



3.2

# HM5F SERIES

**Swash-Plate Type  
Axial Piston Fixed Displacement Motor  
(Containing Gearbox)**

Primarily suitable for application in mobile machinery such as excavators and rotary drilling rigs.

Apply to open circuit

Size :	15	18	23	34
Peak pressure (bar):	216	216	180	216



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· HM5F 15	05-06
· HM5F 18	07-08
· HM5F 23	09-10
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## Features

- ★ Swashplate type piston motor, integrated with mechanical brake, relief valve, charge valve and anti-reaction valve;
- ★ Compact structure design with the motor's rotating group, integral mechanical brake element and the attached valve options are neatly packaged together.
- ★ Special design of the mounting flange, can be directly connected with the reducer.
- ★ Structure is improved of light weight and compact based on the mature technology, increased the output power.
- ★ Applied in the rotation condition of Mini excavators, etc.

## Technical Data

Motor	Feature	15	18	23	34	
	Normal displacement (cc/rev)	14.5	18.1	23.6	30.5	
	Direction of rotation	Clockwise, Counter clockwise				
	Max rotation speed (rpm)	2150	2150	1000	1900	
	Peak pressure (bar)	216	216	180	216	
	Torque	Rated output torque (N·m)	49.5	62	67.5	105
		Max. brake torque (N·m)	68	68	68	116
	Brake release pressure	Min (bar)	25	25	25	29
		Max (bar)	49	49	49	49
	Casting pressure	Rated (bar)	2	2	2	2
Max (bar)		3	3	3	3	
Reducer	Reducer type	RGSM11A	RGSM14A	RGSM06A	RGSS25A	
	Reduction ratio	21.5	21.5	10	23.2	
	Weight (Kg) (Containing Reduction gear)	33	41	26	60	
Oil viscosity (mm <sup>2</sup> /s)		7~1600, Best range: 12~80				
Oil Temperature (°C )		-40~100, Best range: 60~85*				
Oil Cleanliness		ISO 4406 20/18/15				

Note:\*\*" When oil viscosity is between 200 and 1000 mm<sup>2</sup>/s, preheating is required before operation.

## Type introduction

HM5F	18	0	0	206	-	RGSM14A
①	②	③	④	⑤		⑥

### Product series

①	Swashplate piston fixed motor	HM5F
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### Displacement

②	Size	15	18	23	34
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### Time delay valve

③		15	18	23	34	Code
	With Time delay valve	●	●	●	●	1
	Without Time delay valve					0

### Anti-reaction valve

④		15	18	23	34	Code
	With Anti-reaction valve	●	●	●	●	1
	Without Anti-reaction valve					0

### Relief valve setting

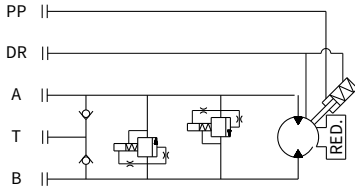
⑤	Relief valve setting	
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### Reducer type

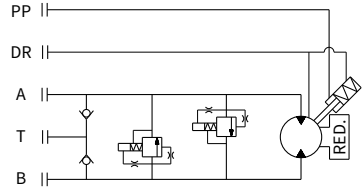
⑥		15	18	23	34	Code
	RGSM11A	●				RGSM11A
	RGSM14A		●			RGSM14A
	RGSM06A			●		RGSM06A
	RGSS25A				●	RGSS25A

# Principle

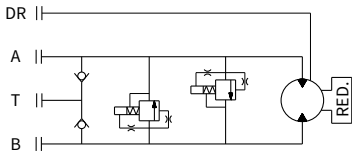
## • HM5F15-RGSM11A



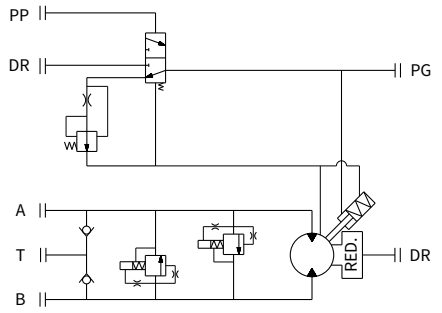
## • HM5F18-RGSM14A



## • HM5F23-RGSM06A

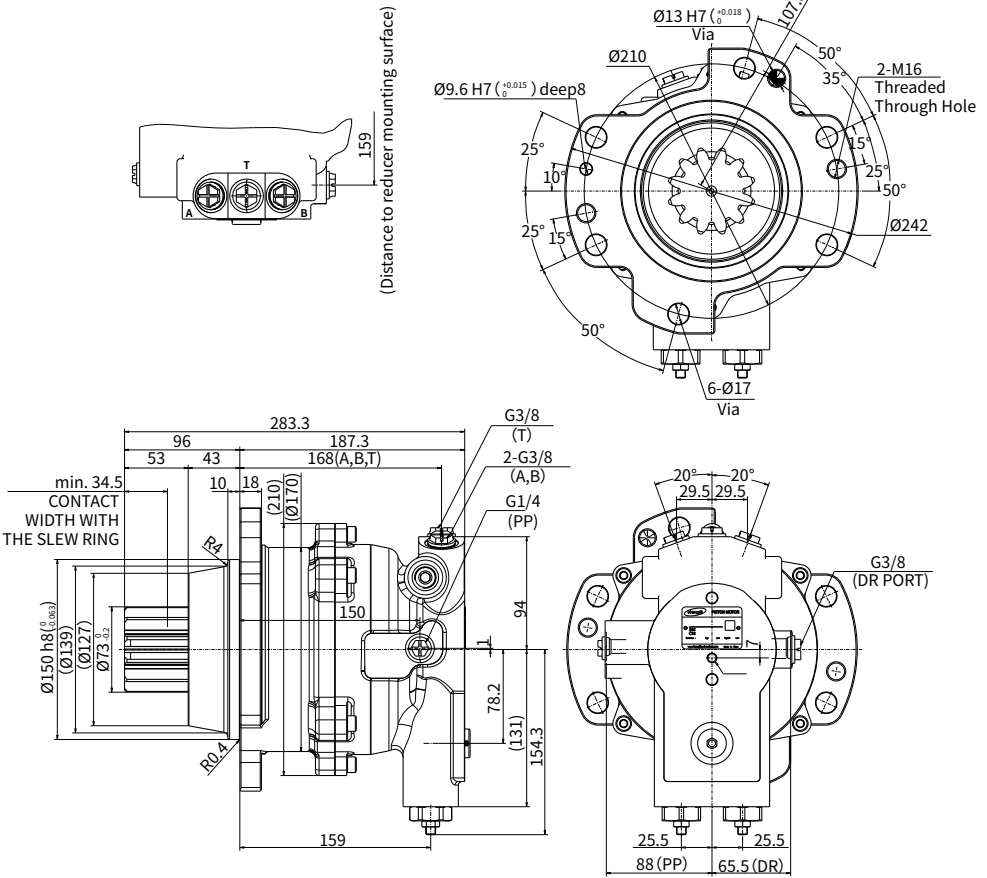


## • HM5F34-RGSS25A



# Installation size

## • HM5F15-RGSM11A Installation



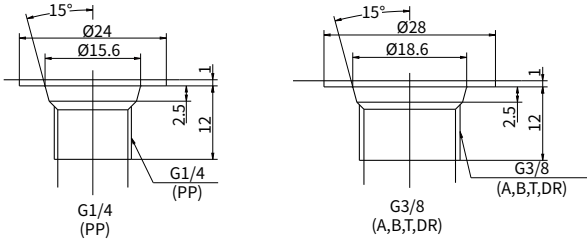
Inlet port	Outlet port	Rotation direction
B	A	Clockwise
A	B	Anti-clockwise

**Note:** The rotation direction is looked from the shaft end.

03

## Installation size

### ·HM5F15-RGSM11A Port details



	Port Name	Port Size and Description	Tightening Torque (N·m)
A B	Inlet port and Delivery port	G3/8 ( depth 12mm )	70
T	Charge port	G3/8 ( depth 12mm )	70
DR	Housing drain port	G3/8 ( depth 12 mm )	70
PP	Braking release pilot port	G1/4 ( depth 12 mm )	45

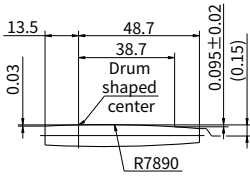
03

### ·Specifications of output pinion

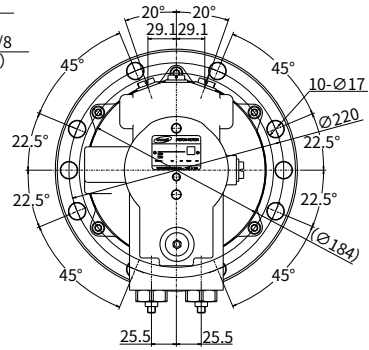
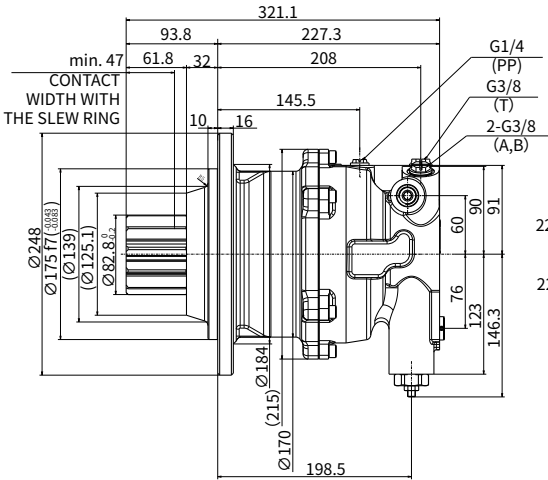
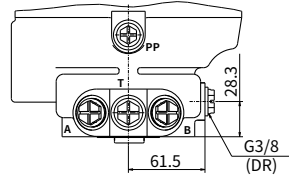
Module	m=5
No.Of teeth	Z=12
Addendum mod.	X=0.4
Displacement over teeth	24.349 <sup>-0.070</sup> <sub>-0.170</sub> (Measurements with two teeth)
Precision class	JIS Class 5
Pressure angle	a=20°

# Installation size

## • HM5F18-RGSM14A Installation



Gear drum shape



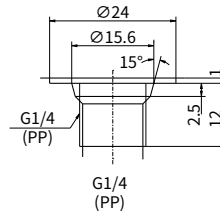
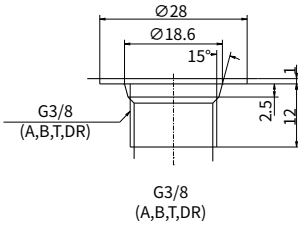
Inlet port	Outlet port	Rotation direction
B	A	Clockwise
A	B	Anti-clockwise

**Note:** The rotation direction is looked from the shaft end.

03

## Installation size

### · HM5F18-RGSM14A Port details



	Port Name	Port Size and Description	Tightening Torque (N-m)
A	Inlet port and Delivery port	G3/8 ( depth 12mm )	70
B			
T			
DR	Housing drain port	G3/8 ( depth 12 mm )	70
PP	Braking release pilot port	G1/4 ( depth 12 mm )	45

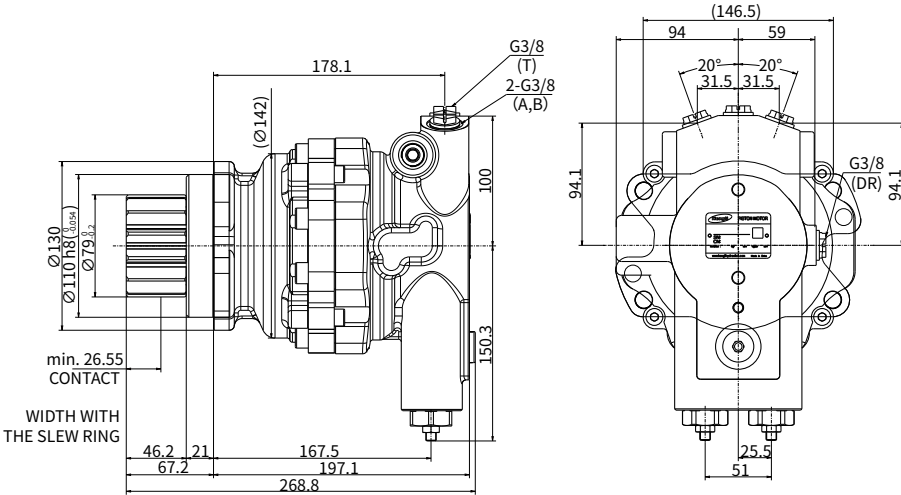
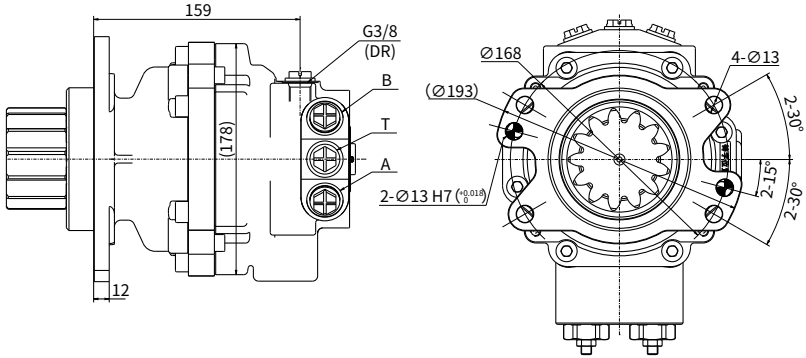
03

### · Specifications of output pinion

Module	m=6
No.Of teeth	Z=11
Addendum mod.	X=0.5
Displacement over teeth	29.546 <sup>-0.080</sup> <sub>-0.180</sub> (Measurements with two teeth)
Precision class	JIS Class 5
Pressure angle	a=20°

# Installation size

## • HM5F23-RGSM06A Installation

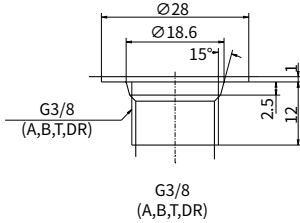


Inlet port	Outlet port	Rotation direction
B	A	Clockwise
A	B	Anti-clockwise

**Note:** The rotation direction is looked from the shaft end.

## Installation size

### ·HM5F23-RGSM06A Port details



	Port Name	Port Size and Description	Tightening Torque (N-m)
A	Inlet port and Delivery port	G3/8 ( depth 12mm )	70
B			
T	Charge port	G3/8 ( depth 12mm )	70
DR	Housing drain port	G3/8 ( depth 12 mm )	70

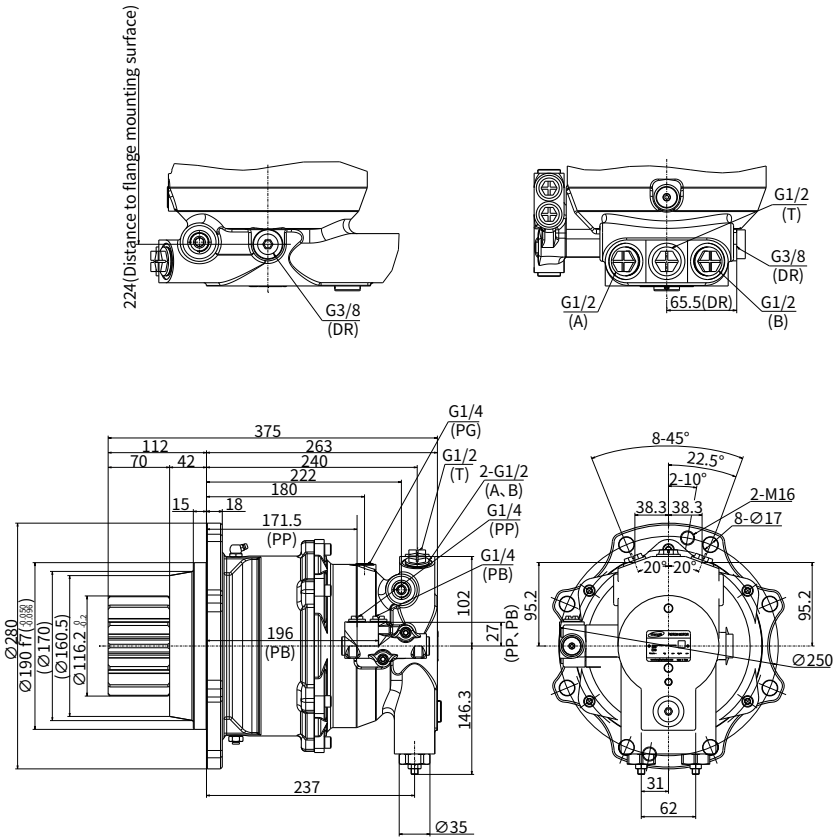
03

### ·Specifications of output pinion

Module	m=5
No.Of teeth	Z=13
Addendum mod.	X=0.5
Displacement over teeth	39.522 <sup>-0.070</sup> <sub>-0.170</sub> (Measurements with three teeth)
Precision class	JIS Class 5
Pressure angle	a=20°

# Installation size

## • HM5F34-RGSS25A Installation



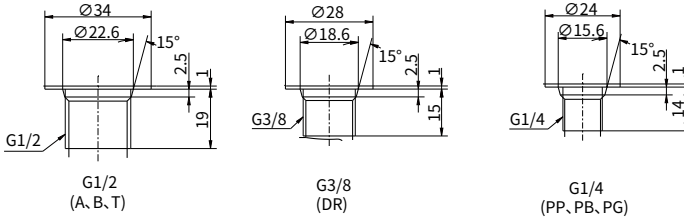
Inlet port	Outlet port	Rotation direction
B	A	Clockwise
A	B	Anti-clockwise

**Note:** The rotation direction is looked from the shaft end.



## Installation size

### ·HM5F34-RGSS25A Port details



	Port Name	Port Size and Description
A	Inlet port and Delivery port	G1/2 ( depth 19mm )
B		
T		
DR	Housing drain port	G3/8 ( depth 15 mm )
PP	Braking release pilot port	G1/4 ( depth 15 mm )
PB	Braking release port	

03

### ·Specifications of output pinion

#### Spar gear

Tool	Tooth profile	Standard gear
	Module	7
	Pressure angle	$20^\circ$
No. Of teeth		14
Pitch diameter		$\varnothing 98.00$
Addendum mod.		$+2.80 (X=+0.4)$
Tooth thickness	Displacement over teeth	$54.950^{+0.090}_{-0.190}$
	No.Of teeth	3



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