Hydraulic Press
- manual

Introduction

The information contained in this SOP is general in nature. It is advised that operators are referred to the relevant manufacturer's manual for specific operating information.

The hydraulic press has a variety of uses, ideal for removing and installing bushes, ball joints, bearings, gears, pulleys etc.

Some presses also have the added feature of a sliding head that can be moved to the side allowing for offset pressing jobs.

The hydraulic ram and pump unit are also easily used for other pressing jobs outside in the workshop such as straightening or bending.

The press is supplied with a pressure gauge, two heavy duty pressing plates. Two combination table plates-v blocks are used for supporting the work while it is being straightened.

Identified Risks and Hazard

Specific hazards that may arise when using a hydraulic press include:

- Hands can become caught under the hydraulic ram and workpiece and sustain a crush injury.
- The workpiece can be ejected under pressure and cause a striking injury.
- The workpiece can shatter causing fragments to cause puncture wounds and lacerations.

Pre-operational Safety

The following safety checks and precautions should be carried out when preparing to set up, operate or maintain a hydraulic press:

Always gain a demonstration of the pressing operation from the supervisor before using the hydraulic press.
Operators must obtain training and instruction in the safe and proper use of the hydraulic press.

Test the press before using. Pump the handle a few times to lower the ram to half way. If the ram does not begin to lower after a few pumps, check to make sure the release valve is tight. Release the valve to raise the ram.

Prepare the work area properly. The work area should be clean and free of scrap metal and other obstacles.

Thoroughly inspect the press for damage or wear before each use. Briefly test the operation of the unloaded ram before using to press any job.

If the press is damaged or malfunctioning do not use it. Notify your supervisor.

Make sure all other persons are clear of the work area. Clear all obstructions from the work area around the press.

Ensure the press is situated on a solid, level floor surface. Uneven or sloped surfaces can create hazardous working conditions.

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Operating Safety Precautions

Do not exceed the working load limit of the press. This Press is intended for pressing, bending and straightening purposes only. Do not use for any other purpose.

Never use the press to compress springs or other objects that could be ejected from the press. Do not compress objects that could shatter.

The press is not a vice. No work should be undertaken on the workpiece while it is being held by the press. This would create a potentially hazardous situation.

Inspect the position of the press plate and the arbour plates, making sure they are centred and properly engaging the workpiece.

Never put an part of your body between the hydraulic ram and the workpiece.

Always wear safety glasses and a face shield.

Make sure all other persons keep clear of the work area at all times.

It is potentially dangerous for one person to insert the workpiece while another person operates the press lever handle.

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Daily Maintenance

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The oil level of the press will need to be monitored and checked regularly. This and any addition of oil will be carried out as part of a maintenance schedule by a qualified person.

The press should be wiped clean with a cloth. Do not use solvents or abrasive cleaners as they may cause deterioration of the hydraulic seals.

Store the press with the pressure fully released. Remove the lever handle.

**Isolating and Lockout Switches**

Electrically operated machines should be fitted with a flush green on or start switch and a red stop switch that has a raised mushroom shaped head for fast emergency contact.

As well as start and stop switches, all machines must have an isolating switch, which enables the main power supply to be switched off when the machine is being set up, adjusted or when maintenance is being carried out.

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**Safe Work Zones**

The following Safe Work Zones for this machine are derived from a state government education authority guide. Click here for a description of the zone requirements described in this diagram.

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Operating Procedures and Precautions
The lever handle is the pressure supply source and is manually operated with an up and down motion.

Always keep the release valve handwheel firmly closed when operating the press. It should only be opened when releasing the pressure to allow the ram to return.

By turning the handwheel, the ram screw can be adjusted into or out of the piston assembly. Always keep the portion of the screw extending out of the piston as short as possible.

It is advisable to raise the table one or two sets of holes rather than running the screw out to its limit of travel. Ensure the table is as close as possible to the ram and support pins are correctly positioned.

Adjust the press plate to the desired height. Consider a comfortable height for the operator and the distance of travel of the ram.

Lock the release valve handwheel firmly. Slowly pump the handle until the press plate just begins to contact the work piece.

Inspect the position of the press plate and the arbour plates, making sure they are centred and properly engaging the workpiece.

Continue pumping the lever handle until the press has completed the required operation.

Watch the workpiece position as the press is applying pressure. Be sure there is no danger of ‘slipping off’ or ‘forcing out’ of the workpiece. If there is, release the pressure and re-align the workpiece.

On completion, release the pressure and be aware the workpiece may move when pressure is released.

The questions in the SOP knowledge test are general in nature. The manufacturer's manual is to be used to develop specific questions relevant to this tool or machine.