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WARNING SYMBOLS AND DEFINITIONS

	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.
	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
	Addresses practices not related to personal injury.

IMPORTANT SAFETY INFORMATION

WARNING

Read all safety warnings and instructions. *Failure to heed these markings may result in personal injury and/or property damage.*

Save all warnings and instructions for future reference.

The warnings, precautions, and instructions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

Work area

1. **Turn off the engine, set the parking brake, and block the tires before working on a vehicle.**
2. **Keep the work area clean and well lighted.** Cluttered benches and dark areas increase the risk of injury to persons.
3. **Keep bystanders and children away while operating the tool.** Distractions can result in loss of control of the tool.

Personal safety

1. **Stay alert. Watch what you are doing and use common sense when operating the tool. Do not use the tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating the tool increases the risk of injury to persons.
2. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair increases the risk of injury to persons as a result of being caught in moving parts.
3. **Use safety equipment.** Wear safety goggles and heavy-duty work gloves during use.

Tool use and care

1. **Do not force the tool.** Use the correct tool for the application. The correct tool will do the job better and safer at the rate for which the tool is designed.
2. **Store the tool when it is idle out of reach of children and other untrained persons.** A tool is dangerous in the hands of untrained users.
3. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that affects the tool's operation.** If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.
4. **Use only accessories that are identified by the manufacturer for the specific tool model.** Use of an accessory not intended for use with the specific tool model, increases the risk of injury to persons.
5. **Avoid off-center loads.** If the Pump seems unusually hard to operate, immediately stop. Adjust the Ram to eliminate or diminish an off-center load. The Flange Base and Flange Head must **only** be used together to prevent an off-center load.
6. **Protect the Hose.** Do not drop heavy objects on the Hose. Avoid kinks in the Hose. Maintain proper clearance to avoid damage to the Hose and Couplers.
7. **Inspect repair before using vehicle.** Repairs to structural or frame members must be inspected by a qualified technician to ensure that the structure is still strong enough to safely fulfill its function.

Service

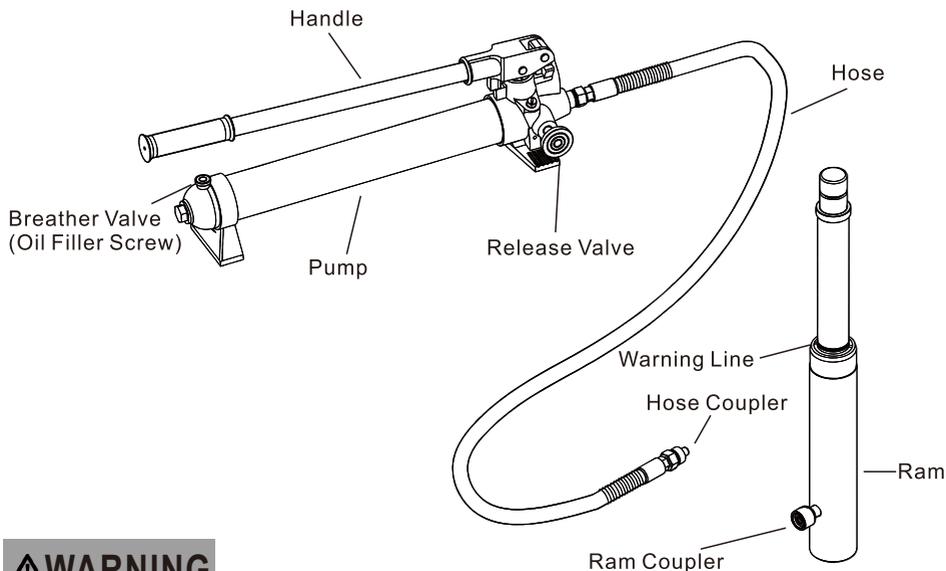
1. **Tool service must be performed only by qualified repair personnel.**
2. **When servicing a tool, use only identical replacement parts. Use only authorized parts.**



SAVE THESE INSTRUCTIONS

SPECIFICATIONS

Capacity	4 Ton	10 Ton
Ram Stroke	125 mm	135 mm
Ram Min Height	270 mm	358 mm
Pump Working Pressure	63 Mpa	62 Mpa
Pump Oil Capacity	0.25 L	0.5 L
Spreader Capacity	0.5 Ton	0.5 Ton
Spreader Opening	16 - 90 mm	16 - 90 mm



⚠ WARNING

1. **Ensure** that the rated working pressure of each pressurized attachment be equal to or greater than the rated working pressure developed by the hydraulic pump.
2. Always **check** connections before using. Alteration of these products is strictly prohibited. Use **only** those adapters and attachments provided and approved by the manufacturer.
3. When extension tubes and/or offset attachments are used, the rated capacity is always **reduced by 50%** for each tube or offset attachment connected.
4. Do not attempt to **operate** pump unless the Breather Valve is open.
5. Do not **overextend** the Ram. (Do not **over** the Warning Line on the Piston of Ram.)
6. Do not **exceed** rated capacity.

SETUP



Read the **ENTIRE** IMPORTANT SAFETY INFORMATION section at the beginning of this document including all text under subheadings therein before set up or use of this product.

Ram Attachments

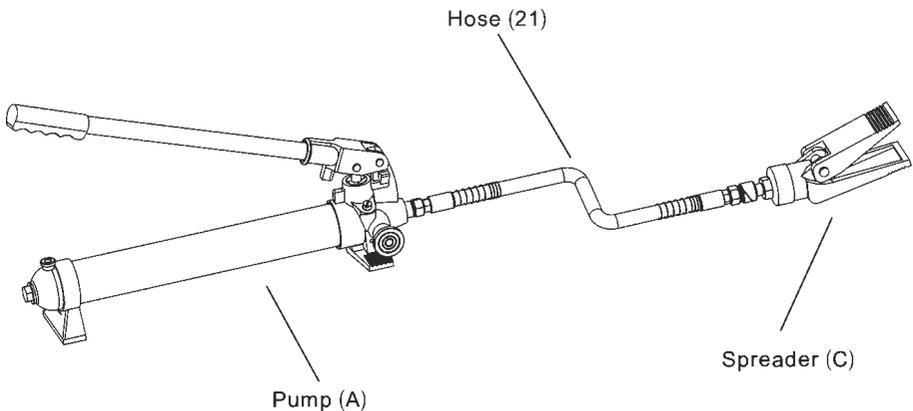
1. The *Extensions* (2a – 2e) connect in different combinations to reach desired lengths.
2. The *Male Connector* (8) is used to connect the female end of the Ram (B) to a Base.
3. The *Flat Base* (3) is typically used on the stationary side to spread out the force of the Ram (B).
4. The *90° V Base* (7) is used to offset the force of the Ram (B) when there is not a straight line between the stationary side and the damaged side, or to spread out force on curved surfaces.
5. The *Cap Head* (9) is typically used on the pushing end to prevent slipping.
6. The *Rubber Head* (10) is typically used for popping dents out of sheet metal such as doors or body panels and to minimize damage to the work surface.
7. The *Wedge Head* (6) is used to repair small dents and areas located in angles and tight spaces.
8. The *Flange Base* and *Flange Head* (4, 5) are used together to allow spreading in areas that the Ram cannot fit into.

Note: The Flange Base and Flange Head must **only** be used together to prevent an off-center load.

Spreader Setup

The Spreader (C) is used when the Ram (B) is too long to fit between the stationary side and the damaged area.

1. Clean the end of the Hose (21) and the inlet on the Spreader (C).
2. Unscrew and save the Dust Covers located on the end of the Hose (21) and Spreader (C).
3. Attach the Hose (21) to the Spreader Wedge (C), as shown below:



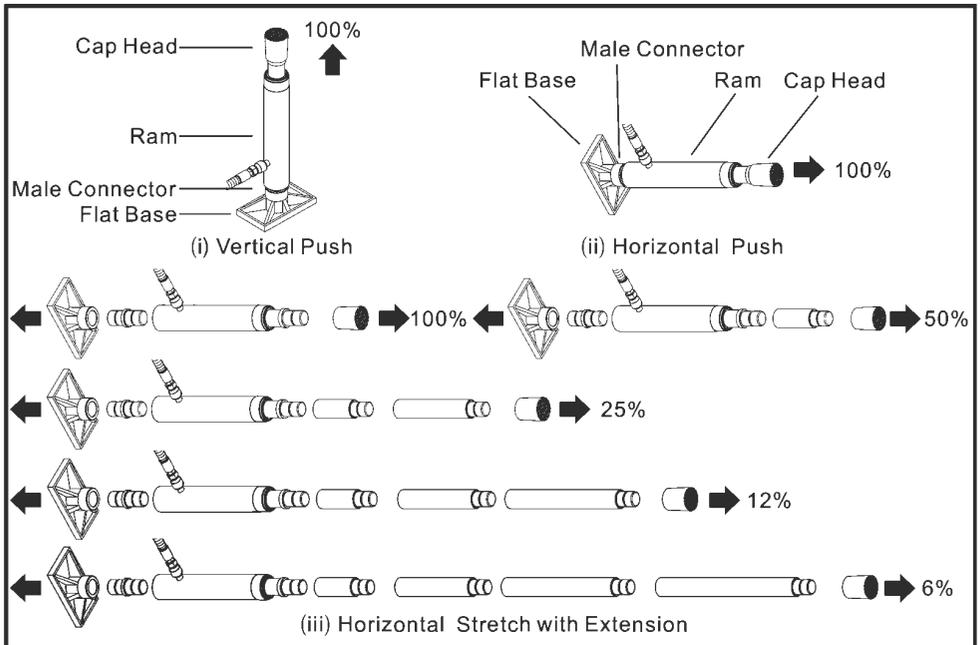
Ram Setup

Note: When positioning the Ram (B) use a smaller attachment on the side that is to be bent instead of the stationary side. If the stationary side is in danger of being bent or damaged, place a block of wood or other material behind the Flat Base (3) to distribute pressure over a greater area.

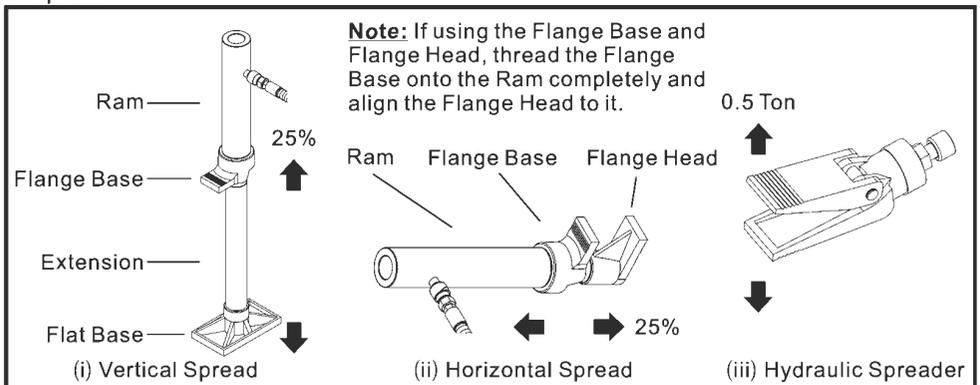
When extension tubes and/or offset attachments are used, the rated capacity is always reduced by 50% for each tube or offset attachment connected.

1. Clean the end of the Hose (21) and the inlet on the Ram (B). Unscrew and save the Dust Covers located on the end of the Hose (21) and Ram (B).
2. Attach the Hose to the Ram.
3. Assemble attachments as shown below:

A. Push & Stretch



B. Spread



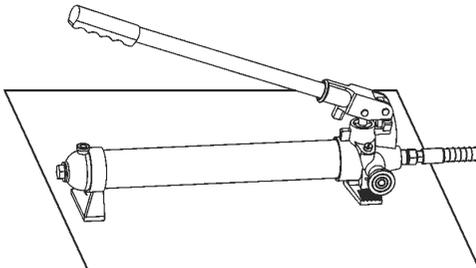
OPERATION



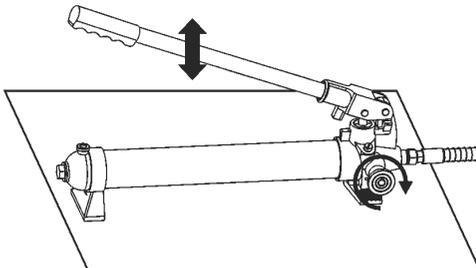
Read the **ENTIRE** IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before use of this product.

To Operate Pump (A)

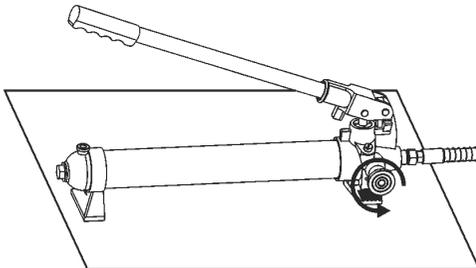
1. Check the Hydraulic Fluid Level, following the instructions in the Cleaning and Maintenance section.
2. Determine which direction the frame needs to be bent.
3. Remove any obstructions that could be damaged or are in the way.
4. Position the Pump Unit on a stable, flat and level surface.



5. Close the release valve by turning it clockwise until it is firmly closed. Pump Handle to apply pressure.



6. Turn the Release Valve counter-clockwise to release the pressure.



Note: The Pump Unit may be positioned horizontally or vertically. When using the Hydraulic Pump (A) in a vertical position, always keep the Hose (21) end of the Hydraulic Unit downward.

To Operate Ram (B)

1. Connect the appropriate Base (3, 4, 7) to the stationary side of the Ram (B), and connect the appropriate head to the pushing end of the Ram.
Note: When repairing larger body panel dents such as a dented door, fender or quarter-panel use the Rubber Head (10) on the pushing end.
2. If using the Flange Base (4) or Flange Head (5): Thread the Flange Base onto the Ram completely and align the Flange Head to it. The Flange Base and Flange Head must only be used together to prevent off-center load.
3. Position the Ram (B) so that the Base is resting against a frame member opposite the damaged area. It must also be in line with the direction in which the damaged area needs to be pushed. The vehicle body part must be stronger than the area to be bent or it may be damaged. A block of wood or a towel may be used to protect the body part.
4. Aim the pushing end towards the area that needs to be repaired, and slowly apply pressure with the Pump (A).

Note: To prevent damage, do not overextend the Ram.

To Operate Spreader (C)

1. Place the Spreader (C) so that the hinged (pushing) arm is resting against the part to be moved and the stationary arm is resting against a non-movable base.
2. Carefully hold the Spreader in position and apply pressure with the Pump (A).

WARNING

1. Once both ends have made contact, move as far away as possible and continue to slowly apply pressure to the damaged area until the desired bend has been made.
CAUTION! Keep hands away from contact areas and tight spaces. The tool may slip and cause injury.
2. When the damaged area has been bent to the desired position, slowly turn the Release Valve (26) counterclockwise to release the hydraulic pressure and remove the Ram (B) or Spreader (C).
3. Clean all hydraulic ports and cover them with clean Dust Covers to prevent contamination and damage.

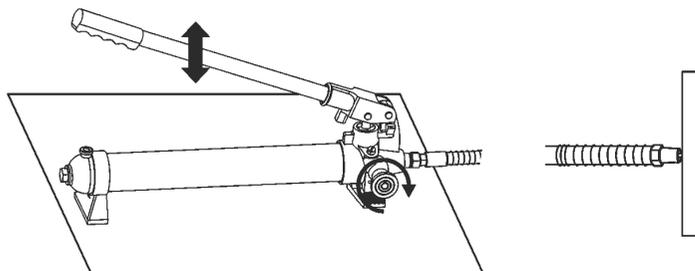
CLEANING AND MAINTENANCE

1. Keep the surface of this tool and its accessories free of hydraulic fluid and grease. Use only a mild detergent and damp cloth when cleaning. Do not use a flammable or combustible solvent to clean this tool or its accessories.
2. Before each use, examine the general condition of the tool and its accessories. Check for loose components, misalignment, binding of moving parts, broken parts and any other condition that may affect its safe operation. Do not use a damaged tool or its damaged accessories.
3. Keep hydraulic connections clean. Clean all hydraulic ports and replace Dust Covers immediately after use.
4. Store the Pump (A) with the Release Valve (26) open.

Filling and Bleeding Hydraulic Fluid

If the Pump (A) operation feels spongy, or the Ram (B) lowers while the Release Valve (26) is closed, there may be air in the Pump. Bleed the Pump as follows:

1. Set Pump (A) flat on a level surface.
2. Remove the Fill Screw (16). The Seal Ring (15) should come off with it.
3. The fluid level should be near the bottom of the opening. If required, add high grade hydraulic fluid.
4. Make sure the Seal Ring (15) is still in place around the Fill Screw (16) and thread the Fill Screw into the Pump securely. Do not use thread seal tape.
5. Firmly close the Release Valve (26) by turning it clockwise.
6. Press the tip of the Coupler (22) against a hard surface and pump the pump handle.
7. Continue pumping, until the hydraulic fluid coming out the end of the Coupler tip is free of air bubbles.

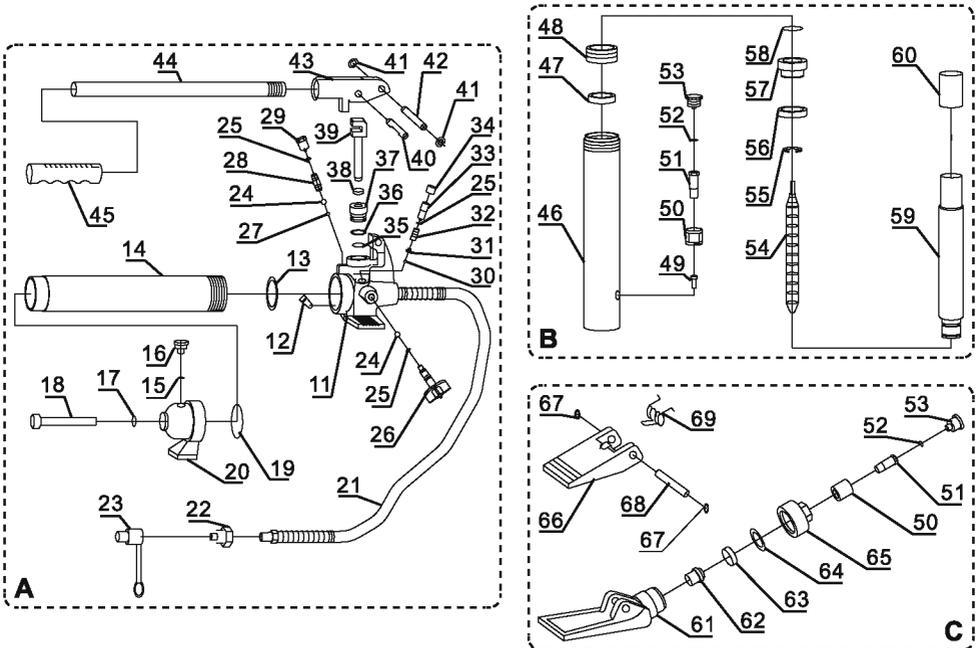
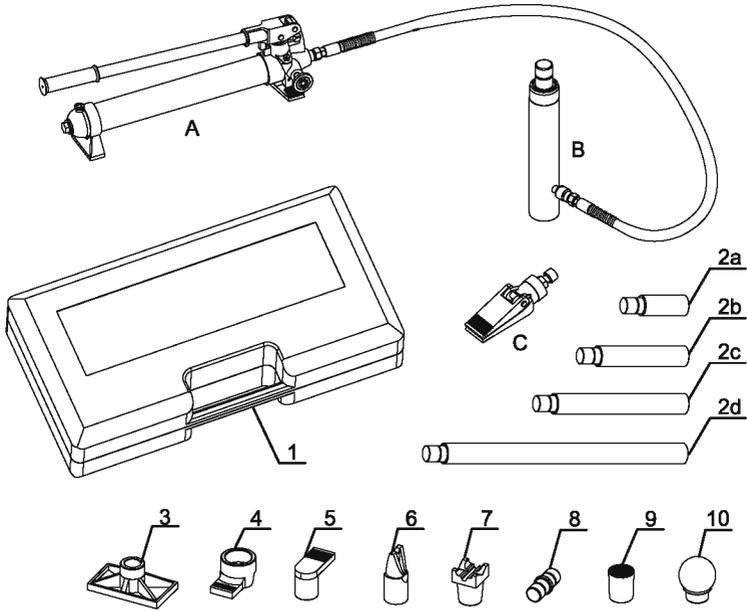


8. Recheck the fluid level and add fluid if necessary.
9. Turn the Release Valve counter-clockwise to release the pressure in the Pump and Hose.

Changing Hydraulic Fluid

1. Change the hydraulic fluid yearly.
2. Remove the Fill Screw (16) and tilt the Pump (A) to drain out the old fluid.
3. Refill the hydraulic fluid and bleed the system several times to ensure all air is out of the system.

DIAGRAM



PARTS LIST

Part	Description	Qty	Part	Description	Qty
A	Pump Asm. (#11-45)	1	32	Spring	1
B	Ram Asm. (#46-60)	1	33	Screw	1
C	Spreader Asm. (#61-69)	1	34	Screw Cup	1
1	Box	1	35	O-Ring	1
2a	Extension A	1	36	Nylon Seal	1
2b	Extension B	1	37	Screw	1
2c	Extension C	1	38	Y-Ring	1
2d	Extension D	1	39	Small Piston	1
3	Flat Base	1	40	Pin	1
4	Flange Base	1	41	Retaining Ring	2
5	Flange Head	1	42	Pin	1
6	Wedge Head	1	43	Handle Socket	1
7	90° V Base	1	44	Handle	1
8	Male Connector	1	45	Handle Sleeve	1
9	Cap Head	1	46	Cylinder	1
10	Rubber Head	1	47	Ram Ring	1
11	Valve Block	1	48	Screw Cover	1
12	Oil Filter	1	49	M6 Screw	1
13	O-Ring	1	50	Connection Nut	2
14	Reservoir	1	51	Cylinder Screw	2
15	Seal Ring	1	52	O-Ring	2
16	Breather Valve (Oil Filler Screw)	1	53	Dust Cover	2
17	Seal Ring	1	54	Spring	1
18	Tie Rod	1	55	Retaining Ring	1
19	O-Ring	1	56	Y-Ring	1
20	Pump Foot	1	57	Bushing	1
21	Hose	1	58	O-Ring	1
22	Coupler	1	59	Piston	1
23	Dust Cover	1	60	Cover	1
24	Ball	2	61	Fixed Jaw	1
25	O-Ring	3	62	Small Piston	1
26	Release Valve	1	63	Piston Ring	1
27	Ball	1	64	Nylon Ring	1
28	Spring	1	65	Screw Cover	1
29	Screw	1	66	Movable Jaw	1
30	Ball	1	67	Retaining Ring	2
31	Ball Cup	1	68	Pin	1
			69	Spring	1

TROUBLE SHOOTING



Stop using this equipment immediately if any of the following problems occur, as it may cause personal injury. Any repairs or replacement must be done by a qualified person or an authorized service center only.

Problem	Possible Cause	Solution
Ram does not operate when handle is pumped	Release valve not tightly closed	Firmly close the release valve
	Air in the pump	See Filling and Bleeding Hydraulic Fluid in Page 9
	The steel ball is immersed inside for too long time	Please follow the steps: 1. Open the release valve by turning it counter-clockwise, pump up the handle 10-15 times 2. Close the release valve by turning it clockwise, pump up the handle 5-10 times 3. Repeat step 1 and 2 for about 3 times
Ram will not hold load	Release valve not tightly closed	Firmly close the release valve
	Malfunction in pump such as dirt inside valve mechanism	Please follow the steps: 1. Open the release valve by turning it counter-clockwise, pump up the handle 10-15 times 2. Close the release valve by turning it clockwise, pump up the handle 5-10 times 3. Repeat the step 1 and 2
Ram reluctant to lower when load removed	Oil reservoir overfilled	Drain oil to correct level
	Piston binding	Clean and lubricate moving parts
	Overextend the ram	Replace ram
Ram will not extend to full range of stroke	Low oil level	Add hydraulic oil to the reservoir
Ram tries to tilt to one side	Incorrect of connection or unbalance of the footing	Stop work and re-position ram and base, ensuring it is well supported and as close to perpendicular to the repair as possible
Available hydraulic oil capacity of 4 Ton pump 250ml±5ml Available hydraulic oil capacity of 10 Ton pump 500ml±5ml		