



UNIDADES DE POTENCIA HIDRÁULICA

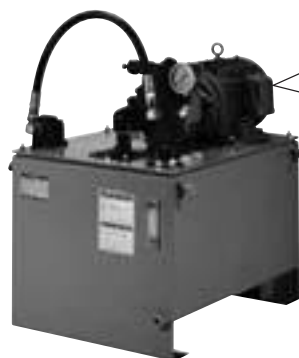
UNIDAD DE POTENCIA HIDRÁULICA
DE BAJO RUIDO Y TAMAÑO REDUCIDO



■ Energy-Saving Hydraulic Units and Controllers

Substantial energy saving of hydraulic units has been achieved by the inverter drive.

Hydraulic units equipped with variable displacement pumps feature greater energy-saving than those with fixed displacement pumps. Yuken's energy-saving hydraulic units and controllers utilize rotational frequency control with an inverter. This innovative configuration solves the problem of efficiency losses suffered by induction motors operating at light loads and ensures significant energy savings.



Efficiency Characteristics of Induction Motor

- At Rated Output: Maximum Efficiency
- At Light-load: Significant Efficiency loss

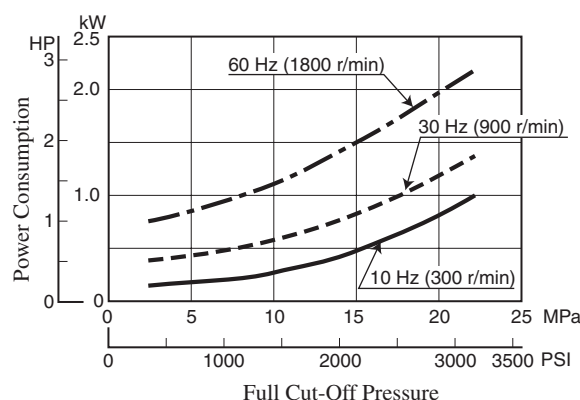
Rotational frequency control is effective for reducing power loss.

Extensive energy saving is possible by detecting a load pressure with the pressure sensor and keeping the motor rotation at the optimum level required for pressure holding. Based on the concept above, the following three different types of inverter-driven system and packages have been developed.

- **Energy-saving control system for hydraulic units (Energy saving controller)**
For modification of existing hydraulic units to energy-saving type
- **Equipped with the variable displacement vane pump <YM-e Pack>**
- **Equipped with the variable displacement piston pump <YA-e Pack>**

● Example of reduction of power consumption with rotational frequency control

Combination of the A37 piston pump and 7.5 kW (10 HP) motor



Features of YUKEN energy-saving units / controllers

- **Extremely easy operation and maintenance**
Adjustment and maintenance works are very easy as basically the conventional power unit is used.
- **Significant reduction of power consumption**
With rotational frequency control, more than 40% of power consumption at pressure holding is possible compared to conventional hydraulic units.
- **Low Noise**
Especially the noise level at the full-cutoff is reduced.
- **Discharge volume can be set to a certain volume at 50/60 Hz.**
Regardless the power supply frequency, the rotation speed at the maximum discharge volume can be set by the inverter within the range from 1500 to 1800 r/min.
- **Continuous operation is possible even at breakdown of the pressure sensor or the inverter.**
Operation at a certain rotation speed is possible even without receiving a signal from the pressure sensor due to breaking of wire or malfunction of the pressure sensor. In case of malfunction of the inverter itself, the same operation mentioned above is possible by reconnecting of the primary power supply to the electric motor.

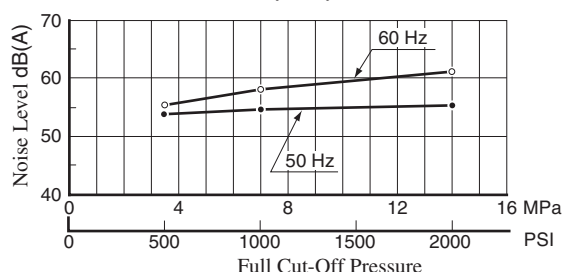
Low Noise & Small Type Hydraulic Power Unit <YP Pack>

Quiet-Low Vibration

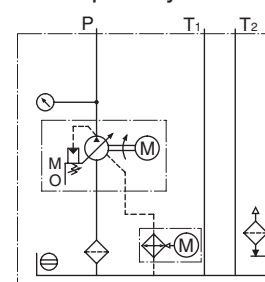
Equipped with low-noise PAL pump and drain cooler. Also, low noise and vibration levels have been achieved by effectively arraying the components to control vibration.

Noise Level

- Model Number: YP16-C-2-2.2-22
- One metre (3.3 ft.) horizontally away from YP Pack



Graphic Symbol



Compact

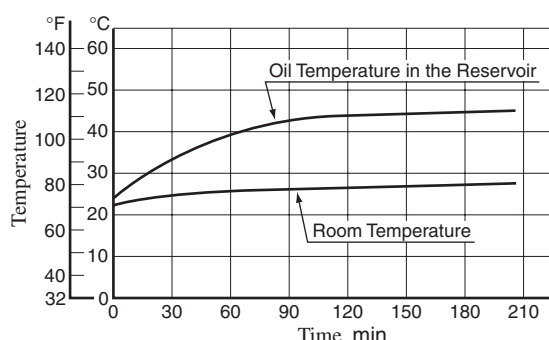
YP pack is well designed to be compact by uprighting the PAL pump and reducing the reservoir size with added drain cooler. It saves floor space for installation.

Low Fluid Temperature Rise

Standard equipment, built-in drain cooler and radiator fins, reduce the fluid temperature rise ratio. Good solution for heat distortion.

Temperature Rise

- Model Number: YP16-B-1-2.2-20
- Frequency: 50 Hz
- Pressure: Full-cut off at 7 MPa (1020 PSI), Continuous



Model Number Designation

YP10 - B - 1 - 1.5 - 22

① ② ③ ④

- ① Geometric Displacement
(Refer to Specifications)
- ② Pressure Adjustment Range
B: 1.2 – 7 MPa (170 – 1020 PSI)
C: 1.2 – 16 MPa (170 – 2320 PSI)
[YP10 Only
C: 2.0 – 16 MPa (290 – 2320 PSI)]
- ③ Reservoir Capacity
(Refer to Specifications)
- ④ Electric Motor
(Refer to Specifications)

Line Up

YP packs offer nine different models in variety. Eight kinds of optional YP pack are available such as YP pack with control circuit consists of modular & solenoid operated directional valve.

Specifications

Model Numbers	Geometric Displacement cm ³ /rev (cu.in. ³ /rev)	Pressure Adjustment Range MPa (PSI)	Reservoir Capacity L (Gal.)	Electric Motor (4 Poles), 200 V AC (50 Hz) 200/220 V AC (60 Hz)	Approx. Mass kg (lbs.)
YP10-B-1-0.75-22	10.0 (.610)	Refer to Model Number Designation	10 (2.6)	0.75 kW (1 HP)	58 (128)
YP10- * -1-1.5-22				1.5 kW (2 HP)	68 (150)
YP16- * -1-1.5-22	15.8 (.964)	Refer to Model Number Designation	10 (2.6)	1.5 kW (2 HP)	68 (150)
YP16- * -1-2.2-22				2.2 kW (3 HP)	78 (172)
YP16- * -2-2.2-22			20 (5.3)	2.2 kW (3 HP)	78 (172)
YP22- * -2-2.2-22	22.2 (1.355)	Refer to Model Number Designation	20 (5.3)	2.2 kW (3 HP)	78 (172)
YP22- * -3-3.7-22			30 (7.9)	3.7 kW (5 HP)	105 (234)
YP37- * -3-3.7-22	36.9 (2.25)	Refer to Model Number Designation	30 (7.9)	3.7 kW (5 HP)	145 (320)
YP37- * -3-5.5-22				5.5 kW (7.4 HP)	145 (320)

Consult Yuken when detailed material such as dimensions figures is required.



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