

NACHI

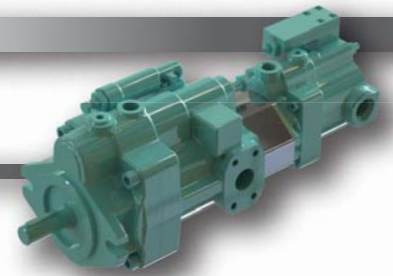


**PVS PISTON PUMP
THRU SHAFT SERIES**



NACHI AMERICA INC.

PVS Piston Pump - Thru Shaft Series



Features

Energy-Saving Type with Drastically Reduced Loss

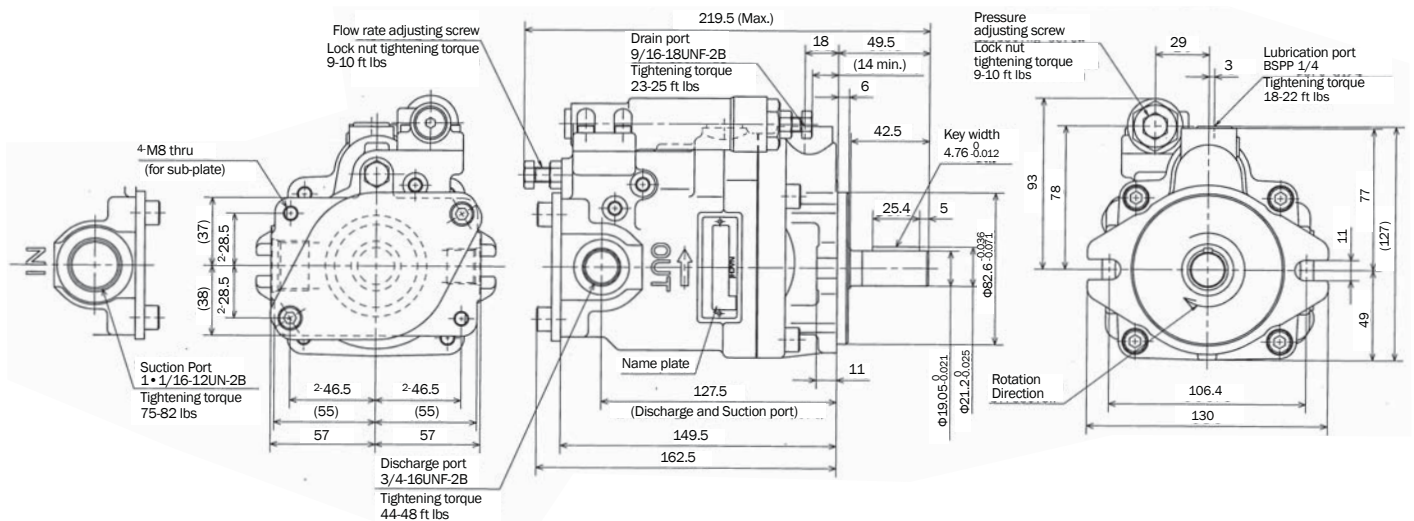
A NACHI-proprietary semi-circular barrel swash plate that receives pressure on its surface ensures a stable discharge volume at all times. This eliminates excess discharge volume, and enables the

effective use of power corresponding to the load cycle. This "energy-saving type" conserves energy, reduces power loss, and helps to reduce hydraulic costs.

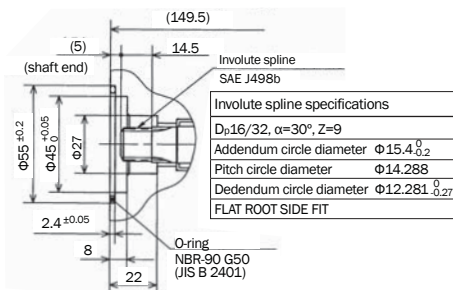
Silent Type That Demonstrates Its Power Quietly

Proprietary low-noise mechanisms are incorporated on the shoe, swash plate, valve plate, and other locations to ensure silent operation. In particular, a semi-circular barrel swash plate stabilizes operation characteristics to ensure silent operation.

Dimensional Drawings



Tandem-pump installation
A sub-plate is necessary



PVS-0B-8N3-K-E5737A

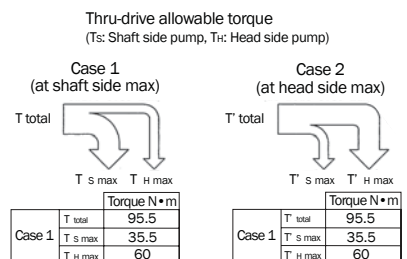
Volume:	.48 cu in (8 cc)
Max. Operating Pressure:	3000 psi
Allowable Peak Pressure:	3600 psi
Rotational Speed (max.):	1800/500 min ⁻¹
Rotational Direction:	Clockwise
Mounting Direction:	Horizon for pump shaft
Control Type:	Pressure compensation type
Mass:	16.9 lbs
Fluid:	Anti-wear Hydraulic fluid ISO VG32-68
Optimum Operating	
Viscosity:	20~200 centistokes
Temperature Range:	40~140 ° F
Suction Pressure:	4.3 psi
Drain Back Pressure:	14 psi
Peak Pressure:	28 psi
Filteration Suction:	150 mesh
Line:	10 micron

Setting of pressure and the displacement upon shipment

P: Minimum pressure
q: Maximum pump capacity

Note:

- Before starting up the pump, fill the pump case with clean hydraulic operating fluid through the lubrication port (13.4 cu in)
- The maximum pressure (set pressure + surge pressure) that can be momentarily allowed.
- Please refer to the standard catalog and instruction manual for the instruction of this pump.



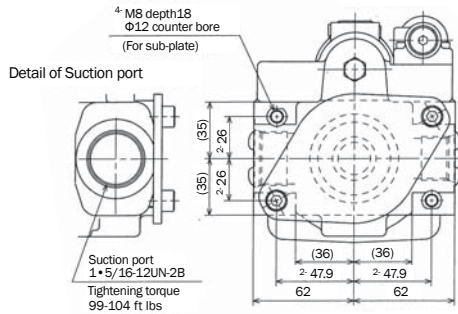
- Add shaft side torque to head side torque, and handle total torque less than 95.5 N • m
- Pull total torque out of shaft side torque, and handle head torque less than 60 N • m

PVS Series Variable Volume Piston Pumps

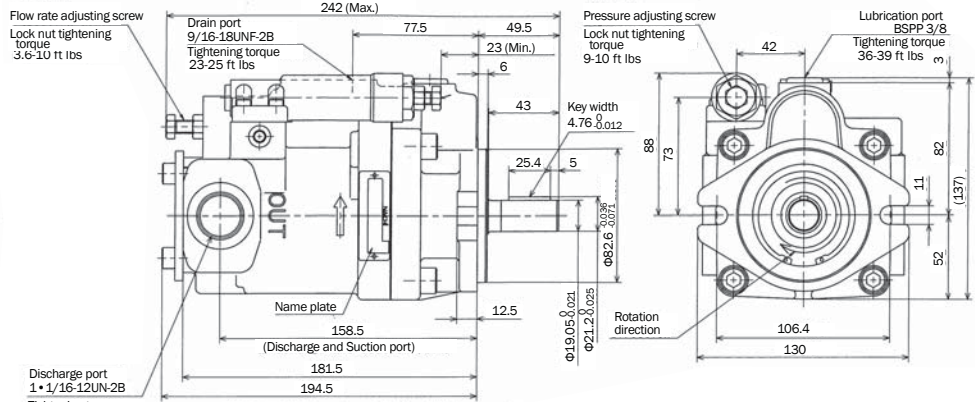
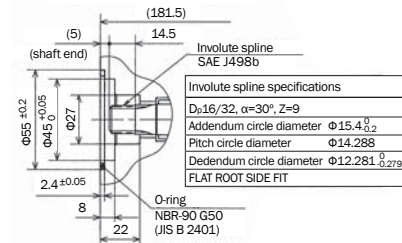


Dimensional Drawings

PVS-1B-16/22N3-K-E5737A



Tandem-pump installation
A sub-plate is necessary



Discharge port
1.5/16-12UN-2B
Tightening torque
75-82 ft lbs

Thru-drive allowable torque
(Ts: Shaft side pump, Th: Head side pump)

Case 1 (at shaft side max)		Case 2 (at head side max)	
Torque N•m		Torque N•m	
T total	105	T total	105
T s max	73	T s max	45
T h max	32	T h max	60

Setting of pressure and the displacement upon shipment
P: Minimum pressure
q: Maximum pump capacity

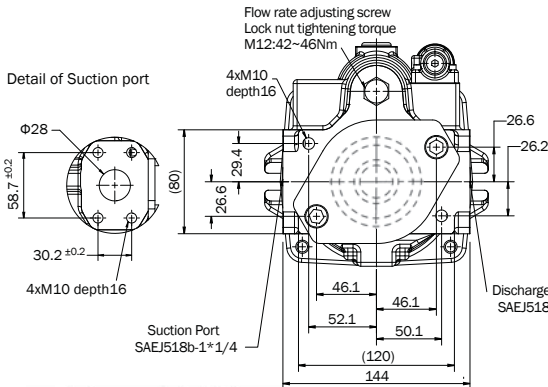
1. Add shaft side torque to head side torque, and handle total torque less than 105 N•m
2. Pull total torque out of shaft side torque, and handle head torque less than 60 N•m

Note:

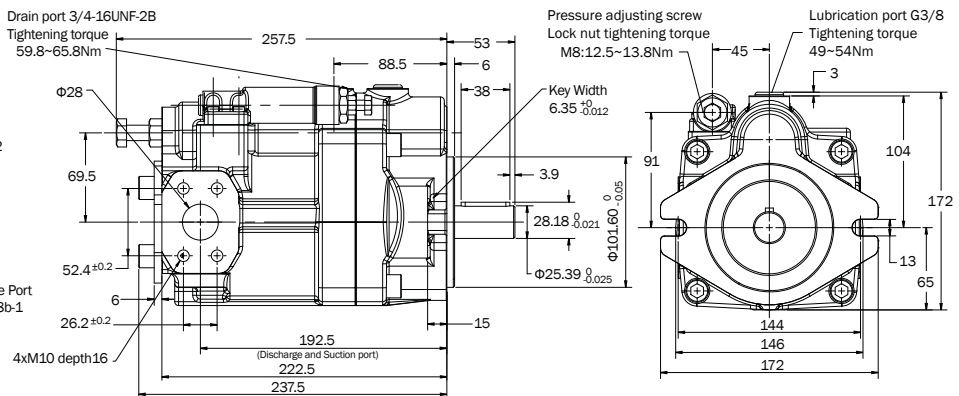
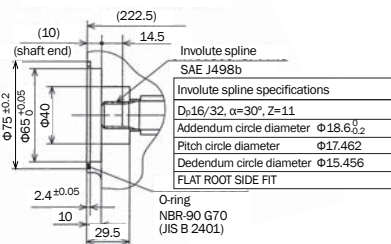
1. Before starting up the pump, fill the pump case with clean hydraulic operating fluid through the lubrication port (18 cu in)
2. The maximum pressure (set pressure + surge pressure) that can be momentarily allowed.
3. Please refer to the standard catalog and instruction manual for the instruction of this pump.

Volume:	1 cu in (16 cc)/1.3 cu in (22cc)
Max. Operating Pressure:	3000 psi
Allowable Peak Pressure:	3600 psi
Rotational Speed (max.):	2000/500 min ⁻¹
Rotational Direction:	Clockwise
Mounting Direction:	Horizon for pump shaft
Control Type:	Pressure compensation type
Mass:	24 lbs
Fluid:	Anti-wear Hydraulic fluid ISO VG32-68
Optimum Operating	
Viscosity:	20~200 centistokes
Temperature Range:	40~140° F
Suction Pressure:	4 psi
Drain Back Pressure:	14 psi
Peak Pressure:	28 psi
Filteration Suction:	150 mesh
Line:	10 micron

PVS-2B-35/45N3-KE5737A



Tandem-pump installation
A sub-plate is necessary



Thru-drive allowable torque
(Ts: Shaft side pump, Th: Head side pump)

Case 1 (at shaft side max)		Case 2 (at head side max)	
Torque N•m		Torque N•m	
T total	284	T total	284
T s max	199	T s max	194
T h max	85	T h max	90

Setting of pressure and the displacement upon shipment
P: Minimum pressure
q: Maximum pump capacity

1. Add shaft side torque to head side torque, and handle total torque less than 284 N•m
2. Pull total torque out of shaft side torque, and handle head torque less than 90 N•m

Note:

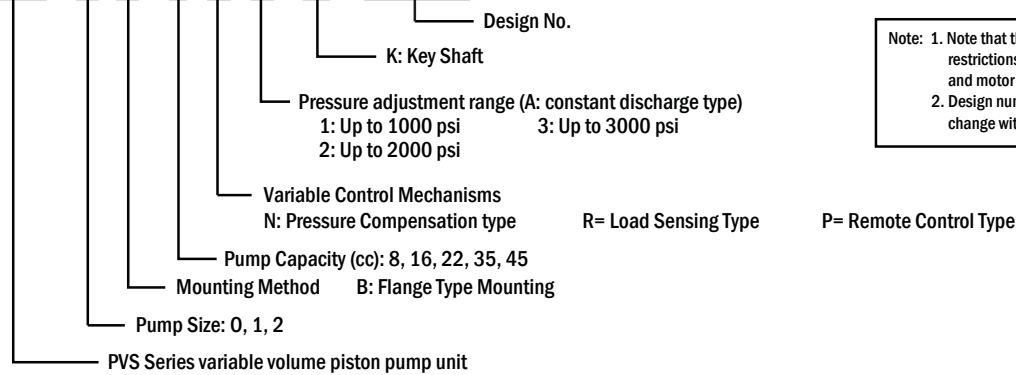
1. Before starting up the pump, fill the pump case with clean hydraulic operating fluid through the lubrication port (39 cu in)
2. The maximum pressure (set pressure + surge pressure) that can be momentarily allowed.
3. Please don't adjust screw (* part) because it's already been adjusted upon shipping.
3. Please refer to the standard catalog and instruction manual for the instruction of this pump.

Volume:	2.1 cu in (35cc)/2.7 cu in (45 cc)
Max. Operating Pressure:	3000 psi
Allowable Peak Pressure:	3600 psi
Rotational Speed (max.):	2000/500 min ⁻¹
Rotational Direction:	Clockwise
Mounting Direction:	Horizon for pump shaft
Control Type:	Pressure compensation type
Mass:	46 lbs
Fluid:	Anti-wear Hydraulic fluid ISO VG32-68
Optimum Operating	
Viscosity:	20~200 centistokes
Temperature Range:	40~140° F
Suction Pressure:	4 psi
Drain Back Pressure:	14 psi
Peak Pressure:	28 psi
Filteration Suction:	150 mesh
Line:	10 micron

Model Code

How to Order

PVS - 0 B - 8 - N - 3 - K - E5737A



Note: 1. Note that there are certain restrictions on pump capacity and motor capacity combinations.
2. Design numbers are subject to change without notice.

Calculation of Torque

[Formula]

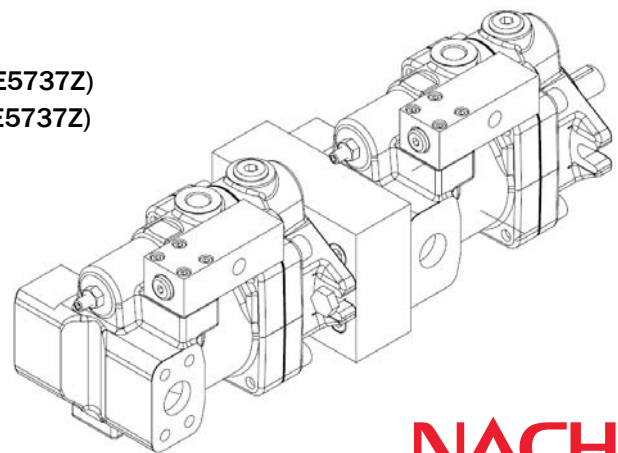
$P(\text{MPa}) * q(\text{cc/rev}) / 2\pi / \text{efficiency}$
(1000psi=7MPa, 1Cu in=16.4cc, temporarily efficiency is 80%)

[Example]

Front :0.4Cu in at 2000psi (Remote control:PVS-0B-8P2-K-E5737Z)

Rear :0.4Cu in at 500psi (Remote control:PVS-0B-8P1-K-E5737Z)

- 1) Caused Torque for Front: 18.3Nm
- 2) Caused Torque for Rear: 4.6Nm < 60Nm
- 3) Total Torque: 22.8Nm < 95.5Nm



NACHI

Nachi America Inc.

715 Pushville Rd, Greenwood, IN 46143
Tel. (800) 622-4410 Fax. (317) 530-1015
Email: hydraulics@nachi-america.com
www.nachi-america.com

October 2016