



## DAKE 3-PHASE DURA PRESS

# Models: Force 40, 70, 100

### INSTRUCTIONAL MANUAL



\*Force 40 shown. May be slight differences\*

### WARNING!

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

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Phone: 800.937.3253

[www.dakecorp.com](http://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](mailto: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](mailto: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

## Specifications

Model	Force 40	Force 70	Force 100
Number	972003	972004	972005-2
Capacity	40 tons	70 tons	100 tons
Horsepower	2	2	3
Voltage	220V/440V, 3-Phase	220V/440V, 3-Phase	220V/440V, 3-Phase
Width between uprights	35"	35"	41"
Width between table channels	8"	8"	10"
Min. ram to table	7"	7-1/4"	7-7/8"
Max. ram to table	32"	32"	35"
Ram Travel	19"	19"	19"
Height	88"	88"	90"
Base	63" x 37"	63" x 27"	75" x 33"
Weight	1,210 lbs	1,595 lbs	2,950 lbs
Ram advance speed	68 ipm	42 ipm	52 ipm
Pressing speed	7 ipm	4 ipm	3 ipm

In the space provided record the serial number and model number 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:	

## SAFETY



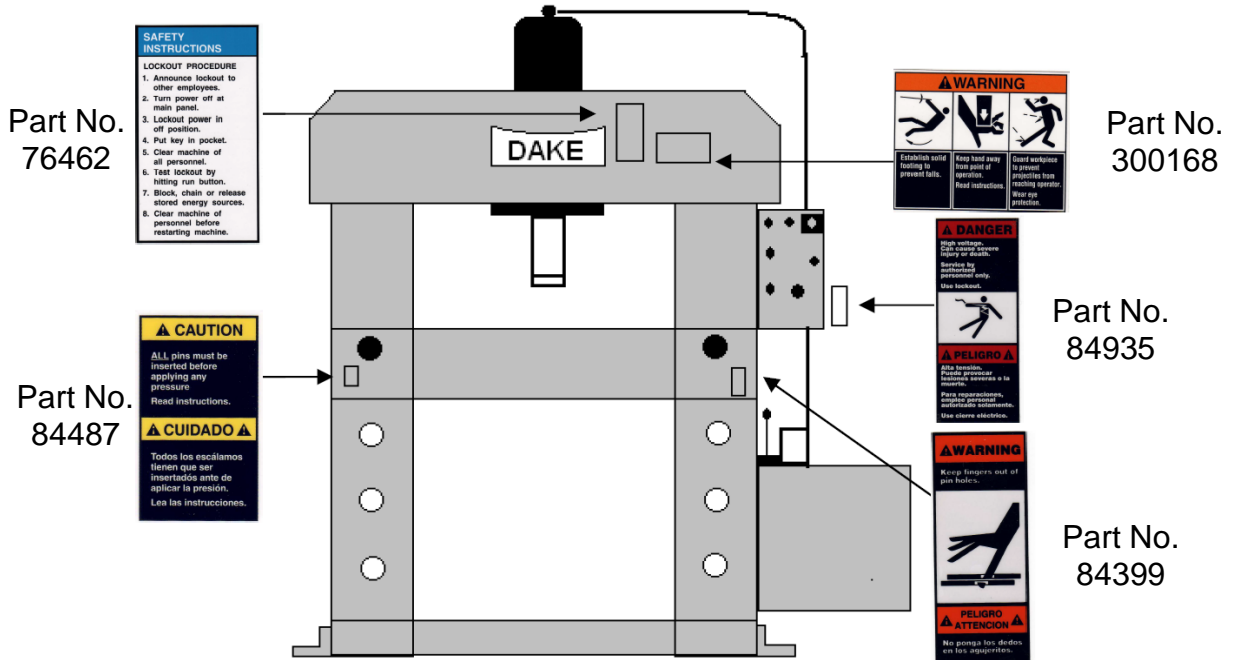
**This is the safety alert symbol.** When you see this symbol on your press be alert to the potential for personal injury.

- Keeps safety labels in good condition and replace missing or damaged labels. If labels are needed send a request to Dake.

**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.**

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

### Label Location:





## **Additional Warnings:**

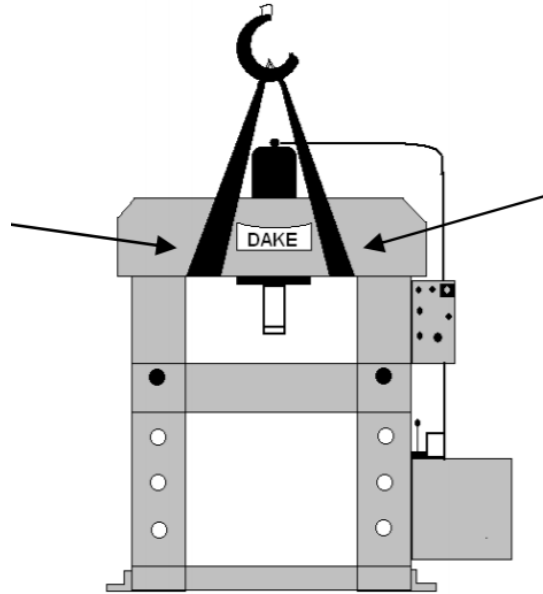
- Operator must never place hands in the area of the ram during pressing operations.
- Do not use the press for pulling
- A machine not subject to maintenance and periodical structural inspection is a danger for the operator and all persons working nearby.
- It is forbidden to tamper with, modify, or elaborate parts of the machine that alter its regular operation.
- During the phases of maintenance requiring guards to be removed the machine must be locked out according to local and state laws. Guards must be replaced after maintenance is complete.
- This press is designed for one operator.
- All work requiring the piece to be pressed to be supported by the operator is forbidden.
- It is forbidden to press pieces whose dimensions or physical nature may explode or produce splinters.

## **SET UP**

### *Handling & Transport*

- Total weight of the press plus packing materials is shown on the adhesive tabs places on the packing and on the accompanying documents.
- Loading and unloading is to be done with lifting straps.
- Ensure the machines weight is not over the maximum capacity of the straps and that the straps are in good condition.
- It is forbidden for things and/or persons to stand close to the machine, loading area, unloading area, and means of transport during the loading and unloading operations.
- Do not make any sudden movements with the transportation device with the press lifted.
- Pay close attention during all handling processes that the press, in particular the hydraulic power unit does not receive damage.
- Observe the in-house provisions concerning lifting and handling.
- It is forbidden to approach or pass under the press while it is lifted.

- Before handling the machine, it is necessary to use special lifting equipment whose maximum lifting capacity is greater than the weight of the press. Press weight can be found in the “Specifications” section of this manual.
- Lifting straps must be positioned as shown below.



The manufacturer is not responsible for damage to the machine while loading or unloading the press.

### Placement

- Simple precautions are necessary for correctly positioning the press, always consider the safety aspect not only in relation to the work carried out with the press but also to the dangers originated by another machine in the workplace.
- Do not position on unstable or unlevel floor.
- The press needs to have 36” of clearance on the sides and 42” of clearance in the front and back.

## Electrical Connection

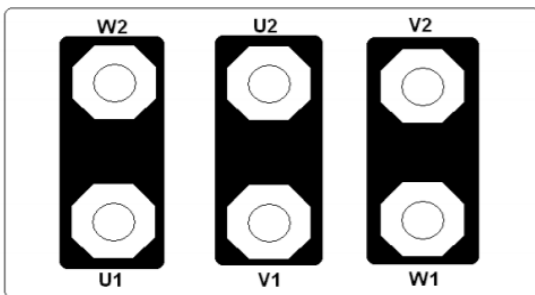
**⚠️ Only a certified electrician that follows local and state laws is authorized to perform any type of electrical connection on this press. The electrical power supply voltage must be made in compliance with local and state laws.**

- This machine is dual voltage 220V 3-phase / 440V 3-phase. The amp rating for voltages are in the table below.

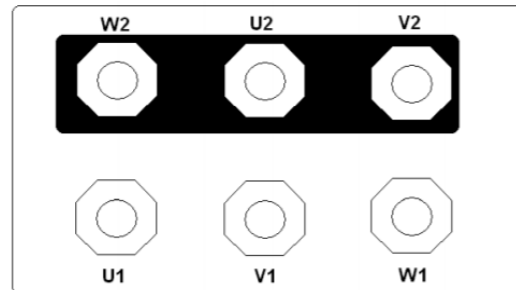
Voltage	Amp Rating
220V, 3-phase	6.8 amps
440V, 3-phase	3.4 amps

- For proper operation it is necessary to ensure constant voltage and must not exceed or be lower than 5% of the rated value.
- Before making any electrical connections, confirm the voltage rating of the machine. There is a black plastic box mounted on top of the reservoir with the rated value.
- **⚠️ Be sure there is no power to the machine before checking the following connections. It may be necessary to lock out the machine for proper power disconnection.**
- Remove the two mounting screws that hold this box in place. Under this box you will see one of the following possibilities shown below. After confirming or changing the voltage to the correct voltage mount the cover with the two screws. Now open the electrical panel on the transformer to check if it is set to the correct output voltage.
- Any damage caused by a faulty electrical connection is not cover by warranty.

220V Connection



440V Connection



### Filling the Pump Unit

To fill the pumping unit, use exclusively the oils indicated in the table or equivalent. The environmental conditions must be considered before purchasing oil. To transfer the oil from the container to the tank use an external filler to prevent the introduction of foreign material or liquids at the time of filling.

Amount of oil for each press:

40 Ton	10.5 Gallons
70 Ton	10.5 Gallons
100 Ton	15.5 Gallons

### Pump Rotation

After making the electrical connections to the press it is necessary to make a visual check on the direction of rotation of the electric motor.

Before checking the direction of the rotation of the pump, fill the reservoir with oil.

1. Unscrew the inspection cap.
2. Identify a reference point on the drive shaft.
3. Power up the motor for a maximum of 1-2 seconds.
4. Check that the rotation of the shaft in moving in the clockwise direction.
  - a. If the motor rotates in the wrong direction contact your electrician.
5. Screw down inspection cap.

### Worktable Height Adjustment

To optimize use of the press it is necessary to set the worktable to a different height in relation to the operation to be carried out on the press.

Before lifting the mobile table first check that:

- The eyebolts fixed to the worktable are fully tightened.
- The eyebolt support (nose piece) is properly screws onto the cylinder ram.
- The eyebolts fixed to the nose piece are fully tightened.

1. Hook chains to the respective eyebolts and lift the cylinder ram until the chains are set under tension but, **do not lift the table**.
2. Check all chain connections to eyebolts to ensure a safe secure connection.
3. If secure, lift the table just above the desired table height.
4. Take the split pins off and then remove the table pins.
5. Insert the table pins to the desired work table height pin location then insert the split pins.
6. Slowly move the table down until it rests on the table pins.
7. Check to ensure the position and assembly of the pins are correct.
8. Unhook chains and leave them to hang in the downwards position.

## Priming the Pump

Before starting the machine for the first time it is necessary to prime the pump.

1. Check that all the valves and distributors are in the rest position.
2. Jog the start button (electric motor), when the unit emits a dull sound with no jumps and the sound of the pump is constant.
3. If the sound is uneven or bubbly there is air in the pump still. Repeat step 2 if this occurs.
4. The oil in the reservoir may fall on startup due to:
  - a. Absorption of volume by the cylinder.
  - b. Absorption of volume by the pumping unit.
  - c. Discharge of air bubbles remaining in the piping.
5. It may be necessary to top off the level of the oil to bring it back to the correct height. By checking the level gauge, the level should be about half way up the gauge.

## OPERATION

- Before starting any operations, make sure there are no other people in the immediate vicinity of the area.

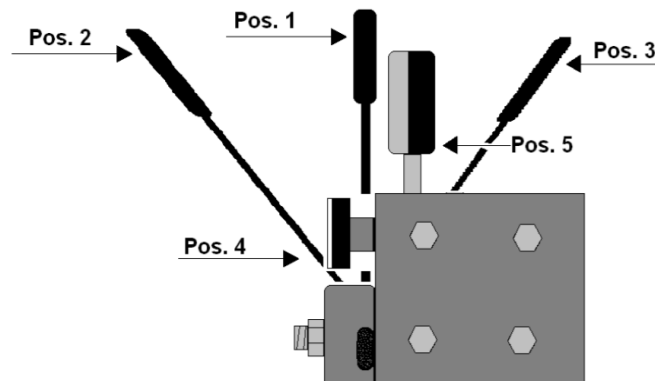
**⚠ It is strictly forbidden to pass under the worktable.**

To operate the cylinder activate the master switch and then operate the distributor level.

- Pulling the lever towards the operator (Pos. 2) will lower the ram.
- Pushing the lever all the way away from the operator (Pos. 3) will raise the ram.
- Releasing the lever will return it to natural position (Pos. 1) and stop the ram's movement.

With the hand wheel positioned on the side of the distributors (Pos. 4) it is possible to adjust the operating pressure continually and therefor the pressing force of the cylinder. The pressure gauge (Pos. 5) displays the pressure during working phases.

Adjustment of the maximum pressure must be increased gradually from a lower pressure until the necessary capacity is reached to perform the operation at hand.



### Operating Temperature

After the machine has been operating at full rate check that the oil temperature does not exceed 140°F. If it does exceed 140°F check that the oil used is not too viscous and replace with more suitable oil if this is the case.

## **MAINTENANCE**

**Routine maintenance operation must be carried out by authorized and trained personnel.**

**All maintenance or cleaning operations must be done with the machine properly locked out in accordance with OSHA regulations.**

- Below is a table the normal times for maintenance work. In addition the work area and press needs to be cleaned and cleared of material.

Operating Hours	Check oil filter	Check oil	Change oil	Change oil filter	Change air filter
50	X				
100				X	
300	X	X			
500				X	X
1000		X		X	X
1500	X			X	X
2000			X	X	X

### Changing Oil

The oil will need to be routinely changed every 2000 operating hours or at least once a year. Empty the until tank be arranging a container of adequate capacity to contain the quantity of old oil being removed under the drainage plug at the bottom of the tank.

**Remember to tighten the plug before refilling the tank with new clean, filtered oil.**

Press Model	Oil required
40 ton	10.5 gallons
70 ton	10.5 gallons
100 ton	15.5 gallons
150 ton	22.5 gallons

Disposing of the oil will have to be done in conformity with local and state laws along with OSHA regulations. Hydraulic oil is considered a special waste.

### Filters

The filter must be frequently replaced during the first period of operating the press and them at regular intervals of time to be defined according to the conditions of use and the environment where the machine is located. After that replacement is needed every 500-600 hours.

## TROUBLESHOOTING

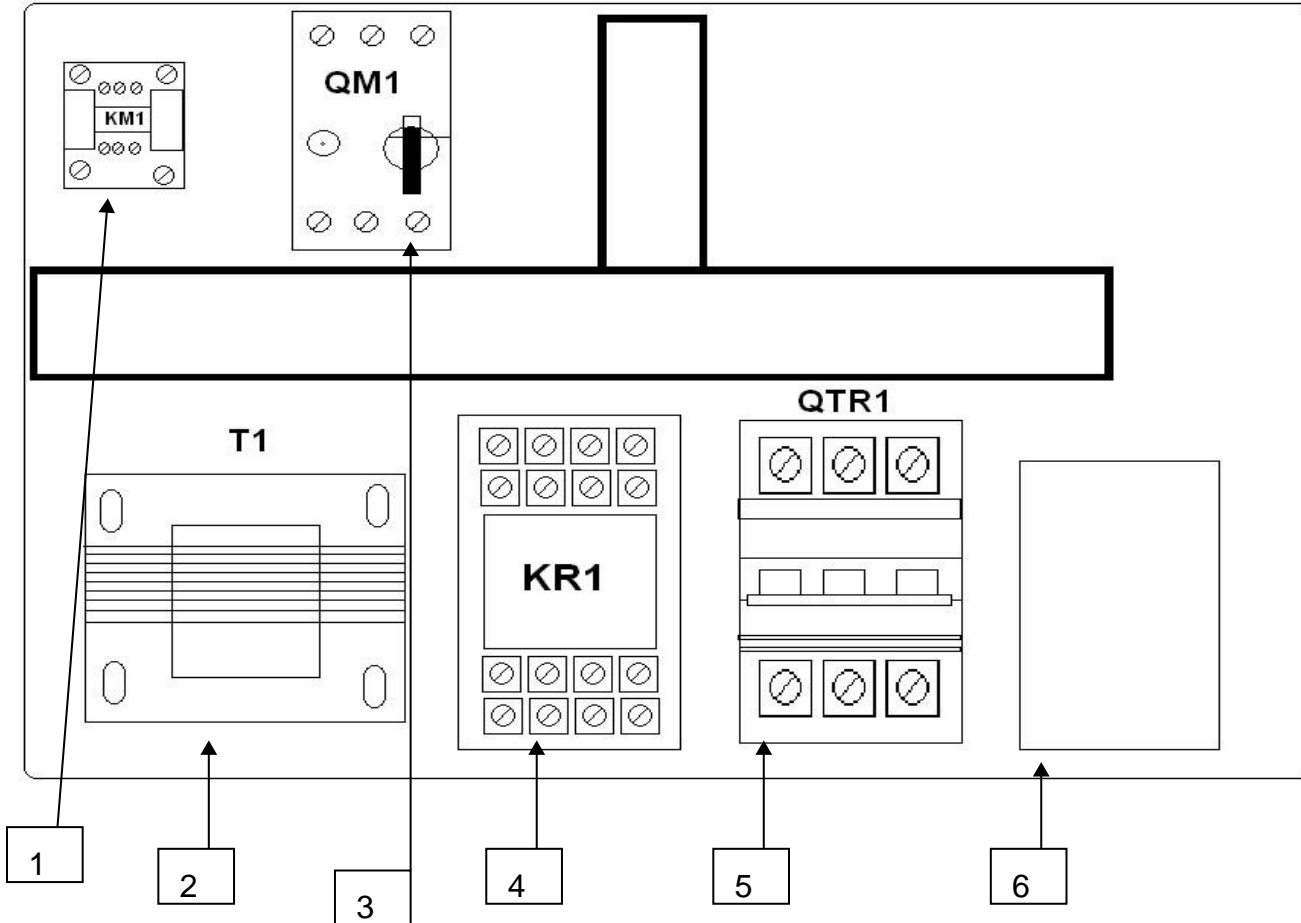
<u>SYMPTOM</u>	<u>CAUSE</u>	<u>SOLUTION</u>
Cylinder moves slow	Air in pump	Bleed the air
	Air in circuit	Bleed the air
	Damaged cylinder gaskets	Replace cylinder gaskets
	Damaged or worn pump	Replace pump
	Sequence valve jammed	Recondition sequence valve
	Delivery oil line is choked or clogged	Check hydraulic lines
Piston will not move	Electric motor will not turn	Check motor
	Piston gaskets are completely damaged	Replace piston gasket
	Blocked distributor	Recondition distributor
	Damaged pump	Recondition or replace pump
Cylinder leaks oil	Head gaskets are damaged or worn	Replace head gaskets
Piston ram will not build pressure	Lack of pressure from pump	Recondition pump
	Pressure control valve is set low	Reset valve appropriately
Pump cavitation	Filter suction is clogged	Clean or replace
	Oil is too viscous	Empty and refill with more suitable oil
Foam forms in the hydraulic fluid	Oil level is too low	Fill oil back up to correct level
	Oil is unsuitable for the press	Replace with suitable oil
	Fittings or joints letting air in	Tighten or replace fittings
	Air is being discharged into circuit	Discharge air from system
Pumps deliver little or no oil	Pump is worn or damaged	Recondition or replace
Pump will not turn	Pump joint is undone or damaged	Check and/or replace
Unstable valves	Valve seat damage	Recondition or replace
	Pressure not constant	Check pump or pressure relief valve

<b><u>SYMPTOM</u></b>	<b><u>CAUSE</u></b>	<b><u>SOLUTION</u></b>
Valve parts jammed	Dirty hydraulic oil	Drain oil from system and replace with new filtered oil
Piston moves irregularly	Lack of pressure from pump	Recondition pump
	Pressure adjustment valve is set low	Reset valve appropriately
	Translating cylinder is damaged	Check and/or recondition
	Translating wheels or guides are dirty or blocked	Clean and/or replace parts
Excessive wear on parts	Oil containing abrasives	Drain and replace oil
	Insufficient lubrication	Drain and replace with higher quality oil
	Too high of operating pressure	Lower the setting of the pressure relief valve
	Contaminants in oil not caught by filter	Insufficient filtering. Replace oil and filter



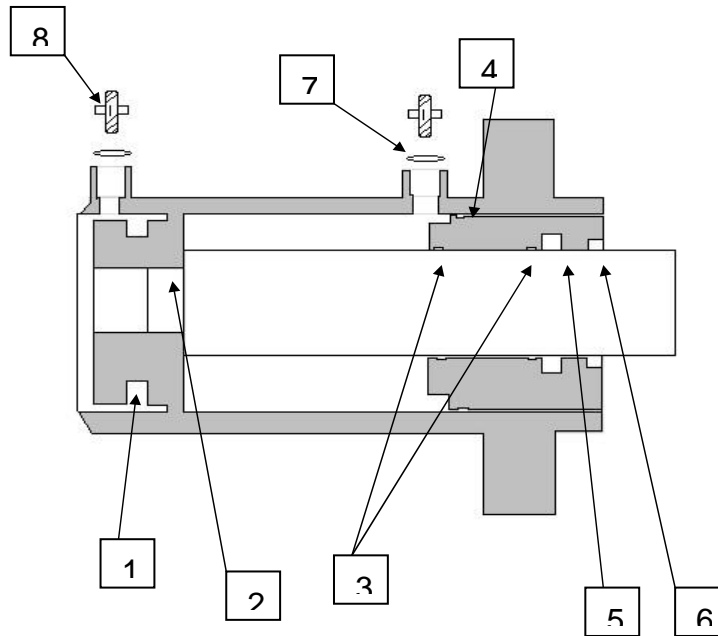
## PARTS LIST

### Electrical Box Components:



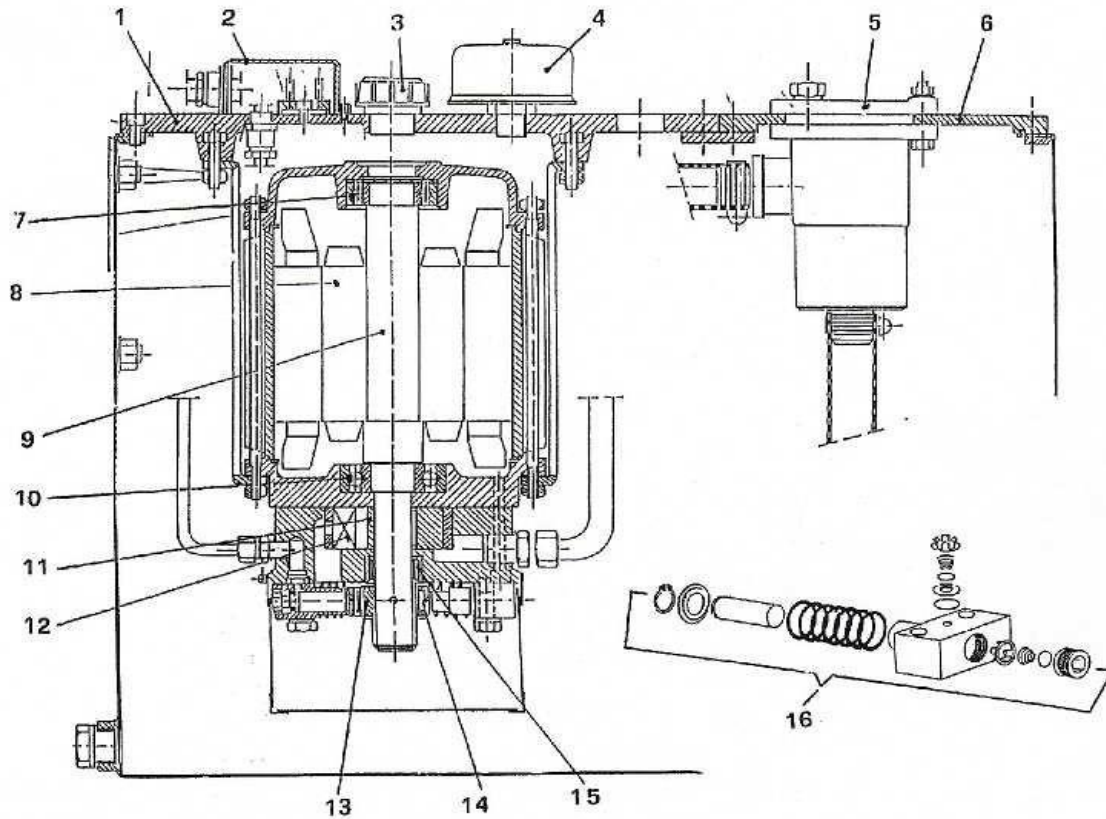
<u>Item</u>	<u>Description</u>	<u>40 Ton</u>	<u>70 Ton</u>	<u>100 Ton</u>
1	Contactors			
2	Transformer	300842	300842	300842
3	Overload 220-volt	302187	302187	302187
3	Overload 440-volt	302189	302189	302188
3A3	N.O. Contact Block	302192	302192	302192
4	Relay	7230000	7230000	7230000
5	Fuse Block	300843	300843	300843
5B	Fuse 2 Amp	77523	77523	77523
6	Terminal Block Ground			
6A	Terminal Block Black			
	On-Off Switch Body	302728	302728	302728

Cylinder:



<u>Item</u>	<u>Description</u>	<u>40 Ton</u>	<u>70 Ton</u>	<u>100 Ton</u>
1	Piston Gasket	300609	301195	301189
2	Piston O-Ring	300610	301196	301186
3	Head Guide Ring	300647	301197	301187
4	Head O-Ring	300648	301198	301188
5	Head Gasket	300649	301199	301185
6	Head Scraper	300650	301200	301184
7	Washer			
8	Hose Fitting (Top)	300890	300890	300890
8A	Hose Fitting (Bottom)	301390	301390	301390
	Gauge	301721	301720	301719
	Gauge Adapter	301813	301813	301813
	Hydraulic Hose A	300383	300383	
	Hydraulic Hose B	300382	300382	
	Eye Bolt	301880	301880	301880
	Nose Piece Bolt	300793	300793	300793
	Cylinder Bolts w/ Jam Nut	303795 303797	303796 303797	301136 303797
	Cylinder Fitting w/ Seal (B Port)	302957 301365	302957 301365	302957 301365
	Repair Kit	716791	716790	716789
	Complete Cylinder	300698	300642	SS100C00

Hydraulic Pumping Unit:



<u>Item</u>	<u>Description</u>	<u>40 Ton</u>	<u>70 Ton</u>	<u>100 Ton</u>
1	Complete Power Unit	300633	300633	79937
1	Tank Cover	301388	301388	301391
2	Electrical Cover	300388	300388	300388
3	Fill Cap	302055	302055	302055
4	Air Filter	300391	300635	300224
5	Drain Filter	300392	300392	300392
6				
7	Back Motor Bearing			
8*	Motor Rotor	301848	301848	
9*	Driving Shaft			
10	Front Motor Bearing			
11*	Pump Motor	302200	302200	
12	Blade	302056	302056	
13	Pumping Bearing			
14	Eccentric			
15	Roller Bearing			
16	High Pressure Pump Group	301115	301115	301115
	Outlet Filter / bottom of pump	300393	300393	300394
	Motor Windings with Shell	301848	301848	
	Drive Shaft Assembly (Items: 8, 9, 11)	302200	302200	

*Please contact factory for current prices.*

## **ORDER 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.

## **DEACTIVATING THE MACHINE**

If the machine is not going to be used for a long period of time it is recommended that you do the following:

1. Disconnect the press from power sources.
2. Empty the unit of oil.
3. Protect it suitably so there is no dust, moisture or other foreign bodies that can damage the machine.

## **DISMANTLING THE MACHINE**

If the machine is not going to be used anymore it is recommended to make it inoperable by removing the oil in the tank and eliminate oil remaining in the cylinder, hydraulic lines, pump body, and valves.

When going for demolition the press must be treated as special waste, it must therefore be split into its homogenous parts. These must be separately disposed of in conformity with local and state laws along with will all OSHA regulations.