

YUKEN

ASE Series

AC Servo Motor Driven Pumps

NEW



In Collaboration with YUKEN KOGYO CO. LTD. JAPAN

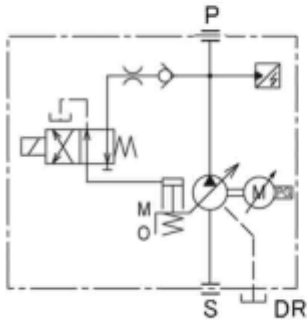
YUKEN INDIA LTD.

ASE-series AC servo motor driven pump is electro-hydraulic hybrid pump developed with our accumulated knowledge by Yuken, the leading supplier of hydraulic products for injection moulding machine. It has strength from both full electric and hydraulic machine, having excellent effect to “energy saving”, “high performance” and “high precision moulding”. The ultimate control system for injection moulding machine.

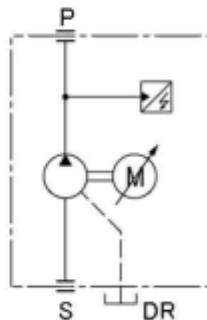
In addition to our ASR1, ASR2, ASR3, ASR5 & ASR10, we proudly announce new AC servo motor driven pump, ASE3, ASE5, ASE10 & ASE15W in the series, that is based on an original idea of Yuken Kogyo.



■ Graphic Symbols



ASE 15
Dual Displacement Type



ASE *

■ Features :

- The complete package in one.
- Larger motor output – max. motor output is 11 to 35 kW (@ASE3 to ASE15W)
- Large flow, up to 4800 L/min with AMSE combination function and 16 units of ASE15W
- Longer lifetime – controller is equipped a long-lifetime cooling fan and capacitors of 10 years
- Easy Maintenance – adopting a cartridge fan and desorption terminals
- Reduced electrical noise, using environmentally friendly EMC filter
- Less wiring – uses sensor-less rotational speed control
- Space saving – integrated motor pump unit



■ Specifications :

Series		ASE3	ASE5	ASE10	ASE15W
Max. Flow	L / min	80.8	132.7	205.4	302
Max. Operating Pres.	Mpa	17.5	17.5	17.5	17.5
Max. Adj. Pres.	Mpa	0.1	0.1	0.1	0.1
Motor Rated Output	kW	11	20	35	35
Mass (Pump+Motor)	kg	79	116	190	242
Command Signal Input	0 to +10VDC max				
Monitor Output	0 to +10 V DC				
Sequence In/ Out Signal	Photo Coupler Input 8ch/ Open Collector Output 5ch				
Elec. Power Supply	AC380 - 480 V				

■ Model Number Designation :

ASE3	- 4	AA	- G	80	S	-B00	**
Series	Power supply	Drive Capacity	Max. Pressure	Max. Flow	Port Position	Function & Parameter No.	Design No.
ASE3	4 : AC 400V	AA	G: 17.5 MPa	80:80.8 L/ min	S Horizontal B Vertical	B: Combination (Single operation Allowed) 00:Std.value at shipment	**
ASE5		BZ		130:132.7 L/min			**
ASE10		CE		200:205.4 L/min			**

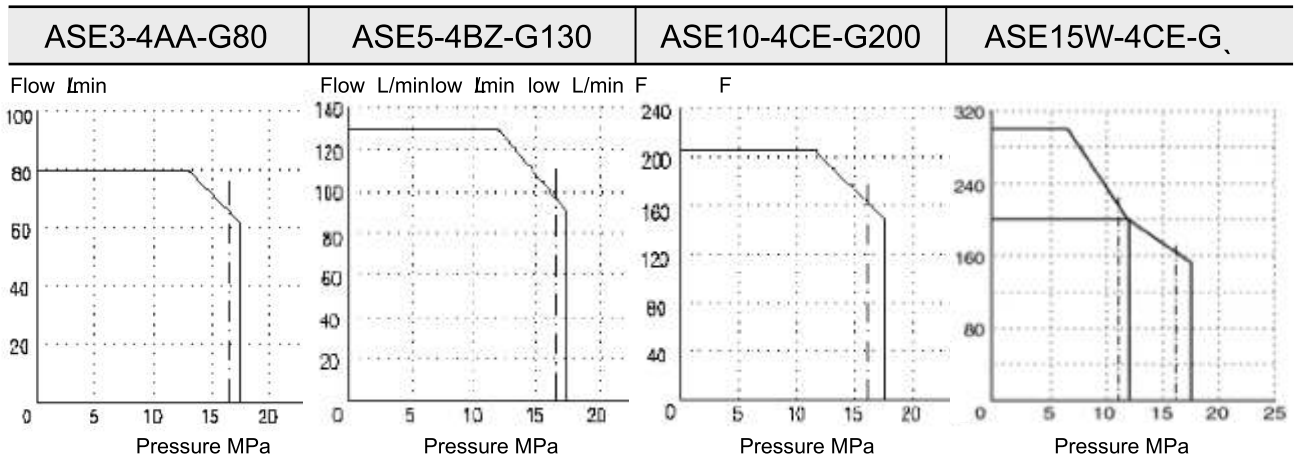
■ Model Number Designation :

ASE15W	- 4	CE	- G	W	S	A100N	-B 00	**
Series	Power supply	Drive Capacity	Max. Pressure	Max. Flow	Port Position	Function & Parameter No.	Function & Parameter No.	Design No.
ASE15W	AC 400V	CE	17.5 MPa	150/100 150/100 cm ³ /rev W: User setting	Same as ASR3-10	A*:AC, D*-DC NF Plug-in Connector None:Terminal Box	B:Combination (both single operation Allowed) 00: Std. value	**

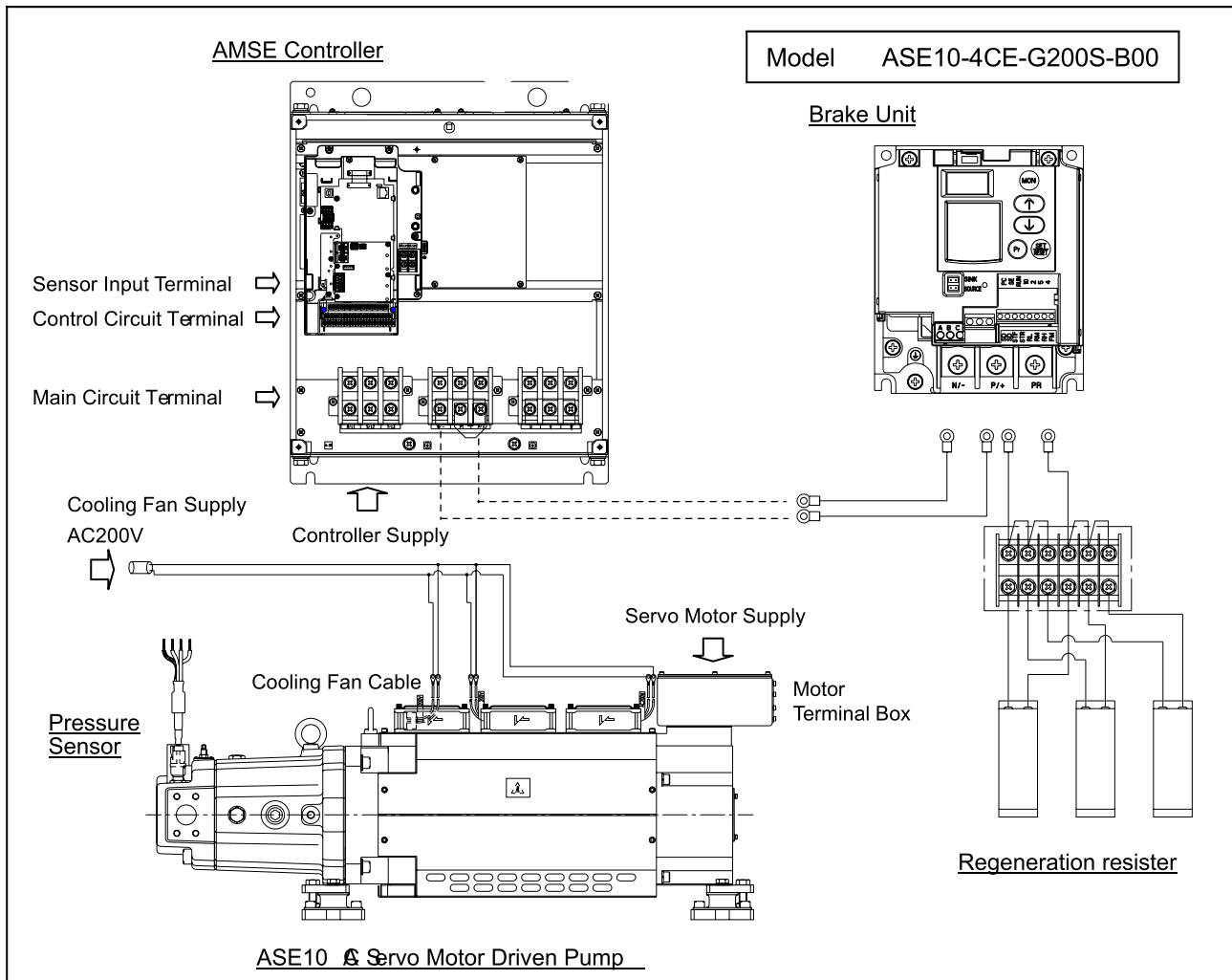
** Design No. Subject to change

■ Sample of Pressure-Flow Diagram

- 1 Continuous Max. Operating Pressure: less than 11MPa
- 2 - - - - Continuous Max. Operating Time 60s



■ Typical System Diagram & Wire Diagram



■ Specifications :

		Series	ASE3-4AA	ASE5-4BZ	ASE10-4CE	ASE15W-4CE
Hydraulic Specifications	Flow Control	Displacement	32.3 cm ³ / rev	57.7 cm ³ / rev	102.7 cm ³ / rev	151 cm ³ / rev
		Max. Flow	80.8 L/ min	132.7 L/ min	205.4 L/ min	302 L/ min
		Max. Speed	2500 r/ min	2300 r/ min	2000 r/ min	2000 r/ min
		Hysteresis	1 % or less			
		Repeatability	1 % or less			
		Input Signal Voltage	400 r/min/V (Max. 6.25 V)	400 r/min/V (Max. 5.75 V)	400 r/min/V (Max. 5.0 V)	400 r/min/V (Max. 5.0 V)
	Pressure Control	Adj. Pres. Range	0.1 to Specify Pressure (Max. Operating Pressure17.5 Mpa)			17.5/max.21 MPa
		Hysteresis	1% or less			
		Repeatability	1% or less			
		Input Signal Voltage	3.5 Mpa/ V (Max. 5V)			
Hydraulic Fluid		Petroleum Base Oil ISO VG 32-46				
Viscosity Range		20 to 400 mm ² /s				
Temperature Range		0 to 60°C				
Motor and Controller Specifications	Servo Motor	Rated Output	11 kW	20 kW	35 kW	35 kW
		Insulation Class	Class F			
		Cooling System	Totally Enclosed Force-cooling			
		Protection	IP44			
		Ambient Temperature and Humidity	0 to 40°C (No Freezing) • 80 %RH or less (No Condensing)			
	Controller	Cooling System	Fan-cooling			
		Protection	Enclosed : IP20		IP00	IP00
		Ambient Temperature and Humidity	0 to 50°C (No Freezing) • 90 %RH or less (No Condensing)			
	Main Supply	Voltage	Ac380 to 480 V ※Permissible Voltage AC323 to 528 V			
		Frequency	50/ 60 Hz ※ Permissible Frequency Fluctuation ±5 % or less			
		Power Supply Cap.	27 kVA	41 kVA	80 kVA	80 kVA
	Environmental Condition		Indoor(Non-direct sunlight) Non-corrosive gas & Non-inflammavle Gas , Non-oil mist, Non-dust			
	Protective Functions <input type="checkbox"/> Overcurrent shut-off <input type="checkbox"/> Regenerative overvoltage shut-off <input type="checkbox"/> AMSE overload <input type="checkbox"/> Motor overload shut-off <input type="checkbox"/> Fin overheat <input type="checkbox"/> Instantaneous power failure <input type="checkbox"/> PU stop <input type="checkbox"/> Undervoltage <input type="checkbox"/> Input phase failure <input type="checkbox"/> Output phase failure <input type="checkbox"/> Stall prevention <input type="checkbox"/> Output side earth fault over current <input type="checkbox"/> Communication option alarm <input type="checkbox"/> Parameter strage device alarm <input type="checkbox"/> CPU error <input type="checkbox"/> Operation panel power supply short circuit <input type="checkbox"/> 24VDC power output short circuit <input type="checkbox"/> Inrush current limit circuit alarm <input type="checkbox"/> Analogue input error <input type="checkbox"/> Fan fault <input type="checkbox"/> Electronic thermal relay function prealarm <input type="checkbox"/> Regenerative brake prealarm <input type="checkbox"/> Brake transistor error <input type="checkbox"/> Copy operation error <input type="checkbox"/> Parameter write error <input type="checkbox"/> Operation panel lock <input type="checkbox"/> Parameter copy alarm <input type="checkbox"/> Error <input type="checkbox"/> Communication error <input type="checkbox"/> USB communication error <input type="checkbox"/> internal circuit error <input type="checkbox"/> Maintenance signal output <input type="checkbox"/> Hydraulic control board error & alarm.					

■ System Construction

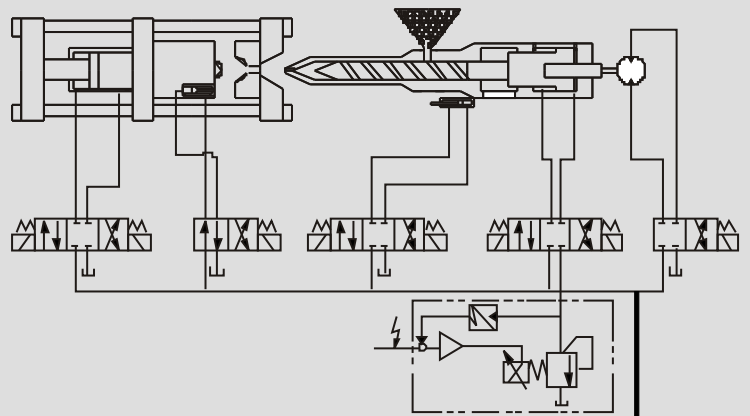
■ Operation

Pump discharge volume “Q” is determined by its displacement per revolution “D” and rotating speed “N”.

Rotating speed is precisely controlled by AC servo motor and driver following command signal from control driver.

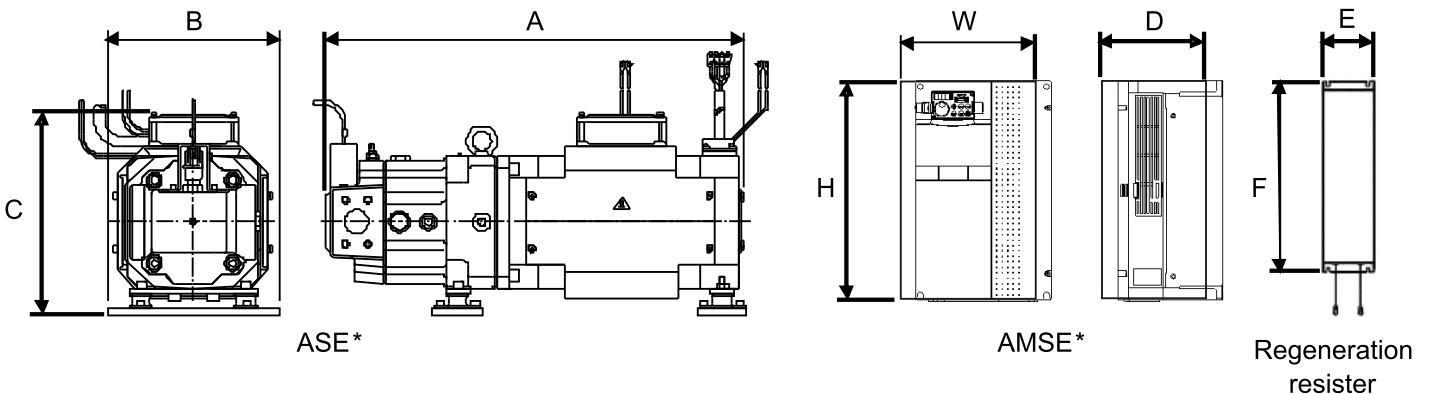
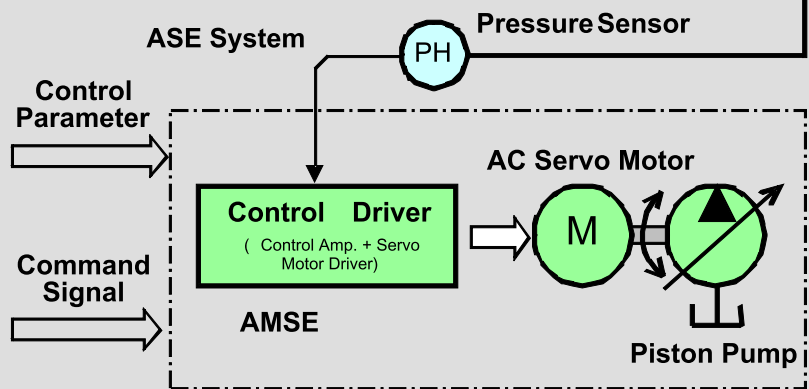
Control Driver computes deviation by detecting load pressure against speed/pressure command signal from upper system, and provide revolution speed command to servo motor. Thus, high precision and high response control is achieved to injection process.

Selection of AC servo motor is determined by required torque and revolution speed to drive hydraulic pump. It is also important to make appropriate selection depending on load condition.



Command Controller at Machine Side

Speed Command (0-5 V)
Pressure Command (0-5 V)



Note : For other dimensions, please refer to installation drawings.
ASE3:1501-PA321742-9, ASE5:1502-PA321743-7, ASE10:1503-5 PA321744

■ Typical Dimensions

Series	ASE3	ASE5	ASE10	ASE15W
Dimension AxBxC mm	559 x 228 x 269	664 x 268 x 326	991 x 340 x 402	1142 x 332 x 395
Dimension WxHxD mm	220 x 300 x 190	250 x 400 x 190	435 x 550 x 250	435 x 550 x 250
Dimension ExF mm(pcs.)	100 x 300 (2pcs.)	100 x 400 (2pcs.)	100 x 400 (3pcs.)	100 x 400 (3pcs.)

Applications

- Plastic Injection Moulding
- Plastic Blow Moulding
- Presses
- Diecasting Machine Etc.,



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