
NEMA MOTORS

Reliance Duty Master®

AC induction Navy motors

BALDOR • RELIANCE



Standing watch, day and night, above deck and below

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01 The Nimitz class aircraft carrier, CVN 70 USS Carl Vinson, uses approximately **650 specially designed** Reliance Navy low-noise motors, with NAVSEA certified sealed insulation, to drive or power a wide array of pumps, fans, compressors, and other equipment.



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When captain and crew ship out to sea, their trust in their vessel is absolute. The safe, reliable performance of Navy motors and generators is critical to the success of every mission. In fact, our motors have played a significant role in some of the most challenging U.S. Navy exploits in recent history. The ABB commitment to consistent, predictable quality shows in everything we do. Our Duty Master AC Navy motors are manufactured under ISO-9001 certification to meet the stringent requirements of MIL-I-45208A. At ABB, we understand that your extraordinary performance depends, in part, on the dependability of ours. We are proud to accept that challenge.

Reliance Duty Master

AC Navy motors

**Features:**

- Designed for optimized performance and longer life in critical above deck and below deck applications
- Compliance with the highest performance standards
 - MIL-I-45208 inspection
 - MIL-M-17059 Fractional Hp AC motors
 - MIL-M-17060 integral Hp AC motors
 - MIL-DTL-17060 integral Hp AC motors
 - MIL-P-17840 pumps
 - MIL-F-18953 fans
- Customized testing, inspection, & software
- Navy-approved Sealed Insulation System per MIL-STD-2037
- A variety of mounting configurations, speeds, and enclosures available to meet specific shipboard requirements.

We've been providing motor solutions to the U.S. Navy for over half a century and are dedicated to developing highly dependable products that perform reliably over the life of the ship.

We also offer marine duty motors, which are specially modified industrial type motors for both above deck and offshore (wet environments) and below deck (dry environments) capable of meeting the following standards and specifications:

- IEEE 45
- USCG (United States Coast Guard)
- ABS (American Bureau of Ships)
- NEMA MG 1

Custom motor capabilities

Navy service A motors

Reliance Navy Service A motors meet all pertinent MIL specs for fractional and integral AC motors, including critical specifications pertaining to energy efficiency, sealed insulation, reduced weight, low airborne noise, and low structure-borne noise.

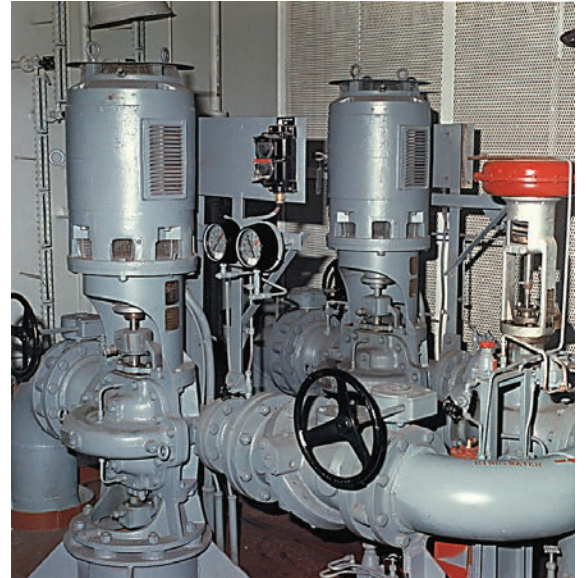
In accordance with the rigid requirements of MIL-DTL-17060, MIL-M-17060 or MIL-M-17059, these motors are built with steel or ductile iron frames and mounting brackets (or non-magnetic components, where required) capable of resisting the shock loads encountered under enemy attack. MIL-S-901 certification is individually obtained for every Navy Service A motor design. These motors also use insulation systems, corrosion-proof hardware, and corrosion-resistant finishes that meet Navy combat-duty requirements.

Navy service C-motors

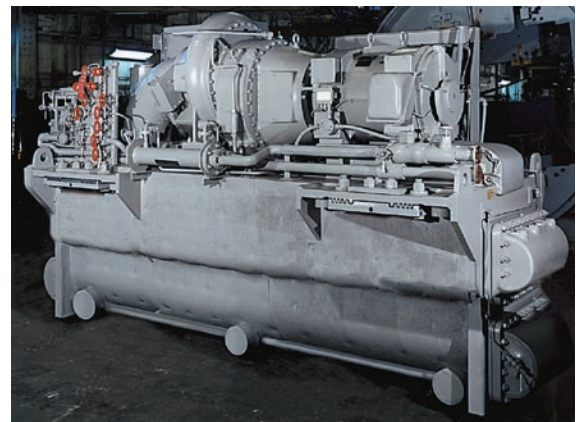
For applications non-essential to the combat-effectiveness of the ship, we offer Navy service C-motors using either cast iron or ductile iron construction.

Marine duty motors

Baldor-Reliance marine duty motors include stainless steel marine nameplates, an insulation system and conduit box suitable for marine service, corrosion-proof hardware, and screens on drip-proof enclosures. Optional features include IP55 (Spraytight) & IP56 (Watertight) enclosure enhancements on enclosed motors, "Weatherdeck" finish, ductile iron components for enclosed motors, ABS Test & Inspection, and special software.



The pumps of this fresh water circulation system are powered by our 50-Hp, 1800-RPM vertical P-base motors.



This air conditioning compressor is driven by a 250-Hp, 3600-RPM DP Reliance motor.

Marine duty applications



Above deck		Below deck	
	Anchor windlass		Air compressors
	Cargo winches	Compressors	A/C compressors
	Constant-tension winches		Refrigeration
Winches & cranes	Lifeboat winches		Bow thrusters
	Mooring winches		Ballast pumps
	Topping winches		Cargo pumps
	Highlines	Refrigeration	Circulating pumps
	Jib cranes		Feedwater pumps
	Capstans		Fire pumps
Drives	Conveyors		Fuel pumps
	Weapon systems		Forced draft blowers
		Fans & air handling	Exhaust fans
			Ventilation fans

US Navy MIL specifications

- All Reliance AC Navy motors use original, computer-aided designs and quality-controlled manufacturing methods to meet stringent U.S. Navy MIL specifications.
- Reliance Navy motors are built in standard NEMA and above-NEMA frame sizes and are rated from 1/5 to 1000 Hp.
- Baldor-Reliance marine motors are rated from ¼ to 3000 Hp and are also available in standard NEMA and above-NEMA frame sizes.
- A variety of mounting configurations, speeds, and enclosures are available to meet specific shipboard requirements.



TEAO multispeed vane-axial fan motor with non-rubbing labyrinth shaft seal per MIL-F-18953.



7.5-Hp, 3600-RPM TEFC close-coupled pump motor designed for low structure-borne vibration, with a threaded Monel® shaft per MIL-P-17840.



500-Hp, 1800-RPM DP (drip-proof) low airborne-noise pump motor for use on cargo oil and JP-5 fuel pumps.

AC induction motors per US Military specification

Hp	3600 RPM		1800 RPM		1200 RPM		900 RPM	
	DPP	TEFC	DPP	TEFC	DPP	TEFC	DPP	TEFC
0.20	48	48	48	48	48	48	56	56
0.25	48	48	48	48	56	56	182TN	182TN
0.33	48	48	48	48	56	56	182TN	182TN
0.50	56	56	56	56	56	56	184TN	184TN
0.75	56	56	56	56	56	56	184TN	184TN
1	56/182TN	56/182TN	56/182TN	56/182TN	56/182TN	56/182TN	182TN	184TN
1-1/2	56/182TN	56/182TN	56/182TN	56/182TN	182TN	184TN	184TN	213TN
2	56/182TN	56/182TN	56/182TN	56/182TN	213TN	213TN	213TN	215TN
3	182TN	184TN	182TN	184TN	182TN	215TN	215TN	254TN
5	182TN	213TN	184TN	213TN	215TN	254TN	254TN	256TN
7-1/2	184TN	215TN	213TN	215TN	254TN	256TN	256TN	256TN
10	213TN	254TN	215TN	254TN	256TN	256TN	286TN	286TN
15	215TN	256TN	254TN	256TN	286TN	286TN	286TN	326TN
20	254TN	286TN	256TN	286TN	286TN	326TN	326TN	326TN
25	256TN	286TN	286TN	286TN	326TN	326TN	326TN	365TN
30	286TN	326TN	286TN	326TN	326TN	365TN	365TN	365TN
40	286TN	326TN	326TN	326TN	326TN	365TN	365TN	405TN
50	326TN	365TN	326TN	365TN	365TN	405TN	405TN	405TN
60	326TN	365TN	365TN	365TN	365TN	405TN	405TN	445TN
75	365TN	405TN	365TN	405TN	405TN	445TN	445TN	445TN
100	365TN	445TN	405TN	445TN	405TN	445TN	445TN	449TN
125	405TN	445TN	405TN	445TN	445TN	445TN	449TN	449TN
150	445TN	445TN	445TN	445TN	445TN	449TN	449TN	449TN
200	445TN	449TN	445TN	449TN	449TN	5000	5000	5000
250	447TN	449TN	449TN	449TN	449TN	5000	5000	5000
300	449TN	449TN	449TN	449TN	5000	5000	5000	5000
350	449TN	449TN	449TN	5000	5000	5000	5000	5000
400	449TN	5000	5000	5000	5000	5000	5000	5000
500	5000	5000	5000	5000	5000	5000	5000	5000

NOTES: DPP (Drip-Proof Protected), TEFC (Totally Enclosed Fan-Cooled), TEWC (Totally Enclosed Water-Cooled), Spraytight Fan-Cooled, Watertight Fan-Cooled and Explosion-Proof Fan-Cooled have same frame assignments as Totally Enclosed Fan-Cooled. Short shaft extensions (TNS) may be furnished for close-coupled service. Frame size may be increased by one (1) frame size for two-pole motors where a non-magnetic one-piece shaft is required.

Navy and marine motors over 500 Hp available - please contact your local ABB representative for more information.

Seaworthy performance

Enclosures:

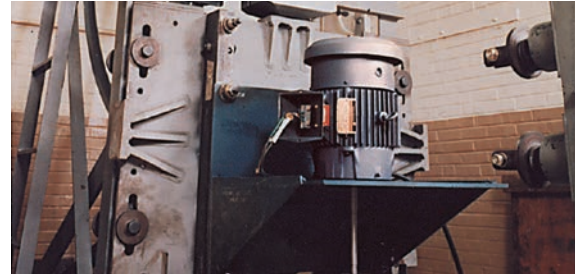
- Drip-Proof Protected (DPP)
- Totally Enclosed Air Over (TEAO)
- Totally Enclosed Non-Ventilated (TENV)
- Totally Enclosed Fan-Cooled (TEFC)
- Totally Enclosed Water-Cooled (TEWC)
- Spraytight (ST)
- Watertight (WT)
- Explosion-Proof (XP)
- Submersible

Mounting configurations:

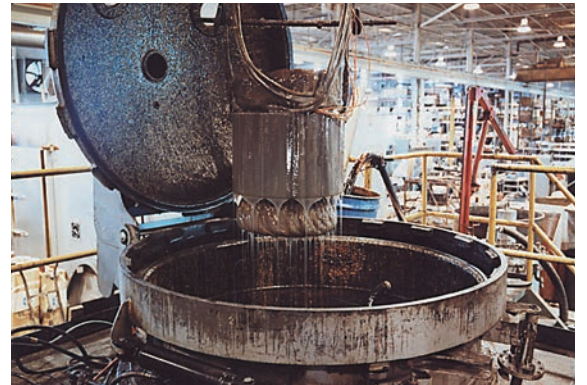
- Horizontal
- Vertical
- Rigid foot mount
- Footless
- C-face
- D-flange
- P-base
- Special flanges and shafts

Development & testing:

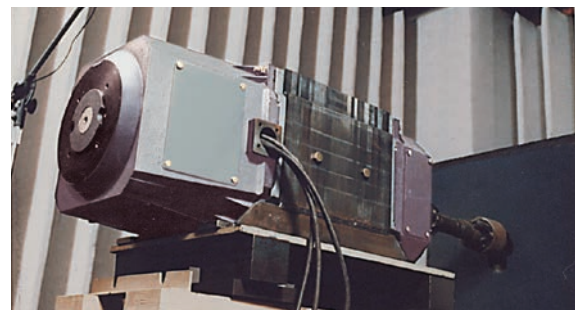
Our research and development capabilities are directed at developing new materials, manufacturing processes, and product innovations to extend motor longevity in Navy applications. Every Reliance Navy motor proves its performance in critical laboratory testing before facing the ultimate test of Navy service. Navy first article motors are dynamometer-tested to verify conformation with specific performance criteria. In addition, testing for shock-load resistance, the ability to resist shipboard and outside vibrations and noise levels are standard for our full line of Navy duty motors.



Navy motors must withstand military-approved shock testing, as performed by this hammer and anvil machine, which releases a free-falling weight that impacts on the motor mounting structure. Every Reliance Navy service "A" motor is proven through testing to be capable of maintaining operation during, and immediately after experiencing such severe shock loads.



To withstand humid marine environments, Reliance Navy motors use standard U.S. Navy insulation systems meeting MIL-I-24092 specifications. For critical applications, a sealed insulation system is also available, which meets MIL-DTL-17060 requirements including 200 hours of submerged qualification testing and a 24-hour underwater stator winding production test.



This sound test chamber represents a major investment in advanced technology. Since 1961, this virtually noiseless room-within-a-room has been used to test the airborne noise levels of our Navy motors.



ABB Motors and Mechanical Inc.

5711 R.S. Boreham, Jr. Street

Fort Smith, AR 72901

Ph: 1.479.646.4711

new.abb.com/motors-generators