

1. This product is the 2 speed hydraulic motor with reduction gear for the crawler type machine, which is a mini-excavator or a similar one in the operating condition and the operating rate.
2. Remove the upper side plug of 'DRAIN PORTS' (DR1 or DR2), and then connect to the tank after install this wheel motor to the machine.
3. Please refer 'DWG. NO. AM-2201ME-2' and the instruction manual for other notes.

Model Code

PHV-2B-20***-(*)-10

Design No.

Option Code

P : with Parking Brake

None : without Parking Brake

(*3) Gear ratio code

A : 1/31.00

B : 1/39.00

(*2) Code for Hyd. Motor displacement (Hi mode)

(*1) Code for Hyd. Motor displacement (Lo mode)

CAUTION

1. SPEED CONTROL PRESSURE : MIN. 1.5 MPa	5. FILTER : 10 μ m
2. HYDRAULIC FLUID : ISO VG46 (ANTI-WEAR HYDRAULIC FLUID)	6. GEAR OIL : SAE-30-CD (AMOUNT OF OIL 330 cm ³)
3. CONTAMINATION : WITHIN NAS GRADE 10	7. MASS : 24 kg
4. OIL TEMP. : -20~90 °C (INSTANTANEOUS MAX. 100 °C)	8. PAINT COLOR : RED (UNDER COAT)

Model No.	SPECIFICATION (THEORETICAL)										(Note3)	(Note4)	(Note5)	(Note6)		(Note7)				
	Code for Hyd. Motor Displacement				Code for Gear Ratio	Final Displacement	Max. Pressure	Max. Output Torque (Theoretical, Lo mode)		Max. Flow	Max. Output Speed (Theoretical, Hi mode)		Option							
	Lo mode		Hi mode					Intermittent	Continuous		Wheel Motor	Hyd. Motor	Parking Brake Torque							
	code: #1	cm ³ /rev	code: #2	cm ³ /rev	code: #3	ratio	Lo mode			Hi mode			MPa	N · m	N · m	L/min	min ⁻¹	min ⁻¹	N · m	N · m
PHV-2B-2012A-(P)-10	1	16.1	2	9.1	A	11/31.00	499.1	282.1	24.5	(1946)	1210	75	(2325)	942	30.4					
PHV-2B-2012B-(P)-10					B	1/39.00	627.9	354.9	(24.2)	2420						(26.6)	(2925)	1186		
PHV-2B-2013A-(P)-10			3	8.4	A	11/31.00	499.1	260.4	24.5	(1946)									(19.5)	(2325)
PHV-2B-2013B-(P)-10					B	1/39.00	627.9	327.6	(24.2)	2420						(24.6)	(2925)	1186		
PHV-2B-2022A-(P)-10	2	17.2	2	9.5	A	11/31.00	533.2	294.5	24.5	(2079)			1210	75					(2325)	942
PHV-2B-2022B-(P)-10					B	1/39.00	670.8	370.5	(22.6)	2420						(27.8)	(2925)	1186		
PHV-2B-2023A-(P)-10			3	8.6	A	11/31.00	533.2	266.6	24.5	(2079)										
PHV-2B-2023B-(P)-10					B	1/39.00	670.8	335.4	(22.6)	2420						(25.2)	(2925)	1186		

Note1 : Use this wheel motor within the hereinbefore 'SPECIFICATION'.

Note2 : The hereinbefore 'SPECIFICATION' is theoretical value. Real Torque at 10min⁻¹(Lo) should be approximate 84% of Theoretical Torque. Real Speed at Hi (P<10.3MPa) should be approximate 96% of Theoretical Speed. The particular performance is shown in 'DWG. NO. AM-2201ME-2'.

Note3 : Max. Pressure is 24.5 MPa. However, the value in () is limited by Max. Output Torque.

Note4 : Max. Output Torque is 2420 N·m. However, the value in () is limited by Max. Pressure. 'Intermittent' means less than 7% of operating time.

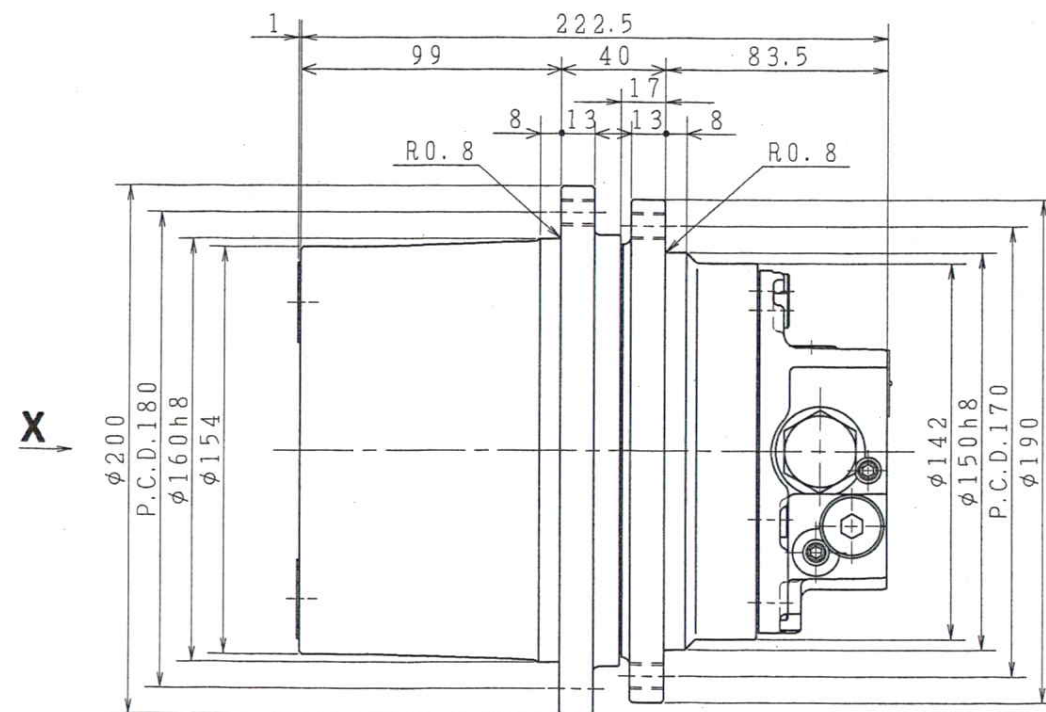
Note5 : Max. Flow is 30 L/min. However, the value in () is limited by Max. Output Speed (Wheel Motor or Hyd. Motor).

Note6 : Max. Output Speed is 75 min⁻¹(Wheel Motor), 3000 min⁻¹(Hyd. Motor).

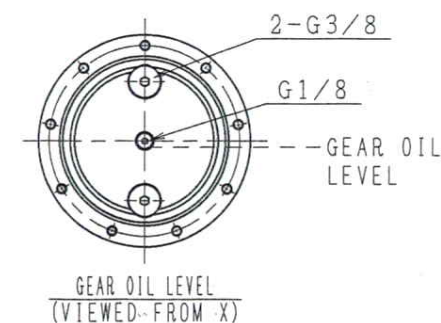
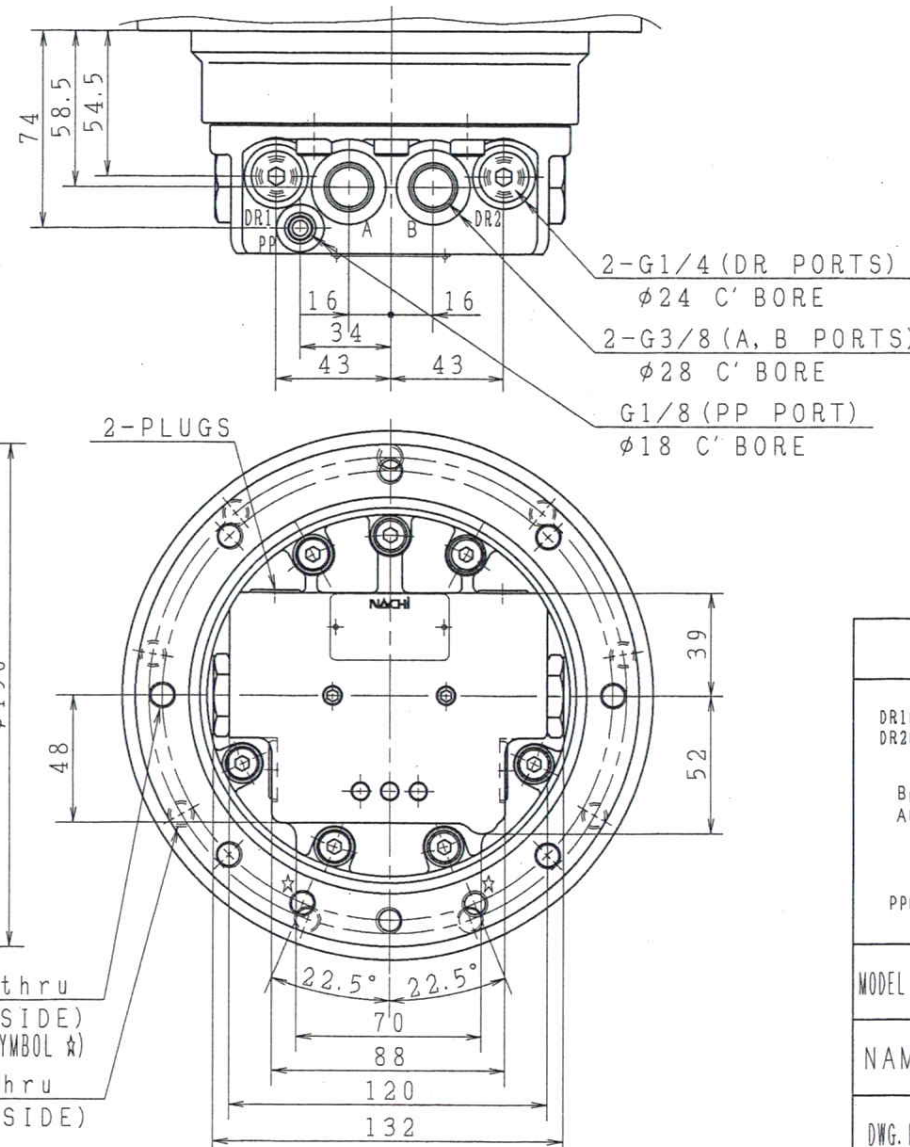
However, the value in () is limited by Max. Flow or Max. Output Speed (Wheel Motor or Hyd. Motor).

Note7 : Parking Brake Torque (Hyd. Motor) is 30.4 N·m.

Therefore, Parking Brake Torque (Wheel Motor) is different value between Gear Ratio 'A (1/31.00)' and 'B (1/39.00)'.



10-M10X1.5 thru
(MOUNTING SIDE)
8 UNIFORMLY DISTRIBUTED + 2 (SYMBOL X)
9-M10X1.5 thru
(SPROCKET SIDE)



ALLOWED DRAIN PRESSURE	
RATED	Max. 0.3MPa
SURGE	Max. 1.0MPa

株式会社 不二越 部品技術二部 OCT. 21. 2005 ENGINEERING DIV. NACHI-FUJIKOSHI CORP.		
ROTATIONAL DIRECTION (VIEWED FROM X)		
	INLET	OUTLET
CLOCKWISE	B	A
COUNTER-CLOCKWISE	A	B

HYDRAULIC SYMBOL			
MODEL NO.	PHV-2B-20***-10	MODEL NO.	PHV-2B-20***-P-10
NAME	2 speed type WHEEL MOTOR		
DWG. NO.	AM-2201ME-1	APPROVED	CHECKED
		W. Maizawa	K. Tamura
		DATE	Oct. 20. 05

This letter is shown the particular performance, expectation of life and instructions for use of the WHEEL MOTOR "PHV-2B-20***-(P)-10".

1. PERFORMANCE

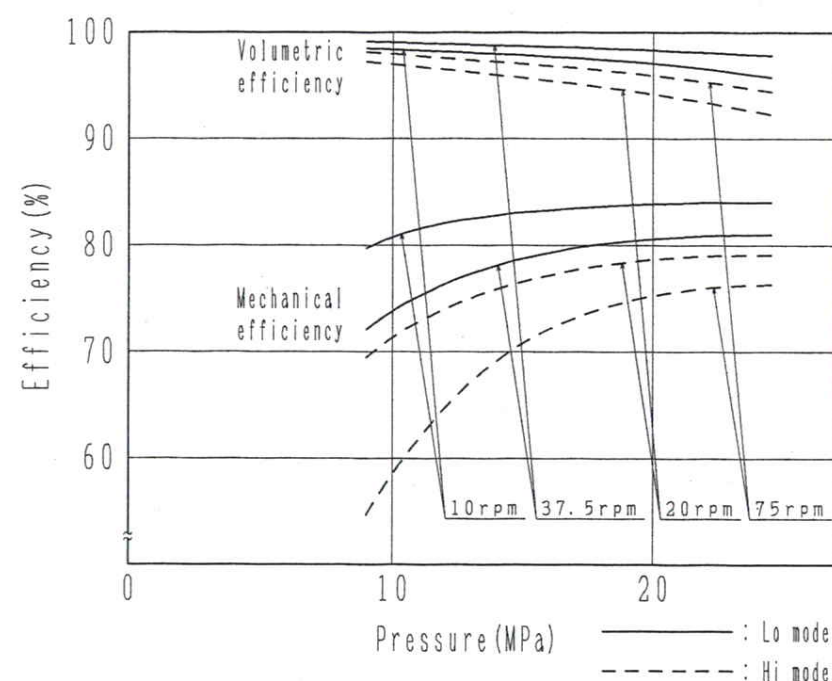
(1) PERFORMANCE

The particular performance is shown the following by the typical performance curve.

(2) CONDITION

HYDRAULIC FLUID : ISO VG46
OIL TEMP. : 50±5 °C

(3) TYPICAL PERFORMANCE CURVE



2. EXPECTATION OF LIFE

(1) ALLOWABLE OUTPUT TORQUE OF REDUCTION GEAR

- a) Condition of allowable output torque curve
Life : 200 hr (Driving time)
(Clock Wise : 100 hr)
(Counter Clock Wise : 100 hr)

b) Reduction Gear life under your using condition

$$L_h = 200 \left(\frac{T_o}{T} \right)^3$$

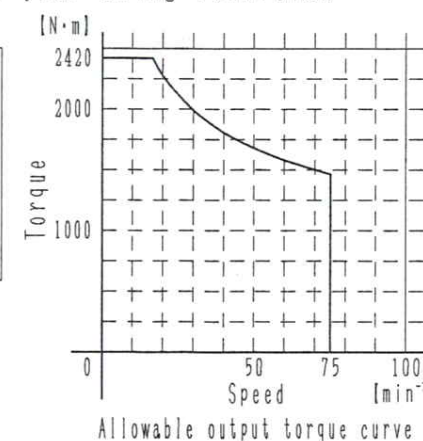
Lh: Life (hr)

N : Your using Speed (min⁻¹)

T_o: Torque on curve at N

T : Your using Torque (N·m)
(Theoretical)

(Note) When the wheel motor is driven only side direction, the life is reduced by half.



(2) ALLOWABLE BEARING LOAD

- a) Condition of allowable bearing load curve
Life : 500 hr

b) Bearing life under your using condition

$$L_h = 500 \left(\frac{W_o}{W} \right)^3$$

Lh: Life (hr)

W_o: Load on curve

at your using speed

W : Your using
Equivalent Load (N) [*1]

[*1] Figure that W (Your using Equivalent Load) is the following.

$$W = \frac{52.9-L}{92} W_r + \frac{(D/2)}{92} W_{th} \quad (L \leq 6.9)$$

$$W = \frac{39.1+L}{92} W_r + \frac{(D/2)}{92} W_{th} \quad (6.9 < L)$$

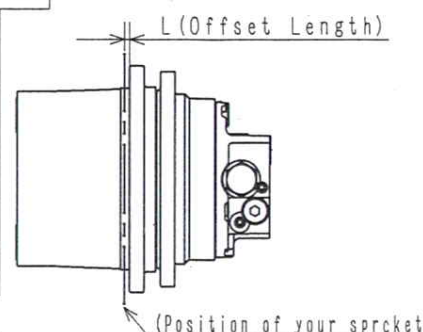
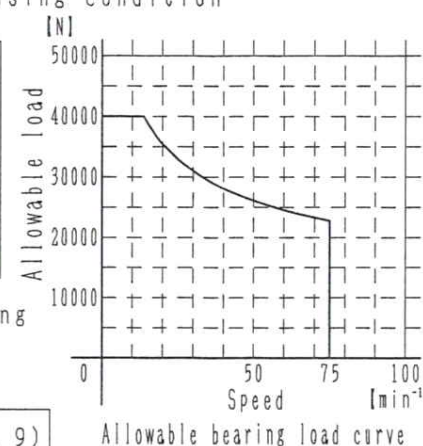
L : Offset Length [*2]

of your sprocket (mm)
D : Pitch Circle Diameter
of your sprocket (mm)

W_r : Your using
Radial Load (N)

W_{th} : Your using
Thrust Load (N)

[*2] Refer the right figure.



3. INSTRUCTION FOR USE

- Use this wheel motor within 'SPECIFICATION' shown in 'DWG. No. AM-2201ME-1'.
- Use an installation mounting with stiffness. And clean the mounting before install this wheel motor to the machine.
- Install this wheel motor horizontally.
- Remove the upper side plug of 'DRAIN PORTS' (DR1 or DR2 : refer 'DWG. No. AM-2201ME-1'), and then connect to the tank after install this wheel motor to the machine.
- Fill the motor case with clean hydraulic fluid through the 'DRAIN PORT' before starting.
- When the 'PP PORT' (refer 'DWG. No. AM-2201ME-1') is connected to the tank, this wheel motor is operated at Lo mode.
(The permitted back pressure : 0.5 MPa)
- When the 'PP PORT' is supplied pressure, this wheel motor is operated at Hi mode.
(The speed control pressure : MIN. 1.5 MPa)
- The parking brake (option) of this wheel motor is negative brake system. So, the parking brake is worked when 'A PORT' and 'B PORT' (refer 'DWG. No. AM-2201ME-1') are not supplied pressure, is not worked when 'A PORT' or 'B PORT' is supplied pressure.
(The parking brake releasing pressure : 1.5 MPa)
- Change the gear oil to the new one each following period.
First : '200 hr' or '2 months'
Second and after : '1000 hr' or '1 year'
- Please refer the instruction manual for other notes.



MODEL NO.	PHV-2B-20***-(P)-10		
NAME	2 speed type WHEEL MOTOR		
DWG. NO.	AM-2201ME-2		
APPROVED	CHECKED	DRAWN	DATE
N. Maegawa	K. Tamura	T. Yokota	Oct. 21. 05