

Hydraulic Circuits

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Hydraulic Circuits

Open loop circuit,

Typical features of open loop circuit are:

- 1) Suction lines
Large diameters, small lengths
- 2) Directional valves
Sizes dependent on flow
- 3) Filters / coolers
Cross – sectional areas / sizes dependent on flow
- 4) Tank size
Multiple of max. pump flow in litres
- 5) Pump arrangement
Next to or under the tank
- 6) Drive speeds
Limited by amount of suction
- 7) Unloading in the return line via valves

Closed loop circuit,

Typical features of closed loop circuits are:

- 1) Directional valves
Small sizes for pilot operation
- 2) Filter / coolers
Small openings to flow / small sizes
- 3) Tank size
Small – determined only by flow of auxiliary pumps and system flow
- 4) Speeds
High limits due to anti – cavitation
- 5) Arrangement / installation position
Any
- 6) Drive
Completely reversible through zero position
- 7) Support of loads
Via drive motor
- 8) Return of braking energy

Hydraulic Circuits

Pumps supply the quantity of liquid only
Pressure is built up by restrictions
Restrictions are: motors, cylinders etc.

TRAINING

open loop circuit

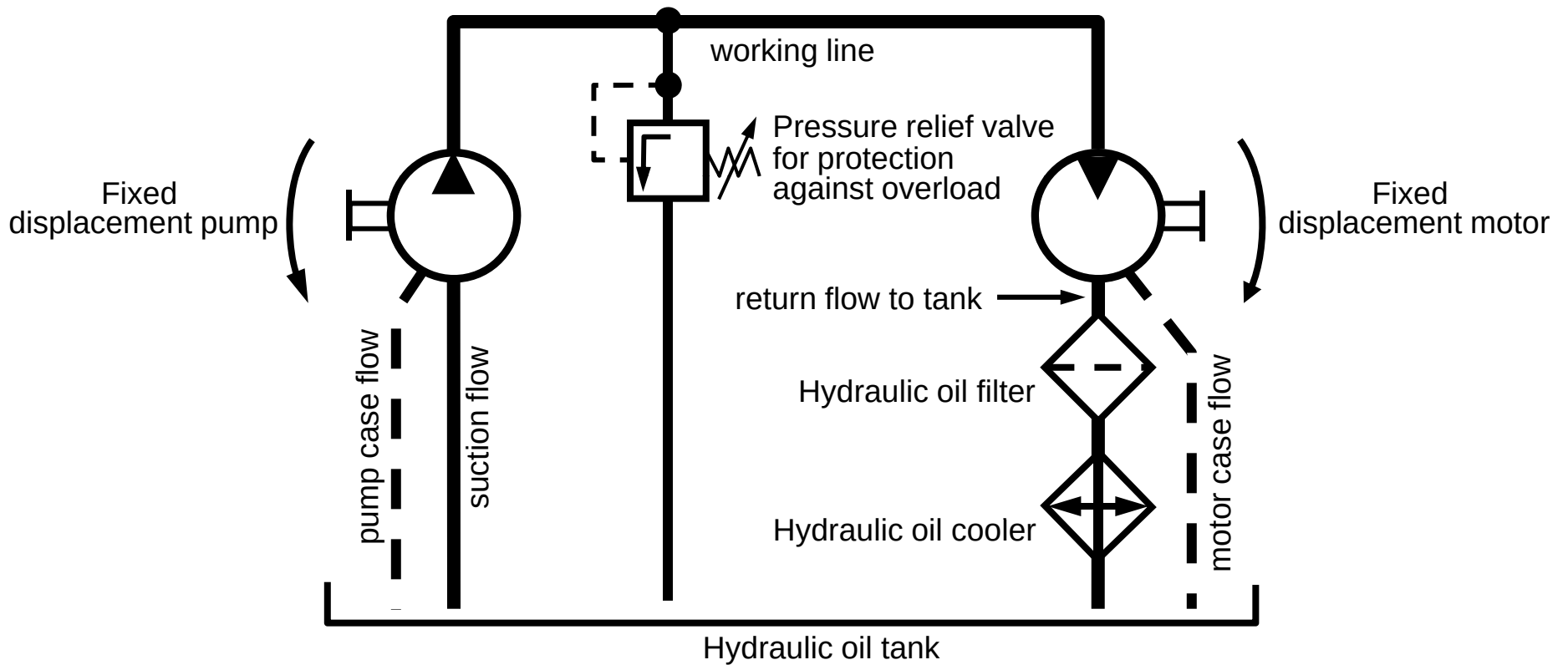
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THE WAY TO THE COMPLETE HYDRAULIC SYSTEM

Open loop circuit

Basic system with hydraulik pump and motor.
single direction



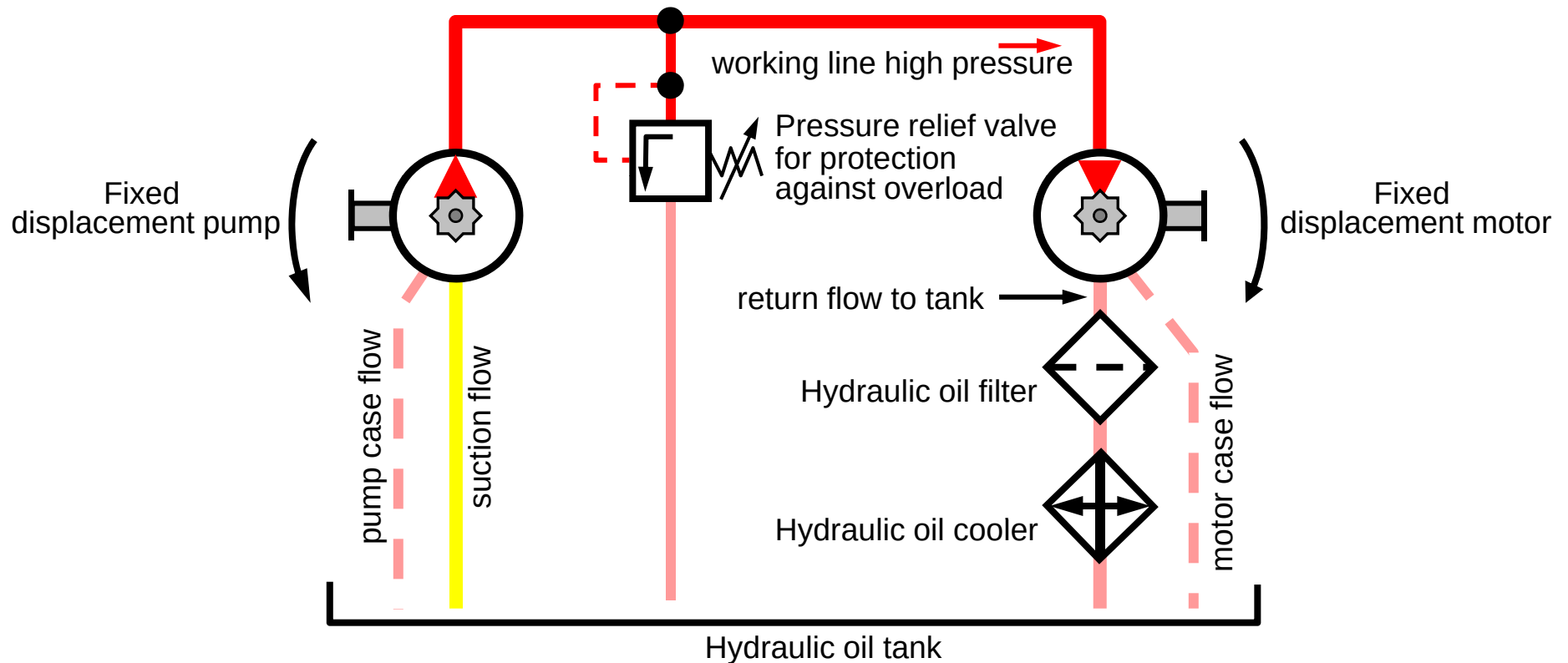
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Basic system with hydraulik pump and motor.
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■ suction flow ■ case flow / leakage ■ high pressure

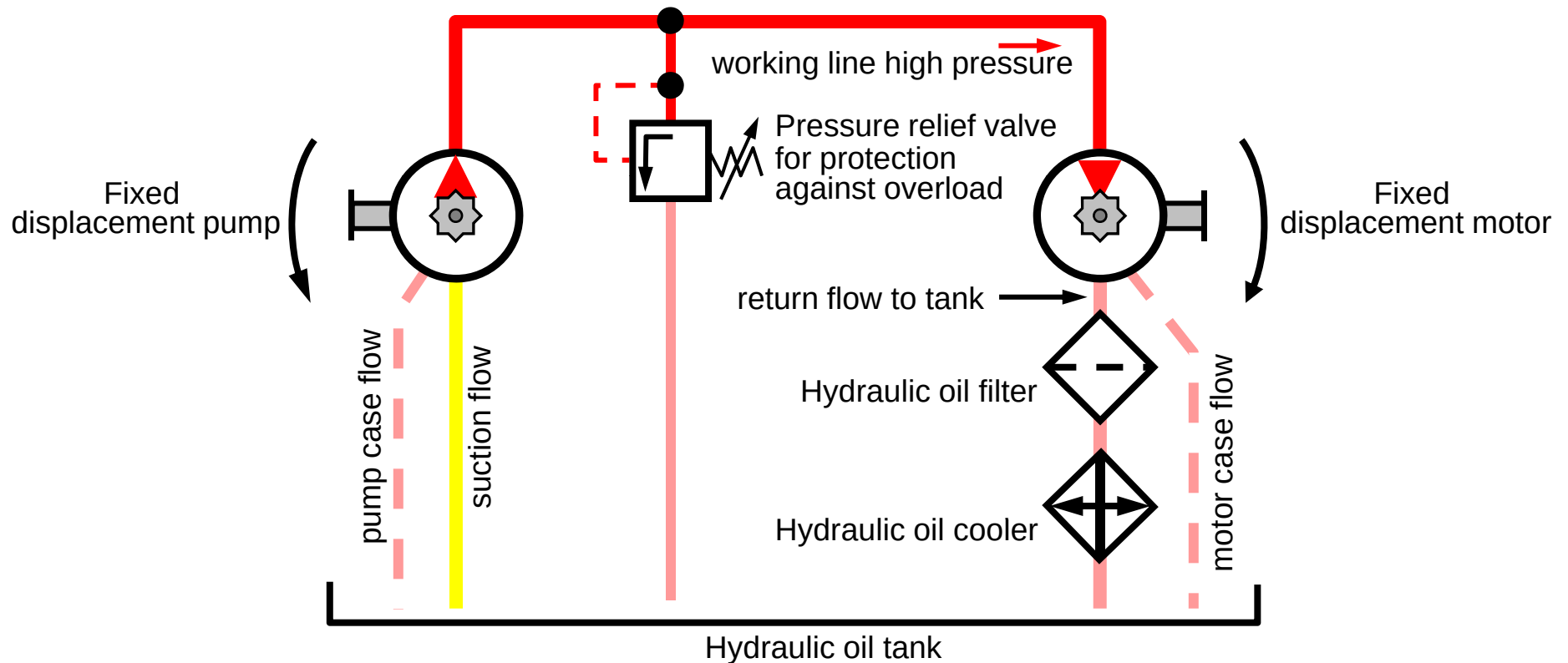
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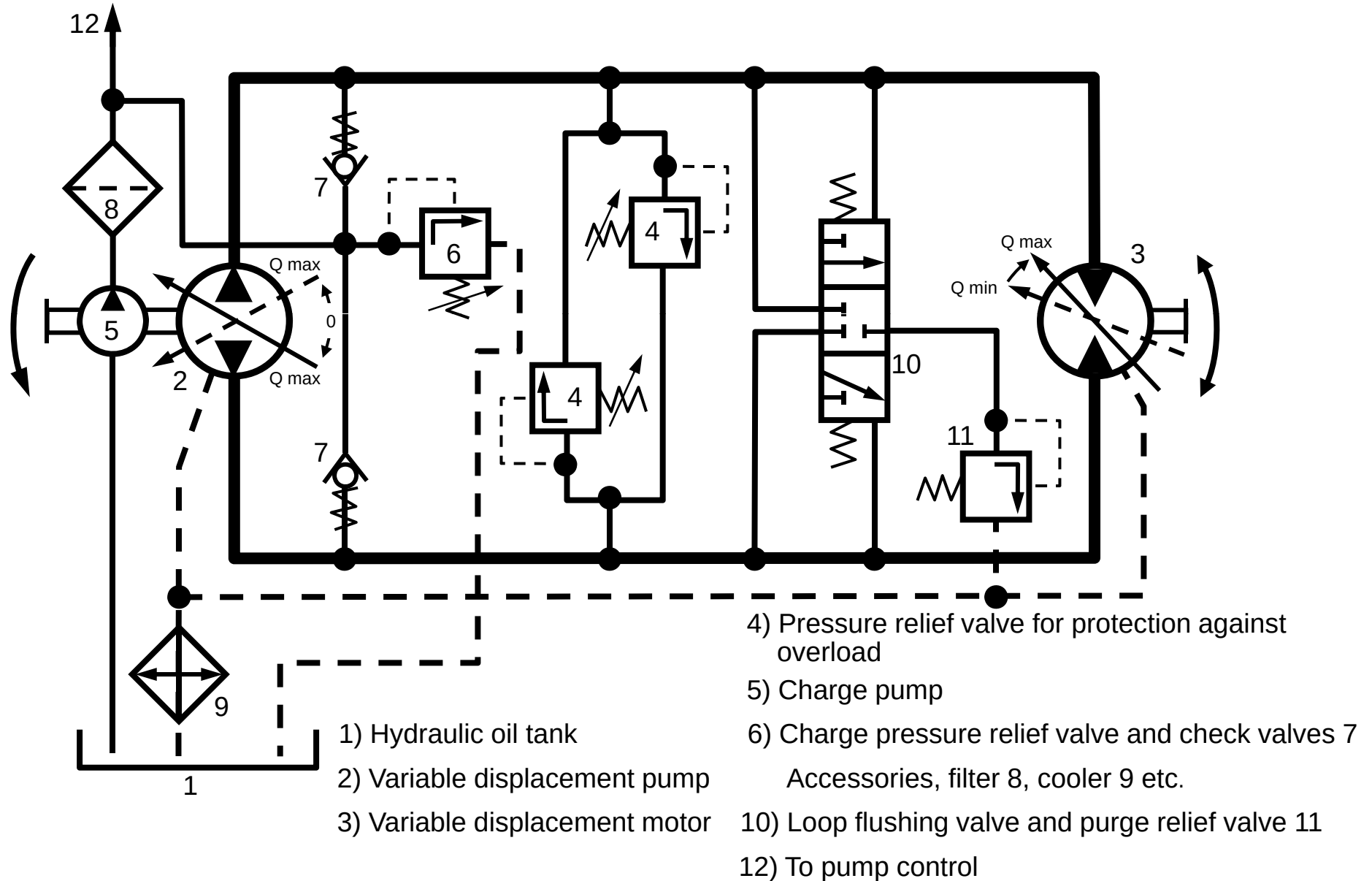
closed loop circuit

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THE WAY TO THE COMPLETE HYDRAULIC SYSTEM

Closed loop circuit



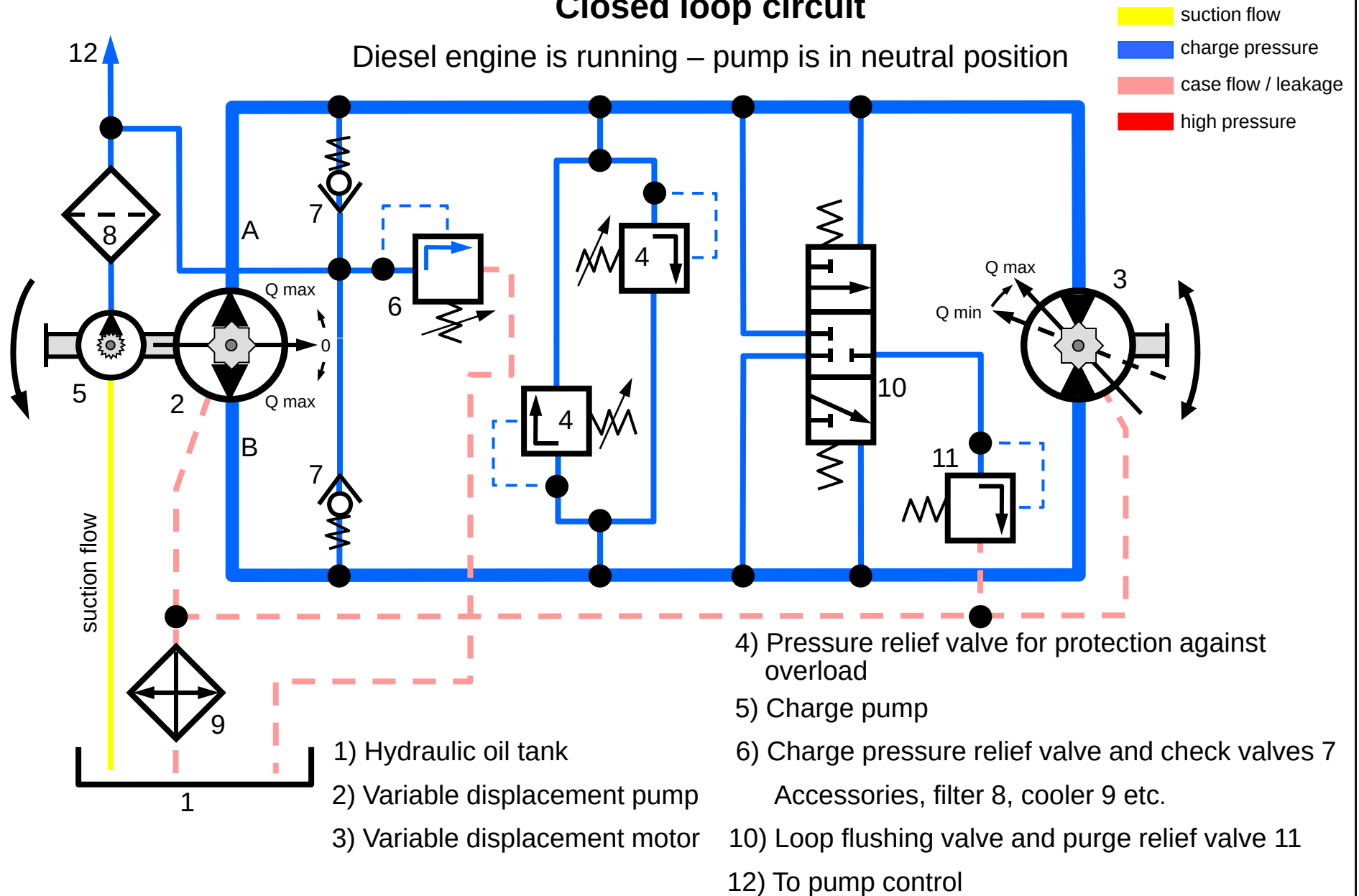
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THE WAY TO THE COMPLETE HYDRAULIC SYSTEM

Closed loop circuit

Diesel engine is running – pump is in neutral position



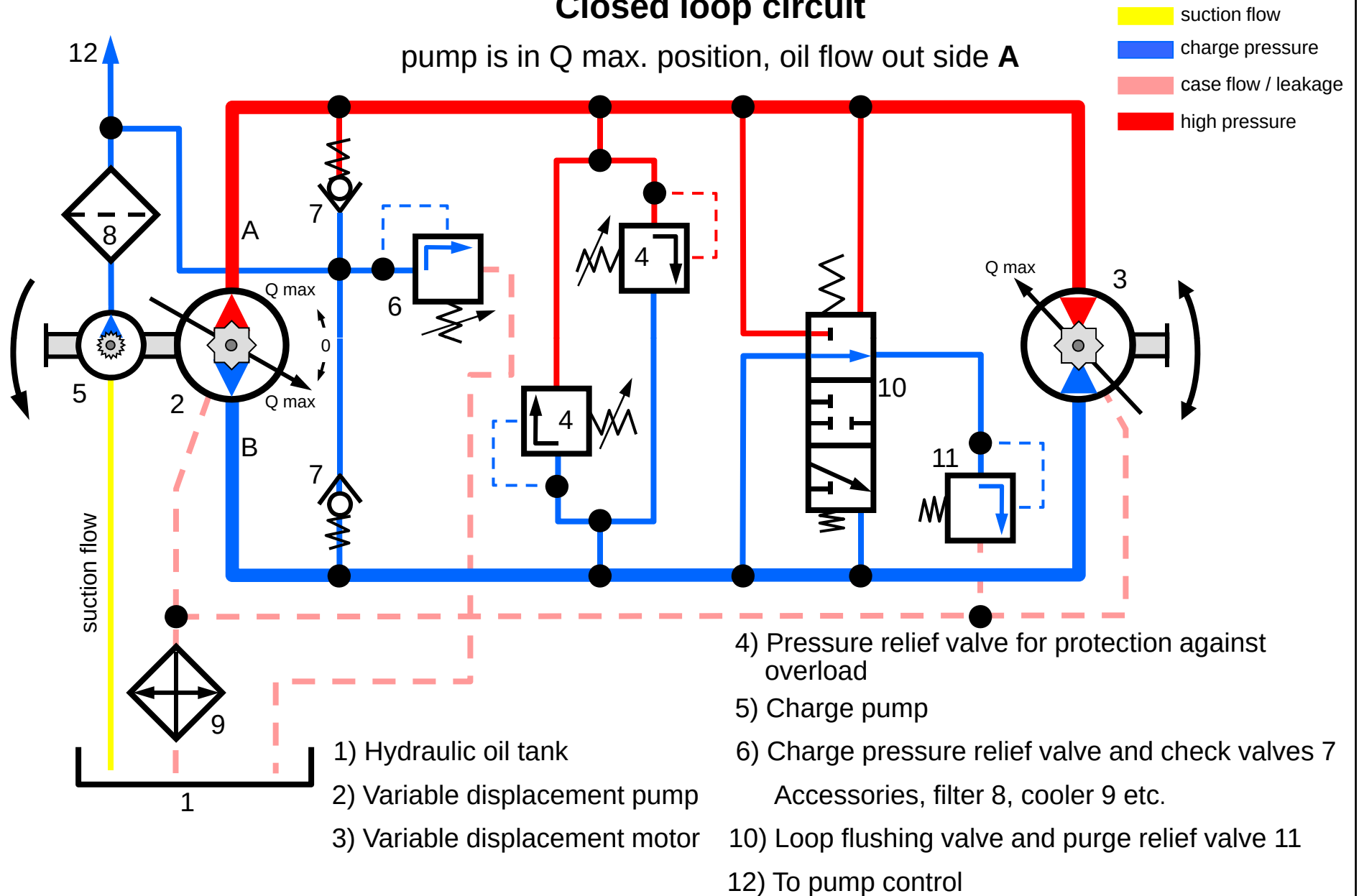
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THE WAY TO THE COMPLETE HYDRAULIC SYSTEM

Closed loop circuit

pump is in Q max. position, oil flow out side A



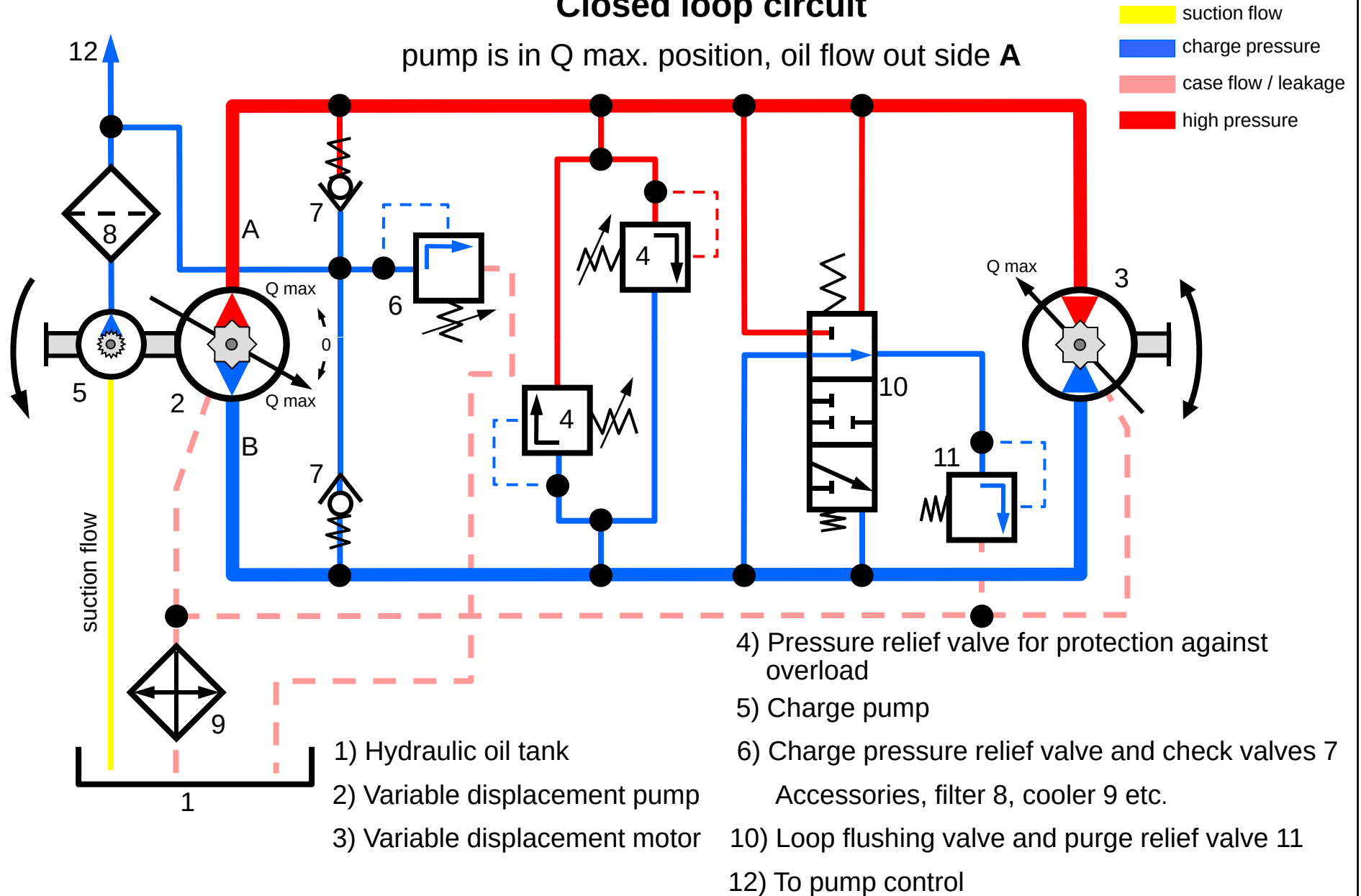
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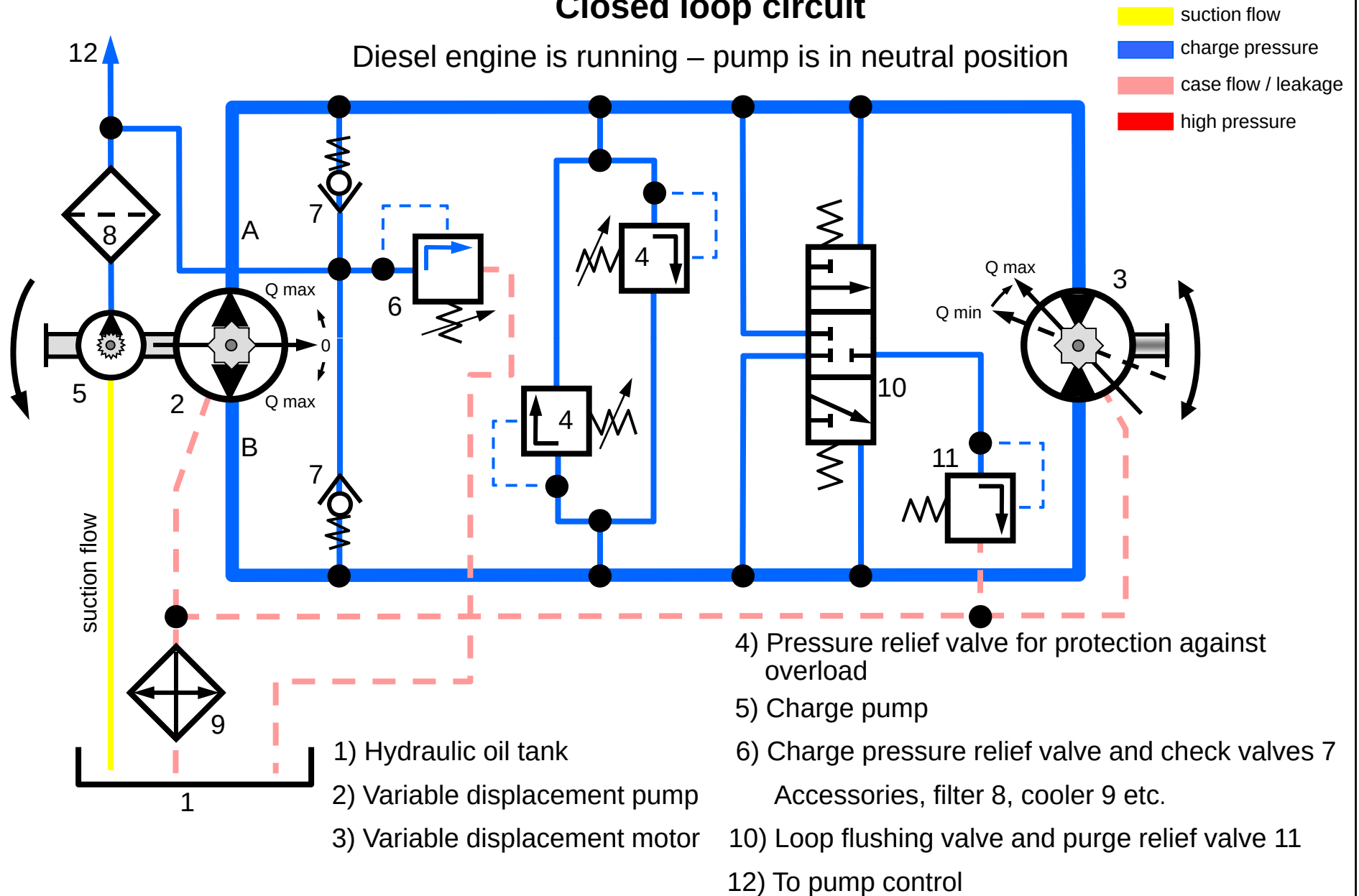
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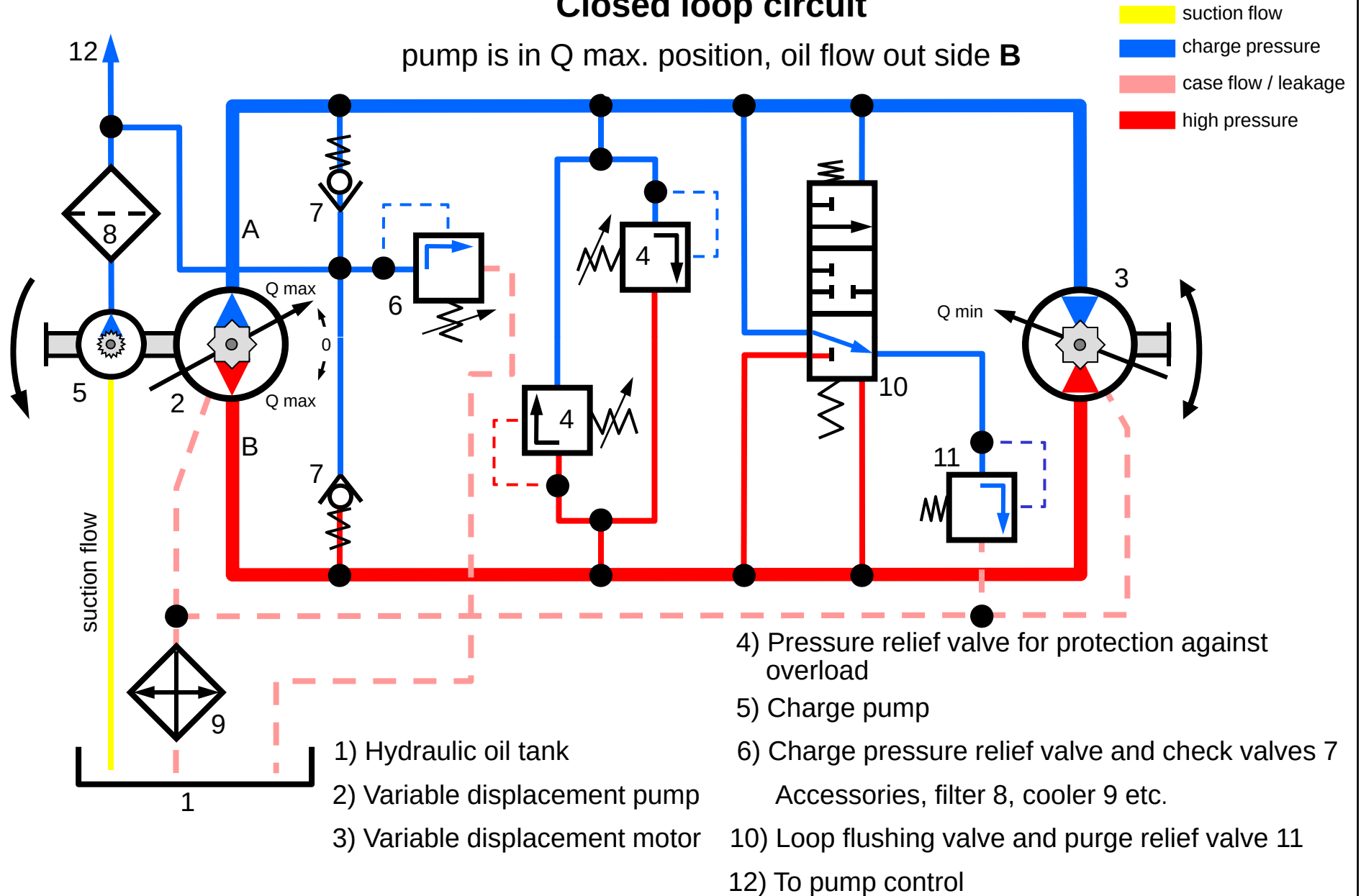
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THE WAY TO THE COMPLETE HYDRAULIC SYSTEM

Closed loop circuit

pump is in Q max. position, oil flow out side B



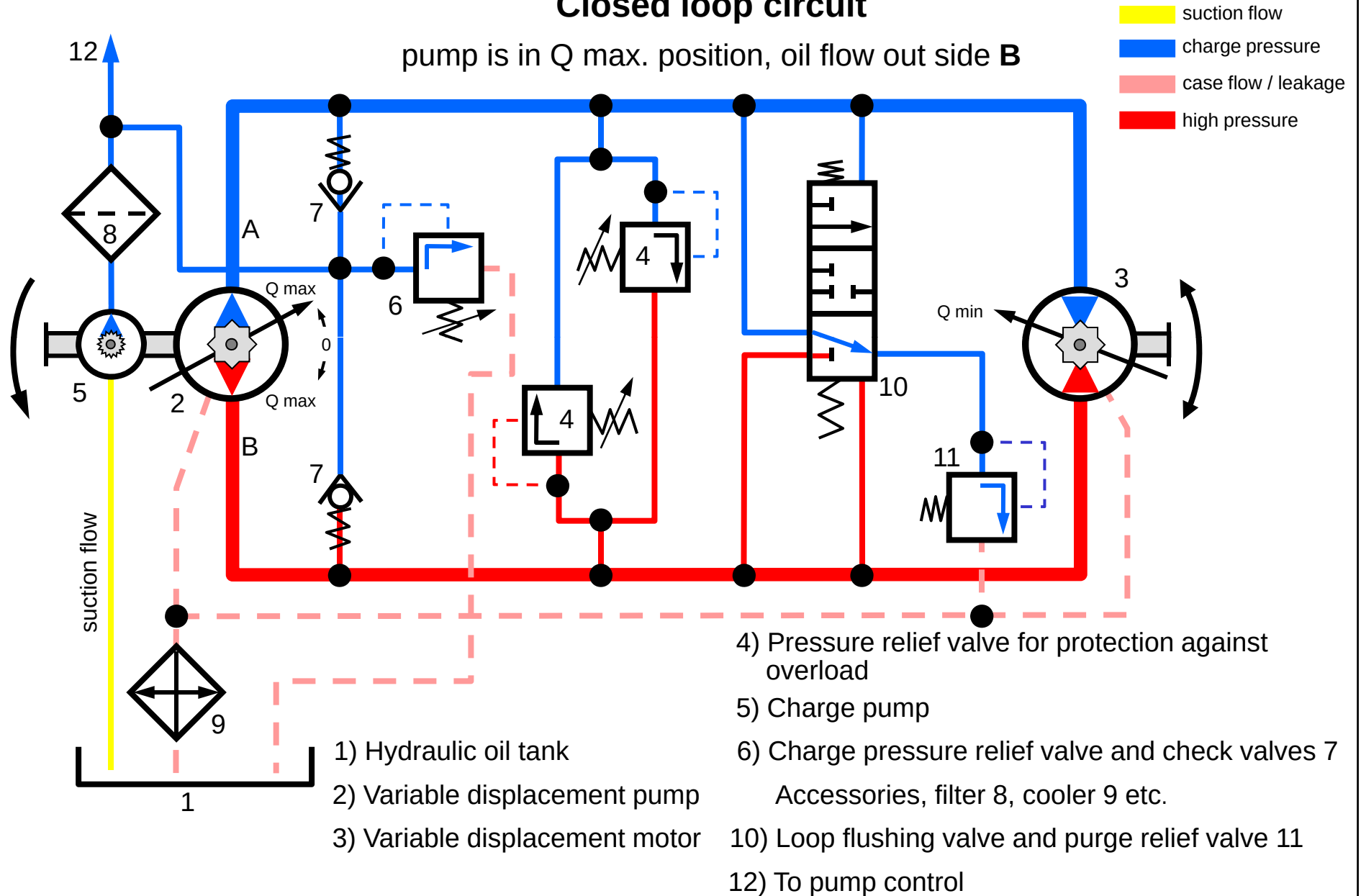
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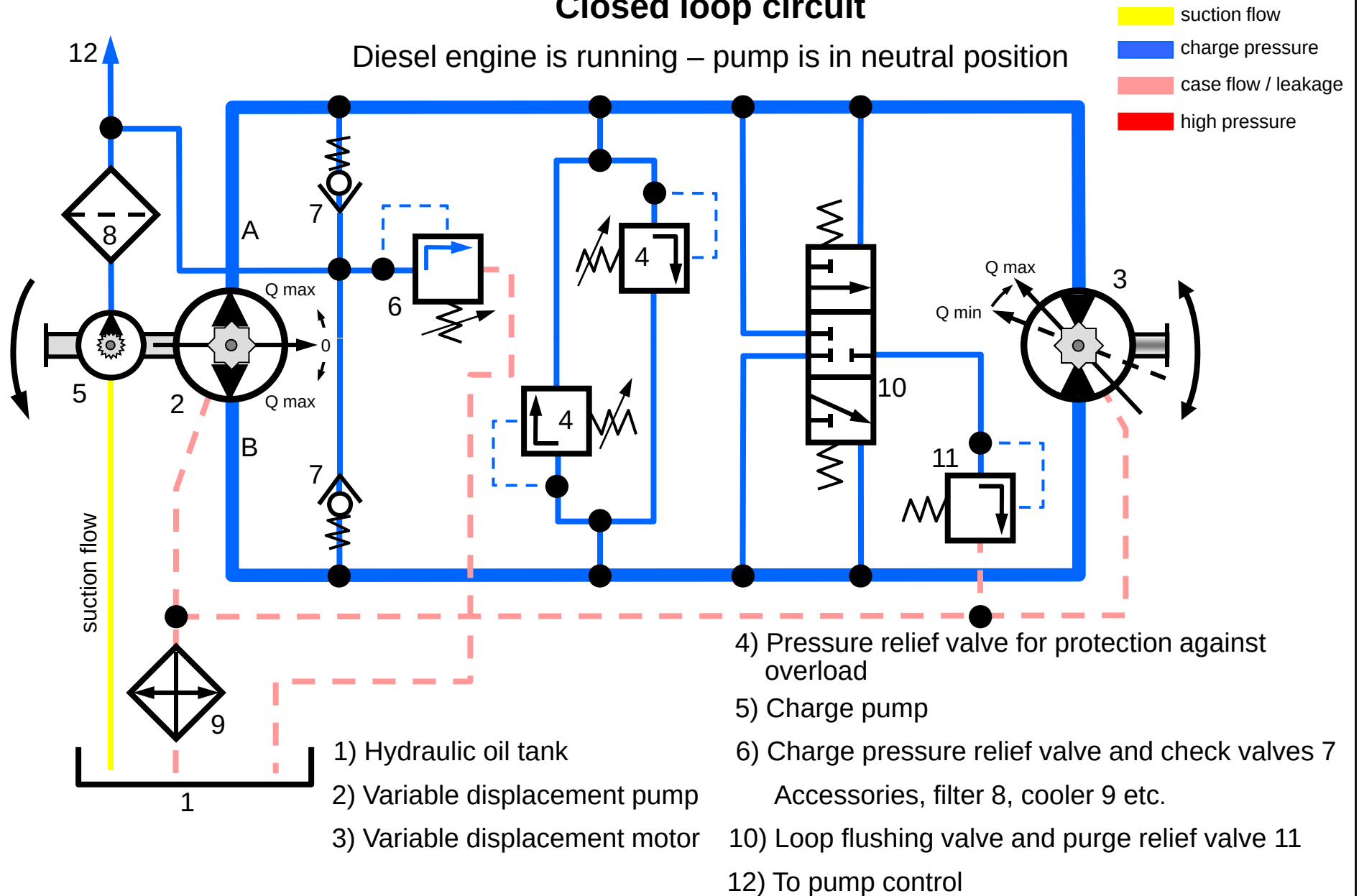
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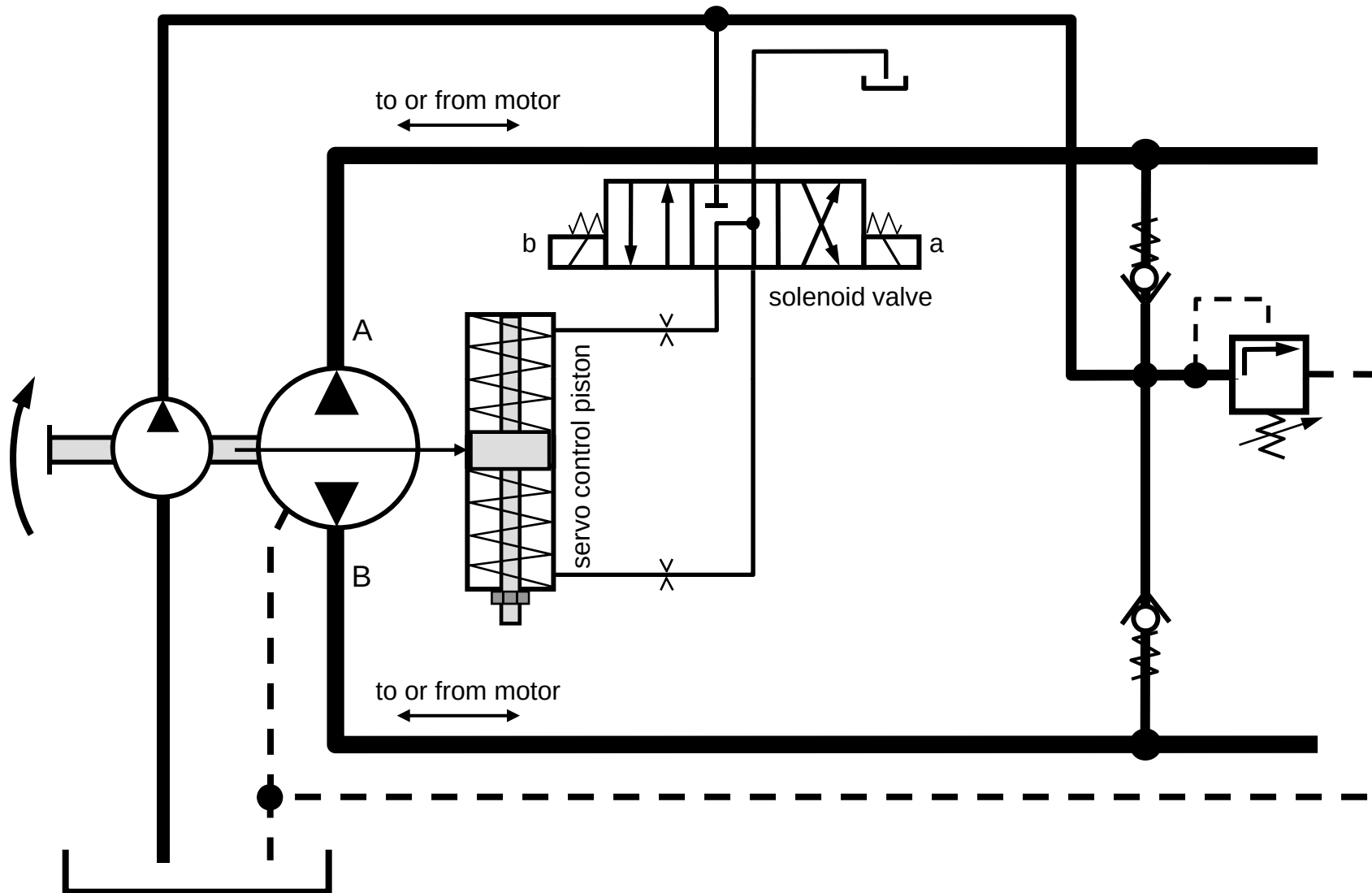
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Pump control by solenoid valve

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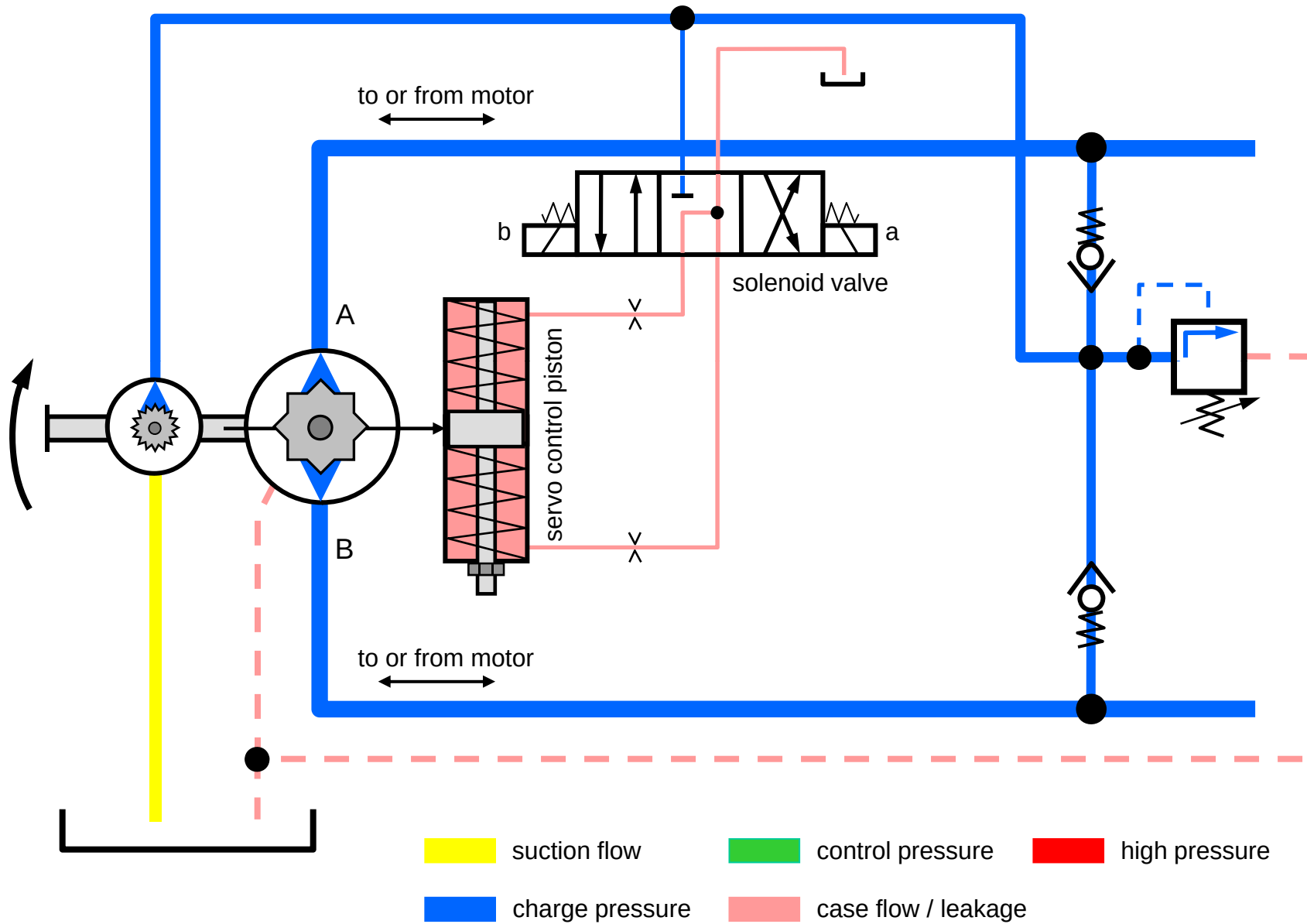
Pump control by solenoid valve



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Pump control by solenoid valve



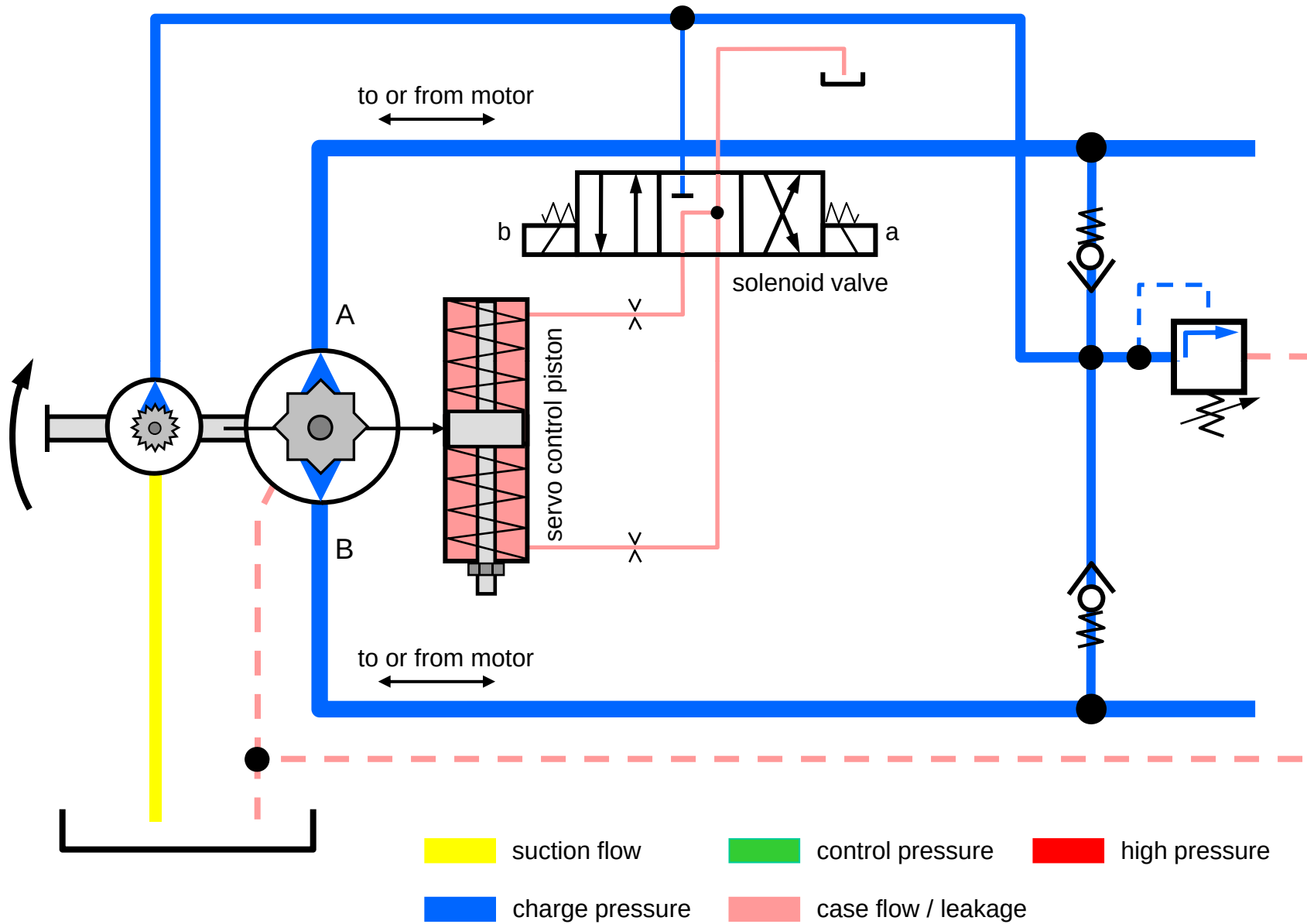
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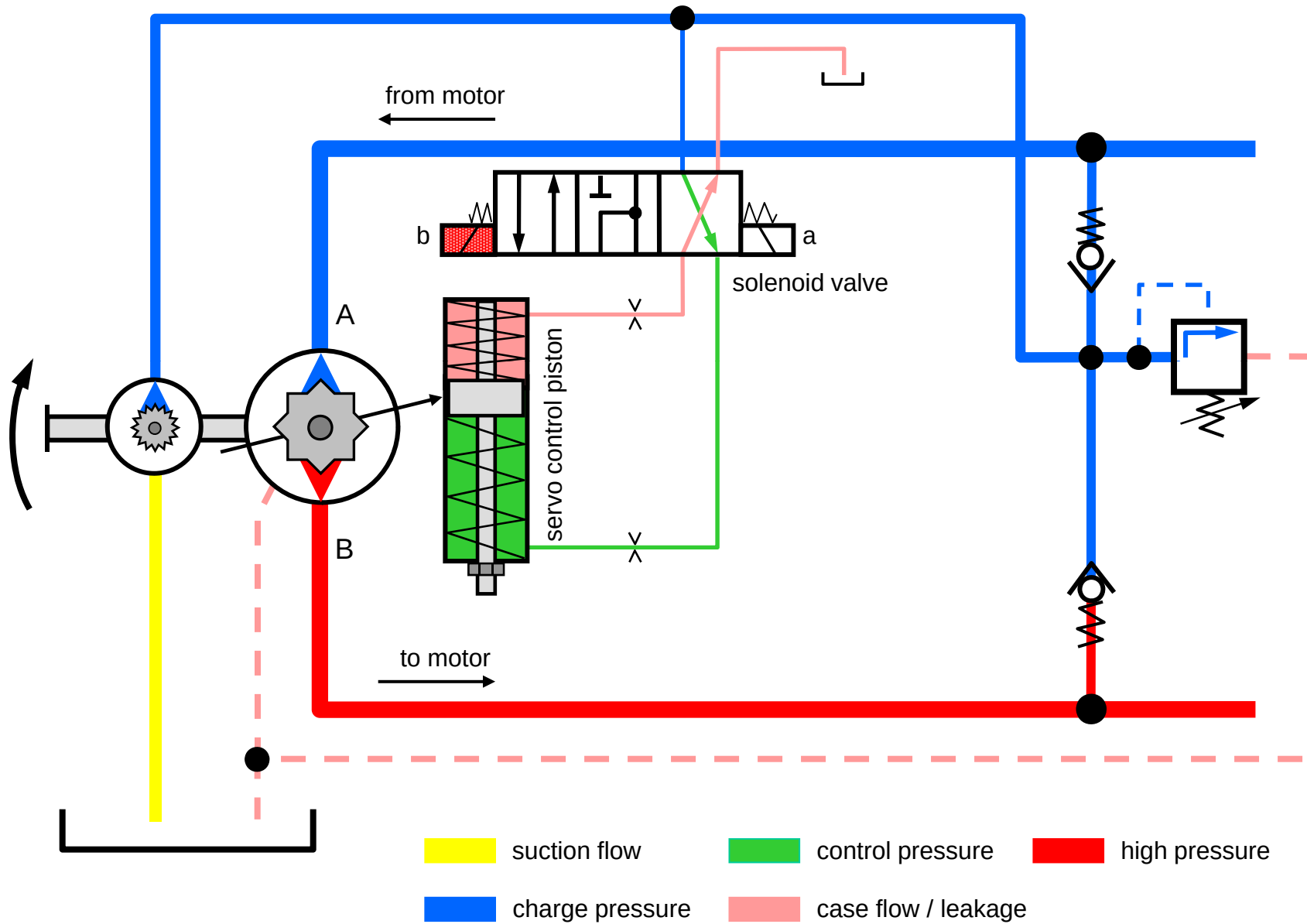
Pump control by solenoid valve



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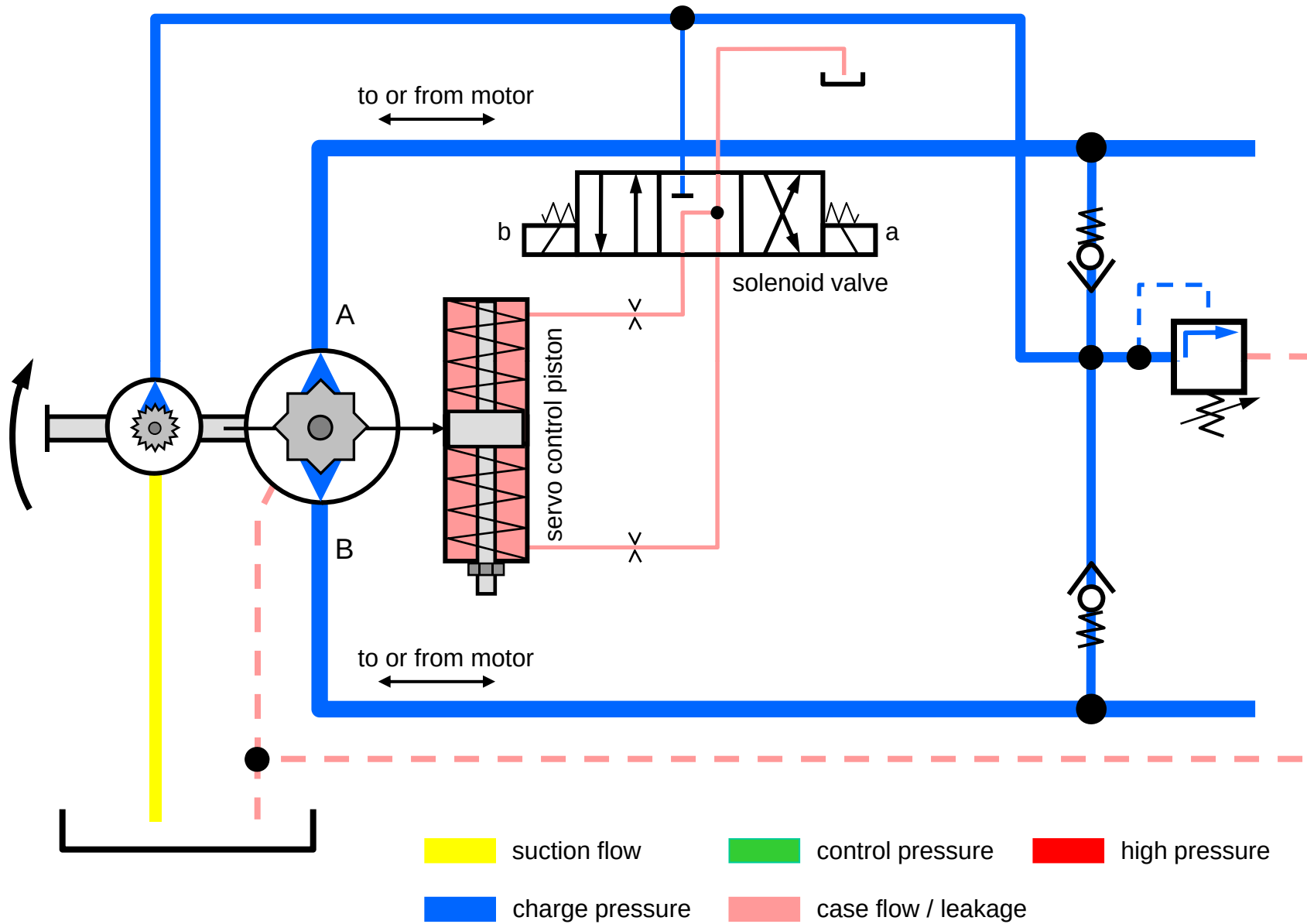
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Thank you very much for your attention.