

UNIT-5

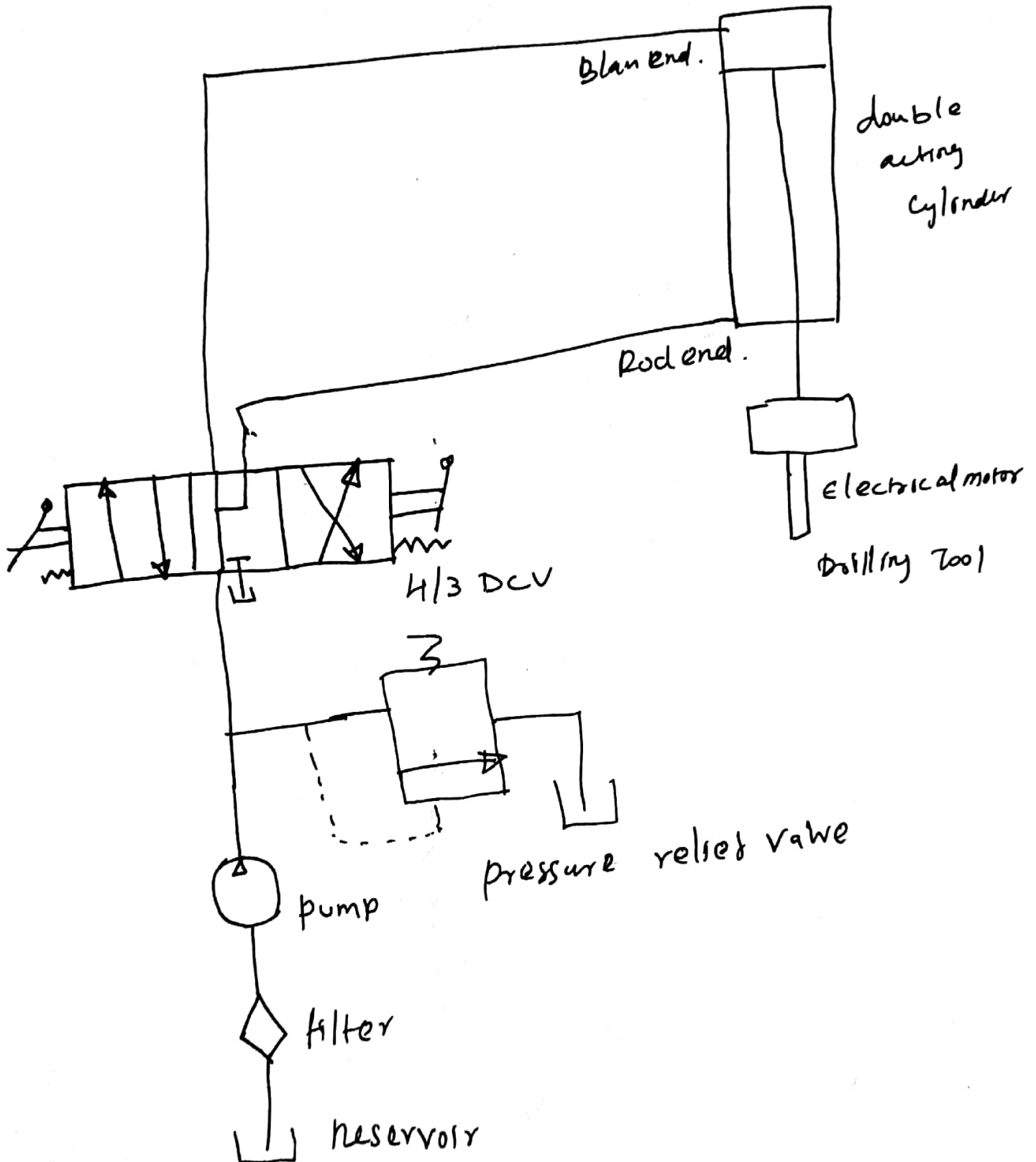
Subject : Hydraulics and Pneumatics

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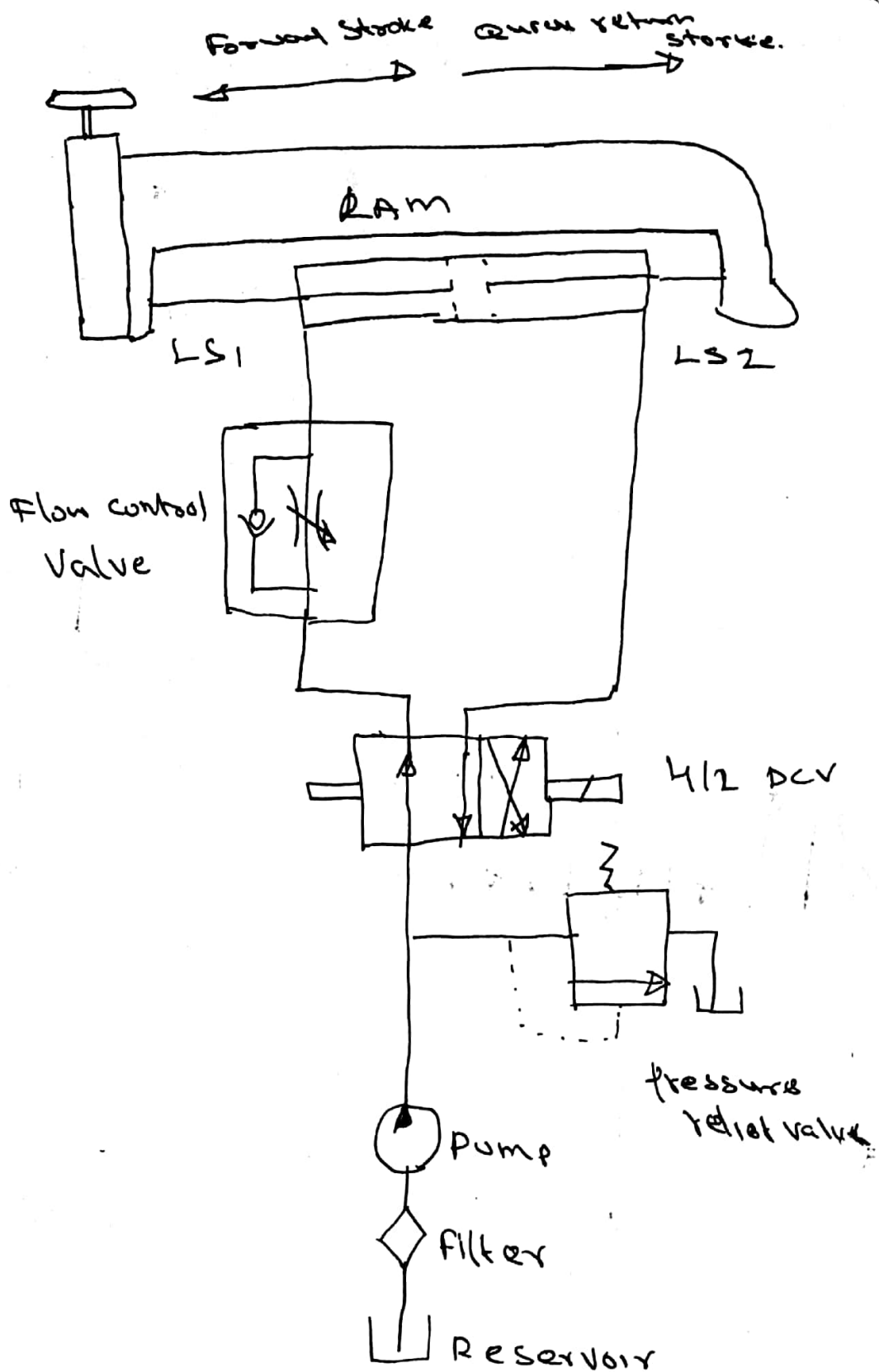
YEAR : IIIrd YEAR Vth sem.

: S. DINESH

Water Compressor
① Design of Hydraulic Circuits for drilling Application.

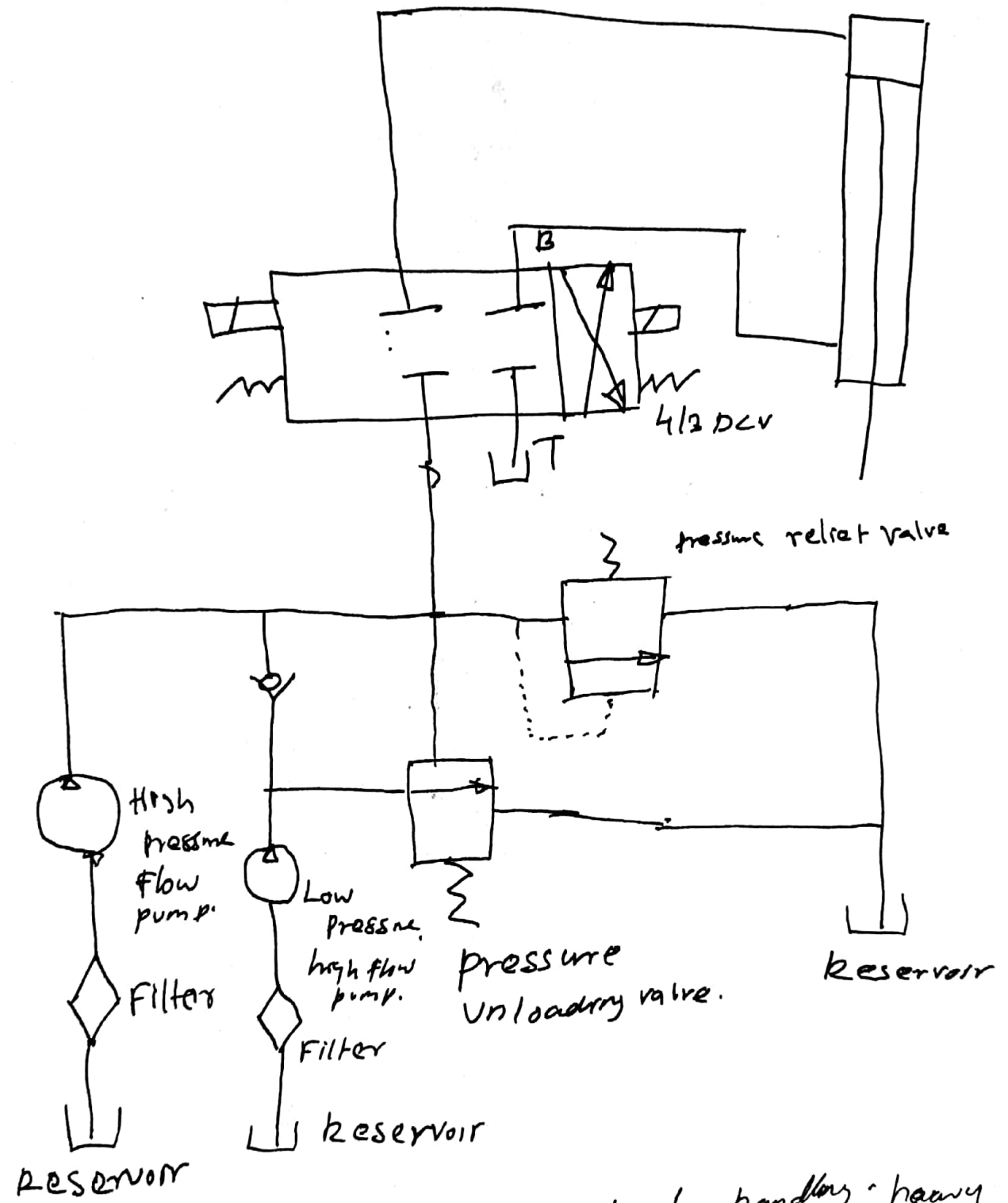


② Design Hydraulic Circuit for Shaping Application



In shaping operation, the cutting stroke of the ram should be slow and the return stroke should be faster. For this a meter-out circuit can be used.

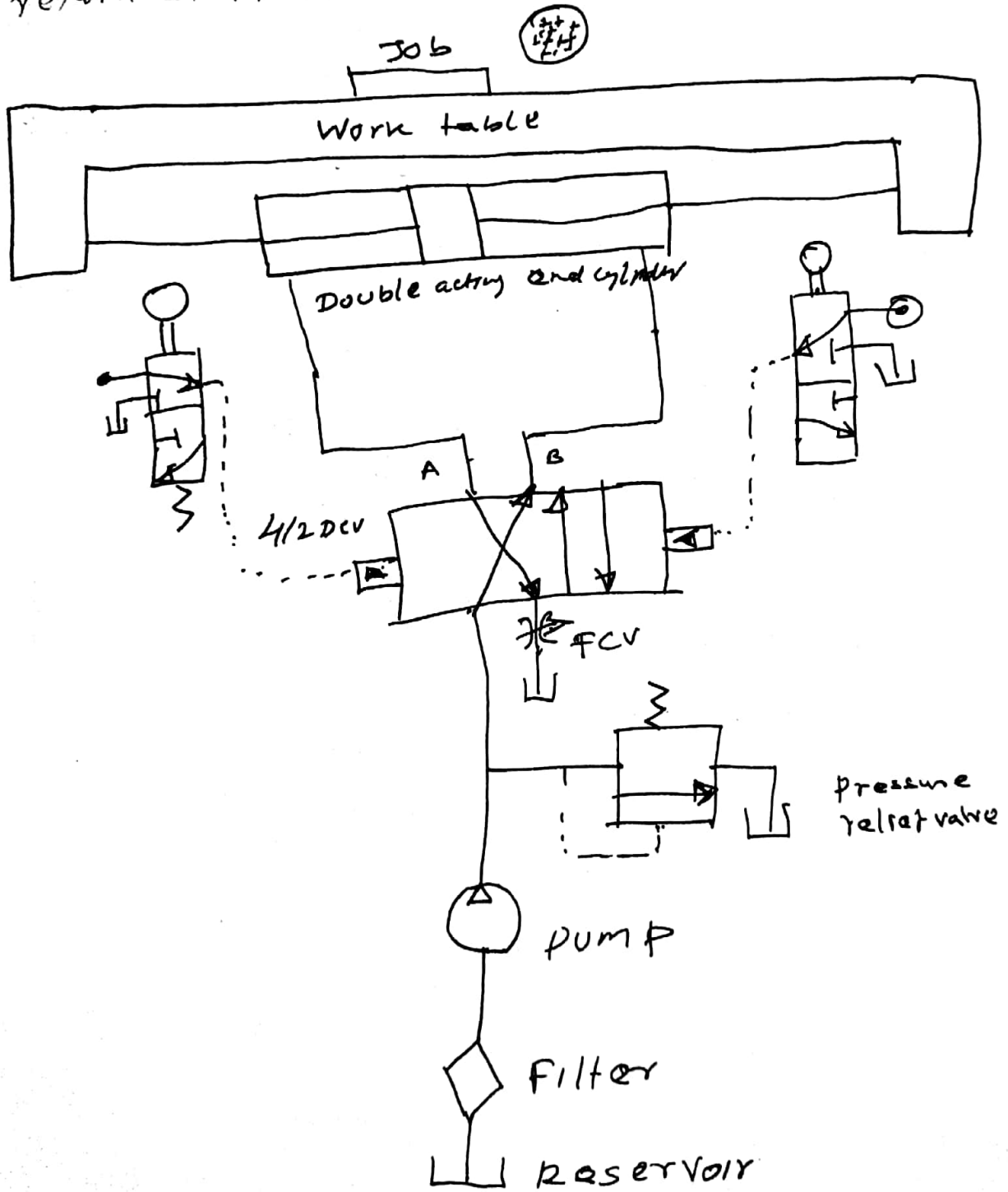
Design Hydraulic circuit for Press Application



Hydraulic presses are used for handling heavy load work. During the hydraulic press punching operation, the punch should move fast at no load and it should move slowly when there is high load. This is because the actual planning starts only the punch

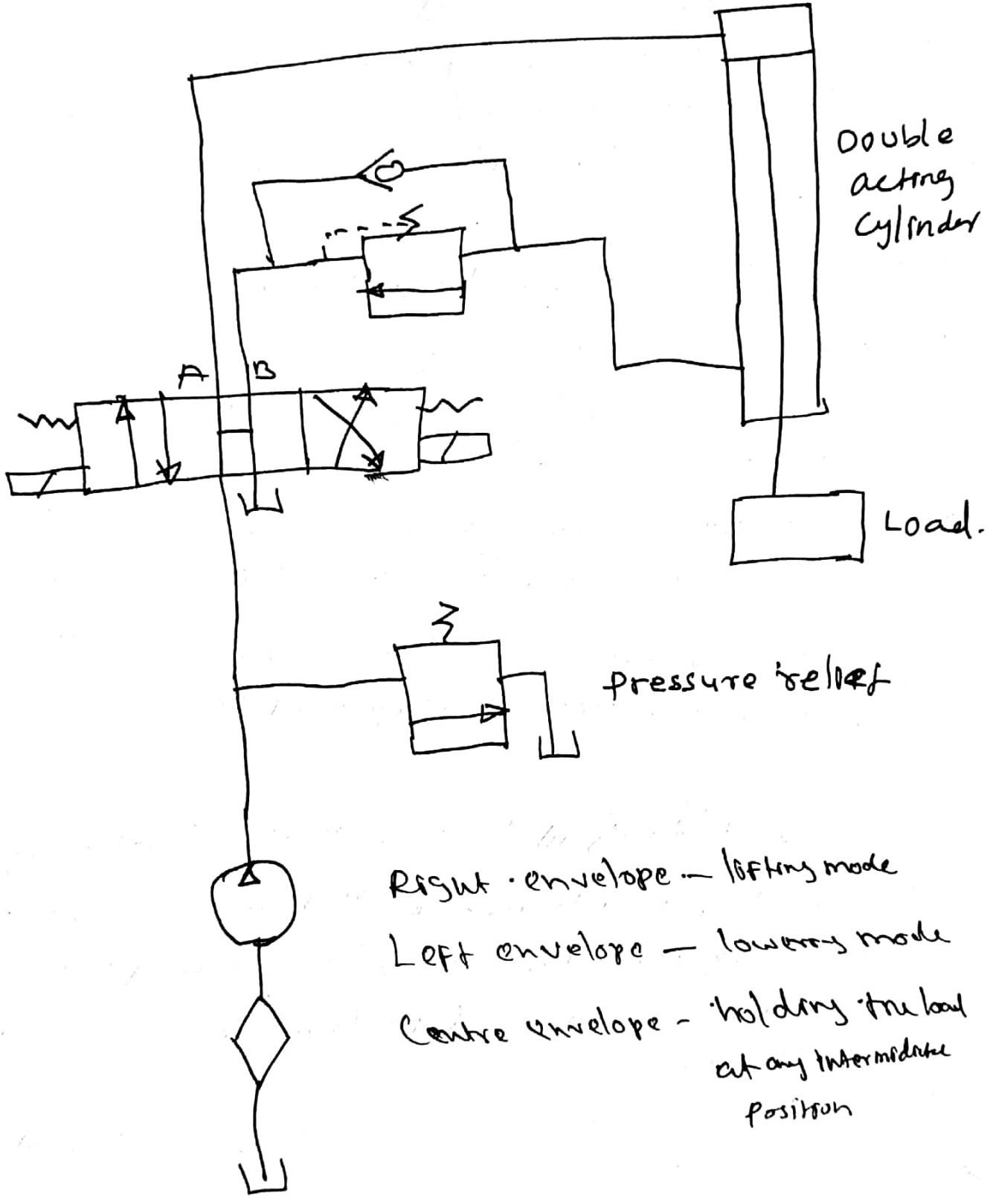
③ Design of Hydraulic circuits For surface Grinding Application.

In a surface grinding machine the work piece is clamped on the machine table below the grinding wheel. For machining operation the table has to reciprocate continuously with same speed on both forward and return strokes.



Touches the work piece.

5. Design of hydraulic circuit for forklift application



Right envelope - lifting mode
Left envelope - lowering mode
Centre envelope - holding the load at any intermediate position

Explain Maintenance Procedure of Pneumatic System and discuss common problems in a pneumatic system.

- * Set up a Maintenance schedule and follow it diligently.
- * Inspect filter elements that have been removed from the compressor and the system for signs of failure which may indicate that the service interval should be shortened or that there are impending system problems.
- * Use clean oil in lubricator.
- * Make sure that the oil used in lubricator is of type recommended by the manufacturer for the system or component.
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- * When adding oil to a lubricator, be sure to clean the areas around the dipstick and filler cap before removing them.
- * Before adding oil be sure that oil already in a lubricator is clean. If it's not drain the oil and refill the lubricator completely with new oil that will give good performance under prevailing conditions.
- * Use clean container, hoses and funnel when filling a lubricator.
- * Use common sense precaution to prevent dirt entering components that have been temporarily removed from the circuit.

Common problems in pneumatic system.

- ① Water-contaminated air
- ② Poor air filtration
- ③ In correct pressure setting
- ④