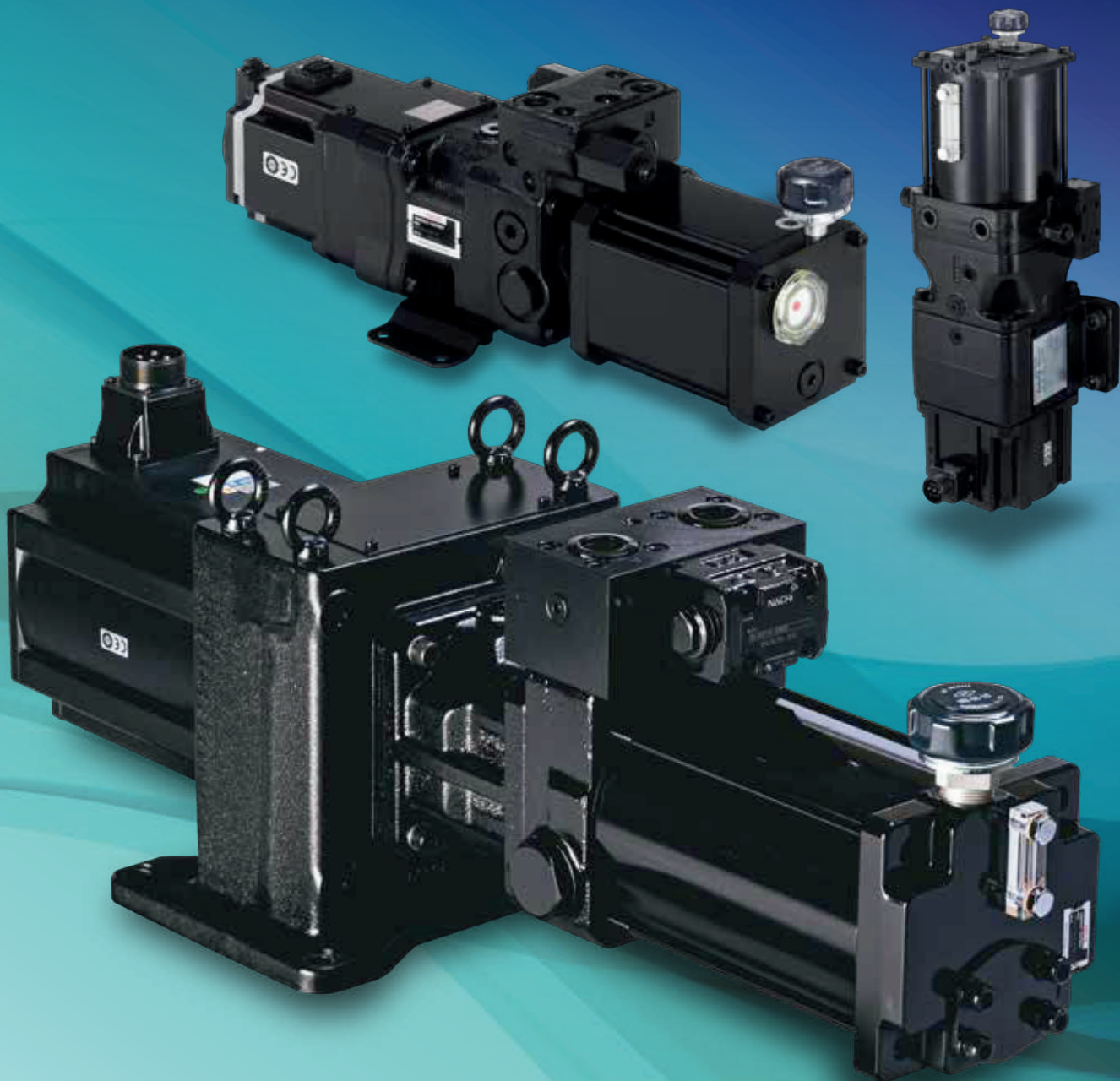


**NACHI**

Compact Hydraulic System for  
Energy Savings and High Precision

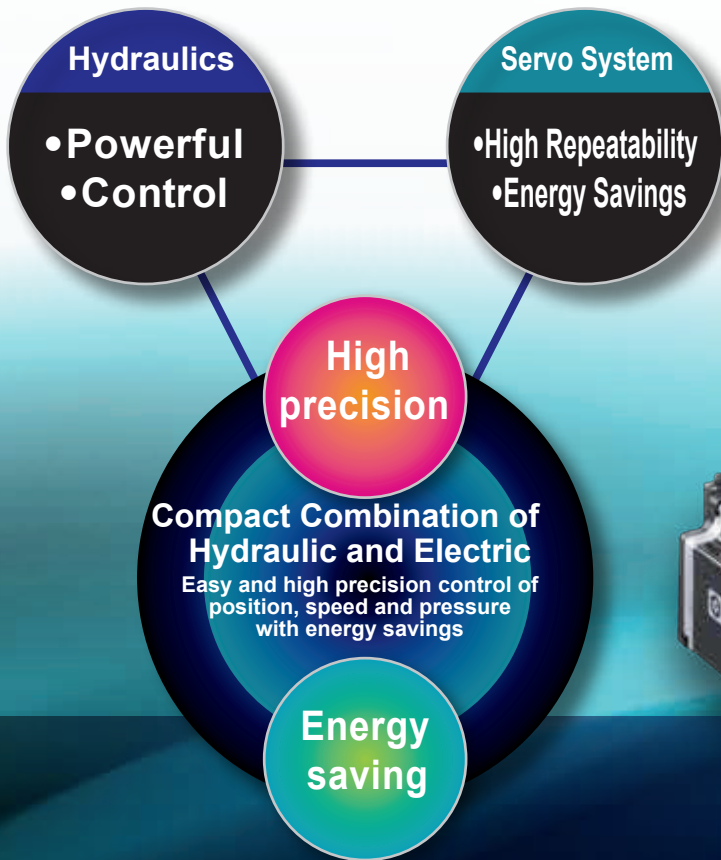
# POWER Meister

**Power Meister**



# Compact Hydraulic System for Energy Savings and High Precision **POWER Meister**

The AC servo motor controls rotational speed and direction of the pump. The pump generates flow and pressure to match the operating cycle of machinery and stops during idle times. Incredible energy savings are achieved by operating only when necessary. Position, Speed and Pressure are controlled with great precision by using a high-speed digital processing servo controller.



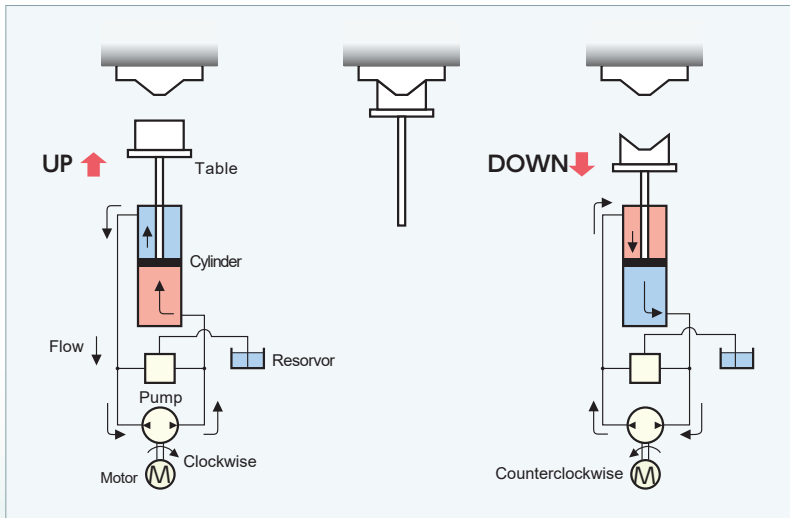
- High Power: 30MPa (4350 PSI)
- Up to max flow 18.5 gpm **NEW**
- Pump Operates Only When Necessary for Energy Savings and Low Noise
- Superior Energy Savings Compared to Conventional Hydraulic Systems
- Highly accurate positioning to the Order of  $\mu\text{m}$  (0.001mm or 0.000039") due to high-speed processing of the servo controller
- Compact All-in-One Design Saves Space  
(Select either vertical or horizontal setup)



# Precision Control of Position, Speed and Pressure by Our Original Feedback System

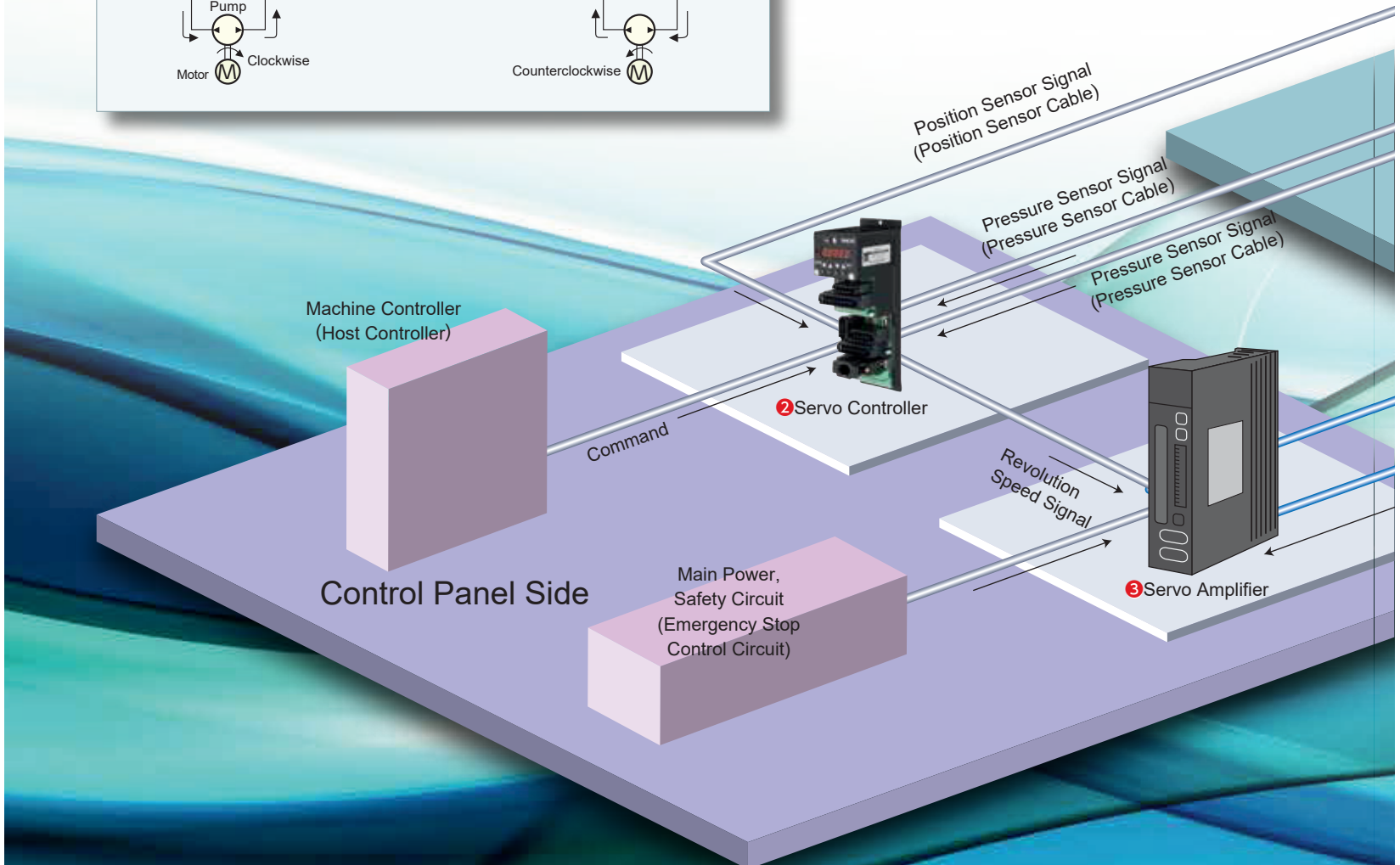
## Principle of Operation

Rotating the motor clockwise brings hydraulic fluid to the head-side of the cylinder which lifts the table. Reversing the motor brings hydraulic fluid to the rod-side and pushes the cylinder down. The rotational direction of the pump controls the direction of the cylinder.



## System Configuration (Standard)

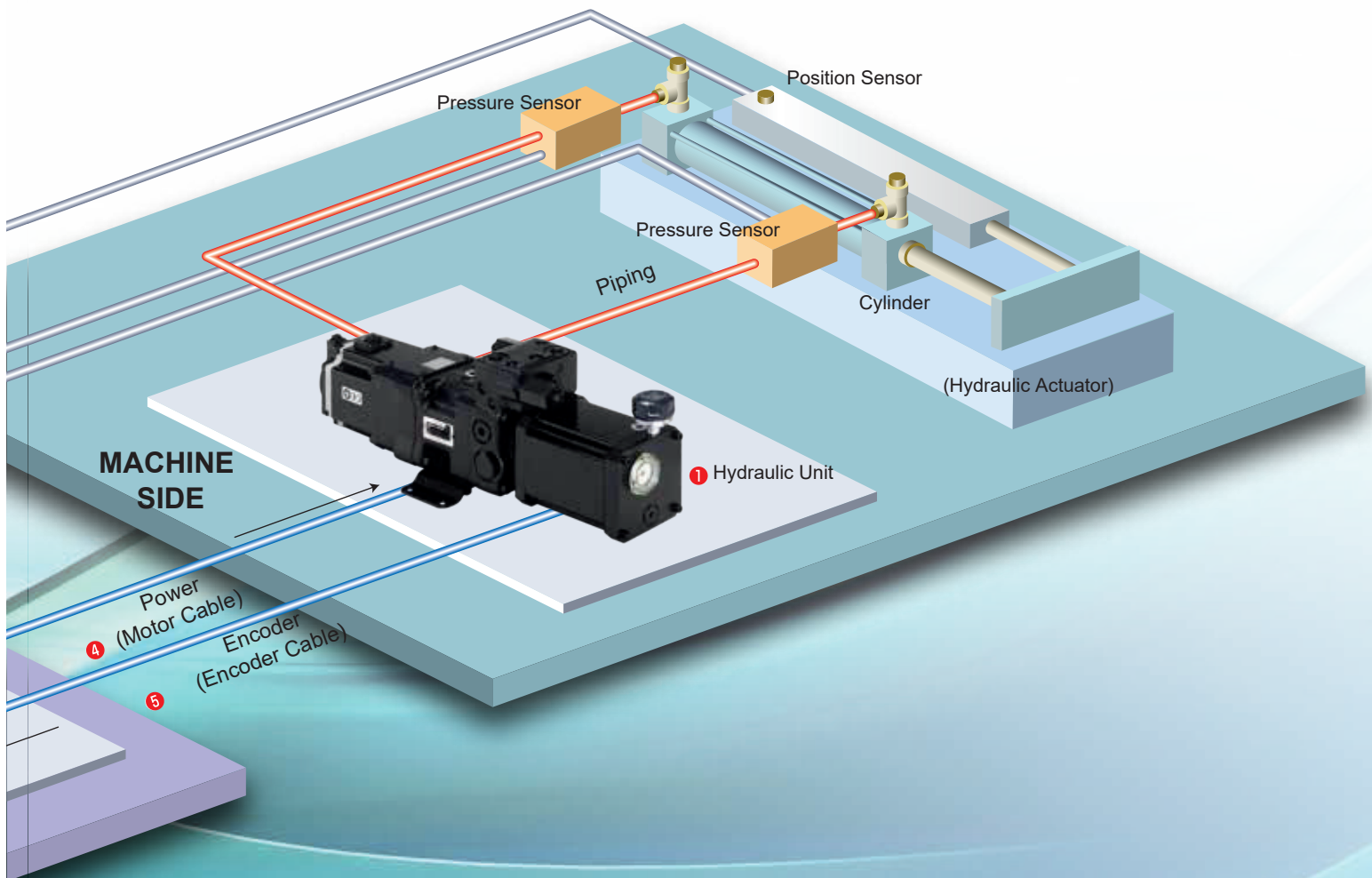
The hydraulic unit responds to signals to operate the cylinder (position, speed and pressure) that are sent from the Machine Controller to the Servo Controller. The Servo Controller receives feedback from sensors and accurately controls the cylinder so the deviation from the signal is 0. A feedback system using position and pressure sensors make it possible to accurately control Position, Speed and Pressure.



## Power Meister Component Device

- ❶ Hydraulic Unit (UPS)
- ❷ Servo Controller (EPD)
- ❸ Servo Amplifier (For AC motor of 1)
- ❹ Motor Cable (3m, 5m or 10m) (10, 16 or 32 feet)
- ❺ Encoder Cable (3m, 5m or 10m) (10, 16 or 32 feet)
- ❻ Motor Fan Cable (choose from 3m, 5m, and 10m) used for UPS-1A: 11kW and UPS-2A: 20kW motor only.

Piping, wiring, hydraulic cylinder, sensor and control panel to be supplied by customer. (Please contact us about cylinders and sensors.)



## Hydraulic Unit (UPS)

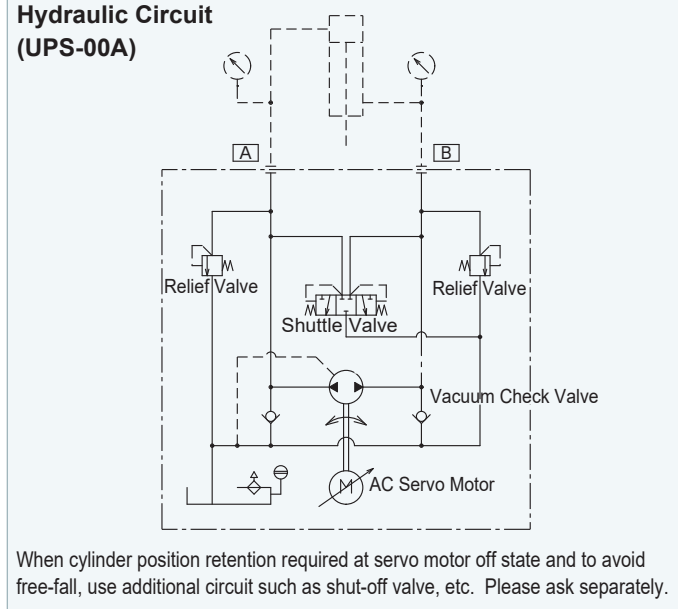
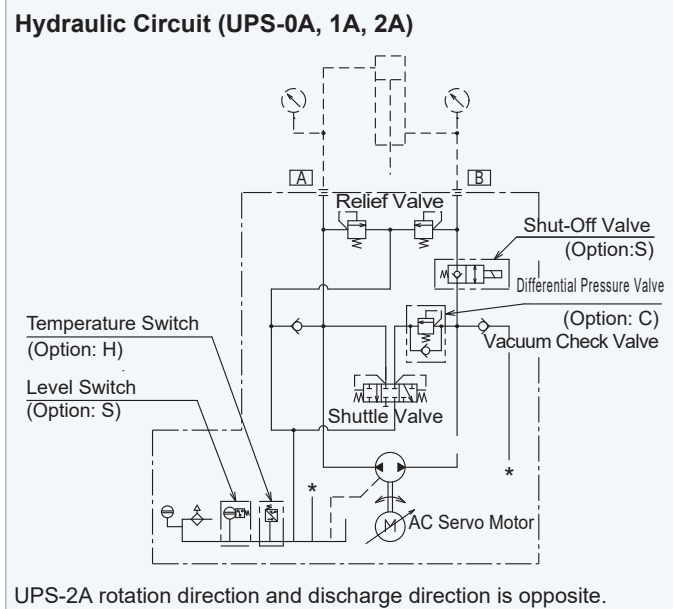
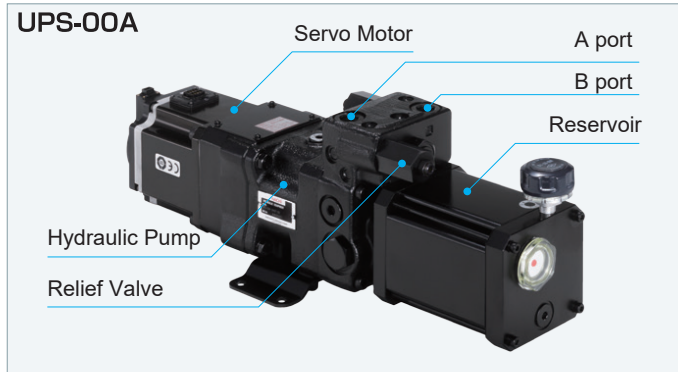
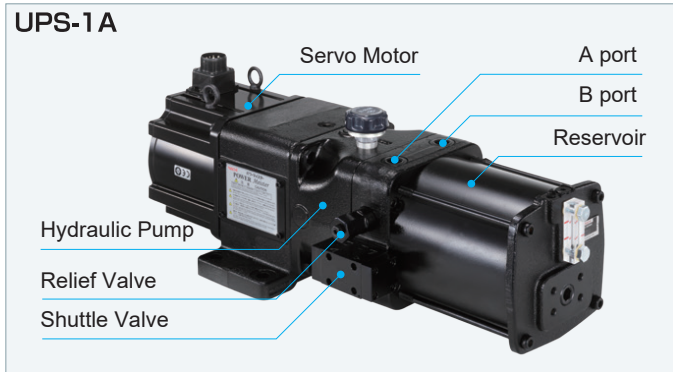
### Space-Saving Design

In-line AC servo motor, hydraulic pump and reservoir. Relief valve and other valves are included in base unit. A port is discharge port when pump rotates counter-clockwise (viewed from AC servo motor). B port is discharge port when pump rotates clockwise. Piping are only between A&B ports of unit and ports of cylinder. Due to rotation of AC servo motor, cylinder can be extended or retracted.

### Options

Additional options that improve usability of UPS: Differential pressure valves that cancel pressure imbalance and shut-off valve to prevent free-fall when motor power turned off are available as UPS options for self-load generation circuit. Temperature switch for abnormal oil temperature detection and float switch for abnormal oil level detection are also available.

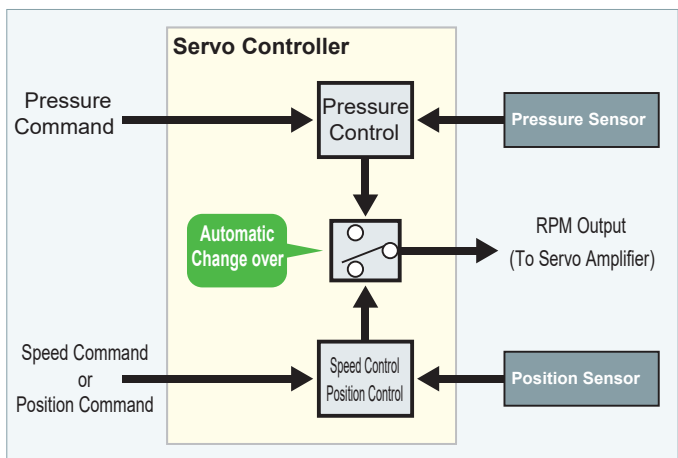
Note) No differential pressure valve, shut-off valve, temperature switch, level switch option for UPS-00A. No shut-off valve, temperature switch, or level switch option for UPS-2A.



## Servo Controller (EPD)

### Easy and Precise Control by High-Speed Calculation

Position sensor and pressure sensor feedback signals. According to cylinder load, servo controller commands to servo amplifier with calculating direction of rotation and rotation speed. Through high-speed calculation of servo controller, it is possible to operate cylinder easily and precisely with command and feedback control. The servo controller features an automatic changeover control mode function as standard. In accordance with actual load conditions, speed control and pressure control or position control and pressure control are automatically selected. Therefore, it is not necessary to control timing by changing the control modes with the host controller, and changing from speed control to pressurizing control can be done smoothly. This function can realize pressurizing control that does not generate surge pressure at the time of changeover. Contact signals from the host controller can also change the control modes.

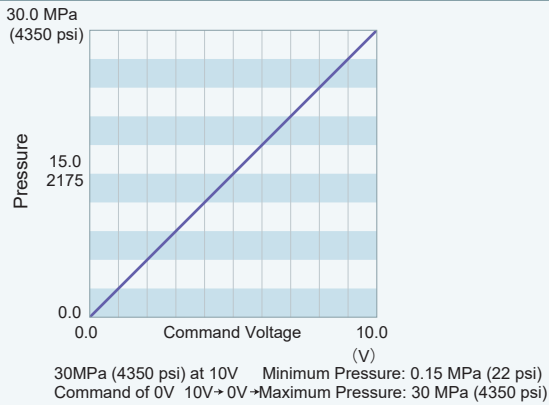


## Servo Amplifier (EPA)

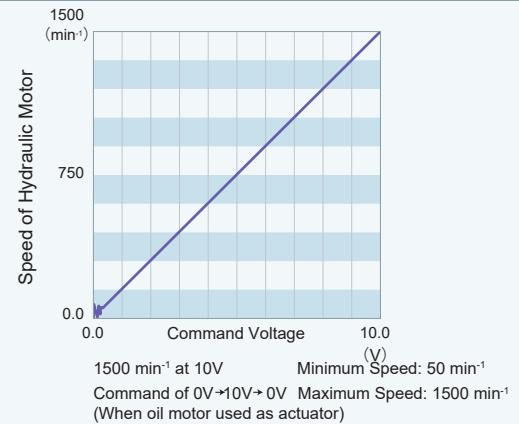
Use a servo amplifier compatible for the servo motor installed in HPU.  
The servo amplifier will activate servo motor to drive the pump according to the rpm command from servo controller.

## Reference Data

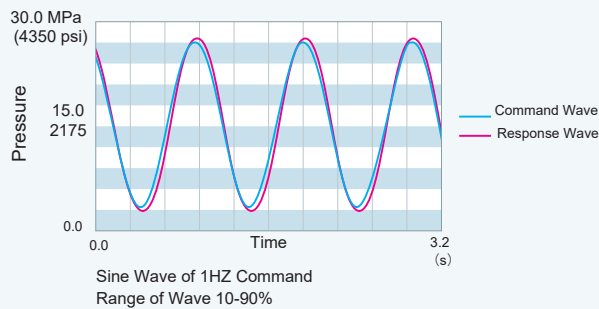
Pressure: Pressure Command Voltage - Pressure Characteristics (0-100%)



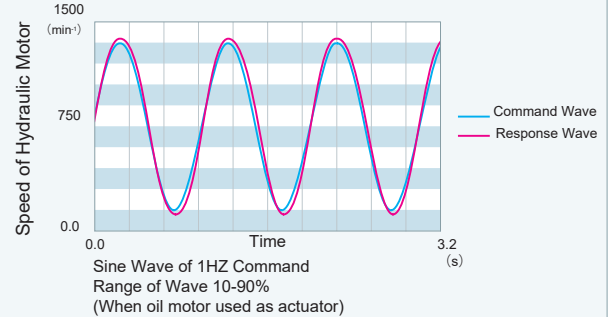
Speed: Speed Command Voltage - Speed Characteristics (0-100%)



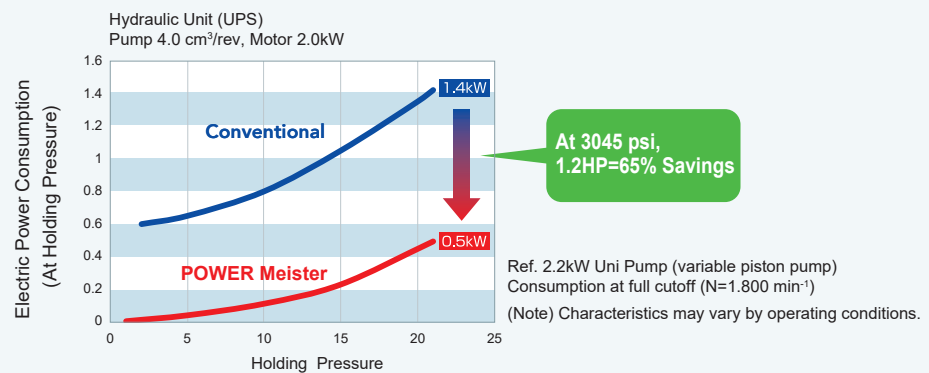
Pressure: Sine Wave Response



Speed: Sine Wave Response



## Hold Pressure: Electric Power Consumption Characteristics



## Application Examples and Results

Metal forming Machines	Compact machine space, precise measures to manufacture.
Caulking Machines and Press Fitting Machines	Control power and position of caulking to maintain quality control. Conventional positioning mechanism not needed. Eliminates the inconsistency of work done by hand.
Grinding Machines	Precise position of start to grind, energy saving to maintain constant pressure for long periods.
Precision Press Machines	Smooth change from high speed to process without surge pressure, for improved quality of products. Less cycle time.
Straightening Machines	Energy saving, low noise, reduced fluid, space saving by integrating unit into machine. Less logistics cost.
Other Applications	Other applications include those requiring compact machines, and high load machines which are incapable of using ball screws.

## Hydraulic Unit Specifications

Electric Motor	AC servo motor (0.75~20kW, driven by servo amplifier) (1.0~26.8HP) Power voltage Three-phase AC200~2 30V 50/60Hz (Servo Amplifier Power) Fan motor power: Single phase: AC200~230V 50/60Hz required. (UPS-1A: 11kW, UPS-2A: 20kW only)
Piston Pump	(2.0~35.0 cm <sup>3</sup> /rev) (0.12~2.13 in <sup>3</sup> /rev)
Ambient Temperature/Humidity	0~+40°C (32~104°F) / 20~90% RH
Fluid Temperature	5~60°C (41~140°F) (Note 6)
Recommended Fluid	UPS-00A, 01A, 1A: ISO VG32~68 (VG 46 recommended), UPS-2A: ISO VG 46 only
Range of Viscosity	20~200mm <sup>2</sup> /s {cSt}
Cleanliness Level	NAS class 10 (ISO 18/16/13)
Setting Range of Relief Valve	UPS-00A:3.5~32MPa UPS-0A/1A/2A:3.5~
Maximum Pressure	30MPa (4350 psi) (Note 7) (Maximum working pressure varied by motor capacity and/or optional features.)
Color	Black

### UPS-00A

Model	Motor Output kW (HP)	Volume cm <sup>3</sup> /rev (in <sup>3</sup> /rev)	Max Rotational Speed min <sup>-1</sup> (Note 1)	Max Flow ℓ/min(Note 2) (GPM)	Rated Pressure Cont. MPa (Note 3)(psi)	Max Working Pressure Short Time MPa(Note 3) (psi)	Reservoir Lit. (Gallon)	Allowable Flow Change Lit. (Gallon>Note 4)
UPS-00A-2*07	0.75(1.0)	2.0(0.12)	3000	6.0(1.59)	6.4 (914)	9.6(1371)	V:0.75(0.20)	
UPS-00A-2*10	1.0(1.3)	2.0(0.12)	3000	6.0(1.59)	8.5(1214)	12.7(1814)	H:0.65(0.17)	V:0.3(0.11)
UPS-00A-3*10		3.0(0.18)		9.0(2.38)	5.7 (814)	8.5(1214)	L:Tankless(Note-5)	H:0.2(0.05)

### UPS-0A

Model	Motor Output kW (HP)	Volume cm <sup>3</sup> /rev (in <sup>3</sup> /rev)	Max Rotational Speed min <sup>-1</sup> (Note 1)	Max Flow ℓ/min(Note 2) (GPM)	Rated Pressure Cont. MPa (Note 3)(psi)	Max Working Pressure Short Time MPa>Note 3) (psi)	Reservoir Lit. (Gallon)	Allowable Flow Change Lit. (Gallon>Note 4)
UPS-0A-2*12	1.2(1.6)	2.0(0.12)	3000	6.0(1.59)	15.2(2171)	22.8(3257)	V:1.9(.50)	V:0.6(0.15)
UPS-0A-4*12		4.0(0.24)		12.0(3.17)	7.6(1086)	11.4(1629)		
UPS-0A-2*20	2.0(2.7)	2.0(0.12)	3000	6.0(1.59)	25.4(3629)	30.0(4350)	H:1.5(.40)	H:0.3(0.11)
UPS-0A-4*20		4.0(0.24)		12.0(3.17)	12.7(1814)	19.0(2755)		

### UPS-1A

Model	Motor Output kW (HP)	Volume cm <sup>3</sup> /rev (in <sup>3</sup> /rev)	Max Rotational Speed min <sup>-1</sup> (Note 1)	Max Flow ℓ/min(Note 2) (GPM)	Rated Pressure Cont. MPa (Note 3)(psi)	Max Working Pressure Short Time MPa>Note 3) (psi)	Reservoir Lit. (Gallon)	Allowable Flow Change Lit. (Gallon>Note 4)
UPS-1A-5*35	3.5(4.7)	4.7(0.29)	2500	11.8(3.12)	21.1(3014)	30.0(4350)		
UPS-1A-7*35		6.7(0.41)		16.8(4.44)	14.8(2114)	22.2(3171)		
UPS-1A-9*35		9.0(0.55)		22.5(5.94)	11.7(1671)	17.5(2500)		
UPS-1A-11*35		11.0(0.67)		27.5(7.28)	9.6(1371)	14.3(2073)		
UPS-1A-13*35		12.9(0.79)		32.3(8.53)	8.2(1171)	12.2(1769)		
UPS-1A-16*35		15.8(0.96)		39.5(10.45)	6.7(957)	10.0(1450)		
UPS-1A-5*45	4.5(6.0)	4.7(0.29)	2500	11.8(3.12)	30.0(4350)	30.0(4350)	-: 4.5(1.20) A:3.0(0.79) B:6.0(1.59)	Reservoir: - V:1.2(0.32), H:0.6(0.16)
UPS-1A-7*45		6.7(0.41)		16.8(4.44)	22.6(3229)	30.0(4350)		
UPS-1A-9*45		9.0(0.55)		22.5(5.94)	17.8(2543)	26.8(3829)		
UPS-1A-11*45		11.0(0.67)		27.5(7.28)	14.6(2117)	21.9(3129)		
UPS-1A-13*45		12.9(0.79)		32.3(8.53)	12.4(1798)	18.7(2711)		
UPS-1A-16*45		15.8(0.96)		39.5(10.45)	10.2(1457)	15.2(2204)		Reservoir:A V:0.6(0.16), H:0.4(0.11)
UPS-1A-7*55	5.5(7.4)	6.7(0.41)	2500	16.8(4.44)	27.9(3986)	30.0(4350)		Reservoir:B V:2.8(0.74), H:0.8(0.21)
UPS-1A-9*55		9.0(0.55)		22.5(5.94)	22.0(3143)	30.0(4350)		
UPS-1A-11*55		11.0(0.67)		27.5(7.28)	18.0(2571)	27.0(3857)		
UPS-1A-13*55		12.9(0.79)		32.3(8.53)	15.3(2219)	23.0(3286)		
UPS-1A-16*55		15.8(0.96)		39.5(10.45)	12.5(1873)	18.8(2686)		
UPS-1A-9*75	7.5(10.0)	9.0(0.55)	2500	22.5(5.94)	30.0(4350)	30.0(4350)		
UPS-1A-11*75		11.0(0.67)		27.5(7.28)	24.7(3529)	30.0(4350)		
UPS-1A-13*75		12.9(0.79)		32.3(8.53)	21.0(3045)	30.0(4350)		
UPS-1A-16*75		15.8(0.96)		39.5(10.45)	17.2(2457)	25.8(3686)		
UPS-1A-13*11K		11.0(14.7)		12.9(0.79)	2500	32.3(8.53)		
UPS-1A-16*11K	15.8(0.96)		39.5(10.45)	25.1(3586)		30.0(4350)		



## UPS-2A

Model	Motor Output kW (HP)	Volume cm <sup>3</sup> /rev (in <sup>3</sup> /rev)	Max Rotational Speed min <sup>-1</sup> (Note 1)	Max Flow ℓ/min (Note 2) (GPM)	Rated Pressure Cont. MPa (Note 3) (psi)	Max Working Pressure Short Time MPa (Note 3) (psi)	Reservoir Lit. (Gallon)	Allowable Flow Change Lit. (Gallon) (Note 4)
UPS-2A-25*11K	11.0 (14.75)	25.0 (1.52)	2000	50.0 (13.2)	14.1 (2044)	21.1 (3060)	B:6.0 (1.58)	Reservoir:B V: 2.8 (0.74) H: 0.8 (0.21)
UPS-2A-32*11K		32.0 (1.95)		64.0 (16.9)	11.7 (1696)	17.5 (2537)		
UPS-2A-35*11K		35.0 (2.13)		70.0 (18.5)	10.7 (1551)	16.0 (2320)		
UPS-2A-25*15K	15.0 (20.10)	25.0 (1.52)	2000	50.0 (13.2)	19.1 (2769)	28.7 (4161)		
UPS-2A-32*15K		32.0 (1.95)		64.0 (16.9)	15.9 (2305)	23.8 (3451)		
UPS-2A-35*15K		35.0 (2.13)		70.0 (18.5)	15.3 (2218)	23.0 (3335)		
UPS-2A-25*20K	20.0 (26.80)	25.0 (1.52)	2000	50.0 (13.2)	25.1 (3639)	30.0 (4350)		
UPS-2A-32*20K		32.0 (1.95)		64.0 (16.9)	20.9 (3030)	30.0 (4350)		
UPS-2A-35*20K		35.0 (2.13)		70.0 (18.5)	20.2 (2929)	30.0 (4350)		

(Note 1) Available pressure at maximum rpm is limited due to the characteristics of motor as its torque output lowered during high speed rotation.

(Note 2) Theoretical flow rate at no load. Actual flow rate may vary by load pressure.

(Note 3) Rated pressure is the rated torque of motor and the maximum working pressure is at 150% torque which is output capable amount pressure. However, when these pressure types exceed 30MPa, hydraulic unit maximum working pressure will be limited to 30MPa.

(Note 4) When variable fluid amount is greater than allowable value, additional fluid can be supplied by connecting a secondary tank. Please contact us for more information.

(Note 5) When choosing a tankless type, oil tank is required separately. Nachi is available to make one for those customers requesting additional tank. Please contact us for more information.

(Note 6) Due to operating oil temperature impacted by various factors such as HPU installed environment, operation method and load conditions etc., ensure to check the oil temperature in HPU at working condition. Also, when using HPU under the long continuous pressure loading operation and very frequent cylinder operation, oil temperature gets high which could limit working pressure and/or require additional cooling system installation. Please contact us for more information.

(Note 7) When mounting an optional circuit, maximum working pressure gets limited as below.

- With differential pressure regulating valve (Code: C),  
UPS-0A, UPS-1A, UPS-2A: Maximum working pressure 25MPa
- With Shut-off Valve (Code: S), UPS-0A, UPS-1A: Maximum working pressure 21MPa

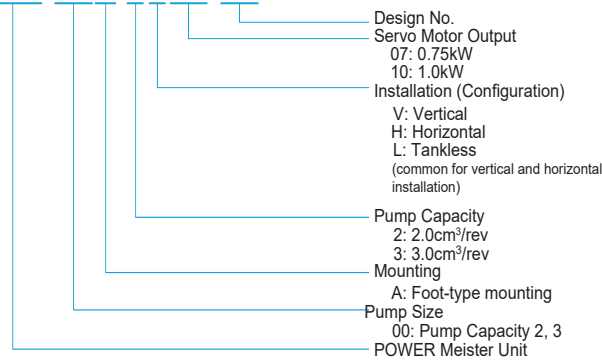
### [Precautions at selecting HPU]

Power Meister is the HPU system to drive hydraulic cylinder directly by motor rotations. Torque required for acceleration/deceleration other than motor torque required to create working pressure, feasible maximum flow rate and maximum working pressure could get regulated lower than the MPa listed above. Please ensure about the desirable working cycle and load in HPU (for Power Meister hydraulic cylinder) first and contact us.

## Model Code

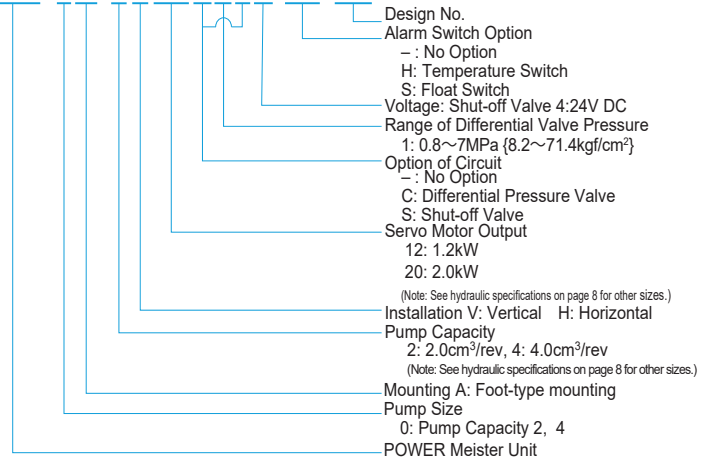
### UPS-00A

#### UPS-00A-2H07-20



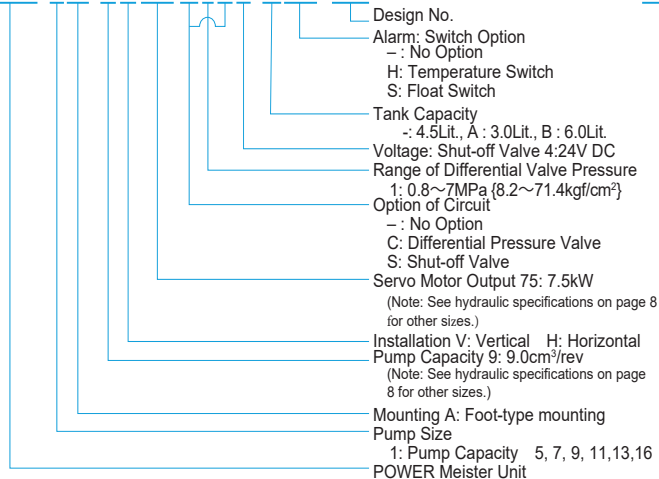
### UPS-0A

#### UPS-0A-2H12C1S4-HS-20



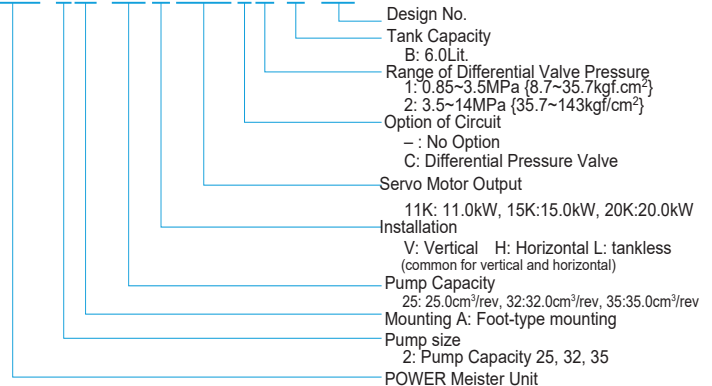
### UPS-1A

#### UPS-1A-9H75C1S4-BHS-20



### UPS-2A

#### UPS-2A-25H11KC1-B-10



## Servo Controller Specifications

Model: EPD-PD3-10 -D2-20

Source Voltage/ Consumption	DC24V±15% / 10W maximum	Require separate power supply for sensor	
Ambient Temperature/ Humidity	0~+55°C (32~131°F) / Under 90% RH		
Control	Control of position, speed and pressure for cylinder	Automatic change function of control mode	
Command Input	Speed Command	Analog voltage DC±10V/Max. cylinder speed (*1) Expand cylinder by + voltage, contract by - voltage	(*1) Set by parameter
	Pressure Command	Analog voltage DC±10V/Max. pressure (*2) Pressurize head side by positive voltage, pressurize rod side by negative voltage	(*2) Set by trimmer
	Position Command	Select contact signal to set positions (4 contacts). Select target position by bit pattern of 4 contacts. Controller calculates function of speed for targeted position and maintain.	Set target position, max speed and accelerated/decelerated speed in inside parameter in advance.
Input Signal (Contact Signal)	Servo ON, alarm reset, external changeover signal for control mode. Point of origin search start signal, retracion LS and proximity LS from/to point of origin.		
Output Signal	Alarm, servo ready, control mode monitor, point of origin search complete/in position (dual output), correspond with pressure		
Pressure Sensor Input	Analog voltage 0.5~4.5V or 1~5V (2ch)	Use pressure sensor with responsiveness under 1ms	
Position Sensor Input	90° phase difference 2 phase pulse. Point of origin pulse (line receiver input) or analog voltage 0~10V.	If using position sensor for pulse output, point of origin search required after power-up. <ul style="list-style-type: none"> <li>Position sensor for pulse output: Under 1μm of resolution.</li> <li>Position sensor for analog voltage output: Under 2ms responsiveness.</li> </ul>	
Servo Amplifier Signal I/F	Output: Motor rotation speed command (Analog voltage DC±10V), Servo ON, Servo alarm reset. Input: Servo alarm, servo ready.		
Operation Panel	5-digit display with code, 4-key input, selector switch.	Data setting, display and trial operation function	

- Connector and pin to connect controller are supplied.
- When used spacer for servo controller (Option: FZV-8676-02A-01), set dimension becomes the same as the former design [EPD-PD2-10(-A)-D2-10] and the connector height from the set surface also gets to be almost the same.

## Servo Amplifier Specifications

Hydraulic Unit (UPS)	Motor Output kW (HP)	Corresponding Servo Amplifier Type	Note
UPS-00A-***07	0.75 (1.00)	EPA-PD1-10-R075-20	Built-in regenerative resistor
UPS-00A-***10	1.0 (1.3)	EPA-PD1-10-R100-20	
UPS-00A-***15	1.5 (2.0)	EPA-PD1-10-R150-20	
UPS-0A-***12	1.2 (1.60)	EPA-PD1-10-R120-20	
UPS-0A-***20	2.0 (2.7)	EPA-PD1-10-R200-20	
UPS-1A-***35	3.5 (4.70)	EPA-PD1-10-R350-20	
UPS-1A-***45	4.5 (6.00)	EPA-PD1-10-R450-20	
UPS-1A-***55	5.5 (7.4)	EPA-PD1-10-R550-20	External regenerative resistor
UPS-1A-***75	7.5 (10.0)	EPA-PD1-10-R750-20	
UPS-1A-***11K	11.0 (14.75)	EPA-PD1-10-R11K-20	
UPS-2A-***11K	11.0 (14.75)	EPA-PD1-10-SR11K-10	
UPS-2A-***15K	15.0 (20.10)	EPA-PD1-10-SR15K-10	
UPS-2A-***20K	20.0 (26.80)	EPA-PD1-10-SR20K-10	Power unit, external regenerative resistor (2pcs) are included

(Note 1) Source: 3 phase AC200~230V 50/60Hz

(Note 2) Separate motor cable and encoder cables required to connect the servo motor of hydraulic unit and servo amplifier.

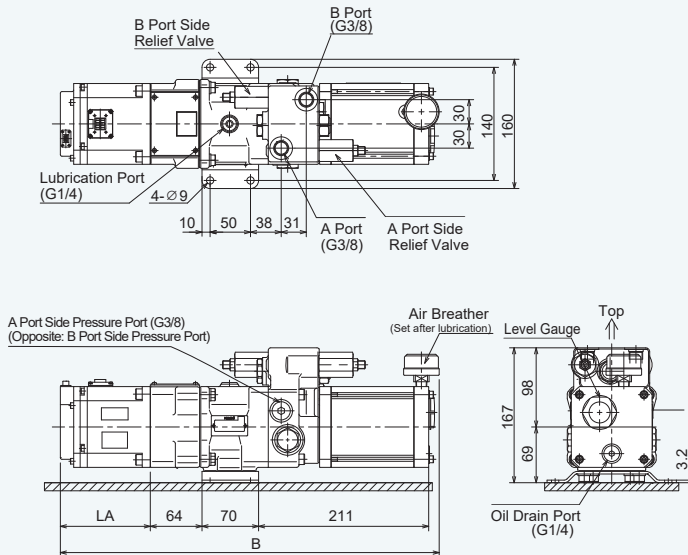
(Note 3) An auxiliary external regenerative resistor may be required in some operating conditions if the built-in or external regenerative resistor is not sufficient. Contact NACHI for more details about your operating conditions.

(Note 4) Connector for wire connection supplied.

Set Dimensions

UPS-00A Series

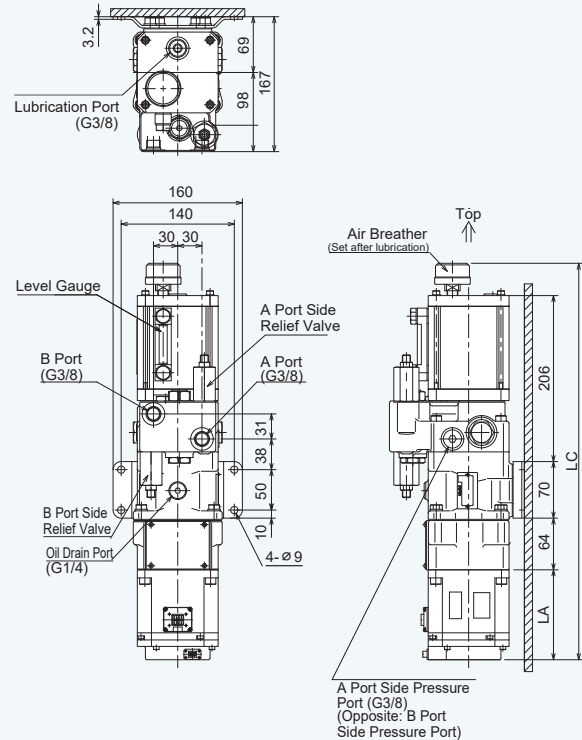
UPS-00A-\*H\*\*\*\* (Horizontal Type)



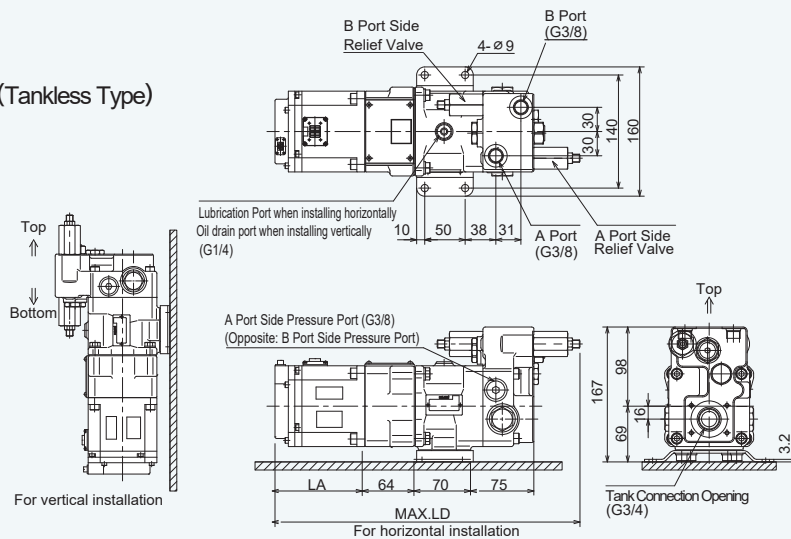
UPS Model	LA	LB	LC	Weight
UPS-00A-* <sub>H</sub> 07	111 (4.37)	469 (18.46)	491 (19.33)	16kg (35.3)
UPS-00A-* <sub>H</sub> 10	128 (5.04)	486 (19.13)	508 (20.00)	17kg (37.5)

(Note 1) Air breather is included in a package. Once oil tank is filled, please install it on your own.  
 (Note 2) Unit needs to be installed at designated installation position. (H: horizontal installation, V: Vertical installation)

UPS-00A-\*V\*\*\*\* (Vertical Type)

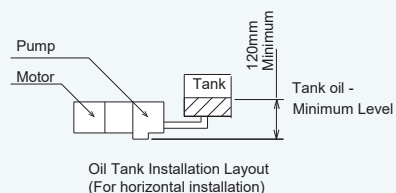


UPS-00A-\*L\*\*\*\* (Tankless Type)



UPS Model	LA	LD	Weight
UPS-00A-*L07	111 (4.37)	377 (14.84)	14 kg (30.86)
UPS-00A-*L10	128 (5.04)	394 (15.51)	15kg (33.06)

(Note 1) Oil tank required separately. Nachi is available for production. Please consult with us if you need one.  
 (Note 2) Please install either horizontally or vertically. And when installing vertically, ensure to have the servo motor facing the bottom.  
 (Note 3) when installing horizontally, the oil tank position to be 120mm or more of the oil minimum level of the bottom surface during cylinder operation. (See diagram on the right for oil tank installation layout.)

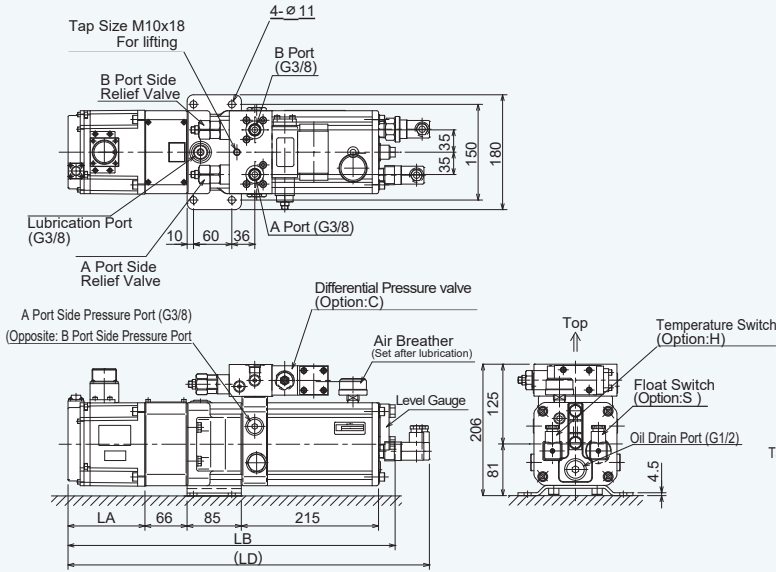


# Set Dimension

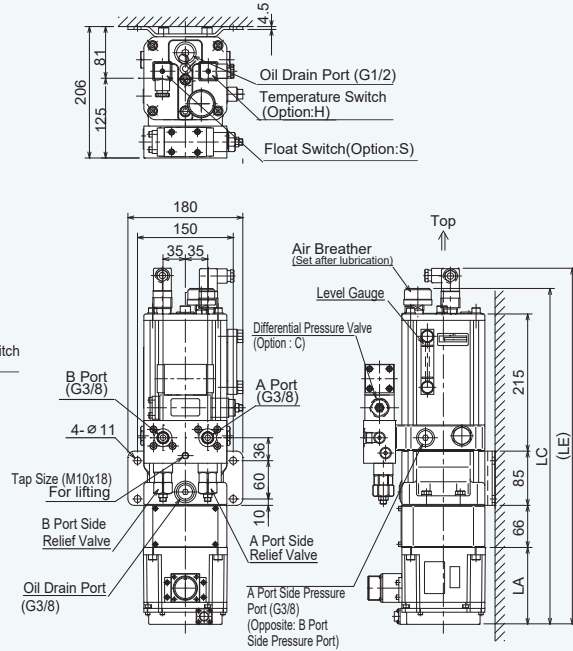
## UPS-0A Series

Option: Without Option S (Shut off valve)

UPS-0A-\*H\*\*\*\* (Horizontal Type)

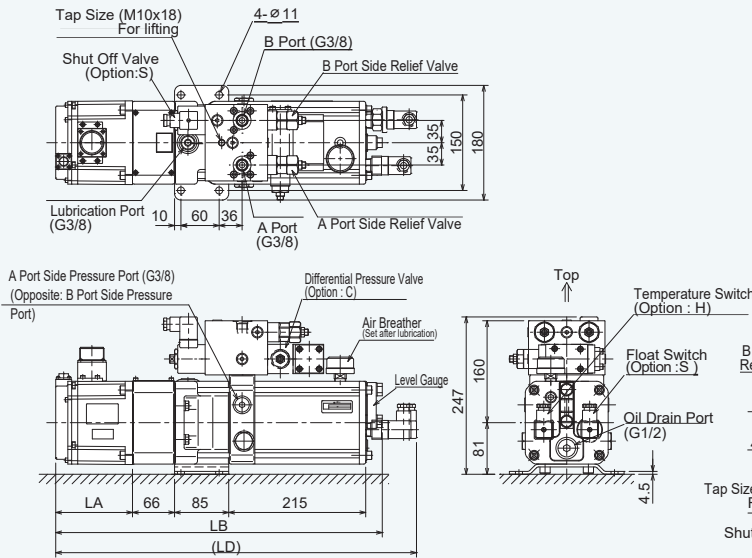


UPS-0A-\*V\*\*\*\* (Vertical Type)

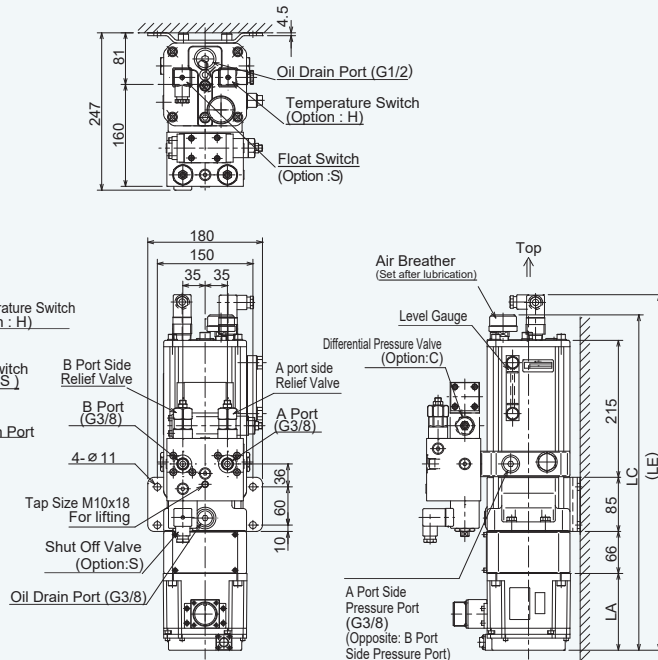


Option : With S (Shut Off Valve)

UPS-0A-\*H\*\*\*\*S4 (Horizontal Type)



UPS-0A-\*V\*\*\*\*S4 (Vertical Type)



※~Note 4) applies to the type without Option S (no shut off valve) as well.

UPS Model	LA	LB	LC	LD	LE	Weight (Note 2)
UPS-0A-*H 12	121(4.76)	513(20.20)	527(20.75)	567(22.32)	559(22.01)	30kg (66.14)
UPS-0A-*H 20	160(6.30)	552(21.73)	566(22.28)	606(23.86)	598(23.54)	33kg (72.75)

(Note 1) Dimensions in parentheses and two dot chain lines are for circuit options C and S and tank options H and S.

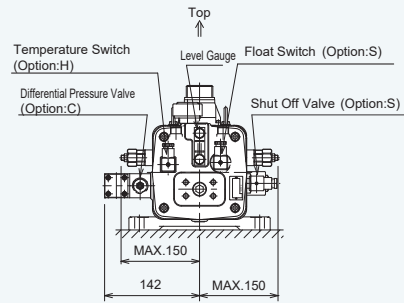
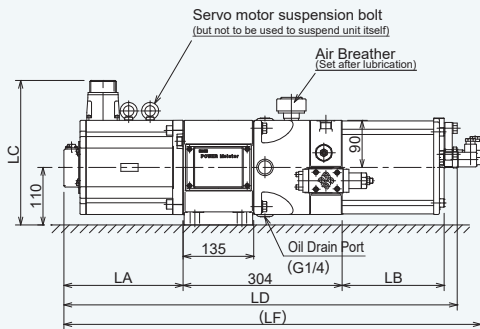
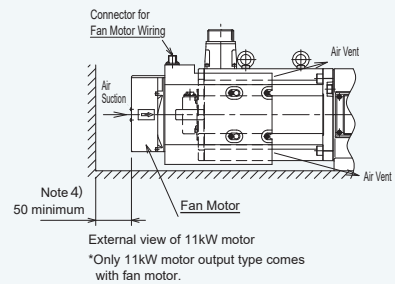
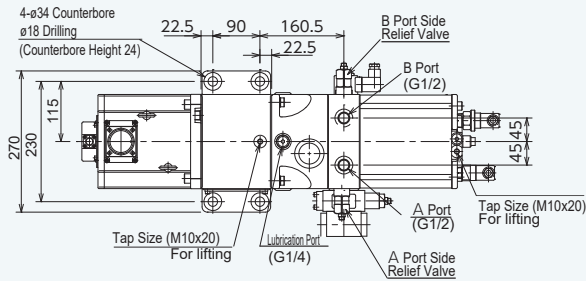
(Note 2) Does not include circuit or tank options or weight of hydraulic fluid.

(Note 3) Install the air breather face up.

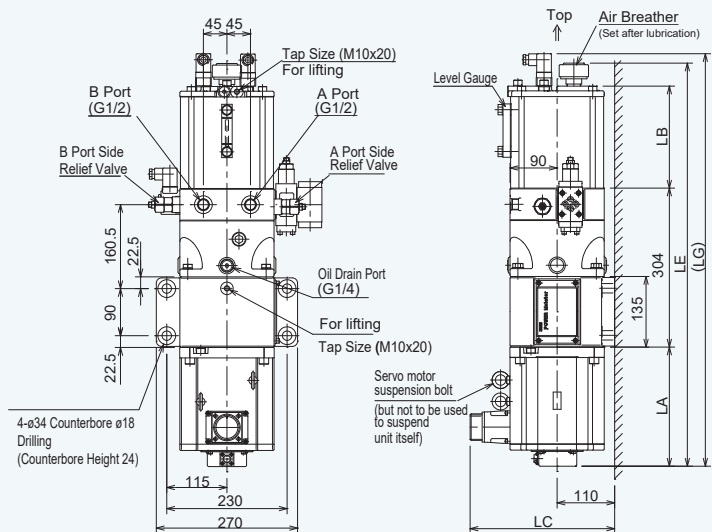
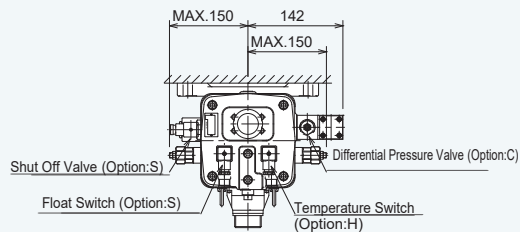
(Note 4) Ensure to install unit in orientation specified by unit type. (Either "H" for horizontal or "V" for vertical.)

UPS-1A Series

UPS-1A-\*\*H\*\*\* (Horizontal Type)



UPS-1A-\*\*V\*\*\* (Vertical Type)



UPS Model	LA	LB	LC	LD	LE	LF	LG	Weight (Note 2)
UPS-1A-**H35***-A	120	120	254	608	627	654	645	60kg
UPS-1A-**H35***-B	275	195		763	782	809	800	63kg
UPS-1A-**H45***-A	120	120		625	644	671	662	64kg
UPS-1A-**H45***-B	176	195	254	700	719	746	737	65kg
UPS-1A-**H45***-B	275	275		780	799	826	817	67kg
UPS-1A-**H55***-A	120	120	276	677	696	723	714	70kg
UPS-1A-**H55***-B	275	195		752	771	798	789	71kg
UPS-1A-**H75***-A	120	120		832	851	878	869	73kg
UPS-1A-**H75***-B	273	195	276	722	741	768	759	78kg
UPS-1A-**H75***-B	273	273		797	816	843	834	79kg
UPS-1A-**H75***-A	275	275		877	896	923	914	81kg
UPS-1A-**H11K***-A	120	120	276	844	863	890	881	85kg
UPS-1A-**H11K***-B	395	195		919	938	965	956	86kg
UPS-1A-**H11K***-B	275	275		999	1018	1045	1036	88kg

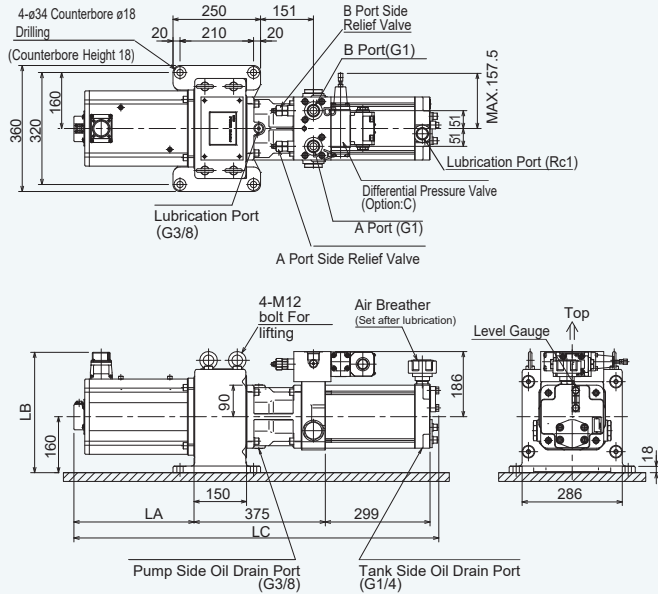
(Note-1) Reference dimension and chain double-dashed line indicate outer dimension of circuit option "C", "S" and the unit type with alarm switch option "H", "S".  
 (Note 2) Does not include circuit or tank options or weight of hydraulic fluid.  
 (Note 3) Install the air breather face up.  
 (Note-4) Only motor output 11kW type comes with fan motor. Apply minimum 50mm space for fan motor air suction.  
 (Note-5) Ensure to install unit in orientation specified by unit type. (Either "H" for horizontal or "V" for vertical.)

# Set Dimensions

## UPS-2A Series

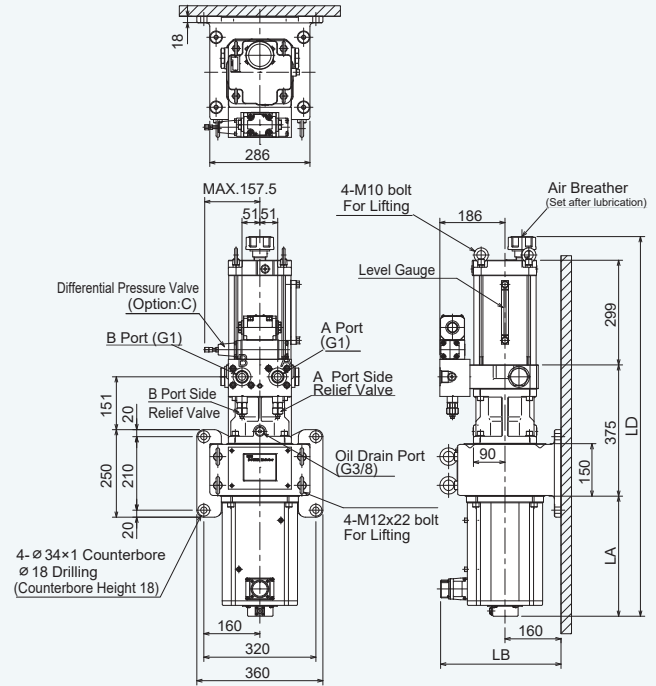
### UPS-2A-\*\*-H\*\*\*\*(Horizontal Type)

For 11 & 15kW Motor

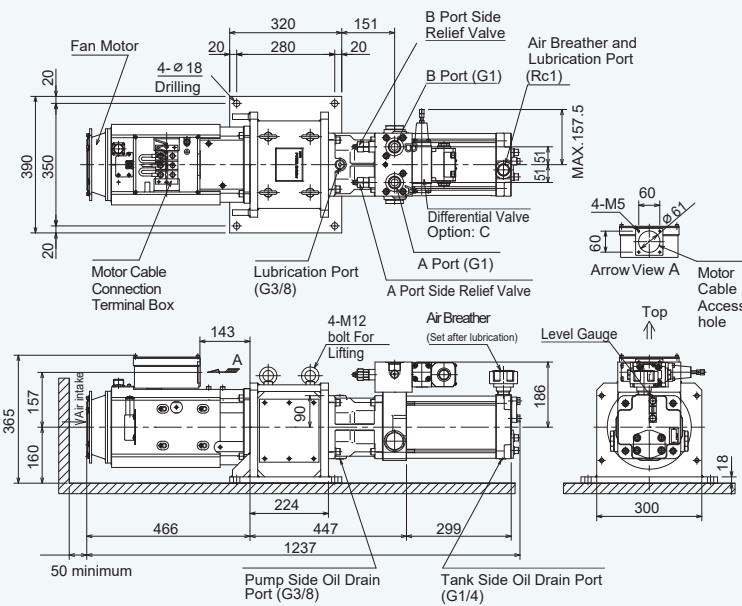


### UPS-2A-\*\*-V\*\*\*\*(Vertical Type)

For 11 & 15kW Motor

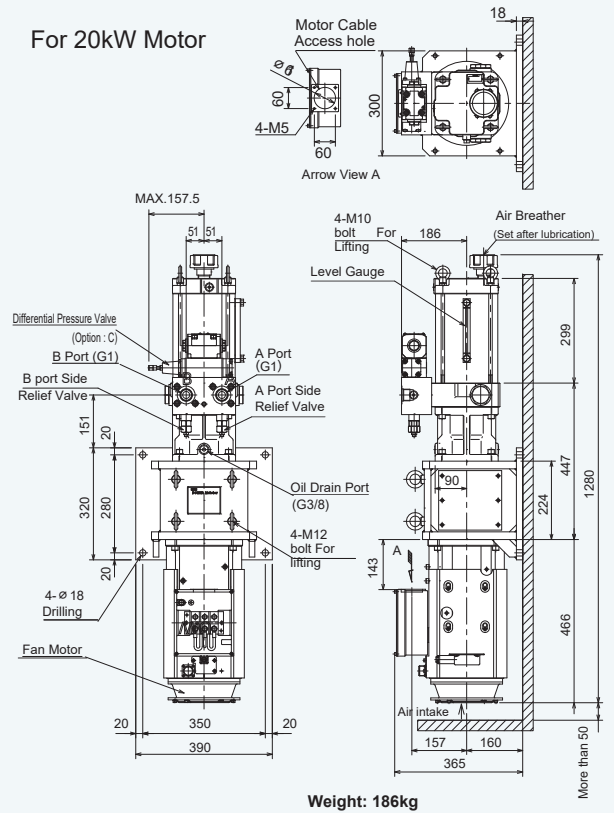


For 20kW Motor



Weight: 186 kg

For 20kW Motor



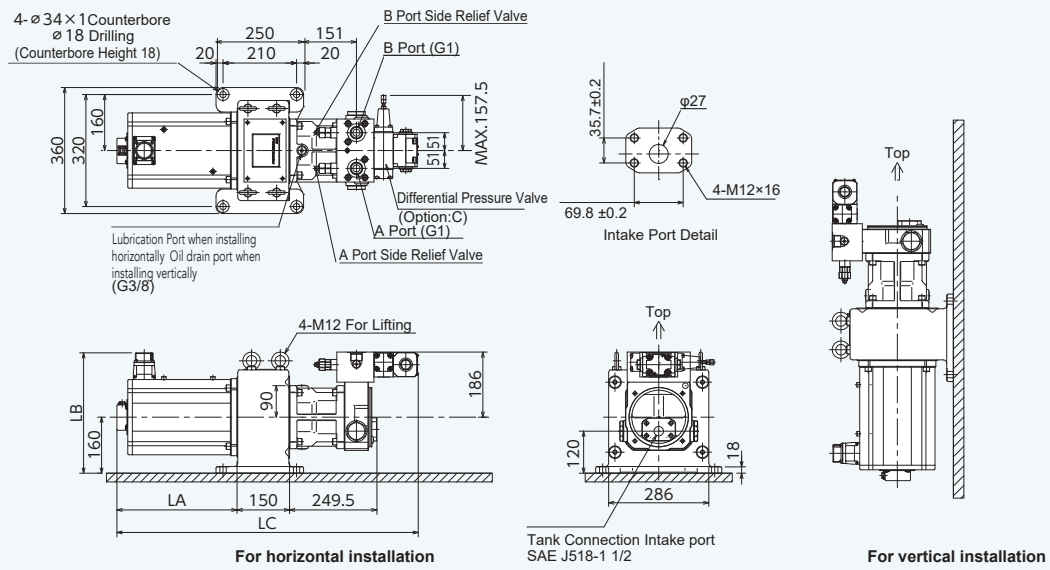
Weight: 186kg

UPS Model	LA	LB	LC	LD	Weight
UPS-2A-**-H11K**-B	304	344	1003	-	156kg
UPS-2A-**-V11K**-B	304	344	-	1046	156kg
UPS-2A-**-H15K**-B	343	344	1042	-	163kg
UPS-2A-**-V15K**-B	343	344	-	1085	163kg

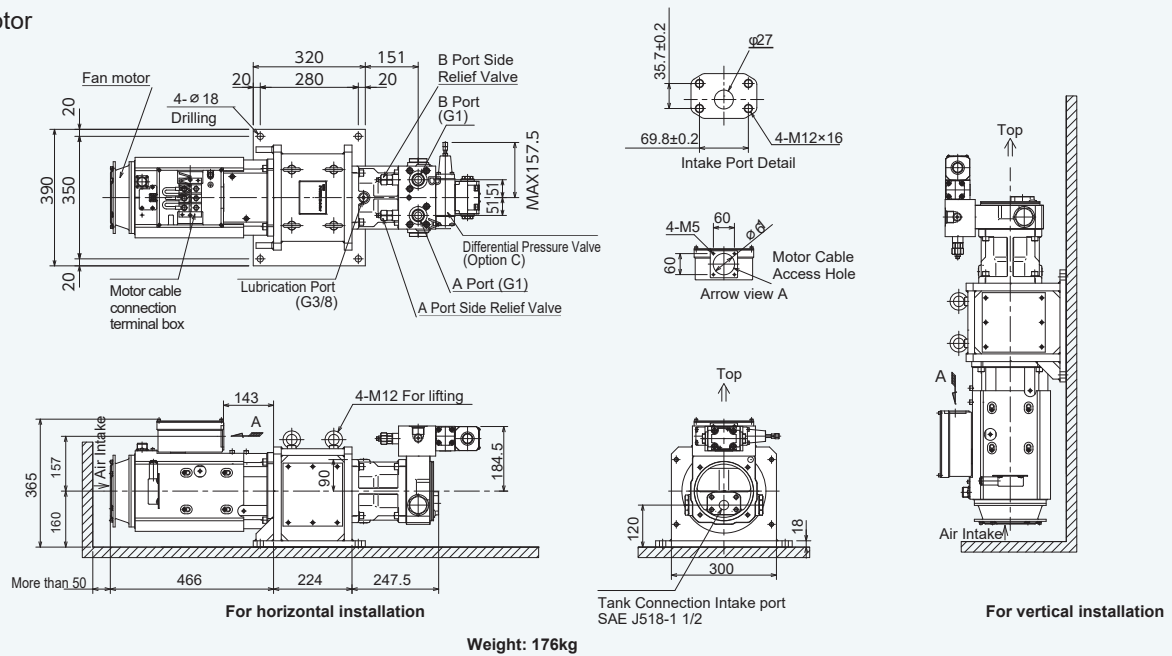
(Note 1) Air breather is included in a package. Once oil tank is filled, please install it on your own.  
 (Note 2) Fan motor comes with the unit for only 20kW motor. When installing the unit, please allow more than 50mm space for fan air intake.  
 (Note 3) Unit needs to be installed at designated installation position. (H: horizontal installation, V: vertical installation)

### UPS-2A-\*\*L\*\*\*\*(Tankless)

For 11 & 15kW Motor



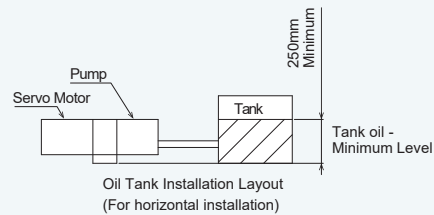
For 20kW motor



Weight: 176kg

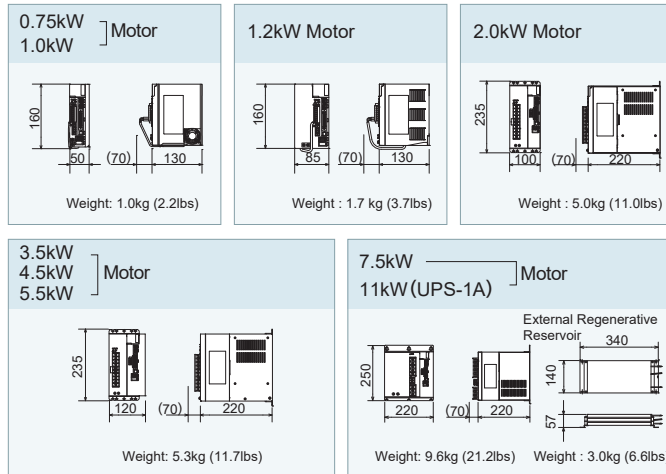
UPS Model	LA	LB	LC	Weight
UPS-2A-**L11K**	304	344	822	146kg
UPS-2A-**L15K**	343	344	861	153kg

(Note 1) Oil tank required separately. Nachi is available for production. Please consult with us if you need one.  
 (Note 2) Please install either horizontally or vertically. And when installing vertically, ensure to have the servo motor facing the bottom.  
 (Note 3) when installing horizontally, the oil tank position to be 250 mm or more of the oil minimum level of the bottom surface during cylinder operation. (See diagram on the right for oil tank installation layout.)

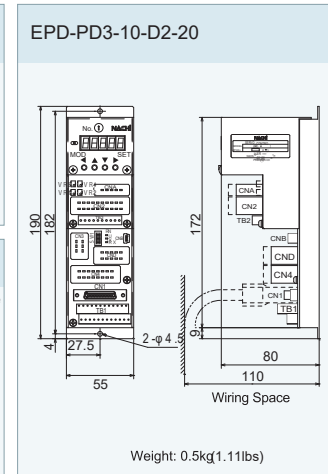


## Set Dimension Diagram

### Servo Amplifier



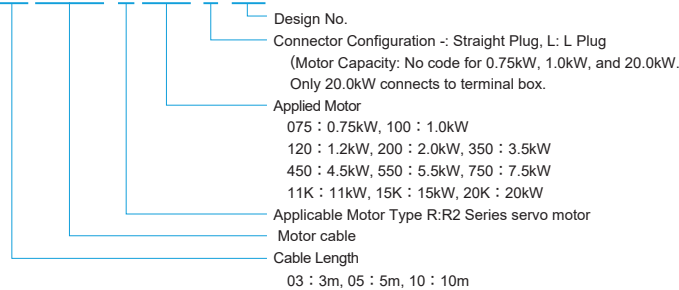
### Servo Controller



## Cable Kit Specifications

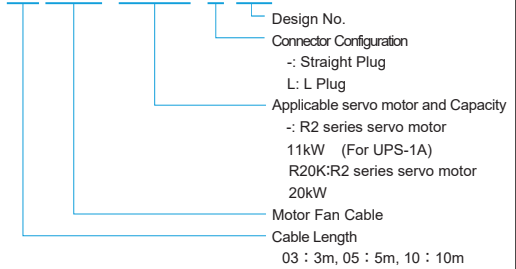
### Motor Cable Kits

#### JAQ-03ACM-R200-L-20



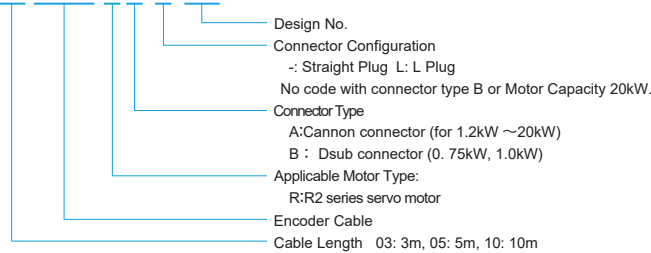
### Motor Fan Cable Kit

#### JAQ-03ACF-R20K-L-20



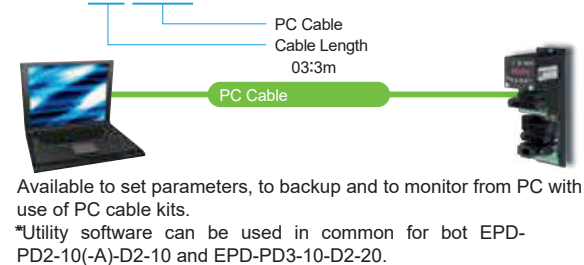
### Encoder Cable Kits

#### JAQ-03ACE-RA-L-20



### PC Cable Kits

#### JAQ-03PMC-8654A



### Warning



- Drastic acceleration during operation may shorten the life of hydraulic unit. When abnormal noise such as impact noise occurs from HPU, it indicates that an intensive torque had occurred. Please review your operation command and/or limit servo amp torque.
- When depressurizing HPU by reverse of servo motor, ensure to release pressure slowly to avoid sudden torque change. When shorter pressure release time required, another method such as additional depressurizing circuit (valve exclusive for pressure release) available to install.
- The safety valve installed in HPU is to protect hydraulic circuit protection in the event of emergency. Safety valve should never be activated during regular operation. Please ensure to adjust and regulate your set pressure to avoid this valve activation. When safety valve gets activated, fluid temperature will rapidly raise and cause issues.

# NACHI

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