

Special DC Motors

Over four decades, Astrosyn has been a regular supplier of special DC electric motors for use in submarine systems. Under such hostile conditions, performance parameters are especially rigorous and the total reliability of motors to drive essential services is stringently tested to extremes.

Our special duty DC motors are designed to meet stringent pre-defined Naval Engineering Standards. These standards specify demanding noise, vibration and atmospheric criteria, resulting in exceptional products that yield both military and commercial benefits.

General Specifications

Special Duty DC Motors

Astrosyn special DC motors feature modern laminated stator design, a voltage range spanning 12-440V DC and power ratings to 100kW at 3000rpm, with protection to IP68 and low noise and vibration levels.

Typical applications include electric propulsion systems, train subsystems (i.e. hydraulic drives, fans) and critical naval and submarine services, including...

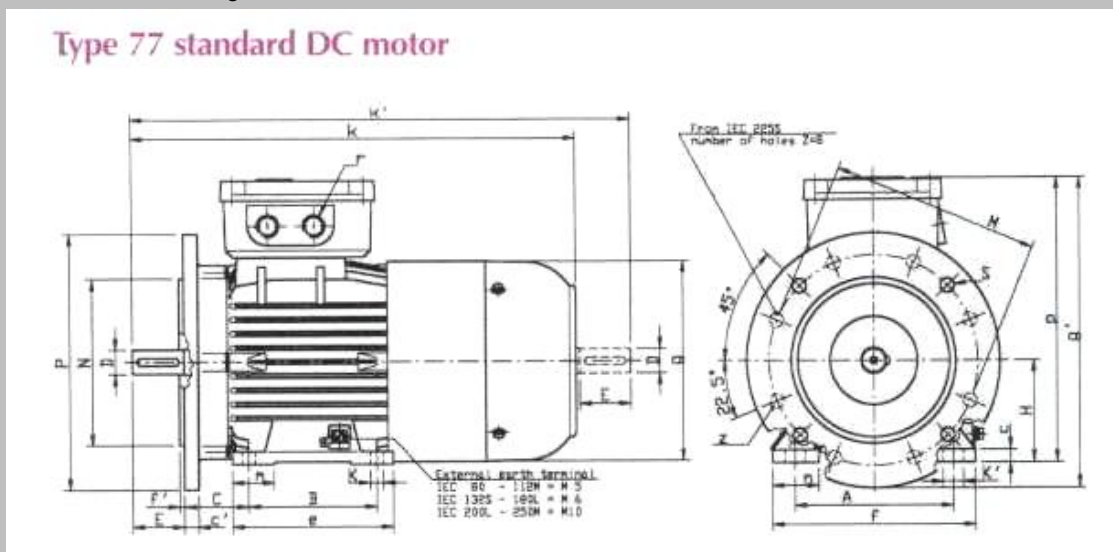
- Priming pumps
- Bilge pumps
- Ballast pumps



Low-Noise and Low-Vibration DC Motors Type 77

- Designed for operation at low noise and vibration levels
- Together with the modern stator core and laminated design, these motors have excellent commutation properties with or without thyristor duty
- Standard range frame sizes are up to IEC250
- DC supply voltage range from 12-440V
- Protection ratings are available from IP44 to IP68.

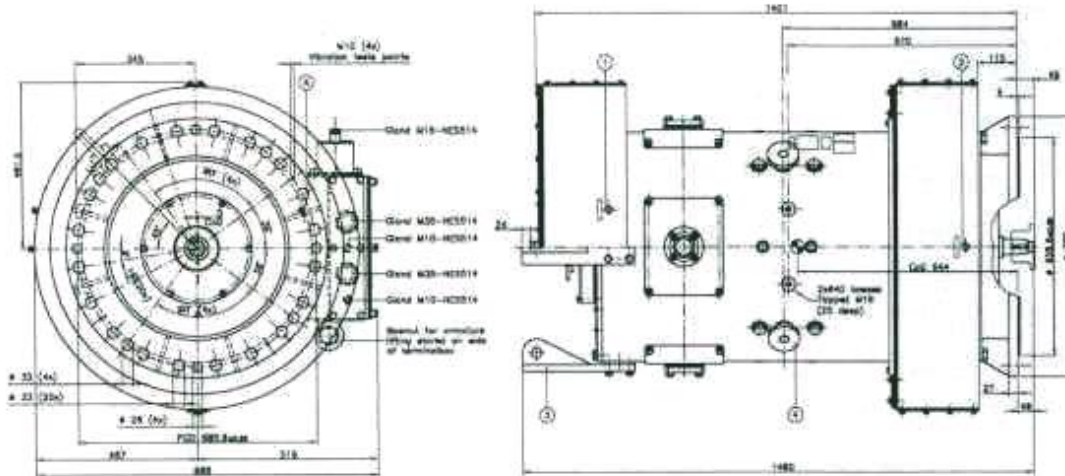
Type 77 standard DC motor



Shock Protected DC Motors Type 90

- Incorporates shock protection and fabricated steel design
- Supply voltage range from 210-720V dc
- Frame sizes up to IEC355, typically in mounting orientation V1
- Optional facilities include space heaters, in-situ armature balancing and a full grease relief system.

Type 90 shock protected DC motor



Brakes for Zero Movement

Most Astrosyn DC motors can be fitted with electromagnetic brakes for those applications where it is essential that no rotation occurs when the motor is not activated. Prime examples of this requirement are winch and elevator drives. When fitted to our motors, the brake option can also be configured with a manual override for emergency operation.

Customisation

Almost any individual need can be met through a wide range of options and special designs, including...

- Special mounting configurations, flanges and shafts
- Custom insulation for high performance
- Non standard duty ratings
- Thermistors and space heaters



Test Facilities

Our extensive factory-based facilities permit computer controlled testing to be carried out on the electrical performance of our motors under both no-load and load conditions. Full spectral analysis of the noise and vibration performance ensures compliance with the specifications.

A specially constructed metal-free laboratory is used for testing low magnetic strayfield motors. In addition, nearby facilities are used as required for comprehensive shock testing and EMC emission measurements.

Motor Refurbishment & Repair

Astrosyn offers a comprehensive repair service for special DC motors of our own manufacture and for those originally supplied by other specialist companies. We can quote for the following steps in the repair process.

Stripdown & Survey



- Initial inspections (visual, mechanical and electrical).
- External cleaning.
- No-load testing.
- Disassembly.
- Internal cleaning
- Inspection of subassemblies and parts.
- Measurement of shaft and housing fits.
- Report findings.



Basic Refurbishment

- Reclaiming of bearing fits shaft and flanges)
- Replacement of bearings.
- Assembly.
- Trim balancing
- No-load testing.
- Airborne noise measurements to NES847.
- Structure borne noise measurements to NES813.
- Touch up paint system; finishing.
- Test report
- Certificate of Conformity.

Major Repairs

- Flange machining and shaft repair.
- Removal of old windings, rewind and varnishing.
- Fitting new thermistors to NES requirements.
- Replacement of armatures.
- Skimming of rotors and stators to adjust air-gap.
- Manufacture and fitment of terminal boxes.

