Hydraulic Motors

Series V12, V14, T12
Variable Displacement

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Parker

ENGINEERING YOUR SUCCESS.

Series V12

Series V12 is a bent-axis, variable displacement motor.

It is intended for both open and closed circuits, mainly in mobile applications, but the V12 can also be utilized in a wide variety of other applications.

Features

- Max intermittent pressure to 480 bar and continuous operating pressure to 420 bar
- Thanks to low weight pistons with laminated piston rings and a compact design of the rotating parts, the V12 tolerates very high speeds
- High allowable speeds and operating pressures means high output power; the overall efficiency remains high throughout the entire displacement range
- The 9-piston design provides high start-up torque and smooth motor operation
- Wide displacement ratio (5:1)
- Broad range of controls and accessory valves for most applications
- Small envelop size and a high power-to-weight ratio
- ISO, cartridge and SAE versions
- Low noise levels due to a very compact and sturdy design with smooth fluid passages
- Positive piston locking, strong synchronizing shaft, heavy-duty bearings and small number of parts add up to a compact and robust motor with long service life and proven reliability.

Series V14

Series V14 is a new generation of variable displacement, bent-axis motors, a further development of our well known V12 motor.

It is designed for both open and closed circuit transmissions with focus on high performance machines .

Applications

- Excavators
- Forestry machines
- Mining and drilling machines
- Wheel loaders
- Winch drives

Optional equipment

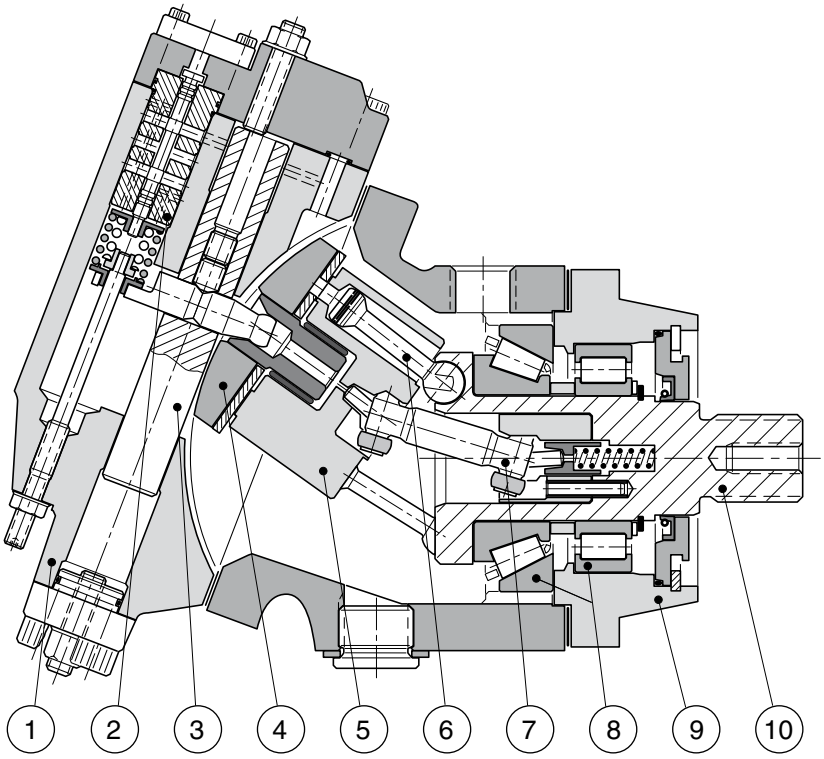
- Integrated sensors for speed and displacement
- Integrated flushing or pressure relief valves

Additional benefits (compared to those of the V12)

- Improved speed capability
- Improved control performance
- Reduced number of parts
- Stronger shaft bearing support.

V12 cross section

1. End cap
2. Servo control valve
3. Setting piston
4. Valve segment
5. Cylinder barrel
6. Spherical piston with laminated piston ring
7. Synchronizing shaft
8. Heavy-duty roller bearings
9. Bearing housing
10. Output shaft



Specifications

V12 frame size	**60**	**80**
Displacement [cm^3/rev]		
- max, at 35°	60	80
- min, at 6.5°	12	16
Operating pressure [bar]		
- max intermittent [1)]	480	480
- max continuous	420	420
Operating speed [rpm]		
- at 35°, max intermittent [1)]	4 400	4 000
max continuous	3 600	3 100
- at 6.5°–20°, max intermittent [1)]	7 000	6 250
max continuous	5 600	5 000
- min continuous	50	50
Flow [l/min]		
- max intermittent [1)]	265	320
- max continuous	215	250
Torque (theor.) at 100 bar [Nm]	95	127
Output power [kW]		
- max intermittent [1)]	150	175
- max continuous	95	105
Corner power [kW]		
- intermittent [1)]	335	400
- continuous	235	280
Mass moment of inertia (x10^{-3}) [kg m^2]	3.1	4.4
Weight [kg]	28	33

1) Max 6 seconds in any one minute.

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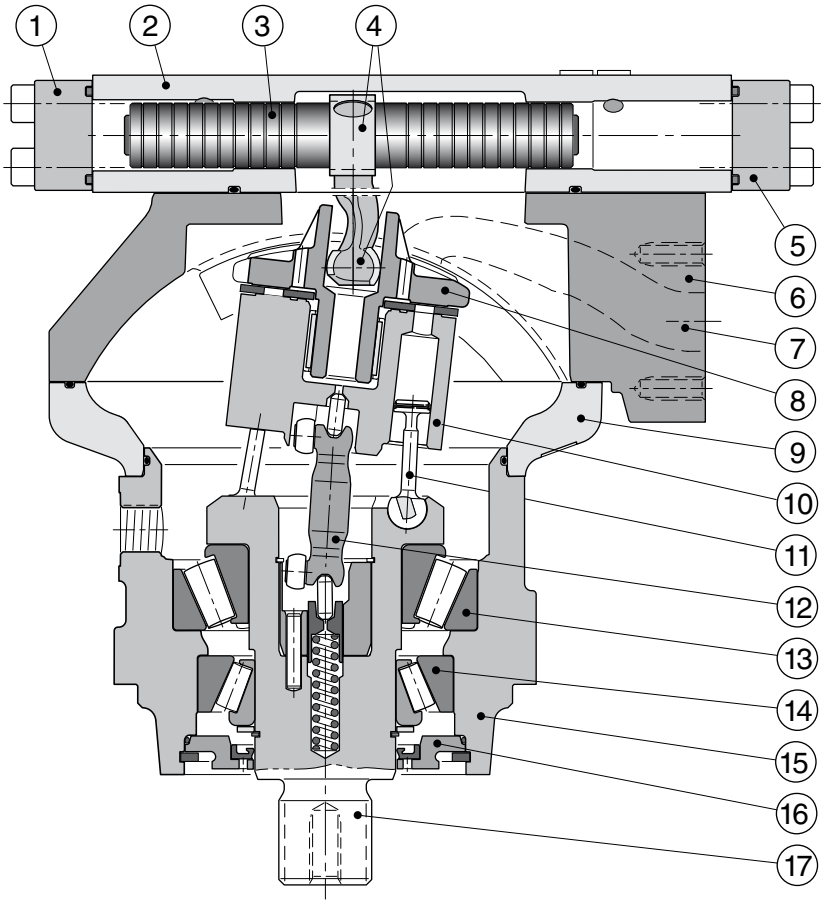
Pump and Motor Division
Trollhättan, Sweden

V14 cross section

1. End cover, min displ.
2. Control module
3. Setting piston
4. Connecting arm
5. End cover, max displ.
6. Connection module
7. Main pressure port
8. Valve segment
9. Intermediate housing
10. Cylinder barrel
11. Spherical piston with laminated piston ring
12. Synchronizing shaft
13. Inner roller bearing
14. Outer roller bearing
15. Bearing housing
16. Shaft seal with retainer
17. Output shaft



Specifications

V14 frame size	**110**	**160**
Displacement [cm³/rev]		
- at 35° (max)	110	160
- at 6.5° (min)	22	32
Operating pressure [bar]		
- max intermittent[1)]	480	480
- max continuous	420	420
Operating speed [rpm]		
- max intermittent at 35°[1)]	3 900	3 400
- max continuous at 35°	3 400	3 000
- max intermittent at 6.5°-20°[1)]	6 500	5 700
- max continuous at 6.5°-20°	5 700	5 000
- min continuous	50	50

1) Max 6 seconds in any one minute.

V14 frame size	**110**	**160**
Flow [l/min]		
- max intermittent[1)]	430	550
- max continuous	375	480
Output torque [Nm]		
at 100 bar (theor.)	175	255
Max output power[1)] [kW]	262	335
Corner power [kW]		
- intermittent[1)]	570	730
- continuous	440	560
Mass moment of inertia		
($x10^{-3}$) [kg m^2]	8.2	14.5
Weight [kg]	54	68

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HydraTorque

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