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## Model: 520B - 20 Ton Shop Press

### Owner's Manual & Safety Instructions



\*This shop press conforms to all "ANSI / ASME" safety standards.

### **WARNING**

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.

Visit our website: <http://www.jackco.com>  
Email our technical support: [techsupport@jackco.com](mailto:techsupport@jackco.com)

 **WARNING:** Cancer and Reproductive Harm  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

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## Machine Specifications

Part Type	Manual 20-ton floor
Cylinder Type	Single Acting
Max. Press Capacity	20 Ton
Ram Diameter	2"
Ram Stroke	8"
Head Travel	Left / Right of center
Ram Travel Per Stroke	3/16" approx
Width Between Uprights	23"
Width Between Channels	4"
Max. Ram to Table	39"
Overall Height	74"
Weight	283 lbs.

## Installation Placement

### Press Placement Selection



1. Location of press should be in a well-lit area that will not interfere with other machines or operations.
2. Carefully unbox machine components from shipping carton. Inspect all packing as not to throw out any parts or manuals.
3. When transporting the machine please use caution. If using a sling have someone steady the machine while transporting it.
4. Install your press on a sturdy level floor surface, or work bench. The machine must be anchored to the floor or workbench securely.
5. After installing the press, use a degreasing product to clean off the anti-rust oil which was applied at the factory. Then wipe machined surfaces (such as ram) with a light coating of lubricant oil.
6. Read rest of the owner's manual before operating this machine. Review and understand all safety instructions.

# Safety Points

## BEFORE USE, ALL SAFETY POINTS MUST BE READ AND UNDERSTOOD!

Before the PRESS is used, the instruction manual with this machine must be read and understood. This manual offers safe operation instructions. Offered below are safety instructions designed for the press and general safety instructions that apply to most machinery.



→ Operation of the press incorrectly, or in a dangerous fashion can result in serious injury or death.



→ Operation of the press incorrectly, or in a dangerous fashion can result in damage to machine or it's components and to the cutting tool.



→ Instructions for safe press use.

This machine is intended to be operated by one person. This person should be conscious of the press ram movement not only for himself but also for persons in the immediate area of the machine. Caution is required when operating the press because it can be dangerous due to the high pressures exerted from the ram. Operation hazards such as pinching, ejection of parts are always present. Please think about the safety warnings in the instruction manual before operating the machine.

Misuse of this machine will void warranty and cause unsafe working conditions.

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## For Safe Operation

For your own safety read the instruction manual before operating your single acting hydraulic press.

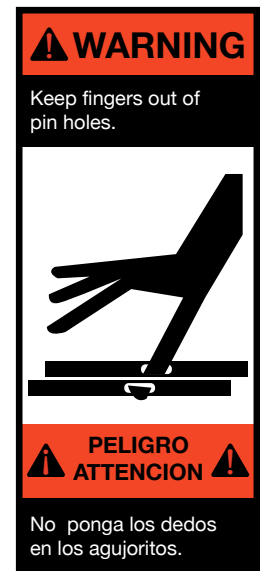
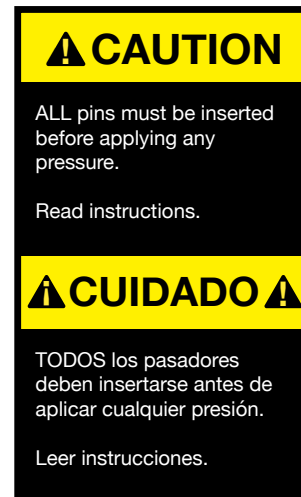


1. Keep hands out of point of operation.
2. Never hold part while pressing.
3. Always wear the eye protection.
4. Clamp work piece or brace when pressing.
5. Never place fingers in pin holes.
6. Always use nose piece when pressing. Never press using the end of the ram, damage to ram or threads can occur.
7. Never use a press that is not fastened securely to the floor or workbench.
8. Always used table pins and accessories furnished with press.
9. Always have firm footing when operating press.
10. Do not use press if parts are damaged or missing. (Hoses, structural components)

# Warning Labels

READ AND UNDERSTAND THESE WARNING LABELS PLACED ON THIS MACHINE BEFORE OPERATING. MAKE SURE ALL PERSONS IN THE AREA OF THE PRESS ARE AWARE OF THESE WARNINGS.

**UNDER NO CIRCUMSTANCES SHOULD THESE LABELS BE REMOVED!**



## Safeguarding

### SAFEGUARDING THE POINT OF OPERATION

ANSI B11.2 – Hydraulic Power Presses

Safety Requirements for Construction, Care and Use

It is important that Jackco press users have a clear understanding of their responsibility involving the care and use of their Jackco hydraulic press, including point-of-operation safe guards. Jackco strongly recommends that Jackco 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. There fore, 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 ever production operation performed on a press production system.

A complete and current copy of the ANSI B11.2 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

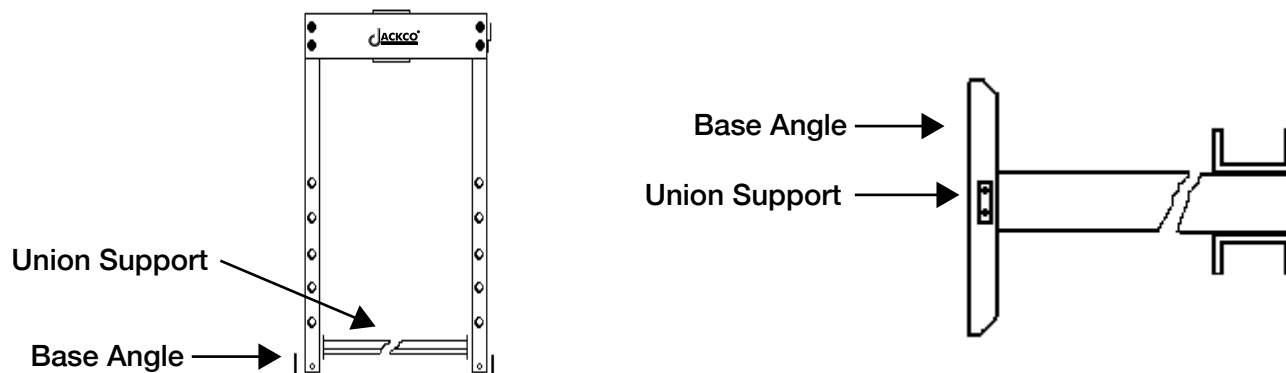
# Assembly Instructions

Your new Jackco Press has been packaged in a manner to prevent damage to any critical components, some assembly will be required. All parts in the accessory box are critical to the function of your press. Please review the parts breakdown to insure you have all components required. Please refer to the parts breakdown and exploded diagrams on pages 12-17 of this owner's manual.

Your press head frame, uprights and head traverse ram plate has been pre-assembled at the factory. You will be required to install the worktable, ram, pumping unit and base angles. Follow the simple instructions below for quick assembly. Assembly may be made easier if the frame is laid down flat with the front facing upward.

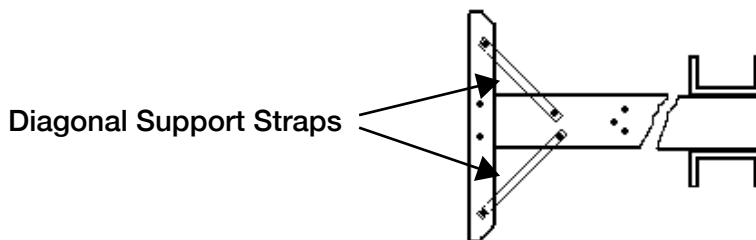
## STEP 1:

Install the union support to the inside of the upright channels and base angles, using the 4 of the M8 x 25mm bolts, nuts and washers provided. Place union support in-between the channels, and install the 2 base angles to the frame through the union support and install nuts. Base angles face outward (See drawing below) Hand tighten.



## STEP 2:

Install the diagonal support straps. Using 4 M8 x 25mm bolts, nuts and washers. Install the support straps to the inside of the base angles then to the frame as shown. Finger tighten.



## STEP 3:

Carefully stand the unit upright. Making sure all components are square to each other, tighten all nuts and bolts securely.

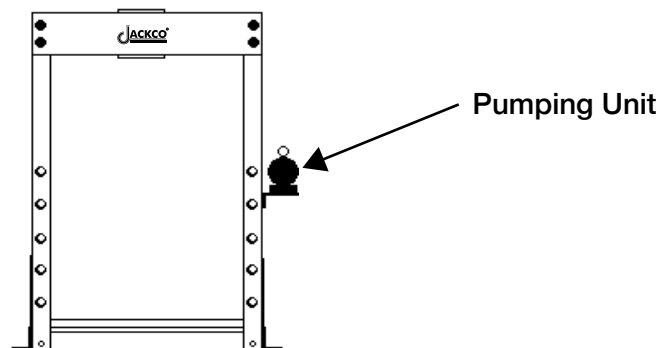
## STEP 4:

Install pump mounting plate on the side of the upright channel using the 3 M10 x 25mm bolts, nuts and washers.

## Assembly Instructions (Cont.)

### STEP 5:

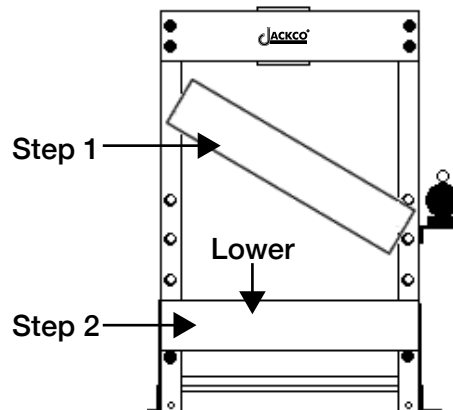
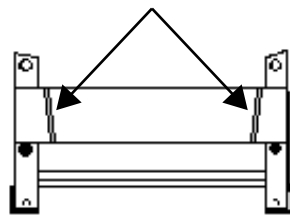
Install the pumping unit to the mounting plate using 2 M10 x 25mm bolts, nuts and washers. Make sure pump is centered on this mounting plate.



### STEP 6:

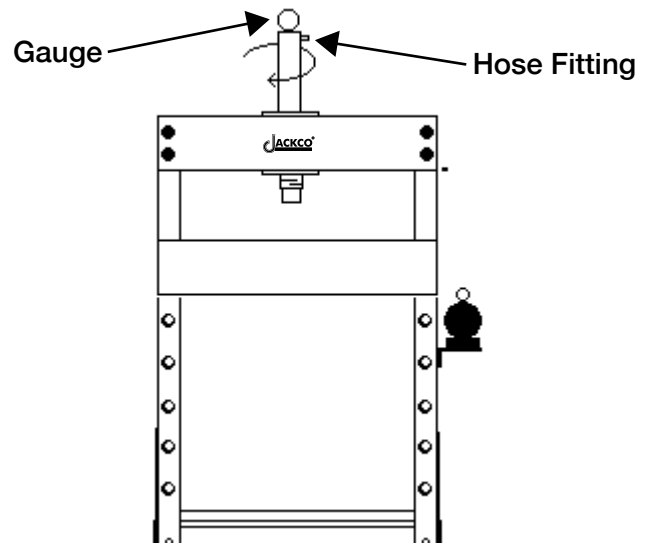
With press standing upright and all bolts tightened install the worktable. Insert two table pins in the two lowest holes. Take the worktable and tilt it at a sharp angle and insert it in the uprights. (NOTE: The gussets welded to the table are at slight angles. The narrowest dimension of these gussets go down. See drawing) (Step 1) Once worktable is in the uprights turn it level and lower down and set it on the table pins. (Step 2) Take care when doing this, a helper would be advised.

Gussets inside table



### STEP 7:

Locate the cylinder and remove the plastic protective cap on the end of the ram. (If applicable) Carefully screw the cylinder from the top into the head traverse ram plate. Screw this in as tight as possible while keeping the cylinder's hydraulic hose fitting facing to the right or pump side. (Cylinder may not be totally tight while keeping the fitting facing this way, but it will not effect the presses operation.) Using Teflon tape to install the gauge to the top of the cylinder facing forward. When gauge and hose fittings are in correct position install the spanner nut on the bottom of cylinder and snug up.



## Assembly Instructions (Cont.)

### STEP 8:

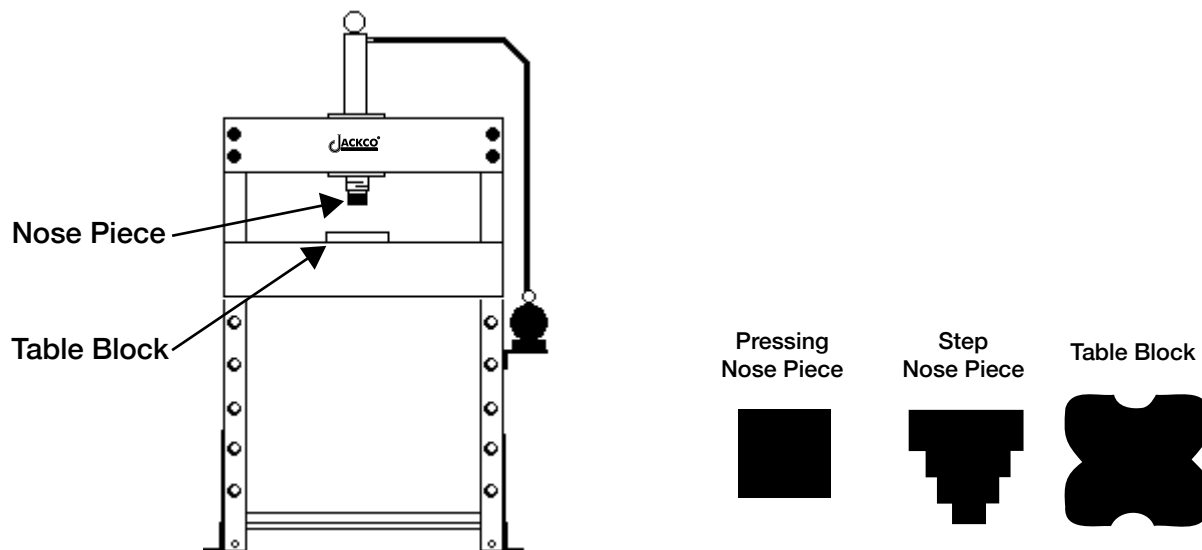
On the bench model hang the pumping unit in its holder bracket on the side of the frame. Remove the plastic protective cap from the end of the hydraulic hose. Screw the hydraulic hose onto the cylinder hose fitting. The fitting has a knurled collar that you can tighten by hand. (Do not use a wrench because damage may occur to the fitting) The hose has a check valve that prevents oil from escaping so if hose is ever removed air will not get in the system.

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### STEP 9:

On the bench model hang the pumping unit in its holder bracket on the side of the frame. Remove the plastic protective cap from the end of the hydraulic hose. Screw the hydraulic hose onto the cylinder hose fitting. The fitting has a knurled collar that you can tighten by hand. (Do not use a wrench because damage may occur to the fitting) The hose has a check valve that prevents oil from escaping so if hose is ever removed air will not get in the system.

Install a nose piece and use table block when operating this machine.



### Note:

*System is filled with oil and may take a few pumps to fill all lines. Close the pump valve and pump to check for piston action, and for leaks. If air appears to be in the system, open the valve handle and pump vigorously about a dozen times. Close valve and try again.*

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### STEP 10:

Chose location placement as described on page 1. Mount the press securely. You are now ready to use the press.

# Operation (Procedure)

Always use the supplied nose pieces. The flat nose piece will be good for most pressing and flattening operations. The step style nose piece will work well for pressing bearing, bushing and parts that have a hole that the nose piece will fit into. This nose piece will help support or hold the piece during pressing operations.

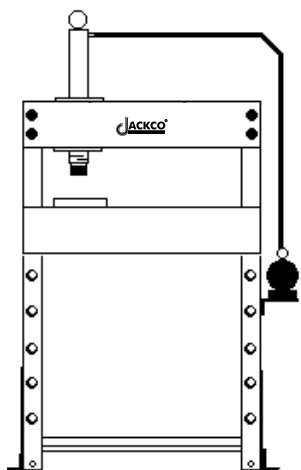
There are two table plates that should always be used as a backing plate during pressing operations. You will find notches in these table plates to allow you to use the press as a straightening press for axles, shafts, etc and most round stock.

When using your press always use the highest table setting to minimize the stroke distance of the ram. *Note: Only use supplied table pins. Do not weld or pin table.* Once a part is put in the press and is clamped or braced securely, close the pumping unit release valve handle. (Clockwise). Pump the handle to lower the ram. Pump until pressing operation is completed. If you need to maintain pressure leave the valve on the pumping unit closed. When operation is complete, turn the valve counter-clockwise to release pressure and raise the ram. Once the ram has been raised just above the work close valve again and repeat operation on the next part. There is no need to raise the ram all the way to the top each time.

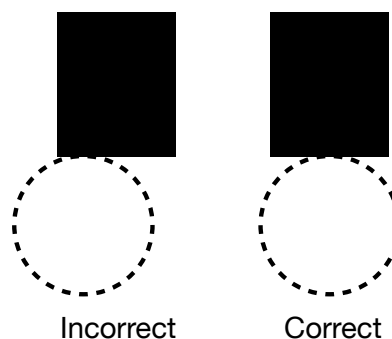
If pressing application requires a certain tonnage, press until the gauge reads the appropriate tonnage then stop. Release pressure and repeat operation.

*Note: Never pump the ram down fully and dead head the ram in the cylinder. Only build pressure when using the table plates or a part is being pressed. Failure to do this may cause ram seal damage and leaking.*

If the application requires off center pressing, loosen the head ram traverse plate bolts and slide head left or right to the area where pressing is required. You may now proceed with the operation. When head is returned to the center position snug these bolts up to prevent unexpected movement.



Off Center Pressing



**Always make sure you are pressing with the whole ram. Center ram over the work, do not press with only the edge of the nose piece. This can cause injury by ejecting the part, or damage to the ram.**



# Maintenance

## ⚠ CAUTION

1. On a regular basis wipe the entire press. Keep ram free from debris and abrasive materials (Frequency depends on environment the machine is in)
2. A light oil applied to the ram will help to keep the surface clean.
3. If the hydraulic hose or table pins are worn or cut, or damaged in any way, have it replaced immediately.
4. If oil is ever needed, remove plug from the top of the pumping unit and add hydraulic jack oil. Bleed the system by pumping the handle repeatedly about a dozen times with the valve open. Close valve and check that air has been bled.
5. **WARNING:** Never make adjustments to the pressure setting adjustment. Never remove the red plastic cap covering this adjustment screw. Serious machine damage or physical injury may occur.

## Troubleshooting

Oil leaking around ram.	Put ram under full pressure for 1 hour. Bad seal
Ram is jerky or sluggish	With valve open repeatedly pump the handle to bleed air from lines.
Ram does not return fully	Open and close valve several times. Return spring broken.
Pump will not pump	Make sure valve is fully closed. Low oil level. Add oil and bleed (Last page)
Leaking by gauge	Place Teflon tape to threads and reinstall.
Leaking by hoses	Check all fittings, make sure they are tight. Look for a hole or abrasions.
Will not reach max. tonnage	Check that the valve is closed fully. Bleed system.
Will not hold pressure	Some bleed off will occur over time. Check if valve is closed fully

Gauge Conversion 20 Ton		65MM Bore = 2.559	
1 Ton	388.86 psi	11 Ton	4,277.51 psi
2 Ton	777.73 psi	12 Ton	4,666.38 psi
3 Ton	1,166.59 psi	13 Ton	5,055.25 psi
4 Ton	1,555.46 psi	14 Ton	5,444.11 psi
5 Ton	1,944.32 psi	15 Ton	5,832.97 psi
6 Ton	1,944.32 psi	16 Ton	6,221.84 psi
7 Ton	2,722.055 psi	17 Ton	6,610.70 psi
8 Ton	3,110.92 psi	18 Ton	6,999.57 psi
9 Ton	3,4993.78 psi	19 Ton	7,388.43 psi
10 Ton	3,888.65 psi	20 Ton	7,777.30 psi

# Parts List

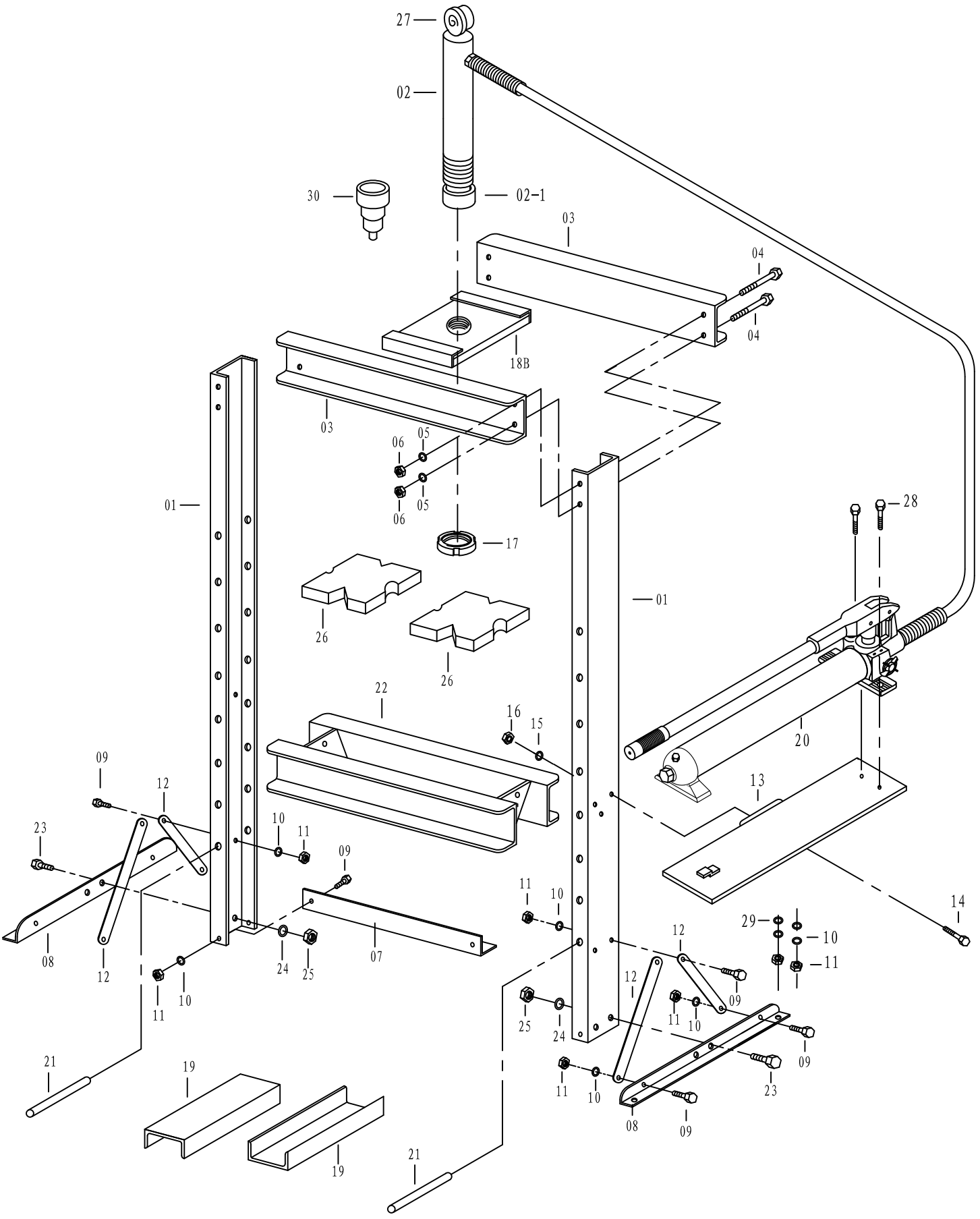
Ref #	Part #	Description	Qty
01	520B-01	Frame upright channel	2
02	520B-02	Ram Cylinder	1
02-1	520B-02-1	Flat nose piece	1
03	520B-03	Head frame channel	2
04	520B-04	Bolt M18 x 140mm	4
05	520B-05	Lock washer 18mm	4
06	520B-06	Nut 18mm	4
07	520B-07	Union support	1
08	520B-08	Base angle	2
09	520B-09	Bolt M8 x 25mm	10
10	520B-10	Lock washer 8mm	12
11	520B-11	Nut 8mm	12
12	520B-12	Angle support strap	4
13	520B-13	Pump support bracket	1
14	520B-14	Bolt M10 x 25mm	3
15	520B-15	Lock washer 10mm	3
16	520B-16	Nut 10mm	3
17	520B-17	Spanner nut	1
18	520B-18	Head traverse plate	1
19	520B-19	Channel Steel	2
20	520B-20	2 Stage pumping unit	1
21	520B-21	Table pin	2
22	520B-22	Table	1
23	520B-23	Bolt M12 x 30mm	4
24	520B-24	Washer 12mm	4
25	520B-25	Nut 12mm	4
26	520B-26	Pressing plates	2
27	520B-27	Gauge	1
28	520B-28	Bolt M8 x 30mm	2
29	520B-29	Washer 8mm	2
30	520B-30	Step nose piece	1
		<b>ITEMS NOT SHOWN</b>	
	520BRK	Seal kit	

Spare seals should be stored in safe location out of direct sunlight.

When ordering, parts have model and date of purchase information ready.

For assistance call Jackco Customer Service at (626) 582-8055 e-mail to [orderdesk@jackco.com](mailto:orderdesk@jackco.com)

Diagram



# Adding Oil to Pumping Unit

1. Retract the ram that is connected to the pump. Remove and place the pump so the pump is horizontal as shown. (Do not disconnect ram from the pump)
2. Remove filler plug (small plug on the top) (See below figure 1) also lift the pump unit up  $\frac{3}{8}$ " –  $\frac{3}{4}$ ", and add hydraulic oil until the oil weeps out of this hole. (Figure 2) Replace plug
3. Remount the unit back on the pump plate. Open valve and pump repeatedly until the system is bled of air.

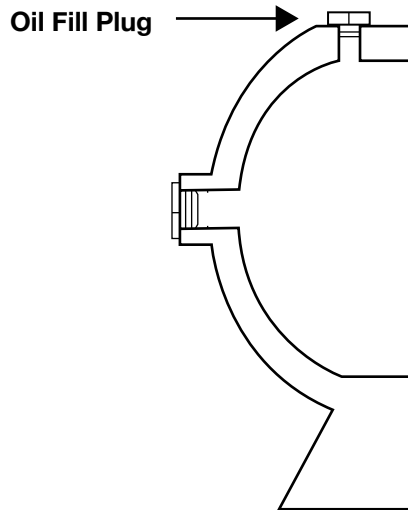


Figure 1

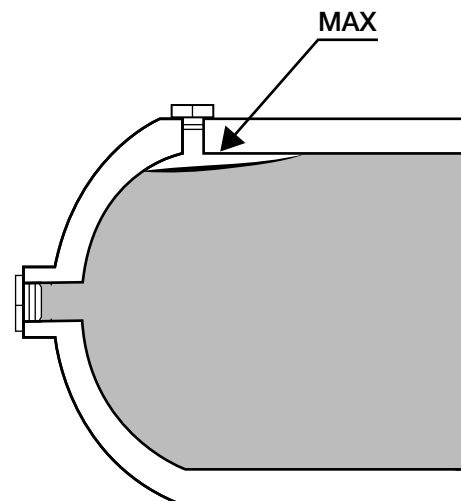
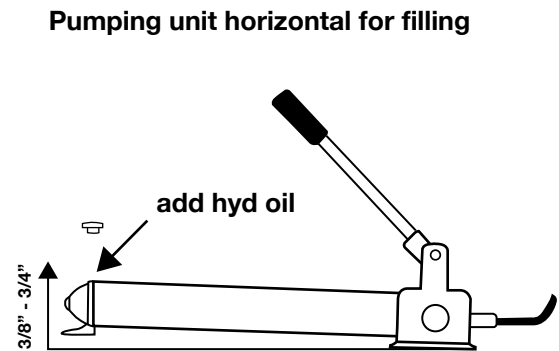


Figure 2

## Warranty

Jackco Transnational Inc. (Jackco) warrants all Jackco equipment and tools to the original purchaser against any manufacturing defect in material or workmanship for a period of one (1) year from the original date of purchase. If the defective equipment or tool is determined to be covered under this warranty, it shall be repaired or replaced at manufacturer's discretion without charge, provided that the equipment or tool must be returned with proof of purchase to the dealer and freight prepaid, if returned to the manufacturer. This warranty shall not apply to damage due to accident, negligent use, lack of maintenance, abuse or applications other than the specific function the equipment or tool is designed for.

No other warranties, expressed or implied, including those of merchantability or fitness for particular purpose shall be applicable to Jackco except as specifically stated herein. In no event shall Jackco be liable to any party for any special, direct, indirect, consequential, punitive damage of any nature caused by the sale or use of the equipment or tool.

Note: This warranty gives the original purchaser specific legal rights which may vary from state to state.