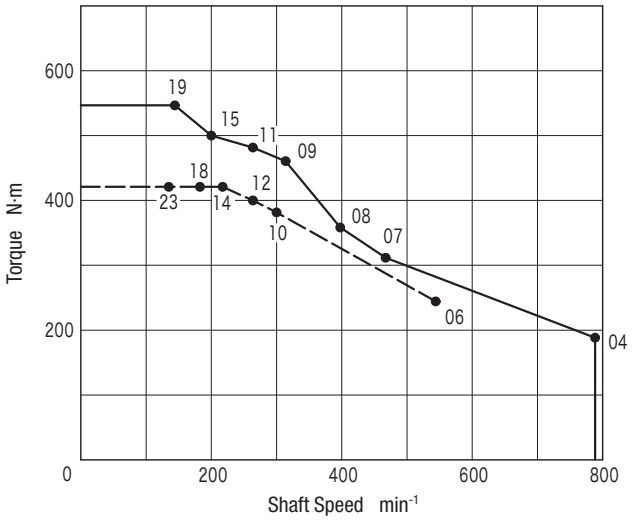
CR/GR-M Output Characteristics

• CR/GR-M

Model Code	Displacement Code	Displacement cm³/rev	Working Pressure MPa	
			Rating	Maximum *
CR GR–M	04	62	21	28
	06	95	18	24
	07	106	21	28
	08	123		
	09	153		
	10	167	16	21. 5
	11	184	18	24
	12	192	15	20
	14	239	12. 5	16. 5
	15	246	14	18. 5
	18	288	10. 5	14
	19	306	13	15. 5
	23	383	8	10. 5

Note:
"Max.*" refers to instantaneous maximum pressure.
Not recommended for continuous operation.

Torque at Rated Pressure



Notes on operation

Hydraulic Fluid

- Max. working pressure and speed, etc., may vary depending on the hydraulic fluid used. See Appendix 1 on Hydraulic Fluid for details on fluid selection.
- Mineral based oil
  Use anti-wear oil equivalent to JIS K 2213-2 (additive) ISO VG32-68.
- Fire resistant fluids
  - ○ Water glycol fluids cannot be used.
  - ○ Specifications of motor when used with phosphate ester fluids will differ from mineral oil specifications. See specifications of each motor for details. Seals are fluororubber. Add F3 prefix to model code.
  - ○ Consult Tokyo Keiki regarding use of motors with other fire-resistant fluids.

Mounting

- Mounting base of motor should be of sufficient rigidity.
- Motor can be mounted in any direction.
- Flatness of mounting surface and squareness tolerance should be less than 0.025 mm.
- Mating of mounting flange should be clearance fit.

Filtration

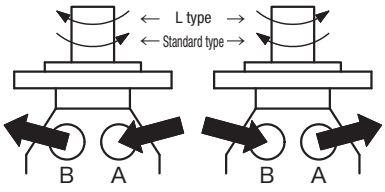
To ensure long motor life, filtration system should be incorporated and all oil in the system should pass through a filter every 8 hours. A 25 μm line filter should be used when the motor is in operation.

Fluid Viscosity

Viscosity range of oil used should be 10 to 860 mm²/s. And the recommended range is 13 to 54 mm²/s. Oil temperature should be maintained below 65°C.

Rotation Direction

Motor is bi-directional. With the standard motor, flow to inlet port A will rotate shaft to the left (CCW) when viewed from shaft end and flow to inlet port B will result in right (CW) rotation. Rotation reverse to standard model is indicated by “L” in the model code.



CR, GR-M series

Drain

Regardless of rotation direction, motor is internally drained so that pressure from high pressure side does not affect motor case. Allowable back pressure is 7 MPa (2 MPa for F3 model) but for longer shaft seal life, back pressure below 1.8 MPa (1MPa for F3 model) is recommended. When motor is used in circuit with back pressures higher than 1.8 MPa (1 MPa for F3 model), utilize D type model with external drain port and connect drain directly to tank. For closed loop circuits such as transmissions, cooled oil will replenish the circuit loop to restrain temperature rise by connecting drain line to tank.

Overload Protection

Incorporate pressure control valve on motor inlet side to prevent overload. For inertial loads, also incorporate pressure control valve on the motor outlet side.

Starting Pressure

Pressure required to start motor under no load differs according to the displacement. It is below 1.5 MPa for CR series motors. For GR-M series motors, control valve pilot pressure must be maintained (to release the mechanical brake) and required starting pressure for GR-M*1 is above 1 MPa and for GR-M*2, above 2 MPa.

Control Valves

Counterbalance and brake valves should be specified if required.

Indirect Drive

As a basic rule, do not apply radial load or thrust load from an external source to the shaft end. When motors are to be operated by belt, chain, gear drive or some other form of indirect drive, consult Tokyo Keiki.

Tachometer Mounting

When selecting tachometer mounting (T type), consult Tokyo Keiki.