

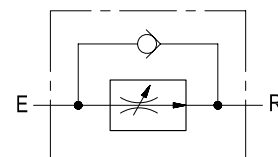
FLOW REGULATORS

Bosch Rexroth Oil Control manufactures a wide range of flow control valves: a few are simple flow restrictors, but, most of them are in-line two or three-ported pressure compensated flow regulators, which meter the flow irrespective of changes in downstream pressure. According to their performance, they can be classified as follows:

A) FLOW REGULATORS 2-WAY TYPE

In line two-ported flow regulators: they are pressure compensated and they meter flow irrespective of change in downstream pressure. Generally, they have an adjuster for the selection of the metered flow; often, these flow regulators incorporate a reverse flow check for meter-in or meter-out applications.

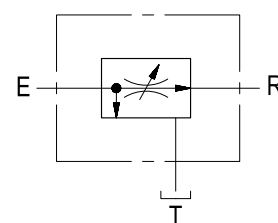
Excess flow needs to be dumped out of the system through the main relief valve.



B) FLOW REGULATORS 3-WAY BY-PASS TYPE

In line three-ported, by-pass type, flow regulators: they are pressure compensated and they meter a constant regulated flow, irrespective of changes in downstream pressure. Generally, they have an adjuster for the selection of the metered flow.

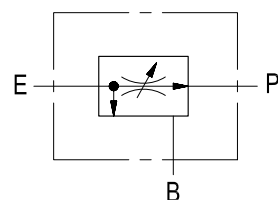
The third port "T" dumps the excess flow at the working pressure of the regulated circuit; the excess flow can be by-passed to tank directly, or it can be employed to power a secondary circuit, where the pressure required is "always lower" than the pressure in the Regulated line. The reverse flow check is an option available for most of these valves.



C) FLOW REGULATORS 3-WAY COMBINATION TYPE

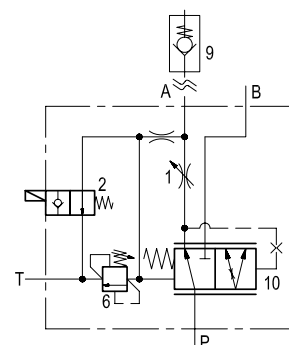
1) In line three-ported combination, or priority, type flow regulators. They divide the inlet flow between two outlets:

- the priority outlet "P" receives a pressure compensated priority flow, which stays constant regardless of pressure changes in the priority line. Generally, there is an adjuster for the selection of the priority flow.
- after the priority outlet is satisfied, the by-pass outlet "B" receives the excess flow which can be used to power a second system, where the pressure needed can be higher than priority.



2) A special version of these three-ported flow regulators has been developed into a "full range" of Heavy Duty Priority Flow Controls: they supply a priority pressure compensated flow on demand (normally controlled by a switch), and they incorporate a pressure relief control for the priority outlet.

They are fitted to existing hydraulic systems to power additional hydraulic tools or attachments with a constant, pressure compensated flow (ex.: hydraulic hammers).



D) FLOW DIVIDERS AND DIVIDERS/COMBINERS

In line three-ported flow controls; they are pressure compensated and provide 50% - 50% division and combination as standard. They are employed for motor or cylinder applications, where they divide or combine C1 and C2 flows from two actuators in order to keep the speeds relatively equal, regardless of working pressure differences.

They are manufactured in various sizes, and, for each size, there are different options of flow ranges: they must always be chosen according to the expected flow in order to match the pressure drops and the slippage performance indicated in the relevant data sheet.

