

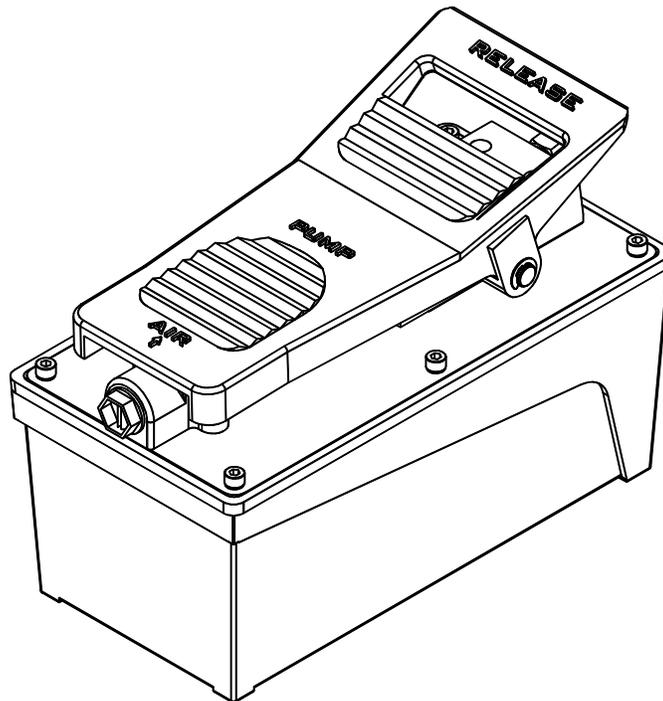


Heavy Duty Hydraulic Treadle Pump

Operating Instructions & Parts Manual

**Model Number
BK229**

**Capacity
10,000 PSI**



MAC TOOLS INC.
505 N. Cleveland Ave. Suite 200
Westerville, OH 43082

Save these instructions. For your safety, read and understand the information contained within. The owner and operator shall have an understanding of this product and safe operating procedures before attempting to use this product. Make certain that the operator thoroughly understands the inherent dangers associated with the use and misuse of the product. If any doubt exists as to the safe and proper use of this product as outlined in this factory authorized manual, remove from service immediately. **Inspect before each use.** It is recommended that, prior to each use, an inspection be done by qualified personnel and that any missing or damaged parts, decals, warning / safety labels or signs be replaced with factory authorized replacement parts only. Any pump that appears to be damaged in any way, is worn, leaking or operates abnormally shall be removed from service immediately until such time as repairs can be made. Any pump that has been or suspected to have been subject to a shock load (a load dropped suddenly, causing the system pressure to exceed 10,000 PSI), shall be removed from service immediately until checked by qualified personnel. Owners and operators of this equipment shall be aware that the use and subsequent repair of this equipment may require special training and knowledge. Labels and owners manuals are available from the manufacturer.

PRODUCT DESCRIPTION

Mac Tools 10,000 PSI Heavy Duty Hydraulic Treadle Pump is designed to meet or exceed ANSI B30.1 Standards for Performance and Safety. Its unique hydraulic circuit allows quick displacement of hydraulic fluid under no load conditions and easy pumping in loaded conditions. These foot actuated pumps supply compressed hydraulic fluid to compatible applications i.e. rams, presses, spreaders, compactors and crimping machines, anywhere that 10,000 PSI of fluid pressure is needed. Special skill, knowledge and training may be required for a specific task and the product may not be suitable for all the jobs described above. Unsuitable applications would include applications that call for a device to move, level or support persons, animals, hazardous materials, mobile homes/ dwellings in general, mirrors and/or plate glass, and/or to connect/secure hatches, components, etc. between bulkheads. The user must ultimately make the decision regarding suitability of the product for any given task and assume the responsibility of safety for himself and others in the work area. This category of Mac Tools Equipment allows quick displacement of hydraulic fluid, up to 10,000 PSI, to comparable rams, presses, spreaders, compactors and crimping machines, anywhere that 10,000 PSI of fluid pressure is needed. Foot / Hand Actuated treadle design delivers a controllable flow to and from the intended application.

Note: Always check connections before using !

SPECIFICATIONS

| Model Number | Usable Oil Capacity (in ³) | Pump Size L x W x H (in) | Output Flow Rate (in ³ /min) | | Input Air Pressure (psi) | Output Port Threads | Input Port Threads | Weight (lbs w/fluid) |
|--------------|--|--------------------------|---|-------|--------------------------|---------------------|--------------------|----------------------|
| | | | No Load | Load | | | | |
| BK229 | 91.5 | 10 1/4 x 5 1/4 x 7 3/8 | 66.5 | 10.98 | 90 - 175 | 3/8" -18NPTF | 1/4" - 18NPT | 18.1 |

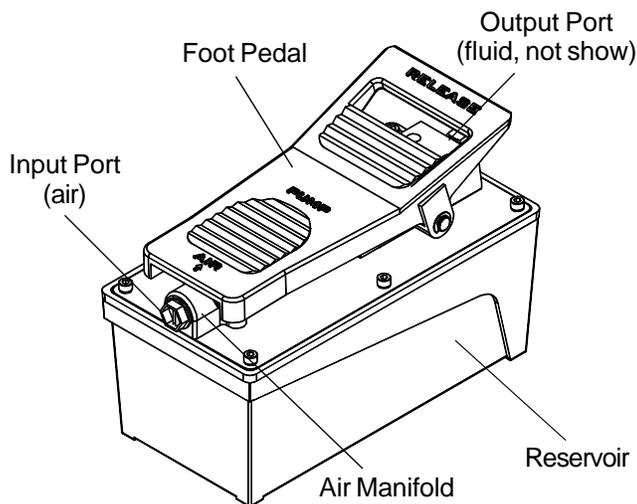


Figure 1- Model BK229 Components

BEFORE USE

Note: Always check connections before using. Alteration of this product is strictly prohibited. Use only those adapters and attachments provided and approved by the manufacturer.

1. Before using this product, read the owner's manual completely and familiarize yourself thoroughly with the product, its components and recognize the hazards associated with its use.
2. Replace shipping plug (red color) with air vent plug (black color) before use.
3. Pour a teaspoon of good quality, air tool lubricant into the air supply inlet. (See Illustration) Connect to air supply and to application, then operate for 3 seconds to evenly distribute lubricant.
4. Use adequate eye protection when operating or near this equipment.

Note: Always secure threaded port connections with non-hardening pipe thread compound. Tighten securely to prevent accidental removal of components while in use. Take care not to introduce compound into port orifices. Familiarize yourself with the specifications and illustrations in this owners manual. Know your pump, its limitations and how it operates before attempting to use. Refer to Specification chart on page 2 for details of oil port thread size, usable oil capacity, and more.

OPERATION

1. Remove plastic cap, connect air nipple to air input port before connecting air hose.
2. connect to suitable air supply, then connect to suitable application.
3. To operate pump, press on the horizontal portion of the foot pedal until desired pressure, load or position is reached. Always monitor pressure, load or position using suitable equipment. Pressure may be monitored by means of an optional manifold and gauge. Load may be monitored by means of a load cell and digital indicator. Correct application position can only be determined by the operator of the equipment.
4. To retract application, simply press the release valve by stepping on the raised, stirrup shaped portion of the foot pedal.

WARNING

- Read and understand all warnings, instructions and owners manual information before attempting to use this equipment.
- Burst hazard exists if hose or connection pressure exceeds rated pressure.
- Do not exceed the rated capacity of this device.
- Use gauge or other load measuring instrument to verify load.
- Always inspect hoses and connections for damage prior to use.
- Always wear protective clothing and eye protection when operating this equipment.
- Always ensure that the chosen application is stable to work on and around.
- Do not work under a lifted load without adequately rated support devices such as jack stands.
- This device is not suitable for use as support device!
- Do not subject the pump and its components to shock loads.
- Do not connect to application which can return more oil to the reservoir than the pump reservoir can hold.
- Failure to heed these warnings may result in personal injury as well as property damage.

MAINTENANCE

1. Inspect hoses and connections daily. Replace damaged components immediately with Mac Tools Authorized Replacement Parts only.
2. Tighten connections as needed. Use pipe thread sealing compound when servicing connections.

NOTE: DO NOT OVER TIGHTEN CONNECTIONS.

3. Use only good quality hydraulic fluid. We recommend Mobile DTE 13M or equivalent.

Important: Use only a good grade hydraulic oil. Avoid mixing different types of fluid and NEVER use brake fluid, turbine oil, transmission fluid, motor oil or glycerin. Improper fluid can cause premature failure of the pump and the potential for sudden and immediated loss of load.

Adding Oil

1. Disconnect hydraulic hose from application, remove air source from pump.
2. With reservoir horizontal, remove the vent / oil filler plug.
3. Use a small funnel to fill reservoir to within 1/4 inch (5 mm) of the opening. Reinstall the vent/ oil filler plug.

Changing oil

1. For best results, change fluid once a year.
2. Repeat # 2 above, then pour used fluid into a sealable container.

3. Dispose of fluid in accordance with local regulations.
4. Fill with a good quality hydraulic jack oil as recommended above. Reinstall vent/ oil filler plug.

Lubrication

(When no In-Line Oiler is used)

1. When used daily, pour a teaspoon of good quality air tool oil into the air source inlet of pump. Connect hydraulic hose to application, connect air source to pump and operate pump a few seconds to evenly distribute fluid.
2. Use a light machine oil to lubricate pivot points, hinges etc.

Storage

When not in use or during storage:

- a. Disconnect pump from air source, depressurize and disconnect hydraulic hoses from application.
- b. Wipe clean, thoroughly.
- c. Shelter the pump with protective cover.
- d. Store in clean, dry environment. Avoid temperature extremes.

NOTE: Never operate pump while disconnected from application. If operated in this condition, the hose and connections become pressurized. This increases the burst hazard. Damage may occur to pump and its components.

TROUBLESHOOTING

| Symptom | Possible Causes | Corrective Action |
|--|---|--|
| Application will not extend, move or respond to pressurized fluid | <ul style="list-style-type: none"> • Overload condition | <ul style="list-style-type: none"> • Remedy overload condition |
| Application responds to pressurized fluid, but system does not maintain pressure | <ul style="list-style-type: none"> • Overload condition • Hydraulic unit malfunction | <ul style="list-style-type: none"> • Remedy overload condition • Contact Service Center |
| Application will not return fluid to pump (i.e. cylinder will not retract) | <ul style="list-style-type: none"> • Malfunctioning coupler, damaged application • Reservoir overfilled | <ul style="list-style-type: none"> • Secure load by other means. Open release valve, depressurize pump and hose, remove coupler and/or application, then renew or replace • Secure load by other means. Open release valve, depressurize pump and hose, remove application, then drain fluid to proper level |
| Application will not fully extend (cylinder or spreader) | <ul style="list-style-type: none"> • Fluid level low | <ul style="list-style-type: none"> • Secure load by other means. Open release valve, depressurize pump and hose, remove application, then ensure proper fluid level |
| Poor performance | <ul style="list-style-type: none"> • Fluid level low | <ul style="list-style-type: none"> • Ensure proper fluid level |

ONE YEAR LIMITED WARRANTY

For a period of one (1) year from date of purchase, **Mac Tools Inc.** will repair or replace, at its option, without charge, any of its products which fails due to a defect in material or workmanship, or which fails to conform to any implied warranty not excluded hereby.

Performance of any obligation under this warranty may be obtained by returning the warranted product, freight prepaid, to **Mac Tools Inc.** Warranty Service Department, 505 N. Cleveland Ave. Suite 200 Westerville, OH 43082.

Except where such limitations and exclusions are specifically prohibited by applicable law, (1) the CONSUMER'S SOLE AND EXCLUSIVE REMEDY SHALL BE THE REPAIR OR REPLACEMENT OF DEFECTIVE PRODUCTS AS DESCRIBED ABOVE, and (2) **Mac Tools Inc.** SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGE OR LOSS WHATSOEVER, and (3) THE DURATION OF ANY AND ALL EXPRESSED AND IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO A PERIOD OF ONE (1) YEAR FROM DATE OF PURCHASE.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

REPLACEMENT PARTS

Available Parts: Please refer to the Parts drawing when ordering parts. Not all components of the pump are replacement items, but are illustrated as a convenient reference of location and position in the assembly sequence. When ordering parts, give Model number, serial number and description below. Call or write for current pricing: Mac Tools Inc. 505 N. Cleveland Ave. Suite 200 Westerville, OH 43082. Tel: 1800-MAC-TOOL (622-8665)

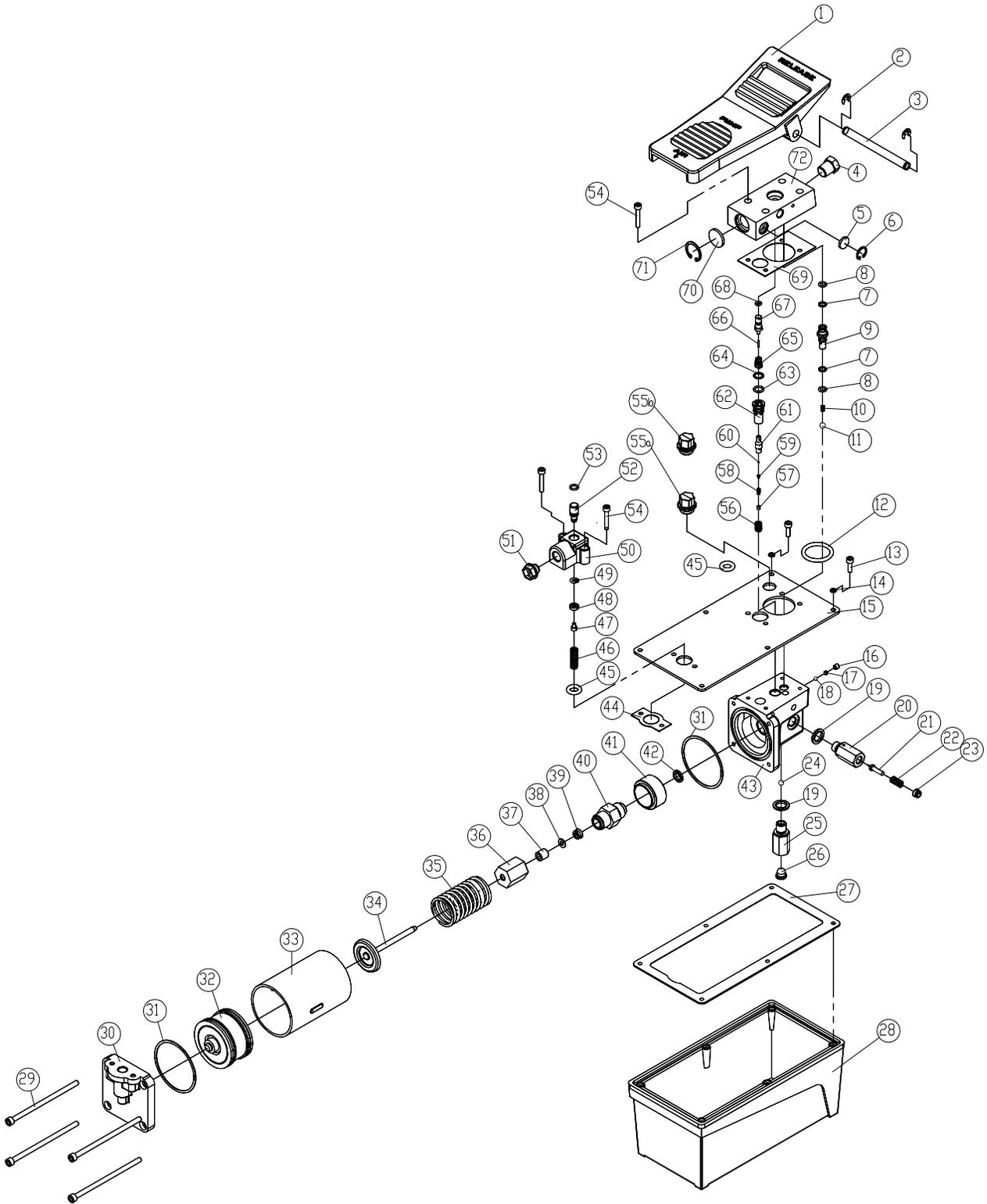


Figure 2 - Replacement Parts Illustration for Model BK229

Model BK-229 Parts List

| <u>Ref.</u> | <u>Parts No.</u> | <u>Description</u> | <u>Quantity</u> | <u>Ref.</u> | <u>Parts No.</u> | <u>Description</u> | <u>Quantity</u> |
|-------------|------------------|---------------------|-----------------|---|------------------|-----------------------|-----------------|
| 1 | A57-6-2001-108 | Foot pedal | 1 | 41 | A57-6-1016-106 | Washer | 1 |
| 2* | 677-5-0070-101 | E-clip | 2 | 42 | H18-6-8103-104 | Special washer | 1 |
| 3 | A57-6-2003-102 | Foot pedal axle | 1 | 43 | A57-6-1001-204 | Base | 1 |
| 4 | D05-6-1001-106 | Manifold plug | 1 | 44 | A57-6-1605-105 | Gasket | 1 |
| 5 | A57-6-3007-105 | Noise suppressor | 1 | 45 | 511-7-0140-200 | O-ring | 2 |
| 6 | 666-5-0160-107 | C-clip | 1 | 46 | 512-2-0092-101 | Compression spring | 1 |
| 7* | 573-7-0070-207 | Back-up ring | 2 | 47 | 649-1-0040-007 | Allen Screw | 1 |
| 8* | 511-7-0070-104 | O-ring | 2 | 48 | A57-6-5004-109 | Air entrance cap | 1 |
| 9 | A57-6-4002-201 | Oil outlet valve | 1 | 49 | 511-7-0053-104 | O-ring | 1 |
| 10 | 512-2-0043-108 | Compression spring | 1 | 50 | A57-6-5001-103 | Air entrance base | 1 |
| 11 | 601-7-0009-001 | Steel ball | 1 | 51 | A17-6-1105-103 | Plastic cap (air) | 1 |
| 12 | 511-7-0410-102 | O-ring | 1 | 52 | A57-6-5003-107 | Air entrance valve | 1 |
| 13 | 649-1-0050-055 | Allen Screw | 6 | 53 | 511-7-0080-309 | O-ring | 1 |
| 14* | 515-3-0051-104 | Copper washer | 6 | 54 | 649-1-0050-046 | Allen Screw | 6 |
| 15 | A57-6-1603-202 | Reservoir top plate | 1 | 55a | A57-3-5007-107 | Shipping plug (red) | 1 |
| 16 | 644-1-0060-05311 | Screw | 1 | 55b | A57-3-1900-109 | Air vent plug (black) | 1 |
| 17 | 503-9-0050-106 | Steel ball seat | 1 | 56 | 512-2-0061-100 | Compression spring | 1 |
| 18 | 601-7-0006-005 | Steel ball | 1 | 57 | 644-1-0040-204 | Screw | 1 |
| 19* | 532-3-0127-106 | Special washer | 2 | 58* | 512-2-0033-105 | Compression spring | 1 |
| 20 | A59-6-1017-102 | High pressure valve | 1 | 59 | 503-9-0035-100 | Steel ball block | 1 |
| 21 | A17-6-1216-102 | Valve stem | 1 | 60 | 601-7-0003-009 | Steel ball | 1 |
| 22 | 512-2-0067-010 | Compression spring | 1 | 61 | A57-6-3003-305 | Release valve | 1 |
| 23 | A17-5-1603-300 | Pressure adjust nut | 1 | 62 | A57-6-3004-307 | Release valve seat | 1 |
| 24 | 601-7-0008-009 | Steel ball | 1 | 63* | 511-7-0100-309 | O-ring | 1 |
| 25 | A59-6-1015-108 | Oil entrance valve | 1 | 64* | 573-7-0130-209 | Back-up ring | 1 |
| 26 | 520-8-0134-101 | Filter | 1 | 65 | 552-2-0010-105 | Compression spring | 1 |
| 27* | A57-6-1602-109 | Gasket | 1 | 66* | A57-6-3002-206 | Release valve pin | 1 |
| 28 | A57-6-1601-107 | Reservoir | 1 | 67 | A57-6-3001-112 | Release valve guide | 1 |
| 29 | 649-1-0060-122 | Allen Screw | 4 | 68* | 511-7-0050-300 | O-ring | 1 |
| 30 | A57-6-1002-105 | Motor cover | 1 | 69* | A57-6-1604-103 | Gasket | 1 |
| 31 | A17-6-2105-108 | Gasket | 2 | 70 | A17-6-1002-103 | Noise suppressor | 1 |
| 32 | A17-4-2100-500 | Air piston assy. | 1 | 71 | 666-5-0250-108 | C-clip | 1 |
| 33 | A57-6-1003-107 | Cylinder | 1 | 72 | A57-6-4001-209 | Oil manifold | 1 |
| 34 | A57-3-1011-108 | Piston assy. | 1 | — | A57-3-9901-101 | Repair kit | 1 |
| 35 | 512-2-0410-017 | Compression spring | 1 | * Repair kit includes 2, 7, 8, 14, 19, 27, 39, 58, 63, 64, 66, 68, 69 | | | |
| 36 | A57-6-1014-102 | Piston cover | 1 | | | | |
| 37 | A57-6-2023-108 | Bushing | 1 | | | | |
| 38 | 573-7-0120-105 | Back-up ring | 1 | | | | |
| 39* | 522-7-0120-007 | U-cup | 1 | | | | |
| 40 | A59-6-1013-105 | Pump piston | 1 | | | | |

