



Drum Motor Information

1. Check of specification

Before installing the Drum Motor ensure the data plate information is correct to your specification.

2. Transport/Handling

For safety reason during transport and assembly of the Drum Motor from Series 138E up to 216S, a lifting rope or harness with a safe working load capability that exceeds the weight of the drum must be used. The rope or harness must be securely fixed or located onto the shafts when lifting.

3. Installation

The Drum Motor should always be mounted horizontally, parallel to the idler pulley and square to the conveyor frame. All types of brackets must be fully supported by and fastened to the conveyor frame in such a way that the shaft ends do not deform. The shaft ends below the key flats must always be supported by the brackets.

All cases of a non-horizontal installation exceeding 2 degree for Series 80S-113X and 5 degree for Series 80E-165E, must be referred to sales. For such applications in which Series 80E-165E are used please always ensure that the gear box is located downwards (gearwheels in oil) to ensure the necessary lubrication.

Drum Motors Series 80E-165E are stamped at one of the shaft ends with the work "UP". To avoid damage through belt tension, ensure that the "UP" mark is in an up position or shows in direction of the idler. For Drum Motors meant for vertical mounting, please refer to Interroll.

The mounting brackets should be fitted in such a way that they are in contact with the shoulder of the shaft flats, or in the case of solid mounting brackets, in contact with the shoulder of the round shaft. This is to ensure that the Drum Motor has no axial clearance.

Where Our standard brackets are not used, it is essential to ensure that at least 80% of the Drum Motor shaft flats are support by the mounting equipment and the clearance between the flats and the support should be not more than 0.2 – 0.4 mm. A Drum Motor with frequent reversible operations or many start/stops should be mounted without any clearance.

4. Belt width and ambient temperatures

The Drum Motor must always be fitted with a conveyor belt on min 2/3 rds of the roller width to prevent overheating. Drum Motors with less belt contact or fitted without a belt, must be referred to Interroll.

Drum motors to be installed in ambient temperatures below -25 degree and above +40 degree should be referred to Interroll. Please check ambient temperature limits in the enclosed list of oil types.

5. Belt Tension

The conveyor belt should not be over tensioned, but sufficient only to pull the belt and load without belt slip. Please refer to maximum radial loads (T1-T2) in the enclosed list. When adjusting the belt it has to be secured that the belt is uniformly tensioned at both sides of the conveyor to avoid any over tension of the belt. Refer also to tensioning guidelines in the belt catalogues.

6. Rubber lagging

Rubber lagging can in certain circumstances cause overheating of the Drum Motor. Therefore please refer to our sales who will be pleased to advise the type and maximum thickness allowed.

7. Electrical Connection

- A wiring diagram is always supplied with the Drum Motor.
- The wiring diagram is inserted in the maintenance booklet or into the terminal box.
- The connection of the Drum Motor must be performed by suitably qualified personnel in accordance with local electrical regulations. If in doubt, please refer to sales.
- Always refer to the connection instructions and ensure that the motor is connected as required for the correct mains supply. If in doubt, please refer to Interroll.

7.1. Protection for Safety

- As a safety measure, please use the earth screw present in the terminal box.
- The protective conductor has to be connected to the earth screw.
- At cable options the green/yellow wire has to be connected to the protective conductor of the main supply.

7.2 Motor Protection

- The motor **MUST** be installed together with an external motor protection switch or relay.
- The protection device must be adjusted in accordance with the present motor data and checked frequently.
- Standard motors are equipped with a thermal switch which is fitted into the winding head. This switch must be connected to protect the Drum Motor.

- This thermal switch will open if the motor overheats. For optimal thermal protection of the motor, it should be connected to a magnetic relay or contactor.
- The maximum switching current of the thermal switch is 2.5 Amps as standard. Others available upon request.
- In case of an error message the motor should not be switched on again before the failure is solved.

7.3 Drum Motor connected to a frequency Inverter

- Drum Motors can operate in connection with frequency Inverter.
- Most suitable are 4-pole and 6-pole motors. 8-pole or higher, must be referred to Sales
- Do not allow resonant frequencies in the power line to cause voltage spikes in the motor. It is possible for Frequency Inverters to create resonant frequencies in the power line between the Frequency Inverter and the motor if the power line is too long. Potential resonant frequencies may be eliminated in two ways. Either by limiting the length of the power line (some Frequency Inverter Manufacturers recommend length of less than 10m) or simply install a filter on the Frequency Inverter output (available from Frequency Inverter Manufacturers).
- To avoid radio-interference the cable from the Drum Motor to the Frequency Inverter has to be screened and properly fixed according to the European Council Directive relating to “Electromagnetic Compatibility” – EMC-89/336/EEC-

8. Single Phase Motors

- All single phase motors Series 113S, 113X, 113E, 138E, 165E and 216S should be connected to a starting capacitor and a running capacitor if 100% starting torque is required. Without a starting capacitor the starting torque is as low as 70% of the nominal torque listed in the Drum motor catalogue.
- For connection of starting capacitors, please refer to the wiring diagram. The starting capacitor must only be applied during start up and for a short period. If in doubt please contact Sales.

9. Drum Motor with Backstop

When a backstop is fitted into the Drum Motor ensure the motor is connected for the correct direction of rotation, otherwise serious damage could occur to the motor. When connected in accordance to the delivered connection diagram and arrow of rotation the motor will run in the free direction.

10. Drum Motors with Electromagnetic Brake

- When an electromagnetic brake is fitted in the Drum Motor it will be supplied with a rectifier (except for 24 V brake) unit and has to be connected according to the wiring diagrams.
- The rectifier has an input AC-voltage and an output DC-voltage.

- Control circuits must be designed so the motor and brake NEVER work against each other. To loosen the brake a reaction time for the brake of 0.4-0.6 seconds shall be observed. The brake must never be engaged when the motor is on and the motor must never be turned on when the brake is engaged.
- It is recommended that the rectifier is no more than 2m from the brake due to voltage transients.

11. Drum Motors 80S-DC, 113S-DC

DC Drum Motors operate without oil. For correct connection, please refer to the diagrams enclosed with the Drum Motor. For correct power supply, please refer to Interroll's catalogue.

12. Before Starting the Drum Motor

- Ensure the Drum Motor is wired correctly and connected to the correct supply voltage.
- Ensure that the Drum Motor and conveyor belt are free to rotate.

13. Information relating to European Council Directives

According to the European Council Directive relating to machinery, the Drum Motor must not be put into operation before the motor is correctly installed and connected to the power supply with all rotating parts protected or guarded by the Original equipment manufacture, Integrator, installer or user.

14. Maintenance

- The Drum Motors are normally maintenance free and require no specific attention during their operation. They are ready for operation immediately after connection to the power supply. If repair or maintenance is required, the Drum Motor **must be disconnected from the power supply before the terminal box can** be opened.
- Shafts must to be securely fixed to framework. To prevent a hazard or injury all rotating parts must be guarded at all times.
- Drum Motors are supplied factory filled with the correct amount of oil. For oil quantity data please refer to our table of oil types and contents.
- The first oil change should be performed after 2,000 operational hours and then approximately every 10,000 hours thereafter.
- Please note that the magnetic oil plug must be cleaned after 2,000 hours and before replacement after an oil change.

Series 80S and 113S/C

- These models are factory oil filled for life according to list of oil contents.
- No oil change or maintenance is necessary throughout its operational life, except where fitted with re-greasable seals (see below).

15. Drum Motors fitted with regreasable IP66/67 seals

- Re-greasable IP 66/67 seals must be re-greased regularly with antifriction and/or foodgrade grease in accordance with the operating conditions.
- Drives should be installed so that the grease is always visible at the labyrinth.
- If installed in aggressive environment and in continuous contact with water, salt, dust, etc. or where working under full load, it will be necessary to re-grease more frequently.
- Please note that motors with protection IP66/67 has been tested 1m under water for 30 minutes, but they are not suitable or manufactured for under-water applications.

16. Oil Characteristic

- Do not use oils containing additives which may damage the motor insulation or seals. Furthermore, graphite, molybdenum disulphide or other electrical conductive based oils must not be used as they will cause damage to the motor.

17. Service and after sales

Contact sales

Guarantee

Manufacture guarantee up to 12 months for the product from the date of invoice, against defective material and/or workmanship.

The invoice data is deemed to be the delivery date or readiness of delivery/collection of the goods.

The guarantee period is based on normal operational use of the product 8 hours-per-day unless otherwise agreed in writing.

Within the terms and validity of this guarantee all products returned to our factory will either be repaired or replaced free of charge to the customer.

We accept no liability for damage or failure of the product due to:

- a. Excessive belt tension or over-loading. Incorrect mounting or electrical connection. Failure to observe and carry out the installation and maintenance instructions.*
- b. Inadequate motor protection and/or failure to connect the thermal protector (where fitted).*
- c. Reversing a motor without the use of suitable time delay mechanism to ensure the motor has completely stopped before reverse operation.*
- d. Use of the product outside the specifications and limitations stated in the current catalogue at time of the purchase unless otherwise specified in our quotation.*

- e. *Rubber lagging or other modification applied by yourself without agreement with sales.*

The guarantee does not include:

- a. Guarantee of performance especially regarding load, power, speed noise levels or protection against adverse conditions unless specified in writing and signed by our qualified representatives.
- b. Rubber lagging or other finished surface due to normal wear and rear or abuse.
- c. Costs for removal of the product from other equipment, packing or transport costs of the product returned for repair/replacement under the terms of the guarantee.

Repairs carried out by any person other than a our qualified representatives will render the guarantee null and void unless expressly agreed in writing by Ourselves

Repairs carried out under this guarantee will not extend the original guarantee period.

Limitation of Liability:

We will not be liable to you or any third party for any consequential, incidental, special, or indirect damages (including, but not limited to, lost profits, cost for removal of the product from other equipment, packing, or transport costs of the product returned for repair/replacement) resulting from the use of the Drum Motor.

Disclaimer:

Except as expressly provided herein, We makes no repretation or warranties of any kind, whether express or implied, with respect to the Drum Motors and its component parts, and disclaims all representations and warranties of any kind, including, without limitation, warranties of merchantability and fitness for a particular purpose.

Condition	Consideration
Low ambient temperature	Refer to list of oil types/contents. Below – 25 degree consult sales, special oil, special seals
High ambient temperature	Above +40 degrees consult sales
Extremely dusty/abrasive wet/high humidity	IP66/67 sealing, special finish, i.e. stainless steel, electro-galvanizing, nickel plating, rubber lagging.
Food handling applications. High pressure water stream cleaning.	As above plus food quality lagging and finish, IP 66/67 re-greasable seals, food grade oil and seals. FDA/USDA/FSIA/FESD recognised products
Under water applications	Where specified IP66/67, the Drum Motor has been tested for 30 minutes under 1.00 meter of water. However, the motor is not intended for continuous under water performance (IEC 529). If in doubt, please consult sales.
Frequent stop/starts	Number of stop/starts for 3 phase motor at full load: 80S, 113S: 15 st/st per minute 80E, 113E: 15 st/st per minute 138E: 4 st/st per minute 165E, 216S: 3 st/st per minute For more frequent stop/starts or in connection with single phase motors please consult sales .
Indexing conveyor/decline conveyor/reversible inclined conveyor	Electro-magnetic brake for all types except for Series 80S and 113S/C.
Inclined conveyor (not reversible)	Mechanical backstop except for Series 113S/C and 113X.
Reversible conveyor	Time delay between forward and reverse. The motor must come to a complete stop before reversing. Drum Motors installed in the middle of the conveyor is recommended.
Variable speed conveyor.	Two speed motor. AC frequency controller (variable speed drive control).
Using Drum Motor without conveyor belt or with a belt covering less than 2/3 drum face width	Consult sales. Only certain powers are allowed or de-rated motors.
Using Drum Motor in vertical position or 2 degree off horizontal	Consult sales. Other oil content. Grease packed top bearing, changed motor construction.

Handling materials with oil and fat content.	Stainless or special drum lagging or surface treatment. Oil and fat resistant.
Conveyors fitted with knife edges/automatic tracking devices.	Higher power Drum Motor. Parallel shell Drum Motor.
Extremely low noise/Vibration environments	Consult sales.
Marine environment. Ship loading/unloading conveyors etc.	IP66/67 sealing (re-greasable). Stainless Steel, electrogalvanizing, nickel plating, special paint. Rubber or ceramic lagging.
High altitudes > 1000m	Consult sales
Chemical Environments	Consult sales
Underground/mining/tunnelling applications where possible dangers atmospheric conditions apply or where the Drum Motir is to be flameproof or explosion proof. ATEX directive	Drum Motors are not intrinsically safe or explosion proof. Please consult sales.
Exact speed requirements	Encoder solution, Frequency Converter. Where exact speeds are required, please consult Interroll. The given nominal motor speeds can deciate by +/- 10%. Belt Speed as specified in the catalogue and on the motor label is the calculated speed at rated diameter and full load.
Recylcling, aggressive environments	S/S shafts, re-grease able seals, extra layer of paint and special oil.