



MODELS 904004 4 TON, 910005 10 TON & 920020 20 TON CAPACITY
COLLISION/MAINTENANCE REPAIR KITS

SETUP • OPERATING • MAINTENANCE INSTRUCTIONS

Note: Revision letters (A, B, C, D etc.) after model numbers have been omitted as they do not affect the setup, operating and maintenance instructions of a particular jack unless otherwise noted.

IMPORTANT: READ THESE INSTRUCTIONS BEFORE OPERATING

BEFORE USING THIS DEVICE, READ THIS MANUAL COMPLETELY AND THOROUGHLY, UNDERSTAND ITS OPERATING PROCEDURES, SAFETY WARNINGS AND MAINTENANCE REQUIREMENTS. FAILURE TO DO SO COULD CAUSE ACCIDENTS RESULTING IN SERIOUS OR FATAL PERSONAL INJURY AND/OR PROPERTY DAMAGE.

The use of collision/maintenance repair kits is subject to certain hazards that cannot be prevented by mechanical means, but only by the exercise of intelligence, care, and common sense. Due to the fact the use and versatility of collision/maintenance repair kits is limited only by the imagination and ingenuity of its operator, Norco cannot be responsible for product damage or personal injury due to faulty operator judgement or improper use or setup of the equipment. It is therefore essential to have owners and personnel involved in the use and operation of equipment who are careful, competent, trained, and qualified in the safe operation of the equipment and its proper use. Examples of hazards are dropping,

tipping, or slipping of motor vehicles or their components caused primarily by improperly securing loads, overloading, off-centered loads, and improper setups.

It is the responsibility of the owner to make sure all personnel read this manual prior to using this kit. It is also the responsibility of the kit owner to keep this manual intact and in a convenient location for all to see and read. If the manual is lost or not legible, contact Norco Industries, Inc. for a free replacement. If the operator is not fluent in English, the product and safety instructions shall be read to and discussed with the operator in the operator's native language by the purchaser/owner or his designee, making sure that the operator comprehends its contents.

WARRANTY

This product is covered by a Limited Lifetime Warranty. For details see the back cover of Norco's product catalog.

⚠ WARNING

- The kit owner is responsible for the kit being installed and used in accordance with OSHA, state, and local safety standards.
 - Wear protective eye wear when performing work.
 - Do not use the kit beyond its rated capacities. Capacity ratings differ according to the rams, extension tubes and adapters being used. Wedge rams are rated at 1/2 ton capacity. Use of offset attachments like ram toes and plunger toes reduce the kit's rated capacity 50%. For each extension tube used in a setup, the rated capacity is reduced another 50%. Example: Using two extension tubes and a flat base adapter in a setup reduces the kit capacity to 25%. If instead an offset attachment is used the capacity will be reduced to 12-1/2%.
 - When using multiple extension tubes always position the shortest length tube farthest away from the ram.
 - Make sure all attachments and extension tubes are aligned and fully engaged before operating the pump.
 - Make sure there is plenty of clearance around the ram hose connection to allow safe and unobstructed travel of the coupling system.
 - Do not continue to pump when the ram reaches the maximum extension. Excessive pumping could cause damage to the ram and cylinder and/or personal injury.
 - Always keep the hydraulic hose in as straight a line or arc as possible. If the hose is bent sharply, stop and rearrange the setup until the hose can be positioned correctly.
 - Be careful not to pinch the hydraulic hose and avoid dropping heavy objects onto the hose. If the hose leaks fluid while under pressure, the ram will retract. If the hose is cut, loss of pressure will be immediate.
 - Never use the hydraulic hose as a handle to carry the pump and ram assembly.
 - Make sure the setup is stable and secure before performing any work. Always operate the pump slowly and carefully, keeping an eye on the ram operation to be sure the setup is doing its intended job correctly and that the load is safely centered or locked in position.
 - Use only Norco components rated specifically for the Norco kit used.
 - Do not alter or modify any Norco kit component.
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SETUP

1. Each kit includes a hand pump with the hydraulic hose connected to the pump at one end and a male quick disconnect at the other end of the hose. Hose and ram connections are made by inserting the male quick disconnect at the end of the hose into the female quick disconnect in the ram. Push the quick disconnects all the way together and screw the threaded collar of the female disconnect all the way onto the externally threaded portion of the male disconnect. It is not necessary to use pliers to tighten the threaded collar.
2. There are two different methods of connecting extension tubes and adapters. Kit models 904004 and 910005 are designed with "Quick-Lock" connections where extension tubes, adapters and rams slip fit together. Kit model 920020 includes threaded connections. Make sure all "Quick-Lock" and threaded connections are fully engaged before using.
3. The model 920020 kit includes a vented hydraulic pump. The vent screw is located in the top rear end of the pump's reservoir. The vent screw must be opened by turning it in a counterclockwise direction two full turns before operating the pump.

SETUP (Continued)

4. Sometimes air gets trapped in the hydraulic system when the hose is first hooked up to the ram. An air bound hydraulic system feels spongy when pumped and sometimes the pump will not pump in full incremental pump strokes.

PURGING AIR FROM THE HYDRAULIC SYSTEM

- a. Open the release valve on the side of the hydraulic block portion of the pump by turning it two full turns in a counterclockwise direction.
- b. Activate the pump handle up and down about 15 times.

- c. Close the release valve by turning it in a clockwise direction until tight.
 - d. Activate the pump handle until the ram is extended all the way out.
 - e. If the condition remains, repeat steps "a" through "d" until all air is purged from the system.
6. Some setup components are rated less than the capacity of the pump and ram. Use a pressure gauge to monitor the force being applied.

OPERATING INSTRUCTIONS

Norco collision/maintenance repair kits provide the user with an effective method to accomplish the following basic tasks with the convenience of hydraulic power: spreading, bending, stretching, pulling, clamping, pushing, lifting, pressing and straightening. The basic kit consists of a hand operated portable pump, hydraulic hose, ram(s), extension tubes and adapters. The wide range of setup combinations for specific job requirements makes it impossible to document every conceivable application.

1. Study the type of work to be done and determine the components (ram, extension tubes, adapters) needed for the setup.
2. Make sure all threaded components are free of dirt, dust, nicks, cuts, etc. Chase or file threads as needed for smooth threading operation. Always use the threaded protector ring on all ram cylinders when the threads are not being used.
3. The pump can be operated in a horizontal position or in a vertical position with the hose pointing down. Rams can be used in any position provided the setup is safe and secure.
4. Once the kit components are properly connected and are positioned in the setup, turn the pump's release valve in a clockwise direction until hand tightened. Slowly operate the pump handle so the ram is extended to meet the load. Observe

the pressure gauge being sure not to exceed the maximum force to be applied. At the same time make sure extension tubes and attachments (in-line or off-center) are stable and secure. Continue to activate the pump unless it is evident the setup is becoming unstable. If the setup becomes unstable, turn the pump's release valve in a counterclockwise direction to remove the ram pressure and then adjust or change the setup accordingly. NOTE: All rams have return springs that return them to their retracted positions when the pump's release valve is opened. The pump is equipped with an overload system that will send the oil back into the pump reservoir if the system is overloaded. Stop pumping and release the load if the system is overloaded.

5. After work is completed, turn the pump's release valve slowly in a counterclockwise direction to release pressure from the ram.
6. **IMPORTANT:** Make sure the ram is completely retracted before disconnecting the hose from the ram.
7. The air quick disconnect fittings are repeatedly disconnected and exposed to shop or work place floors that contain dirt or debris. It is important to use the dust caps provided on the male and female air quick disconnect fittings immediately after disconnecting them to prevent dirt and debris from entering the hydraulic system.

PREVENTATIVE MAINTENANCE

1. Always store the kit in its case in a well protected area where it will not be exposed to inclement weather, corrosive vapors, abrasive dust, or any other harmful elements. The kit must be cleaned of water, snow, sand, or grit before using.
2. A thin coat of general purpose grease must be applied to the external threads of all applicable components. A general purpose grease must be applied to the pump's pump linkage, not the pump piston.

3. **IMPORTANT:** In order to prevent seal damage and hydraulic failure, never use alcohol, hydraulic brake fluid, or transmission oil in the pump. Use Chevron Hydraulic Oil AW ISO 32 or its equivalent Unocal Unax AW 150.
4. Every kit owner is responsible for keeping the kit label clean and readable. Use a mild soap solution to wash external surfaces of the kit but not any moving hydraulic components.
5. Do not attempt to make any repairs unless you are a qualified repair person that is familiar with this equipment.

REPAIR SERVICE

If your Norco product requires service or repair, contact the Norco Customer Service Department for the location of the nearest Norco Authorized Service Center.

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It will be necessary to provide the Norco Authorized Service Center with a copy of the bill of sale if requesting warranty repair. If the authorized service center determines your product is eligible for warranty repair, the repair will be made at no charge and returned freight prepaid. The cost of non-warrantable service, repair, and return freight is the customer's responsibility.