

Hydro-pneumatic

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ADVANTAGES

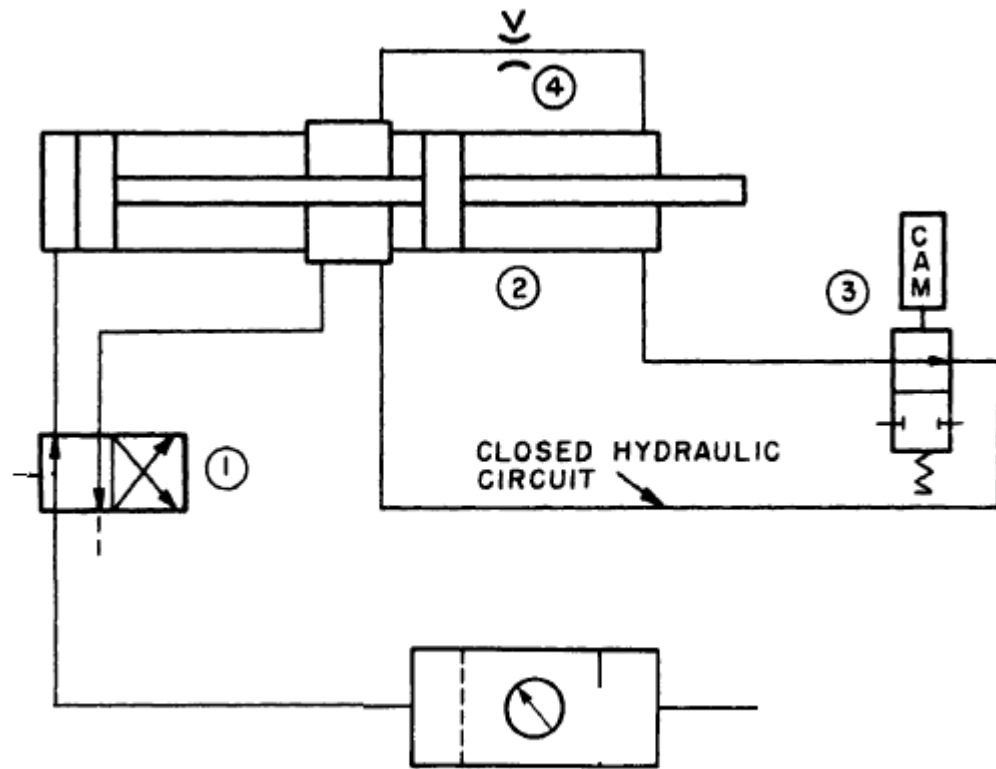
- Reduce space requirement.
- Quick action of air is combined with smooth and high pressure action of oil.
- Reduced maintenance cost of original equipment.
- Improve the performance of equipment and allow more flexibility.

ADVANTAGES

- Although two fluids are used, but the fluids are never used.
- Air and oil is used in same cylinder.
- Air is motivating means and oil is used for control.
- Cylinder is costly but eliminates the use of hydraulic power unit.
- Faster speed as pneumatics and feeds as hydraulics.

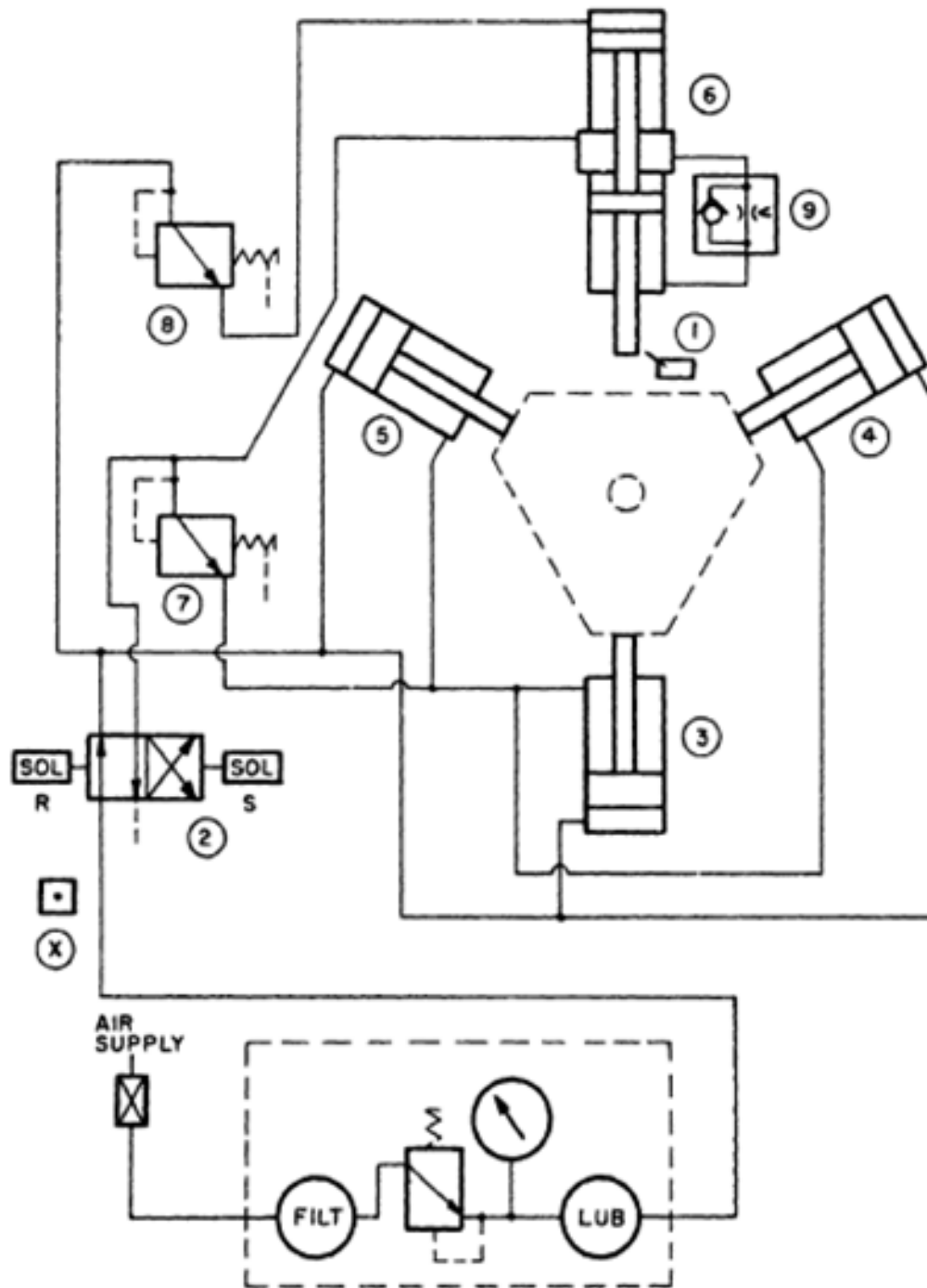
Hydro-pneumatic circuit for drilling

- It provides for rapid traverse on the outstroke.
- Until the position for the start of the drilling operation is reached.
- A slow drilling feed.
- Rapid traverse return.
- Any feed from maximum to minimum can be obtained by adjusting the needle valve.



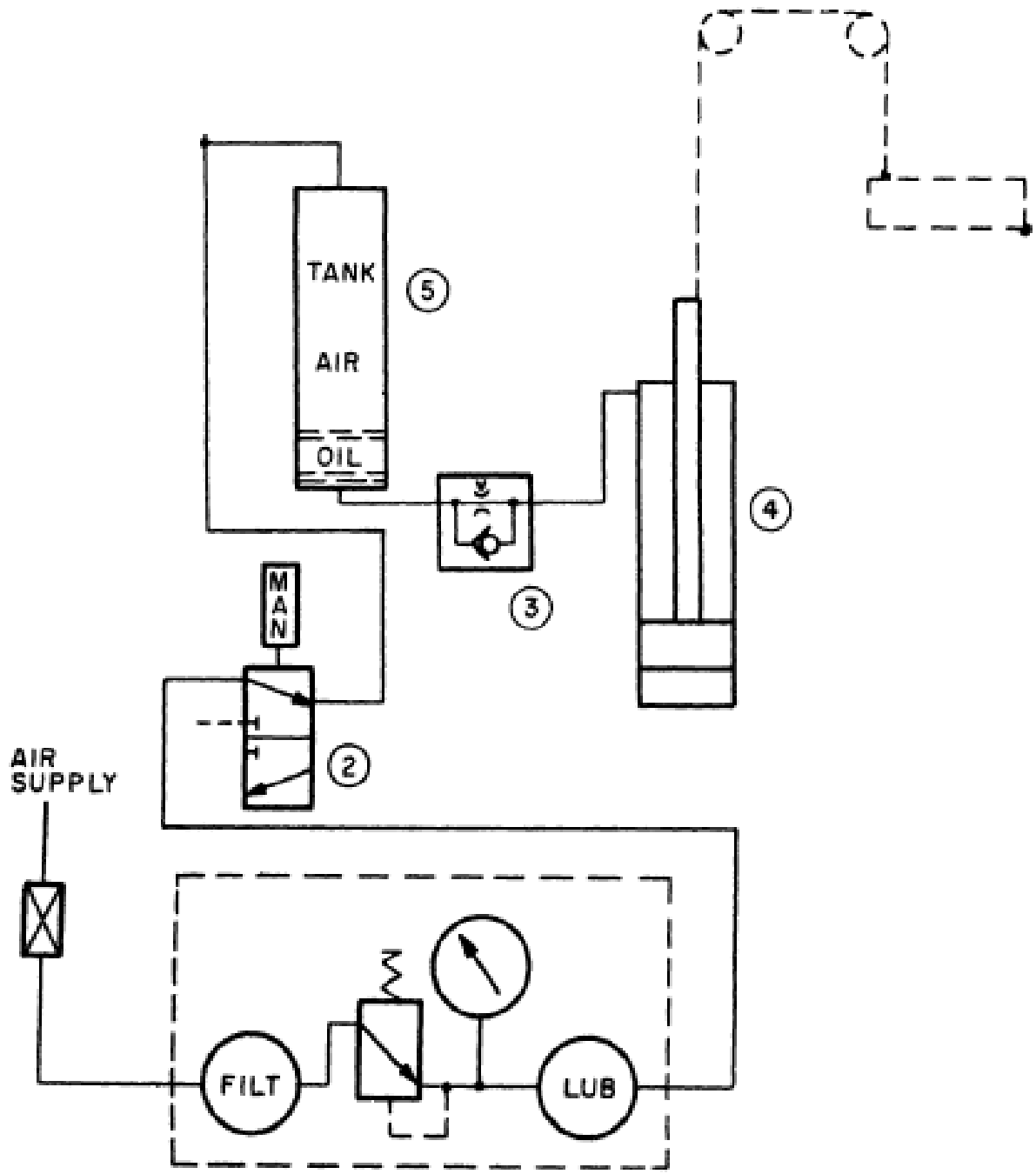
- Shift 1.
 - Air flows to blind end of cylinder.
 - Rod extends at rapid rate till touches 3.
 - Shut-off valve 3 closes.
 - High speed oil line closes.
 - Speed of piston is governed by 4 as drill contacts the w/p.
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- Shift 1.
 - Air piston retracts.
 - Check valve opens.
 - Fast return stroke

Hydro-pneumatic circuit for drilling with 3 cylinders.



Air hydraulic cylinder that makes use of three cylinders

Hydro-pneumatic circuit to lift mechanism



Pneumatic cylinders to load/unload and hydraulic cylinders to perform operation.

