



A3HM Series

High Pressure Variable Displacement Piston Pumps

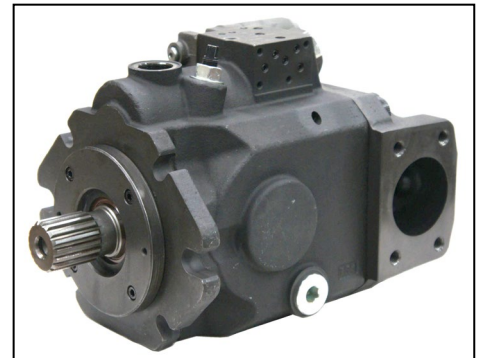
Release of New Products

“A3HM” series piston for open circuit pumps match the requirements of construction machinery and mobile equipment.

Drastically compact and lightweight. Suitable for mobile products.

■ Advantages

- (1) Compact and lightweight compared with conventional pumps.
- (2) Applicable for medium pressure hydraulic systems:
Rated Pressure 31.5 MPa and Max. Pressure 35 MPa.
- (3) We offer 6 models in the geometric displacement range from 18.6 to 100.7 cm³/rev. Available for a wide range of applications.
- (4) Through-drive type is employed for standard models. Driven side pumps with displacement volume up to the same displacement as that of the driving pump can be connected. Wide range of maximum flow due to it.



■ Model Number Designation

A3HM18	-R	01	A	S	R	-11
Series Number	Direction of Rotation	Control Type	Type of Mounting (ISO3019-1)	Port Position	Shaft Extension	Design Number
A3HM18: (18.6 cm ³ /rev)	(Viewed from Shaft End) R: Clockwise L: Counter clockwise	01: Pressure Compensator Type	A: 82-2	S: Side Port	None: Spline ISO 3019-1 Standard	11
A3HM28: (28.7 cm ³ /rev)			B: 101-2			12
A3HM45: (45.7 cm ³ /rev)		07: Pilot Pressure Control Type	B: 101-2		R: Spline High Torque Transmission	12
A3HM63: (63.5 cm ³ /rev)			C: 127-4			12
A3HM85: (85.6 cm ³ /rev)		14: Load Sensing Control Type	C: 127-2/4		None: Spline ISO 3019-1 Standard	11
A3HM100: (100.7 cm ³ /rev)						11

■ Timing of Release

October 2020

■ Applications

Construction machinery, agricultural machinery, forestry machinery, various industrial vehicles etc.

■ Specifications

Model Number		A3HM18	A3HM28	A3HM45	A3HM63	A3HM85	A3HM100
Geometric Displacement	cm ³ /rev	18.6	28.7	45.7	63.5	85.6	100.7
Minimum Adj. Flow	cm ³ /rev	—	17.8	27.5	44.0	61.3	70.5
Rated Pressure	MPa	31.5					
Max. Pressure* ¹	MPa	35					
Pressure Adj. Range	MPa	3.0 to 31.5					
Allowable Shaft Speed	Max.* ²	3400	3200(3600)	2700(3300)	2600(2700)	2500(2700)	2300(2600)
	r/min	600					
Suction Pressure		-20 kPa to +400 kPa					
Drain Pressure		Normal Pressure : 0.1 MPa or less Surge Pressure : 0.4MPa or less (Allowable duration for Surge Pressure 0.1 sec or less)					
Hydraulic Fluid		Petroleum Based Oils* ³					
Seal Material		FKM (Fluoro Rubber)					
Mass* ⁴		12	14	21	24.5/25	36	36

★1. If operating pressure exceeds the rated pressure due to surge pressure, make sure that it does not exceed the max. pressure.

Please, contact YUKEN KOGYO for further information.

★2. Minimum flow values are shown in brackets.

★3. Please, contact YUKEN KOGYO regarding the use of non-petroleum based oils.

★4. Pressure Compensator Control Type

■ Viscosity / Temperature Range

Operating Conditions		Cold Start	Continuous Operation	Short Time Operation
Viscosity	mm ² /s	400 to 1600	16 to 400	7 to 15
Oil Temperature (at the Suction Port)	°C	-40 to -25	-25 to 90	90 to 115
Limits on Operating Conditions		Operating Time 1min or less Discharge Pressure 3MPa or less Shaft Speed 1000 r/min or less	—	Operating Time 1 min or less Discharge Pressure 8MPa or less
Recommended Viscosity	mm ² /s	20 to 60		

■ Control Type

Number, Control Type	Graphic Symbols	Performance Characteristics	Explanation
“01” Pressure Compensator Type			<ul style="list-style-type: none"> ● Discharge pressure is preset. When the system pressure approaches the preset full cut-off pressure, the discharge flow decreases automatically. ● The output flow and full cut-off pressure can be manually adjusted.
“07” Pilot Pressure Control Type Pressure Compensator			<ul style="list-style-type: none"> ● The pump is used in combination with a pilot relief valve or proportional pressure control valve. ● By controlling the pilot pressure, the full cut-off pressure can be remote-controlled according user requirements.
“14” Load Sensing Type			<ul style="list-style-type: none"> ● This is an energy-saving control which regulates the pump flow to be at the absolute minimum necessary to operate the actuator. ● Automatically controls the output flow so that the inlet-outlet differential pressure of the flow control valve is constant.

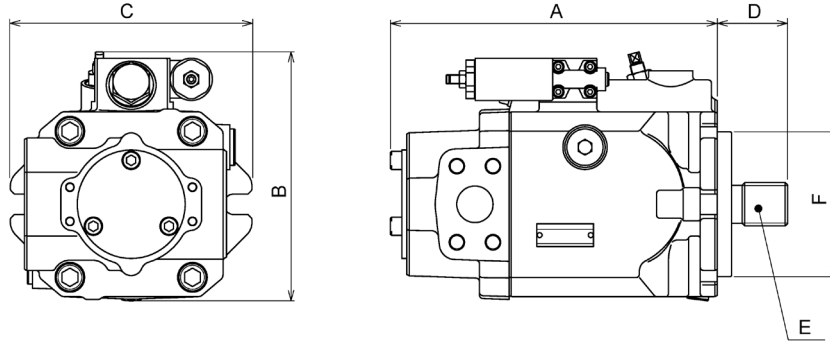
★1. Flow adjustment function is not available on A3HM18.

★2. Pilot relief valve/ proportional pressure control valve is not supplied with the pump. Please, arrange it separately.

★3. Flow control valve is not supplied with the pump. Please, arrange it separately.

■ Main External/ Mounting Dimensions

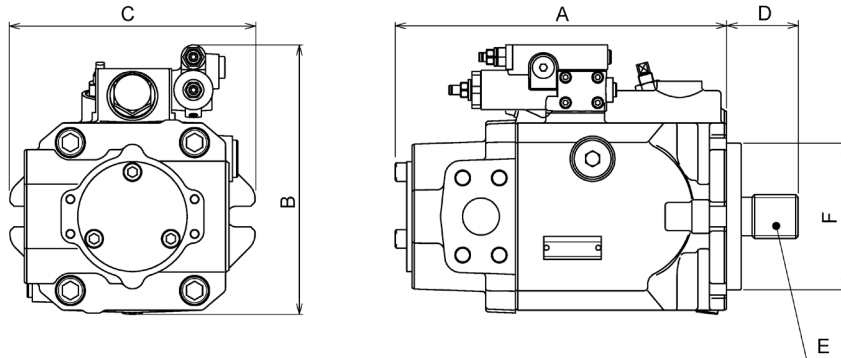
● 01 Control Type



Series Number	Mounting Bolt Qty.	A	B	C	Mounting Dimensions		
					D	E*	F
A3HM18	2	176	168	139.5	38	11T-16/32DP	$\phi 82.55 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$
A3HM28	2	187	169	174	41	13T-16/32DP	$\phi 101.6 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$
A3HM45	2	217.5	183.5	174	46	15T-16/32DP	$\phi 101.6 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$
A3HM63	2	243	188	174	46	15T-16/32DP	$\phi 101.6 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$
	4				56	14T-12/24DP	$\phi 127 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$
A3HM85	2,4	288	217	213	62	17T-12/24DP	$\phi 127 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$
A3HM100	2,4	288	219	213	62	17T-12/24DP	$\phi 127 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$

★ ANSI B 92.1 Flat Root Side Fit Class 5

● 07/14 Control Type



Series Number	Mounting Bolt Qty.	A	B	C	Mounting Dimensions		
					D	E*	F
A3HM18	2	176	188	148 ^[07] 143 ^[14]	38	11T-16/32DP	$\phi 82.55 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$
A3HM28	2	187	182	174	41	13T-16/32DP	$\phi 101.6 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$
A3HM45	2	217.5	203.5	174	46	15T-16/32DP	$\phi 101.6 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$
A3HM63	2	243	208	174	46	15T-16/32DP	$\phi 101.6 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$
	4				56	14T-12/24DP	$\phi 127 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$
A3HM85	2,4	288	233.5	213	62	17T-12/24DP	$\phi 127 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$
A3HM100	2,4	288	233.5	213	62	17T-12/24DP	$\phi 127 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$

★ ANSI B 92.1 Flat Root Side Fit Class 5

■ External Dimensions / Performance Characteristics

See the installation drawing for external shape and dimensions. Please, contact YUKEN KOGYO for the performance characteristics.

Series Number	Installation Drawing Number		
	01 Control Type	07 Control Type	14 Control Type
A3HM18	2250-PA322096-9	2250H-PA322102-5	2250Q-PA322108-2
A3HM28	2251-PA322097-7	2251H-PA322103-3	2251Q-PA322109-0
A3HM45	2252-PA322098-5	2252H-PA322104-1	2252Q-PA322110-8
A3HM63	2253-PA322099-3	2253H-PA322105-8	2253Q-PA322111-6
A3HM85	2254-PA322100-9	2254H-PA322106-6	2254Q-PA322112-4
A3HM100	2255-PA322101-7	2255H-PA322107-4	2255Q-PA322113-2

■ Through-drive Kit

Driving Side Pump	Driven Side Pump		Through-drive Kit Model
	Flange Type	Shaft Extension	
A3HM18	SAE A-2 hole (45° installation combined)	SAE A-9T 16/32	KT-A3HM18/28-A-10
		SAE-11T 16/32	KT-A3HM18/28-AB1-10
A3HM28	SAE A-2 hole (45° installation combined)	SAE A-9T 16/32	KT-A3HM18/28-A-10
		SAE-11T 16/32	KT-A3HM18/28-AB1-10
	SAE B-2 hole	SAE B-13T 16/32	KT-A3HM28-B-10
A3HM45	SAE A-2 hole	SAE A-9T 16/32	KT-A3HM45/63-A-10
		SAE-11T 16/32	KT-A3HM45/63-AB2-10
	SAE A-2 hole 45°	SAE-11T 16/32	KT-A3HM45/63-AB3-10
	SAE B-2 hole	SAE B-13T 16/32	KT-A3HM45/63-B-10
		SAE BB-15T 16/32	KT-A3HM45/63-BB-10
A3HM63	SAE A-2 hole	SAE A-9T 16/32	KT-A3HM45/63-A-10
		SAE-11T 16/32	KT-A3HM45/63-AB2-10
	SAE A-2 hole 45°	SAE-11T 16/32	KT-A3HM45/63-AB3-10
	SAE B-2 hole	SAE B-13T 16/32	KT-A3HM45/63-B-10
		SAE BB-15T 16/32	KT-A3HM45/63-BB-10
	SAE C-4 hole	SAE C-14T 12/24	KT-A3HM63-C-10
A3HM85 A3HM100	SAE A-2 hole (45° installation combined)	SAE A-9T 16/32	KT-A3HM85/100-A-10
		SAE-11T 16/32	KT-A3HM85/100-AB1-10
	SAE B-2 hole	SAE B-13T 16/32	KT-A3HM85/100-B-10
		SAE BB-15T 16/32	KT-A3HM85/100-BB-10
	SAE C-4 hole	SAE C-14T 12/24	KT-A3HM85/100-C-10
		SAE CC-17T 12/24	KT-A3HM85/100-CC-10

★Please contact YUKEN KOGYO for further information on through-drive kit.