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
earch and Rescue Boats
Fire Boats

Continuous Duty
Commonly called "Workboat Duty," these Marine Gear applications are expected to operate continuously at fulI 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

IIMPORTANT 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 staboad 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.

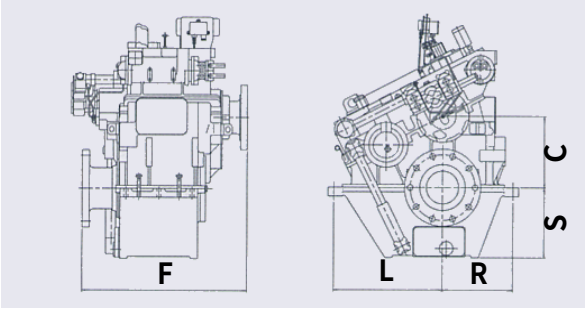
Continuous Duty Marine Gear Ratings

Model MGN Series (Vertical Offset 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}
MGN 1801AV	---	1.34, 1.82	823	1103	1097	1471	1372	1839	500
		1.91	805	1079	1074	1440	1342	1799	
		2.00	794	1064	1059	1420	1324	1775	
		2.10	783	1050	1044	1399	1306	1751	
MGN 1803V	---	1.91, 2.00, 2.20	823	1103	1097	1471	1372	1839	500
		2.31	783	1050	1044	1399	1306	1751	
MGN 4022V	---	1.63, 2.09, 2.39	894	1198	1192	1598	1489	1996	500
		2.50	838	1123	1118	1499	1397	1873	
			200 min^{-1}		300 min^{-1}		400 min^{-1}		
MGN 2501AV	---	1.33, 1.69, 2.09	744	997	1116	1496	1489	1996	400
		2.18	736	987	1103	1479	1471	1972	
		2.28	691	926	1037	1390	1383	1854	
MGN 5622V	---	1.67, 1.95, 2.20	831	1114	1247	1672	1662	2228	400
		2.29	796	1067	1194	1601	1592	2134	
		2.39	759	1017	1139	1527	1518	2035	
		2.50	721	967	1081	1449	1442	1933	
MGN 3501BV	---	1.25, 1.66, 2.00	1074	1440	1611	2160	2148	2879	400
		2.08	1049	1406	1573	2109	2098	2812	
		2.16	1008	1351	1511	2025	2015	2701	
		2.25	965	1294	1447	1940	1930	2587	
MGN 8041V	---	1.23, 1.45, 1.72	1250	1676	1876	2515	2501	3353	400
		1.80	1212	1625	1818	2437	2424	3249	
		1.88	1169	1567	1754	2351	2339	3135	
		1.97	1128	1512	1692	2268	2257	3026	
MGN 10042V	---	1.20, 1.40, 1.63	1765	2366	2648	3550	3530	4732	400
		1.77	1721	2307	2582	3461	3442	4614	
		1.84	1677	2248	2515	3371	3354	4496	
		1.92	1618	2169	2427	3253	3236	4338	
		2.00	1545	2071	2317	3106	3089	4141	

MGN Series (Vertical Offset Type)

Dimensional Data



Model	F: length	L:mtg. pad	R:mtg. pad	C: offset	S: sump	Mass (approx.dry)
	mm	mm	mm	mm	mm	kg
MGN 1801AV	1150	800	530	492	480	3500
MGN 1803V	1150	800	530	492	480	3500
MGN 4022V	1180	800	580	535	560	3900
MGN 2501AV	1300	895	625	540	550	4400
MGN 5622V	1330	850	650	575	630	5000
MGN 3501BV	1540	950	680	600	630	6500
MGN 8041V	1720	985	700	600	600	7600
MGN 10042V	1900	1050	750	670	710	11000

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.**

Hitachi Nico Transmission Co., Ltd.

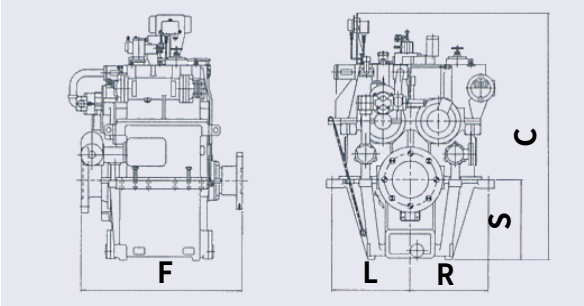
Continuous Duty Marine Gear Ratings

Model MGN Series (Coaxial Offset 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}
MGN 3642Z	---	1.34, 1.60, 1.83	827	1109	1103	1479	1379	1849	500
		1.91	821	1101	1094	1995	1368	1834	
		2.00	814	1091	1086	1979	1357	1819	
		2.10	808	1083	1077	1962	1346	1804	
		2.20	801	1074	1068	1946	1335	1790	
		2.31	792	1062	1056	1925	1320	1769	
MGN 4042Z	---	1.49, 1.91, 2.39	896	1201	1194	1601	1493	2001	500
		2.50	867	1162	1156	1550	1445	1937	
			200 min^{-1}		300 min^{-1}		400 min^{-1}		
MGN 5642Z	---	1.38, 1.80, 2.20	831	1114	1247	1672	1662	2228	400
		2.29	794	1064	1192	1598	1589	2130	
		2.39	759	1017	1139	1527	1518	2035	
		2.50	721	967	1081	1449	1442	1933	
MGN 8042Z	---	1.19, 1.64, 2.12	1250	1676	1876	2515	2501	3353	400
		2.22	1236	1657	1853	2484	2471	3312	
		2.32	1177	1578	1765	2366	2354	3156	
MGN 10042Z	---	1.19, 1.59, 2.01	1545	2071	2317	3106	3089	4141	400
		2.09	1471	1972	2207	2958	2942	3944	
		2.18	1412	1893	2118	2839	2824	3786	
		2.27	1368	1834	2052	2751	2736	3668	
		2.36	1309	1755	1964	2633	2618	3509	
		2.46	1250	1676	1876	2515	2501	3353	
MGN 12042Z	---	1.27, 1.93, 2.66	1795	2406	2692	3609	3589	6542	400
		2.76	1765	2366	2648	3550	3530	6434	
		2.86	1706	2287	2560	3432	3413	6220	

MGN Series (Coaxial Type)

Dimensional Data



Model	F: length	L:mtg. pad	R:mtg. pad	C: offset	S: sump	Mass (approx.dry)
	mm	mm	mm	mm	mm	kg
MGN 3642Z	1350	640	640	---	560	4400
MGN 4042Z	1380	635	635	---	560	5000
MGN 5642Z	1500	700	700	---	630	6100
MGN 8042Z	1850	775	775	---	630	9000
MGN 10042Z	2060	870	870	---	700	12000
MGN 12042Z	2380	1020	1020	---	850	17000

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.**