



MARINE COMMON RAIL ENGINES

4JH Series - 45 / 57

Configuration	In-line, 4-stroke, vertical, water-cooled diesel engine					
Max. output at crankshaft*	33.1 kW@3000 rpm	[45 mhp@3000 rpm]				
	41.9 kW@3000 rpm	[57 mhp@3000 rpm]				
No. of cylinders	4 cylinder					
Displacement	2.190 L [134 cu in]					
Bore x stroke	88 mm x 90 mm	[3.46 in x 3.54 in]				
Aspiration	Natural					
Combustion system	Direct injection, Bosch common rail system					
Starting system	Electric starting 12V - 1.4 kW					
Engine management	Electronic					
Cooling system	Fresh water cooling by centrifugal fresh water pump					
	Seawater cooling by rubber impeller seawater pump					
Alternator	12V - 125A					
Lubrication system	Enclosed, forced lubricating system					
Engine lube oil specifications	API class: CD or higher, SAE grade: 10W-30 or 15W-40					
Direction of rotation at crankshaft	Counterclockwise (CCW) viewed from stern					
Dry weight without gear	220 kg [48	5 lbs]				
Engine dimensions [†] L x W x H	870 x 589 x 627 mm					
Emission compliance	EU: RCD 2, BSO II, EMC	US: EPA Tier 3, EPA-C				
Flywheel housing size	SAE #5					
Controls	Mechanical (optional - VC20 system)					

NOTE: Fuel condition: Density at $15^{\circ}C = 0.84 \text{ g/cm}^3$; 1 kW = 1.3596 mhp = 1.3410 HP

Technical data is according to (ISO 8665) / (ISO 3046)

†Length includes KM35P marine gear (Dimensions may vary with other gears/elbow)

DIMENSIONS

Rear view Right side view 194 674 470 4JH45/57 with KM4A1 marine gear

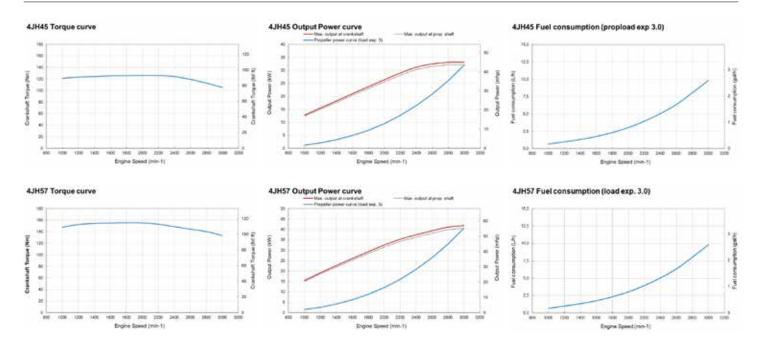
(Not to be used for engine installation)

 $^{^{\}star}$ Fuel temperature 40°C at the inlet of the fuel injection pump (ISO 8665)





PERFORMANCE CURVES



MARINE GEAR / DRIVE*

Model	KM35P [parallel]		KM35A2 [down angle: 7°]		KM4A1 [down angle: 7°]		ZF30M [parallel]		Saildrive [SD60]		
Clutch type	Mechanical cone clutch		Mechanical cone clutch		Mechanical cone clutch		Mechanical multi-disc		Mechanical multi-disc		
Dry weight	15 kg [33 lbs]		16 kg [35 lbs]		33 kg [73 lbs]		23 kg [51 lbs]		44 kg [97 lbs]		
Reduction ratio [fwd/asn]	2.36/3.16	2.61/3.16	2.33/3.04	2.64/3.04	1.47/1.47	2.14/2.14	2.63/2.63	2.15/2.64	2.70/2.64	2.23/2.23	2.49/2.49
Direction of rotation [viewed from stern]	Clockwise		Clockwise		Clockwise & counterclockwise		Clockwise		Clockwise & counter clockwise		
Lubrication system	Splash lubrication						Trochoid pump		Splash lubrication		
Lube oil specifications	API class: CD or higher, SAE grade: #20 or #30						ATF		API class: CD or higher, SAE grade: 15W-40		
Max. lube oil capacity	1.	1 L	0.65 L		2.0 L		1.1 L		2.8 L		
Dry weight - engine & gear	235 kg	[518 lbs]	236 kg	[520 lbs]		253 kg [558 lbs]	243 kg [536 lbs] 264 kg		[582 lbs]	

^{*} Other marine gearboxes and configurations available upon request. Contact your local supplier for more information.

ACCESSORIES

Standard engine package

- Exhaust mixing elbow [L-type]
- Alternator 12V 125A
- B25 panel
- Flexible mounts
- Mechanical throttle sensor
- Fuel pre-filter with water separator
- Fresh water expansion tank
- Belt safety cover

Optional

- High-riser mixing elbow [instead of L-elbow]
- Secondary alternator 12V 125A or 24V 60A
- C35 panel
- Extension harness [3m, 5m, 10m]
- Second station
- TFX Sidemount control head
- VC20 Vessel Control System
- NMEA2000 Engine monitoring system
- Semi 2-pole
- SOLAS including Certificate [factory fit only]
- Hot water kit with cocks
- Extension saildrive leg [75 mm]
- Propeller cone nut kit SD60
- On-board spare parts kit