

SERVICE CLASSIFICATION DEFINITIONS

Pleasure Craft

Maximum power capacity is intended only for personal use, planing hull pleasure craft where full engine throttle operation will be less than 5% of total time with balance of time at 87% of full throttle engine RPM or less. Marine Gears used in long range pleasure cruisers, sportfish charters or any commercial service should not be selected according to Pleasure Craft Service Classification.

Intermediate Duty

pleasure or Commercial usage of planing or semi-displacement hull craft can qualify for Intermediate Duty Service Classification if full throttle operation will average only a few hours per day with major portion of usage at partial throttle and total annual usage will be 2000 hours or less.

Examples: Long Range Pleasure Cruisers

portfish Charter Boats

Party Fishing Boats

Some Crew Boats, Lobster Boats

Harbor and Coastal Patrol Boats

Search and Rescue Boats

Fire Boats

Continuous Duty

Commonly called "Workboat Duty," these Marine Gear applications are expected to operate continuously at full engine governed speed. The propulsion engine power setting must be known and must be within the Marine Gear's allowable input rating for continuous daylong or around-the-clock service.

Most displacement hull vessels are powered for Continuous Duty service. However, the actual engine (and Marine Gear) power loading depends on:

- a. The propeller used
- b. The vessel's work assignment
- c. The captain's choice of throttle setting during continuous service

Hitachi Nico Transmission Co., Ltd. (HNT) recommends that all displacement and semidisplacement hull commercial applications be classed as Continuous Duty usage of the Marine Gear.

Examples: Fishing trawlers, Purse seiners
Lobster boats and crab boats
Tugs, Tow boats, Buoy tenders
Offshore crew/supply boats, Ferries
Research vessels, Ocean freighters

IMPORTANT APPLICATION INFORMATION

- Transmission ratings are based on use of the transmission in a torsionally compatible system utilizing suitable input torsional coupling.
- Ratings are for diesel engines at the indicated speeds unless otherwise limited.
- Consult factory for ratings applicable to gasoline engines or gas turbines or for all other applications not conforming to the given service classification definitions.
- Ratings apply to right hand engines, i.e., counterclockwise flywheel rotation when viewing rear of engine.
- The power transmission capacity of the forward and reverse components is the same. However, helical directions of gear for starboard and port unit on some models will be changed.

IMPORTANT NOTICE : Torsional vibration analysis is required and can be made by the engine manufacturer and independent consultants. HNT is prepared to assist the analysis in relation to the transmissions. Hitachi Nico Transmission Co., Ltd. advises users of these products that their safe operation depends on use in compliance with technical information provided in the product manuals. Proper installation, operation and periodical inspection and maintenance are prerequisite for safe operation of these products. It is the responsibility of users to provide and install safety devices, which may be required by recognized safety standards.

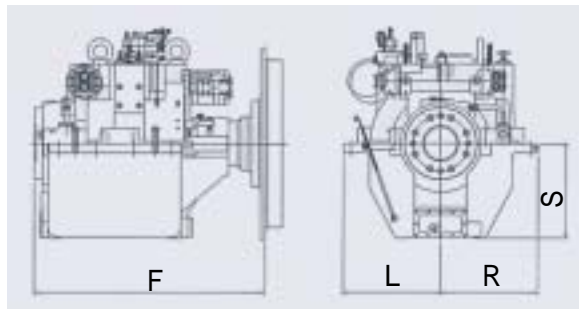
Hitachi Nico Transmission Co., Ltd.

Continuous Duty Marine Reverse Gear for Low-Speed Engine

MN Series (Coaxial Type)

Model	SAE Hsg.	Standard Ratios	Input Rating						Max. Speed
			300 min ⁻¹		400 min ⁻¹		500 min ⁻¹		
			kW	HP	kW	HP	kW	HP	min ⁻¹
MN 630	---	---	473	634	630	845	662	887	500
MN 730	---	---	630	845	840	1126	883	1184	500
			200 min ⁻¹		300 min ⁻¹		400 min ⁻¹		
MN 830	---	---	588	788	883	1184	1103	1479	400
MN 930	---	---	758	1016	1136	1523	1324	1775	400
MN 1030	---	---	1049	1406	1567	2101	1692	2268	400
MN 1130	---	---	1421	1905	2059	2760	2059	2760	400
			100 min ⁻¹		200 min ⁻¹		300 min ⁻¹		
MN 1230	---	---	883	1184	1765	2366	2354	3156	300
MN 1430	---	---	1147	1538	2295	3076	2795	3747	300
MN 1630	---	---	1545	2071	3089	4141	3310	4437	300

MN Series (Coaxial Type)
Dimensional Data



Model	F:	L:mtg.	R:mtg.	C:	S:	Mass (approx.dry) kg
	length mm	pad mm	pad mm	offset mm	sump mm	
MN 630	950	470	470	---	470	1600
MN 730	1015	490	490	---	500	1850
MN 830	1150	530	530	---	560	2340
MN 930	1300	580	580	---	600	3100
MN 1030	1540	650	650	---	630	4300
MN 1130	1600	700	700	---	670	5300
MN 1230	1760	750	750	---	700	6900
MN 1430	1830	800	800	---	750	7800
MN 1630	1922	900	900	---	850	10000

- Comments
- Dimensions may vary with housing adapter or output flange size.
 - Dry mass is approximate and does not include companion flange.
 - Specifications subject to change.