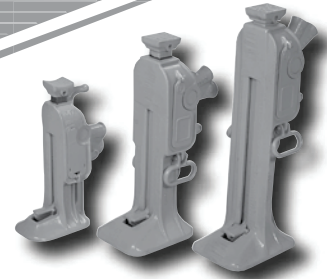




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## **RATCHET JACKS**

**Reference # - 87901**

**Rev. - A**

**Date - 0908**

# **5, 10 AND 20 TON RATCHET LOWERING LEVEL JACKS**

**REPAIR PARTS, SAFETY AND OPERATING INSTRUCTIONS**

**INSTRUCTIONS ONLY FOR THE FOLLOWING MODELS;**

**84A - 85A - 86A - 1017 - A1022 - 22B - 24A - 2029**

### **- Note -**

SIMPLEX has taken every care in preparing this Operational Manual that is intended as a technical guideline only. SIMPLEX accepts no liability in relation to any use or reliance made of any information in this Operational Manual. All information, illustrations and specifications in this Operational Manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice. Equipment operators and installers shall be responsible for ensuring that a safe working environment and safe systems of work are in place before operating the equipment.

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## 5, 10 & 20 Ton Ratchet Jacks



### IMPORTANT - READ CAREFULLY

This manual contains important information for the correct installation, operation and maintenance of this equipment. All persons involved in the installation, operation and maintenance of this equipment must be thoroughly familiar with the contents of this manual. To safeguard against the possibility of personal injury or property damage, follow the recommendations and instructions of this manual. Keep this manual for reference.

### WARRANTY STATEMENT

SIMPLEX products are warranted to be free of defects in materials and workmanship under normal use for as long as the original purchaser owns them, subject to the guidelines and limitations listed. This warranty does not cover: normal wear & tear, cosmetic items, abuse, overloading, alterations, improper fluid, or use in a manner for which they are not intended. If the customer believes a product is defective, the product must be delivered, or shipped freight prepaid, to the nearest SIMPLEX Authorized Service Center for evaluation and repair.

### RECEIVING INSTRUCTIONS

Important! Make sure to inspect all of the components for shipping damage. If damage is found, notify carrier at once. Shipping damage will not be covered by warranty. The carrier is responsible for all loss associated with shipping damage.

## OPERATING AND SAFETY PROCEDURES AND PRECAUTIONS

**Important:** Prior to using jack, read and understand jack operating instructions (A), (B) and (C), detailed at right. Also read and understand and comply with all operating procedures and safety precautions on page (2) and (3) of this manual.

### Reference safety standard publications:

- **Code of Federal Regulations** - Title 29 Occupational Safety and Health Standards (Superintendent of Documents, U.S. Government Printing Office, Washington D.C. 20402)
- **ANSI B30.1 Safety Standards** - Jacks (American Society of Mechanical Engineers, United Engineering Center, 345 East 47th, New York, NY 10017)



### Jack Operating Instructions:

**(A)** To raise, move reversing lever to the up position. Select the appropriate socket and insert lever bar, make certain that lever bar engages full depth of the socket. Grip the lever firmly and make up and down strokes exerting a controlled force. Complete each stroke and assure pawl engagement prior to each stroke reversal.

**Caution:** After each down stroke, gradually release the downward force on the lever bar taking care that the holding pawl has engaged and the lever is free of load prior to completing the upward stroke. Should the lever bar be released while under load, it will suddenly “kick up”, presenting a personal injury hazard.

**(B)** To lower, move the reversing lever to the down position, insert the lever bar as detailed in instruction (A). Grip the lever firmly and exert a controlled downward force making up and down strokes. Complete each stroke and assure pawl engagement prior to each stroke reversal.

**Caution:** The down stroke releases the retaining pawl and transfers the load reaction to the lever bar in the operators hands. The lever must be allowed to raise slowly by exerting a controlled downward force throughout the up stroke. Should the downward force be released before completion of the up stroke, the lever will suddenly “kick up”, presenting a personal injury hazard.

**(C)** Operating the speed trip (Group 1 Jacks only)

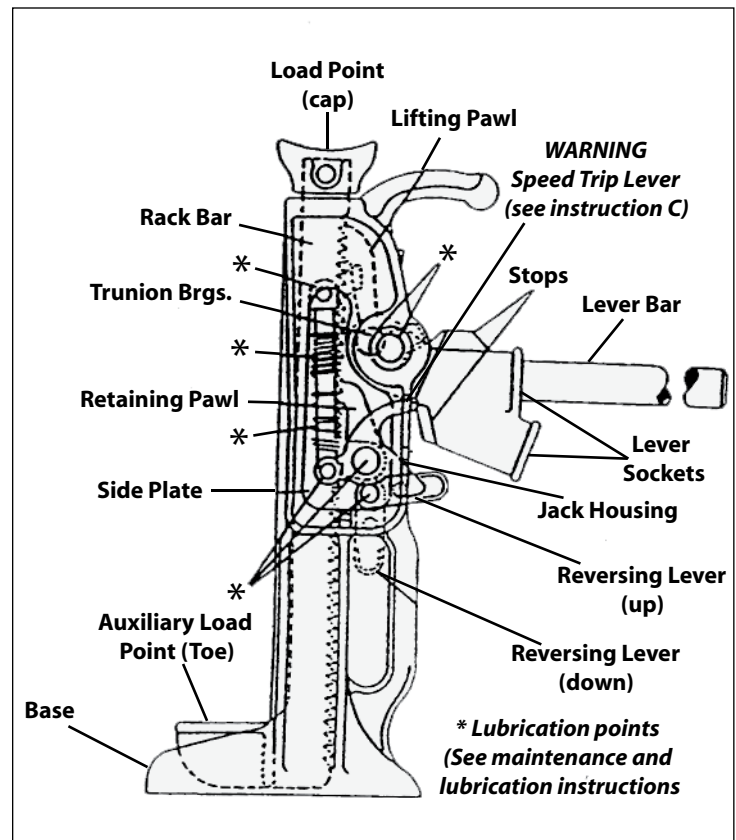
**Warning:** Do not operate speed trip to lower load. This feature is to be used for dropping the rack bar under no load condition only.

### Before Using Trip:

1. Be certain that the load is properly blocked.
2. Move reversing lever to down position. Operate the lever bar per instruction (B) above and ratchet lower the load onto substantial load supports. Continue to lower until load point of jack clears the load.

### When jack is no longer under load, then:

3. To release the rack bar, move the lever bar to the down position, hold the speed trip lever down, and gradually push the lever bar upward. At the point of pawl disengagement, the rack bar will suddenly drop.



**Caution:** Keep all parts of the human body clear of rack bar action during release.

GROUP 1 JACK SPECIFICATIONS					LEVER BAR DATA †	
MODEL	CAP. TONS	TRAVEL IN.	HANDLE EFFORT/TON	DECAL	MODEL	SIZE DIA. X LENGTH
84A	5	7	32	98524	10640	1 x 36
85A	5	10	32	98524	10640	1 x 36
86A	5	13	32	98524	10640	1 x 36
1017	10	9.5	30	98528	10665	1.25 x 60
24A	15	13	32	98530	10665	1.25 x 60
2029	20	18	32	98530	10675	1.25 x 60

GROUP 2 JACK SPECIFICATIONS					LEVER BAR DATA †	
MODEL	CAP. TONS	TRAVEL IN.	HANDLE EFFORT/TON	DECAL	MODEL	SIZE DIA. X LENGTH
22B	10	12	48	98528	10665	1.25 x 60
A1022	10	12	30	98528	10665	1.25 x 60
29	15	19	34	-----	10665	1.25 x 60

† For particular jack model. Use only Simplex lever bar of the diameter and length specified for that particular model.

**Note:** Group 2 Jacks do not have speed trip feature.

## OPERATING AND SAFETY PROCEDURES AND PRECAUTIONS

**Warning!** - Use of jacks to move heavy loads involves substantial risk of serious injury unless: the jack is properly maintained; great care is taken; and the operator of the jack is properly qualified, trained and supervised in the use of such jacks in the specific application.

### To avoid risk of serious injury:

#### Do the following before each and every use of the jack:

1. Assure that the operator is properly trained and qualified, and is properly supervised and instructed in the safe and proper use of the jack and all related equipment for the specific application. Also assure that the operator has read and understands these “**Operating and Safety Procedures and Precautions**” on page 1 (which explain how the ratchet mechanism of the jack operates to shift between lifting and lowering a load.)
2. First have the jack examined carefully by a qualified person for signs of any cracks, damage, wear or other condition which might cause the jack to malfunction or fail. Do not use the jack if the decal is missing or not readable. Then operate the jack without load through at least one full cycle to verify proper functioning of all mechanisms without binding, slippage, or other condition which might affect proper functioning. Then immediately before use, assure that all mechanisms are free of dirt, stones or other foreign objects.
3. Determine the maximum weight of the load, and the distance it is to be lifted; and then be sure that neither the load nor the distance to be lifted exceeds the jacks rated load capacity and stated maximum travel, as set out on the decal affixed to the jack and cast housing of the jack.

**Assure that the lever bar (jack handle) to be used is the Simplex lever bar of the correct diameter and length recommended for the specific jack model. The lever bar to be used must never exceed the length specified on the decal label** (nor have more force applied to it than the maximum force specified on the decal label). Dangerous, and even lethal, overloading and excessive lever bar travel conditions can exist whenever a bar is used which exceeds the maximum specified length, or upon which excessive force is applied. If a lever bar is used which is too short, it may be difficult to control the bar and the load during jack operation - **see procedure 6 warnings.**

**Do the following in using the jack:**

5. Assure that the jack is on a firm foundation, evenly and rigidly supported at the base, properly aligned with the load, and securely seated at both the lifting point and the base so that neither the jack nor the load can slip or shift.
6. Assure that the lever bar's full arc of travel and the surrounding work space are free of all obstructions. Make sure the operator's head and body are positioned to one side of the lever bar, and the area is clear of all other personnel so that a sudden movement of the load, or release of the lever, will not cause the lever to strike any one if it "kicks up" or "flies out".

**Warning! A sudden shift or release of the load, or release of the hand force on the lever bar, can cause the lever bar to "kick up" or "fly out" with great or even lethal force. Except for hands on the bar, the head and body must be clear of the lever bar arc of travel. Keep all other personnel positioned away from the load and the jack working space.**

7. When using the jack to move or lift a load, follow the operating instructions (A) on page 1 and these operating and safety procedures and precautions. Assure that securely placed and affixed blocking, guys, guides and other safety constraints are properly installed which follow the load during operation, so as to prevent the load from failing or shifting, even if the jack should fail or be accidentally dislocated. (To lower follow procedure 10). Also see above procedure 6 warning.
8. Keep fingers and other foreign objects clear of the jack's rack bar and operating mechanisms.
9. Immediately after lifting, remove the lever bar from the socket and permanently secure the raised load with fixed retainers and supports. Assure these retainers and supports are installed in accordance with OSHA standards with inspection and approval by a safety engineer or other qualified person or authority.

**OPERATING AND SAFETY PROCEDURES AND PRECAUTIONS****Do the following in using the jack:**

10. Before lowering the load, be sure that all obstructions are removed (and refer also to all operating and safety procedures and precautions). Assure that securely affixed guys, guides, and other safety constraints are properly installed which follow the load during operation so as to prevent the load from becoming unstable or shifting, and be sure that the jack's rack bar and mechanisms are free from foreign objects. Then with the reversing lever in the down position, lower the load evenly per operating instruction (B) on page 1. Also see procedure 6 warning.
11. If more than one jack is used to move, raise or lower a load: Assure that all jacks are of identical type and properly positioned so that the load will remain evenly distributed during jacking. Assure that all jacks have reversing levers positioned for the same direction of travel. (Refer also to all operating and safety procedures and precautions). Follow operating instructions on page 1 and activate all jack levers in unison with slow, precision coordinated strokes taking care to move the load evenly.

**Caution: Uneven load distribution and uneven lifting or lowering can cause a sudden shift of load with consequent overloading of the jack or inability to hold or control the load or lever bar. See procedure 6 warning.**

**Abide by the following safety rules of things not to do in using the jack:**

- **Never** use a jack without a capacity or instruction label.
- **Never** use a jack beyond (or if you do not know) its rated capacity or stated travel.
- **Never** use a jack which appears cracked, worn, bent or otherwise damaged.
- **Never** use a jack with a dirty or rusty mechanism.
- **Never** apply force to extend the jack after stop contact has occurred.
- **Never** continue to lift a load if the jack or the jack's rack bar, or its lever bar, is visibly deflecting or distorting under load, or if any misalignment begins to occur between the jack and the load.
- **Never** abruptly release downward force on the lever bar, unless you are sure that the retaining pawl is engaged and the lever bar is free from load (See cautions under operating instructions A and B on page 1; and also see procedure 6 warning).
- **Never** kick, jump, stand on, or straddle the lever bar; nor strike the lever bar with a hammer; nor force the lever bar in a rocking motion; nor use mechanical or other means to increase the force applied to the lever.
- **Never** use an overlength lever bar as lever bar extenders or "cheaters" (see procedure 4). These can cause dangerous or lethal overload conditions and excessive force or travel of the lever bar through its arc.

- **Never** lift human cargo; nor allow personnel on or under the load before the lifting is complete and the load has been fully secured (see procedure 9).
- **Never** allow a raised load to be supported by the jacks only or lift without being secured (see procedure 9). Never leave the lever bar in the socket after lifting is complete. (Accidental striking of unattended bar projecting from socket risks the jack becoming dislocated or dislodged causing the load to shift or fall).
- **Never** strike jack housing or parts with a hammer or other heavy object to align or set jack. (In addition to causing possible damage to the jack, flying chips or other objects may cause serious injury to anyone in the vicinity.)

**Maintenance and Lubrication Instructions:**

1. Comply with procedure 2 and the inspection, testing and maintenance requirements of ANSI B30.1 as determined from use experience or as specified by a qualified person of authority.
2. Keep jack mechanisms clean, free of grit and rust, and in good working condition.
3. **Do not lubricate the tooth side of the rack bar. Lubricate the back side with #2 graphite grease.**
4. **Never mass lubricate a jack.**
5. Periodically lubricate at points marked with an (\*) asterisk (see Fig. on page 2) with a good grade of SAE 20 wt. oil -

**Avoid lubrication of tooth surface or pawls and rack bar.**

6. Inspect jack frequently and before each use. **Immediately remove jack from service if any parts appear worn, bent, rusted or otherwise damaged.** Repairs must be made by an Authorized Service Center (contact Simplex at 1(800) 323-9114 for referral).





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