



EM-100 100 TON WORKSHOP HYDRAULIC PRESS

OWNER'S MANUAL



WARNING!

Read and understand all instructions and responsibilities before operating. Failure to follow safety instructions and labels could result in serious injury.

Dake Corporation
1809 Industrial Park Dr
Grand Haven, MI 49417

Phone: 800.937.3253

www.dakecorp.com

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DAKE STANDARD LIMITED WARRANTY

Finished Machines

Dake warrants to the original purchaser the finished machine manufactured or distributed by it to be free from defects in material and workmanship under normal use and service within 1 year (12 months) from the delivery date to the end user.

Parts

Dake warrants to the original purchaser the component part manufactured or distributed by it to be free from defects in material and workmanship under normal use and service within 30 days from the delivery date to the end user.

The standard limited warranty includes the replacement of the defective component part at no cost to the end user.

Sale of Service (Repairs)

Dake warrants to the original purchaser the component part repaired by Dake Corporation at the manufacturing facility to be free from defects in material and workmanship under normal use and service within 90 days from the return date to the end user, as it pertains to the repair work completed. The standard limited warranty includes repair of the defective component part, at no cost to the end user.

Warranty Process

Subject to the conditions hereinafter set forth, the manufacturer will repair or replace any portion of the product that proves defective in materials or workmanship. The manufacturer retains the sole right and option, after inspection, to determine whether to repair or replace defective equipment, parts or components. The manufacturer will assume ownership of any defective parts replaced under this warranty.

All requested warranty claims must be communicated to the distributor or representative responsible for the sale. Once communication has been initiated, Dake Customer Service must be contacted for approval:

Phone: (800) 937-3253

Email: customerservice@dakecorp.com

When contacting Dake, please have the following information readily available:

- Model #
- Serial #
- Sales Order #

Purchasers who notify Dake within the warranty period will be issued a Case number and/or a Return Material Authorization (RMA) number. If the item is to be returned per Dake's request, the RMA number must be clearly written on the exterior packaging. Any item shipped to Dake without an RMA will not be processed.

Warranty Exceptions:

The following conditions are not applicable to the standard limited warranty:

- (a) Part installation or machine service was not completed by a certified professional, and is not in accordance with applicable local codes, ordinances and good trade practices.
- (b) Defects or malfunctions resulting from improper installation or failure to operate or maintain the unit in accordance with the printed instructions provided.
- (c) Defects or malfunctions resulting from abuse, accident, neglect or damage outside of prepaid freight terms.
- (d) Normal maintenance service or preventative maintenance, and the parts used in connection with such service.
- (e) Units and parts which have been altered or repaired, other than by the manufacturer or as specifically authorized by the manufacturer.
- (f) Alterations made to the machine that were not previously approved by the manufacturer, or that are used for purposes other than the original design of the machine.

RETURN & REFUND POLICY

Thank you for purchasing from Dake! If you are not entirely satisfied with your purchase, we are here to help.

Returns

All Dake manufactured / distributed machines, parts and couplings include a 30-day return option. These policies are valid from the date of final shipment to the end user.

To be eligible for a return, the item must be unused and in the same condition as received.

All requested warranty claims must be communicated to the distributor or representative responsible for the sale. Once communication has been initiated, Dake Customer Service must be contacted for approval:

Phone: (800) 937-3253

Email: customerservice@dakecorp.com

Once the return request has been approved by Customer Service, a representative will supply a Return Material Authorization (RMA) number. The returned item must have the provided RMA number clearly marked on the outside packaging. Any item received without an RMA number clearly visible on the packaging will not be processed.

An RMA number can only be provided by the Dake Customer Service team and must be obtained prior to the return shipment.

Refunds

Once the item has been received and inspected for damages, a representative will notify the requestor referencing the provided RMA number.

If the return is approved, a refund will be issued to the original method of payment, less a 20% restocking fee. The restocking fee may be waived if an order is placed at the time of return with like-value merchandise.

Transportation costs are the responsibility of the end user and will not be credited upon return approval.

Any item that is returned after the initial 30 days or has excessive/obvious use will not be considered for a full refund.

SAFEGUARDING THE POINT OF OPERATION

ANSI B11.2 - Hydraulic Power Presses - Safety Requirements for Construction, Care, and Use

It is important that Dake press users have a clear understanding of their responsibility involving the care and use of their Dake hydraulic press, including point-of-operation safe guards. Dake strongly recommends that Dake press users obtain a copy of the current American National Standard Institute (ANSI) B11.2 standard, for a more complete understanding of their responsibilities.

ANSI B11.2 states the following, relative to point of operation safeguarding:

“Normally, only the employer (press user) can determine the requirements of the press productions system components, including the dies and methods for feeding. Therefore, the employer is ultimately responsible to designate and provide the point-of-operation safeguarding system.”

The standard also discusses additional responsibilities of the employer. Some of the key responsibilities are:

- The employer is responsible for the safety, use, and care of the hydraulic power press production system.
- The employer is responsible to consider the sources of hazards for all tasks to be implemented on the hydraulic power press production system.
- The employer is required to eliminate, or control identified hazards in the scope of their work activity.
- The employer is responsible for the training of personnel, caring for, inspecting, maintaining, and operating hydraulic press production systems to ensure their competence.
- The employer is responsible to provide and ensure that point-of-operation safeguarding is used, checked, maintained, and where applicable, adjusted on every production operation performed on a press production system.

A complete and current copy of the ANSI B.11.2 standard can be obtained by contacting the following:

American National Standards Institute
1430 Broadway
New York, NY 10018

AMT – The Association for Manufacturing Technology
7901 Westpark Drive
McLean, VA 22102

DAKE STANDARD TERMS & CONDITIONS OF SALE

All proposals and quotations for the original sale of our products are subject to the following terms and conditions:

ACCEPTANCE OF ORDER: All orders are subject to acceptance by Dake at its main office in Grand Haven, Michigan.

APPLICABLE LAWS: This quotation or acceptance shall be governed in all respects by the laws of the State of Michigan.

CANCELLATION: We reserve the right to cancel and/or refuse to complete your order if, in our opinion, you have not established credit to promptly meet the payment terms of your order. Any cancellation from the Purchaser may be subject to a 10% cancellation fee for any of our non-standard machinery upon the discretion of Dake. All custom or special quotes will not be eligible for cancellation, nor returns.

DELIVERY: The proposed shipment date is an estimate and is contingent upon causes beyond Dake's control. Under no circumstances shall Dake have any liability for loss of use or for any direct or consequential damages resulting from delay. All shipments from the Dake facilities are F.O.B.

FREIGHT CLAIM: Damage freight claims must be submitted to Dake within thirty (30) days of shipment from Dake's facility. If shipment for order was set up by the Purchaser, Dake is not liable to handle the freight claims.

PERMITS AND COMPLIANCE: Dake shall not be responsible for obtaining any permits, inspections, certifications, or licenses required for the installation or use of the equipment. Dake makes no promise or representation that the equipment or any services to be furnished by Dake will conform to any federal, state, or local laws, ordinances, regulations, codes or standards.

PRICES: Unless otherwise agreed to in writing, all prices are F.O.B. our plant in Grand Haven, Michigan and Grand Prairie, Texas. In any event, the quoted prices for component parts become invalid ten (10) days after date of quotation, and machinery may become invalid sixty (60) days after date of quotation. Unless otherwise specified in Dake's quotation, installation services and final on-site adjustments are not included in the quotation.

TAXES: Prices do not include taxes. If any sales, use or similar tax is payable to Dake in connection with any transaction or part thereof between the Purchaser and Dake with respect to goods delivered, the Purchaser will, upon demand, pay to Dake the amount of any such tax. If you are tax exempt, please include your exemption document when submitting your order.

TERMS OF PAYMENT: Terms of payment are as stated in Dake's quotation subject to credit approval by our home office. Dake will invoice Purchaser when the equipment is completed and ready for shipment. Payment terms run from invoice date. Purchaser may be required to issue a down payment before production of order and shipment, at the discretion of Dake Accounting. For credit card purchases, a 3.5% processing fee may be applicable to the order. The following states are exempt from the 3.5% processing fee: CA, CO, KS, OK, TX, FL, NY, CT, MA, and ME. Dake's preferred method of payment is as follows: ACH Wire and credit card. Checks will be accepted but may cause delay in order processing. Below is our billing address:

1809 Industrial Park Drive, Grand Haven, MI 49417

WARRANTY If, within a period of one (1) year from date of shipment, any part of any equipment sold by Dake is defective in material or workmanship and is so found after inspection by Dake, it will be replaced or repaired at the option of Dake, providing the equipment has been given normal and proper usage and is still the property of the original Purchaser. Purchased components such as Micro Drop mist system or the like, installed as a part of Dake equipment are warranted only to the extent of the original Manufacturer's warranty. Dake is not responsible for any service work performed unless authorized in advance.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER WRITTEN, ORAL OR IMPLIED (INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE). UNDER NO CIRCUMSTANCES SHALL DAKE BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

SPECIFICATIONS

Model	EM-100 100 TON WORKSHOP HYDRAULIC PRESS
Number	970105
Capacity	100 tons
Horsepower	5.5 HP
Voltage	220V, 3 phase, 60 Hz
Amperage	8 amp
Filter Type	Pollution Filter
Pressing Speed	19.5 inches per minute (IPM)
Width between uprights	40"
Ram Travel	15.75"
Min. ram to table (in)	0"
Max. ram to table (in)	35"
Min. Operating Pressure (PSI)	580 psi
Max Operating Pressure (PSI)	5801
Hydraulic Pump Capacity (Gal)	6 gal
Oil Capacity (Gal)	8 gal
Height	96.5"
Base	63" x 33.5"
Weight	2205 lbs.
Operation	Motor & Hand Operated

In the space provided, record the serial number, model number, and install date of the machine. This information is only found on the black and gold Dake tag shown below. If contacting Dake this information must be provided to assist in identifying the specific machine.

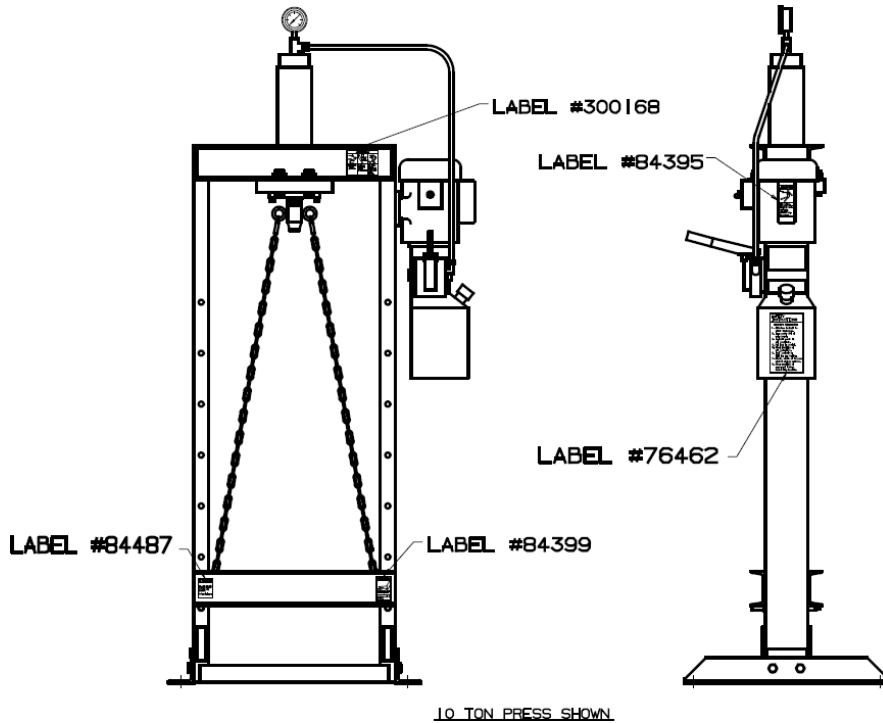


Serial No.	
Model No.	
Install Date:	

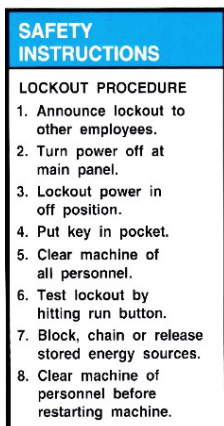
 **This is the safety alert symbol.** When you see this symbol on your press be alert to the potential for personal injury.

Employer is responsible to perform a hazard/PPE assessment before work activity.

Label Placement View



Label Part No. 300168



Label Part No.
76462



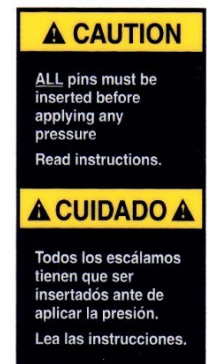
Label Part No.
84399



Label Part No.
302070



Label Part No.
84395

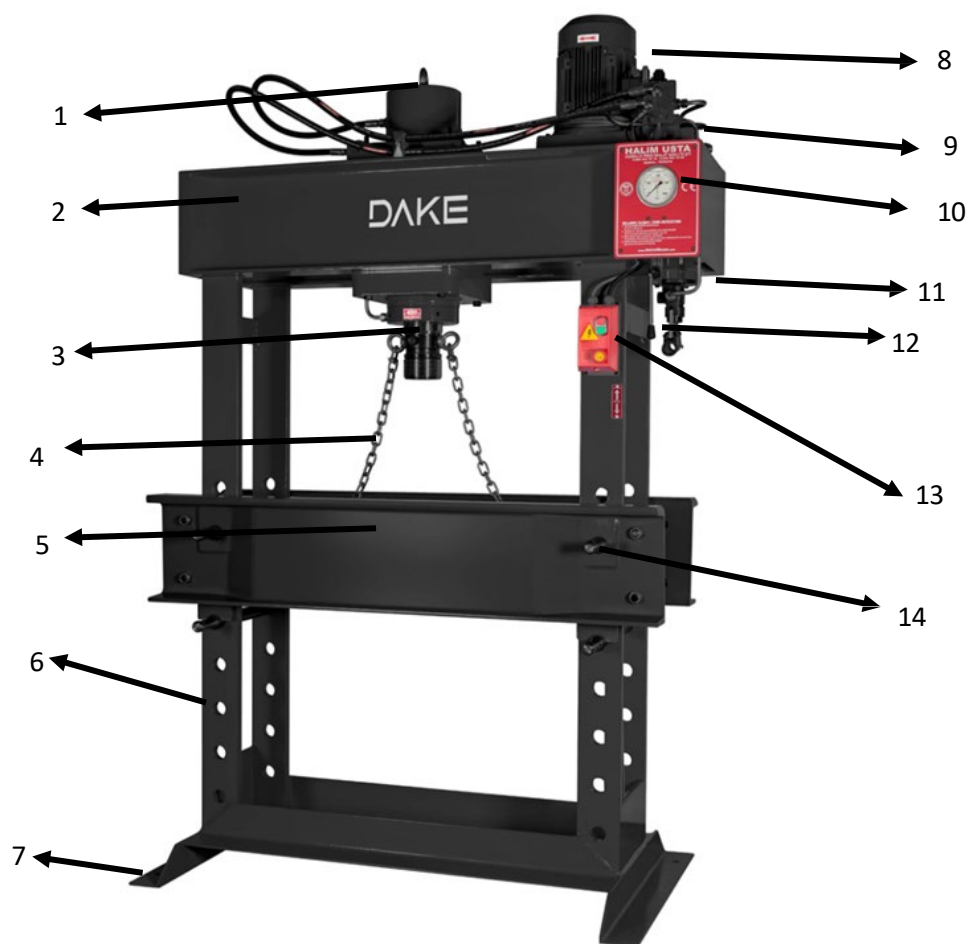


Label Part No.
84487

Follow recommended precautions and safe operating practices. It is important that the operator understand all safety instruction listed below in order to prevent damage to themselves, others, or the machine:

- Carefully read all the safety messages in this manual and on your press safety labels. Keep safety labels in good condition. Replace missing or damaged safety labels.
- Do not alter this press from its original design.
- Do not make repairs or adjustments to any hydraulic system unless you are competent or working under competent supervision.
- Only use Dake original parts.
- This machine is intended to be operated by one person. This person should be conscious of the ram movement not only for themselves but also for people in the immediate area of the machine.
- This press is not intended for pulling operations. Personal injury or machine damage can result.
- Ensure there are no thermal, vibrational, or radiational hazards when operating the press
- Avoid welding on the press table or workpiece. If unavoidable, ensure electrodes/pliers do not touch any part of the press.

MACHINE OVERVIEW

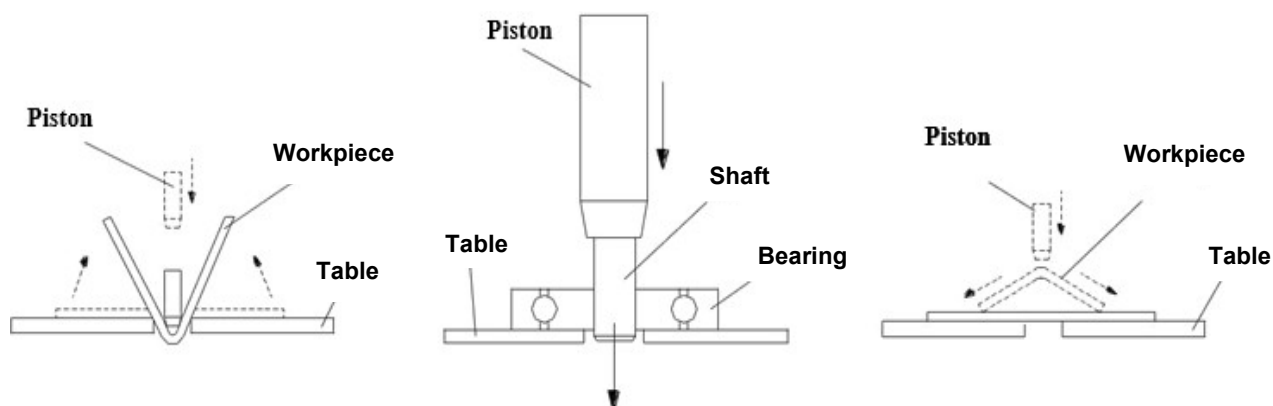


Part No	Part Name	Part No	Parts Name
1	Cylinder	8	Motor
2	Upper Plate	9	Oil Tank
3	Piston	10	Gauge
4	Table Adjusting Chain	11	Mechanic Pump Lever
5	Lower Table	12	Control Valve Hand
6	Column	13	Start-Stop
7	Stand	14	Lower Table Fixing Pin

GENERAL MACHINE INFORMATION

This press is used for bending, twisting, and straightening in workshops. It has an adjustable table and applies hydraulic pressure to the workpiece. If the motor isn't running, pressure is applied manually using a pump lever. The force depends on how much pressure is applied to the lever. Various operations can be performed with this hydraulic press.

Various operations that can be done with a hydraulic press are shown below



The hydraulic cylinder on the upper table can move left and right between the columns using movable bearings. It can press anywhere between the columns. If there's difficulty moving the piece on the lower table, the cylinder can be repositioned to complete the pressing operation. Detailed movement instructions are in the adjustment section.

SET UP

Remove any packaging that the machine was shipped in.

Moving and placing the press

- The press needs to be placed so that it has a safety perimeter of 2-1/2 feet on all sides from any other objects or machines.
- Press should be placed on level floor with base angles touching the floor at all points. Use shims where necessary.
- The press must be placed on a surface that can support the weight of the machine. The machine weighs 2205 lbs.

There are two parts welded to the upper table to help carry the press.
To move the press:

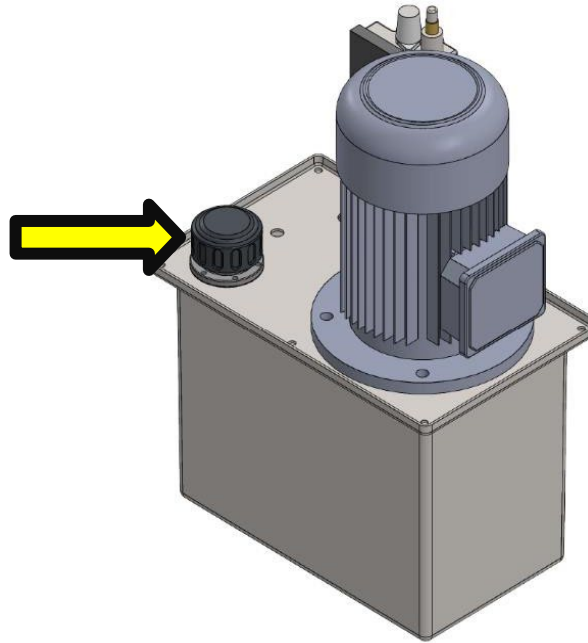
- Connect a chain or rope to the top hook, located at top arrow mark in the photo below.
 - The chain or rope needs to be strong enough to lift the press, as shown in the technical properties table. The connecting height should be at least as long as the cylinder.
- Use a forklift where the middle arrow is marked in the photo.
 - A forklift that can carry up to 6000 lbs is required. The machine weighs 2205 lbs.
 - Do not damage the machine with the forks.
- Use a pallet truck from the bottom arrow mark.
 - A pallet truck that can carry up to 6000 lbs is required. The machine weighs 2205 lbs.
- Once the machine is placed, secure the press by anchoring the bottom of the press to the ground. This is achieved by installing anchors and bolts to the bottom of the press. This will prevent the press from tipping over.



Filling the press with oil

Fill the reservoir with DTE 24 Mobil hydraulic oil or equivalent.

- a. EM-100 holds 6 gallons of oil. Make sure the oil is new and be cautious that no contaminants get in while filling the reservoir.
- b. Oil should be changed about once a year.
- c. You should be able to see the oil level and temperature on the indicator outside the tank.
- d. Never operate the press hydraulic system without oil.
- e. Remove the cover indicated by the arrow and pour in the specified oil. Check the oil level indicator on the tank and fill up to the red line.



WIRING INSTRUCTIONS

⚠ WARNING: A licensed qualified electrician that follows all state and local laws must wire and install electrics on this press.

The motor's rotation direction is indicated by an arrow on the motor. An electrician should make electrical connections based on this direction. The motor's rotation can be adjusted from the panel or the motor itself.

The panel is mounted on the front right side of the upper table of the press. Connect the input cable from the panel to the 380 V line by plugging in the earth socket.

⚠ WARNING: Machine must have a designated 30 amp drop for 110 volts. This press will not operate correctly without 30 amps.

220 Volt three Phase

The press new is shipped out as a 220-volt machine. This press will only function correctly with a 220 Volt three phase connection

OPERATION

Before first time operation

1. Make sure the reservoir is filled with 6 gallons of Mobil DTE 24 hydraulic fluid or equivalent.
2. Turn the on/off power (toggle) switch to the “on” position (up).
3. Facing the press, push the control lever forward (right). (New Configuration 2022)
 - a. Move the control lever down, this will advance the ram in the downward position.
(Classic Configuration)
4. Release the control lever and the ram will stop all movement.
5. Pull the control lever towards you (left) to retract the ram. (New Configuration 2022)
 - a. Move the control lever to the up position and the ram will move up.
(Classic Configuration)
6. When the press is new be sure to move the ram up and down to work out any air that may be in the system.
7. Place the piece on the lower table. Use guarding materials or follow safety measures to prevent pieces from flying off or breaking during loading.
8. Ensure All table shafts are fully installed.
9. Ensure the hydraulic oil is at the required level.
10. Ensure the upper movable part is securely fixed (for movable cylinder presses).
11. Ensure that the machine is grounded when plugged in.

Operating the machine

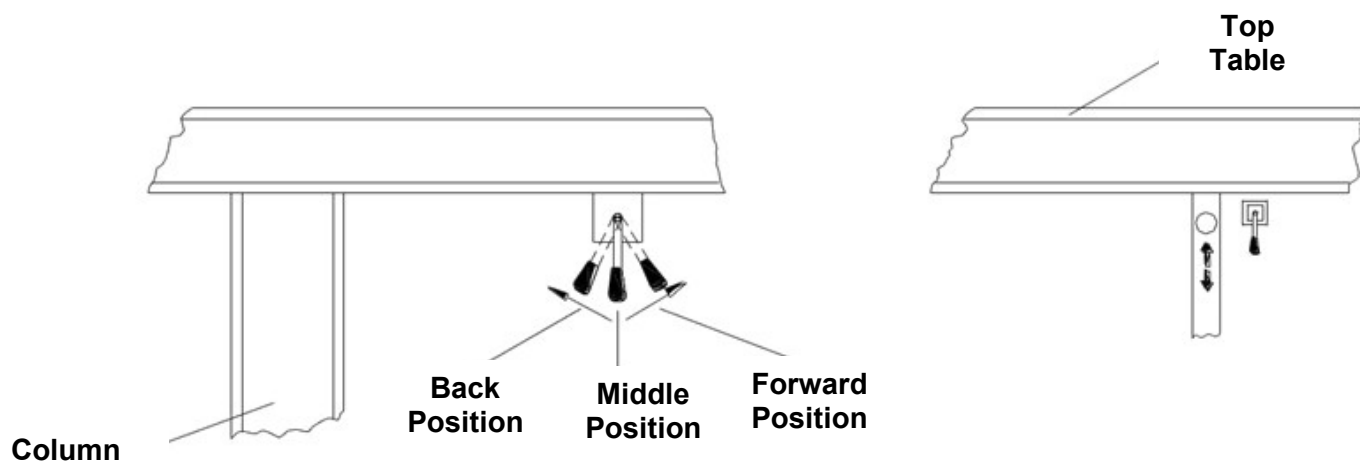
1. Start the machine by pressing the start button.
2. Pull the control lever backward to press the piece with the hydraulic cylinder. If the piece is not properly contacted, adjust its position. Ensure the cylinder's center aligns with the force application point to avoid eccentric loads and damage.
3. Our press has a relief line to prevent the piston from exceeding the preset stroke and an oil capture seal to prevent leakage. After pressing, pull the control lever backward to move the cylinder to a suitable position and carefully remove the piece.

 **WARNING: When using the control lever in pressing operations or to return the ram stop applying pressure once the handle reaches its positive stop. Applying additional force on the lever does not increase ram speed and will lead to premature damage of the valve.**

ADJUSTMENTS

Direction Valve Control

When the arm is in the middle position, hydraulic oil flows to the tank, keeping the piston rod still. Pushing the arm forward moves the cylinder down, and pulling it back moves the cylinder up.

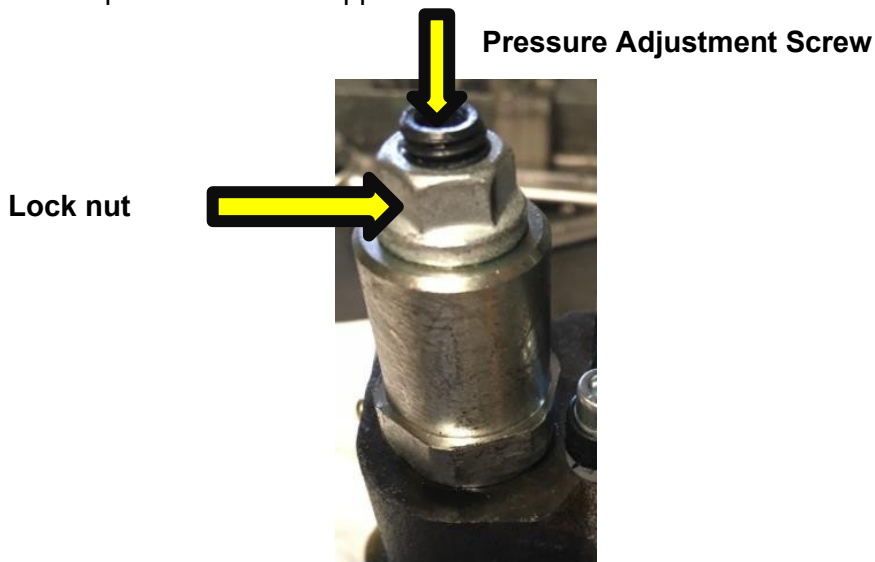


Pressure Adjusting Valve

The pressure adjusting valve is located at the upper table with the direction valve.

To adjust the pressure:

1. Remove the blunt stopper on the pressure valve.
2. Loosen the lock nut underneath.
3. Use a spanner wrench to turn the adjusting screw **clockwise to increase pressure or counterclockwise to decrease pressure.**
4. Operate the press to apply load on the piece.
5. When the required pressure is reached, fix the valve screw on the pressure gauge.
6. Tighten the lock nut and replace the blunt stopper.

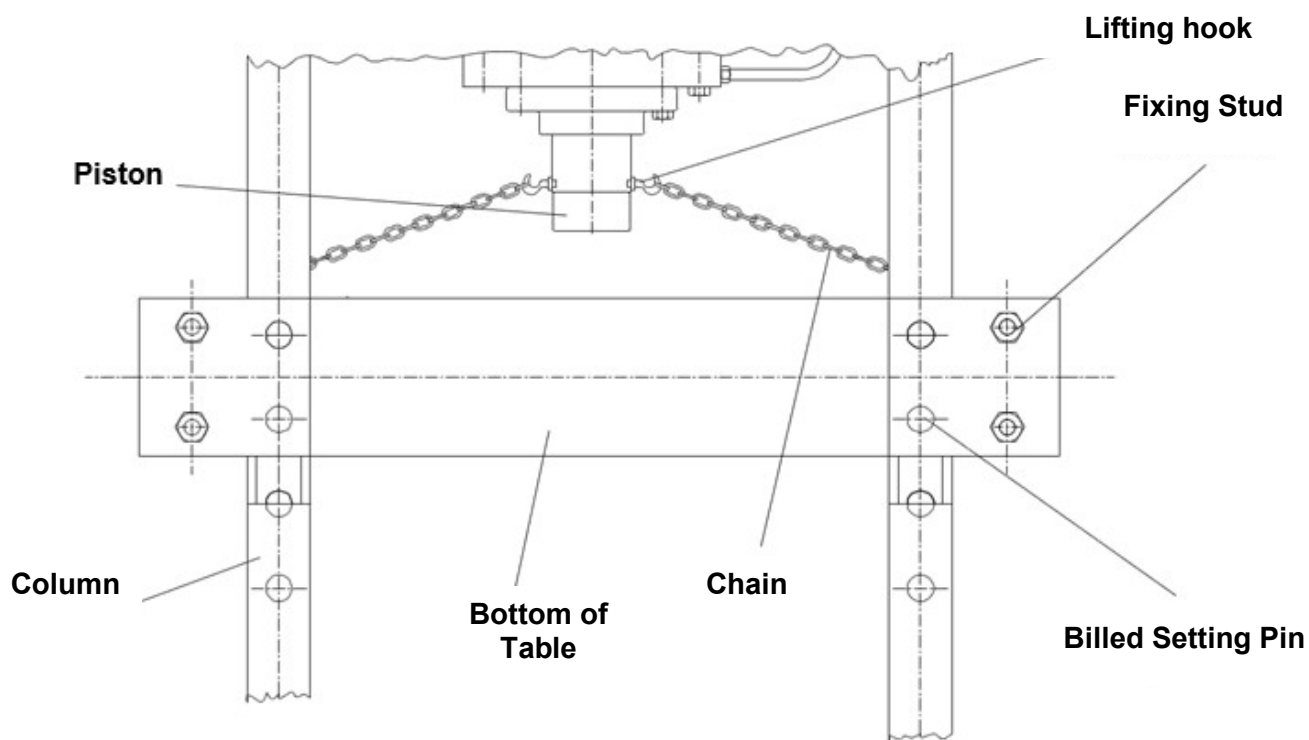


Adjusting the table

The side columns have holes for the table to move up and down, connected by shouldered adjusting pins.

To adjust the table height:

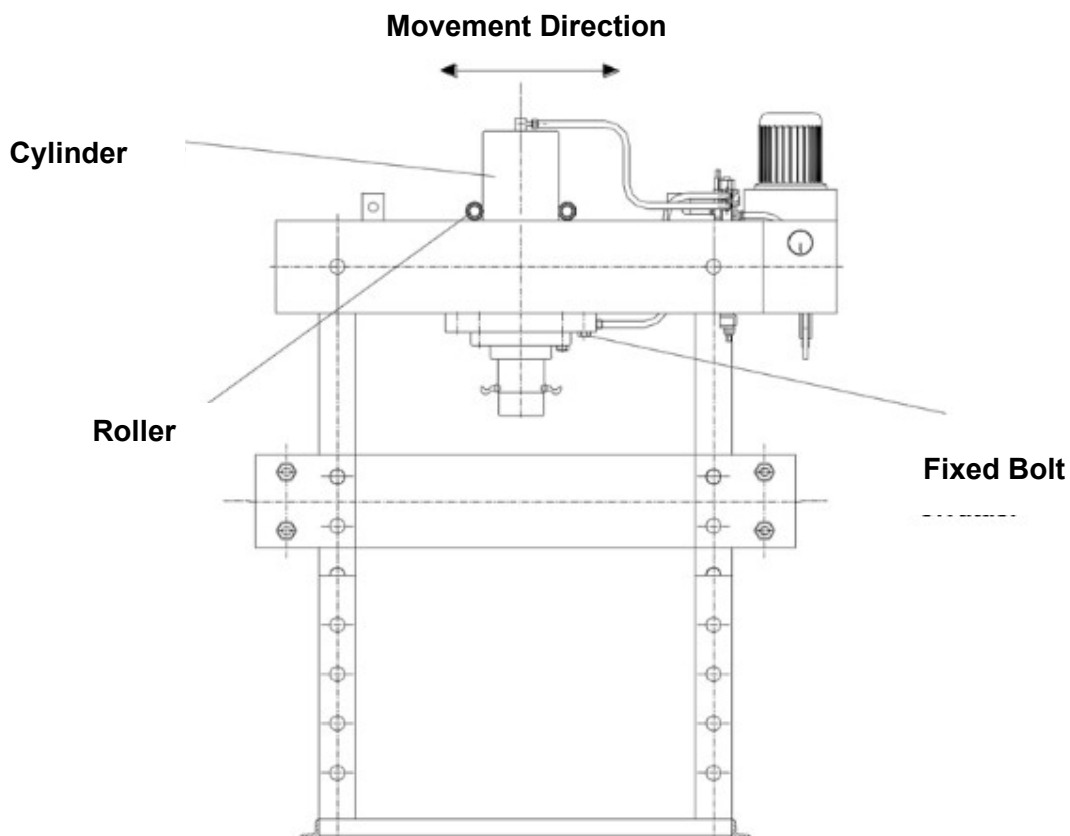
1. Attach the chain to the hooks at the end of the plunger and the fixing studs on the movable table.
2. Remove the upper parts of the shouldered pins by hand or with a slight hammering.
3. Lift the cylinder slightly, loosen and remove the other pins.
4. Move the table to the desired height using the cylinder.
5. Reinstall the pins and connections in the same order.
6. Remove the chain from the piston and table.
7. Ensure all table shafts are installed before starting work.



Adjustment of the piston

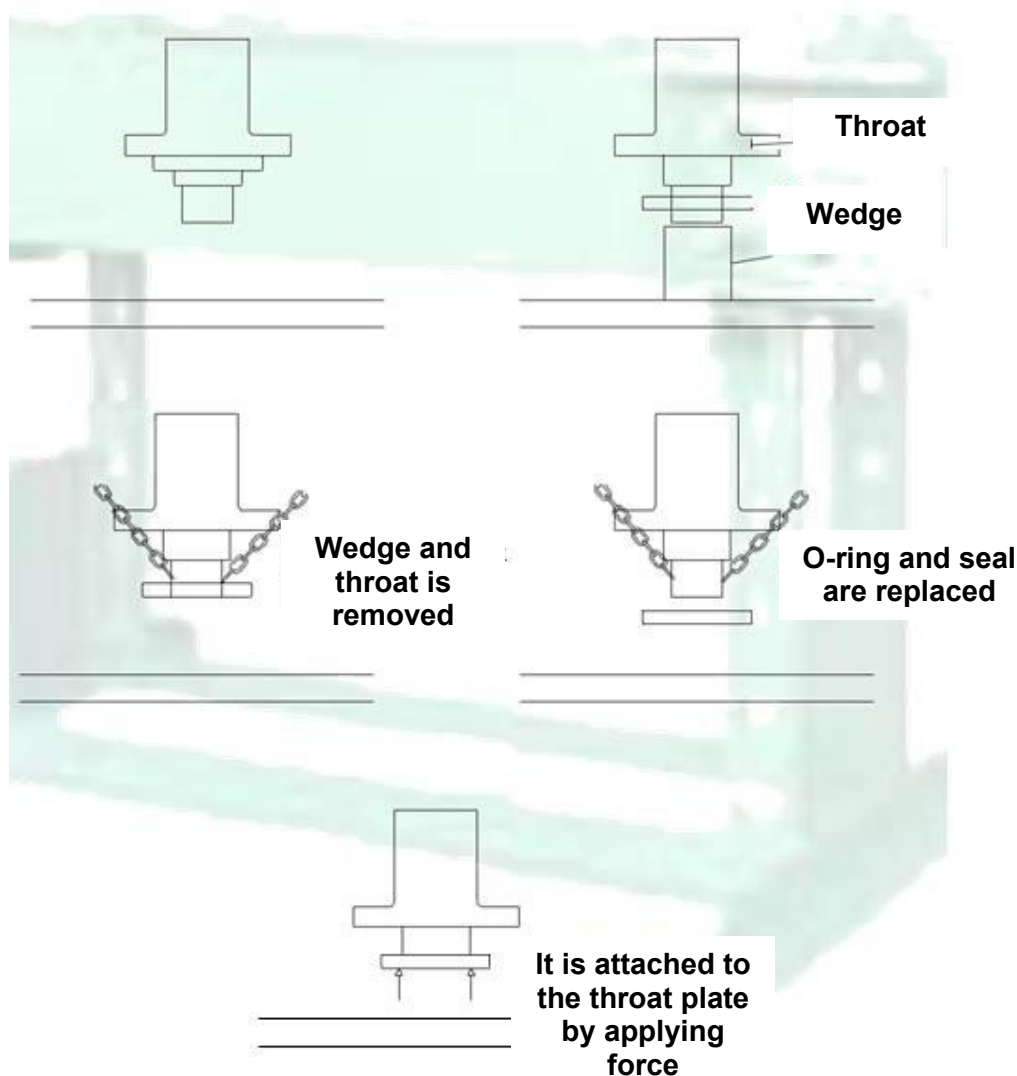
To adjust the cylinder position (left or right):

1. Remove the fixing bolts under the traveling cylinder.
2. Manually push the cylinder to the desired position.
3. Ensure the load point of the workpiece and the cylinder center align.
4. Apply load without the fastening bolts attached.



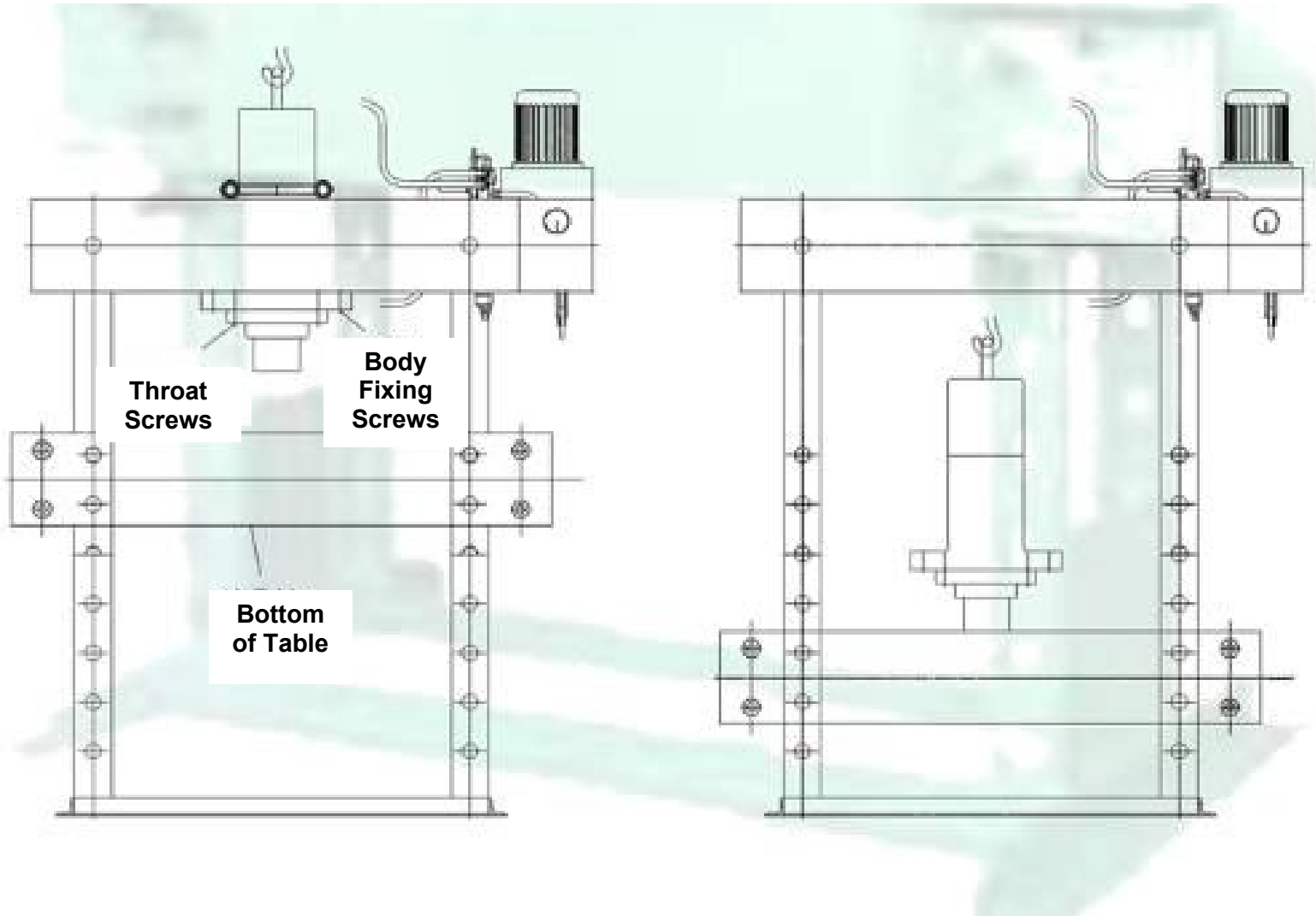
Replacing the seal and o-ring in the cylinder

1. Place a wedge on the lower plate to allow the piston to descend easily.
2. Unscrew the cover counterclockwise.
3. Remove the inlet and outlet pipes of the hydraulic system.
4. Use a lever to carefully remove the front throat from the piston.
5. Lower the piston onto the wedge with the throat.
6. Suspend the piston with a chain and remove the throat by pulling the wedge from under the piston.
7. Replace damaged O-rings and seals on the throat.
8. Reattach the throat by reversing the removal steps.



Seal Replacement on Piston

1. Suspend the cylinder group using a screw ring and a crane or lifting device.
2. Remove the body fixing screws and hydraulic inlet/outlet screws.
3. Lower the cylinder group onto the lower table, then move it to a clean place with a lifting vehicle.
4. Remove the front throat counterclockwise and separate the cap from the piston.
5. Replace the seals by removing the piston from the cylinder.
6. Reassemble the cylinder group by reversing the steps.



TROUBLESHOOTING

SYMPTOM	CAUSE	SOLUTION
Ram runs jerky while moving up and down	Air is in the system	This press has a self-bleeding system, continue to run the ram up and down approximately 15 times.
Machine will not build desired pressure	Relief valve needs to be reset	Remove octane cap from back of manifold and adjust set screw to correct pressure. WARNING: Do not exceed 5801 PSI
Pins are shearing or bending	Relief valve needs to be reset	Remove octane cap from back of manifold and adjust set screw to correct pressure. WARNING: Do not exceed 5801 PSI
Oil Leaks around the ram	Cylinder seals are worn or damaged	Replace cylinder seals
Oil leaks around holes other than the ram	Bolts need to be tightened	Tighten bolts around the ram
Ram will not extend the full 15.75 inches	Oil level is too low	Re-fill the reservoir with oil
Hydraulic gauge will not read pressure	Hydraulic gauge is bad	Replace hydraulic gauge
Motor will not start	No power to press	Double check electrical cord
Oil Leaking	Loose or damaged connection/fitting	Tighten the connection. Wrap threads with Teflon tape and then tighten the connection.
Motor overheats and shut down	Duty cycle time is exceeded	Check the duty cycle time on the motor. (Has no cooling fan, 15-20 minutes)
	Extension cord is being used	Extension cord will lower the AMPS and will cause overheating of the motor. Remove cord.

MAINTENANCE

	Daily	Weekly	Monthly	Every Three Months	Every Six Months	Yearly
Clean and remove dust/trash that is in, on, and around the press.	X					
Clean the press after every use.	X					
Remove and clean the filter					X	
Inspect any fittings or connections for damage or looseness. Repair if any are found.		X			X	
Inspect for any loose nuts. Tighten loose nuts if loose.		X				
Inspect for any loose screws. Tighten loose screws if loose.	X					
Lubricate the sliding carriage/sledge cylinder with grease					X	
Empty and clean the oil tank. Refill the oil tank after cleaning.		X				X

Lubrication

Keep all working parts of press well-oiled for easier operation. Also, keep a light film of oil over the entire surface of the ram to prevent rust

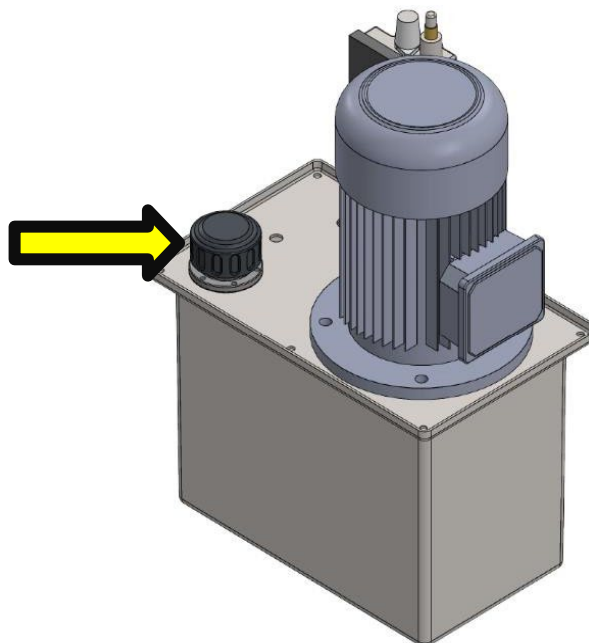
Cleaning the tank

1. Open the upper lid
2. Clean the tank and remove any accumulated dirt and sediments through the lower lid. Clean the bottom with a cloth or brush dipped in diesel.
3. Close the lower lid, fill the tank with clean oil through the upper lid, and close it. The press is now ready for operation.

Filling the press with oil

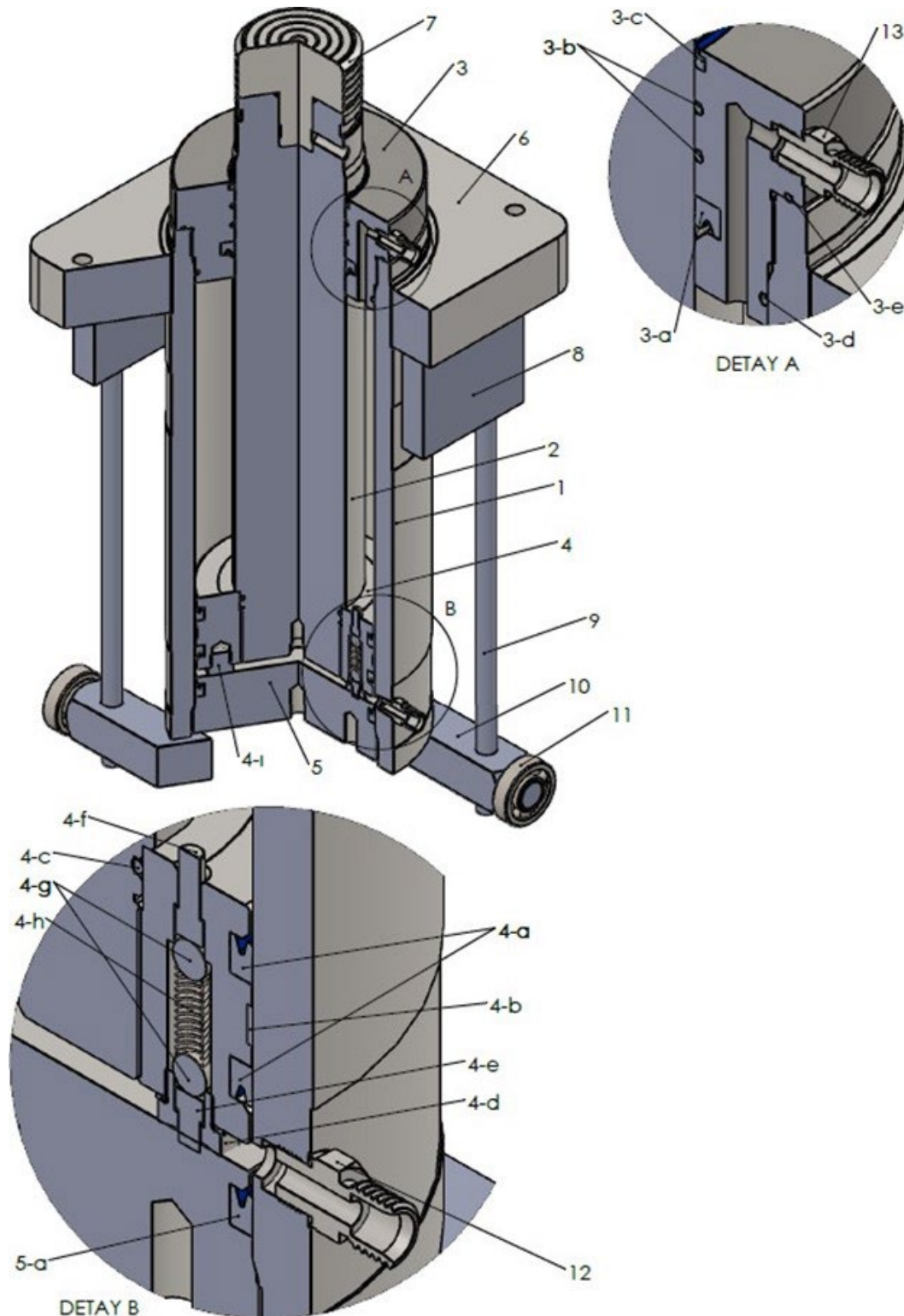
Fill the reservoir with DTE 24 Mobil hydraulic oil or equivalent.

- a. EM-100 holds 6 gallons of oil. Make sure the oil is new and be cautious that no contaminants get in while filling the reservoir.
- b. Oil should be changed about once a year.
- c. You should be able to see the oil level and temperature on the indicator outside the tank.
- d. Never operate the press hydraulic system without oil.
- e. Remove the cover indicated by the arrow and pour in the specified oil. Check the oil level indicator on the tank and fill up to the red line.



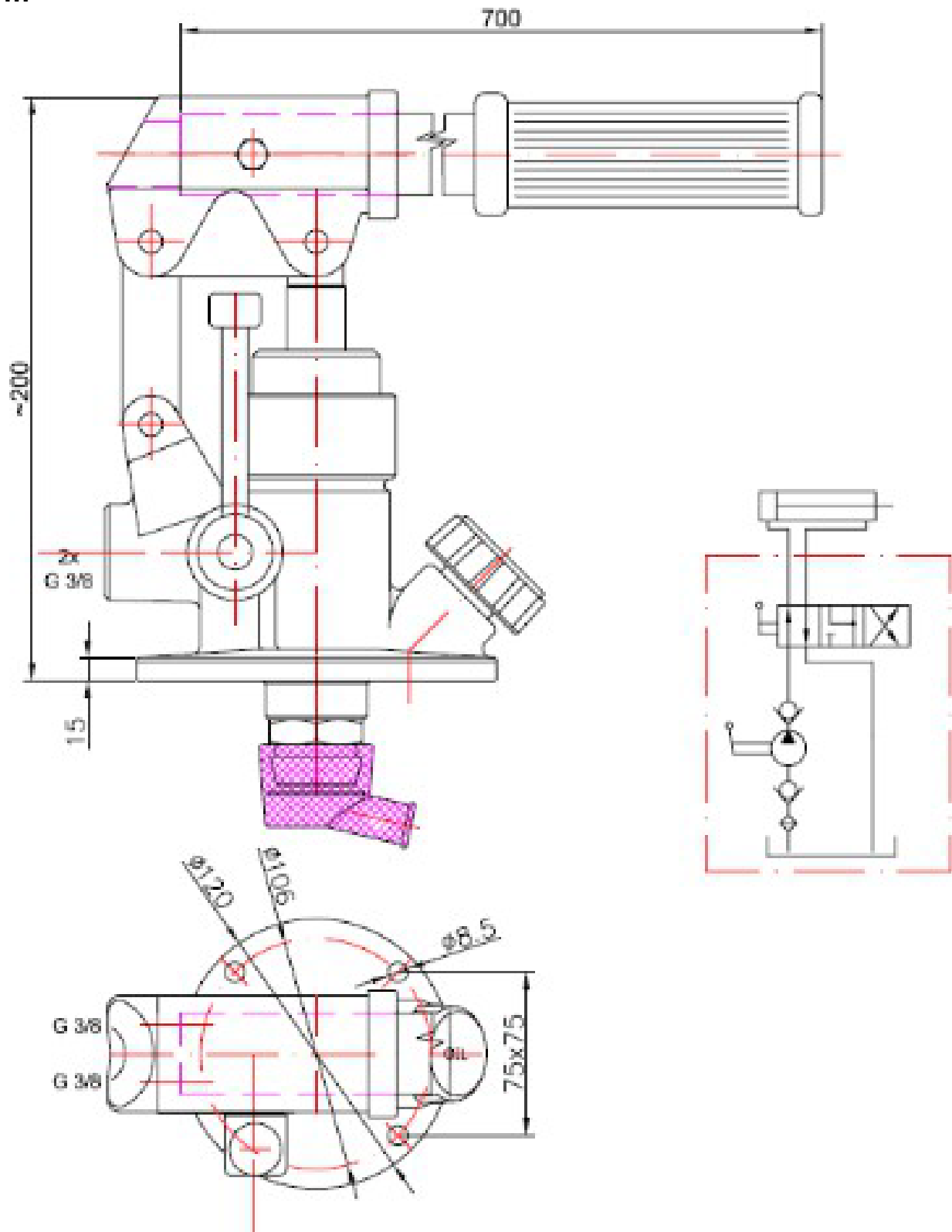
EXPLODED VIEWS & PARTS LISTS

Piston

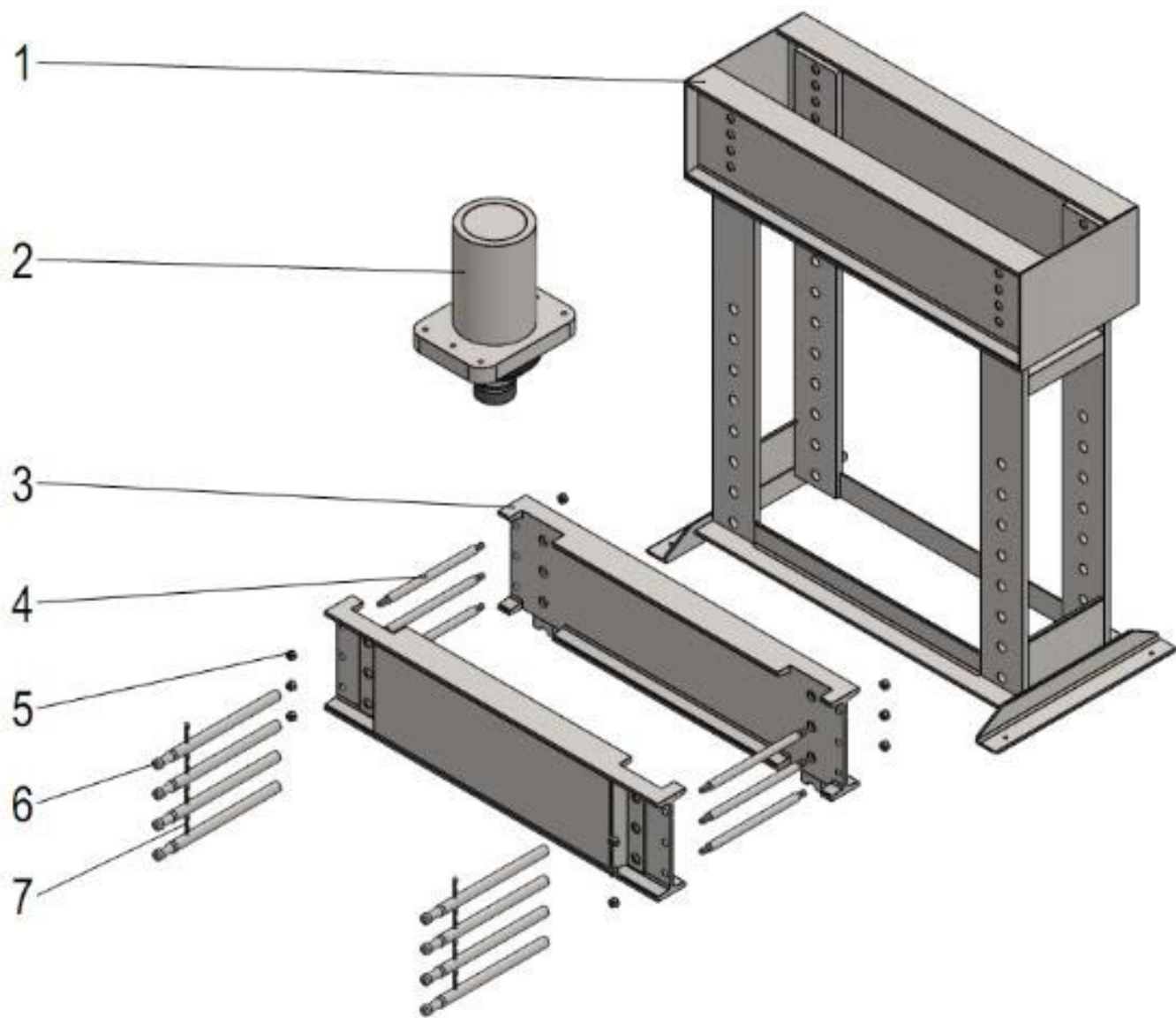


ATP CYLINDER PART LIST		
PART NO	PART NAME	QUANTITY
1	BOOT	1
2	ROT	1
3	FRONT THROAT	1
3-a	FRONT THROAT NBR NUTRING SEALING	1
3-b	FRONT THROAT INSIDE O-RING	2
3-c	FRONT THROAT DUST SEALING	1
3-d	FRONT THROAT OUT DIAMETER O-RING	1
3-e	FRONT THROAT OUT SURFACE O-RING	1
4	PISTON	1
4-a	PISTON PU NUTRING SEAL	2
4-b	PISTON BEARING UNIT	1
4-c	PISTON INSIDE O-RING	1
4-d	PISTON UNLOADING STOPPER	1
4-e	PISTON UNLOADING OF SHORT PIM	1
4-f	PISTON UNLOADING OF LONG PIM	1
4-g	PISTON UNLOADING BALL	2
4-h	PISTON UNLOADING SPRING	1
4-i	PISTON SUPPORTER STOPPER	2
5	REAR COVER	1
5-a	REAR COVER PU NUTRING SEALING	1
6	FLANGE	1
7	TAPE	1
8	SUPPORTER	2
9	MOVABLE THREADED ROD	4
10	SQUARE BAR	2
11	MOVABLE BEARING	4
12	PRESSURE LINE COUPLING	1
13	RETURN LINE COUPLING	1

Arm

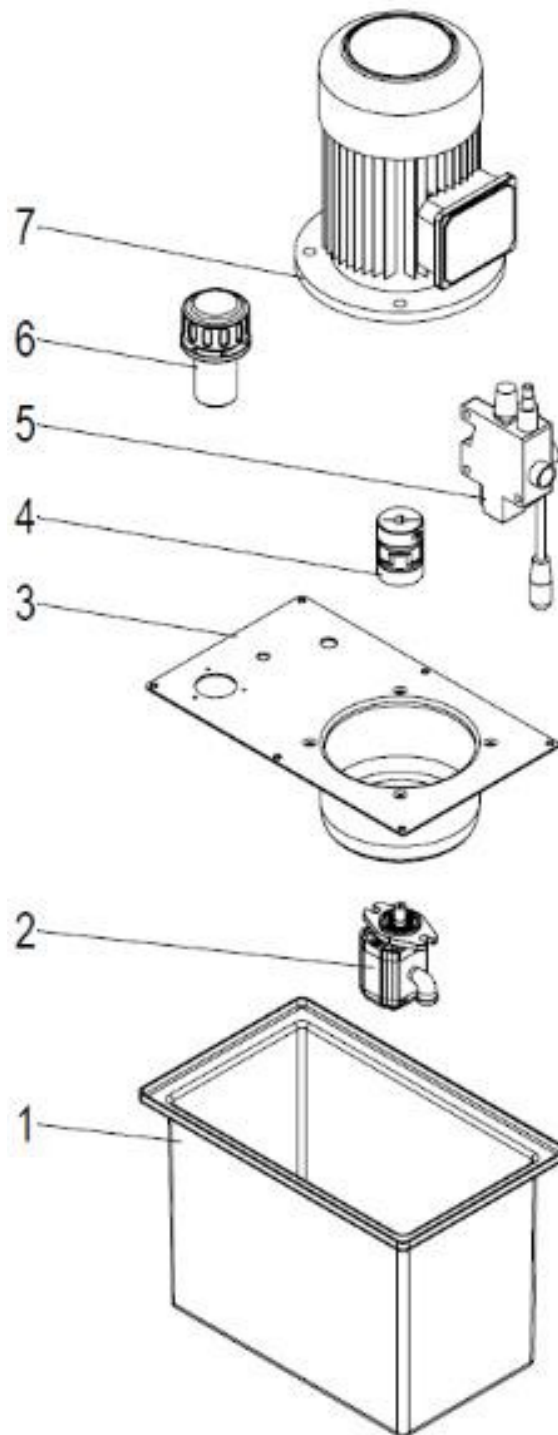


Chassis



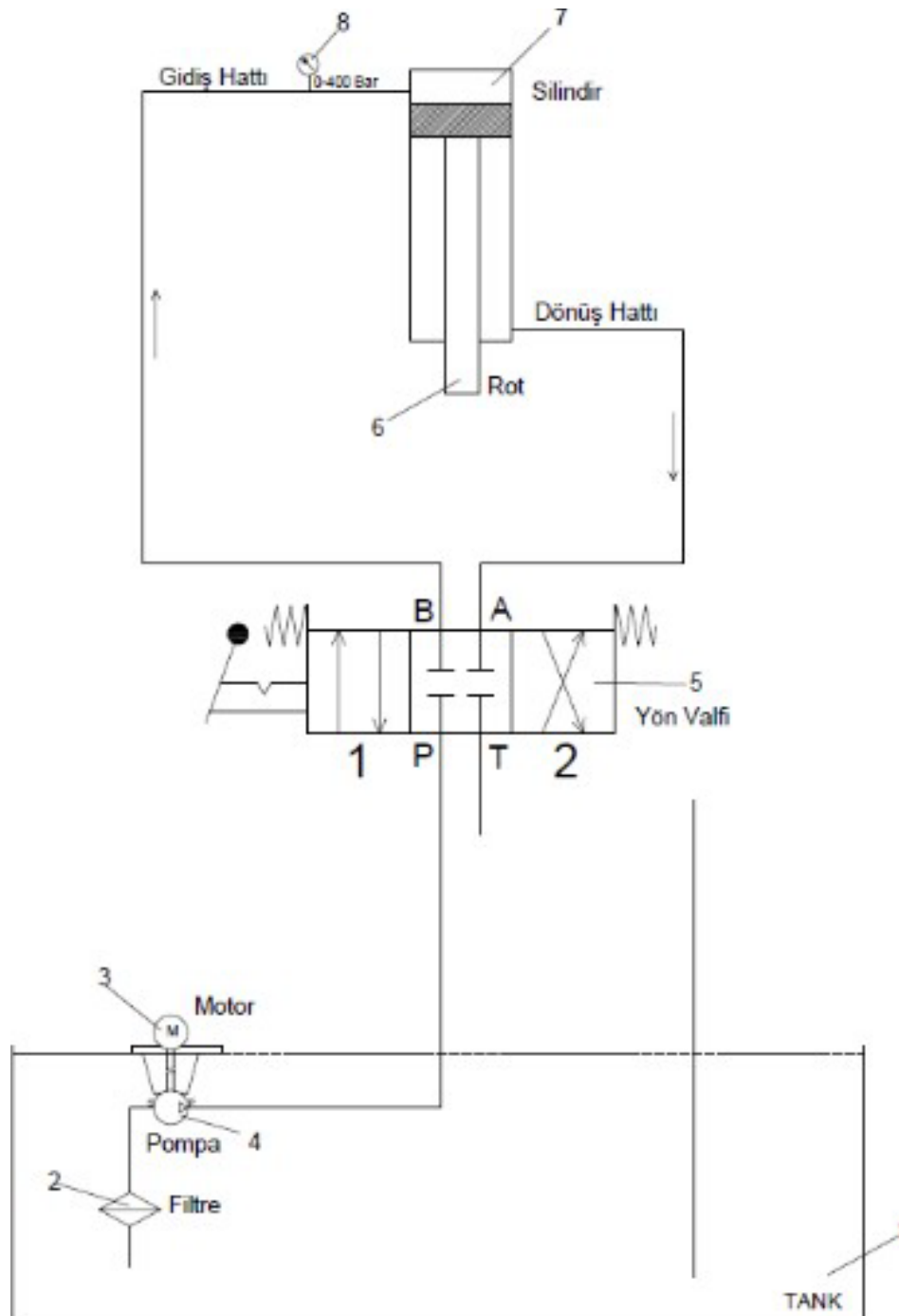
PART NO	PART NAME
1	CHASSIS
2	CYLINDER
3	BOTTOM CLAMP
4	GAP SHATF(MILE)
5	NYLOC NUT
6	LAMP SHAFT(MILE)
7	PIN

Motor



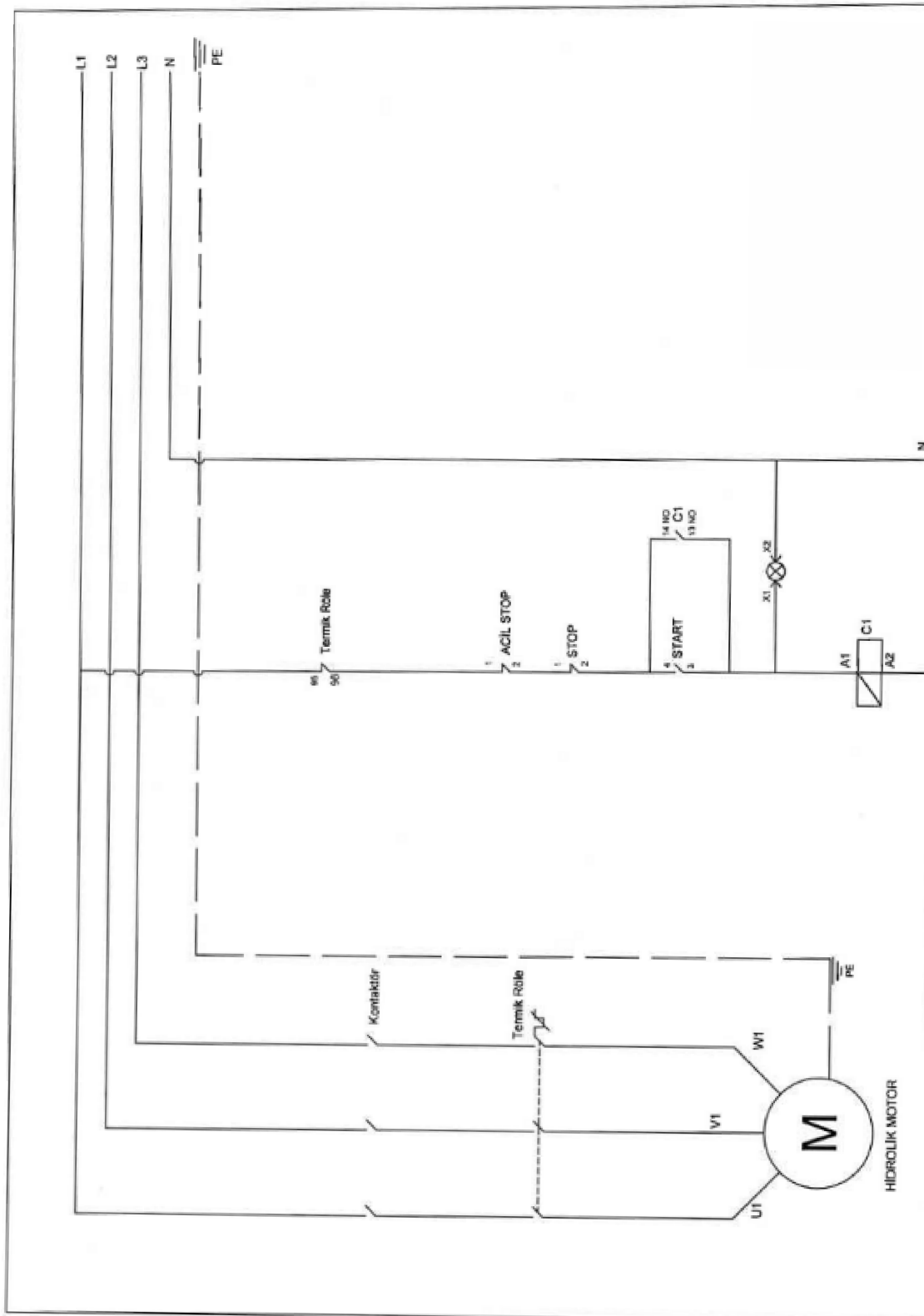
PART NO	PART NAME
1	OIL TANK
2	PUMP
3	UPPER CAP OF OIL TANK
4	COUPLING
5	LEVER HAND
6	TANK CAP
7	MOTOR

HYDRAULIC SCHEMATIC



PART NO	PART NAME
1	TANK
2	FILTER
3	MOTOR
4	PUMP
5	DIRECTION VALVE
6	ROT
7	CYLINDER
8	MANOMETER

ELECTRICAL SCHEMATIC



PART NO	PART NAME
1	THERMIC RELAY
2	CONTACTOR
3	AUTOMAT
4	STOP BUTON
5	START BUTON
6	EMERGENCY STOP BUTTON

Please contact factory for current prices.

ORDERING INFORMATION

Parts are available for direct purchase from Dake or through a distributor. When placing a parts order, you will need to provide the part number, name of part, and model number. All parts shipped F.O.B. Factory in Grand Haven, MI.