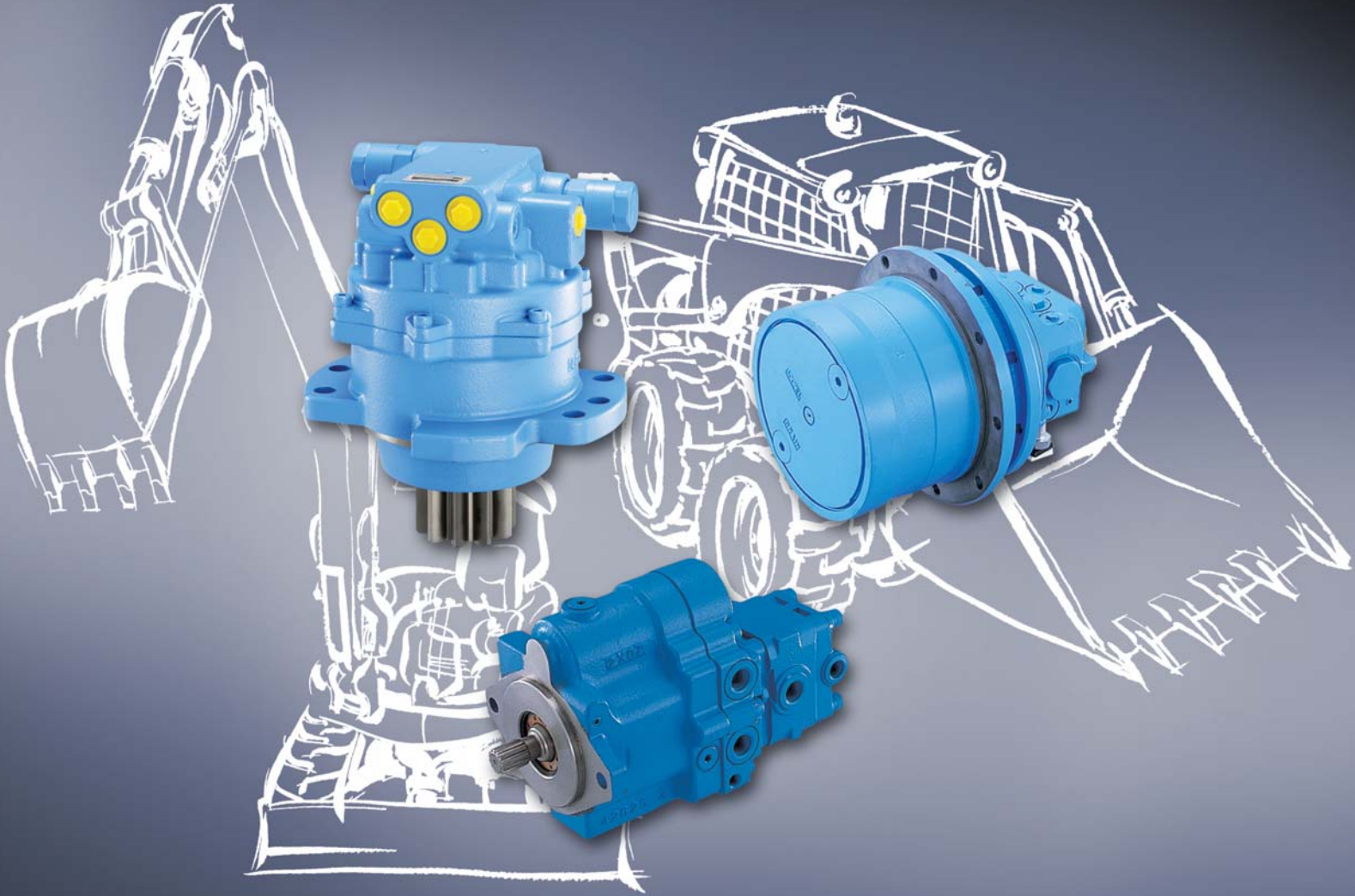


NACHI

Hydraulic Equipment

For Compact Construction Machines



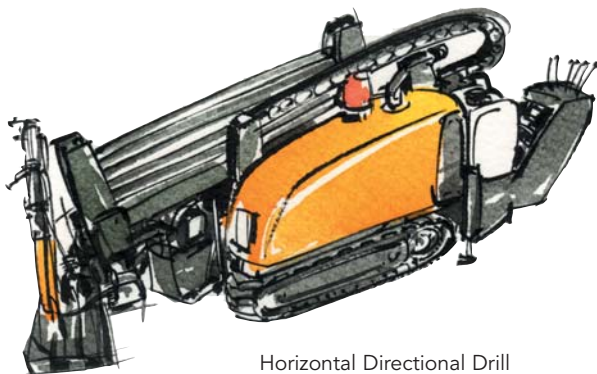
USING OUR COMPREHENSIVE CAPABILITIES,
**NACHI can meet your requirements in the diversified
market of compact construction machinery.**

There is a growing need for sophisticated diverse compact construction machinery in terms of function, productivity, maneuverability, and versatility.

NACHI offers unique solution for this market with our pumps and motors.

Due to our extensive studies of piston motor design, NACHI has succeeded in achieving power efficiency, operational stability, and substantial downsizing of the components.

Using our comprehensive capabilities, NACHI meets the needs of the world's market of compact construction machinery.



Horizontal Directional Drill



Skid Steer Loader



Stump Cutter

PHV Series Travel Motor



Features

- **All-in-One Design**

All required components for track drive motor are in one unit. (planetary gearbox, hydraulic motor, negative type parking brake, shockless relief valve, anti-cavitation check valve, other optional valve.)

- **High Reliability**

All main parts, including special-made angular ball bearing in gearbox, are made and tested by NACHI.

- **High Efficiency**

The axial piston motor can maintain good efficiency at high pressure ranges. It reduces engine stall, and enables better machine maneuverability.

- **Auto Kick Down**

Speed changed automatically without operating a selector switch.

- **2-Speed Function**

Specifications

Model	Gear Ratio	Hyd. motor displacement (Lo/Hi)	Wheel Motor			Hyd. Motor			Valve T:Auto S:Shockless relief valve R:Surge killer relief valve	Mass
			Max. final displacement (Lo)	Max. torque (Lo) (Note 1)	Max. speed (Hi)	Max. pressure	Max speed (Hi) (Note 2)	Parking brake torque (Note 3)		
			cm ³ /rev (in ³ /rev)	N-m (lbf-ft) (Theo)	min. ⁻¹ (Theo)	MPa (psi)	min. ⁻¹ (Theo)	N-m (lbf-ft) (Theo)		
PHV-1B	1/25.26 1/36.96	9.5/4.7 (0.58/0.29)	458.3 (27.97)	1510 (1113.72)	80	24.5 (3553)	3000	20 (14.46) (Option)	—	17 (37)
		10.9/5.6 (0.67/0.34)								
		11.4/5.8 (0.70/0.35)								
		12.4/6.2 (0.76/0.38)								
PHV-2B	1/31.00 1/39.00	16.1/8.4 (0.98/0.51)	670.8 (40.93)	2420 (1784.91)	75	24.5 (3553)	3000	30 (22.42) (Option)	T (Option)	24 (53)
		16.1/9.1 (0.98/0.56)								
		17.2/8.6 (1.05/0.52)								
		17.2/9.5 (1.05/0.58)								
PHV-3B	1/36.51 1/45.20	20.7/10.9 (1.26/0.67)	1134.5 (69.23)	4114 (3034.35)	70	24.5 (3553)	3500	36 (26.77) (Option)	T,S,R (Option)	36 (79)
		21.4/12.9 (1.31/0.79)								
		23.6/12.0 (1.44/0.73)								
		23.6/12.9 (1.44/0.79)								
		23.6/15.7 (1.44/0.96)								
PHV-4B	1/36.80 1/47.53	28.6/17.4 (1.75/1.06)	1677.8 (102.39)	6542 (4825.16)	65	24.5 (3553)	3500	86 (63.65) (Option)	T,S,R (Option)	56 (123)
		29.7/18.3 (1.81/1.12)								
		34.2/19.1 (2.09/1.17)								
		35.3/21.3 (2.15/1.30)								

Note 1: Actual torque at 10 min⁻¹(Lo) should be approximately 85% of theoretical torque.

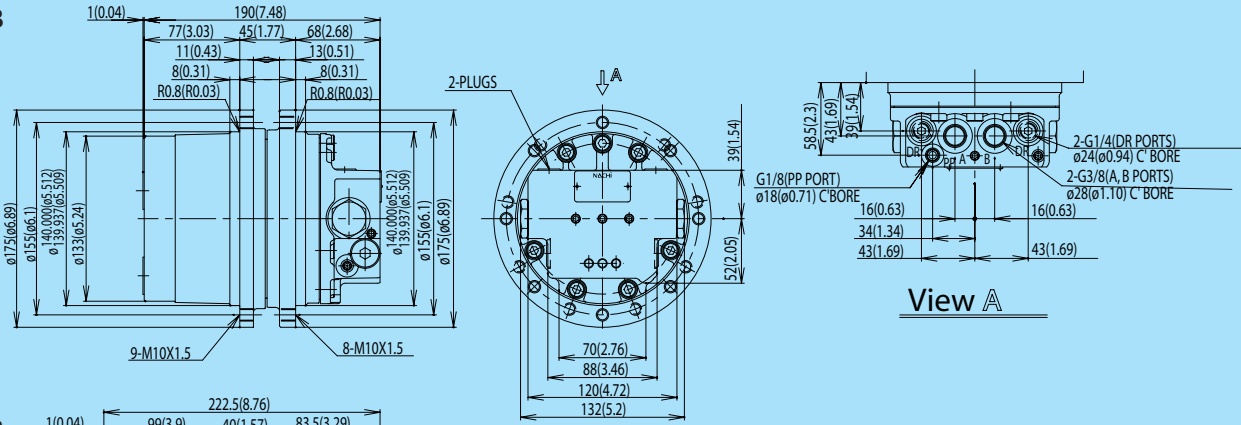
Note 2: Actual speed at Hi (P<10.2MPa:1479psi) should be approximately 96% of theoretical speed.

Note 3: Final torque is shown as gear ratio X brake torque.

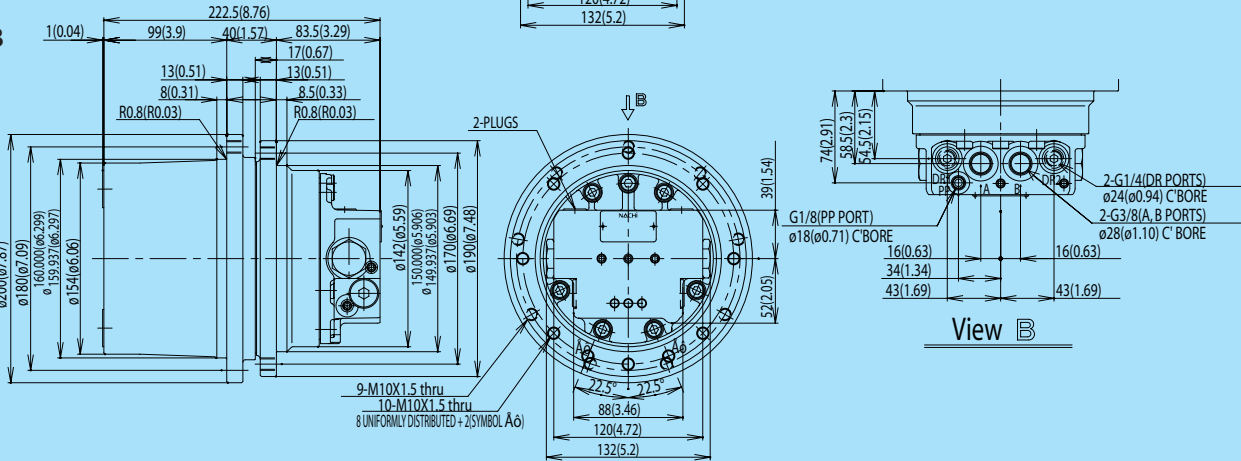
Dimensional Drawings

mm(inch)

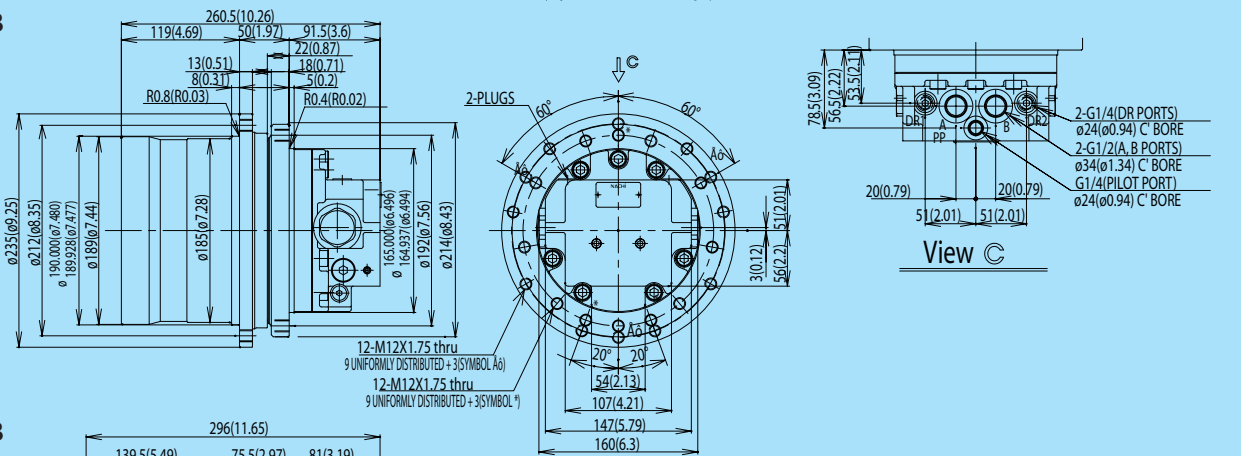
PHV-1B



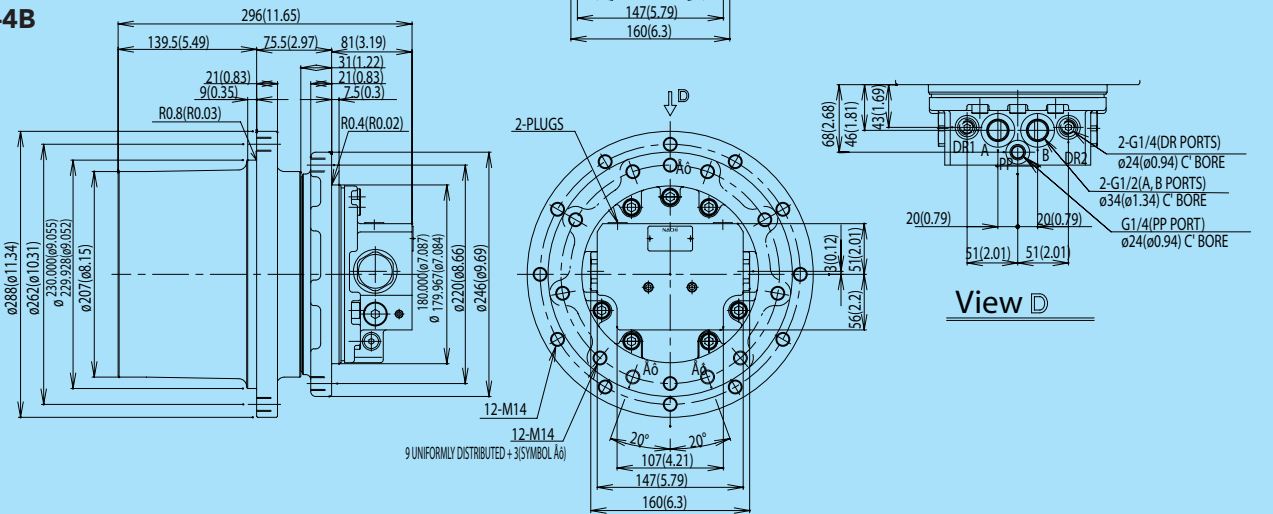
PHV-2B



PHV-3B



PHV-4B



Note: The above drawings are for wheel motors without optional valves.

PCR Series Slew Motor



Features

- All in One Design**
 All required components for slew motor are in one unit. (planetary gearbox, hydraulic motor, negative type parking brake, shockless relief valve, anti-cavitation check valve, other optional valve.)
- Compact**
 Low height design.
- Maintenance-Free**
 The gearbox is lubricated by hydraulic oil.
- High Efficiency**
 The axial piston motor can maintain good efficiency at high pressure ranges.
- Shockless**
 Shockless relief valves are standard.
- Timer Valve**

Specifications

Model	Gear Ratio	Hyd. motor displacement	Max. final displacement	Max. torque (Note 1)	Hyd. Motor		Parking brake torque (Note 3)	Valve F: P/B timer valve G: By-pass valve S: Shockless relief valve	Mass
					Max. pressure	Max. speed (Hi) (Note 2)			
		cm ³ /rev (in ³ /rev)	cm ³ /rev (in ³ /rev)	N-m (lbf-ft) (Theo)	MPa (psi)	min. ⁻¹ (Theo)	N-m (lbf-ft) (Motor shaft)		kg (lbs)
PCR-1B	1/10.0	18.1 (1.10)	236 (14.40)	627 (462.45)	21.6 (3133)	1000	68.4 (50.45) (Option)	S (Standard) F (Option)	24 (53)
		20.0 (1.22)							
		22.1 (1.35)							
		23.6 (1.44)							
PCR-2B	1/21.5	12.5 (0.76)	344 (20.99)	1000 (737.57)		2200	68.4 (50.45) (Option)	S (Standard) F (Option)	34 (75)
		13.3 (0.81)							
		14.5 (0.88)							
		16.0 (0.98)							
PCR-3B	1/21.5	18.1 (1.10)	507 (30.94)	1399 (1031.85)		2200	68.4 (50.45) (Option)	S (Standard) F, G (Option)	37 (82)
		20.0 (1.22)							
		22.1 (1.35)							
		23.6 (1.44)							
PCR-4B	1/23.2	26.4 (1.61)	784 (47.84)	2434 (1795.24)	1900	116 (85.56) (Option)	S (Standard) F, G (Option)	55 (121)	
		28.0 (1.71)							
		30.0 (1.83)							
		32.0 (1.95)							
		33.8 (2.06)							

Note 1: Actual torque should be approximately 85% of theoretical torque.

Note 2: Speed should be approximately 97% of theoretical speed.

Note 3: Final torque is shown as gear ratio X break torque.

PVD Series Split Flow Piston Pump



Features

- **Compact**
Easy installation in the engine room due to very short overall length.
- **Less Than 1% Flow Difference**
Flow difference between each port is minimum.
- **High Efficiency**
Axial piston pump can maintain high efficiency at high pressure ranges.
- **Total Horsepower Control - The Engine Will Never Stall**
The constant horsepower control, including feedback from option gear pump, can keep the pump drive power under the engine power curve.
- **Optional Gear Pump**
Single or double gear pumps can be installed on the back of piston pump.
- **Eliminate Piping for the Case Drain**

Specifications

Model	Max. displacement	Max. pressure	Drive speed			Constant torque control	Option G: Gear pump P: Power shift B: Valve block	Mass
			Max. speed	Rated speed	Min. speed			
	cm ³ /rev (in ³ /rev)	MPa (psi)	min. ⁻¹	min. ⁻¹	min. ⁻¹	kg (lbs)		
PVD-00B	8x2 (0.49x2)	24.5 (3553)	2800	2800	900	Standard	G, P (Option)	9 (20)
PVD-0B	12x2 (0.73x2)		2800	2600			G, P, B (Option)	13 (29)
PVD-1B	17x2 (1.04x2)		2700	2500			G, P, B (Option)	15 (33)
PVD-2B	22.5x2 (1.37x2)		2600	2400			G, P, B (Option)	20 (44)
PVD-3B	33x2 (2.01x2)		2400	2200			G, P, B (Option)	27 (60)

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