



**BK104B AND BK110B
4-TON AND 10-TON
CAPACITY BODY REPAIR KIT**

OWNER'S MANUAL



**BK104B
4-TON**



**BK110B
10-TON**

SPECIFICATIONS

	BK104B	BK110B
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.....	12.8-oz.	22-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.

- User and bystanders must wear eye protection that meets ANSI Z87.1 and OSHA standards.

- Do not use beyond 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. Refer to the Owner's Manual section titled "APPLYING FORCE" for typical applications and corresponding load capacities.

- Use a pressure gauge that indicates force applied.

- Spreader Ram is 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 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.

- No alterations or modifications shall be made to any of the kit components.

- Failure to follow these warnings could result in death or serious 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.

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.

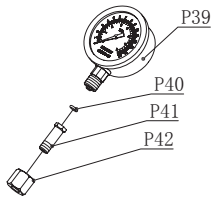
SETUP INSTRUCTIONS

⚠ WARNING

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

Please refer to the exploded view drawings on page 6-11 in this manual in order to identify parts:

1. Refer to the parts list and drawing in this manual to identify parts mentioned in this setup procedure.
2. Before installing the force gage (P39) remove the plug A in the hose end of the pump (01). Thread the gage into the gage fitting (P41) and connect with the receiver (P42) by turning it clockwise. Make sure the connection is tight to prevent leakage.
3. Open the release valve (P29) by turning it counterclockwise until it stops, then pump the handle 4 or 5 full incremented pump strokes to purge air from the hydraulic system.
4. Install ram (02) or spreader (03) at the end of hose (P30) and secure the quick disconnect fittings together by hand tightening the threaded sleeve (R06-4T & R15-10T) on the female coupler (R15-4T & R16-10T) to the male coupler (P31) at the end of the hose (P30).



OPERATING INSTRUCTIONS


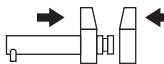


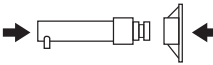
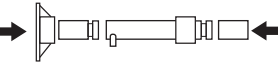
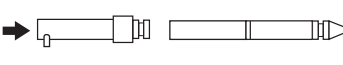

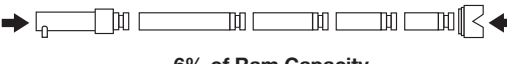

⚠ WARNING

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 end of the hose (P30) all the way in to the ram's female quick disconnect (R15). Slide the female connector's threaded sleeve (R06-4T & R15-10T) on to the threads at the end of the hose (P30) 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 (1) may be operated in the horizontal or vertical position but the pump (1) 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 (P30) as a means to carry the kit components. Do not subject the hose (P30) to any hazards such as fire, extreme heat or cold, sharp surfaces, or heavy impact. IF A HOSE (P30) RUPTURES, BURSTS, OR NEEDS TO BE DISCONNECTED, IMMEDIATELY SHUT THE PUMP (1) OFF AND OPEN THE RELEASE VALVE (P29) TO RELEASE HYDRAULIC PRESSURE. NEVER GRASP A LEAKING PRESSURIZED HOSE, FITTING OR COMPONENT WITH YOUR HANDS OR SUFFER SERIOUS INJURY.
6. Always use the pressure gauge (14) to make sure you are within the required force range when operating the system.
7. In order to pump the ram (2), it will be necessary to turn the release valve knob (P29) in a clockwise direction until tight. Tighten by hand only.
8. Pumping the handle (P34) up and down transfers the hydraulic fluid from the pump's reservoir (P6), through the hose (P30), in to the cylinder and extends the ram with each incremental pump stroke.

OPERATING INSTRUCTIONS (CONTINUED)

9. To release the pressure and return the ram (2) back in to its cylinder (R13-4T & R14-10T), turn the release valve knob (P29) in a counterclockwise direction very slowly. Turning the release valve knob (P29) slowly will determine the speed in which the ram (2) will retract back into its cylinder (R13-4T & R14-10T).
- 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 (P24) is set to a higher rating.
10. Make sure the ram (2) is completely retracted inside its cylinder (R13-4T & R14-10T) before disconnecting the hose from the cylinder.
 11. The the hose (P30) and the ram (2) 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 (P32) provided to prevent contaminants from entering the air and hydraulic systems.
 12. Based on continuous engagement and disengagement of the hose (P30) from the cylinder (R13-4T & R14-10T), eventually it will become necessary to add hydraulic fluid to the pump's reservoir (P6). 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, Chevron Hydraulic Oil AW ISO 32 or its equivalent Unocal Unax AW 150. Other fluids will cause damage to the hydraulic seals.

APPLICABLE FORCE FOR COMPONENT SET UPS		
 Spreader Capacity	 100% of Plunger Toe Capacity	 50% of Plunger Toe Capacity
		 25% of Ram Capacity
 100% of Ram Capacity	 100% of Ram Capacity	 25% of Ram Capacity
 100% of Rubber Head Capacity		 6% of Ram Capacity
 12% of Ram Capacity		

PREVENTATIVE MAINTENANCE

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

1. 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.
2. 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.

3. 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.
4. 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.



BK104B AND BK110B 4-TON AND 10-TON CAPACITY BODY REPAIR KIT

PROPER STORAGE

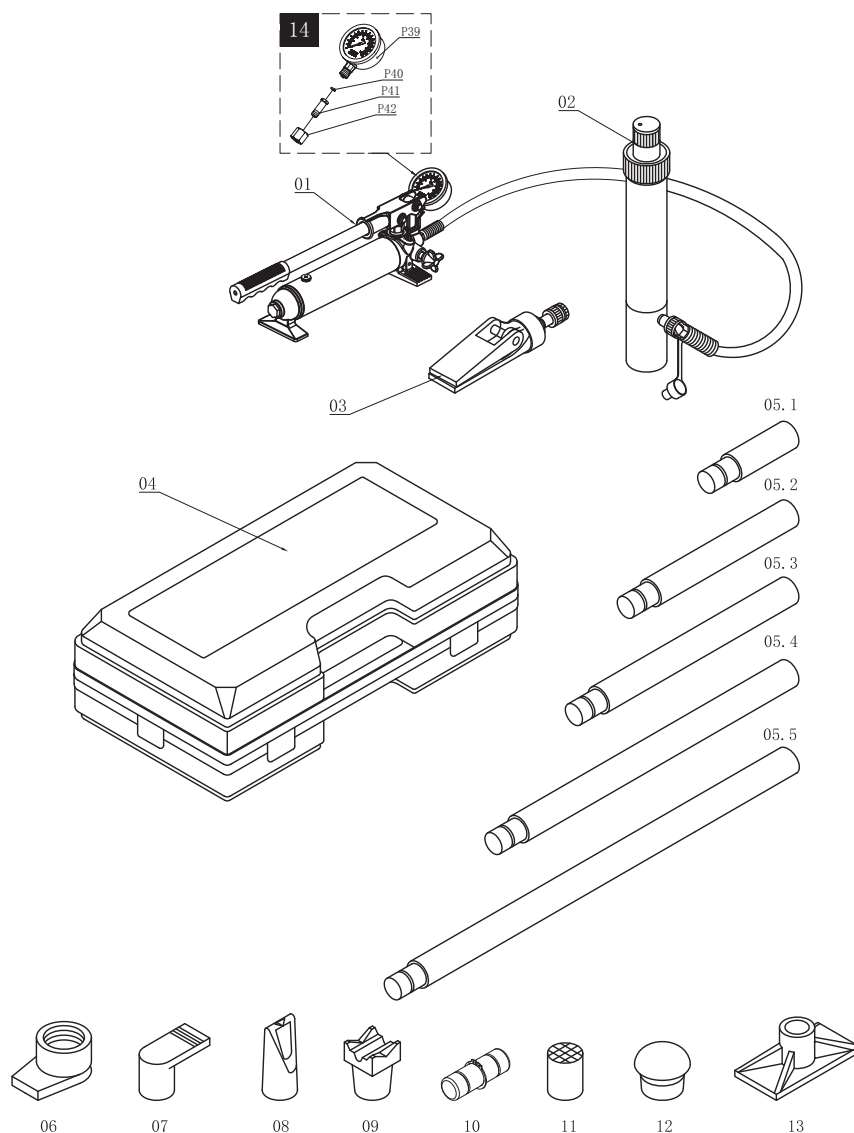
It is recommended that the kit be stored in a dry location with all wheels touching the ground on a relatively level surface.

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. Ram will not lift rated Load.	Turn reservoir fill screw (P7) counterclockwise two complete revolutions and wait 10 seconds. Turn screw clockwise until tight and proceed to pump. If that does not fix the problem check the pump reservoir's fluid level. The proper amount of fluid should be BK104B - 12.8 ounces and BK110B - 22 ounces. Use only hydraulic jack oil. For any other problems contact Mac Tools® authorized hydraulic service center.
2. Unit will not sustain rated load or feels "spongy" under rated load.	Purge air from hydraulic system as above.
3. Unit will not lift to full height.	Purge air from hydraulic system as above.
4. Handle tends to raise up while the unit is under rated load.	Pump the handle rapidly several times to push oil past ball valves in power unit.
5. Unit still does not operate.	Contact Mac Tools® authorized hydraulic service center.

4-TON PARTS DIAGRAM

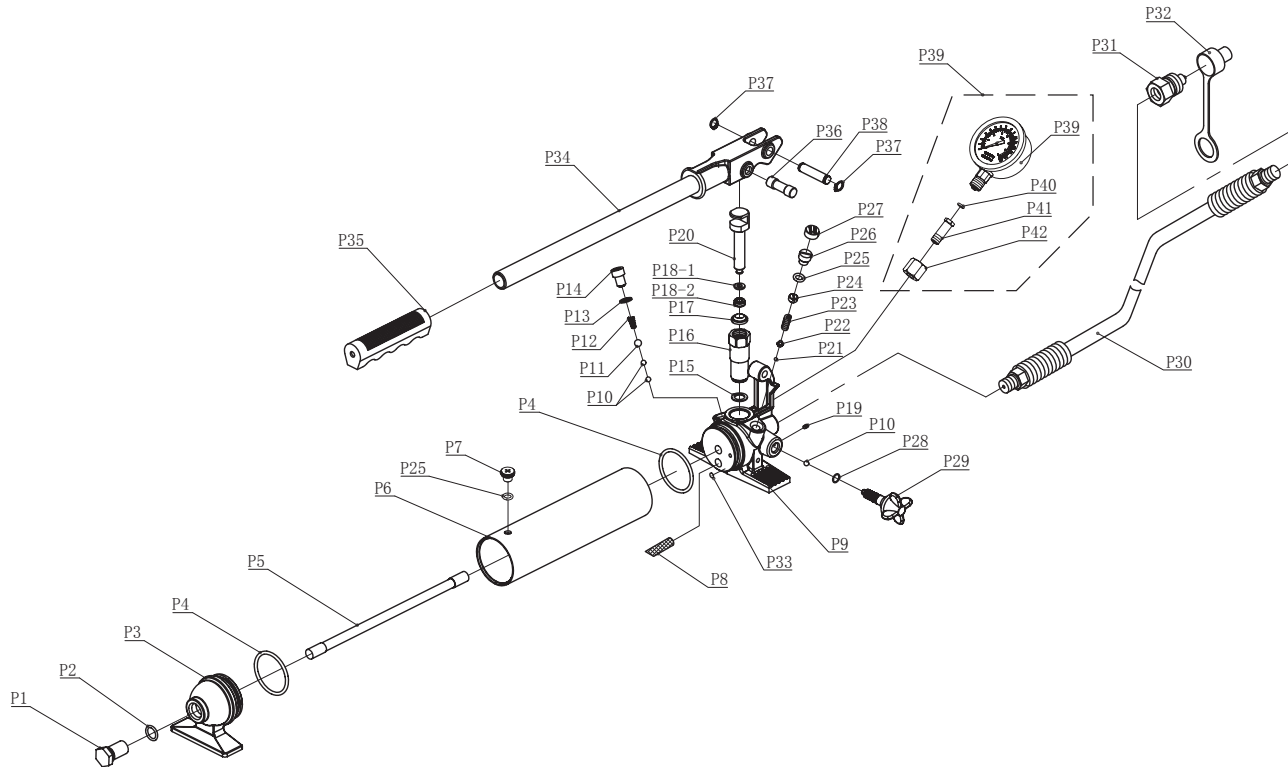


Item No.	Part No.	Description	Qty.
01	RS4TPAR	Pump (Incl. Hose)	1
	RS4SHS	Hose	1
02	RS4TR	Ram	1
03	RSSPRAR	Spreader	1
04	RS4T01	Case	1
05.1	RS4T02.1	3.23" (82mm) Extension	1
05.2	RS4T02.2	5.04" (128mm) Extension	1
05.3	RS4T02.3	8.50" (216mm) Extension	1
05.4	RS4T02.4	16.54" (420mm) Extension	1
05.5	RS4T02.5	19.49" (495mm) Extension	1

Item No.	Part No.	Description	Qty.
06	RS4T04A	Ram Toe	1
07	RS4T05	Plunger Toe	1
08	RS4T06	Wedge Head	1
09	RS4T07	V-Base	1
10	RS4T08	Male Connector	1
11	RS4T09	Serrated Saddle	1
12	RS4T10	Rubber Head	1
13	RS4T03	Flat Base	1
14	RSPGA	Pressure Gauge Assembly	1
	RSBK104BPLK	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.
P1		Screw	1
P2	*	O-ring	1
P3	RS4TPFR	Pump Foot - Red	1
P4	*	O-ring	2
P5		Tie Rod	1
P6		Reservoir	1
P7		Breather Screw	1
P8		Oil Filter	1
P9		Valve Block	1
P10	*	Ball	3
P11	*	Ball	1
P12	*	Spring	1
P13	*	Washer	1
P14		Plug Screw	1
P15	*	Copper Ring	1
P16	*	Piston Seat	1
P17	*	Anti-dust Ring	1
P18	*	Sealing Ring (incl 18-1 & 18-2)	1
P19		Screw	1
P20		Piston	1
P21	*	Ball	1

P22	*	Ball Cup	1
P23	*	Spring	1
P24	*	Screw	1
P25	*	O-ring	2
P26		Screw	1
P27		Screw Cap	1
P28	*	O-ring	1
P29	RSP15	Release Valve - Red	1
P30	RSHS	Hose	1
P31	RSP17	Male Coupler	1
P32	RSP18	Hose Dust Cover	1
P33		Magnet	1
P34	RS4THNDLR	Handle w/Grip - Red	1
P35		Handle Grip	1
P36		Pin	1
P37		Sealing Ring	2
P38		Pin	1
P39	RSPGA	Pressure Gauge (incl P39 - P42)	1
P40		O-ring	1
P41		Gauge Fitting	1
P42		Nut	1

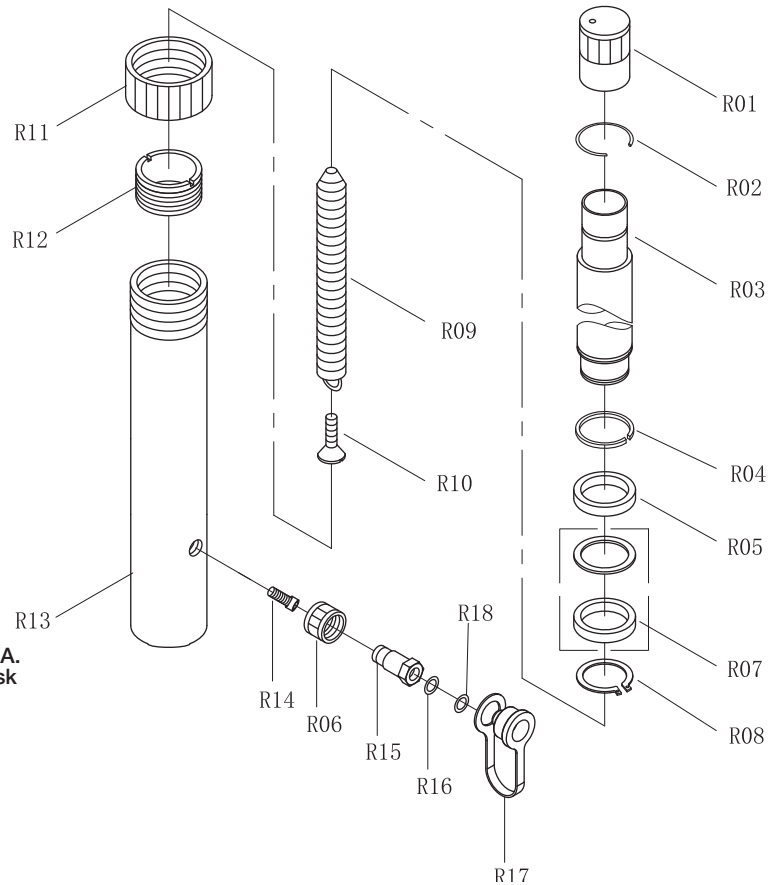
* Items identified by an asterisk are available in pump seal kit, RS4TPSKA.

NOTE: Items which are not identified by a part number or with an asterisk are not available separately.

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		Nut	1
R07	*	Sealing Ring Set	1
R08	*	Retaining Ring	1
R09		Spring	1
R10		Screw	1
R11	RS4TR12	Protection Cap	1
R12		Limit Ring	1
R13		Cylinder	1
R14		Screw	1
R15		Female Coupler	1
R16		O-ring	1
R17		Dust Cover	1
R18		Sealing Ring	1
N/S	RSRCPLR	Ram Coupler (incl R06, R15–R18)	1

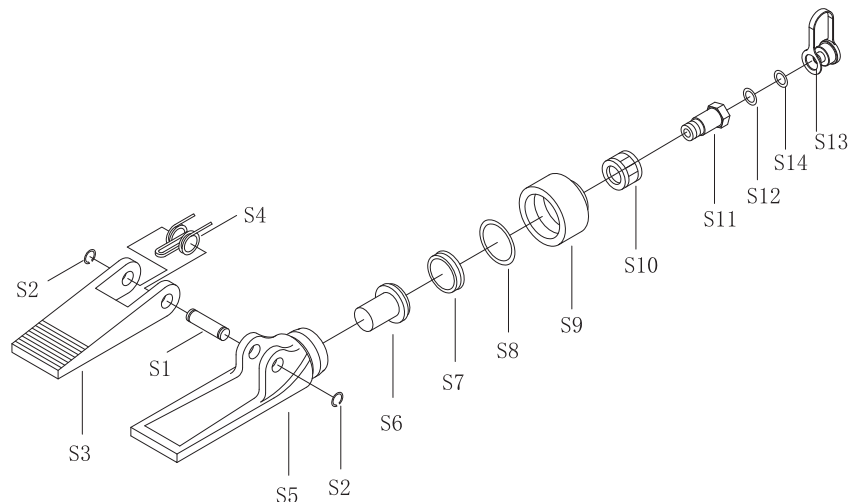
* Items identified by an asterisk are available in Ram Seal Kit, RS4TRSKA.
NOTE: Items which are not identified by a part number or with an asterisk are not available separately.



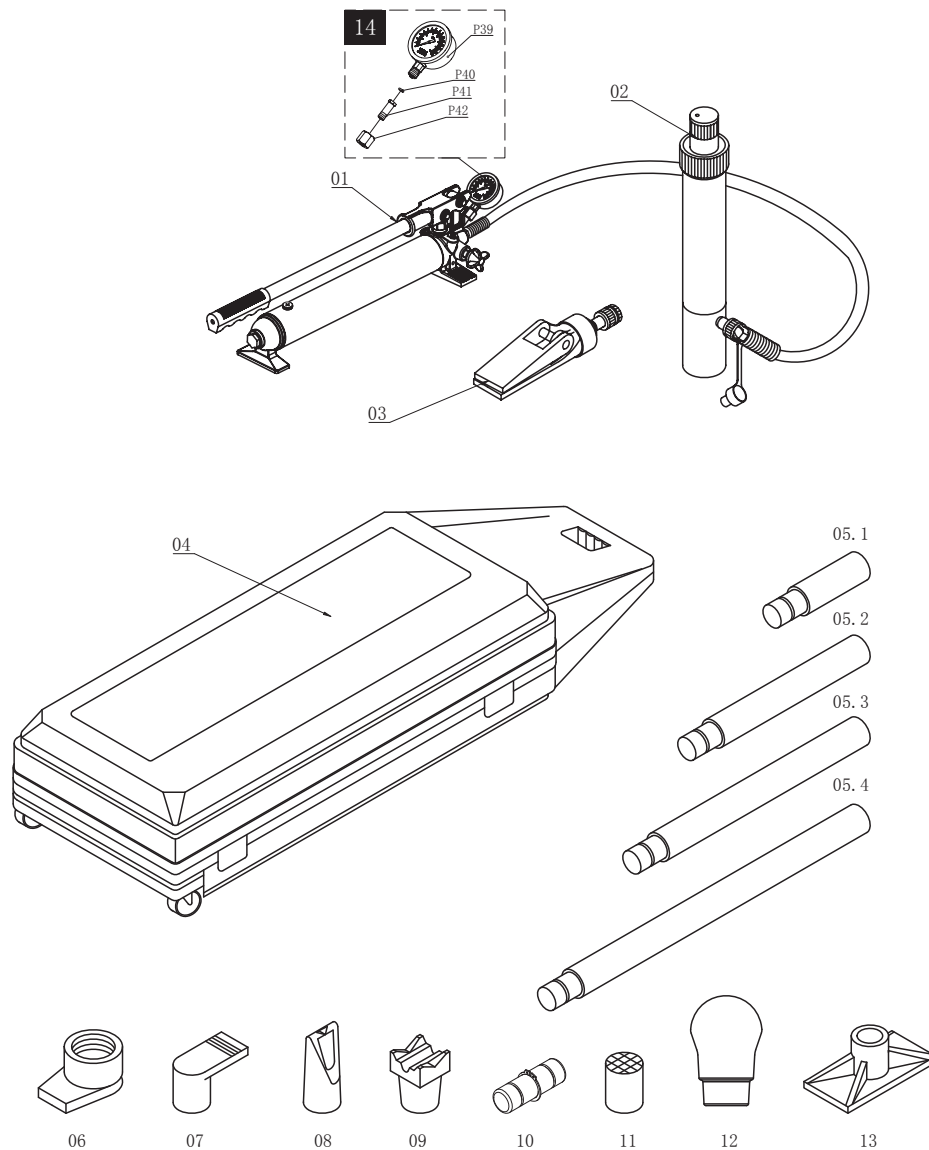
4-TON SPREADER PARTS DIAGRAM

Item No.	Part No.	Description	Qty.
S1		Pin	1
S2		Circlip	1
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
S10		Nut	1
S11		Coupler	1
S12		O-ring	1
S13		Dust Cover	1
S14		Sealing ring	1
N/S	RSSPRCLR	Spreader Coupler (incl S10 – S14)	1

* Items identified by an asterisk are available in Spreader Seal Kit, RSSPRASK.
NOTE: Items which are not identified by a part number or with an asterisk are not available separately.



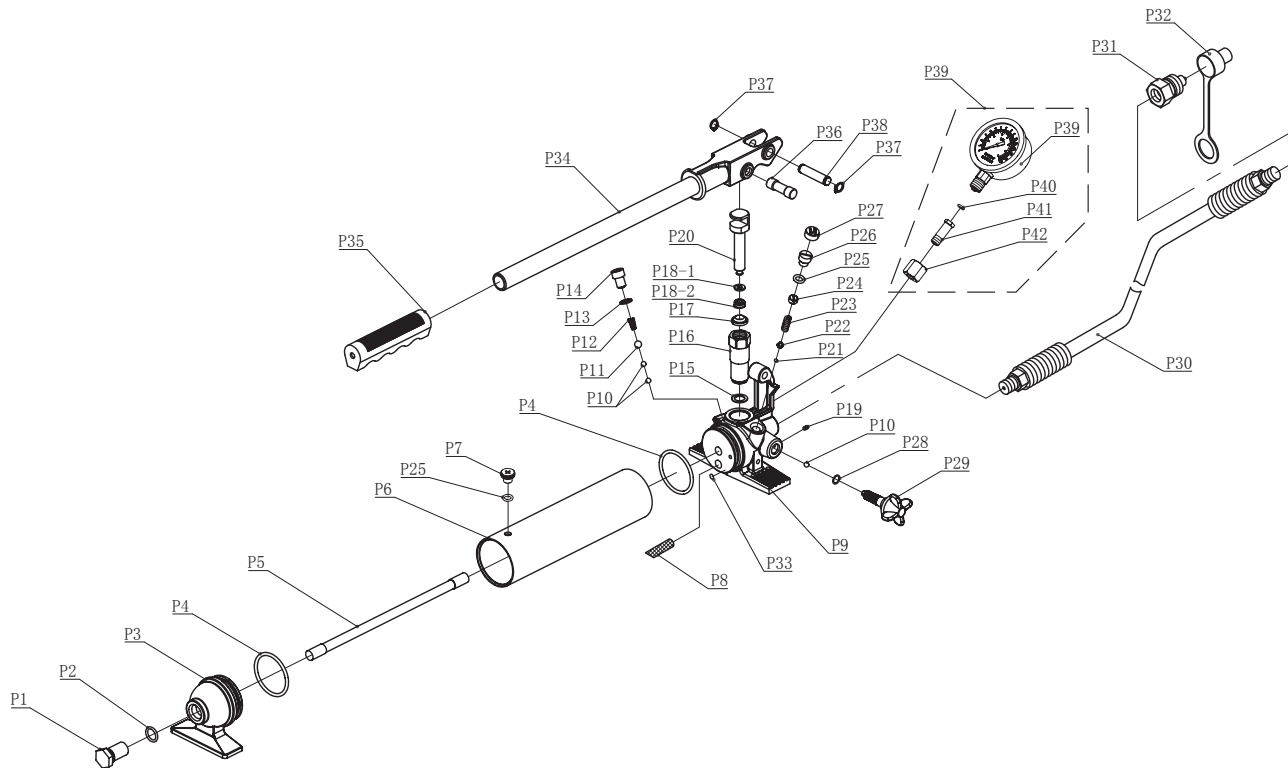
10-TON PARTS DIAGRAM



Item No.	Part No.	Description	Qty.	Item No.	Part No.	Description	Qty.
01	RS10TPAR	Pump w/Hose	1	06	RS10T04A	Ram Toe	1
	RS10TR	Hose	1	07	RS10T05	Plunger Toe	1
02	RS10TR	Ram	1	08	RS10T06	Wedge Head	1
03	RSSPRAR	Spreader	1	09	RS10T07	V-Base	1
04	RS10T01	Case	1	10	RS10T08	Male Connector	1
	RS10T01WH	Wheel for Case	2	11	RS10T09	Serrated Saddle	1
5.1	RS10T02.1	4.33" (110mm) Extension	1	12	RS10T10	Rubber Head	1
5.2	RS10T02.2	10.43" (265mm) Extension	1	13	RS10T03	Flat Base	1
5.3	RS10T02.3	14.37" (365mm) Extension	1	14	RSPGA	Pressure Gauge Assembly (incl. P39-P42)	1
5.4	RS10T02.4	20.47" (520mm) Extension	1	N/S	RSBK110BPLK	Product Label Kit	1

Only items identified by part number are available for purchase.

10-TON PUMP PARTS DIAGRAM



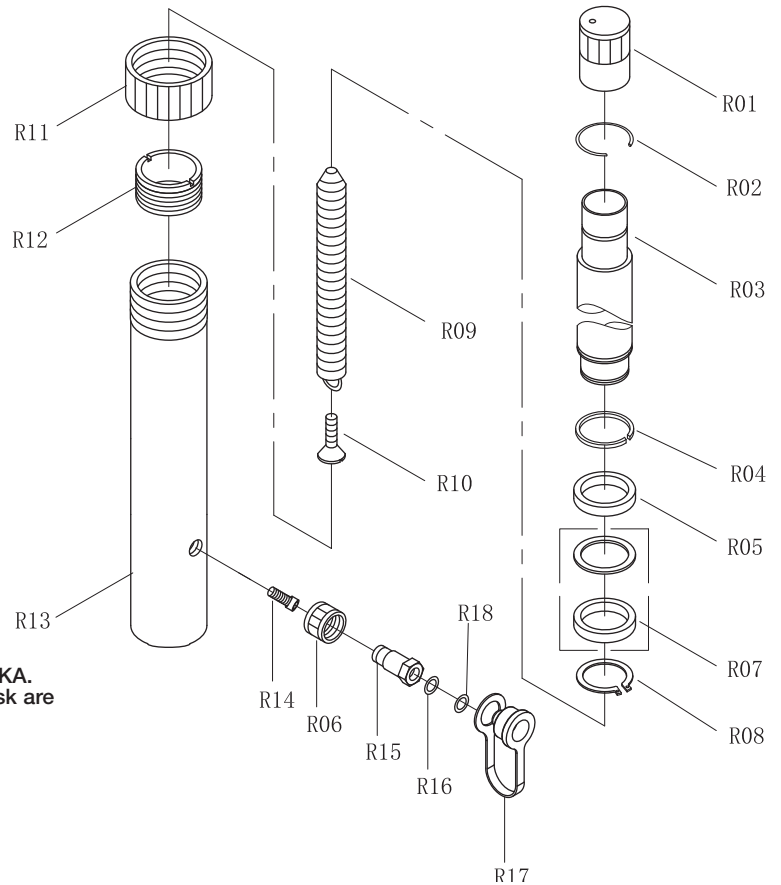
Item No.	Part No.	Description	Qty.	Item No.	Part No.	Description	Qty.
P1		Screw	1	P22	*	Ball Cup	1
P2	*	O-ring	1	P23	*	Spring	1
P3	RS10TPFR	Pump Foot - Red	1	P24	*	Screw	1
P4	*	O-ring	2	P25	*	O-ring	2
P5		Tie Rod	1	P26		Screw	1
P6		Reservoir	1	P27		Screw Cap	1
P7		Breather Screw	1	P28	*	O-ring	1
P8		Oil Filter	1	P29	RSP15	Release Valve - Red	1
P9		Valve Block	1	P30	RSHS	Hose	1
P10	*	Ball	3	P31	RSP17	Male Coupler	1
P11	*	Ball	1	P32	RSP18	Hose Dust Cover	1
P12	*	Spring	1	P33		Magnet	1
P13	*	Washer	1	P34	RS10THNDR	Handle w/Grip - Red	1
P14		Plug Screw	1	P35		Handle Grip	1
P15	*	Copper Ring	1	P36		Pin	1
P16	*	Piston Seat	1	P37		Sealing Ring	2
P17	*	Anti-dust Ring	1	P38		Pin	1
P18	*	Sealing Ring (incl 18-1 & 18-2)	1	P39	RSPGA	Pressure Gauge (incl P39 - P42)	1
P19		Screw	1	P40		O-ring	1
P20		Piston	1	P41		Gauge Fitting	1
P21	*	Ball	1	P42		Nut	1

* Items identified by an asterisk are available in pump seal kit, RS10TPSKA.

NOTE: Items which are not identified by a part number or with an asterisk are not available separately.

10-TON RAM PARTS DIAGRAM

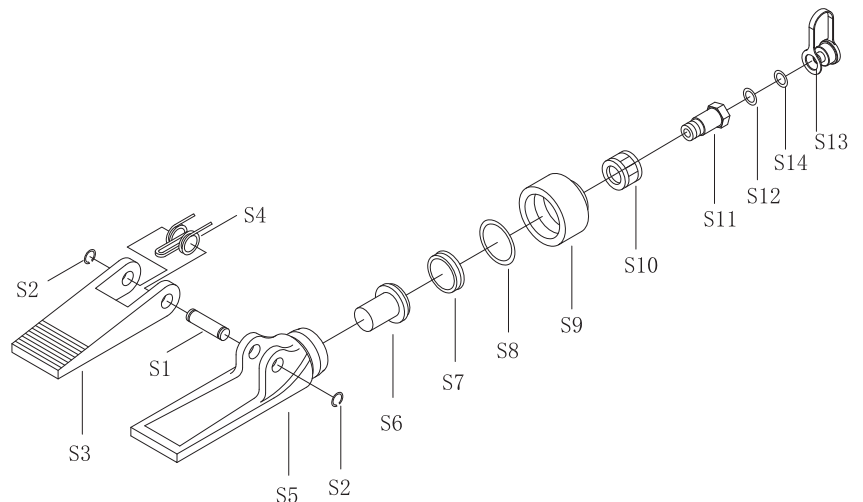
Item No.	Part No.	Description	Qty.
R01	RS10TR01	Cover	1
R02		Circlip	1
R03		Piston Rod	1
R04	*	Circlip	1
R05	*	Bushing	1
R06	*	Nut	1
R07		Sealing Ring Set	1
R08	*	Circlip	1
R09		Spring	1
R10		Screw	1
R11	RS10TR12	Protection Cap	1
R12		Limit Ring	1
R13		Cylinder	1
R14		Screw	1
R15		Female Coupler	1
R16		O-ring	1
R17		Dust Cover	1
R18		Sealing Ring	1
N/S	RSRCPLR	Ram Coupler (incl R15–R18)	1



* Items identified by an asterisk are available in Ram Seal Kit, RS10TRSKA.
NOTE: Items which are not identified by a part number or with an asterisk are not available separately.

10-TON SPREADER PARTS DIAGRAM

Item No.	Part No.	Description	Qty.
S1		Pin	1
S2		Circlip	1
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
S10		Nut	1
S11		Coupler	1
S12		O-ring	1
S13		Dust Cover	1
S14		Sealing ring	1
N/S	RSSPRCPLR	Spreader Coupler (incl S10 – S14)	1



* Items identified by an asterisk are available in Spreader Seal Kit, RSSPRASK.
NOTE: Items which are not identified by a part number or with an asterisk are not available separately.



BK104B AND BK110B 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.