



4.3

HM4V SERIES

**Axial Piston Variable Displacement Motor
(Containing Gearbox)**

Primarily suitable for application in excavator track travel systems

Size:	12	21	22	290	340
Max service pressure (bar):	245	245	245	345	345



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Features

- ★ Composite product featuring a high-efficiency plunger motor and high-precision reducer
- ★ Dual-speed switching controlled not only by pilot-operated hydraulic control but also by working load
- ★ Highly compact design integrating buffer relief valve, balance valve, parking brake, etc., while enabling powerful travel
- ★ Dedicated motor for hydraulic excavator track travel systems

Technical data

Motor	Size	12	21	22	290			340	
	Maximum displacement cc/rev	11.3	20.7	22.1	290.7			337.2	
	Direction of rotation	Bidirectional							
	Max rotation speed (rpm)	2957	2556	3691	2175			2650	
	Max service pressure (bar)	245	245	245	345			345	
	Torque	Rated (N·m)	48.4	80.7	86.2	1596			1852
		Max (N·m)	20	55.9	55.9	1170			1400
	Two-speed switch pilot pressure	Normal (bar)	33	33	33	39			39
		Max (bar)	49	49	49	49			59
	Shell pressure	Rated (bar)	3	3	3	2			2
Max (bar)		10	10	10	5			5	
Reducer	Reducer Model	RGTM22A	RGTM34A	RGTM50A	RGTL60A	RGTL75A	RGTL95B	RGTL180B	
	Reduction ratio	36.96	36.51	52.73	40.467	53.05	66.17	76.44	
Weight (including reducer) (kg)		16	34	44	418	500	709	755	
Oil viscosity mm ² /s*		7-1600, Optimal Range: 12-80							
Oil Temperature °C		-20-90							
Oil Cleanliness		ISO 4406 20/18/15							

When the oil viscosity is between 200~1000mm²/s, it needs to be preheated before operation.

Type introduction

HM4V	12	C	P	T	N	N	-	RGTM22A	-	XXX
①	②	③	④	⑤	⑥	⑦		⑧		⑨

Product series

①	Swash plate axial piston motor	HM4V
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Size

②	Size	12	21	22	290	340
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Port and flange fixing thread

③		12	21	22	290	340	Code
	UNC unified thread, ISO 11926	○	○	○	○	○	A
	BSPPG thread , JIS B2351	○	○	○	○	○	G
	Metric thread, ISO 9974	○	○	○	○	○	M
	Special inch pipe thread	●	●	●	●	●	C

Built-in parking brake

④		12	21	22	290	340	Code
	With built-in parking brake	●	●	●	●	●	P
	Without built-in parking brake	○	○	○	○	○	N

Automatic change valve

⑤		12	21	22	290	340	Code
	With automatic change valve	●	●	●	●	●	T
	Without automatic change valve	●	●	●	●	●	N

No impact relief valve

⑥		12	21	22	290	340	Code
	With no impact relief valve				●	●	S
	Without no impact relief valve	●	●	●			N

Safety valve against surge

⑦	Without safety valve against surge	N
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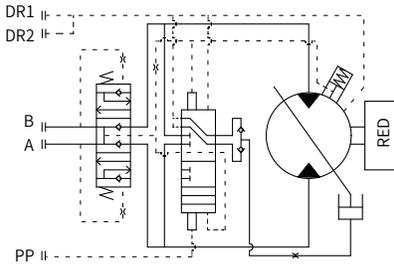
Type introduction

Reducer type (Only HM4V12、HM4V21、HM4V22)

	12	21	22	290	340	Code
Without reducer				●	●	None
RGTM22A	●					RGTM22A
RGTM34A		●				RGTM34A
⑧ RGTM50A			●			RGTM50A
RGTL60A				●		RGTL60A
RGTL75A				●		RGTL75A
RGTL95B				●		RGTL95B
RGTL180B					●	RGTL180B

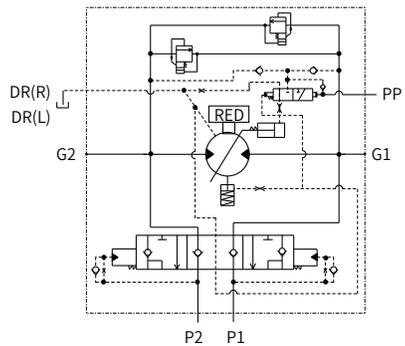
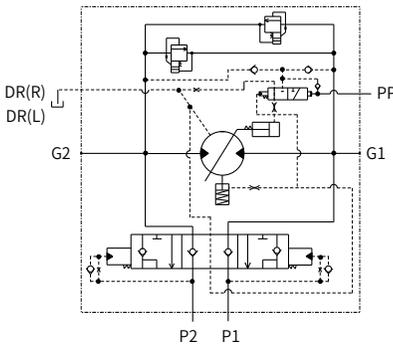
Principle

- HM4V12-RGTM22A, HM4V21-RGTM34A, HM4V22-RGTM50A



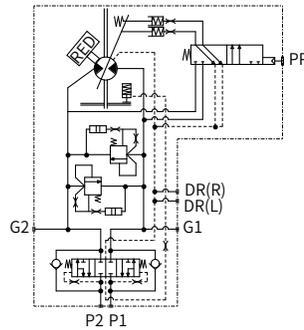
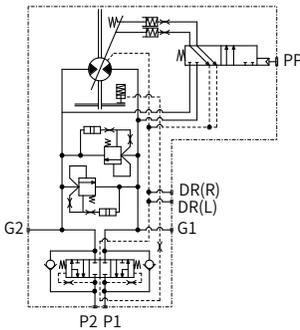
- HM4V290(Single motor)

- HM4V290-RGTL60A/RGTL75A/RGTL95B



- HM4V340(Single motor)

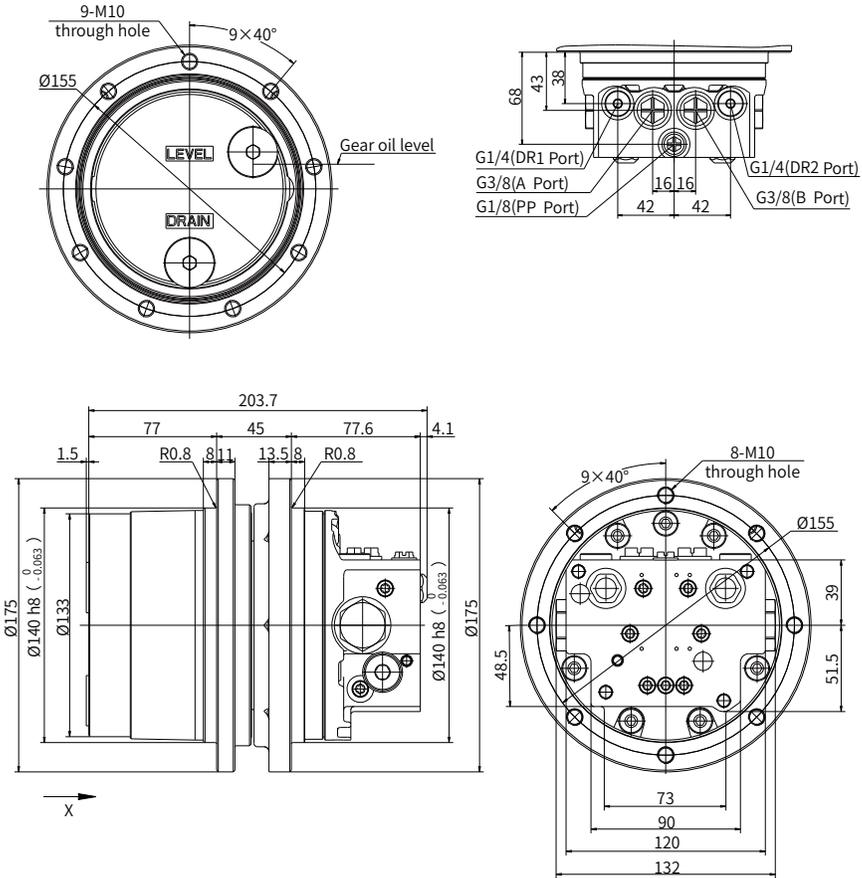
- HM4V340-RGTL180B



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Installation size

·HM4V12-RGTM22A



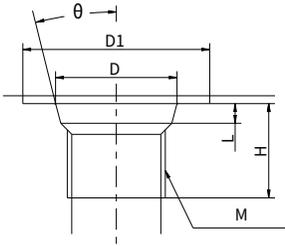
Inlet port	Outlet port	Rotation direction
B	A	Clockwise
A	B	Anti-clockwise

Note: The rotation direction is looked from the X end.

Port details

• HM4V12-RGTM22A

	Port Name	Port Size and Description
A	Inlet port and Delivery port	G3/8 (depth 14mm)
B		
DR1、DR2	Housing drain port	G1/4 (depth 12 mm)
PP	Two speed switch pilot oil port	G1/8 (depth 10 mm)

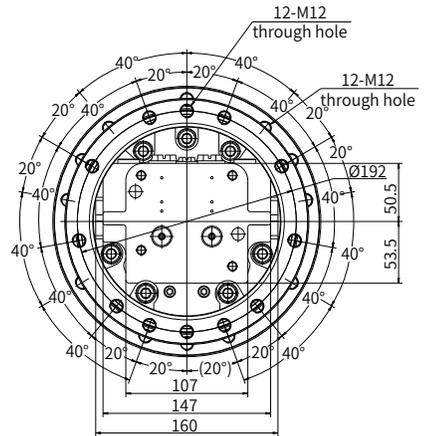
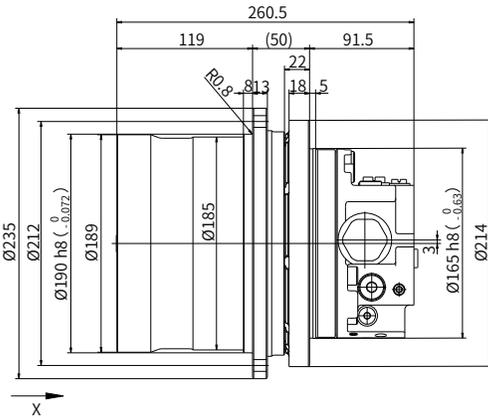
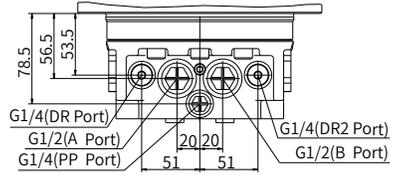
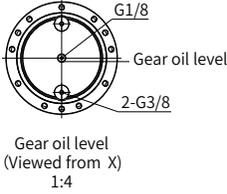


Special inch non - sealed pipe thread orifice details

Port (M)	H	L	D	D1	θ
G1/4	12	2.5	Ø15.6	Ø24	15°
G1/2	17	2.5	Ø22.6	Ø34	15°
G1/8	10	2	Ø11.6	Ø18	15°

Installation size

· HM4V21-RGTM34A



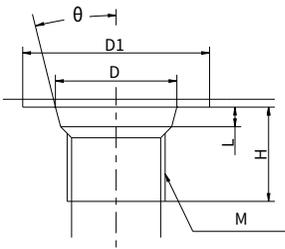
Inlet port	Outlet port	Rotation direction
B	A	Clockwise
A	B	Anti-clockwise

Note: The rotation direction is looked from the X end.

Port details

• HM4V21-RGTM34A

	Port Name	Port Size and Description
A B	Inlet port and Delivery port	G1/2 (depth 17mm)
DR1、DR2	Housing drain port	G1/4 (depth 12 mm)
PP	Two speed switch pilot oil port	G1/4 (depth 12 mm)

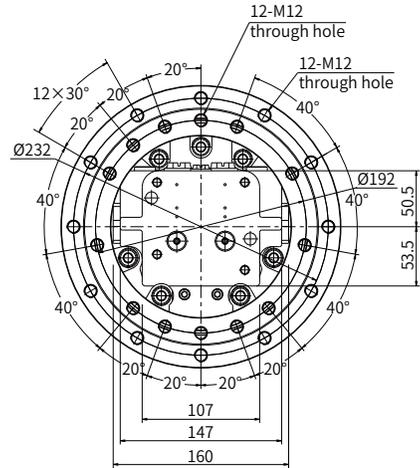
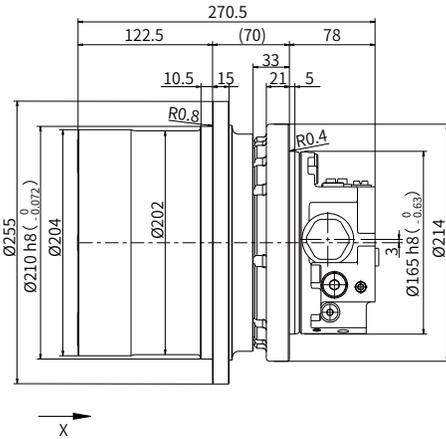
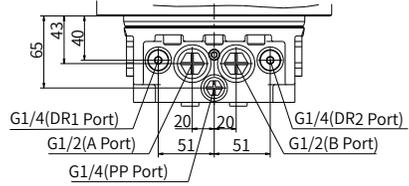
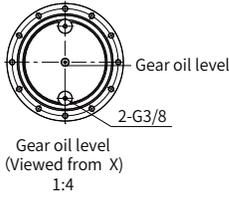


Special inch non - sealed pipe thread orifice details

Port (M)	H	L	D	D1	θ
G1/4	12	2.5	Ø15.6	Ø24	15°
G1/2	17	2.5	Ø22.6	Ø34	15°

Installation size

· HM4V22-RGTM50A



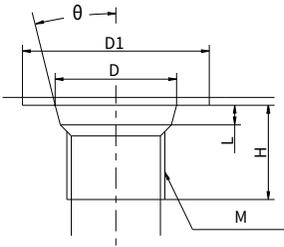
Inlet port	Outlet port	Rotation direction
B	A	Clockwise
A	B	Anti-clockwise

Note: The rotation direction is looked from the X end.

Port details

• HM4V22-RGTM50A

	Port Name	Port Size and Description
A B	Inlet port and Delivery port	G1/2 (depth 17mm)
DR1、DR2	Housing drain port	G1/4 (depth 12 mm)
PP	Two speed switch pilot oil port	G1/4 (depth 12 mm)



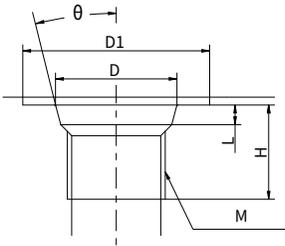
Special inch non - sealed pipe thread orifice details

Port (M)	H	L	D	D1	θ
G1/4	12	2.5	Ø15.6	Ø24	15°
G1/2	17	2.5	Ø22.6	Ø34	15°

Port details

• HM4V 290(Single motor)

	Port Name	Port Size and Description
P ₁	Inlet port and Delivery port	G1 (depth 23 mm)
P ₂		
DRR、DRL	Housing drain port	G1/2 (depth 18 mm)
PP	Two speed switch pilot oil port	G1/4 (depth 15 mm)
G1、G2	Pressure Measuring	G1/4 (depth 15 mm)

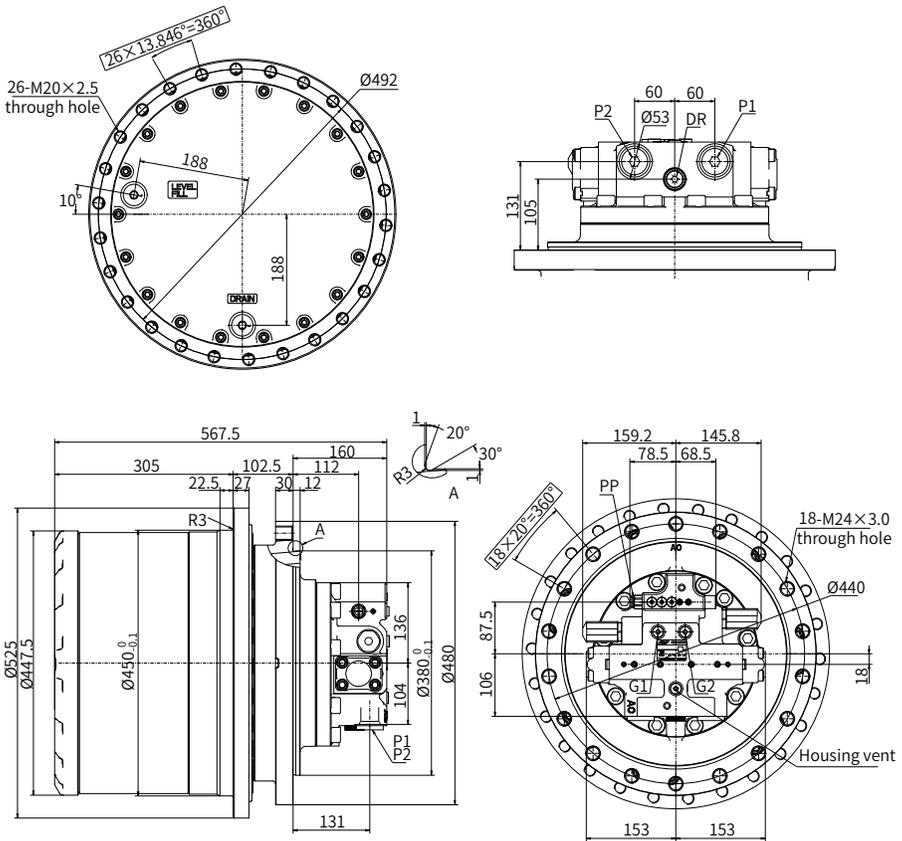


Special inch non - sealed pipe thread orifice details

Port (M)	H	L	D	D1	θ
G1	23	3.5	35.8	53	15
G1/2	18	2.5	22.6	34	15
G1/4-13	15	2.5	15.6	-	15
G1/4-13	15	2.5	15.6	24	15

Installation size

· HM4V290-RGTL60A(Motor Reducer Assembly)



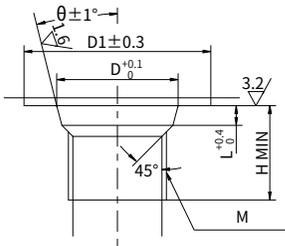
Inlet port	Outlet port	Rotation direction
P1	P2	Anti-clockwise
P2	P1	Clockwise

Note: The rotation direction is looked from the bottom of reducer

Port details

• HM4V290-RGTL60A(Motor Reducer Assembly)

	Port Name	Port Size and Description
P ₁	Inlet port and Delivery port	G1 (depth 23 mm)
P ₂		
DR	Housing drain port	G1/2 (depth 18 mm)
PP	Two speed switch pilot oil port	G1/4 (depth 15 mm)
G1、 G2	Pressure Measureing	G1/4 (depth 15 mm)

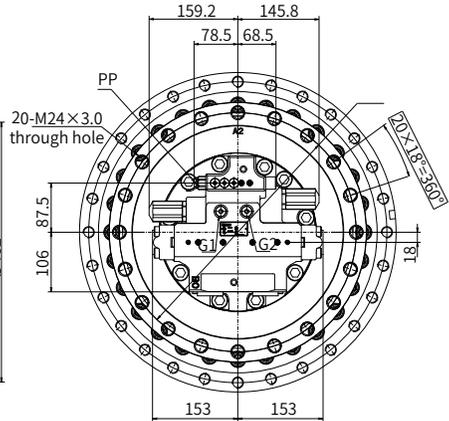
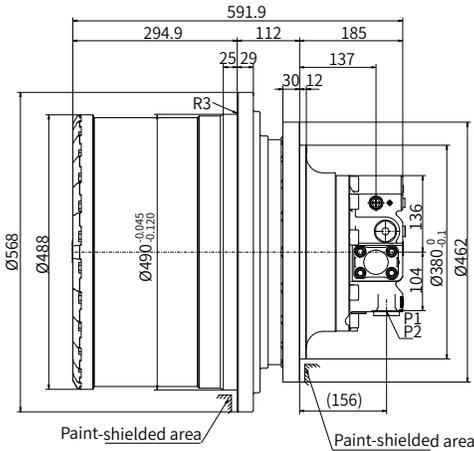
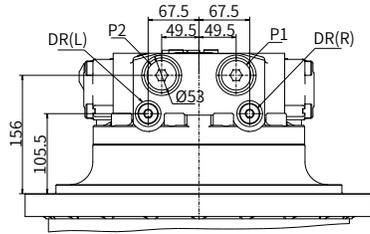
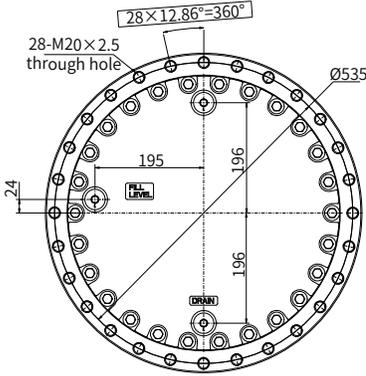


Special inch non - sealed pipe thread orifice details

Port (M)	H	L	D	D1	θ
G1	23	3.5	35.8	53	15
G1/2	18	2.5	22.6	34	15
G1/4-13	15	2.5	15.6	-	15
G1/4-13	15	2.5	15.6	24	15

Installation size

· HM4V290-RGTL75A(Motor Reducer Assembly)



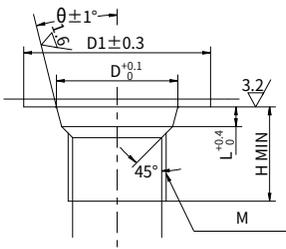
Inlet port	Outlet port	Rotation direction
P1	P2	Anti-clockwise
P2	P1	Clockwise

Note: The rotation direction is looked from the bottom of reducer

Port details

• HM4V290-RGTL75A(Motor Reducer Assembly)

	Port Name	Port Size and Description
P ₁	Inlet port and Delivery port	G1 (depth 23 mm)
P ₂		
DR(R&L)	Housing drain port	G1/2 (depth 18 mm)
PP	Two speed switch pilot oil port	G1/4 (depth 15 mm)
G1、 G2	Pressure Measreing	G1/4 (depth 15 mm)

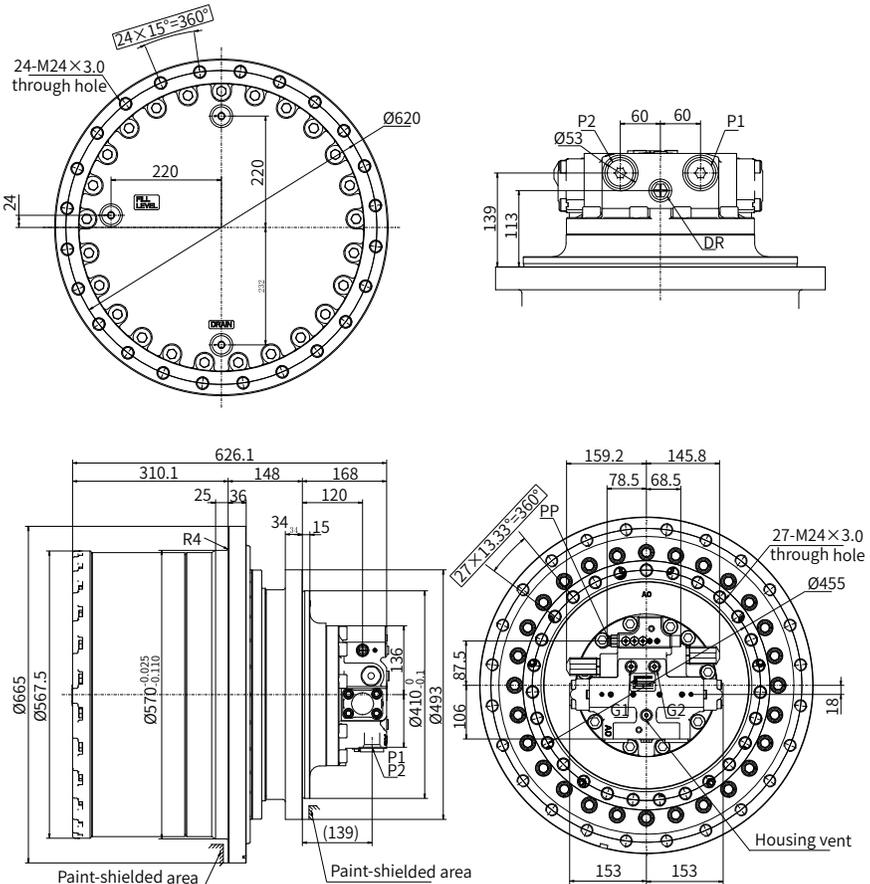


Special inch non - sealed pipe thread orifice details

Port (M)	H	L	D	D1	θ
G1	23	3.5	35.8	51	15
G1/2	18	2.5	22.6	45	15
G1/4-13	15	2.5	15.6	-	15
G1/4-13	15	2.5	15.6	24	15

Installation size

• HM4V290-RGTL95B(Motor Reducer Assembly)



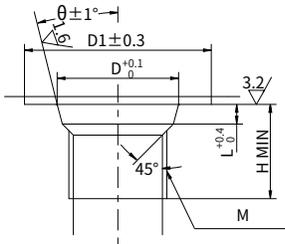
Inlet port	Outlet port	Rotation direction
P1	P2	Anti-clockwise
P2	P1	Clockwise

Note: The rotation direction is looked from the bottom of reducer

Port details

• HM4V290-RGTL95B(Motor Reducer Assembly)

	Port Name	Port Size and Description
P ₁	Inlet port and Delivery port	G1 (depth 23 mm)
P ₂		
DR	Housing drain port	G1/2 (depth 18 mm)
PP	Two speed switch pilot oil port	G1/4 (depth 15 mm)
G1、 G2	Pressure Measuring	G1/4 (depth 15 mm)

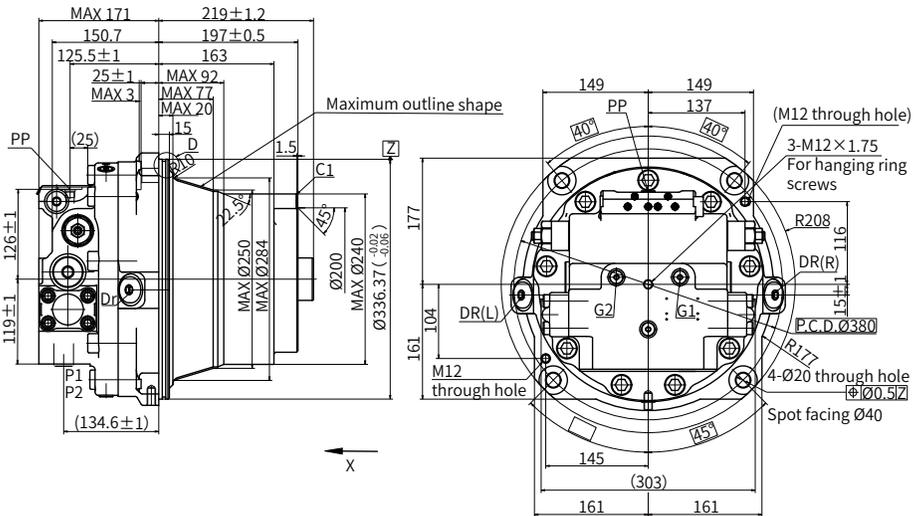
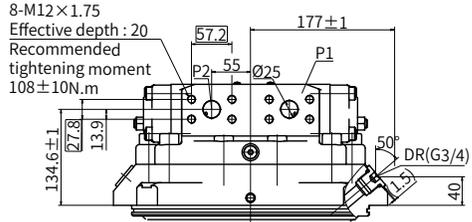
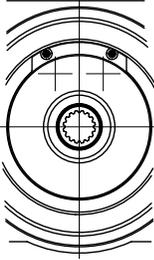


Special inch non - sealed pipe thread orifice details

Port (M)	H	L	D	D1	θ
G1	23	3.5	35.8	53	15
G1/2	18	2.5	22.6	34	15
G1/4-13	15	2.5	15.6	-	15
G1/4-13	15	2.5	15.6	24	15

Installation size

· HM4V 340(Single motor)



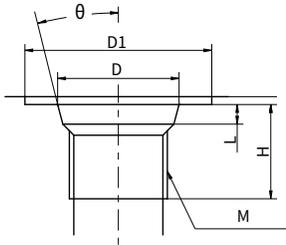
Inlet port	Outlet port	Rotation direction
P1	P2	Clockwise
P2	P1	Anti-clockwise

Note: The rotation direction is looked from the X end.

Port details

• HM4V 340(Single motor)

	Port Name	Port Size and Description
P ₁	Inlet port and Delivery port	SAE 1"
P ₂		
DRR、DRL	Housing drain port	G3/4 (depth 12 mm)
PP	Two speed switch pilot oil port	G1/4 (depth 15 mm)
G1、G2	Pressure Measureing	G1/4 (depth 12 mm)

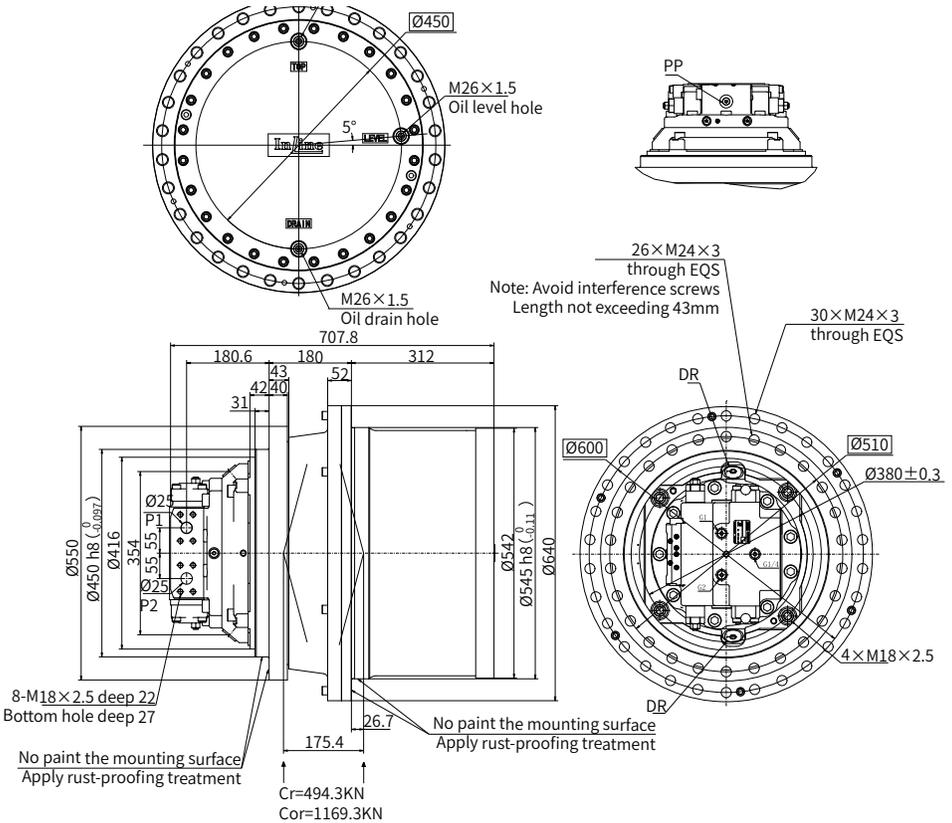


Special inch non - sealed pipe thread orifice details

Port (M)	H	L	D	D1	θ
SAE 1"	-	-	-	-	-
G3/4-20	20	3.5	30.8	45	15
G1/4-13	15	2.5	15.6	24	15
G1/4-13	15	2.5	15.6	24	15

Installation size

· HM4V340-RGTL180B(Motor Reducer Assembly)



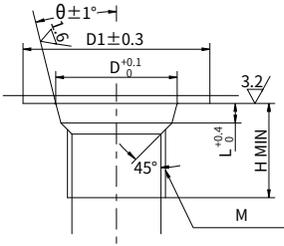
Inlet port	Outlet port	Rotation direction
P1	P2	Anti-clockwise
P2	P1	Clockwise

Note: The rotation direction is looked from the bottom of reducer

Port details

• HM4V340-RGTL180B(Motor Reducer Assembly)

	Port Name	Port Size and Description
P ₁	Inlet port and Delivery port	SAE 1"
P ₂		
DRR、DRL	Housing drain port	G3/4 (depth 12 mm)
PP	Two speed switch pilot oil port	G1/4 (depth 15 mm)
G1、G2	Pressure Measureing	G1/4 (depth 12 mm)



Special inch non - sealed pipe thread orifice details

Port (M)	H	L	D	D1	θ
SAE 1"	-	-	-	-	-
G3/4-20	20	3.5	30.8	45	15
G1/4-13	15	2.5	15.6	24	15
G1/4-13	15	2.5	15.6	24	15



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