

ECORICH-R

Surpassing IE4 class

Exceeds standard of
high efficiency motor regulation

All Models CE Standard Compliant

High accuracy.

Increased functionality.

Unparalleled energy savings.



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Hybrid Hydraulic Unit Model List

16 PQ Sixteen-pattern P-Q control

C Communication function

A Analog command input
* Only applicable to single pumps.

Hyb. Win Hybrid-Win compatible
* Refer to Page 3.

Diverse specifications for each model. DAIKIN's lineup provides a variety of functions and capacities depending on the machine type.

(The examples here are 200 V models.)

		Equivalent to 0.75 kW	Equivalent to 1.5 kW	Equivalent to 2.2 kW	Equivalent to 2.8 kW	Equivalent to 3.7 kW	Equivalent to 5.0 kW	Equivalent to 7.0 kW	Equivalent to 11.0 kW
For machine tools	ECORICH					3.7	5.0	7.0	11.0
	ECORICH-R	0.75	1.5			3.7	5.0	7.0	11.0
For general industrial machines	Unit type	0.75	1.5	2.2	2.8				
	Motor pump type	0.75	1.5	2.2	2.8				

Model	Motor capacity (*)	Maximum operating pressure (MPa)						Maximum discharge rate (L/min)											Tank capacity (L)	
		4	5	6	7	10	15	20	10	20	30	40	50	60	70	80	90	100		110
ECORICH-R	EHU15R07××-40	Equivalent to 2.2 kW	[Bar chart showing pressure range 4-7 MPa]						[Bar chart showing discharge rate range 10-20 L/min]											Tankless 18 33
	EHU15R10××-40	Equivalent to 2.2 kW	[Bar chart showing pressure range 4-10 MPa]						[Bar chart showing discharge rate range 10-20 L/min]											
	EHU30R07××-40	Equivalent to 2.8 kW	[Bar chart showing pressure range 4-7 MPa]						[Bar chart showing discharge rate range 10-28.5 L/min]											

* The above motor capacities are given for guidance only and do not represent the standard capacities of general motors.

Energy savings and advanced functionality from Daikin patented IPM motors and hydraulic technologies.

Explained in an easy-to-understand video!

URL https://www.daikinpmc.com/mv/ipm_motor.html



Energy-saving technology that supports hybrid products

- ◆ DAIKIN was the first in the industry to introduce an interior permanent magnet synchronous motor (IPM motor) into air conditioners for household use. DAIKIN was also an early adopter in the industry of the IPM motor for use in industrial-use air conditioners. We have led the industry as a front runner in air conditioner energy-saving performance.



- ◆ Hybrid products equipped with variable speed motors, developed by making full use of DAIKIN's original energy-saving motor technology and its production capacity, help to achieve energy savings for factory equipment.

Improved energy savings with the use of powerful neodymium magnets!

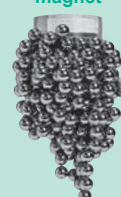
"Double torque" improves the energy-saving effect.

Combining two rotational forces, "magnetic torque" generated by a powerful neodymium magnet^{*1} and "reluctance torque"^{*2}, generates more power with less electricity.

Ferrite magnet



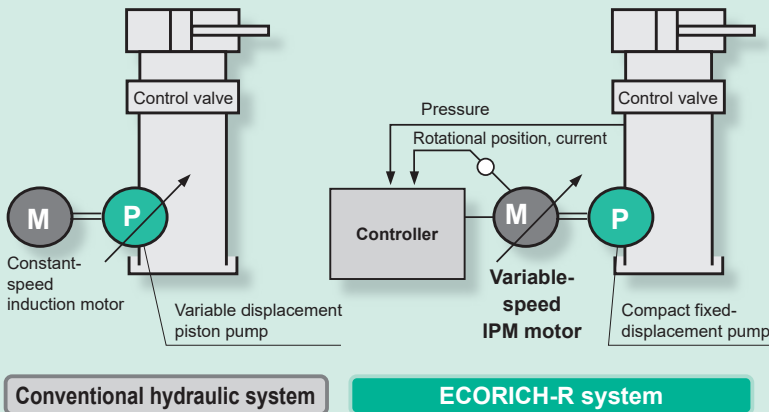
Neodymium magnet



Neodymium magnets provide more power – substantially more than the ferrite magnets in general use.

*1: A compound of neodymium (Nd, rare-earth element), iron (Fe), and boron (B). Neodymium magnets are known to have superior magnetic properties. *2: Rotational force generated by attractive force (reluctance = magnetic resistance) between iron and a magnet.

System Configuration



Energy-saving and low heat/noise generation

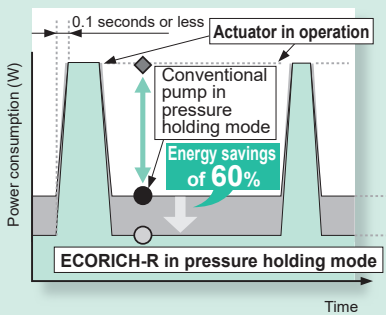
- ◆ The high-efficiency IPM motor is always controlled to run at an optimum speed, eliminating unnecessary energy consumption.
- ◆ The motor is controlled at the minimum required rotation speed to prevent unnecessary oil temperature rise and suppress deterioration of the hydraulic oil.
- ◆ In addition, the noise level in the pressure holding mode is substantially reduced.

Easy installation and operation

- ◆ Ready for operation simply by supplying commercial 3-phase AC 200 V power.
- ◆ The pressure and flow rate can be set with simple key operations.
- ◆ Clear digital indication of pressure and flow rate settings and operation status.

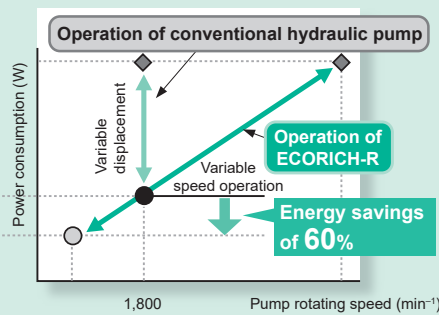
System for Saving Energy

Operating pattern of hydraulic system and energy savings



■ Power consumption of conventional pump
■ Power consumption of ECORICH-R

Operation outline



◆ Operating ○ ECORICH-R in pressure holding mode
● Conventional pump in pressure holding mode

Autonomous energy-saving pressure and flow rate control

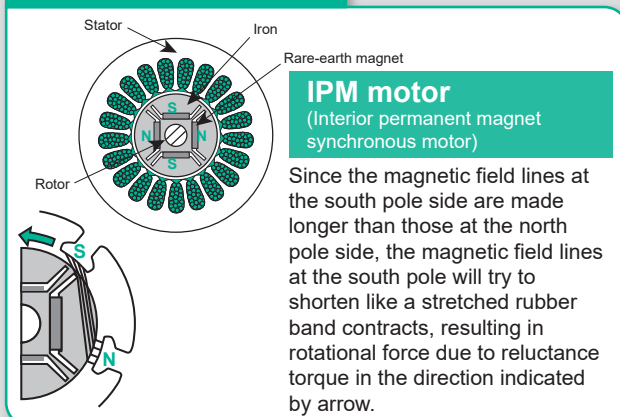
- ◆ The pressure is always monitored to supply hydraulic oil at the optimum flow rate as required according to the load condition.
- ◆ The IPM motor* runs at the minimum required rotation speed in the pressure holding mode and it rotates at a high speed to supply hydraulic oil at the required flow rate when operating a hydraulic actuator.

* See below for details on the IPM motor.

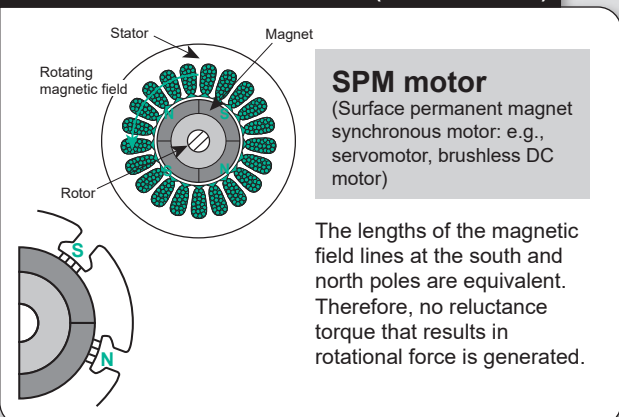
Fundamental Principle of the IPM Motor

With a rare-earth permanent magnet deeply embedded in the rotor, the IPM motor uses an electromagnetic structure that maximizes magnetic torque (attractive/repulsive force between the coil and permanent magnet) and reluctance torque (force of the coil that attracts iron). This structure achieves high torque and maximum efficiency while suppressing heat generation.

Structure of the IPM motor



Structure of a conventional motor (AC servomotor)

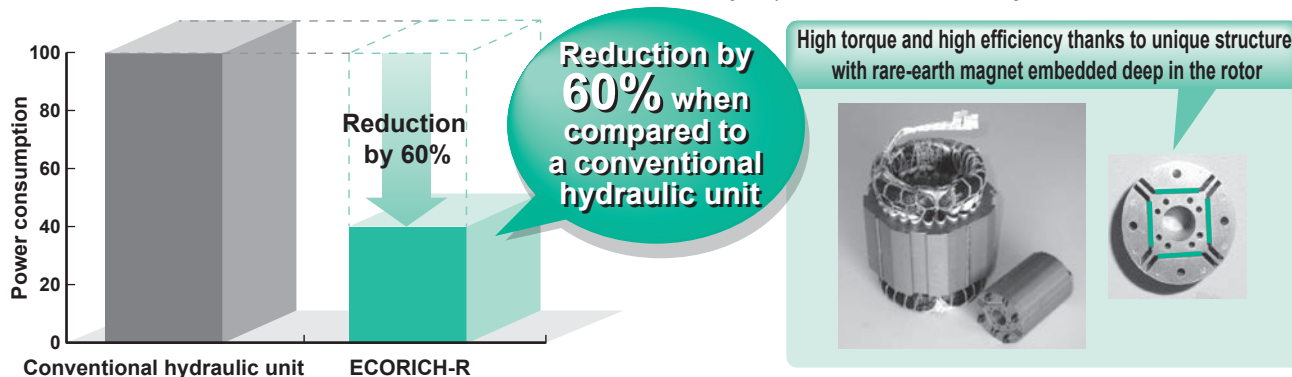


Features

Feature 1 Energy-saving hydraulic unit incorporating a high-efficiency IPM motor

The system uses an ultra energy-saving IPM motor*, featuring a combination of magnet torque (pull-in and repulsive force between a coil and permanent magnet) and reluctance torque (pull-in force between a coil and iron).

* IPM motor: Interior Permanent Magnet Synchronous Motor * Refer to Pages 1 and 2 for details on the IPM motor.



Feature 2 ECORICH-R is excluded from high-efficiency motor regulations.

High-efficiency motor regulations came into effect in Japan in April 2015. These regulations apply to the hydraulic units equipped with induction motors. This ECORICH-R Series will be exempted from these regulations by adopting a high-efficiency IPM motor.

Advantages of adopting a hybrid hydraulic unit

- 1 Eliminates motor replacement work for each destination
- 2 Eliminates machine design change in accordance with amendment of the regulations.
- 3 Reduces design changes to spare parts, and saves maintenance time.

Feature 3 All models conforming to CE standards

All models conform to the machinery directive, EMC directive, and low voltage directive. This facilitates CE approval of the main machine.

Feature 4 16-pattern multistep control of pressure and flow rate featured

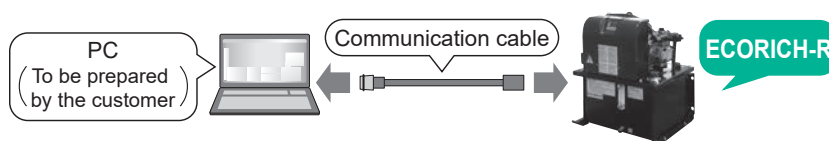
Multi-step pressure and flow rate control can be realized simply by inputting 16 patterns of pressure and flow rate settings and selecting a pattern using external input signals from the machine. Shockless adjustment upon switching can be achieved by changing the acceleration/deceleration time using parameters.

Feature 5 Monitoring oil level drop in the tank

The unit incorporates the dry run prevention function to automatically stop operation when the oil level in the tank drops lower than a certain level, preventing the pump from running while dry. This helps to extend the service life.

Feature 6 Simple monitoring of operating status

The pressure, flow rate, motor speed and other internal data can be monitored and graphically displayed using Hybrid-Win*. This all-inclusive data display makes it easy to grasp the operating status.



* Hybrid-Win is utility software to monitor the internal status of DAIKIN hybrid systems using a PC. The software and its instruction manual can be downloaded from the website "http://www.daikinpmc.com/" free of charge by completing the user registration process.

* The communication cable is separately available.

* Some models require a dedicated separate monitor harness.

* A wireless module can be added, allowing connection to a smart phone or factory LAN (option). This is useful for your daily inspection/maintenance, and remote monitoring.

Features

Feature
7

Unit downsized

The overall height of the unit has been reduced by 20% compared to existing models. This gives much greater flexibility in installation.

Feature
8

Updated hardware options

Optional models equipped with a level switch, temperature switch, thermometer, and micro separator, which were previously provided as separately sold options, are now available as standard. In addition, models with a water fill test tank or water leak test tank are also provided, enabling a diverse range of modes of use.

Description of Function

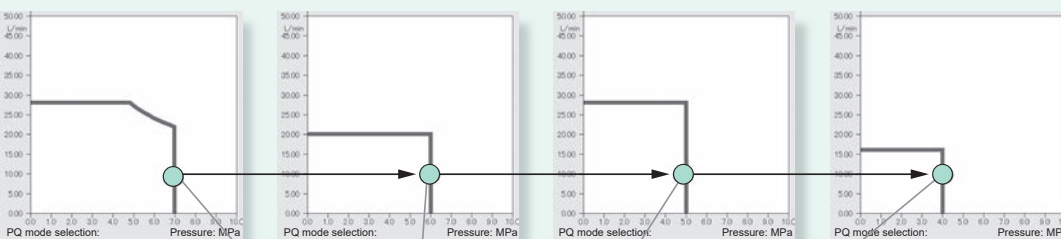
Sixteen pressure (P) - flow rate (Q) setting patterns are available for cylinder control.

- The proportional control valve and proportional pressure control valve, which are utilized in conventional actuator circuits, can be omitted.
- The pressure and flow rate can be set using the controller's operation panel.
- The pressure and flow rate settings can be selected from among the sixteen patterns using external input signals.
- The ECORICH-R autonomously switches between the pressure control and flow rate control modes.

Shockless switching of flow rates and pressures

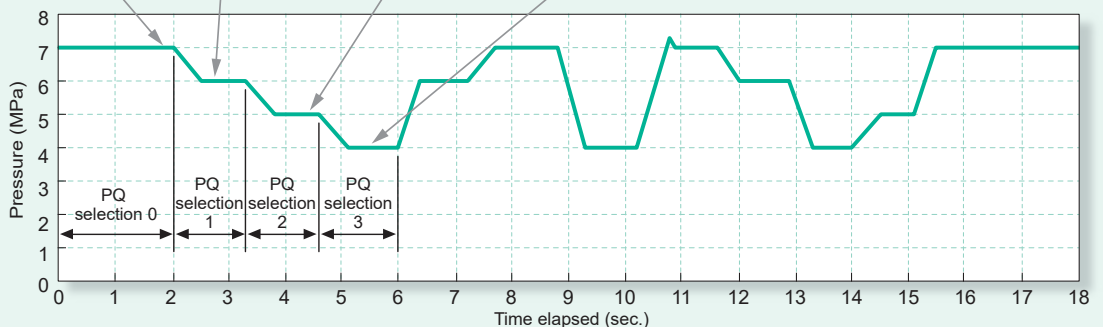
- Setting the acceleration/deceleration time can reduce shocks when flow rates and pressures are switched.

● PQ selection 0 → ● PQ selection 1 → ● PQ selection 2 → ● PQ selection 3



Multi-state
pressure
selection by
contact inputs

Example pressure
switching data
with acceleration
deceleration time
set at 50 msec.



Nomenclature

EHU	××	R	××	××	- 40	- ×	××	-×××
1	2	1	3	4	5	6	7	8

1 Model No.

- EHU××R: ECORICH-R

2 Pump maximum flow rate (discharge rate)

- 15: 15.2 L/min
- 30: 28.5 L/min

3 Maximum operating pressure

- 07: 7.0 MPa
- 10: 10.1 MPa

4 Tank capacity

- 00: tankless
- 02: 18 L
- 03: 33 L

5 Design No.

(May change according to model changes)

6 Function option

- C: With communication function
- P: With analog input function

* Can also be equipped at the same time.

7 Hardware option

Code			Description
Tank capacity			
Tankless	18 L	33 L	
—	—	22	Controller cover (33 L tank only)
03*1	03	03*1	With flow control valve
19	04	19	Separate power supplies for power system and control system
—	05	48	Water fill test compliant tank
—	06	53	Water leak test compliant tank
—	07	54	Level switch
—	08	55	Temperature switch
—	09	56	Thermometer
—	10	57	Micro separator

Hardware options can also be combined.

*1 With the tankless specifications and 33 L tank specifications, hardware option: 03 (with flow control valve) must always be selected.

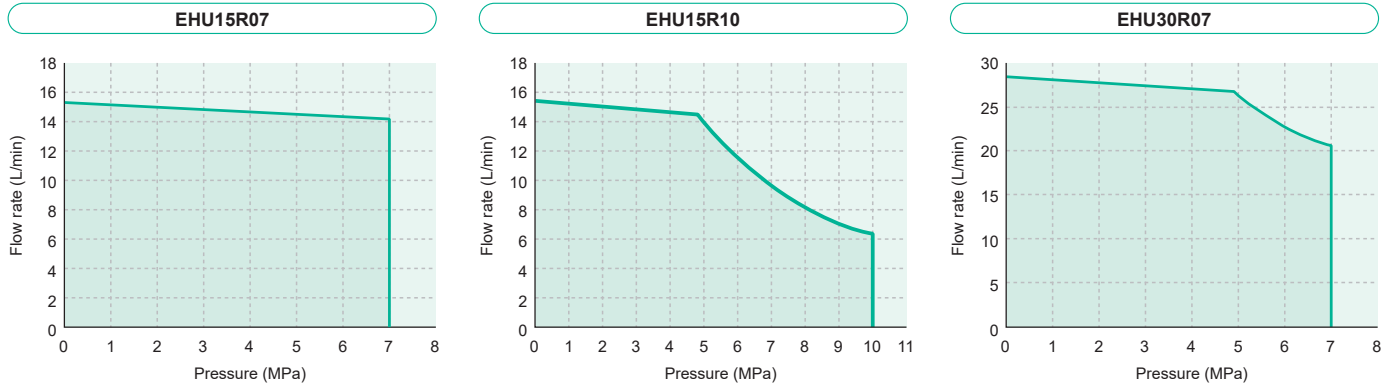
8 Non-standard No.

Specifications

Model code	EHU15R07			EHU15R10			EHU30R07		
	00	02	03	00	02	03	00	02	03
Maximum operating pressure (MPa)	7.0			10.0			7.0		
Operating pressure adjustment range	0.5 to 7.0			0.5 to 10.0			0.5 to 7.0		
Maximum flow rate*2 (L/min)	15.2			15.2			28.5		
Operating flow rate adjustment range	2.5 to 15.2			2.5 to 15.2			3.5 to 28.5		
Motor capacity (equivalent kW)	2.2			2.2			2.8		
Tank capacity (L)	Not provided	18	33	Not provided	18	33	Not provided	18	33
Power supply voltage	3-phase, AC 200-220 V 50/60 Hz (Permissible fluctuation: ±10%)								
Rated current (A)	7.4			5.7			10.3		
No-fuse breaker capacity (A)	10			10			15		
External input signal	5 channels, photo coupler insulation, DC 24 V (maximum of DC 27 V), 5 mA per channel								
External output signal	Digital output	2 channels, photo coupler insulation, FET output, DC 24 V, 50 mA maximum per channel							
	Contact output	1 channel, relay output, Contact capacity: DC 30 V, 0.5 A (resistance load), 1 common contact							
Operating hydraulic oil	General petroleum-based hydraulic oil (R&O)/Wear-resistant hydraulic oil • Viscosity grade: ISO VG32 to 68 • Viscosity range: 15 to 400 mm ² /s • Contamination: Within NAS class 10 • Volumetric water content: 0.1% maximum								
Tank oil temperature	0 to 60°C (Recommended operating temperature range: 15 to 50°C)								
Operating ambient temperature	0 to 40°C								
Storage ambient temperature	-20 to 60°C								
Humidity	85% RH maximum (no condensation)								
Waterproof protection rating	IP44								
Installation site	Indoors (Be sure to secure with bolts, etc.)								
Altitude	1,000 m maximum								
Standard coating color	Ivory white	Black	Ivory white	Ivory white	Black	Ivory white	Ivory white	Black	Ivory white
Mass (hydraulic oil excluded) (kg)	25	29	48	25	29	48	25	29	48

*2 The maximum flow rate is the theoretical value, not the guaranteed value.

Representative Pressure – Flow Rate Characteristics



* The graph shows actual flow rates (representative values).

* Operating flow rate at the maximum pressure in continuous operation: EHU15R: 3 L/min maximum EHU30R: 5 L/min maximum

Function Option

Function
Option

C Communication function



Remote setting of operating conditions

● Operating condition setting of the ECORICH-R possible from a distance

- Various settings such as acceleration/deceleration time and pressure switch settings, as well as the pressure and flow rate, can be set remotely. This makes it possible to control the hydraulic pressure operating conditions in synchrony with the control of the machine.

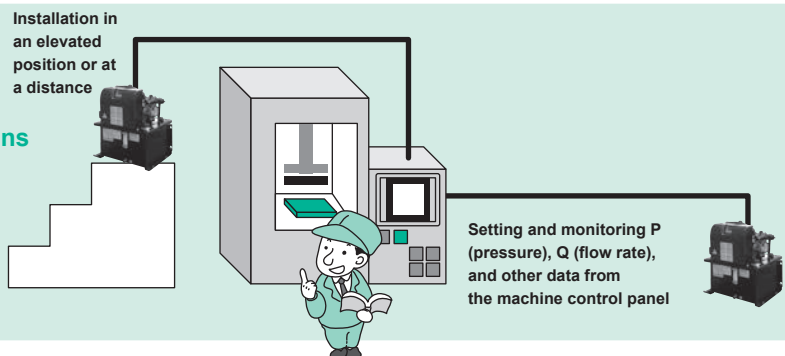
IoT-ready

● Managing the pressure and flow rate from a machine

- The information that the ECORICH-R outputs during machine operation, such as pressure and flow rate, can be displayed on the monitor at a machine.
- By continuously collecting data from the ECORICH-R, it is possible to determine machining faults, diagnose machine failures, and utilize the data for predictive maintenance.

* The Modbus communication protocol is supported. The RS232C, RS422, or RS485 interface standard can be selected. Provide a controller such as a PLC or touch panel display with a communication function at the machine side.

ECORICH-R Example application of remote operation and communication functions



Function
Option

P Analog command input



The capability to specify the pressure and flow rate with voltage ranging from 0 to 10 V enables continuous hydraulic control as required. Real-time variation in response to commands facilitates condition settings at the machine side.

- A hydraulic control system for machinery that requires variable speed control or continuity of pressurizing forces can be realized with a simple configuration.
- A joystick or trimmer can be connected for real-time control.

Hardware Option 02 With controller cover

Optionally available with models equipped with a 33 L tank

- The metal cover protects the controller.

Hardware Option 03 With flow control valve

The tankless specifications and 33 L tank specifications feature a flow control valve as standard. It is set as an option for the 18 L tank specifications.

- The leakage flow rate can be controlled at a constant level regardless of pressure changes.

Hardware Option 04 Separate power supplies for power system and control system

- When an error occurs, only the main power supply is shut down and control power supply continues to carry current, thereby enabling the alarm code and internal status on occurrence of an error to be checked on the operation panel or through serial communication.

Hardware Option 05 Water fill test compliant tank

Optionally available with all unit type models

- We implement a water fill test and a water leak test that is DAIKIN's own criterion.

Products are shipped with a test-compliance name plate affixed, and with a pass certificate. (A water fill test compliant tank is not equivalent to a Fire Services Act-compliant tank.)

Hardware Option 06 Water leak test compliant tank

	Test details	Tank wall thickness
Water fill test	Check that there is no leakage in a 24-hour water fill test	3.2 mm
Water leak test	Check that there is no leakage in a 12-hour water fill test	Standard (2.3 mm)

Hardware Option 07 Level switch

Hardware Option 08 Temperature switch

Hardware Option 09 Thermometer

Hardware Option 10 Micro separator

Optionally available with all unit type models

- These accessories for fitting to the tank are provided as options.
- The accessories can be purchased separately as optional parts. (See Page 10.)

List of Models with Options Installed

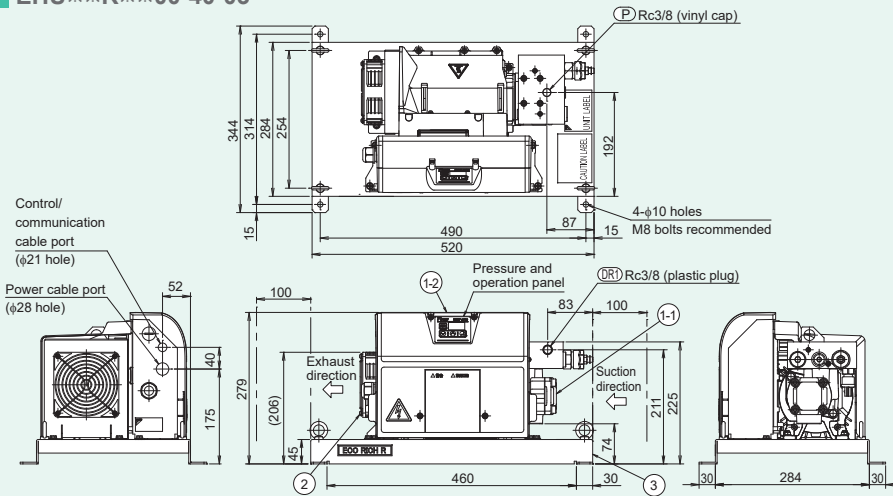
Model code	Function Option		Hardware Option			
	C	P	With controller cover (02)	With flow control valve (03)	Separated power supplies for power system and control system (04)	Tank inspection/ Unit accessory (*)
EHU15R0700-40			–	○	○	–
EHU15R0702-40			–	○	○	○
EHU15R0703-40			○	○	○	○
EHU15R1000-40			–	○	○	–
EHU15R1002-40	○	○	–	○	○	○
EHU15R1003-40			○	○	○	○
EHU30R0700-40			–	○	○	–
EHU30R0702-40			–	○	○	○
EHU30R0703-40			○	○	○	○

* Tank inspections: Water fill test compliant tank (05), water leak test compliant tank (06)
Unit accessories: Level switch (07), temperature switch (08), thermometer (09), microseparator (10)

○ Available – Not available

External Dimension Diagram

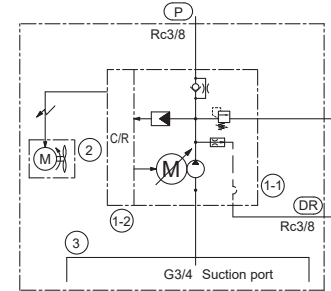
EHU××R××00-40-03



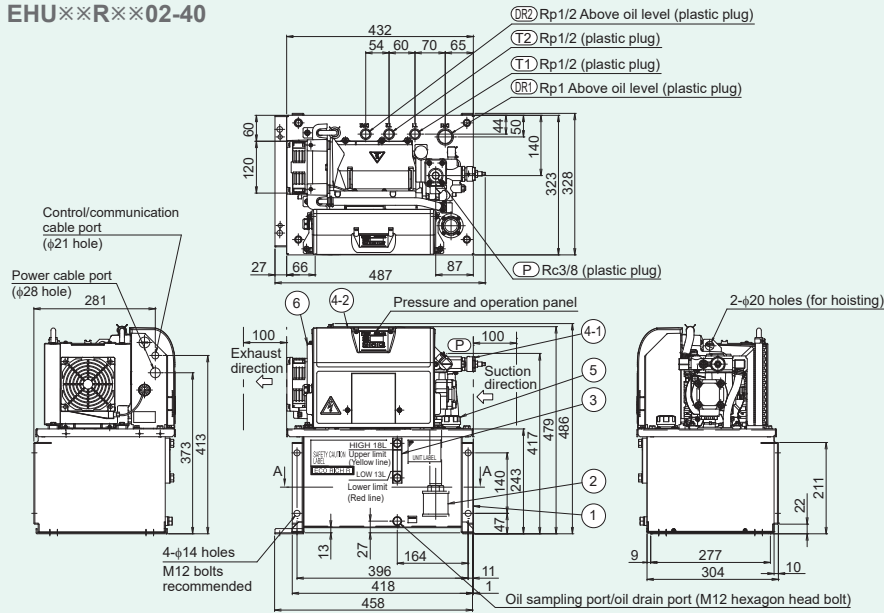
List of parts

Part No.	Name	Quantity
1-1	Motor pump equipped with IPM motor	1
1-2	Controller	1
2	DC fan	1
3	Base	1

Hydraulic circuit diagram



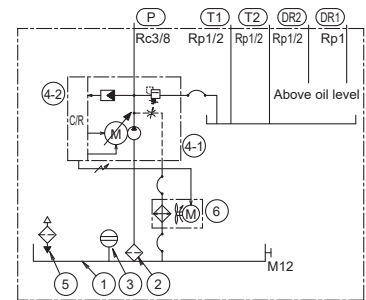
EHU××R××02-40



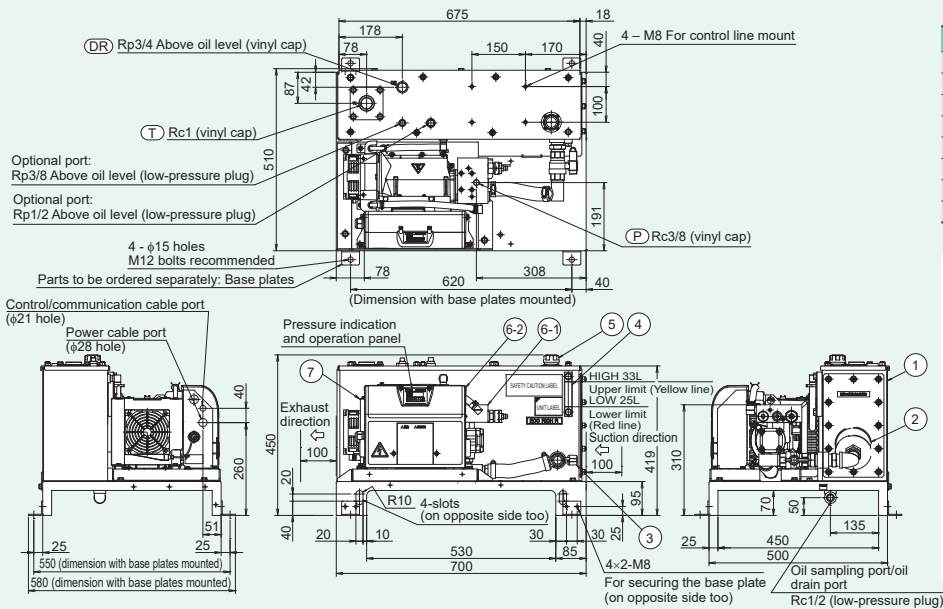
List of parts

Part No.	Name	Quantity
1	Oil tank (18 L)	1
2	Suction strainer	1
3	Oil level gauge	1
4-1	Motor pump equipped with IPM motor	1
4-2	Controller	1
5	Oil filler port with air breather	1
6	Oil cooler	1

Hydraulic circuit diagram



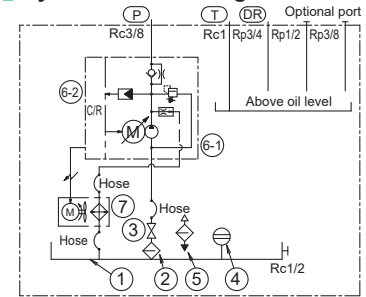
EHU××R××03-40-03



List of parts

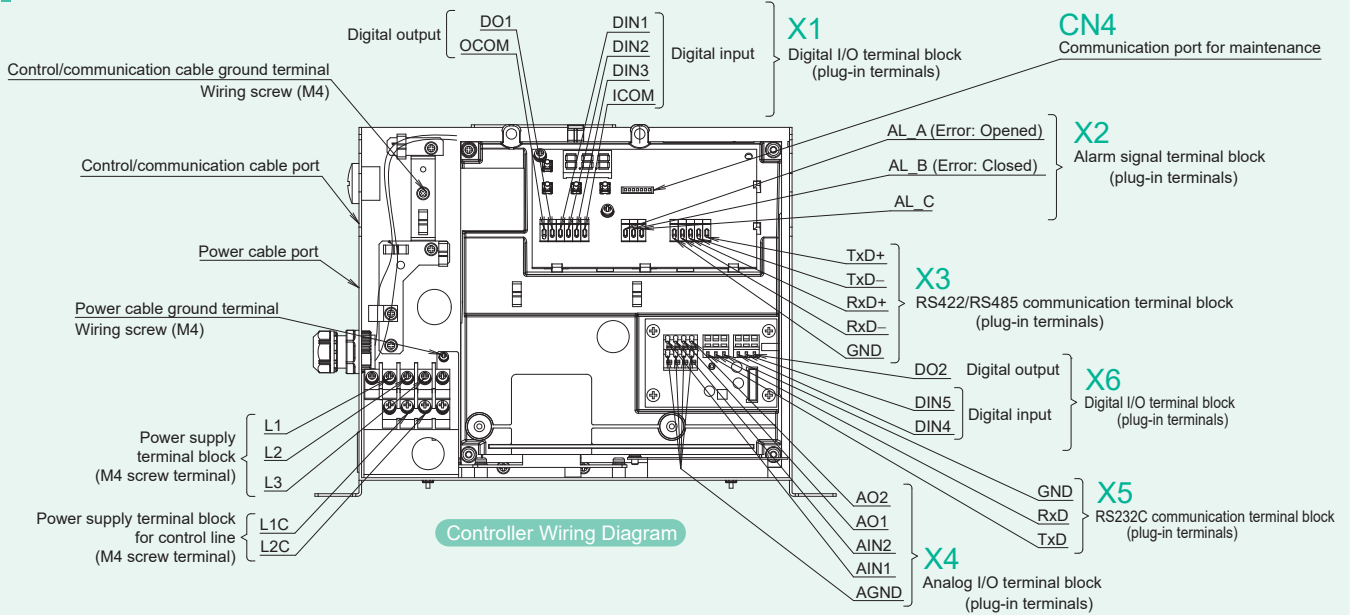
Part No.	Name	Quantity
1	Oil tank (33 L)	1
2	Suction strainer	1
3	Stop valve	1
4	Oil level gauge	1
5	Oil filler port-cum-air breather	1
6-1	Motor pump equipped with IPM motor	1
6-2	Controller	1
7	Oil cooler	1

Hydraulic circuit diagram



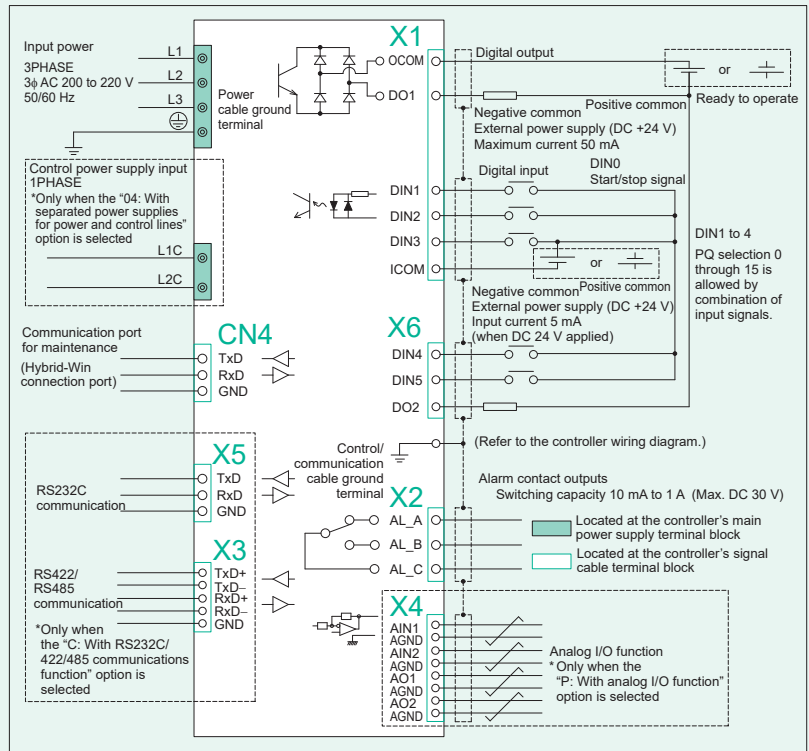
Internal terminal layout (with the controller cover open)

EHU×R×02-40



I/O signal terminal block

Terminal	Terminal code	Type	Signal name	Remarks
I/O signal terminal block	AGND	Analog input/output	Analog ground	To be connected when using the optional analog input function
	AO2		Flow rate monitor output	
	AGND		Analog ground	
	AO1		Pressure monitor output	
	AGND		Analog ground	
	AIN2	Flow rate command input	Common contact output	Common
	AIN1	Pressure command input		
	AL_C	Contact output	Contact output b	Connected to the common when the pressure switch is operating or on occurrence of an alarm or warning (Varies depending on the parameter setting.)
	AL_A		Contact output a	Normally connected to the common
	OCOM	Digital output	Common digital output	This common terminal can be either positive or negative.
	DO2		Digital output 2	Outputs alarms. (Varies depending on the parameter setting.)
	DO1		Digital output 1	Outputs completion signals or motor operation signals. (Varies depending on the parameter setting.)
	DIN5	Digital input	Digital input 5	PQ selection 0 through 15 is allowed by combination of input signals.
	DIN4		Digital input 4	
	DIN3		Digital input 3	
DIN2	Digital input 2			
DIN1	Digital input 1	Runs or stops the unit. Runs/stop operation upon signal input can be selected with a parameter.		
ICOM	Serial communication (RS232C)	Common digital input	This common terminal can be either positive or negative.	
GND		Digital ground	To be connected when using the optional communication function	
RXD+	Received data			
TXD+	Sent data			
TXD-	Sent data			
RXD-	Received data			
GND	Serial communication (RS422/485)	Digital ground		
GND		Digital ground		



Main power supply connections

Connect a 3-phase AC power supply to the power supply terminals (L1, L2 and L3), and connect the ground wire to the power supply ground terminal.

Cable specifications	Cable size	Recommended cable	Recommended crimp terminal	Recommended cable clamp
CE	1.5 mm ² or greater	CE362 1.5 mm ² × 4 wires (KURAMO ELECTRIC)	RBC2-4 (J.S.T. Mfg.)	OA-W1611 (OHM ELECTRIC) Applicable cable outer diameter: φ9 to φ11
VCT	2 mm ² or greater	VCT362 2 mm ² × 4 wires (KURAMO ELECTRIC)		OA-W1613 (OHM ELECTRIC) Applicable cable outer diameter: φ11 to φ13

I/O signal cable connections

Connect wires to the I/O signal terminal block as shown in the table at left above.

Cable size	Recommended cable	Recommended cable clamp
0.3 to 0.5 mm ² (AWG20 to 22)	KVC-36SB 0.3 mm ² (KURAMO ELECTRIC)	OA-W1611 (OHM ELECTRIC) Applicable cable outer diameter: φ9 to φ11

Options Sold Separately (can only be fitted to unit type)

Level switch

Applicable model	Model	Operating voltage	Operating current	Contact resistance	Protection class	Oil level triggering alarms	Mount size	Mounting method	CE standard
EHU**R**02-40	E-DLSN-130L-A-10	AC 100 /110 V DC 24 V	20 mA 50 mA	1 Ω maximum	IP65	11 L maximum Closed	Rp 1/2	*1	N/A
	11 L maximum Open								
EHU**R**03-40	E-DLSN-130L-A-10					21 L maximum Closed			
	E-DLSN-130L-B-10					21 L maximum Open			

*1: Mounted directly at the DR2 port *2: Mounted directly at option port Rp1/2

Temperature switch

Applicable model	Model	Operating voltage	Operating current	Contact resistance	Protection class	Oil level triggering alarms	Mount size	Mounting method	CE standard
EHU**R0702-40	E-MQT83PD-L60X1-10	AC 100 V	2 A	30 mΩ	IP65	60°C	Rp 3/8	*3	N/A
EHU**R0703-40		DC 24 V	50 mA	maximum				*4	

*3: Mounted at the T2 port with a low-pressure or high-pressure bushing (1/2 × 3/8) *4: Mounted directly at option port Rp3/8

Thermometer

Applicable model	Model	Thermometer specification	Temperature indication range	Size	Mounting method
EHU**R**02-40	E-RBT-ST-R1/4-100-6X150	Bimetal type	0 to 100°C	φ45	*5
EHU**R**03-40	E-RBT-100-200L				*6

*5: Mounted at the T2 port with a low-pressure or high-pressure bushing (1/2 × 1/4)
*6: Mounted at option port Rp3/8 with a low-pressure or high-pressure bushing (3/8 × 1/4)

Micro separator

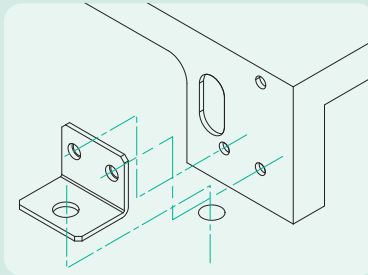
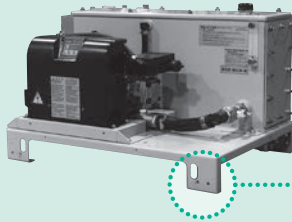
Applicable model	Model	Size
EHU**R**02-40	E-MSB-110-01	110 × 60 × 30
EHU**R**03-40	E-MSB-110	

Base plate set

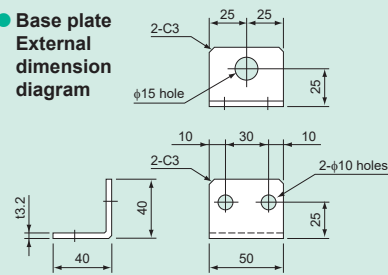
These parts are used to fasten the ECORICH-R to a floor surface. The bolts for mounting the unit to the floor should be prepared by the user.

Applicable model	Model code	Color	Accessories
EHU**R**03-40	E-SUTPLATE-2	Ivory white (Munsell code 5Y7.5/1)	(1) Base plate (4 pcs.) (2) Tank fastening bolt (8 pcs.) (3) Plain and spring washers for the above parts (8 pcs. each)

Example of installation



Base plate External dimension diagram



Bracket/piping set for manifolds

In order to install a control system on the ECORICH-R, select a bracket and piping set for the manifold according to the control system's size and number of series. Please prepare a manifold block separately.

Installation of
02 Size
Control
Systems

Installation of
03 Size
Control
Systems

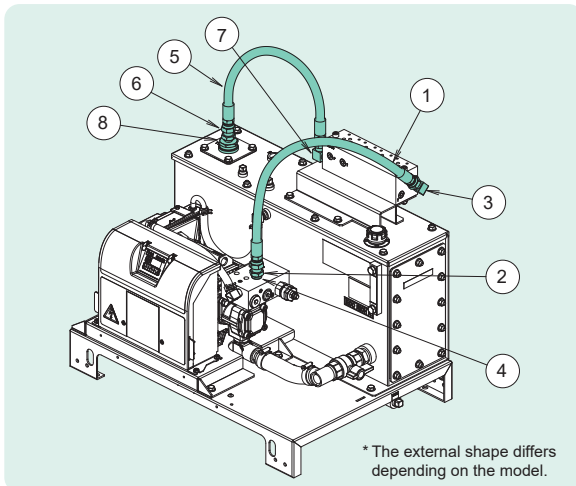
ECORICH-R	Manifold bracket	Piping set
Model code	Model code	Model code
EHU15R0703-40	E-SUT03BASE-402 (Maximum installable series: 4) [Mountable manifold blocks] BT-102-50 (1 series) to BT-402-50 (4 series) or BT-102-50-140 (1 series) to BT-402-50-140 (4 series)	E-EHU15R0703N-PIPE-02
EHU15R1003-40		E-EHU15R1003N-PIPE-02
EHU30R0703-40		E-EHU30R0703N-PIPE-02
EHU15R0703-40	E-SUT03BASE-203 (Maximum installable series: 2) [Mountable manifold blocks] BT-103-40 (1 series), BT-203-40 (2 series)	E-EHU15R0703N-PIPE-03
EHU15R1003-40		E-EHU15R1003N-PIPE-03
EHU30R0703-40		E-EHU30R0703N-PIPE-03

Component parts

Manifold bracket

Model code	Maximum installable series	Accessories
E-SUT03BASE-402	4-series	• Bracket body 1 pc. • Hexagon bolt (M8 × 16) 4 pcs. Hexagon socket head cap bolts for mounting the manifold 2 pcs. (M8 × 85)
E-SUT03BASE-203	2-series	• Flat washer (M8) 4 pcs. Hexagon socket head cap bolts for mounting the manifold 4 pcs. (M8 × 105)

Piping set



For installing 02 size control systems

Model code	Name	Quantity	Tightening torque (N·m)
E-EHU15R0703N-PIPE-02 E-EHU15R1003N-PIPE-02 E-EHU30R0703N-PIPE-02	1 Hydraulic hose	1	54.0 to 66.0
	2 Hose adaptor (straight)	1	43.0 to 47.5
	3 Hose adaptor (elbow)	1	43.0 to 47.5
	4 —	—	—
	5 Hydraulic hose	1	43.0 to 47.5
	6 Hose adaptor (straight)	1	28.5 to 33.0
	7 Hose adaptor (elbow)	1	28.5 to 33.0
	8 Bushing	1	95.0 to 110.0
	9 Installation guide	1	—

For installing 03 size control systems

Model code	Name	Quantity	Tightening torque (N·m)
E-EHU15R0703N-PIPE-03 E-EHU15R1003N-PIPE-03 E-EHU30R0703N-PIPE-03	1 Hydraulic hose	1	54.0 to 66.0
	2 Hose adaptor (straight)	1	43.0 to 47.5
	3 Hose adaptor (elbow)	1	64.0 to 70.0
	4 Bushing	1	110.0 to 120.0
	5 Steel pipe	1	247.0 to 286.0
	6 Steel piping joint (straight)	1	95.0 to 110.0
	7 Steel piping joint (elbow)	1	57.0 to 66.0
	8 —	—	—
	9 Installation guide	1	—

These are the minimum requirements for use of the ECORICH.
For details, refer to the unit's Instruction Manual.

● Ambient conditions

1. Ambient temperature: 0 to 40°C, ambient humidity: 85%RH maximum (with no condensation), altitude: 1,000 m maximum, to be used indoors

● Hydraulic oil

1. Use general petroleum-based hydraulic oil (R&O) or wear-resistant hydraulic oil. Use of hydrous or synthetic hydraulic oil is prohibited.
2. Use hydraulic oil equivalent to ISO VG32 to 68. Keep the viscosity of the hydraulic oil within the range from 15 to 400 mm²/s, and keep tank oil temperatures within the range from 0 to 60°C.
3. Keep contamination within NAS class 10.

● Installation and piping

1. The unit is a stationary type. Fix it with bolts on a level location that is free of vibration.
2. Keep obstacles that will obstruct air intake and emission at least 100 mm away from the end face of the unit. Install the unit at a location with good air flow so that heated air can be vented.

● Electric wiring

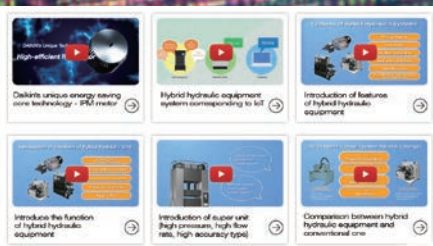
1. Install a no-fuse breaker and a ground fault interrupter compliant with European Standard EN60947-2 in the main power supply of ECORICH-R, to protect the electrical circuits against shorting and overcurrent, and to prevent electric shocks.
2. Use suitable electric cable in accordance with the power supply capacity. In addition, connect the cables correctly in accordance with the wiring guide.
3. Provide a ground connection in compliance with the law in the relevant country. Connect the grounding wire directly with no breaker in the line.

4. Take care not to allow waste metal such as screws and wiring debris, or combustible matter such as wood waste or oil, to enter inside the controller.
5. Use a commercial power supply for the power source. The use of an inverter power supply may cause burn damage to the unit.
6. Before accessing the interior of the controller, check that the unit's power supply has turned OFF and then wait at least 5 minutes.
7. For the power supply wiring, use ring tongue type terminals for 200 V specifications.

● Other precautions

1. If the ECORICH-R detects an error, it stops operating with an alarm displayed. If failure or malfunction of this unit is expected to cause death or pose a danger to human beings, adopt appropriate safety measures in the facilities. If this unit is used in a specialty facility, also adopt appropriate safety measures in the facility to ensure that a failure of the equipment will not lead to a serious accident or loss.
2. Turning the power supply ON/OFF frequently will significantly shorten the life of the controller. Use the start/stop digital inputs to start/stop this hydraulic unit. Leave an interval of at least 5 minutes between operation stops invoked by turning the power supply ON/OFF. Also, when starting and stopping the unit using the start/stop signals, leave an interval of at least 0.5 seconds between a stop command and restarting.
3. It takes approximately 3 seconds for this hydraulic unit to start up after being powered ON. Depending on the piping conditions, the unit may take longer to increase the pressure to the pressure switch's preset level, resulting in pressure switch signal output. In this case, set the machine up so that it will not accept this alarm output during this period.

[Official] Introducing a Video Site



We have opened a site where you can watch videos on the latest models of the DAIKIN Oil Hydraulics Division, including SUPER UNIT, ECORICH, and oil cooling units, all in one place.

Everything from the energy-saving technology supporting hybrid products to the features and functions of each model is explained in an easy-to-understand manner.

By registering the page in the favorites on your computer or cell phone, you can have the latest information at your fingertips any time.

URL <https://www.daikinpmc.com/en/mv/index.html>



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