. Adjust the Ram to eliminate or diminish an off-center load. The Ram Toe and Plunger Toe must **only** be used together to prevent an off-center load.
6. **Protect the Hose.** Do not drop heavy objects on the Hose. Avoid kinks in the Hose. Maintain proper clearance to avoid damage to the Hose and Couplers.
7. **Inspect repair before using vehicle.** Repairs to structural or frame members must be inspected by a qualified technician to ensure that the structure is still strong enough to safely fulfill its function.

Service

1. **Tool service must be performed only by qualified repair personnel.**
2. **When servicing a tool, use only identical replacement parts. Use only authorized parts.**



SAVE THESE INSTRUCTIONS.

SPECIFICATIONS

Model	60406
Ram Capacity	10 Tons
Ram Travel	5"
Extension Tubes	4-3/8", 10-3/8" (2), 14-3/8", 20-1/2"
Spreader Capacity	1/2 Ton
Hose Length	5'

SETUP



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this document including all text under subheadings therein before set up or use of this product.

Ram Attachments

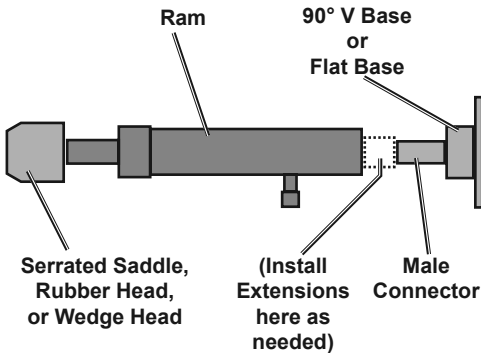
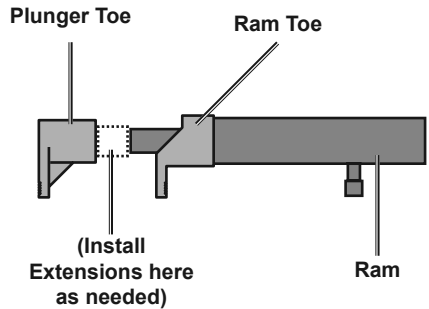
1. The Extensions connect in different combinations to reach desired lengths.
2. The Male Connector is used to connect the female end of the Ram to a Base.
3. The Flat Base is used on the stationary side to spread out the force of the Ram.
4. The 90° V Base is used to offset the force of the Ram when there is not a straight line between the stationary side and the damaged side, or to spread out force on curved surfaces.
5. The Serrated Saddle is used on the pushing end to prevent slipping.
6. The Rubber Head is used for popping dents out of sheet metal such as doors or body panels and to minimize damage to the work surface.
7. The Wedge Head is used to repair small dents and areas located in angles and tight spaces.
8. The Ram Toe and Plunger Toe are used together to allow spreading in areas that the Ram cannot fit into.

Note: The Ram Toe and Plunger Toe must **only** be used together to prevent an off-center load.

Ram Setup

Note: When positioning the Ram use a smaller attachment on the side that is to be bent instead of the stationary side. If the stationary side is in danger of being bent or damaged, place a block of wood or other material behind the Flat Base to distribute pressure over a greater area.

1. Clean the end of the Hose and the inlet on the Ram. Unscrew and save the End Plugs located on the end of the Hose and Ram.
2. Attach the Hose to the Ram.
3. Assemble attachments as shown below:



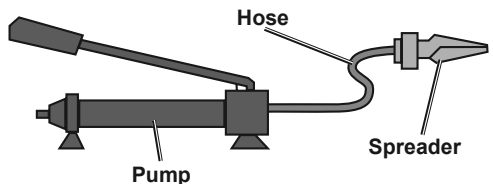
Note: If using the Ram Toe and Plunger Toe, thread the Ram Toe onto the Ram completely and align the Plunger Toe to it.

Spreader Setup

The Spreader is used when the Ram is too long to fit between the stationary side and the damaged area.

1. Clean the end of the Hose and the inlet on the Spreader.
2. Unscrew and save the End Plugs located on the end of the Hose and Spreader.

3. Attach the Hose to the Spreader, as shown below:



OPERATION



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before use of this product.

1. Check the Hydraulic Fluid level, following the instructions in the Cleaning and Maintenance section.
2. Determine which direction the frame needs to be bent.
3. Remove any obstructions that could be damaged or are in the way.

Note: When using the Pump in a vertical position, keep the Hose end of the Pump downward.

4A. USING RAM:

- a. Connect the appropriate Base to the stationary side of the Ram, and connect the appropriate head to the pushing end of the Ram.
- c. Position the Ram so that the Base is resting against a frame member opposite the damaged area. It must also be in line with the direction in which the damaged area needs to be pushed. The vehicle body part must be stronger than the area to be bent or it may be damaged. A block of wood or a towel may be used to protect the body part.

Note: When repairing larger body panel dents such as a dented door, fender or quarter-panel use the Rubber Head on the pushing end.

- b. **If using the Ram Toe or Plunger Toe:**
Thread the Ram Toe onto the Ram completely and align the Plunger Toe to it. The Ram Toe and Plunger Toe must **only** be used together to prevent off-center load.

- d. Aim the pushing end towards the area that needs to be repaired, and slowly apply pressure with the Pump.

Note: To prevent damage, do not overextend the Ram.

4B. USING SPREADER:

- a. Place the Spreader so that the hinged (pushing) arm is resting against the part to be moved and the stationary arm is resting against a non-movable base.
 - b. Carefully hold the Spreader in position and apply pressure with the Pump.
5. Once both ends have made contact, move as far away as possible and continue to slowly apply pressure to the damaged area until the desired bend has been made.
CAUTION! Keep hands away from contact areas and tight spaces.
The tool may slip and cause injury.
 6. When the damaged area has been bent to the desired position, slowly turn the Release Valve counterclockwise to release the hydraulic pressure and remove the Ram or Spreader.
 7. Clean all hydraulic ports and cover them with clean End Plugs.

CLEANING AND MAINTENANCE

1. Keep the surface of this tool and its accessories free of hydraulic fluid and grease. Use only a mild detergent and damp cloth when cleaning. Do not use a flammable or combustible solvent to clean this tool or its accessories.
2. Before each use, examine the general condition of the tool and its accessories. Check for loose components, misalignment, binding of moving parts, broken parts and any other condition that may affect its safe operation. Do not use a damaged tool or its damaged accessories.
3. Keep hydraulic connections clean. Clean all hydraulic ports and replace Dust Covers immediately after use.
4. Store the Pump with the Release Valve open.

Filling and Bleeding Hydraulic Fluid

If the Pump operation feels spongy, or the Ram lowers while the Release Valve is closed, there may be air in the Pump. Bleed the Pump as follows:

1. Set Pump flat on a level surface.
2. Remove the Breather Valve (P09), the Oil Fill Screw (P07), and their seals.
3. The fluid level should be near the bottom of the opening. If required, add high grade hydraulic fluid.
4. Make sure the Seal Ring is still in place around the Fill Screw and thread the Fill Screw into the Pump securely. Do not use thread seal tape.
5. Firmly close the Release Valve (P15) by turning it clockwise.
6. Press the tip of the Coupler (P17) against a hard surface and pump the pump handle.
7. Continue pumping, until the hydraulic fluid coming out the end of the Coupler tip is free of air bubbles.
8. Recheck the fluid level and add fluid if necessary.
9. Turn the Release Valve counterclockwise to release the pressure in the Pump and Hose.

Changing Hydraulic Fluid

1. Change the hydraulic fluid yearly.
2. Remove the Fill Screw and tilt the Pump to drain out the old fluid.
3. Refill the hydraulic fluid and bleed the system several times to ensure all air is out of the system.

PLEASE READ THE FOLLOWING CAREFULLY

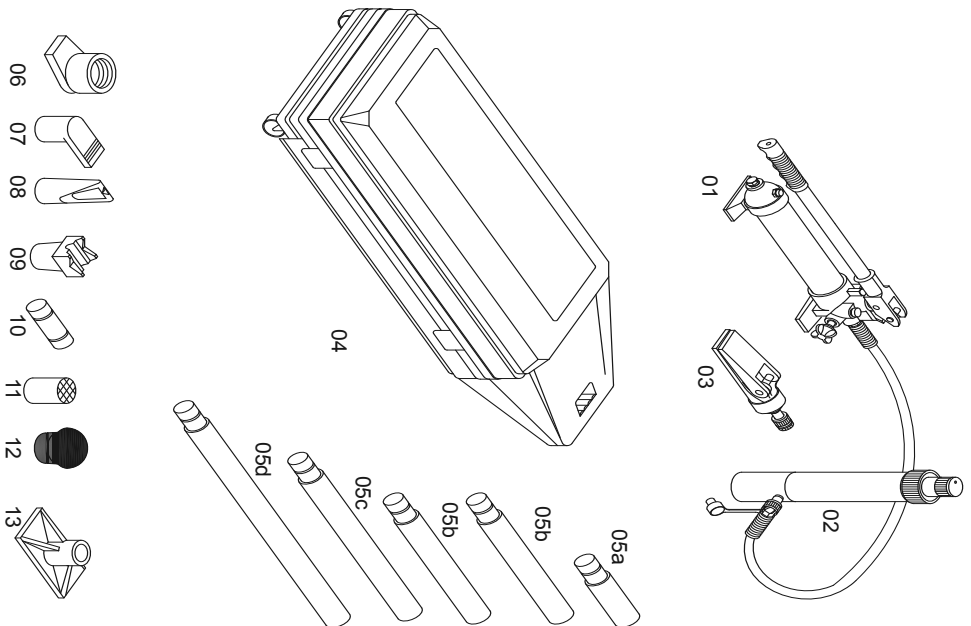
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PARTS LISTS AND DIAGRAMS

Main Parts List and Assembly Diagram

Part	Description	Qty
01	Pump	1
02	Ram	1
03	Spreader	1
04	Storage Case	1
05a	4-3/8" Extension	1
05b	10-3/8" Extension	2
05c	14-3/8" Extension	1
05d	20-1/2" Extension	1

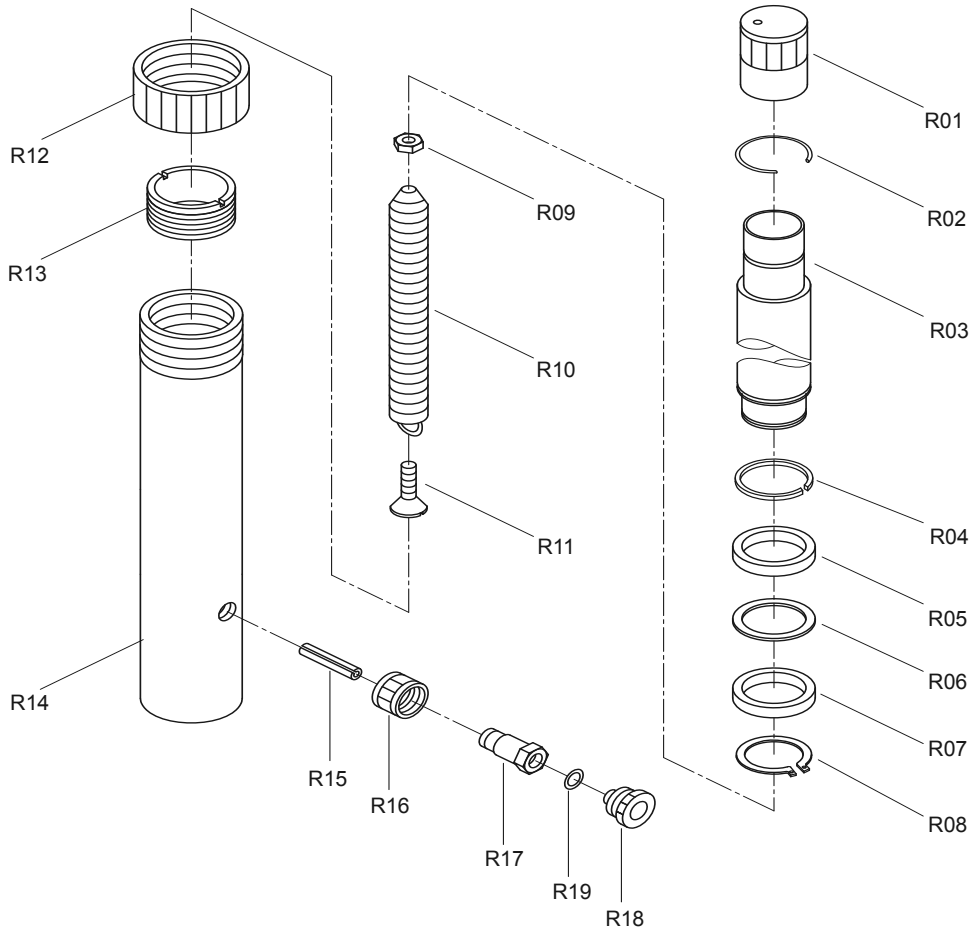
Part	Description	Qty
06	Ram Toe	1
07	Plunger Toe	1
08	Wedge Head	1
09	90° V Base	1
10	Male Connector	1
11	Serrated Saddle	1
12	Rubber Head	1
13	Flat Base	1



Parts List and Assembly Diagram A - Ram

Part	Description	Qty
R01	Cap	1
R02	Circlip	1
R03	Piston	1
R04	Circlip	1
R05	Bushing	1
R06	PTFE Ring	1
R07	U-Ring 22x30x6	1
R08	Circlip Ø32	1
R09	Nut M8	1
R10	Spring	1

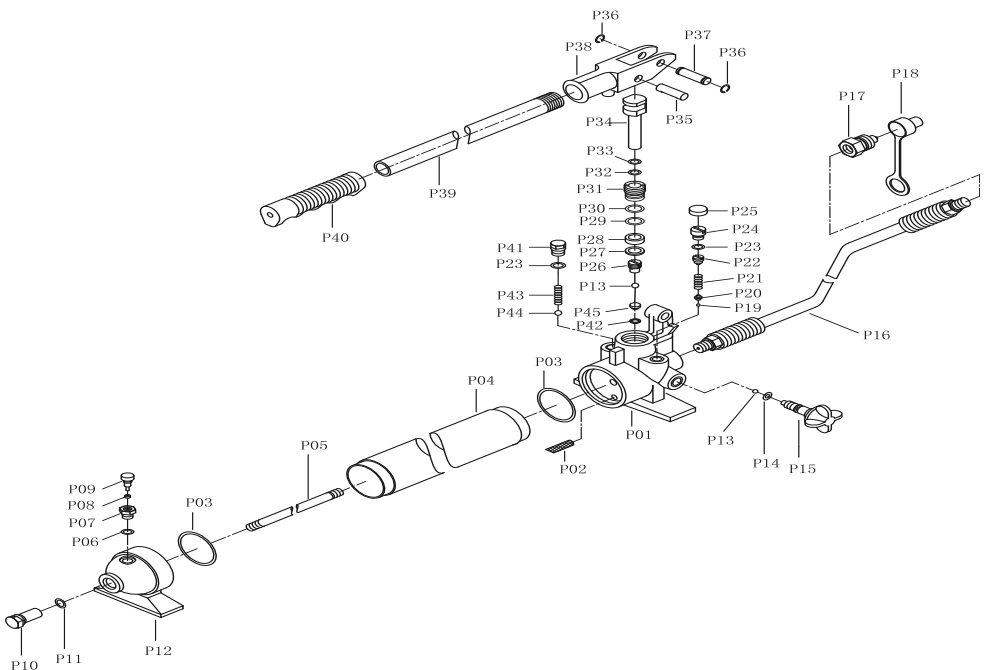
Part	Description	Qty
R11	Screw M8x35	1
R12	Protector Cap	1
R13	Screw	1
R14	Cylinder	1
R15	Pin Ø8x40	1
R16	Coupling Ring	1
R17	Coupling Bolt	1
R18	End Plug	1
R19	O-Ring 9.4x2.4	1



Parts List and Assembly Diagram B - Pump

Part	Description	Qty.
P01	Base	1
P02	Oil Filter	1
P03	O-Ring 51x3.1	2
P04	Reservoir	1
P05	Screw	1
P06	Nylon Ring	1
P07	Oil Fill Screw	1
P08	Seal Ring	1
P09	Breather Valve	1
P10	Bolt	1
P11	O-Ring 9.4x2.4	1
P12	Pump Foot	1
P13	Ball Ø5.5	2
P14	O-Ring 5x3	1
P15	Release Valve	1
P16	Hose	1
P17	Coupler	1
P18	End Plug	1
P19	Ball Ø3.5	1
P20	Ball Seat	1
P21	Spring	1
P22	Screw	1
P23	O-Ring 7.8x2.2	2

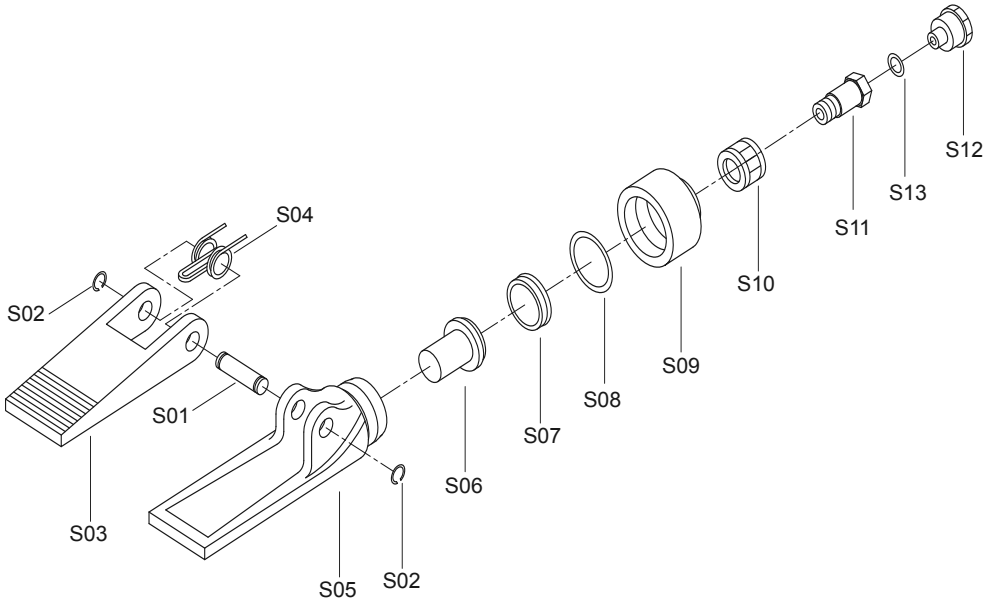
Part	Description	Qty.
P24	Screw	1
P25	Cap	1
P26	Valve Screw Cap	1
P27	Nylon Ring 18x12.5x2	1
P28	U-Ring 12x18x6	1
P29	O-Ring 18x3.55	1
P30	Nylon Ring 24x18x1	1
P31	Cylinder	1
P32	O-Ring 11.6x2.65	1
P33	Nylon Ring 16.2x12x1.25	1
P34	Piston	1
P35	Pin	1
P36	Circlip Ø10	2
P37	Pin	1
P38	Handle Socket	1
P39	Handle	1
P40	Grip	1
P41	Screw	1
P42	Nylon Ring	1
P43	Spring	1
P44	Ball Ø8	1
P45	Ball Seat	1



Parts List and Assembly Diagram C - Spreader

Part	Description	Qty
S01	Pivoting Pin	1
S02	Circlip Ø12	2
S03	Pushing Arm	1
S04	Spring	1
S05	Stationary Arm	1
S06	Piston	1
S07	Cup Seal	1

Part	Description	Qty
S08	O-Ring 38x3.5	1
S09	End Cap	1
S10	Coupling Ring	1
S11	Coupling Bolt	1
S12	End Plug	1
S13	O-Ring 9.4x2.4	1



Record Product's Serial Number Here:

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts. Specify UPC 193175333186 when ordering parts.

Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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