


Photo	Type	Series	Description	Main Specifications
	Compact Power Units	<b>NSP</b>	Compact Power Unit with Variable Volume Vane Uni-Pump	5.3gpm, 3hp

# NACHI

## NSP Series

*Compact Power Unit with  
Variable Volume Vane Uni-Pump*



# NSP Series

## Compact Power Unit with Variable Volume Vane Uni-Pump



Compact hydraulic units are widely used as a power source in such machine tool applications as NC lathe chuck opening and closing, tailstock, tool rotation, machining center spindle raise and lower operations, etc. During pressure holding, the new NSP power unit, consisting of our UVN variable volume vane uni-pump, enables machine efficiency that delivers energy savings of approximately 40% when compared with Nachi standard power units.

### Features

#### Space-saving, lightweight design

A smaller tank capacity makes the power unit more compact, and greatly reduces space requirements.

#### New structure increases efficiency

Based on years of experience, the structure includes an improved pump joint that provides more efficient operation.

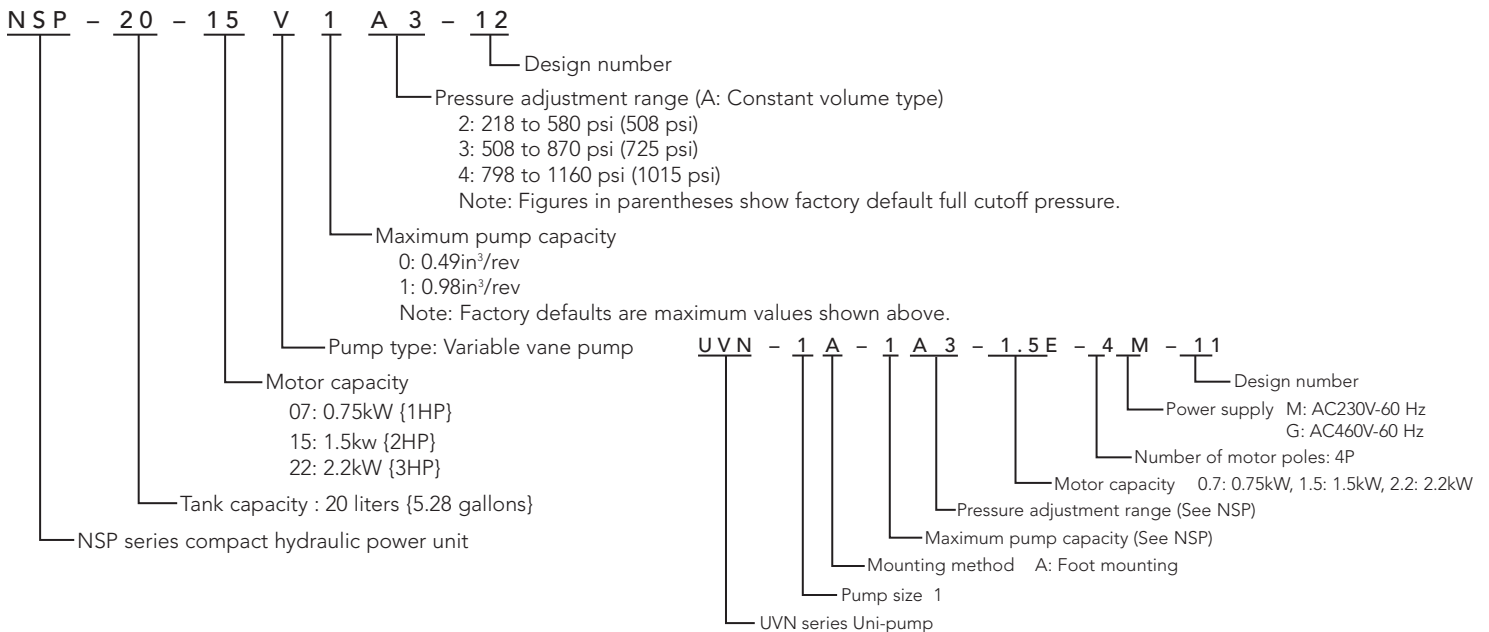
#### Greatly improved cooling capacity

A powerful, energy-efficient built-in cooling system eliminates the need for fan motor wiring and coolant pipes.

### Specifications

Item	Model No.	NSP--*V0A*	NSP--*V1A*
Pump capacity	cm <sup>3</sup> /rev. {in <sup>3</sup> /rev}	8.0 {0.49}	16.0 {0.98}
Maximum pressure	MPa {psi}	8.0 {1160} (Full cutoff pressure)	
Motor output	kW {HP}	0.75 {1}, 1.5 {2}	1.5 {2}, 2.2 {3}
Tank capacity	ℓ {gallon}	20 {5.28}	
Installation space	mm {inch}	300 X 400 {11.81 X 15.75}	
Approximate weight	kg {lbs}	39 {86} (20 ℓ, 1.5kW)	

### Model Code





## Motor Selection Method

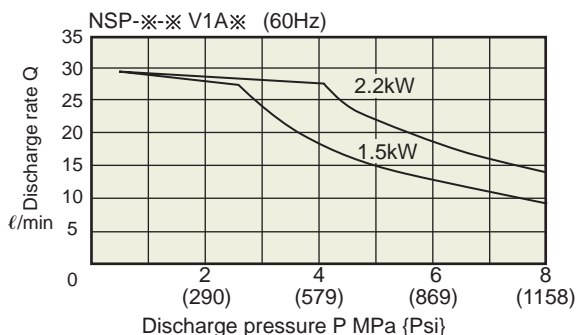
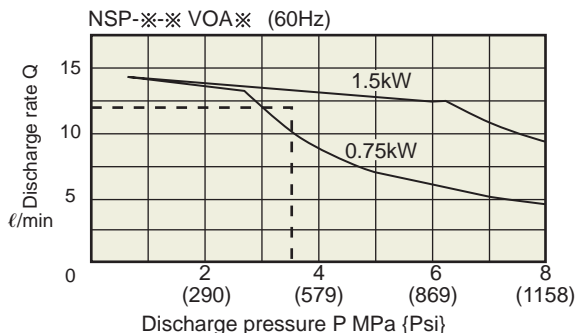
The area under a motor output curve in the graphs below is the operating range for the motor under the rated output for the motor.

### Example

Find the motor to be used at a pressure of 3.5MPa {508psi} and discharge rate of 12ℓ/min {3.2gpm}.

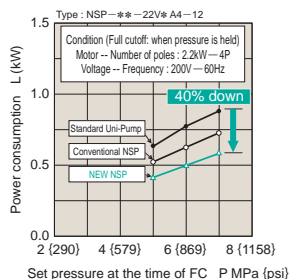
### Solution

Since the intersection of the two broken lines from a pressure of 3.5MPa {508psi} and discharge rate of 12ℓ/min {3.2gpm} intersect in the area under the 1.5kW curve, it means that a 1.5kW motor should be used.

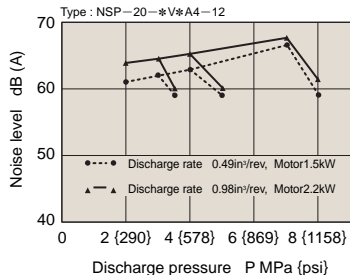


## Performance Characteristics

### Power Consumption



### Noise Characteristics

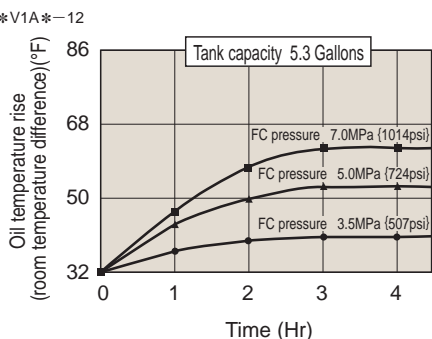
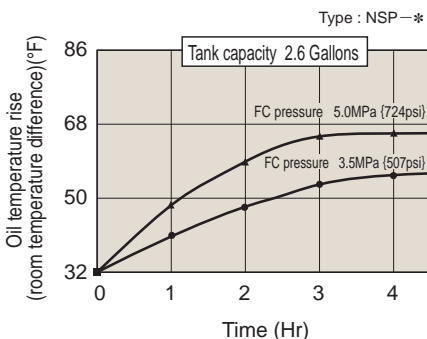


### Conditions

The value in the left-hand drawing represents typical characteristics under the following conditions:  
Oil used: ISO VG32 or its equivalent  
Oil temperature: 104 +/- 41°F  
Measuring distance: 3.3 feet around the unit  
Note:

The noise characteristics depend on the installation floor base conditions and the presence of the surrounding substance reflecting the sound, and so may be different from the above description in some cases.

### Oil Temperature Characteristics



### Conditions

The value on the left-hand drawing represents typical characteristics under the following conditions:  
Oil used: ISO VG32 or its equivalent  
Speed: 1800 min<sup>-1</sup>  
Room temperature: 84°F  
Motor: 0.75~2.2kW

### Notes:

- For 5.0MPa (724psi) of a 2.6 gallon tank. It should be noted that there is a big rise in oil temperature under continuous operation. In this case, we recommend use of a 5.3 gallon tank.
- Rise of oil temperature depends on the conditions of using an actual machine, and so may be different from the above description in some cases.

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