

LOW-NOISE TYPE HYDRAULIC POWER UNIT TOYOPAC "SIZUKA" (TSU)



The hydraulic power unit is able to operate silently. This model has the pump directly coupled to the motor and the pump and motor assembly is immersed in the fluid in the reservoir. The result is drastic reduction of noise.

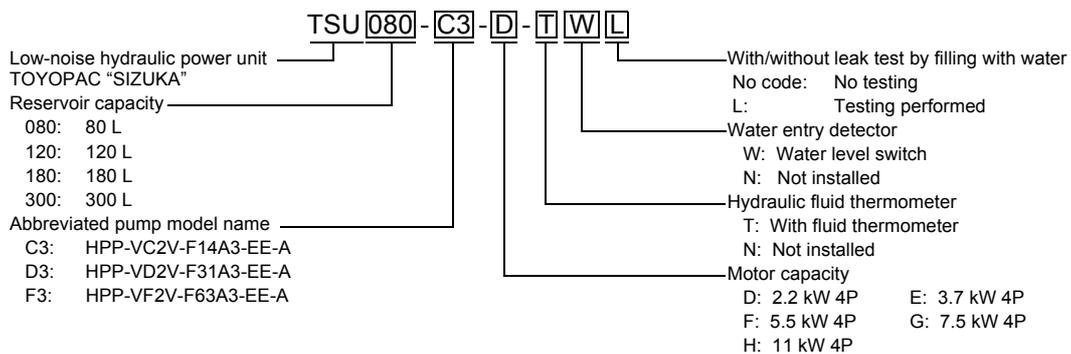
Since the unit is free of oil leaks, it improves the working environment and assures clean operation. It can be used in a wide variety of industrial products such as testing machines and industrial machinery.

- Always ground the hydraulic power unit. Failure to ground it will cause electrocution or fire. You are recommended to install an earth leakage breaker to prevent electric shock accidents and fire with certainty.
- If the hydraulic fluid level falls to the level that is detected by the lower limit level switch (more than 10 mm below the lower limit level), it can cause abnormal heating of the motor. Stop the hydraulic power unit if the fluid temperature rises abnormally (setting temperature: 65°C), the motor temperature rises abnormally (110°C or higher) or the water content becomes too high (water content is 0.1% or higher). If the hydraulic power unit is operated continuously under such conditions, it will fail to operate or trouble will occur.

NOTE: The level switch that detects the lower limit of the hydraulic fluid and the thermostat that detects abnormal temperature rise of the hydraulic fluid and/or motor are standard. The water level switch that detects entry of water into the hydraulic fluid is optional.

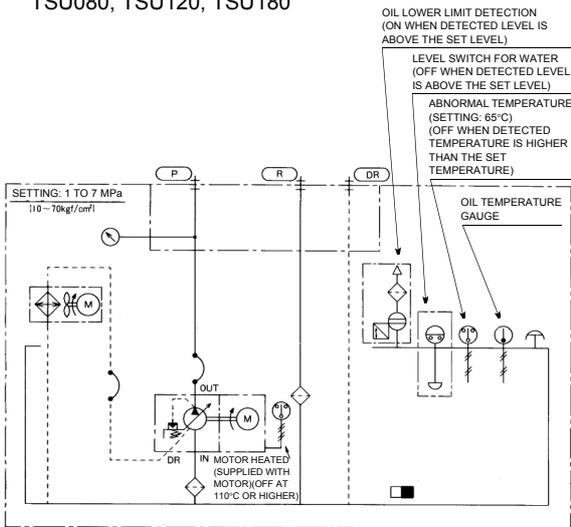
- Before operating the hydraulic power unit, confirm that the fluid level is between the H and L indications of the level gauge. If the hydraulic power unit operates for a long time in a state where the pump and motor assembly are not immersed in fluid, the motor will overheat.
- The water content in the hydraulic fluid must be less than 0.1%. Entry of water into the fluid is the cause of insulation failure of the motor. If the hydraulic power unit is used in an environment where entry of water is anticipated, install the optional water detection level switch.
- Remove and clean the air filter of the fan cooler periodically (every 3 to 6 months). If the air filter becomes clogged the cooling capacity will be lowered, causing a hydraulic fluid temperature rise.
- Use petroleum-base fluid (equivalent to ISO VG22 or 32) within the viscosity range of 20 to 400 mm²/s and temperature range of 0 to 60°C. Using hydraulic fluid outside the specified range will cause hydraulic unit failure and fluid deterioration. The hydraulic unit is not able to use fluid that contains water and fire-resistant fluid.
- Control the contamination level of fluid to achieve better than Class 11 of NAS1638. Using contaminated fluid will shorten the service life of the hydraulic devices and damage them.
- The exterior coating is Munsell No. 10.0 GY9.0/1.

MODEL DESIGNATION

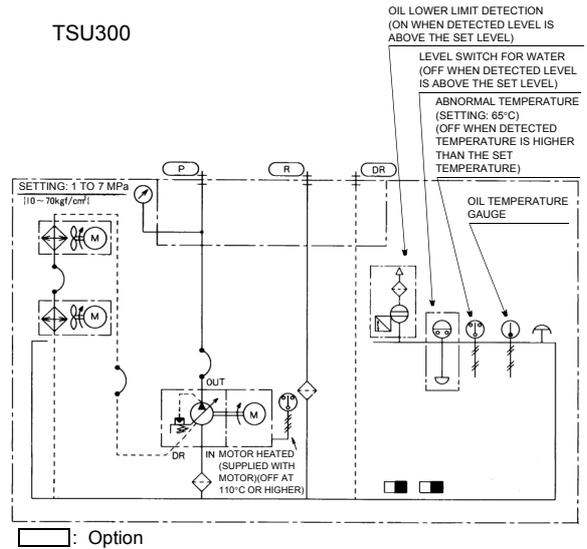


● Hydraulic Circuit Diagrams

TSU080, TSU120, TSU180



TSU300



STANDARD EQUIPMENT

- Pressure gauge
- Terminal box
- Fan cooler
- Oil level gauge with air breather (with level switch)
- Abnormal fluid temperature detecting thermostat
- Strainer
- Return filter
- Abnormal motor temperature detecting thermostat
- Magnetic separator

OPTIONAL FUNCTIONS

- Hydraulic fluid thermometer
- Water entry detector (water level switch)
- Fire Defense Law compatible type

SPECIFICATIONS

*1: Value at 1,800 min⁻¹ *2: Value at 1,500 min⁻¹ *3: Fluid is not included.

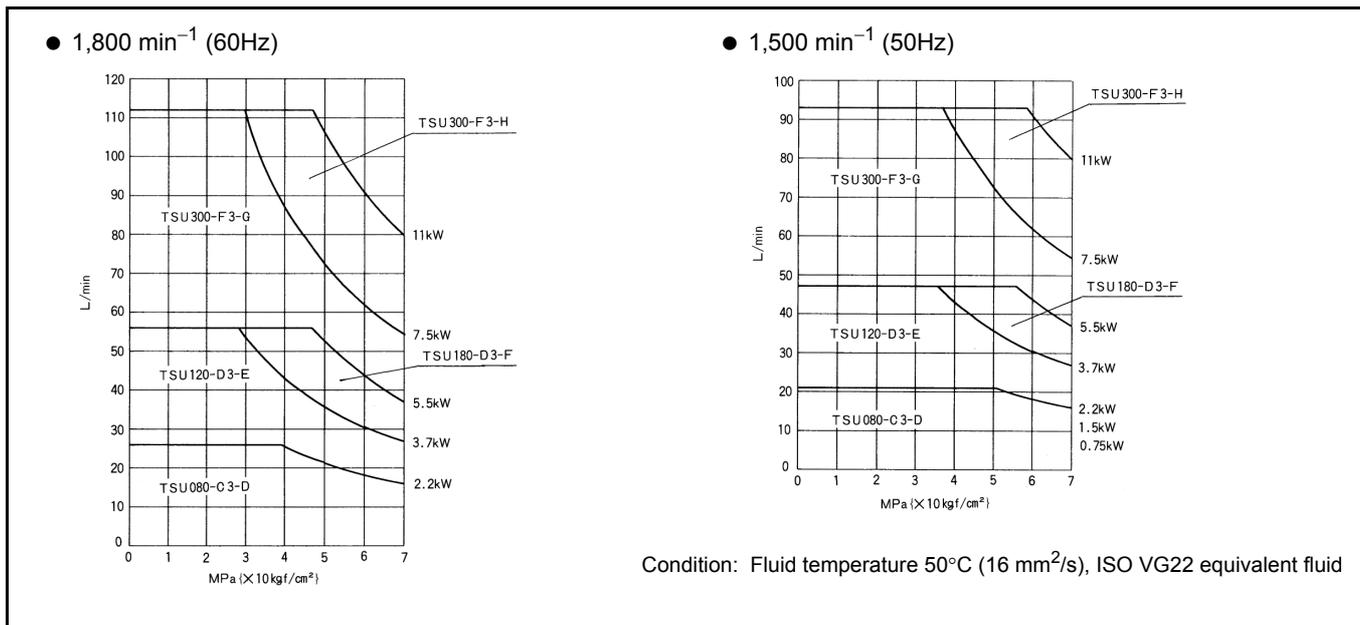
Model	Reservoir Capacity (L)	Motor Capacity	Discharge Rate Adjustment Range (L/min)		Max. Operating Pressure (MPa)	Pressure Adjustment Range (MPa)	Voltage	Mass* ³ (kg)
			*1 ⁶⁰ Hz	*2 ⁵⁰ Hz				
TSU080-C3-D-**	80	2.2 kW 4P	5 to 26	5 to 21	7	1 to 7	Power line: 200 VAC 50/60 Hz 220 VAC 60 Hz Control line: 24 VDC	130
TSU120-D3-E-**	120	3.7 kW 4P	12 to 56	12 to 47				160
TSU180-D3-F-**	180	5.5 kW 4P	12 to 56	12 to 47				210
TSU300-F3-G-**	300	7.5 kW 4P	23 to 110	23 to 94				330
TSU300-F3-H-**	300	11 kW 4P	23 to 110	23 to 94				340

NOTE 1: A high-pressure series (max. operating pressure: 21 MPa, motor capacity: 11 to 37 kW) using a low-noise internal gear pump is available. If this is required, please consult us.

NOTE 2: If a control line voltage of 100 VAC is required, please consult us.

NOTE 3: External pressure adjustment is possible. If this is required, please consult us.

MODEL SELECTION CHART



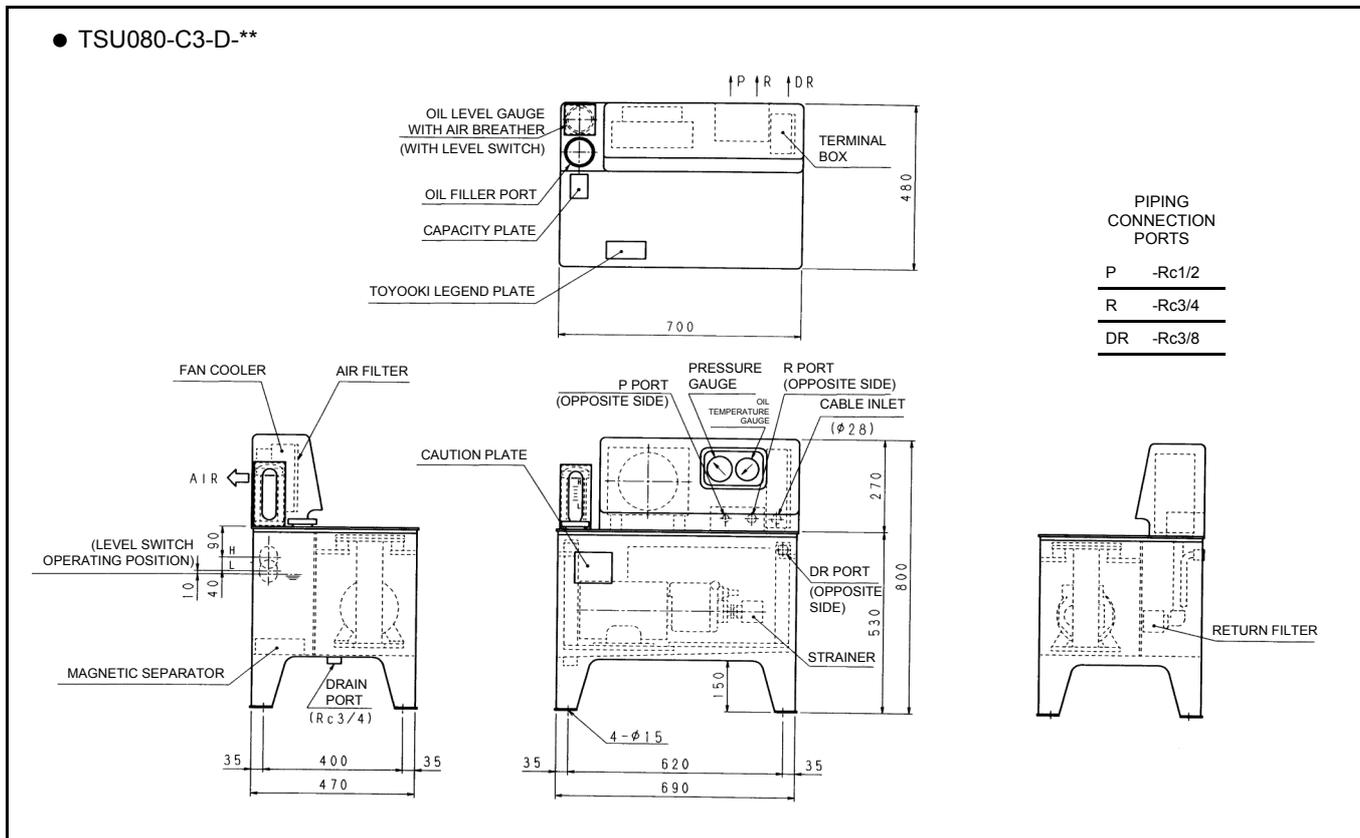
PRESSURE ADJUSTMENT AMOUNT PER TURN OF THE ADJUSTING SCREW (REFERENCE)

Model	Adjustment Amount (MPa)
TSU080-C3-D-**-	2
TSU120-D3-E-**-	
TSU180-D3-F-**-	
TSU300-F3-G-**-	3
TSU300-F3-H-**-	

DISCHARGE RATE ADJUSTMENT AMOUNT PER TURN OF THE ADJUSTING SCREW (REFERENCE)

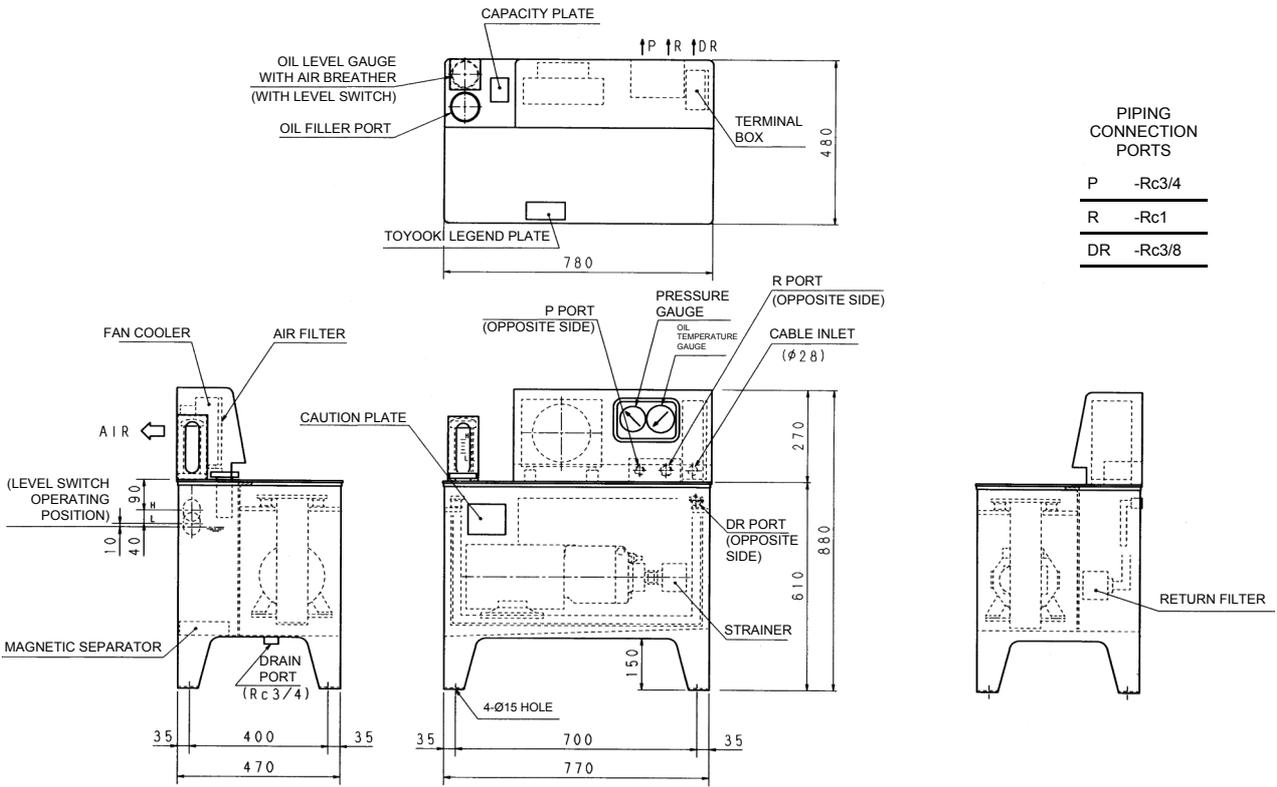
Model	Adjustment Amount (L/min)	
	50 Hz	60 Hz
TSU080-C3-D-**-	1.8	2.1
TSU120-D3-E-**-	4.7	5.6
TSU180-D3-F-**-	4.7	5.6
TSU300-F3-G-**-	9.4	11.3
TSU300-F3-H-**-	9.4	11.3

EXTERNAL DIMENSIONS

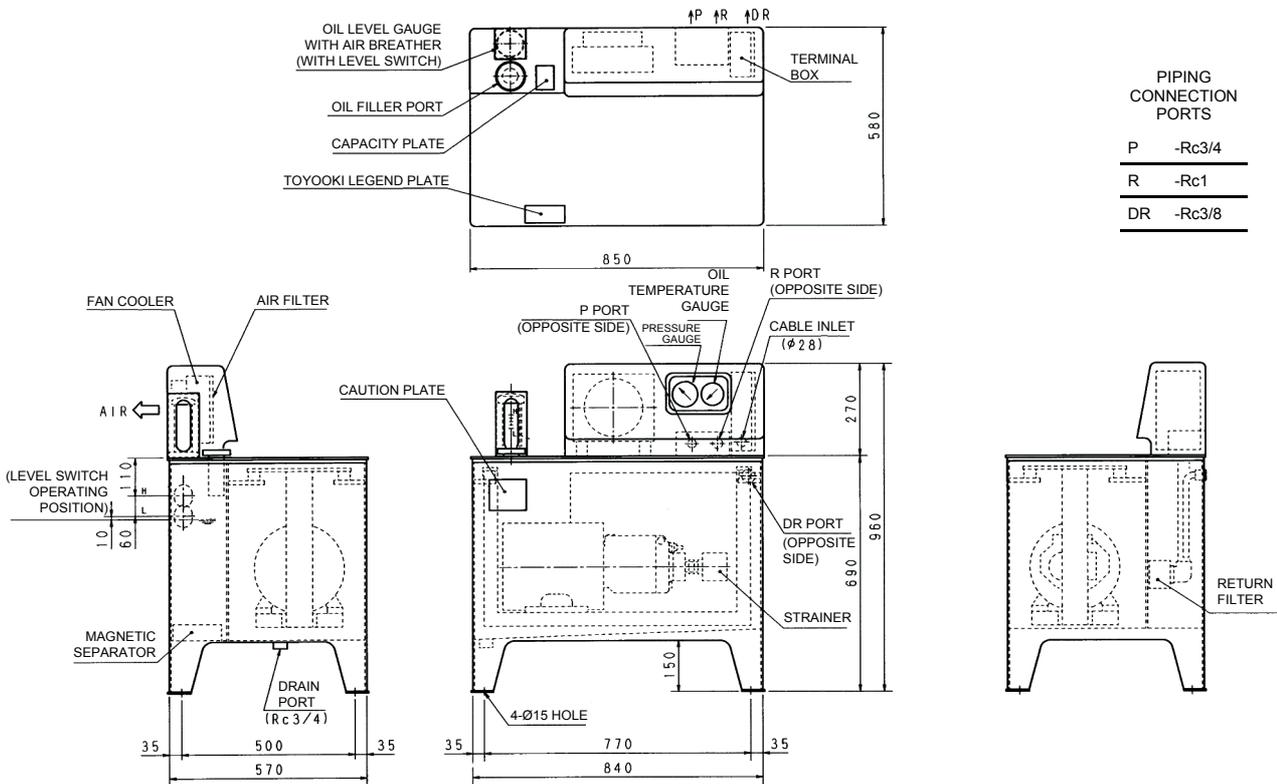


EXTERNAL DIMENSIONS

● TSU120-D3-E-**

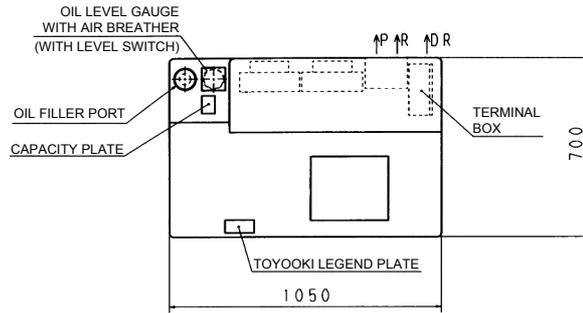


● TSU180-D3-F-**



EXTERNAL DIMENSIONS

- TSU300-F3-G-**
- TSU300-F3-H-**



PIPING CONNECTION PORTS

P	-Rc1
R	-Rc1 1/4
DR	-Rc3/4

