



20 Ton Air Over Hydraulic Jack

Model 95553

ASSEMBLY AND OPERATION INSTRUCTIONS



Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein.

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

SAVE THIS MANUAL.

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For technical questions or replacement parts, please call 1-800-444-3353.

REVISED MANUAL 08b

Specifications

Maximum Height	16-3/4" without screw extension 20" with screw extension	Operating Pressure	110-120 PSI
Minimum Height	10-1/4" without screw extension	Lifting Capacity	20 Tons (40,000 lb.)
Ram Travel	6-1/2"	Base Dimensions	8-5/8" L x 5-3/16" W
Air Fitting	1/4" NPT with quick release nipple	Hose Size	3/8" x 48" L
		Weight	35 lb.

Note:

All part numbers mentioned in this manual refer to the Parts Lists and Assembly Diagrams on pages 8 - 11.

Save This Manual

You will need the manual for the safety warnings and precautions, assembly instructions, operating and maintenance procedures, parts list and diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep the manual and invoice in a safe and dry place for future reference.

SAFETY WARNINGS AND PRECAUTIONS

WARNING: When using tool, basic safety precautions should always be followed to reduce the risk of personal injury and damage to equipment.

Read all instructions before using this tool!

1. **Keep work area clean.** Cluttered areas invite injuries.
2. **Observe work area conditions.** Do not use machines or power tools in damp or wet locations. Don't expose to rain. Keep work area well lit.
3. **Keep children away.** Children must never be allowed in the work area. Do not let them handle machines, tools, or extension cords.
4. **Store idle equipment.** When not in use, tools must be stored in a dry location to inhibit rust. Always lock up tools and keep out of reach of children.
5. **Use the right tool for the job.** Do not attempt to force a small tool or attachment to do the work of a larger industrial tool. There are certain applications for which this tool was designed. It will do the job better and more safely at the rate for which it was intended. Do not modify this tool and do not use this tool for a purpose for which it was not intended.
6. **Dress properly.** Do not wear loose clothing or jewelry as they can be caught in moving parts. Protective, electrically non-conductive clothes and non-skid footwear are recommended when working. Wear restrictive hair covering to contain long hair.
7. **Use eye, hand and ear protection.** Always wear ANSI approved impact safety goggles when working. Wear a full face shield if you are producing metal filings or wood chips. Wear an ANSI approved dust mask or respirator when working around metal, wood, and chemical dusts and mists. Wear protective gloves when handling tools and equipment.
8. **Do not overreach.** Keep proper footing and balance at all times. Do not reach over or across running machines.

9. **Maintain tools with care.** Keep tools maintained and clean for better and safer performance. Follow instructions for lubricating and changing accessories. The handles must be kept clean, dry, and free from oil and grease at all times.
10. **Remove adjusting keys and wrenches.** Check that keys and adjusting wrenches are removed from the tool or machine work surface before beginning work.
11. **Avoid unintentional operation.** Be sure all safety precautions are followed, lift is secure and vehicle is properly positioned before operating this jack. Always think several steps ahead of your current operation to ensure safety.
12. **Stay alert.** Watch what you are doing, use common sense. Do not operate any tool when you are tired or using any medication.
13. **Check for damaged parts.** Before using any tool, any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment and binding of moving parts; any broken parts or mounting fixtures, and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician. Do not use the tool if any control does not operate properly.
14. **Replacement parts and accessories.** When servicing, use only identical replacement parts. Use of any other parts will void the warranty.
15. **WARNING! Fluid ejected at high pressure can cause injection injury.** Do not handle equipment if leaking. Avoid high pressure leak ejection stream.
16. **Do not operate tool if under the influence of alcohol or drugs.** Read warning labels on prescriptions to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not operate the tool.
17. **Maintenance.** For your safety, service and maintenance should be performed regularly by a qualified technician.
18. **Use compressed air only.** Only use clean, dry and regulated compressed air at no more than 120 PSI to power this tool. Never use oxygen, carbon dioxide or any other bottled gas as a power source for this tool.
19. **Keep the air hose away from the jack at all times.** If an air hose is crushed, it can rupture resulting in personal injury.
20. **Do not exceed the weight limit of this jack, which is 40,000 lb. (20 tons).** Overloading may cause damage to the hydraulic seals. Overloading may also cause the jack to fade or suddenly fail, allowing the vehicle to suddenly lower.
21. **Do not lift an unbalanced load.** An unbalanced load may suddenly pitch off the jack possibly causing serious injury or property damage.
22. **Avoid Dynamic Loading.** This jack is designed to safely handle a mass of 20 tons. If an object is dropped on the jack, the force applied to the jack will be greater than the force applied by the same object at rest, and may exceed the safe operation limits of this tool.
23. **Avoid Pinch Injury.** The return spring will compress when the jack is lowered. Be careful to keep hands, tools, clothing and other materials away from the return springs to avoid pinch injury.

24. **Only use high quality hydraulic jack oil; do not substitute any other type of oil.**
25. **Warning: The warnings, cautions, and instructions discussed in this instruction 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.**
26. **WARNING:** The brass components of this product contain lead, a chemical known to the State of California to cause birth defects (or other reproductive harm). (California Health & Safety code § 25249.5, et seq.)

UNPACKING

When unpacking, check for damage. If any parts are missing or broken, please call Harbor Freight Tools at the number on the cover of this manual.

- (1) Air / Hydraulic 20-ton bottle jack
- (1) Attached 48" Air Hose with fittings
- (1) 2-piece jack handle

Please refer to the Assembly Diagrams and Parts Lists on pages 8 - 11 of this manual for other parts information.

ASSEMBLY

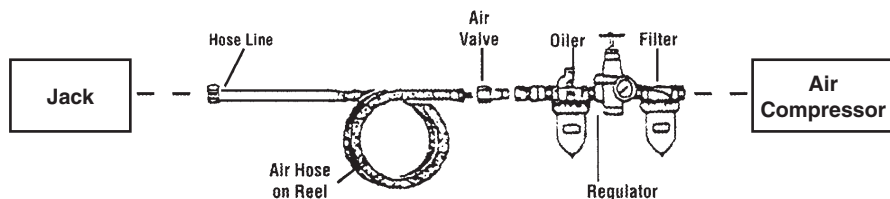
1. Apply thread seal tape (not included) to the threads and screw the Air Valve (44) onto the Air Hose (43).

Air Pressure Supply

Before initial use, a pressurized air supply must be furnished. The hydraulic fluid level must also be checked before use.

1. **Use proper size and type air pressure line and fittings.** The recommended air line for this tool is 3/8" delivering no more than 120 PSI. Air inlet size is 1/4" - 18 NPT.
2. **Maintain a proper regulator and moisture trap in your air line at all times.**
3. **Compressed air only.** Only use clean, dry and regulated compressed air at no more than 120 PSI to power this tool. Never use oxygen, combustible gases, carbon dioxide or any other bottled gas as a power source for this tool.

We recommend that you use both a filter and an in-line oiler in your air supply system as illustrated in the diagram below. These components are not included with this tool, but are available from Harbor Freight Tools.



Recommended Air Line Components

This item is supplied with a quick connect male fitting on the Air Valve (44). Quick connect fittings make working with air powered tools easier and more convenient.

Checking Hydraulic Fluid

Note: Before first use, the hydraulic ram may need to be purged. Some air may intrude in the hydraulic system due to movement during shipping.

Air bubbles can become trapped inside the hydraulic system thereby reducing the efficiency of the Jack. Purge the air from the system if lift efficiency drops.

1. Place the slotted end of the Jack Handle (45) assembly over the Release Valve Release (4) and turn 1-1/2 turns counterclockwise.
2. Remove the Oil Filler Plug (16) on the side of the jack Reservoir (15) by gently turning counterclockwise.
3. Rapidly pump the Handle assembly several times to purge the air from the hydraulic system.
4. Turn the Release Valve screw clockwise until snug using the Handle assembly.

5. Top off jack Reservoir (15) with a high quality hydraulic jack oil, see page 7.
6. Replace the Filler Plug (16).

OPERATION

This is an air-actuated hydraulic bottle jack. The air motor is air pressure activated and drives the hydraulic jack. In the event no air pressure is available, a standard hydraulic piston assembly is provided for hand jacking.

1. Position the Jack on a solid level surface that can withstand the weight of the jack and the load which will be lifted.
2. Be sure the load is balanced on the jack. Sturdy jack stands (not included) positioned under the weight provide a good safety precaution against the possibility of the load toppling.
3. Be sure that the jack is positioned at a proper lift point on the item to be lifted. Using appropriate lift points avoid possible damage to the item. Rotate the Screw Extension (13.1) on the Ram (13) until it contacts the underside of the load to be lifted. Screwing counterclockwise raises the extension, screwing clockwise lowers the extension.

4a. Pneumatic Operation:

- a. Connect a pressurized air source to the Air Valve (44).
- b. Engage the notch on the end of the Jack Handle (45) onto the Release Valve (4). Turn the Release Valve slightly clockwise to ensure that the valve is closed. The jack will not lift if the valve is open.
- c. When it is safe to do so, squeeze the Air Valve (44). This will admit pressurized air into the Air Motor (42) which will cause the hydraulic jack to lift. Continue to hold the Throttle Lever down until the load is lifted to the desired level. Note that the maximum ram travel is 6-1/2”.

4b. Manual Operation:

To manually operate the jack without use of compressed air, close the Release Valve, then insert the end of the Jack Handle (45) into the Handle Bracket (34) and pump up and down. This action will raise the jack.

5. Support the load using jack stands (not included) or other means to support the weight. Do not leave the load on the jack for an extended period of time. Damage to the jack or personal or property injury may result.
6. To lower the item, first lift the item slightly and remove the jack stands.
7. Engage notches in the end of the Jack Handle (45) onto the Release Valve (4). Turn the valve slightly, approximately 1/4 turn to lower the load. When the load is lowered, turn the Release Valve clockwise to stop the motion.

MAINTENANCE

1. Periodically check the air and hydraulic fittings for leaks. Repair if any leak is detected.
2. Periodically lubricate all moving points of the Jack.
3. The Hydraulic Ram (13) should be kept clean, free of dirt and water, and protected from corrosion.
4. **OIL REPLACEMENT:**
 - a. Place Jack in an upright position.
 - b. Completely lower the Ram (13).
 - c. Remove the Filler Plug (16) and keep it clean.
 - d. Fill with high-quality hydraulic jack oil to the lower rim of the fill hole.
 - e. Purge air from the hydraulic system as previously described.
 - f. Top off with more hydraulic oil.
 - g. Replace Filler Plug (16).

Troubleshooting

1. If the Jack fails to lift, or fades under load, first check that the Release Valve (4) is closed. Engage the notches at the end of the Jack Handle (45) onto the Release Valve (4) and turn clockwise. Check to see if this has solved the problem.
2. Next check to see if there are any leaks in the air system. Examine all connections and valves to see if there is a leak. If so, have a qualified service technician repair the connection or replace the faulty part.
3. Check to see if there are any leaks in the hydraulic system. Leaks will produce visible hydraulic fluid at the separation. If there are any leaks, have a qualified repair technician tighten, repair or replace any leaking components.
4. Air in the hydraulic system will cause the jack to fade. If no leaks are detected, purge the hydraulic system to remove any trapped air. Purging instructions are given in number 4, above.
5. The Air pump mechanism may be stuck. To remedy this, open the release valve, and operate the air lever fully.
6. If none of these troubleshooting options solves the problem, it is possible that the seals of the jack have been damaged by overloading, dirt on the ram or other environmental factors. Have a qualified service technician inspect the Jack for faults and possible repair.

HYDRAULIC JACK PARTS LIST

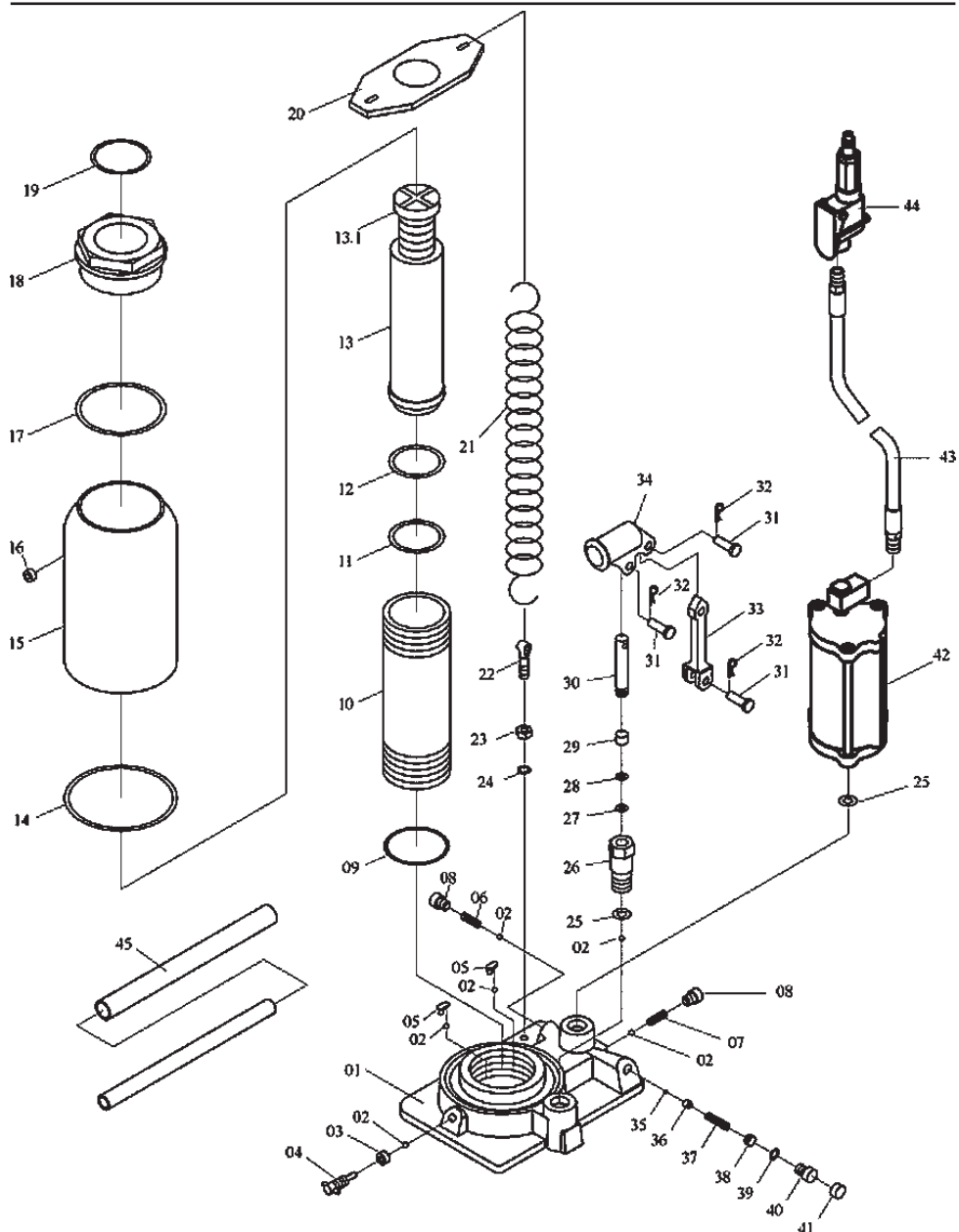
Part	Description	Q'ty
1	Base	1
2	Ball	6
3	Seal	1
4	Release Valve	1
5	Ball Cup	2
6	Spring	1
7	Spring	1
8	Screw	2
9	Nylon Ring	1
10	Cylinder	1
11	O-ring	1
12	Cup Seal	1
13	Ram	1
13.1	Extension Screw	1
14	Packing	1
15	Reservoir	1
16	Filler Plug	1
17	Nylon Ring	1
18	Top Nut	1
19	O-ring	1
20	Spring Plate	1
21	Return Spring	2
22	Eye Bolt	2

Part	Description	Q'ty
23	Nut	2
24	Lock Washer	2
25	Washer	2
26	Pump Cylinder	1
27	O-ring	1
28	Nylon Ring	1
29	Backup Ring	1
30	Piston	1
31	Pin	3
32	R-Pin	3
33	Connector	1
34	Handle Bracket	1
35	Ball	1
36	Ball Cup	1
37	Spring	1
38	Screw	1
39	O-ring	1
40	Screw	1
41	Plastic Cap	1
42	Air Motor Assembly*	1
43	Air Hose	1
44	Air Valve Assembly*	1
45	Handle	2

This parts list refers to the Assembly Diagram on page 9.

* Air Motor Assembly (42) and Air Valve Assembly (44) may be replaced as assemblies or individual parts may be replaced. Please see Air Motor parts information on pages 10 and 11.

HYDRAULIC JACK ASSEMBLY DIAGRAM



Note: Some parts are listed and shown for illustration purposes only and are not available individually as replacement parts.

Note: Assemblies 42 and 44 are shown in more detail on page 12.

AIR MOTOR PARTS LIST

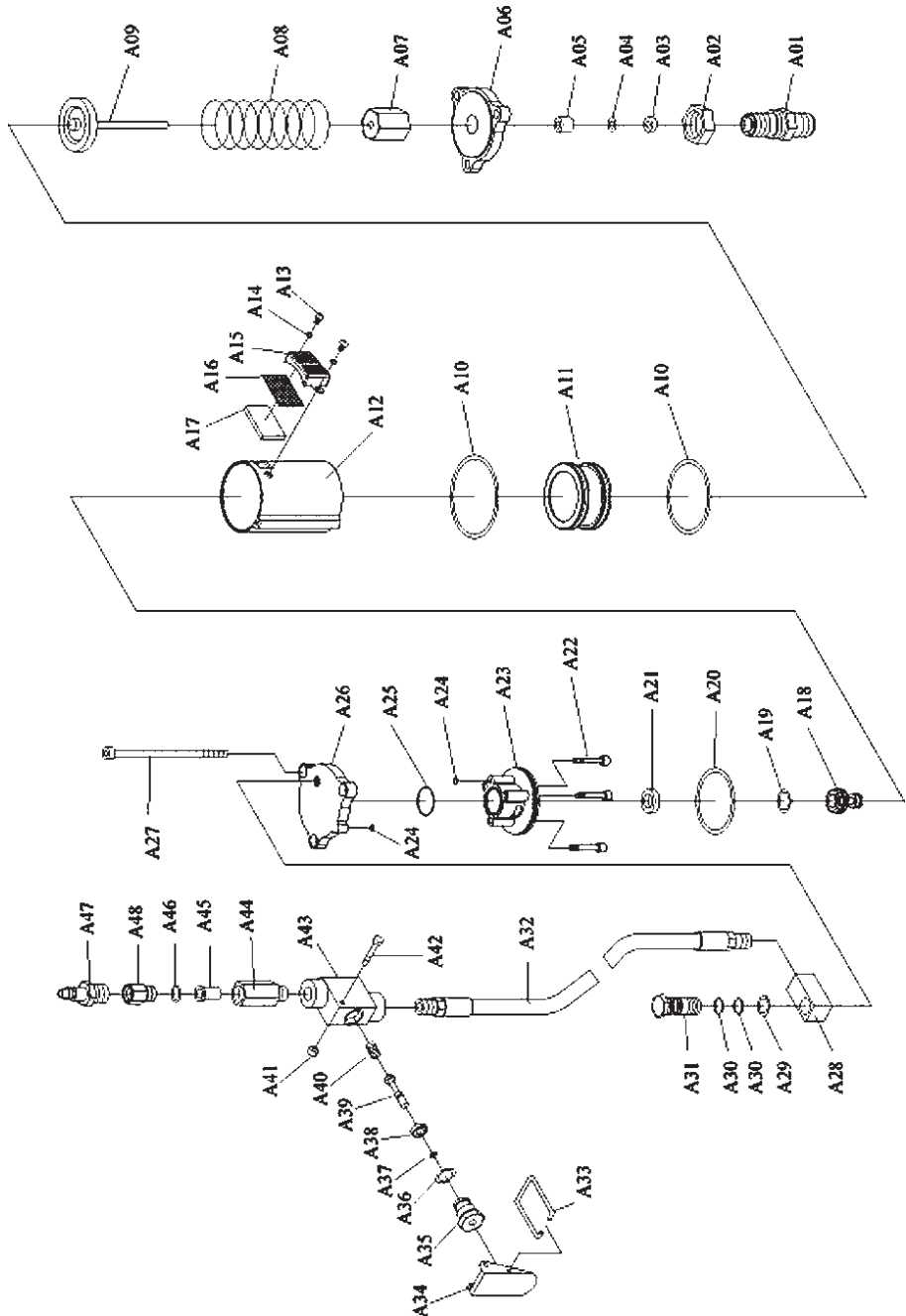
Part	Description	Q'ty
A1	Air Pump Cylinder	1
A2	Nut	1
A3	Sealing Ring	1
A4	Nylon Ring	1
A5	Copper Ring	1
A6	Air Cylinder Seat	1
A7	Nut	1
A8	Spring	1
A9	Air Pump Piston	1
A10	O-ring	2
A11	Big Piston	1
A12	Air Cylinder	1
A13	Screw	2
A14	Lock Washer	2
A15	Safety Cover	1
A16	Filter	1
A17	Silencing Pad	1
A18	Small Piston	1
A19	O-ring	1
A20	O-ring	1
A21	Sealing Ring	1
A22	Bolt	3
A23	Nylon Ring	1
A24	O-ring	2

Part	Description	Q'ty
A25	O-ring	1
A26	Air Cylinder Cap	1
A27	Bolt	3
A28	Coupler Seat	1
A29	Retaining Ring	1
A30	O-ring	2
A31	Coupler	1
A32	Air Hose	1
A33	Lock Lever	1
A34	Lever	1
A35	Nut	1
A36	O-ring	1
A37	O-ring	1
A38	Packing	1
A39	Throttle	1
A40	Spring	1
A41	Lock Nut	1
A42	Bolt	1
A43	Valve Body	1
A44	Inlet	1
A45	Screen	1
A46	O-ring	1
A47	Quick Coupler, Male	1
A48	Coupler Seat	1

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER NOR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

AIR MOTOR ASSEMBLY DIAGRAM



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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