Parker Product Datasheet

Parker offers four different flow divider/combiner valves to cover a wide range of flows up to 320 lpm (85 gpm) and pressures as high as 420 bar (6,000 psi). Standard and custom ratios are available, along with optimized flow range options.

PART NUMBER: FDC101A66V
FLOW RATE: 12 GAL/MIN, 45 L/MIN
SEAL MATERIAL: Fluorocarbon
RATIO: 50/50
STANDARD FLOW RATE SETTING: 6-12 GAL/MIN, 22.5-45 L/MIN

PRODUCT OVERVIEW

Parker's family of flow divider/combiner valves feature interlocking spools for pressure compensation in both directions while either dividing or combining the flow. These valves can operate with hydraulic system flows as high as 320 lpm and pressures up to 420 bar with a selection of dividing/combining ratios available. Parker's divider/combiner valves are ideal for cylinder or motor synchronization applications within a broad range of markets, such as the construction, material handling, industrial markets, oil & gas, and many more.

Markets:
- Construction Equipment
- Material Handling Equipment
- Miscellaneous Industrial
- Miscellaneous Manufacturing
- Miscellaneous Mobile
- Oil & Gas

Features/Benefits:
• Interlocking spools for equal control dividing or combining
• Pressure compensated control in both directions
• Hardened, precision ground parts for durability
• Ratios of 50-50, 60-40, and 66-33 available
• All external parts zinc plated

Applications:
• Cylinder synchronization
• Motor synchronization
• Flow partitioning
• Transmission differentials

Additional Technical Insight:
Each of Parker's four flow divider/combiner versions can be used as a divider or combiner depending on the direction of flow. Two inter-locking spools allow for pressure compensated flow division and combination to be proportioned based on the selected ratio and flow range. When port 3 is supplied flow it is divided by a fixed ratio to work ports 2 and 4. For example, if a 50:50 ratio is selected, half of the flow will exit port 2 and the other half will exit port 4. If the actuators have the same area or displacement they will operate at the same speed. If different actuator speeds are required, alternative ratios can be selected to supply different flows to each port. Ratios other than 50:50 can allow speed synchronization of two actuators that have different areas or displacements. The flow to each actuator port is proportional to the inlet flow based on the flow division ratio. When used as a combiner, flow applied to ports 2 and 4 is combined and the total flow exits port 3. The flow from the combiner inlet ports is pressure compensated and the flow ratio determines how much flow is allowed from each port. Just like the divider mode, the combiner mode allows for actuator speed variation or synchronization. Typical flow accuracy is +/- 10% between ports 2 and 4. When trying to synchronize 2 cylinders or motors, cross-port relief valves or balancing orifices can be used to help maintain tighter synchronization. Parker's FDC101, L04A3, L06A3 and L1A300 flow divider/combiners operate in the same manner with each having a different maximum flow and multiple standard ratios and flow ranges.

TECH SPECIFICATIONS

MAXIMUM OPERATING TEMPERATURE	+204 °C

MAXIMUM OPERATING TEMPERATURE	+400 °F
DIVISION	Hydraulic Valve Systems Division
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MAXIMUM OPERATING PRESSURE	245 bar
MAXIMUM OPERATING PRESSURE	3500 psi
FLOW RATE	12 gal/min
FLOW RATE	45 L/min
MINIMUM OPERATING TEMPERATURE	-15 °F
MINIMUM OPERATING TEMPERATURE	-26 °C
FOR FLUID TYPE	Mineral-based or synthetic hydraulic fluids
CONNECTION TYPE	N/A
CONNECTION SIZE	N/A
BODY MATERIAL	N/A
SEAL MATERIAL	Fluorocarbon
WEIGHT	0.3 lb
WEIGHT	0.14 kg
OPERATING TEMPERATURE	-15 to +400 °F
OPERATING TEMPERATURE	-26 to +204 °C
MAXIMUM FLOW RATE	45 L/min
MAXIMUM FLOW RATE	12 gal/min
FUNCTION	Flow Divider/Combiner
ACTUATION TYPE	Interlocking Spools
OPERATION TYPE	Automatic
CONFIGURATION	N/A
MAXIMUM KINEMATIC VISCOSITY	45-2000 SSU (6 to 420 cSt)

FILTER EFFICIENCY RATING	ISO 4406 18/16/13, SAE Class 4
MAXIMUM INLET PRESSURE RATING	245 bar
MAXIMUM INLET PRESSURE RATING	3500 psi
VALVE MATERIAL	All parts steel. All operating parts hardened steel
RATIO	50/50
FLOW RATE ACCURACY	10%
CAVITY SIZE	C10-4
INSTALLATION TORQUE	22 Nm
INSTALLATION TORQUE	16 lb-ft
STANDARD FLOW RATE SETTING	22.5-45 L/min
STANDARD FLOW RATE SETTING	6 to 12 gal/min