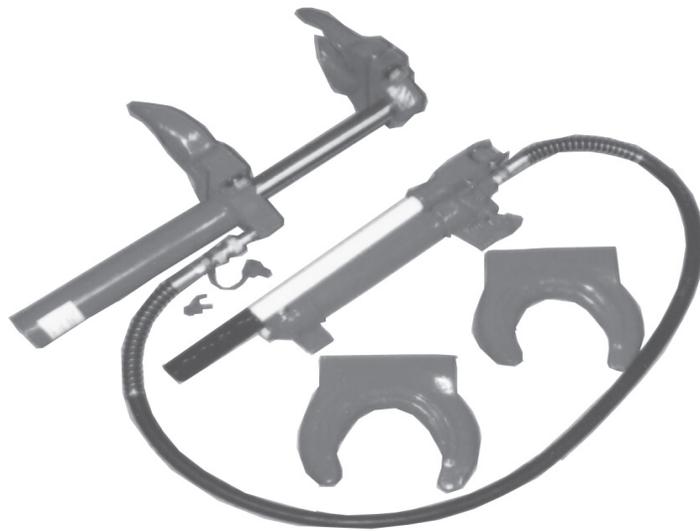


HYDRAULIC SPRING COMPRESSOR SET

Model 47890

**ASSEMBLY and OPERATING
INSTRUCTIONS**



3491 Mission Oaks Blvd., Camarillo, CA 93011
Visit our Web site at <http://www.harborfreight.com>

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

Specifications

Maximum Compression	1500 Lbs.
Pump Size	5" H x 3" W x 14" L
Cylinder Size	2" Dia. x 12-1/2" L
Retracted Length	17-1/2"
Extended Length	22-1/2"
Ram Travel	5-1/2"
Coil Capacity	6.5" Max. (large), 5" Max. (small)
Pump Hose	5' L
Weight	47 Lbs.

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 lighted.
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 and ear protection.** Always wear ANSI approved impact safety goggles. 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.
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 clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and, if damaged, have them repaired by an authorized technician. The handle must be kept clean, dry, and free from oil and grease at all times.
10. **Stay alert.** Watch what you are doing, use common sense. Do not operate any tool when you are tired.
11. **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.
12. **Guard against electric shock.** Prevent body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerator enclosures.
13. **Replacement parts and accessories.** When servicing, use only identical replacement parts. Use of any other parts will void the warranty. Only use accessories intended for use with this tool. Approved accessories are available from Harbor Freight Tools.
14. **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.
15. **Maintenance.** For your safety, maintenance should be performed regularly by a qualified technician.
16. **Never leave a loaded spring unattended.** Whenever a strut spring is compressed, a lot of force is stored in the spring. This must be controlled and monitored until the spring is relaxed.
17. **Keep hands and fingers away from the Spring Compressor when applying or releasing a load.**
18. **Release a load from the Spring Compressor before performing any service or maintenance.** Do not move the tool, service the pump, or clean a Strut Assembly while it's under a load.
19. **Do not allow contact with lubricants.** Make sure the Spring Compressor is clean and all lubricants are washed off prior to use. Lubricants will diminish it's ability to hold the spring firmly and safely.
Never exceed the maximum capacity of 1500 Lbs. Personal injury or property damage may result if you exceed the capacity of the Spring Compressor.
20. **Warning:** De-grease the strut spring to be compressed. Never attempt to compress a dirty spring.
21. **Warning:** The maximum force which can be applied by the Strut Spring Compressor is 1,500 Lbs. Use the Strut Spring Compressor only on passenger cars and pickup trucks. Using the Strut Spring Compressor at a force greater than 1,500 lbs. may result in personal injury and/or property damage.
22. **Do not allow any lubricants to contact the Coil Brackets (#16) of the Hydraulic Spring Compressor.** Lubricants of any type on the above mentioned parts will diminish the ability of the Hydraulic Spring Compressor to firmly and safely grip and hold a Strut Spring in position, which may result in personal injury and/or property damage.

Warning: This product contains or produces a chemical known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code 25249.5 et seq.)

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.

Unpacking

When unpacking, check to make sure the parts listed on pages 6 and 7 are included. If any parts are missing or broken, please call Harbor Freight Tools at the number on the cover of this manual as soon as possible.

Assembly

The only assembly required is the mounting of the large or small set of **Coil Brackets (#16)**.

Removing existing **Coil Brackets (#16)**.

1. On the **Coil Bracket Base (#15)**, remove the existing **Coil Brackets (#16)** by removing the **Bolt (#13)**, **Lock Washer (#12)**, and **Washer (#11)**. Repeat with other side.

Adding a **Coil Bracket (#16)**.

2. Line up the holes on the **Coil Bracket (#16)** with the holes on the **Coil Bracket Base (#15)**. Put a **Lock Washer (#12)**, and a **Washer (#11)** on a **Bolt (#13)**, and thread it through the **Coil Bracket Base (#15)**, into the **Coil Bracket (#16)**. Repeat with other side.

Operation

Refer to both **Assembly Drawings** on pages 8 and 9.

Note: This product is to be used to remove a strut spring from a strut assembly previously removed from a vehicle. For the purpose of this manual, it is assumed that this tool will be used to remove a strut spring from a generic type of strut assembly previously removed from a vehicle. You must follow the directions in the vehicle manual (not included) specific to your strut assembly

1. Attach the hose from the **Hand Pump (#17)** to the **Cylinder Screw (#9)** within the **Connection Nut (#10)**.

2. Tighten (clockwise) the **Release Valve (#15a)** on the **Pump (#17)**.

3. To move the **Coil Brackets (#16)** closer together slowly pump the **Handle Grip (#38a)**.

4. To adjust them away from each other, loosen (counterclockwise) the **Release Valve (#15a)** on the **Pump (#17)**.

Operation (continued)

5. De-grease the spring to be compressed. Never attempt to compress a dirty spring as it may slip from the brackets causing injury or damage.
6. Make sure you have the proper size **Coil Brackets (#16)** for the spring. If not, change them according to the assembly directions on page 4.
7. Adjust the **Coil Brackets (#16)** according to the directions under Operation on page 4 so that the recessed lips (See Assembly Drawing 1) of the **Coil Brackets (#16)** fully contact the furthestmost top and bottom spring coils within the strut assembly.
Note: Make sure you tighten (clockwise) the **Release Valve (#15a)** on the **Pump (#17)**.
8. Check to make sure that the top and bottom of the vehicle's spring coils are firmly in contact with the **Coil Brackets (#16)**.
9. Clear the area of all observers.
10. Keep your hands clear of the spring.
11. Slowly pump the **Handle Grip (#38a)** to compress the spring.

Removing strut assembly from spring.

12. After fully compressing the spring, remove the spring from the strut assembly by following the manual (not included) specific to your struts. Per the manual's (not included) instructions, remove the appropriate hardware (Upper Spring Cap & Piston Rod Nut) that connects the spring to the strut assembly.
13. Slowly release (counterclockwise) the **Release Valve (#15a)** on the pump to release the load on the Spring Compressor.
14. If necessary (according to the strut manual) loosen nuts that hold spring to the strut assembly.
15. The vehicle's strut assembly may now be removed from the Spring Compressor.

Reassembly

16. Reassemble the strut assembly with the exception of the Spring Cap & Piston Rod Nut.
17. Follow steps five through eleven above to compress the spring.
18. Following the strut manual (not included), replace the strut assembly hardware into the spring, securing the Piston Rod Nut onto the Piston Rod, and replacing the Upper Spring Cap.
19. Slowly release (counterclockwise) the **Release Valve (#15a)** on the pump to release the load on the Spring Compressor. Once the **Coil Brackets (#16)** are clear of the furthestmost top and bottom spring coils, remove the tool.

Maintenance

To keep the pump working properly, air must be bled from the hydraulic system when performance begins to decline.

1. Tighten (clockwise) the **Release Valve (#15a)** on the pump while the pump hose is still attached to the main assembly.
2. Remove the Oil Fill Cap (See Assembly Drawing 2). Pump the **Handle Grip (#38a)** slowly to bleed air from the system. Repeat until no more air leaves the system.
3. Add clean, high quality hydraulic oil if necessary and then replace the Oil Fill Cap . Loosen (counterclockwise) the **Release Valve (#15a)**.
4. Test the pump by tightening the **Release Valve (#15a)** and pumping the **Handle Grip (#38a)** ten times, making sure the **Coil Brackets (#16)** compress. If the pump is still not performing properly, repeat the bleeding procedure.

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.

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

Parts List 1 (Main Assembly)

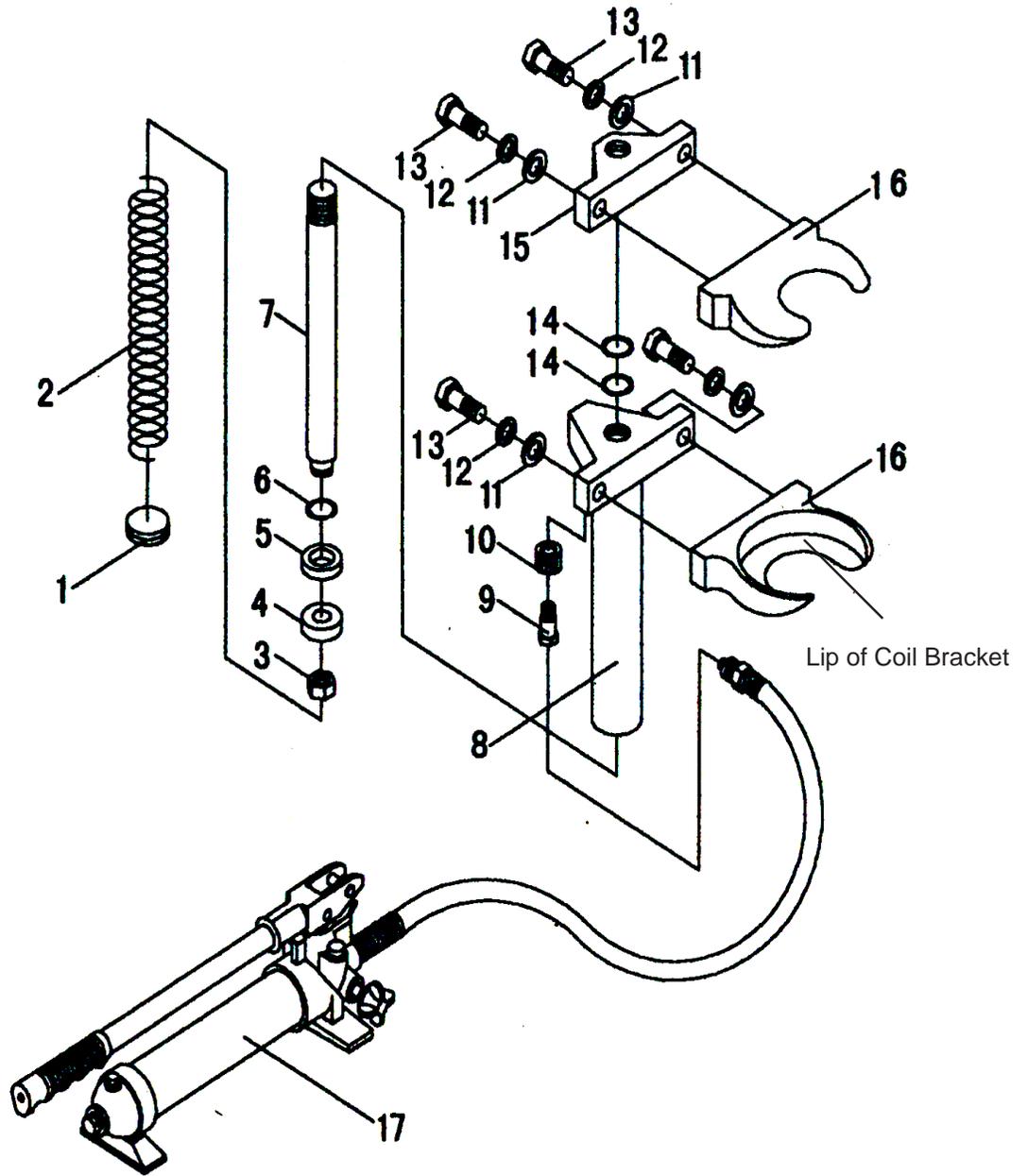
Part No.	Description	Qty.
1	Screw	1
2	Spring	2
3	Nut	1
4	Bushing	1
5	Sealing Ring	1
6	Retaining Ring	1
7	Piston Rod	1
8	Cylinder	1
9	Cylinder Screw	1
10	Connection Nut	1
11	Washer	4
12	Lock Washer	4
13	Bolt	4
14	O-ring	2
15	Coil Bracket Base	1
16	Coil Bracket	4
17	Hand Pump	1

Parts List 2 (Pump)

Part No.	Description	Qty.	Part No.	Description	Qty.
1a	Valve Block	1	22a	Screw	1
2a	Oil Filter	1	23a	O-ring	1
3a	O-ring	2	24a	Screw	1
4a	Reservoir	1	25a	Screw Cover	1
5a	Tie Rod	2	26a	Screw	1
6a	NylonRing	1	27a	Nylon Ring	1
7a	Nut	1	28a	Sealing Ring	1
8a	Ring	1	29a	Screw	1
9a	Breather Valve	1	30a	O-ring	1
10a	Screw	1	31a	Nylon Ring	1
11a	O-ring	3	32a	Piston	1
12a	Pump Foot	1	33a	Pin	1
13a	Ball	2	34a	Retaining Ring	2
14a	O-ring	1	35a	Pin	1
15a	Release Valve	1	36a	Handle Socket	1
16a	Hose	1	37a	Handle	1
17a	Coupler	1	38a	Handle Grip	1
18a	Dustproof Cover	1	39a	Screw	1
19a	Ball	1	40a	Screw	1
20a	Ball Cap	1	41a	Spring	1
21a	Spring	1	42a	Ball	

Note: When ordering pump parts off of Parts List 2 (referring to Assembly Drawing 2 on page 9), make sure you add the suffix "a" to the order number.

Assembly Drawing 1



Assembly Drawing 2

Note: When ordering pump parts off of Parts List 2 (referring to Assembly Drawing 2 on page 9), make sure you add the suffix "a" to the order number.

