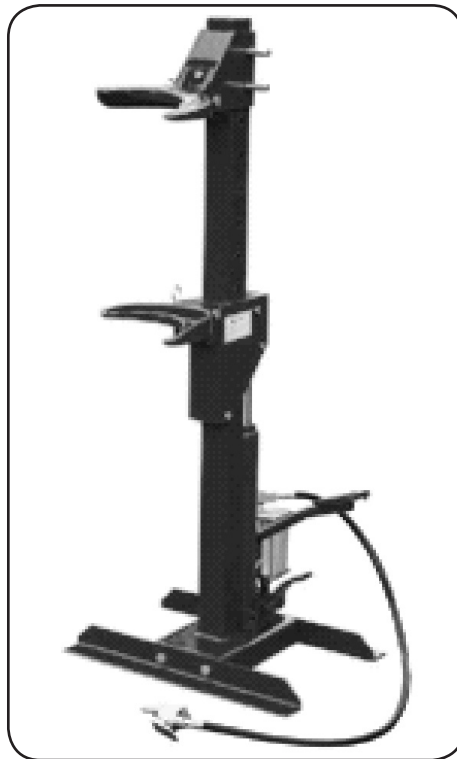


**Central
Hydraulics®**

Model 65549

1-TON AIR/HYDRAULIC STRUT SPRING COMPRESSOR

INSTRUCTIONS AND PRECAUTIONS



Distributed exclusively by Harbor Freight Tools®.

3491 Mission Oaks Blvd., Camarillo, CA 93011

Visit our website at: <http://www.harborfreight.com>



**SAVE THESE INSTRUCTIONS. READ ALL
PRECAUTIONS AND INSTRUCTIONS.**

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

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SPECIFICATIONS

Air Pressure	120 PSI
Maximum Compression	2200 lbs.
Ram Travel	12.8"
Coil Spring Sizes Accepted	4" Dia. to 6.3" Dia.
Spring Length Accepted	5" Long to 18" Long
Shoes	Small Set (4" Springs) Large Set (6.3" Springs)

UNPACKING

When unpacking, make sure that the item is intact and undamaged. If any parts are missing or broken, please call Harbor Freight Tools at the number shown on the cover of this document as soon as possible.

ASSEMBLY PRECAUTIONS

1. Use only according to these instructions. Improper use can create hazards.
2. Wear ANSI-approved safety goggles and heavy-duty work gloves during use.
3. Keep work area clean and well lit.
4. Keep bystanders out of the area during use.
5. Do not use when tired or when under the influence of drugs or medication.

IMPORTANT SAFETY INFORMATION

In this manual, on the labeling, and all other information provided with this product:



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

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

CAUTION

CAUTION, without the safety alert symbol, is used to address practices not related to personal injury.

GENERAL SAFETY.

1. **WARNING!** Ensure Health & Safety, local authority, and general workshop practice regulations are adhered to when using this equipment.
2. **WARNING!** Wear approved safety hand and eye protection (standard spectacles are not adequate).
3. **WARNING! TRAPPING DANGER** — Keep hands and fingers away from the spring and compressing Shoes when in use.
4. Keep the work area clean, uncluttered and ensure there is adequate lighting.
5. Maintain correct balance and footing. Ensure the floor is not slippery and wear non-slip shoes.
6. Remove ill-fitting clothes. Remove ties, watches, rings and other loose jewellery. Contain and/or tie back long hair.
7. Wear appropriate protective clothing.
8. Familiarize yourself with the applications, limitations and potential hazards of the Spring Compressor.
9. **DO NOT** force the spring compressor to achieve a task it was not designed to perform.
10. **DO NOT** allow untrained persons to use the spring compressor.

PRE-OPERATIONAL SAFETY.

1. This product is not a toy. Do not allow children to play with or near this item.
 2. Use for intended purpose(s) only.
 3. Inspect before use; do not use if parts are loose or damaged.
 4. Strut and Spring Compression station should be securely bolted to the workshop floor before use.
 5. Apply grease to the front and rear faces of the main Upright (14) to assist the smooth sliding of upper and lower strut support (24, 31) Rollers (27).
 6. **DO NOT** operate Spring Compressor if parts are damaged or missing as this may cause failure and/or personal injury.
 7. Before compressing, make visual inspection of machine to ensure pins are securely positioned and that there is no sign of wear or fatigue. If found, do not use the unit until it is replaced or repaired by a qualified technician.
 8. Ensure upper and lower Shoes (28, 28A), Strut Supports (31, 24) and their Retaining Pins (30, 23, 26) are properly positioned. Their R-Clips (32) and Circlips (29, 22, 25) must be properly installed.
 9. Before commencing compression of a spring, ensure ends of the spring are seated and being held securely in upper and lower Shoes (28, 28A) of the compressor and cannot slide out during compression.
 10. Always fit the Safety Chain (37) around strut and spring (see Fig. 2). Ensure Chain is not trapped in the coils of the spring being compressed.
 11. Maintain product labels and nameplates. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
 12. When compressing the spring, always stand to one side of the unit.
- DANGER!** Stop compressing the spring before the coils touch. **Do not** over compress.
13. Before attempting to remove top cap nut, always use some type of tool or short stick to test if the compression has been relieved, **DO NOT** use your fingers.
 14. Harbor Freight Tools recommends use of an appropriate tool, to be supplied by user, to remove top cap nut from upper strut mount.
 15. Once compressed and strut is removed, it is a good idea to release the tension on the spring.
 - a. Do not leave the spring under compression in the machine unattended and do not leave in compression for prolonged periods, i.e. overnight.
 16. Before releasing the compression, ensure that the top cap nut is securely fastened according to the manufacturer's specs.
 17. Release the compression slowly, keeping your hands and fingers away from the spring assembly.
 18. Be sure the tension on the spring is fully held by the strut assembly before removing the strut from the Shoes (28) of the compressor.

POST OPERATIONAL SAFETY.

1. When not in use, clean and store the Spring Compressor in a safe, dry, childproof location.
2. Maintain the Spring Compressor in good condition.
 - a. Replace or repair damaged parts. Use genuine Harbor Freight Tools parts only.
 - b. Unauthorized parts may present a hazard and will invalidate the warranty.

Change Shoes

- a. Two sets of Shoes (28, 28A), one large (28A) and one small (28), are provided. One set handles springs as small as 4" in diameter and the larger set handles springs as large as 6.3" in diameter.
- b. To change to the second pair of Shoes, first undo and remove the Socket Cap Screw (33) that secures the Upper to the Upper Strut Support (31). Remove the R-Clip (32). Support the Shoe with one hand and slide the Retaining Pin (23) out.
- c. The Circlip (22) will remain in place on the other end.
- d. Remove the Shoe (28). Hold the alternative Shoe in place within the support bracket and slide the Retaining Pin (23) back into place and lock it with the R-Clip (32). Replace the Socket Cap Screw (33). The Shoes are

designed to be used as matched pairs and should not be mixed.

INTRODUCTION

1. The 1-Ton Air/Hydraulic Spring Compressor is an air actuated hydraulic unit with alternative foot operation.

ASSEMBLY

1. The unit requires minimal assembly before use.
2. Attach the Angle Steel (21) to the base of the Upright (14) by using Bolts (20), Nuts (18) and Washers (19). Be sure Angle Steel (21) are fixed securely to the base as they provide stability and will be used to secure the unit to the floor.
3. Insert the Foot Pedal (5) into the Socket (B28) on the hydraulic jack and secure with the Bolt (10) and Washer (11).
4. Push Circlips (29) into the groove on each retaining Pin (30).
5. Slide the Upper Strut Support (31) over the Upright (14) to the required height and align the two holes in the support with two holes in the Upright. Slide the two Retaining Pins (30) through the assembly and retain them in position using the R-clips (32).
6. Two pairs of shoes (28,28A) are supplied. Choose one pair of shoes and attach them to the upper and lower support bracket by using the socket cap Screw (33), the R-clip (32), the Retaining Pin (23) and the Circlip (22). The shoes are designed to be used as matched pairs and should not be mixed.
7. The unit must now be fixed securely to the ground in order to ensure the safety of the user. Mounting holes are to be found in the brackets, which allow the unit to be secured by way of masonry bolts or sinking pins (not included) into concrete.

WARNING! Whichever method is used, ensure the unit is adequately fixed and cannot topple.

AIR SUPPLY SET UP

8. Ensure the Air Valve (1) is in the "Off" position before connecting to the air supply. The Spring Compressor requires 120 PSI to operate at full capacity.

9. **WARNING!** Ensure air supply is clean and does not exceed 120 PSI.
 - a. Too high an air pressure and unclean air will shorten the life of the unit due to excessive wear, and may be dangerous causing possible damage and/or personal injury.
 - b. Drain the air supply tank daily and clean the Air Inlet Filter (A16) weekly.
 - c. When used, drain air filter at least once a day.

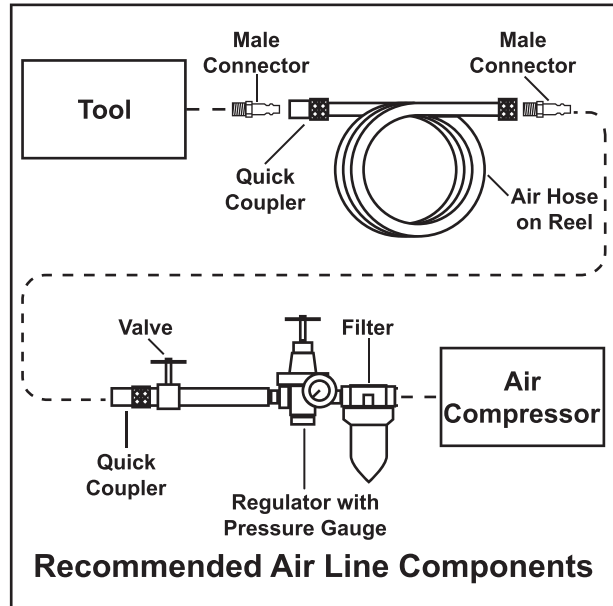


Fig.1

10. For recommended air source and automatic oiler hook-up, refer to Fig. 1.
11. Keep hose away from heat, oil and sharp edges.
12. Check hoses for wear and make certain that all connections are secure.



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.



SAVE THESE INSTRUCTIONS.

OPERATING INSTRUCTIONS

1. Measure the outer diameter of the spring to be compressed and select the correct set of Shoes.
2. Press down on the Release Valve Pedal (6) releasing air pressure to lower the Under Strut Support until the Ram is fully retracted and the Under Strut Support (24) is at its lowest position.

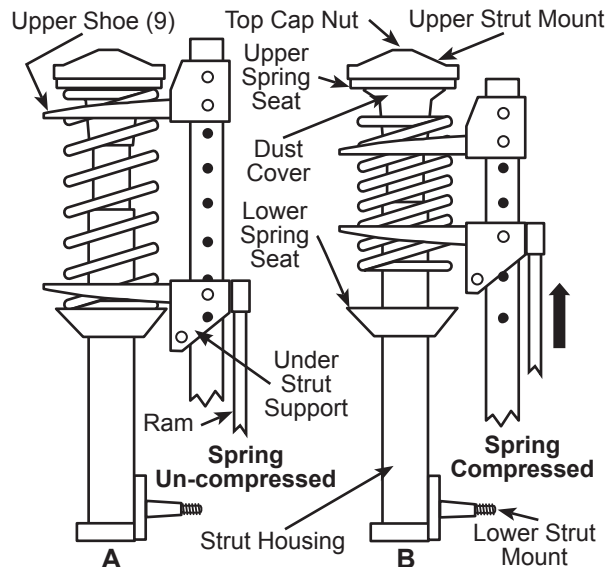


Fig. 2

3. The upper Shoe (28) should bear down on the *first full coil* down from the top of the strut. The lower Shoe should be pushing up on the *first full coil* up from the bottom of the strut. (See Fig. 2.)
 - a. Measure the distance between these coils and adjust the position of the upper strut support so that the distance between the Shoes is slightly larger than required.
 - b. Ensure that the Retaining Pins (30) holding the Upper Strut Support (31) are fully inserted and secured with the R-Clip (32) and Circlips (29) provided.
 - c. Use the Foot Pedal (5) to raise the Under Strut Support (24) to finely adjust the distance between the Shoes.
4. Before compressing, make a visual inspection of the tool to ensure all Retaining Pins are securely positioned and that there is no sign of wear or metal fatigue.

- a. If wear or fatigue is found, do not use the Tool. Have the tool replaced or repaired by a qualified technician.
 5. Fit the strut into the Shoes (28) and ensure that the lower coil used lies behind the inner retaining rim at the back of the Shoe (28). Operate the Foot Pedal (5) to raise the upper coil end into contact with the upper spring seat, ensuring the coil at both ends are securely retained by the raised inner and outer rims within the Shoes (28, 28A).
 6. Wrap one Safety Chain (37) around the portion of the spring and strut protruding from the upper Shoe (28) ensuring that the Chain lies **above** the Shoe. (See Fig. 2.)
 7. Wrap the other Safety Chain around the spring and strut protruding from the lower Shoe ensuring that the Chain lies **below** the Shoe.
 - a. Fasten each Chain behind the Upright (14) using the attached spring catches. Make sure each Chain is as tight as possible. Do not position the Chain in the coils held between the Shoes (28, 28A).
 8. When applying compression to the spring, always stand to one side of the unit.
 9. Gradually compress the spring by pumping the Foot Pedal (5) or operating the Air Valve (1) ensuring that the spring and strut remain securely held at all times.
 10. Ensure that the strut and the Upright (14) of the compressor are correctly aligned at all times during spring compression.
 - a. For conical springs, the center line of the spring should remain parallel to the compressor body.
- DANGER!** Stop compressing the spring before the coil windings touch. You need only compress the spring until the upper spring seat is free from spring pressure.
11. Before attempting to remove top cap nut on the strut, use a tool or short stick to test if the spring compression has been relieved from the upper spring seat. Do not use your hands or fingers.
 12. Harbor Freight Tools recommends the use of properly designed strut tools to remove the top cap nut from the shock absorber piston.

- a. Ensure that the shock absorber is supported as the top cap nut is removed to prevent it falling down through the coils and causing injury.
13. Once compressed and the strut removed, it is recommended to release the tension on the spring.
 - a. Do not leave the spring under compression unattended and do not leave in compression for prolonged periods. I.e. overnight.
 14. Allow the spring to gradually decompress by carefully pressing the Valve Release Pedal (6) keeping your hands and fingers away from the spring assembly.
 15. Replace the spring or shock absorber as necessary and reassemble the strut by first compressing the spring and then introducing the shock absorber up through the lower Shoe (28) and compressed spring coils.
 - a. Re-position the upper strut mount and secure with the top cap nut.
 16. Before releasing the compression, ensure that the top cap nut is securely tightened according to the manufacturer's specs.
 17. Release the compression slowly keeping your hands and fingers away from the spring assembly.
 18. Be sure that the spring ends are firmly and securely seated in the upper and lower Shoes of the Compressor before removing the strut from the Spring Compressor.

MAINTENANCE

1. Before each use, check the compressor to ensure it is not damaged or worn. If in any doubt DO NOT use the tool.
 - a. Remove it from service immediately and have it replaced or repaired by a qualified technician.
2. Refilling the hydraulic system with oil is rarely necessary but the oil level should be checked in the event of a loss of performance.
 - a. To check oil level, ensure the Under Strut Support (24) is fully lowered, remove filler plug and check that level is within .4" of filler hole. Add hydraulic jack oil if necessary.

WARNING: DO NOT use brake fluid, or any fluid other than hydraulic jack oil as this will cause

serious damage to the jack and invalidate the warranty!

Bleeding the Hydraulic System

3. The Strut Spring Compressor must be securely mounted on a flat and level surface.
4. Wipe the Oil Filler Plug (38) and its surrounding area at the side of the Ram (7).
5. With the tip of a flat tip screwdriver, pry and remove the rubber Oil Filler Plug.
6. Pour fresh hydraulic jack oil into the Ram (7) until it starts to overflow.
7. Step on the Valve Release Pedal (6) and allow the Under Strut Support (24) to be lowered completely.
8. While holding the Valve Release Pedal (6) down, rapidly pump the Foot Pedal (5) at least five full strokes. This should purge the air out of the system.
9. Repeat step 6 above to make sure that the Ram (7) is filled with oil.
10. Wipe the plug and place its edge against the fill-hole and while applying thumb force behind the plug, work the rubber plug back into the fill-hole with the aid of the flat tipped screwdriver.
11. After the plug is inserted, wipe off spilled oil from jack exterior with a clean and dry rag.

CAUTION: DO NOT operate the jack when the Oil Filler Plug (38) is removed.

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS DOCUMENT AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR 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.

PARTS LIST - SPRING COMPRESSOR

Part	Description	Qty.
1	Air Valve	1
2	Air Hose	1
3	Air Motor	1
4	Washer	1
5	Foot Pedal	1
6	Valve Release Pedal	1
7	Ram	1
8	Pin	1
9	Ram	1
10	Bolt	1
11	Washer	1
12	Screw	1
13	T-Connector	1
14	Upright	1
15	Washer	2
16	Lock Washer	2
17	Bolt	2
18	Nut	4
19	Washer	4
20	Bolt	4
21	Angle Steel	2
22	Circlip	2
23	Retaining Pin	2
24	Under Strut Support	1
25	Circlip	6
26	Retaining Pin	3
27	Roller	2
28	Shoe - Small 4"	2
28A	Shoe - Large 6.3"	2
29	Circlip	2
30	Retaining Pin	2
31	Upper Strut Support	1
32	R-Clip	4
33	Socket Cap Screw	1
34	Safety Ring	1
35	Bolt	2
36	Washer	2
37	Safety Chain	2
38	Oil Filler Plug (Hidden)	1

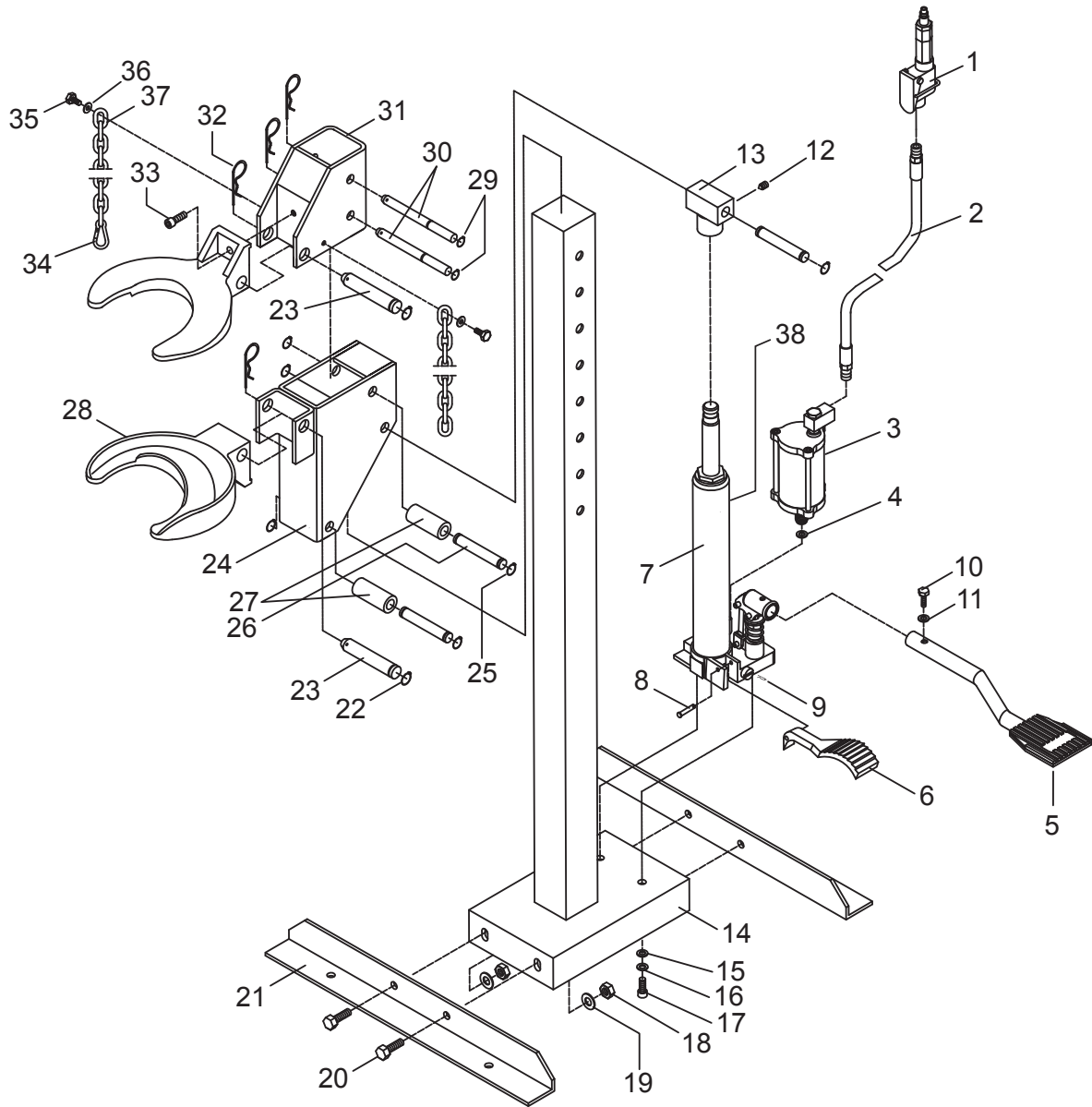
PARTS LIST - AIR MOTOR

Part	Description	Qty.
A01	Air Pump Cylinder	1
A02	Nut	1
A03	Sealing Ring	1
A04	Nylon Ring	1
A05	Copper Ring	1
A06	Air Cylinder Seat	1
A07	Nut	1
A08	Spring	1
A09	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
A25	O-Ring	1
A26	Air Cylinder Cap	1
A27	Bolt	4
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	Screw	1
A45	Screen	1
A46	O-Ring	1
A47	Quick Coupler-Male	1
A48	Coupler Seat	1

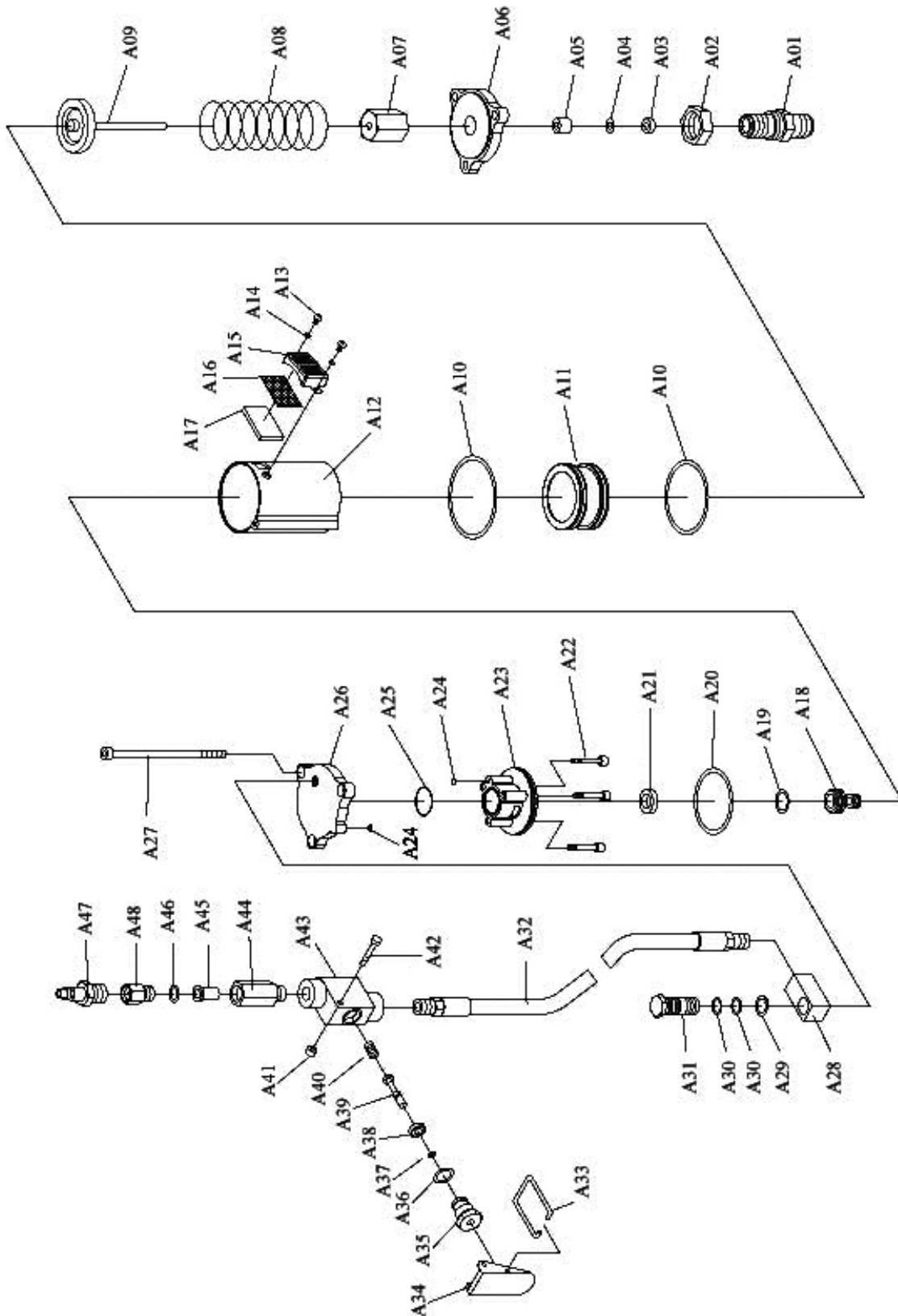
PARTS LIST - HYDRAULIC JACK

Part	Description	Qty.
B1	Screw Protector	1
B2	Screw	1
B3	O-ring	1
B4	Screw	1
B5	Spring	1
B6	Ballcap	1
B7	Ball	1
B8	Base	1
B9	Pin	3
B10	Release Pedal	1
B11	R-pin	4
B12	Screw	1
B13	O-ring	1
B14	Screw	1
B15	Rubber Pad	1
B16	Ballcap	1
B17	Spring	1
B18	Ball	6
B19	Copper Washer	2
B20	Piston Housing	1
B21	O-ring	1
B22	Nylon Ring	1
B23	Dust Seal	1
B24	Small Piston	1
B25	Pin	1
B27	Link	1
B28	Socket	1
B29	Washer	1
B30	Cylinder	1
B31	Pump Pedal	1
B32	Washer	1
B33	Screw	1
B34	Oil Plug	1
B35	Recervoir	1
B36	Spring	2
B37	Copper Washer	2
B38	Screw	2
B39	O-ring	1
B40	Nylon Ring	1
B41	Circlip	1
B42	Ram	1
B43	O-ring	1
B44	Nylon Ring	1
B45	Cylinder Cap	1

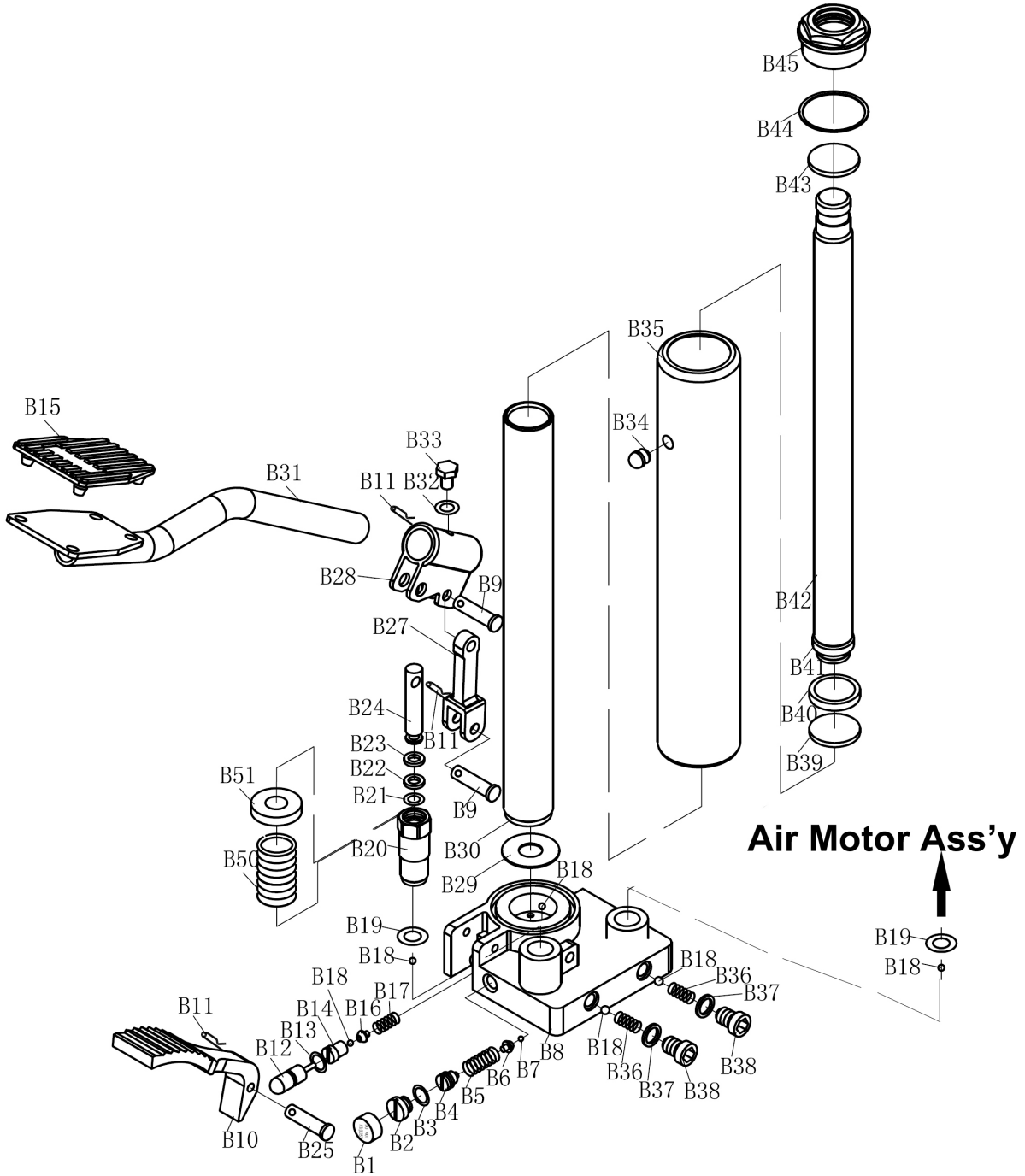
Assembly Drawing — 1-Ton Strut Spring Compressor



Assembly Drawing - Air Motor



Assembly Drawing - Hydraulic Jack



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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Record 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.

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