



BK104A AND BK110A 4-TON AND 10-TON CAPACITY BODY REPAIR KIT

OWNER'S MANUAL



**BK104A
4-TON**



**BK110A
10-TON**

SPECIFICATIONS

	BK104A	BK110A
Maximum Capacity.....	4-Ton @ 7,250 psig	10-Ton @ 7,250 psig
Ram Minimum Height.....	10.51"	12.68"
Stroke.....	4.72"	5.12"
Fluid Capacity.....	10.5-oz.	17.5-oz.
Weight.....	40.7-Lbs.	69.3-Lbs.



WARNING INFORMATION

THIS INSTRUCTION MANUAL USES THE FOLLOWING SYMBOLS AND DEFINITIONS TO ALERT YOU TO HAZARDOUS CONDITIONS WHICH MAY CREATE A RISK OF PERSONAL INJURY AND/OR PROPERTY DAMAGE.



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.

WARNING

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



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. SAVE THESE INSTRUCTIONS.

It is the responsibility of the owner to make sure all personnel read this manual prior to using this Portable Hydraulic Power 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 or product labels are lost or not legible, contact Mac Tools for replacements. 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.

WARNING

This product is intended only for use in the repair of vehicle bodies and frames. Do not use or modify this product for any other purpose than that for which it was designed without consulting the manufacturer's authorized representative. The use of portable automotive lifting devices are subject to certain hazards that cannot be prevented by mechanical means, but only by the exercise of intelligence, care, and common sense. It is therefore essential to have owners and personnel involved in the use and operation of the 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 loads caused primarily by improperly securing loads, overloading, off-centered loads, use on other than hard level surfaces, and using equipment for a purpose for which it was not designed.

METHODS TO AVOID HAZARDOUS SITUATIONS

WARNING



- Read, study, understand and follow all instructions before operating this device.
- The kit owner is responsible for the kit being used in accordance with OSHA, state, and local safety standards.
- Wear eye protection that meets ANSI Z87.1 and OSHA standards (users and bystanders).
- Do not exceed the rated capacity.
- When attachments and adapters are used with the kit, the rated capacity of the kit shall be no greater than the rated capacity of the lowest rated component or combination of components that makes up the kit. Please refer to the Owner's Manual section titled APPLICABLE FORCE FOR COMPONENT SETUPS. Use a pressure gauge that indicates force applied. Spreader Rams are rated at 1/2-ton capacity. Rubber Heads are rated at 1/2-ton capacity in the 4-ton kit and 1-ton capacity in the 10-ton kit.
- Do not overextend the rams.
- When using extension tubes, position the shortest tube farthest away from the cylinder.
- Attachments and extension tubes must be aligned and fully engaged so the ram force is straight and avoids off-center load conditions
- Before operating tighten all hose, gauge and manifold connections so they are secure and leak free. Do not over tighten or it may cause premature thread failure or split pressure fittings. Tighten all hose quick disconnect fittings by hand only.
- Do not subject the hose to extreme heat or cold, sharp surfaces, abrasion, impact, kinking, twisting, curling, bending or any condition that restricts or affects fluid flow.
- Make sure setup is stable and secure before performing any work.
- Use this kit for the intended purpose of vehicle body/frame repair only.
- Only components supplied with this kit shall be used with this kit.
- Do not use or modify this product for any other purpose than that for which it was designed without consulting the manufacturer's authorized representative.
- Failure to heed these warnings may result in serious or fatal personal injury and/or property damage.



WARNING: This product can expose you to chemicals including nickel, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.



BK104A AND BK110A 4-TON AND 10-TON CAPACITY BODY REPAIR KIT

CONSEQUENCES OF NOT AVOIDING HAZARDOUS SITUATIONS

⚠ WARNING

Failure to read this manual completely and thoroughly, failure to understand its OPERATING INSTRUCTIONS, SAFETY WARNINGS, MAINTENANCE INSTRUCTIONS and comply with them, and failure to comply with the METHODS TO AVOID HAZARDOUS SITUATIONS could cause accidents resulting in serious or fatal personal injury and/or property damage.

SETUP INSTRUCTIONS

⚠ WARNING

Failure to follow these Setup Instructions may result in serious injury or death, and/or property damage.

1. Refer to the exploded view parts drawing in this manual to identify parts mentioned in this setup procedure.
2. Remove the hose from the pump. Remove any pipe dope tape from the pump. Put 2 layers of pipe dope tape around the threads of the adapter, around the threads of the hose, and around the threads of the gauge. Thread the adapter in the pump until tight with the gauge port sticking straight up. Tighten the hose in the end of the adapter. Tighten the gauge in the adapter with the face of the gauge pointing toward the pump handle.
3. Install the ram at the end of the hose and secure the quick disconnect fittings together by hand tightening the threaded sleeve on the ram fitting.
4. Insert the pump handle in the pump linkage receiver and rotate the handle clockwise until tight. Before operating the pump, turn the reservoir vent screw in a counterclockwise direction until it stops.
5. During shipping or handling air may have become trapped in the hydraulic system. If the pump is not providing a full incremental pump stroke or the ram feels spongy, it will be necessary to purge the air out of the hydraulic system:
 - a. Before operating the pump, turn the reservoir vent screw in a counterclockwise direction until it stops.
 - b. Place the pump horizontally on a table. Position the hose and ram over the edge of the table, lower than the pump with the ram piston pointing down.
 - c. Close the pump's release valve and pump the ram to its complete or its furthest extension. Open the pump's release valve to retract the ram all the way. Conduct this procedure several times without a load.
 - d. Repeat steps "b" and "c" until all air is purged from the system.

OPERATING INSTRUCTIONS

⚠ WARNING

Failure to follow these Operating Instructions may result in serious injury or death, and/or property damage.

1. Study the work to be done in order to determine the type ram and other attachments you will be using. **Consult the enclosed chart titled "Applicable force for component set ups" in order to determine the maximum allowable force to be used in your specific setup.** All rams have female hose disconnects attached to them, and the end of the hose has the male quick disconnect attached to it. Insert the male quick disconnect at the end of the hose all the way in to the ram's female quick disconnect. Slide the female connector's threaded sleeve on to the threads of the male connector and hand tighten. Never use any tools to tighten this connection.
2. Consult this Owner's Manual section titled APPLICABLE FORCE FOR COMPONENT SET UPS for typical attachment and extension tube setups and pay very close attention to the corresponding load ratings of certain attachment connections. The use of extension tubes, ram or plunger toes greatly reduces the hydraulic system's capacity. When using extension tubes, put the shortest tubes on the ends of the setup.
3. The pump may be operated in the horizontal or vertical position but the pump must point down when used in the vertical position.
4. Make sure all hydraulic and attachment connections are fully engaged and tight so ram force is straight in order to avoid off-center load conditions.
5. During setup, make sure the hose routing avoids kinks, twists, curls or bends that will impede hydraulic fluid flow. Do not use the hose as a means to carry the kit components. Do not subject the hose to any hazards such as fire, extreme heat or cold, sharp surfaces, or heavy impact.

⚠ WARNING

Risk of fluid injection injury.

NEVER GRASP LEAKING PRESSURIZED HOSE, FITTING OR COMPONENT, OR EXPOSE BODY PARTS TO PRESSURIZED FLUID. SEVERE PERSONAL INJURY MAY RESULT.

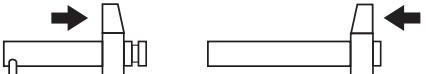
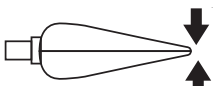
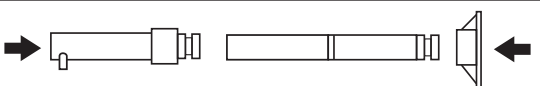
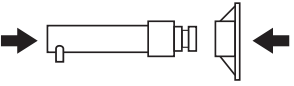
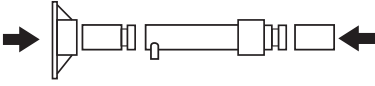
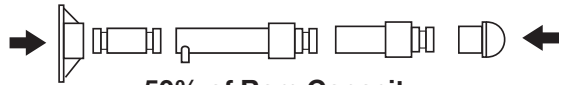
6. Always use the force gauge to make sure you are within the required force range when operating the system.
7. In order to pump the ram it will be necessary to turn the release valve knob in a clockwise direction until tight. Tighten by hand only.

OPERATING INSTRUCTIONS (CONTINUED)

- Pumping the handle up and down transfers the hydraulic fluid from the pump's reservoir, through the hose, in to the cylinder and extends the ram with each incremental pump stroke.
- To release the pressure and return the ram back in to its cylinder, turn the release valve knob in a counterclockwise direction very slowly. Turning the release valve knob slowly will determine the speed in which the ram will retract back into its cylinder.

IMPORTANT: The pump includes an overload valve that will activate at the pump's rated capacity only. If the setup requires a reduced rating, the operator is responsible for using the gauge to determine when to stop pumping since the overload valve is set to a higher rating.

- Make sure the ram is completely retracted inside its cylinder before disconnecting the hose from the cylinder.
- The air and hydraulic quick disconnect fittings are repeatedly disconnected and exposed to shop or work place floors that are covered with dirt and debris. It is important to use the dust caps provided to prevent contaminants from entering the hydraulic systems.
- Based on continuous engagement and disengagement of the hose from the cylinder, eventually it will become necessary to add hydraulic fluid to the pump's reservoir. Completely retract the ram before adding hydraulic fluid. Do not overfill in order to avoid personal injury and hydraulic malfunction. Use only hydraulic jack oil. Other fluids will cause damage to the hydraulic seals.

APPLICABLE FORCE FOR COMPONENT SET UPS		 50% of Ram Capacity
 Spreader Capacity	 50% of Ram Capacity	 25% of Ram Capacity
 100% of Ram Capacity	 100% of Ram Capacity	 25% of Ram Capacity
 50% of Ram Capacity		 6% of Ram Capacity

PREVENTATIVE MAINTENANCE

⚠ WARNING Failure to follow these Preventative Maintenance instructions may result in serious injury or death, and/or property damage.

- Always store the kit in a well protected area where it will not be exposed to inclement weather, corrosive vapors, abrasive dust, or any other harmful elements. The jack must be cleaned of water, snow, sand, grit, oil, grease or other foreign matter before using.
- Based on continuous engagement and disengagement of the hose from the cylinder, eventually it will become necessary to add hydraulic fluid to the pump's reservoir. Completely retract the ram before adding hydraulic fluid. Do not overfill in order to avoid personal injury and hydraulic malfunction. Use only hydraulic jack oil. Other fluids will cause damage to the hydraulic seals.

⚠ WARNING In order to prevent seal damage and kit failure, never use alcohol, hydraulic brake fluid or transmission oil in the pump.

- Every kit owner is responsible for keeping the kit labels clean and readable. Use a mild soap solution to wash external surfaces of the kit components but not any moving hydraulic components.
- Do not attempt to make any hydraulic repairs unless you are a qualified hydraulic repair person that is familiar with this equipment. Repairs must be performed by an authorized service center.



BK104A AND BK110A 4-TON AND 10-TON CAPACITY BODY REPAIR KIT

PROPER STORAGE

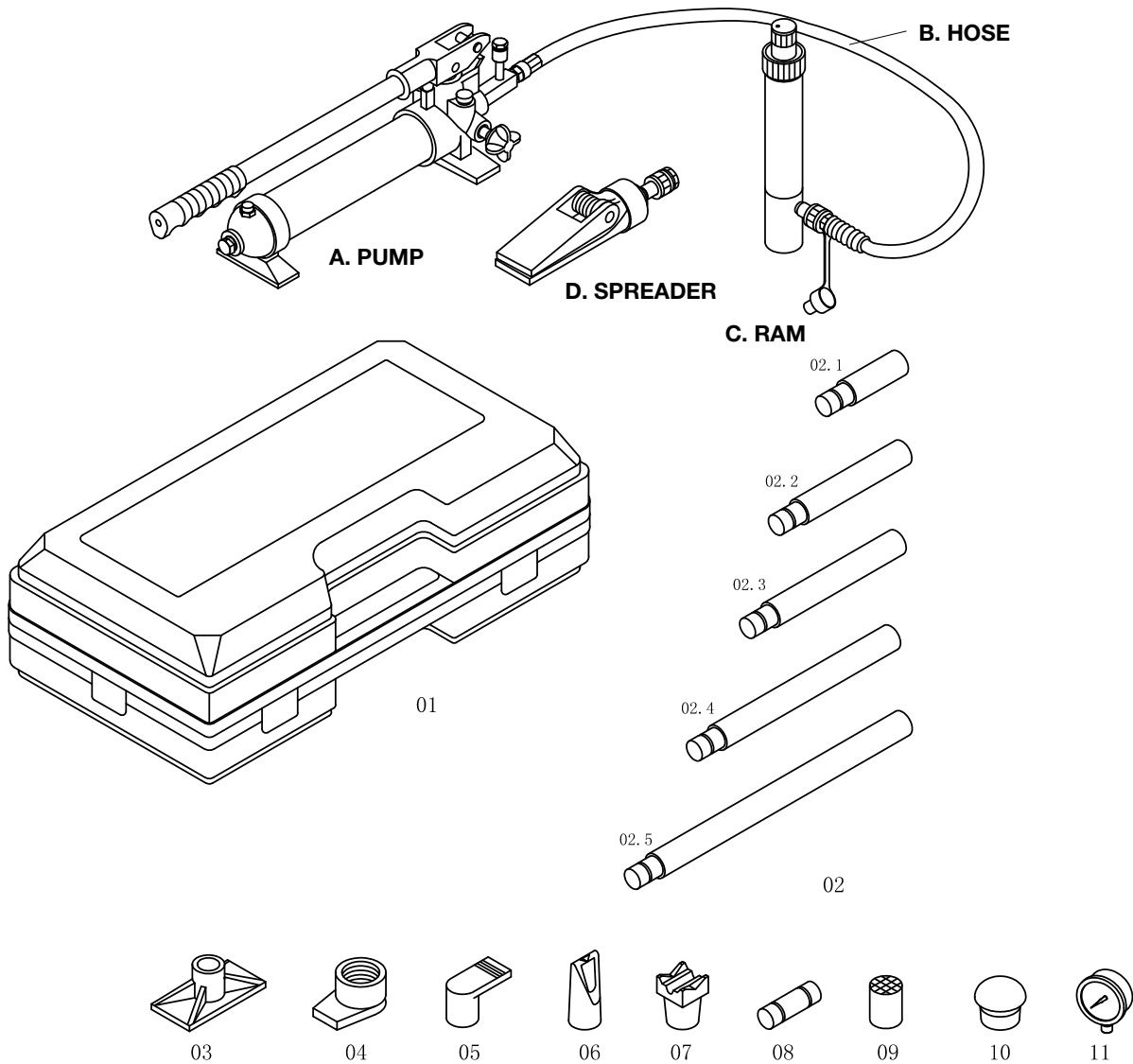
It is recommended that the kit be stored in a dry location with all wheels touching the ground on a relatively level surface.

TROUBLESHOOTING

Important: If repairs are necessary they must be performed in a dirt-free environment by qualified personnel who are familiar with this equipment.

PROBLEM	ACTION
1. Unit will not lift rated load.	Purge air from hydraulic system by following procedure under SETUP.
2. Unit will not sustain rated load or feels “spongy” under rated load.	Purge air from hydraulic system by following procedure under SETUP.
3. Unit will not lift to full height.	Purge air from hydraulic system by following procedure under SETUP.
4. Unit still does not operate.	Contact your Mac Tools Distributor.

4-TON PARTS DIAGRAM

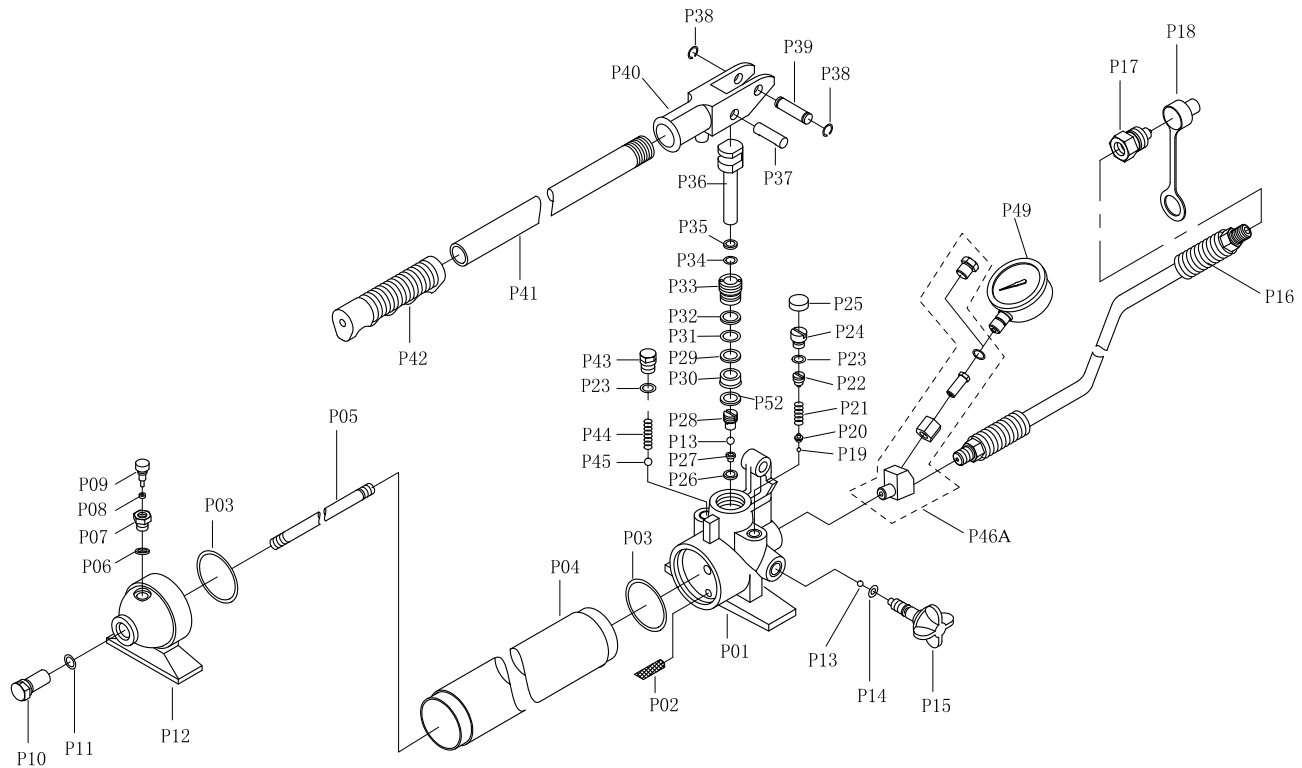


Item No.	Part No.	Description	Qty.
A	RS4TP	Pump (Incl. Hose)	1
B	RSHS	Hose	1
C	RS4TR	Ram	1
D	RSSPR	Spreader	1
01	RS4T01	Case	1
02.1	RS4T02.1	3.23" Extension	1
02.2	RS4T02.2	5.04" Extension	1
02.3	RS4T02.3	8.50" Extension	1
02.4	RS4T02.4	16.54" Extension	1
02.5	RS4T02.5	19.49" Extension	1

Item No.	Part No.	Description	Qty.
03	RS4T03	Flat Base	1
04	RS4T04A	Ram Toe	1
05	RS4T05	Plunger Toe	1
06	RS4T06	Wedge Head	1
07	RS4T07	V-Base	1
08	RS4T08	Male Connector	1
09	RS4T09	Serrated Saddle	1
10	RS4T10	Rubber Head	1
11	RSPG	Pressure Gauge	1
	RSBK104APLK	Product Label Kit (not shown)	1

Only items identified by part number are available for purchase.

4-TON PUMP PARTS DIAGRAM



Item No.	Part No.	Description	Qty.	Item No.	Part No.	Description	Qty.
P01		Valve Block	1	P25		Screw Protector	1
P02		Oil Filter	1	P26	*	Nylon Ring	1
P03	*	O-Ring	2	P27	*	Valve Base	1
P04		Reservoir	1	P28		Valve Cover	1
P05		Tie Rod	1	P29	*	Washer	1
P06		Nylon Ring	1	P30	*	Seal	1
P07		Oil Filler Screw	1	P31	*	O-Ring	1
P08		Sealing	1	P32	*	Washer	1
P09	RSP09A	Breather Valve (Incl. #6-9)	1	P33		Screw	1
P10		Screw	1	P34	*	O-Ring	1
P11	*	O-Ring	2	P35	*	Washer	1
P12	RSP12	Pump Foot	1	P36		Piston	1
P13	*	Ball	2	P37		Pin	1
P14	*	O-Ring	1	P38		Retaining Ring	2
P15	RSP15	Release Valve	1	P39		Pin	1
P16	RSHS	Hydraulic Hose	1	P40		Handle Socket	1
P17	RSP17	Coupler	1	P41	RS4TP41	Handle (Incl. #42)	1
P18	RSP18	Hose Dust Cover	1	P42		Handle Sleeve	1
P19	*	Ball	1	P43		Screw	1
P20		Ball Cap	1	P44	*	Spring	1
P21	*	Spring	1	P45	*	Steel Ball	1
P22		Screw	1	P46A	RSPGAA	Gauge Adapter Assembly	1
P23	*	O-Ring	1	P49	RSPG	Pressure Gauge	1
P24		Screw	1	P52	*	Nylon Ring	1

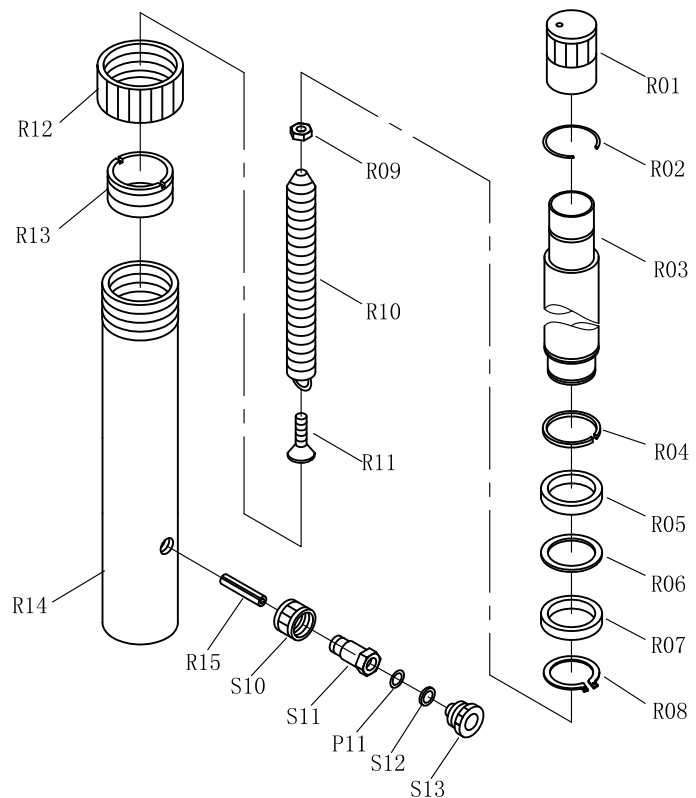
* Items identified by an asterisk are available in Pump Seal Kit, RSPSKA. Only items identified by part number are available for purchase.

4-TON RAM PARTS DIAGRAM

Item No.	Part No.	Description	Qty.
R01	RS4TR01	Cover	1
R02		Circlip	1
R03		Piston Rod	1
R04	*	Circlip	1
R05	*	Bushing	1
R06	*	Nylon Ring	1
R07	*	Sealing Ring	1
R08	*	Circlip	1
R09		Nut	1
R10		Spring	1
R11		Screw	1
R12	RS4TR12	Protection Cap	1
R13		Ring for Ram	1
R14		Cylinder	1
R15		Screw	1
	RSCPRA	Coupler (Incl. #S10, S11, P11, S12, S13)	1

* Items identified by an asterisk are available in Ram Seal Kit, RS4TRSKA.

Only items identified by part number or an asterisk are available for purchase.

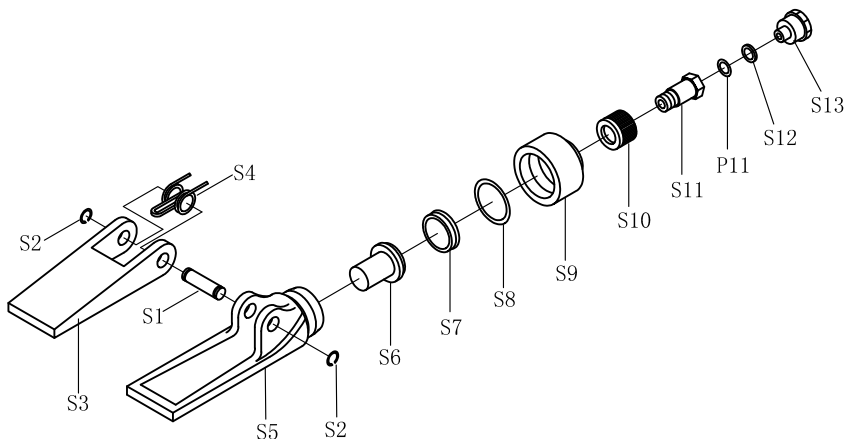


4-TON SPREADER PARTS DIAGRAM

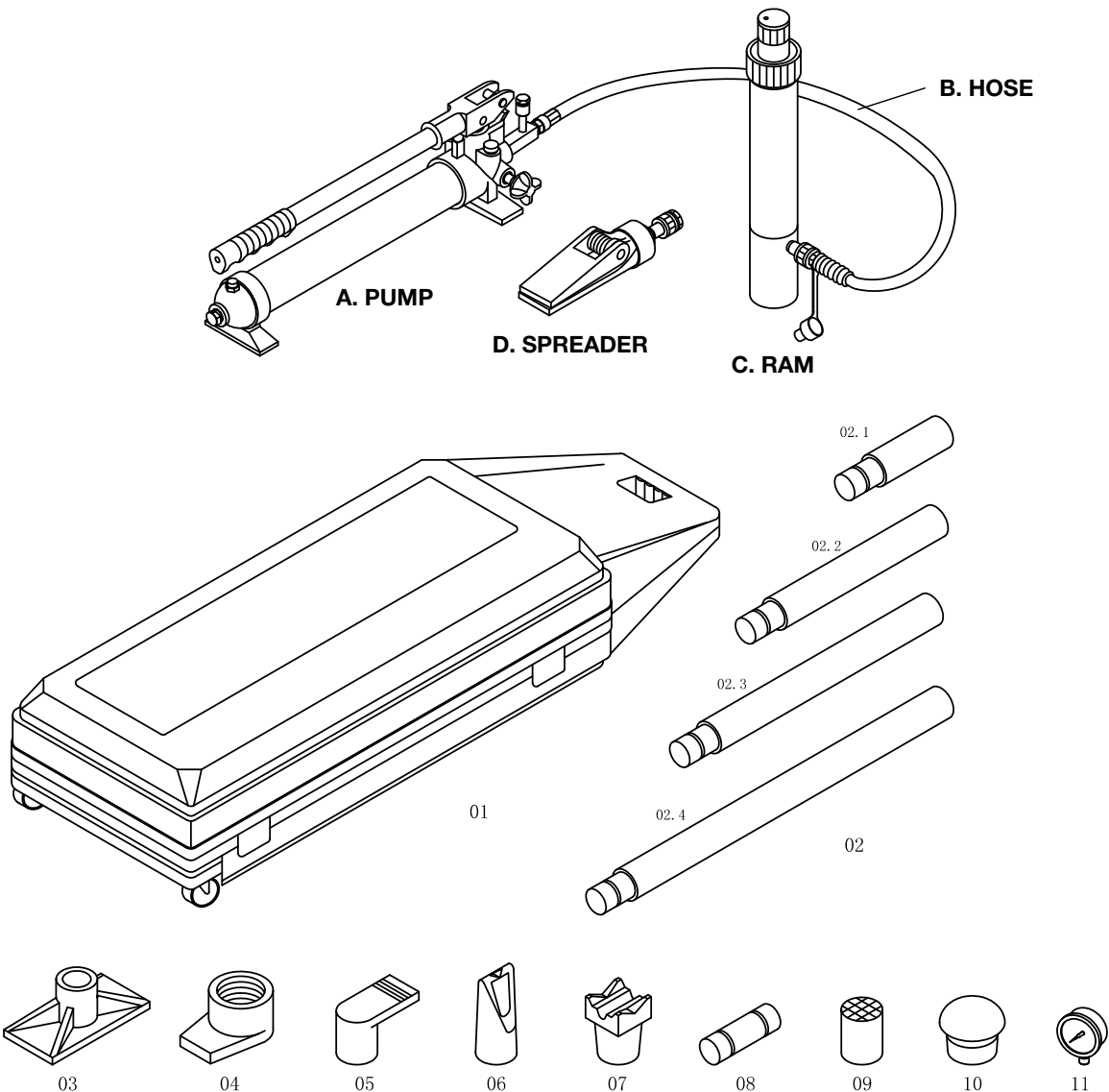
Item No.	Part No.	Description	Qty.
S1		Pin	1
S2		Circlip	2
S3		Movable Jaw	1
S4		Spring	1
S5		Fixed jaw	1
S6		Piston	1
S7	*	Cup Seal	1
S8	*	O-Ring	1
S9		End Cap	1
	RSCPRA	Coupler (Incl. #S10, S11, P11, S12, S13)	1

* Items identified by an asterisk are available in Spreader Seal Kit, RSSPRSK.

Only items identified by part number or an asterisk are available for purchase.



10-TON PARTS DIAGRAM

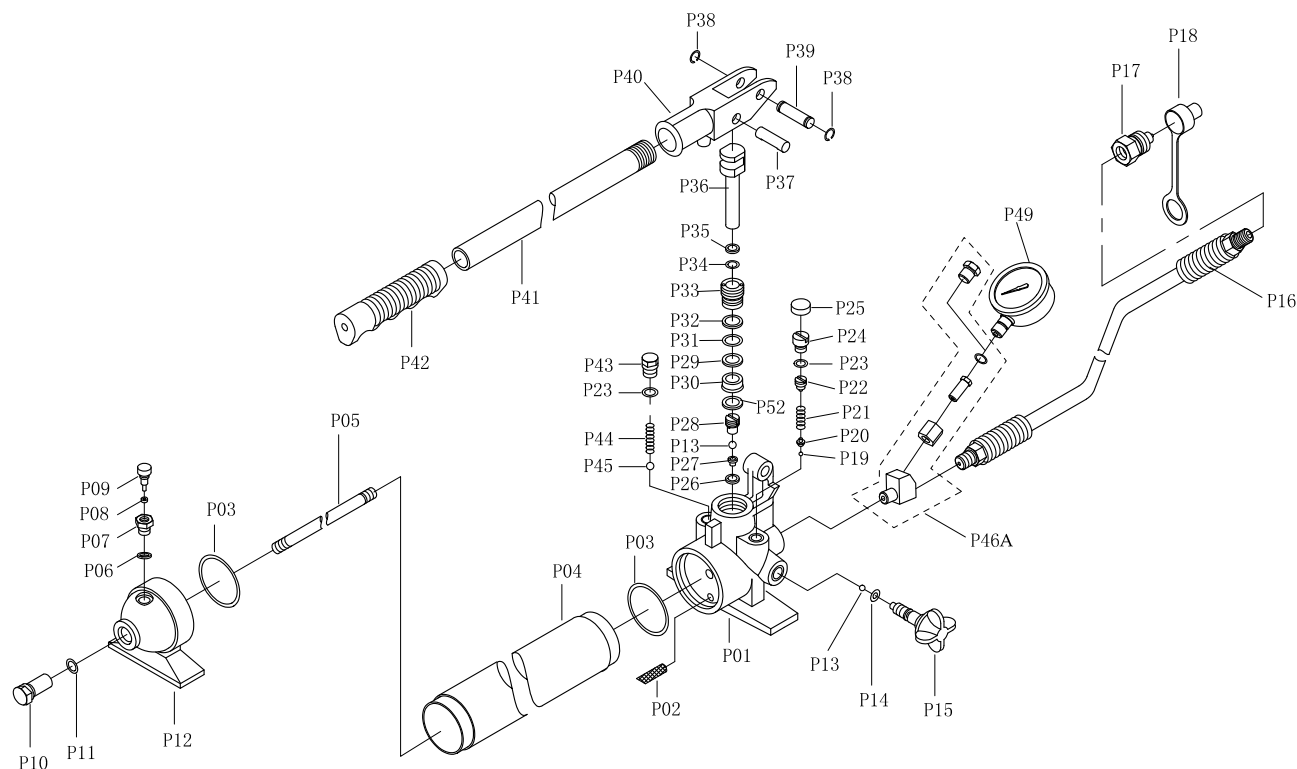


Item No.	Part No.	Description	Qty.
A	RS10TP	Pump (Incl. Hose)	1
B	RS10HS	Hose	1
C	RS10TR	Ram	1
D	RSSPR	Spreader	1
01	RS10T01	Case	1
	RS10T01WH	Wheel with Hardware for Case	2
02.1	RS10T02.1	4.33" Extension	1
02.2	RS10T02.2	10.43" Extension	1
02.3	RS10T02.3	14.37" Extension	1
02.4	RS10T02.4	20.47" Extension	1

Item No.	Part No.	Description	Qty.
03	RS10T03	Flat Base	1
04	RS10T04A	Ram Toe	1
05	RS10T05	Plunger Toe	1
06	RS10T06	Wedge Head	1
07	RS10T07	V-Base	1
08	RS10T08	Male Connector	1
09	RS10T09	Serrated Saddle	1
10	RS10T10	Rubber Head	1
11	RSPG	Pressure Gauge	1
	RSBK110APLK	Product Label Kit	1

Only items identified by part number are available for purchase.

10-TON PUMP PARTS DIAGRAM



Item No.	Part No.	Description	Qty.
P01		Valve Block	1
P02		Oil Filter	1
P03	*	O-Ring	2
P04		Reservoir	1
P05		Tie Rod	1
P06		Nylon Ring	1
P07		Oil Filler Screw	1
P08		Sealing	1
P09	RSP09A	Breather Valve (Incl. #6-9)	1
P10		Screw	1
P11	*	O-Ring	2
P12	RSP12	Pump Foot	1
P13	*	Ball	2
P14	*	O-Ring	1
P15	RSP15	Release Valve	1
P16	RSHS	Hydraulic Hose	1
P17	RSP17	Coupler	1
P18	RSP18	Hose Dust Cover	1
P19	*	Ball	1
P20		Ball Cap	1
P21	*	Spring	1
P22		Screw	1
P23	*	O-Ring	1
P24		Screw	1

Item No.	Part No.	Description	Qty.
P25		Screw Protector	1
P26	*	Nylon Ring	1
P27	*	Valve Base	1
P28		Valve Cover	1
P29	*	Washer	1
P30	*	Seal	1
P31	*	O-Ring	1
P32	*	Washer	1
P33		Screw	1
P34	*	O-Ring	1
P35	*	Washer	1
P36		Piston	1
P37		Pin	1
P38		Retaining Ring	2
P39		Pin	1
P40		Handle Socket	1
P41	RS10TP41	Handle (Incl. #42)	1
P42		Handle Sleeve	1
P43		Screw	1
P44	*	Spring	1
P45	*	Steel Ball	1
P46A	RSPGAA	Gauge Adapter Assembly	1
P49	RSPG	Pressure Gauge	1
P52	*	Nylon Ring	1

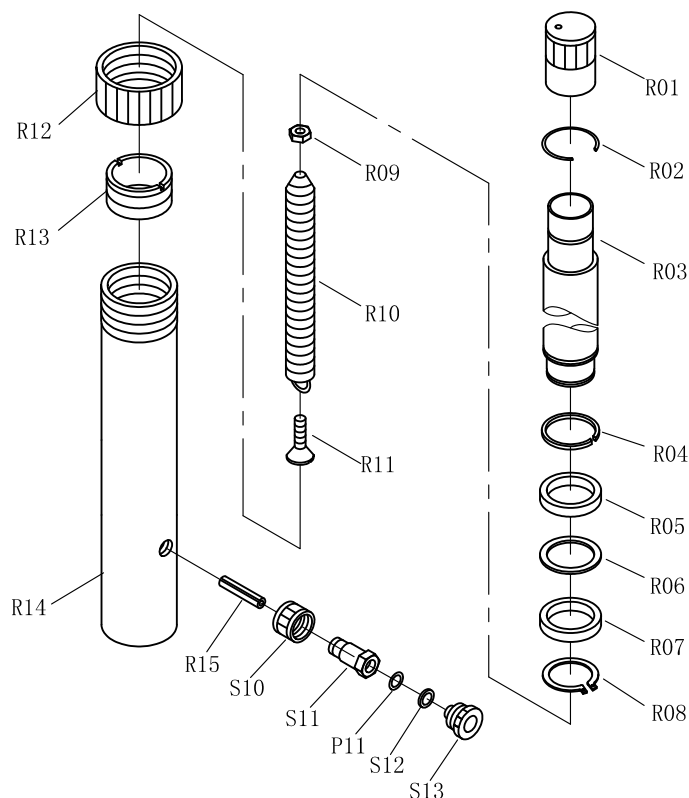
* Items identified by an asterisk are available in Pump Seal Kit, RSPSKA. Only items identified by part number are available for purchase.

10-TON RAM PARTS DIAGRAM

Item No.	Part No.	Description	Qty.
R01	RS10TR01	Cover	1
R02		Circlip	1
R03		Piston Rod	1
R04	*	Circlip	1
R05	*	Bushing	1
R06	*	Nylon Ring	1
R07	*	Sealing Ring	1
R08	*	Circlip	1
R09		Nut	1
R10		Spring	1
R11		Screw	1
R12	RS10TR12	Protection Cap	1
R13		Ring for Ram	1
R14		Cylinder	1
R15		Screw	1
	RSCPRA	Coupler (Incl. #S10, S11, P11, S12, S13)	1

* Items identified by an asterisk are available in Ram Seal Kit, RS10TRSKA.

Only items identified by part number or an asterisk are available for purchase.

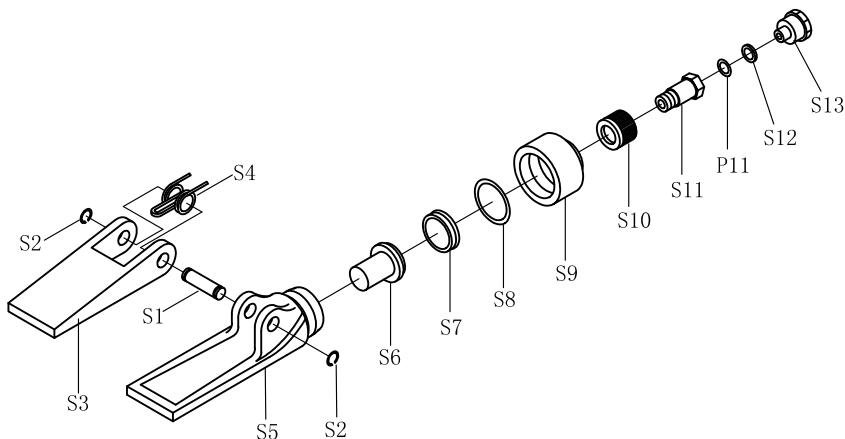


10-TON SPREADER PARTS DIAGRAM

Item No.	Part No.	Description	Qty.
S1		Pin	1
S2		Circlip	2
S3		Movable Jaw	1
S4		Spring	1
S5		Fixed jaw	1
S6		Piston	1
S7	*	Cup Seal	1
S8	*	O-Ring	1
S9		End Cap	1
	RSCPRA	Coupler (Incl. #S10, S11, P11, S12, S13)	1

* Items identified by an asterisk are available in Spreader Seal Kit, RSSPRSK.

Only items identified by part number or an asterisk are available for purchase.





BK104A AND BK110A 4-TON AND 10-TON CAPACITY BODY REPAIR KIT

LIMITED WARRANTY

MAC TOOLS WARRANTS TO ITS CUSTOMERS THAT THE COMPANY'S MAC TOOLS BRANDED PRODUCTS ARE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS.

Mac Tools will repair or replace its Mac Tools branded products which fail to give satisfactory service due to defective workmanship or materials, based upon the terms and conditions of the following described warranty plans attributed to that specific product. This product carries a ONE-YEAR warranty. During this warranty period, Mac Tools will repair or replace at our option any part or unit which proves to be defective in material or workmanship.

Other important warranty information:

This warranty does not cover damage to equipment or tools arising from alteration, abuse, misuse, damage and does not cover any repairs or replacement made by anyone other than Mac Tools. The foregoing obligation is Mac Tools sole liability under this or any implied warranty and under no circumstances shall we be liable for any incidental or consequential damages.

Note: 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. If you have any questions about warranty service, please contact Mac Tools. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.