

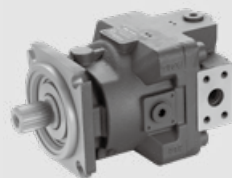


# HM7X SERIES

## Swash-plate Type Axial Piston Fixed Displacement Motor

HM7X series swashplate axial piston motor is a kind of fixed displacement motor with wide application for open and closed circuit. The swashplate design allows a compact motor with high power density. This series is applicable to construction machinery and industrial vehicles.

Apply to open and closed hydraulic circuit  
 Displacements (cc/rev) 85 112\* 160\*  
 Rated pressure (bar): 400  
 Maximum pressure(bar): 450



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## Features

- **High speed operation and smooth starting characteristics:**  
Optimized rotary balance design high-speed performance and excellent starting characteristics.
- **Low speed operation:**  
Superior performance in low speed operation provides excellent controllability.
- **Compact size:**  
Swash plate conguration enables the motor to be much more compact.
- **Long bearing life:**  
Swash plate conguration results in longer bearing life.

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### Note:

"\*" means under development

## Technical Data

Size		HMTX 85
Max. Displacement: $q_{\max}$	$\text{cm}^3$	90
Max. speed: $N_{\text{non}}$	$\text{min}^{-1}$	4,500
Rated pressure: $P_{\text{nom}}$ *1	bar	400
Max. pressure: $P_{\text{max}}$ *2	bar	450
Theoretical output torque	$\text{N} \cdot \text{m}$	573
Power	Kw	270
Max. Flow: Q	L/min	405
Moment of inertia	$\text{kg} \cdot \text{m}^2$	0.011
Volume in the case	L	0.5
Mass	Kg	26
Temperature	$^{\circ}\text{C}$	at drain port: -20 ~ +115 at inlet port: -20 ~ +90
Coating *3		Red/Yellow/Black/Gray/Blue

The data in the above table is the theoretical value.

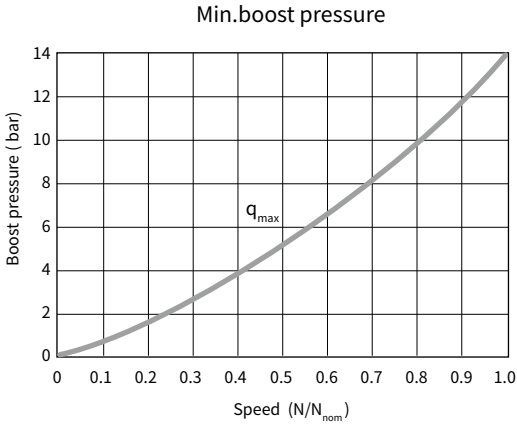
\* 1: Nominal pressure corresponds to the design pressure to provide appropriate performance, function, and service life.

: Nominal pressure corresponds to the design pressure at which the products will function properly.

\* 2: Summation of pressure on A and B port shall be 560bar or less.

\* 3: Hengli standard.

## Min.boost pressure



To prevent cavitation when the motor is operating in a pumping mode, a positive pressure is required at the suction port.

The figure above shows the minimum boost pressure requirement based on regular operation. In case of a rapid change of the ow, more boost pressure must be applied.

## Type introduction

HM7X	85	A	1	4	-	B	-	
①	②	③	④	⑤		⑥		⑦

### Product series

①	Swash-plate Type Axial Piston Fixed Displacement Motor	HM7X
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### Size

②		85
	Standard Size	●

### Mounting flange and port position

③		Mounting	Port position	85
	A	SAE J744, 4-bolt mount	Side	●

### Port and flange fixing thread

④		Threaded Port Type	Flange fixing thread type	85
	1	Parallel piping ISO228	Metric ISO724	●
	2	ANSI ISO11926	ANSI ASMEB1.1	○
	3	ANSI ISO11926	Metric ISO724	○
	4	Metric ISO6149	Metric ISO725	○

●: Available      ○: Under development

## Type introduction

### Input Shaft

	Standard	Size	85
⑤	1	ANSI B92.1	1 1/2 in 17T 12/24DP <input type="radio"/>
	2	ANSI B92.1	1 3/4 in 13T 8/16DP <input type="radio"/>
	3	ANSI B92.1	2 in 15T 8/16DP <input type="radio"/>
	4	ANSI B92.1	1 3/8 in 21T 16/32DP <input checked="" type="radio"/>
	5	ANSI B92.1	1 1/4 in 14T 12/24DP <input type="radio"/>
	6	DIN 5480	W35x2x16x9 g <input type="radio"/>
	7	DIN 5480	W40x2x18x9 g <input type="radio"/>
	8	DIN 5480	W45x2x21x9 g <input type="radio"/>
	9	DIN 5480	W50x2x24x9 g <input type="radio"/>

### Displacement (cm<sup>3</sup>)

⑥	Size	85	A:90 <input type="radio"/>	B: 85	<input checked="" type="radio"/>	C:80 <input type="radio"/>	D:75 <input type="radio"/>
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### Customer reference code

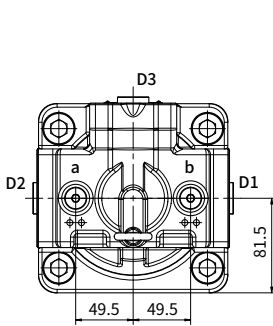
⑦	Customer reference code	
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●: Available      ○: Under development

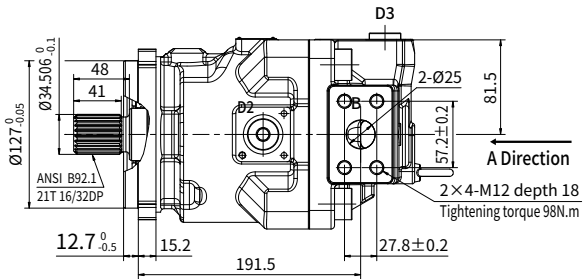
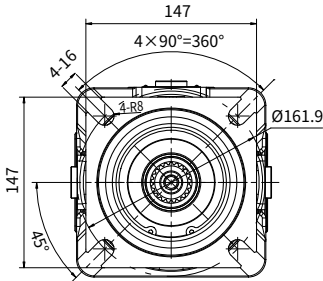
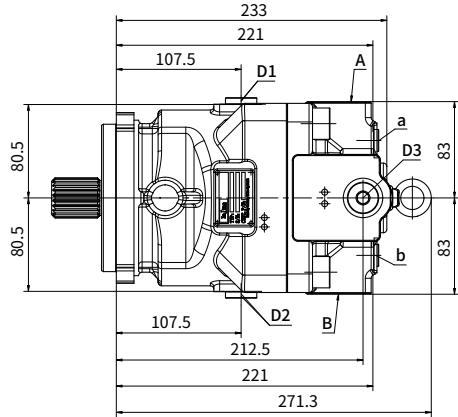
# Installation size

## HM7X 85 Installation size

SAE Mounting, Flange Ports at Side



A Direction

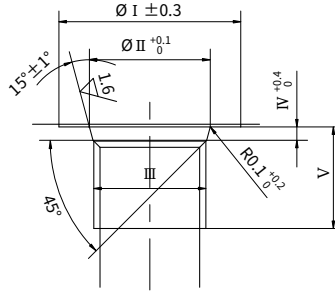


A Direction

HM7X

## Installation size

### • Port and flange fixing thread (Ordering Code ④)



### • Drain port and gauge port

ANSI thread type ( Code : 1, 2 )

	Symbol	I	II	III	IV	V	VI	Tightening torque (N.m)
Gauge port	a,b	25	15.6	9/16-18UNF-2B	2.5	15.5	12	59
Drain port	D1/D2/D3	41	29.2	1-1/16-12UN-2B	3.3	13/13/19	15	170

Metric thread type ( Code : 3 )

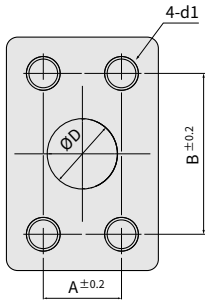
	Symbol	I	II	III	IV	V	VI	Tightening torque (N.m)
Gauge port	25	15.6	M14×1.5	2.4	15.5	15	47	59
Drain port	40	29.2	M27×2	3.1	13/13/19	15	180	170

Parallel piping thread type ( Code : 4 )

	Symbol	I	II	III	IV	V	VI	Tightening torque (N.m)
Gauge port	25	15.6	G 1/4	2.5	15.5	15	36	59
Drain port	34	29.2	G 1/2	2.5	13/13/19	15	98	170

## Installation size

### • Port details



Ordering Code ④	d1	A	B	D	Tightening torque (N.m)
1	7/16-14UNC-2B	27.8	57.2	25	98
2-3-4	M12	27.8	57.2	25	98

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