INTERROLL®

WE MAKE THE WORLD MOVE

MOTORISED PULLEYS 220 – 801

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* Short RL Not for All Power Available.

Modern Components - The Key to Efficient Bulk Handling

Today, transportation in bulk handling is on a higher status than years ago.

Therefore we steadily develop components for new bulk handling conveyors and logistical systems.

Worldwide the products of the Interroll Group play a pivotal role in helping companies meet the new challenges in bulk handling.

A large and diversified range of Motorised Pulleys, belt pulleys and rollers, offer engineers and technicians the means of solving virtually any bulk handling problem.

The best solutions always result from close relationships; Interroll's Business Unit Bulk Handling is fully committed to its customers and their needs. This is why Interroll has been able to gain the trust of a demanding clientele worldwide.

Customers are most welcome to involve Interroll engineers at an early stage of their project development – a method proven for years.

The outstanding features of Interroll products are their high quality, reliability and quiet running properties.
The development of Interroll products, are more and more focussed to fulfil the new, more sensitive, environmental awareness that is a necessity in this age.

Interroll Bulk Handling
A Business Unit of the
Interroll Worldwide Group.

www.interroll.com

MOTORISED PULLEYS

General Description

The Interroll Motorised Pulley was first produced in 1953 specifically for belt conveyor systems.
The aim was to produce an extremely compact, totally enclosed and highly efficient belt conveyor drive, resistant to dust, water, oil, grease or harmful substances – which would be quick and simple to install and would require virtually no maintenance.
These aims were achieved and today the Interroll Motorised Pulley is considered to be one of the most reliable and effective belt conveyor drives available throughout the world.

The Motorised Pulley is in simplistic terms a highly efficient geared motor drive, which is totally enclosed in a steel cylindrical tube, referred to as the shell".
The shell, usually crowned to ensure central belt tracking, is fitted with end housings incorporating precision bearings and oils seals and it rotates on a pair of shafts.
The motor stator is fixed to the shafts and the motor wires passes through one end of the shafts, eliminating the need for slip rings and brushes.

The squirrel cage induction motor, manufactured in steel laminate, is machined concentric to high tolerances and designed to give 200% starting torque.

The rotor pinion is coupled directly to the gearbox. The gearbox transmits the drive directly to the shell end housing through a geared rim and provides high efficiency from motor to drum face with very little frictional losses.
The Motorised Pulley is oil filled, which acts as both a lubricant and a coolant whereby the heat is dissipated through the shell and conveyor belt.

The Interroll Motorised Pulley is supplied as standard with:

- Machined mild steel crowned shell.
- Electric motor manufactured in accordance with IEC 34-1 (EN60034-1), (VDE 0530).
- Class F insulation according to IEC 34-1 (EN60034-1), (VDE 0530).
- Most international voltages.
- Standard voltages supplied with ±10% tolerance in accordance with IEC 38.
- Factory oil filled and tested.
- Degree of protection IP66/67 (EN60034-1).

Interroll Motorised Pulleys are manufactured according to the Council Directives of the European Communities.
The CE-marking is according to Directive 73/23/EEC relating to electrical equipment and according to Directive 89/336EEC relating to electrical magnetic compatibility.

Features and Benefits of Interroll Motorised Pulleys

Purpose-built design
The Interroll Motorised Pulley has been specifically designed for belt conveyors.

Totally enclosed
The motor, gearbox and bearings are totally enclosed and sealed inside a steel shell; therefore they are unlikely to fail due to harmful environmental conditions such as water, dust, grit, chemicals, grease, oil, etc.

Space saving design
Because the drive unit and the bearings are mounted inside the Motorised Pulley shell, it takes up much less room than a conventional drive. No need for costly extras like chains, v-belts, couplings, bearings, support structure and special guarding.

Safety
The Interroll Motorised Pulley is probably one of the safest drives available because the motor is completely enclosed and the external shafts are always stationary. The only moving external parts are the Motorised Pulley shell.

Low purchasing and installation cost
The Interroll Motorised Pulley is quite often less expensive than a conventional drive because it has fewer parts, which reduces conveyor design and purchasing costs. It is also much quicker and easier to install – certainly less than a quarter of the time needed to fit an exposed system.

Low maintenance cost
The end user also benefits from the Interroll Motorised Pulley, because it requires no maintenance other than the recommended oil change every 10.000 hours. In other words, there are almost 5 years between oil changes based on an 8-hour/day 5-day working week.

Efficiency
The Interroll Motorised Pulley usually has a much higher efficiency from electrical motor to shell (pulley face) than conventional drives, because it has fewer frictional losses, and therefore efficiencies of up to 97% can be achieved.

Cleanliness
Because the Interroll Motorised Pulley is totally enclosed, it cannot contaminate any conveying materials such as electrical components; plastics and other materials that must be kept perfectly clean durin.

Aesthetic appearance
If installed correctly the Interroll Motorised Pulley always looks good. Due to its compact size and smooth lines, quite often the Motorised Pulley is out of sight, because it is hidden within the conveyor frame.

Weight saving and distribution
Often the Interroll Motorised Pulley is lighter than conventional drives and often it is possible to reduce the cost of the conveyor structure, because the weight is evenly distributed within the conveyor frame.

Fewer parts
An Interroll Motorised Pulley consists of the drive and two fixing brackets! Conventional drives can require up to 8 or more separate components, most of which have to be purchased from different suppliers or manufactured specially.

Low noise
Thanks to the totally sealed enclosure and high quality gears the Interroll Motorised Pulley runs almost at a whisper – a very important fact in today's modern factory environments.

The Interroll Motorised Pulley – the ideal drive unit for conveyors
"Fit it and forget it"

Special Operating Conditions

- **Low ambient temperature**
  Below –25° C consult Interroll, special oil, special seals, anti-condensation heater.

- **High ambient temperature**
  Above +40° C consult Interroll.

- **Extremely dusty/abrasive, wet/high humidity**
  IP66/67 sealing system, special finish, e.g. rust-free, special coating, nickel plating, rubber lagging, flying lead option in place of terminal box.

- **Frequent start/stops**

Type	Max. no. of Start/stops
TM 220	120 per minute
TM 321 – 401	25 per minute
TM 500 – 801	10 per minute

  For more frequent start/stops please consult Interroll.

- **Indexing conveyor/decline conveyor/reversible inclined conveyor**
  Electromagnetic brake, or special shafts prepared for fitting of an external brake (TM 500 – TM 801).

- **Inclined conveyor (not reversible)**
  Mechanical backstop.

- **Reversible conveyor**
  Essential time delay between, forward and reverse. The Motorised Pulley must come to a complete stop before reversing.

- **Variable speed conveyor**
  Two speed motor. AC frequency controller (variable speed drive control).

- **Using a Motorised Pulley without conveyor belt or with a belt covering less than 2/3 of the pulley face width**
  Use drives only from a special range of Motorised Pulleys developed for this purpose. Do not use standard belt drives unless accepted by Interroll. Insulation class H, extra oil. Connect thermal protector.

- **Motorised Pulleys mounted more than +/- 5 degrees non-horizontally**
  Special execution! Please consult Interroll. Extra oil, grease packed top bearing and electrical outlet at the opposite end required.

- **Impact load**
  Oversize the Motorised Pulley. Please consult Interroll.

- **Handling materials with oil, grease and fat content**
  Stainless steel version TS 9/TS 10 or semi-stainless steel version TS 11/TS 12. Food quality lagging being oil, fat and grease resistant.

- **High powered Motorised Pulleys – low starting current required**
  Star/delta starter. Soft start electronic starter.

- **Conveyor fitted with knife edges/ automatic tracking devices**
  Parallel shell belt drive. Higher powered motor.

- **Extremely low noise/vibration requirements**
  Balanced shell. Anti vibration mounting brackets etc. Please contact Interroll for special solution.

- **Marine environment. Ship loading/ unloading conveyors etc.**
  IP66/67 sealing system (regreasable). Special finish e.g. rust-free, electro-galvanising, nickel plating, epoxy. Stainless steel external bolts, rubber or ceramic lagging.

- **High altitude > 1000 m**
  Please consult Interroll.

- **Chemical environments**
  Please consult Interroll.

- **Underground mining/tunnelling applications where possible dangerous atmospheric conditions apply or where the Motorised Pulley is to be flame proof or intrinsically safe**
  Interroll Motorised Pulleys are not intrinsically safe or explosion proof. Please consult Interroll.

- **Critical speed requirements**
  Normal speeds can deviate by ±10%. Where exact speeds are required, please consult Interroll.

- **Recycling, aggressive environments**
  Stainless steel shafts, regreasable labyrinth seals, special painting and special oil.

- **Metal separators and metal detectors**
  Special execution as to oil, bearings, electrical connection and built-in position.

Power Calculation

Power calculation for Motorised Pulleys in bulk handling
In Order to calculate the necessary power required the following formula may be used:

$$P = \frac{C \times f \times L}{367} (3.6 \times G_m \times v + Q_t) + \frac{Q_t \times H}{367}$$

P = Necessary power [kW]
C = Frictional resistance in belts, bearings etc. (Fig.I)
f = Friction in conveyor pulleys is fixed to 0.025 – 0.030.
L = Centre- to centre distance between drum motor and idler pulley [m]
G_m = Weight of belt and rotating parts in conveyor pulleys as well as idler pulley (Fig.II) [kg/m]
v = Velocity [m/sec.]
Q_t = Capacity of the belt [t/h]
H = Lift [m]
B = Belt width [mm]

The power calculation does not include the extra power required for belt scrapers, ploughs, cleaners or receiving hoppers.

Fig. I Factor C

L [m]	**3**	**4**	**5**	**6**	**8**	**9**	**10**
C	**9.0**	**7.6**	**6.6**	**5.9**	**5.1**	**4.5**	**4.1**
L [m]	**16**	**20**	**25**	**32**	**40**	**50**	**63**
C	**3.6**	**3.2**	**2,9**	**2,6**	**2.4**	**2.2**	**2.0**
L [m]	**80**	**100**	**125**	**160**	**200**	**250**	**300**
C	**1.9**	**1.8**	**1.65**	**1.59**	**1.47**	**1.38**	**1.33**
L [m]	**400**	**500**	**600**	**700**	**800**	**900**	**1000**
C	**1.25**	**1.20**	**1.17**	**1.13**	**1.11**	**1.08**	**1.05**

Fig. II G_m [kg/m]

B [mm]	**500**	**600**	**650**	**800**	**1000**	**1200**	**1400**	**1600**	**1800**
G_m for standard conveyor	**17**	**26**	**28**	**40**	**56**	**70**	**85**	**105**	**120**
G_m for heavy and profiled belts	**20**	**30**	**32**	**45**	**62,5**	**80**	**110**	**135**	**160**

After choice of drum motor power, the required belt pull and power consumption may be calculated as shown below:

Required Torque

$$= 500 \times \frac{D \times P}{v}$$

M = torque [Nm]
D = diameter [m]
v = speed [m/sec]
P = power [kW]

Power Consumption (accurate to ± 20%)

$$I = 0.9 \times \frac{P \times 1000}{U}$$

I = power consumption [A]
P = power [kW]
U = Voltage [V]

Required Belt Pull

$$F = \frac{1000 \times P}{v}$$

F = belt pull [N]
v = speed [m/sec]
P = power [kW]

For more information please contact Interroll.

Installation and Maintenance

Before starting the Motorised Pulley

1. Check of the specification

Before installing the Motorised Pulley please ensure the data plate information is correct to your specification.

2. Transport/Handling

For safety reasons during transport and assembly of the drum motor a lifting rope according to the max. Weight of the drum has to be used. The weight of the drum is stamped on the data plate. The rope has to be fixed on the shaft ends. With drum motor types TM 500 – TM 801, a steel rope or chain should be fixed to the eye-bolts, which are located on the mounting brackets.

3. Installation

- The Interroll Motorised Pulley should always be mounted horizontally, parallel to 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 must always be fully supported by the brackets and where keys are fitted, the key must be securely fixed.
- In case of a non-horizontal installation, of more than +/-5 degree, please consult Interroll.
- The shaft of Motorised Pulley types TM 220, TM 321, TM 323, TM 400 & TM 401 are stamped with the word "UP". During installation ensure that the "UP" mark does not appear below the horizontal.
  Serious damage could occur if this instruction is not followed.
- The instruction does not apply to types TM 500 – TM 801.
- For drum motor types TM 500 – TM 801 please ensure that the drum motor is positioned in such a way that the cable entry of the terminal box is always located downwards and the mounting brackets are mounted vertically.

- 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.
- The keys must be checked regularly and fixed if necessary.
- Where Interroll brackets are not used, it is essential to ensure that at least 80% of the drum motor shaft flats are supported 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 starts / stops should be assembled without any clearance.
- The drum motor must always be fitted with a conveyor belt to prevent overheating. Drum motors fitted without a belt must be referred to Interroll.
- Drum motors to be installed in ambient temperatures below –25° C and above +40° C consult Interroll.
  Please check ambient temperature limits in the enclosed list of oil contents.

4. Belt Tension

- The conveyor belt should not be over-tensioned, but sufficiently only to pull the belt and load without belt slip.
  For maximum belt tension refer to the included list of maximum radial loads.
- When the belt needs to be adjusted it has to be secured so that it will be uniformly tensioned at both sides of the conveyor to avoid any over-tensioning of the belt.

5. Rubber lagging

- Rubber lagging is used to increase the coefficient of friction between the belt and pulley.
- Rubber lagging can, in certain circumstances, cause overheating of the Motorised Pulley. Therefore please refer to Interroll who will be pleased to advise the type and maximum thickness allowed.

6. Surface coating

- The drum motor types TM 400, TM 401 and TM 500 – TM 801 are supplied with a salt water resistant primary paint coat of 60 microns. For aggressive environmental conditions the drum motor should be painted to a thickness of 120 microns.
- In this case it is essential to ensure that no paint material can enter the gap between the shaft and the end housing to prevent any possible damage to the shaft sealing.
- Drum motor types TM 220, TM 321 & TM 323 are supplied with high resistant powder coated end housings and the shells are treated with anti-rust wax.

7. Electrical Connection

- A wiring diagram is always supplied with each Interroll Motorised Pulley.
- The wiring diagram is inserted in the booklet and into the terminal box.
- Connection of power to the Motorised Pulley must be performed by a specialist in accordance with electrical regulations.
- Interroll standard Motorised Pulleys are delivered with clockwise rotation when viewed from the terminal box end of the Motorised Pulley.
- Always refer to the connection instructions and ensure that the motor is connected as required to the correct mains supply.

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 a motor protection switch or relay. The protection device must be adjusted in accordance with the present motor data and checked frequently.
- The standard motors are equipped with a thermal protector, which is fitted into the winding head.
- This thermal protector will open if the motor overheats. For higher thermal protection of the motor it should be connected to a relay or contactor.
- The maximum switching current of the thermal protector is 2.5 Amps.
- In case of an error message the motor should not be switched on again before the failure is solved.

7.3. Motorised Pulleys connected to a frequency converter

- In general Interroll Motorised Pulleys can operate in connection with frequency converters.
- Most suitable are 4-pole motors.
- If an Interroll Motorised Pulley with cable option is connected to a frequency converter, the cable has to be covered with a screening tube/sleeve according to the European Council Directive relating to

" Electro-magnetic compatibility "
- EMC-89/336/EEC -

7.4. Operating condition

- Interroll Motorised Pulleys are designed for direct starting. Please be aware that when connecting to a soft start device, the power of the motor during start will be drastically reduced and could cause overheating of the motor. In connection with a soft start device the start of the motor under full load will be very slow and can cause overheating of the motor winding.

7.5. Single-phase motors

- Single-phase motors 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 reduced to 70% of the nominal torque listed in the Interroll Joki catalogue.
- Interroll single-phase motors are delivered with running capacitors; the starting capacitors are on request.
- For connection instructions of starting capacitors, please consult Interroll.

7.6. Motorised Pulleys with backstop

- When a backstop is fitted to the drum motor ensure that 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 the motor will run in the free direction. Motorised Pulleys with backstop are signed for the free direction.
- Motorised Pulleys with backstop are delivered with rotation arrow.

7.7. Motorised Pulleys with electromagnetic brake

- Where an electromagnetic brake is fitted to the Motorised Pulley it will be supplied with a rectifier and has to be connected according to instructions.
- The rectifier has an input AC - voltage and an output DC - voltage. It has to be connected according to the attached wiring diagram.
- The electromagnetic brake operates with a direct voltage (DC). Therefore it must not be connected to an AC-voltage supply.
- The brake is a spring-applied brake, which means it has to be energised to be released.
- The brake has to be switched on at the same time with the motor to avoid the motor running against the de-energised brake.

8. Before starting the Motorised Pulley

- Ensure the Motorised Pulley is wired correctly and that the Joki is connected to the correct supply voltage.
- Ensure that the oil is present in the Motorised Pulley.
- Ensure that the Motorised Pulley and conveyor belt are free to rotate.
- Ensure that the belt tension is sufficient to transmit belt pull, avoid over-tension.

9. Information relating to European Council Directives

According to European Council Directive relating to machinery, the Motorised Pulley must not be put into operation before the Motorised Pulley is correctly installed, correctly connected to the power supply and protected against rotating parts by the equipment manufacturer.

10. Maintenance

- The Motorised Pulleys 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 has to be disconnected from the supply before the terminal box can be opened.
- During a test run, the shaft ends have to be fixed to the frame properly. The rotating drum shell has to be protected so that it is not a hazard to an exposed person.
- The supplied drum motors are factory oil filled according to the enclosed list of oil contents.
- The first oil check should be done after a break-in period of 2.000 hours. In a case of too much wear, the oil should be changed. If there is normal wear the first oil change should be performed after 10.000 operational hours and then approximately every 10.000 hours.
  Please note that the oil plug with magnet must be cleaned before replacement after an oil change.
- The oil filler/drain plugs are located on the drum end housing and marked with a red dot. When refilling with oil, please refer to the enclosed list of oil contents shown in litres or to the motor data plate.

11. Motorised Pulley fitted with regreasable IP66/67 sealing system

- Regreasable IP66/67 seals must be regreased regularly with anti-friction bearing grease in accordance with the operating conditions.
- It has to be secured that grease is always seen at the labyrinth gap.
- If installed in aggressive environments and in continuous contact with water, salt, dust etc. or where working under constant full load, it will be necessary to re-grease more frequently.

- If the Motorised Pulley is cleaned by means of special chemical detergents, high-pressure water or steam, re-greasing should take place more frequently according to the operating conditions.
- Please note that motors with protection IP66/67 have been tested 1 metre under water for 30 minutes but they are not suitable for under-water applications.

12. Oil Characteristic

Do not use oil-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. Also use the viscosity as mentioned on the data plate otherwise gear failure could occur.

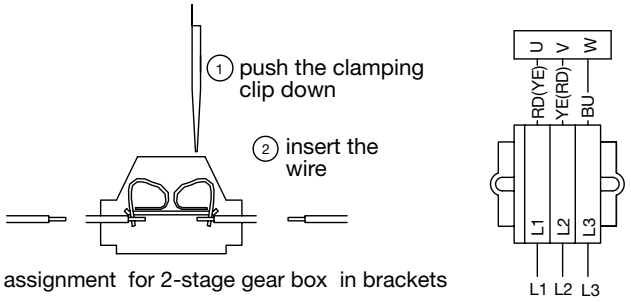
13. Service and After Sales

Always contact your local Interroll service centre or official distributor.

Connection Diagrams for Motorised Pulleys TM 220, TM 321 & TM 323

up to 4.0 kW

01



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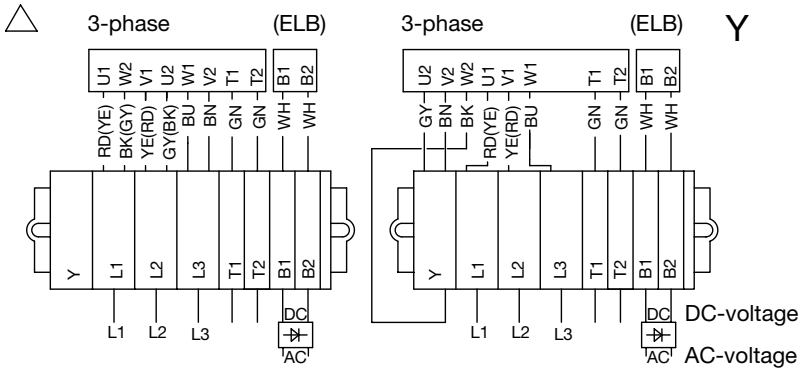

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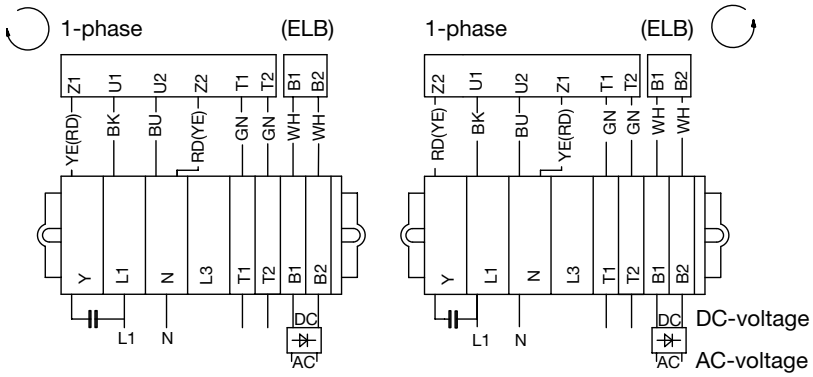

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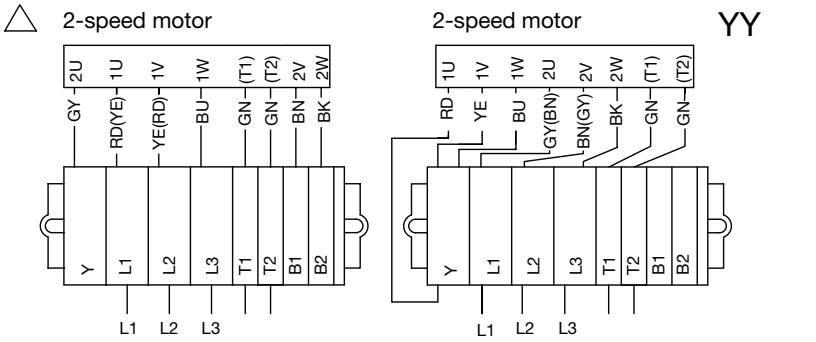

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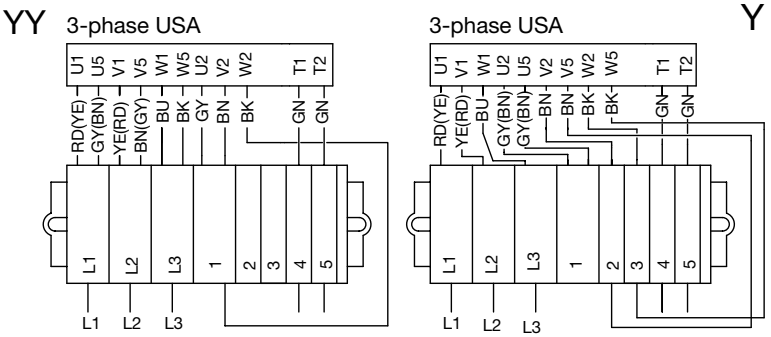
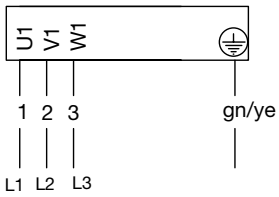


Connection Diagrams for Interroll Motorised Pulleys

Cable Connection

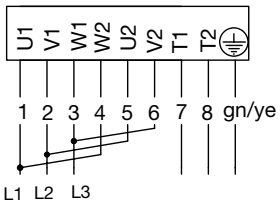
01

3-phase

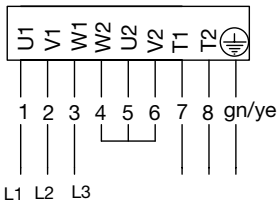


02

△ 3-phase

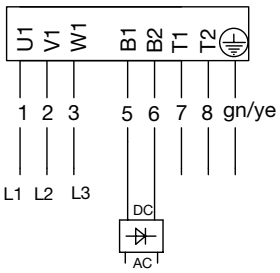


Y 3-phase



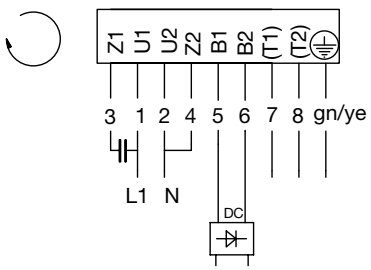
03

3-phase with ELB

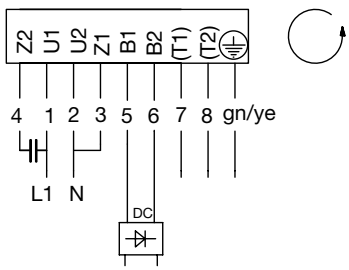


04

1-phase (ELB)

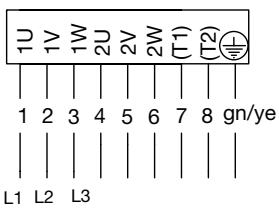


1-phase (ELB)

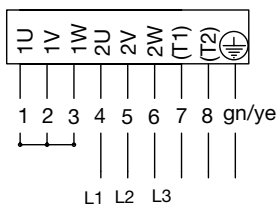


05

△ 2-speed motor
low speed



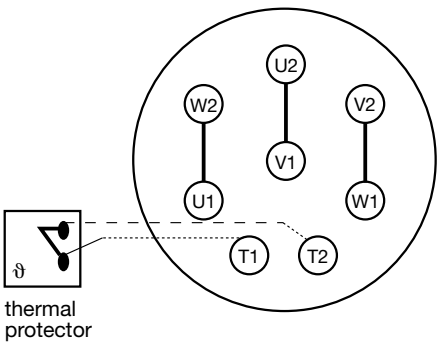
2-speed motor
high speed YY



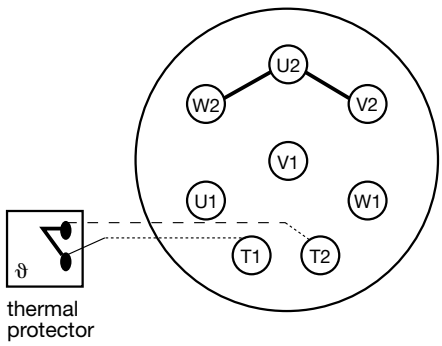
Connection Diagrams for Motorised Interroll Pulleys TM 323 - TM 801

5.5 kW to 132.0 kW

delta connection

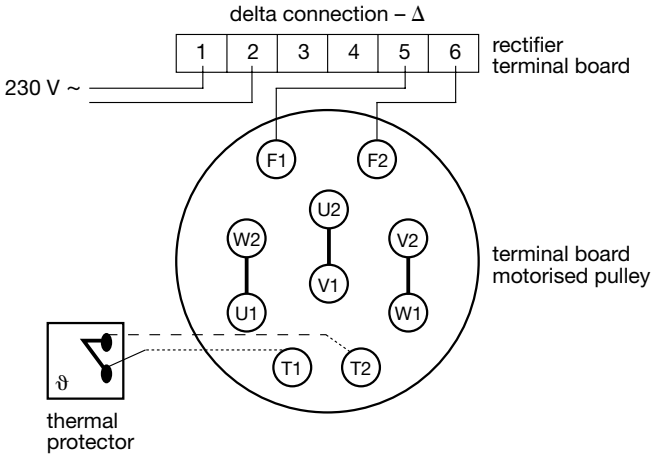


star connection – Y

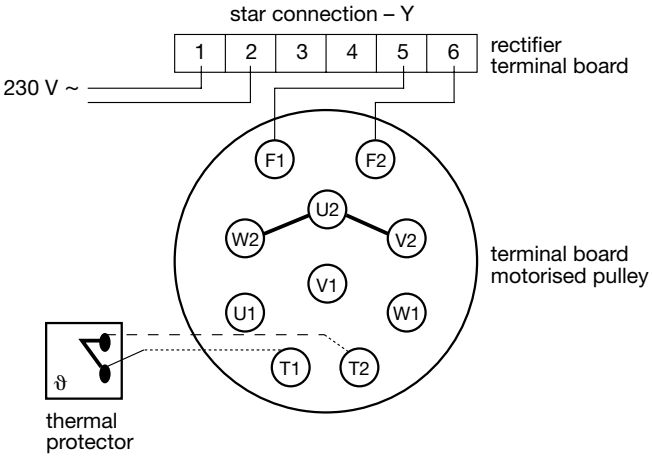


Electromagnetic Brake Execution

delta connection – Δ

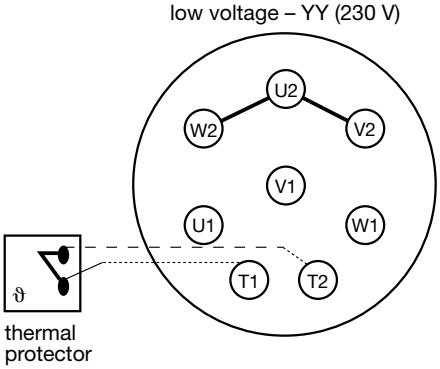


star connection – Y

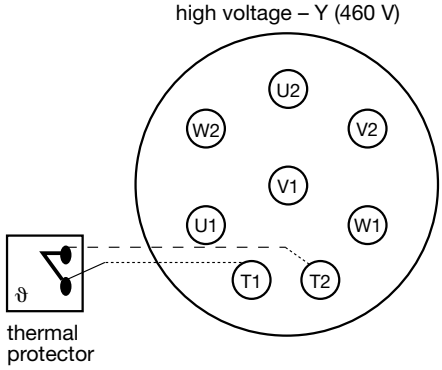


USA - Execution

low voltage – YY (230 V)



high voltage – Y (460 V)



Interroll After Sales

International security with national service

Interroll is represented in more than 40 countries with established after sales service facilities throughout the world. These facilities provide fast delivery of efficient sales and repair service using skilled Interroll trained fitters and an emergency stock.

Interroll Motorised Pulley after sales service offers the following benefits:

- Short delivery time of finished Motorised Pulleys.
- Fast efficient repair sales and replace service.
- Communication network of stock inventory between Interroll companies worldwide.
- Technical backup from your local Interroll partner.
- Interroll's main manufacturing plants are working with, or have been certified to quality standard ISO 9001 or ISO 9002/BS5750 and where necessary, have CSA approval or UL recognition.
- After assembly, all Motorised Pulleys are fully tested before leaving our factories.

Important Information

Belt pull and torque
The belt pull and torque values given in this catalogue are based on the motor reaching its normal nominal operating condition like speed, temperature etc.

Belt speed
The exact belt speed can deviate by ±10% of the nominal belt speed shown. Exact information regarding the actual belt speed for special applications are available on request. Please note that a rubber lagged drum motor will have a higher speed than quoted in the catalogue due to the larger diameter. The exact belt speed of single-phase motors can deviate by plus 10% to minus 20%.

Motorised Pulleys with mechanical backstop
Motorised Pulleys fitted with mechanical backstops are used for inclined belt conveyors to prevent run-back of the belt should power failure occur. The backstop is built into the drum motor and is mounted on the rotor shaft. The mechanical backstop works in one direction only and, unless otherwise stated, supplied from the factory with a clockwise rotation when viewed from the terminal box end of the pulley.

Motorised Pulleys with electromagnetic brake
Motorised Pulleys with electromagnetic brakes are intended for use on conveyors where automatic braking is required in one, or both directions. The electromagnetic brake is a spring, applied brake and it is connected to the rotor shaft.
In a de-energised condition – power switched off – the springs press against
- An armature disc,
- A friction lined disc and
- the brake flange of the motor

And the rectifier and the brake coil are both disconnected. When power is switched on, a magnetic field is built up. The armature disc is attracted (pulled) against the springs resulting in no friction between
- the armature disc,
- the friction line disc and
- the brake flange.

The brake is now released and the rotor shaft is then able to rotate freely.
A rectifier must be used.

Motorised Pulleys with special manufacture

Motorised Pulleys with special power; diameter, widths, speeds, voltages or frequencies deviating from the standard programme can be supplied at extra cost and perhaps longer delivery time.
The stated minimum widths in the range cannot be reduced.

Thermal protector

The thermal protector is a heat sensitive switch built into the motor windings which disconnects the control power should the motor overheat. All three phase motors are supplied with a thermal protector as standard. The thermal protector must be connected in series with a magnetic coil/relay device and contactor. The thermal protector will reset automatically when the motor winding temperature returns to a safe level. The thermal protector is based on a bi-metallic switch. The permissible current is 2.5 amps and the voltage is 230 V.

Note:

When the thermal protector switch or other safety devices are activated, check for the cause before restarting the system. Frequent activation of the system can cause burnout of the windings. In such a case please contact Interroll.

Motorised Pulleys with rubber lagging

Plain or profiled lagging in normal black or white food quality is available. The lagging is normally cold vulcanised (glued) but can be hot vulcanised for high power/high temperature applications and for drum motors with insulation class "H".

Note:

All Motorised Pulley specifications are given according to the standard pulley without rubber lagging. In cases where the Motorised Pulley is to be rubber lagged by the user it is necessary to refer to INTERROLL in order to avoid heat dissipation problems and to keep its guarantee. Please also note the speed change when using rubber lagged pulleys.

Partial rubber lagging

To enable us to deliver lagged, Motorised Pulleys with relatively high powers, we offer partial rubber lagging. For this we use a specially developed shell that has a thicker central third. The outer two thirds are lagged and are flush with the central third, which remains unlagged and is in constant contact with the belt offering similar heat dissipation characteristics to standard Motorised Pulleys.

Single-phase execution

Single-phase execution windings are manufactured with a starter winding to overcome high starting torque.
The motor must therefore operate with a starting capacitor, a running capacitor and a relay, which automatically disconnects the starter winding, and the starting capacitor once the rated torque is reached.

Without a starting capacitor, the starting torque is about 70% of the nominal torque listed in the catalogue. Single-phase motors are delivered with running capacitor only. Starting capacitors are on request.

Certificates of approval/recognition

Motorised Pulleys can be supplied where required in accordance with CSA standard specification.

Rust-free specification for TM 220/TM 321/TM 323

TS 9
- Stainless steel shell.
- Stainless steel shafts.
- Heavy-duty industrial nickel-plated cast iron bearing housings.
- Stainless steel oil plugs with magnet.
- Stainless steel regreasable labyrinth seals with grease nipples.
- Stainless steel exterior bolts.
- Protection IP66/67.
- Salt water resistant powder coated aluminium terminal box.

TS 10
- As TS 9, but without regreasable labyrinth seals.

Semi-rust-free specification for TM 220 – TM 801

TS 11
TM 220/TM/TM 321/TM 323
- Mild steel shell treated with anti-rust wax.
- Stainless steel shafts.
- Cast iron nickel-plated bearing housing with labyrinth groove.
- Stainless steel labyrinth seals with grease nipples.
- Zinc or nickel-plated exterior bolts.
- Zinc or nickel-plated oil plugs with magnet.
- Protection IP66/67.
- Powder coated terminal box.

TS 11
TM 400/TM 401/TM 500
- Painted mild steel shell - minimum layer thickness of 120 µm
- Stainless steel shafts
- Painted cast iron bearing housing
- Nickel-plated cast iron bearing housings (TM 320; TM 400; TM 401).
- Stainless steel bearing covers and covers with labyrinth groove.
- Stainless steel or nickel-plated oil plugs with magnet.
- Stainless steel or nickel-plated exterior bolts.
- Protection IP66/67.
- Powder coated terminal box (TM 400).
- Painted terminal box - min. layer thickness 120 µm (TM 401).

TS 11
TM 501 – TM 801
- Painted mild steel shell - min. layer thickness of 120 µm.
- Painted cast iron covers - min. layer thickness of 120 µm.
- Stainless steel covers with labyrinth groove.
- Nitrided shaft sleeves.
- Stainless steel or nickel-plated oil plugs with magnet.
- Stainless steel or nickel-plated exterior bolts.
- Nickel-plated mounting brackets with labyrinth groove.
- Protection IP66/67.
- Painted terminal box - min. layer thickness 120 µm.

TS 12
TM 400/TM 401/TM 500
- As TS 11, but without regreasable seals.
- Covers – standard.

TS 11
TM 501 – TM 801
- As TS 11, but without regreasable seals.
- Covers – standard.

Note: For food application, food grade oil is available on request.

Please specify required TS-number when ordering!


Kässbohrer

Interroll Motorised Pulley Series 6700 Ø 216 mm TM 220

Specification of standard Motorised Pulley

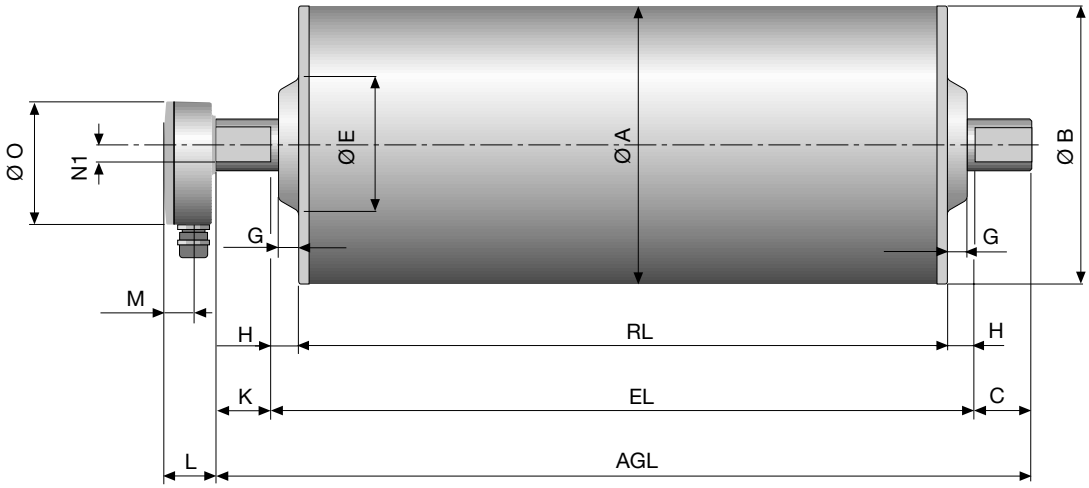
- Crowned mild steel shell treated with anti-rust wax
- Powder coated cast iron bearing housings
- Mild steel shaft treated with ant-rust wax
- Protection to IP66/67
- Powder coated aluminium terminal box
- Motor winding insulation class F
- 3-phase induction motor
- Thermal protector
- Magnetic oil plug
- Dynamically balanced rotor
- Factory oil filled for 10.000 operational hours – refer to installation and maintenance chapter
- Maximum standard shell width 2000 mm

Please note:

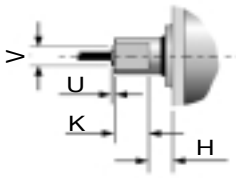
- Single phase motors, special speeds and special pulley widths available on request
- Straight or elbow connector available on request
- The high speed of 2-pole motors can cause higher noise levels and are therefore not recommended in noise sensitive areas
- For regreasable seals refer to page 31
- For brackets refer to page 74
- For environmental condition and important information refer to page 8/9
- For rust-free and semi rust-free option TS 9–12 refer to page 23

Series 6700
Ø 216 mm
TM 220

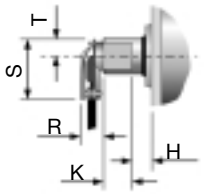
Standard Motorised Pulley TM 220

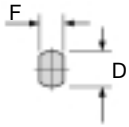


Straight connector



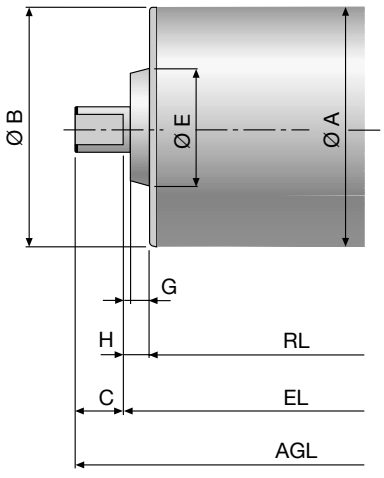
Elbow connector





	Motorised Pulley with terminal box													Straight connector		Elbow connector		
Type	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	K mm	L mm	M mm	N1 mm	O mm	U mm	V mm	R mm	S mm	T mm
TM 220	216	214.5	43.5	40	100	30	15.5	21.5	41.5	41	24	14	95	4	27	20	48	12
	Idler Pulley																	
UT 220	216	214.5	43.5	40	100	30	15.5	21.5										

Idler Pulley UT 220



Series 6700
Ø 216 mm
TM 220

	Motor		Nominal belt speed at full load 50 Hz	Torque	Belt pull	Max. radial load $T_1 + T_2$	Weight** in kg for standard width RL in mm								
	Power	No. of poles													
	kW/HP		m/sec	Nm	N	N	400	450	500	550	600	650	700	750	800	per 50 mm up to 1500
Standard Motorised Pulley	0.55/ 0.75	8	0.13	452	4205	25000*	–	–	71	74	77	80	83	86	89	3 kg
			0.16	353	3284		–	–								
			0.20	282	2623	11500	–	55	58	61	64	67	70	73	76	3 kg
			0.25	226	2102		–									
			0.32	176	1637		–									
			0.40	141	1312		–									
			0.50	113	1051		–									
			0.63	89	828		–									
			0.80	70	651		–									
			1.00	56	521		–									
			1.25	45	419		–									
	0.75/ 1.10	8	0.13	592	5510	25000*	–	–	71	74	77	80	83	86	89	3 kg
			0.16	481	4476		–	–								
			0.20	385	3581	11500	–	55	58	61	64	67	70	73	76	3 kg
			0,25	307	2856		–									
			0.32	239	2223		–									
			0.40	191	1777		–									
			0.50	153	1423		–									
			0.63	122	1135		–									
			0.80	96	893		–									
			1.00	77	716		–									
			1.25	62	577		–									
	1.10/ 1.50	6	0.16	705	6558	25000*	–	–	68	71	74	77	80	83	86	3 kg
			0.20	564	5246		–	–								
		4	0.25	452	4205		–	61	64	67	70	73	76	79	82	
			0.32	353	3284		–									
		4	0.40	282	2623	11500	46	49	52	55	58	61	64	67	70	3 kg
			0.50	226	2102											
			0.63	178	1656											
			0.80	141	1312											
			1.00	112	1042											
			1.25	90	837											
			1.60	70	651											
			2.00	56	521											
			2.50	45	419											
	1.50/ 2.00	4	0.25	616	5730	25000*	–	61	65	68	71	74	77	80	83	3 kg
			0.32	481	4476		–									
			0.40	385	3581	11500	48	51	54	57	60	63	66	69	72	3 kg
			0.50	307	2856											
			0.63	243	2260											
			0.80	191	1777											
			1.00	153	1423											
			1.25	123	1144											
			1.60	96	893											
			2.00	77	716											
			2.50	62	572											

* 3-stage gearbox
** Weights above 1500 mm RL on request

Series 6700
Ø 216 mm
TM 220

	Motor		Nominal belt speed at full load 50 Hz	Torque	Belt pull	Max. radial load $T_1 + T_2$	Weight** in kg for standard width RL in mm								
	Power	No. of poles													
	kW/HP		m/sec	Nm	N	N	400	450	500	550	600	650	700	750	800	per 50 mm up to 1500
Standard Motorised Pulley	2.20/ 3.00	4	0.32	705	6558	25000*	–	–	68	72	75	78	81	84	87	3 kg
			0.40	564	5246		–	–								
			0.50	451	4195	11500	–	55	58	61	64	67	70	73	76	3 kg
			0.63	358	3330		–									
			0.80	282	2623		–									
			1.00	226	2102		–									
			1.25	180	1674		–									
			1.60	140	1302		–									
			2.00	115	1070		–									
			2.50	90	837		–									
	3.00/ 4.00	4	0.50	616	5730	25000*	–	–	–	74	77	80	83	86	89	3 kg
			0.63	481	4476		–	–	–							
			0.80	385	3581	11500	–	–	60	63	66	69	72	75	78	3 kg
			1.00	307	2856		–	–								
			1.25	245	2279		–	–								
			1.60	192	1786		–	–								
			2.00	154	1433		–	–								
			2.50	123	1144		–	–								
	4.00/ 5.50	2	0.63	684	6349	25000*	–	–	–	74	77	80	83	86	89	3 kg
			0.80	539	5000		–	–	–							
			1.00	431	4009	11500	–	–	60	63	66	69	72	75	78	3 kg
			1.25	345	3200		–	–								
			1.60	255	2500		–	–								
			2.00	204	2000		–	–								
			2.50	163	1600		–	–								
	Idler Pulley					11500	25	27	29	31	33	35	37	39	41	2 kg

* 3-stage gearbox
** Weights above 1500 mm RL on request

Series 6700
Ø 216 mm
TM 220 P

	Motor		Nominal belt speed at full load 50 Hz	Torque	Belt pull	Max. radial load	Weight* in kg for standard width								
	Power	No. of poles				$T_1 + T_2$	RL in mm								
	kW/HP		m/sec	Nm	N	N	400	450	500	550	600	650	700	750	800	per 50 mm up to 1500
Two Speed Motor (dual voltage connection not possible)	0.70/1.00 1.10/1.50	8 4	0.25 0.50 0.32 0.63 0.40 0.80 0.50 1.00 0.63 1.25	285 226 223 178 179 141 143 112 113 90	2651 2102 2074 1656 1665 1312 1330 1042 1051 837	11500	– – – – – – – – – –	51	56	61	66	69	72	75	78	3 kg
	0.80/1.10 1.00/1.40	4 2	0,50 1.00 0,63 1.25 0,80 1.60 1.00 2.00 1.25 2.50	163 102 130 82 102 64 82 51 65 41	1516 949 1209 763 949 595 763 474 605 381	11500	46	49	52	57	62	65	68	71	74	3 kg
	1.00/1.40 1.40/1.90	4 2	0.50 1.00 0.63 1.25 0.80 1.60 1.00 2.00 1.25 2.50	204 143 162 114 128 89 102 71 82 57	1898 1330 1507 1060 1191 828 949 660 763 530	11500	– – – – – – – – – –	52	54	57	60	63	66	69	72	3 kg
	1.50/2.00 1.90/2.60	4 2	0.50 1.00 0.63 1.25 0.80 1.60 1.00 2.00 1.25 2.50	307 194 243 155 191 121 153 97 123 78	2856 1805 2260 1442 1776 1126 1423 902 1144 726	11500	– – – – – – – – – –	– – – – – – – – – –	58	61	64	67	70	73	76	3 kg

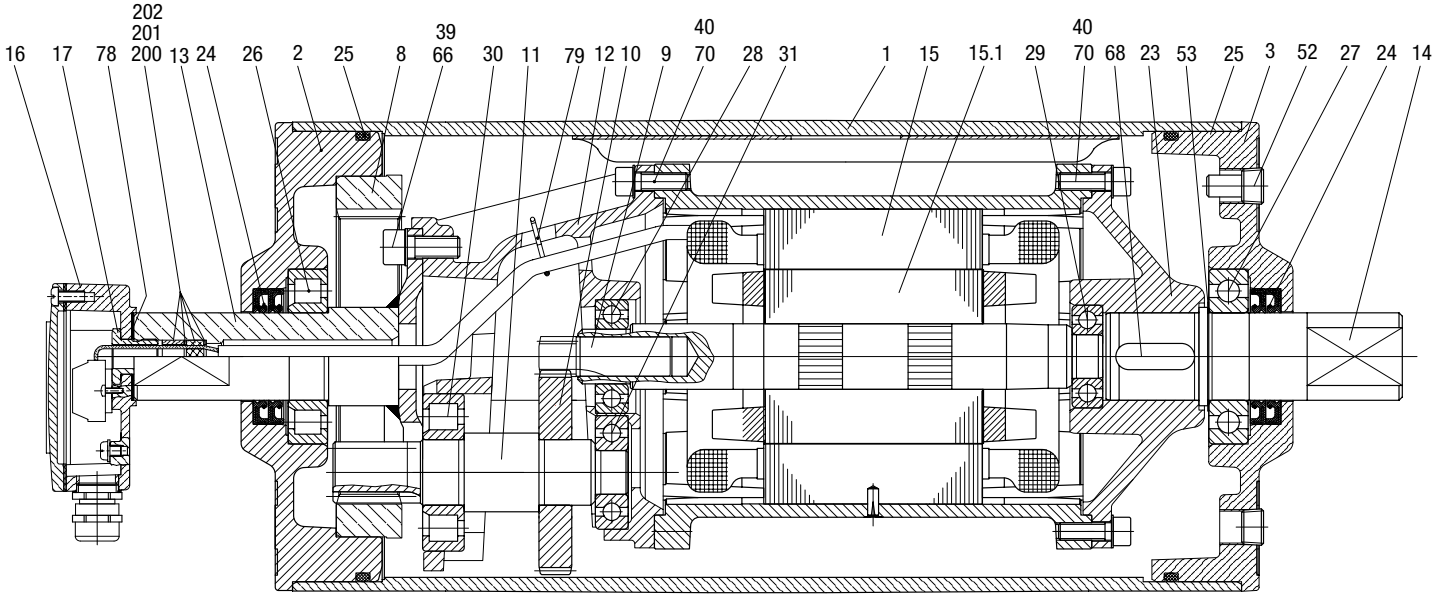
*Weights above 150 mm RL on request

Interroll
Motorised Pulley
Series 6700
Ø 216 mm
TM 220

Sectional Drawing

Pos.	Description
1	Shell
2	End housing with geared rim
3	End housing
8	Geared rim
9	Rotor pinion
10	Input wheel
11	Output pinion
12	Gearbox
13	Front shaft
14	Rear shaft
15	Stator complete
15.1	Rotor
16	Terminal box complete
17	Nipple
23	Rear flange
23.1	Rear flange for backstop
23.2	Rear flange for electromagnetic brake
24	2 Dust lip seals
25	O-ring
26	Bearing
27	Bearing
28	Bearing
29	Bearing (for backstop solution a one way bearing is used)
30	Bearing
31	Bearing

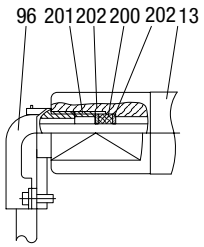
Pos.	Description
39	Hexagon socket screw
40	Hexagon socket screw
41	Hexagon socket screw
52	Magnetic oil plug
53	Distance washer
66	Waved spring washer
67	Key
70	Toothed washer
78	Gasket
79	Holding clip or plastic tie
85.1	Intermediate flange for brake assembly
91	Electromagnetic brake
93	Spring washer
94	Straight connector
95	Elbow connector
101	Key
104	Distance washer
120	Labyrinth cover
121	Fixing bolt
122	O-ring
123	Grease nipple
124	Distance washer
200	Gasket
201	Threaded nipple
202	Washer



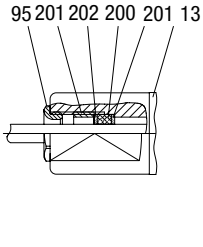
Interroll
Motorised Pulley
Series 6700
Ø 216 mm
TM 220

Sectional Drawing

Cable option

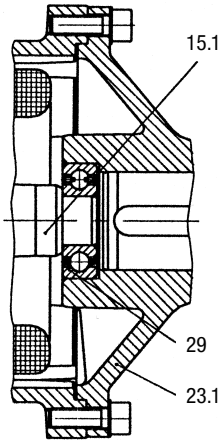


(Elbow connector)

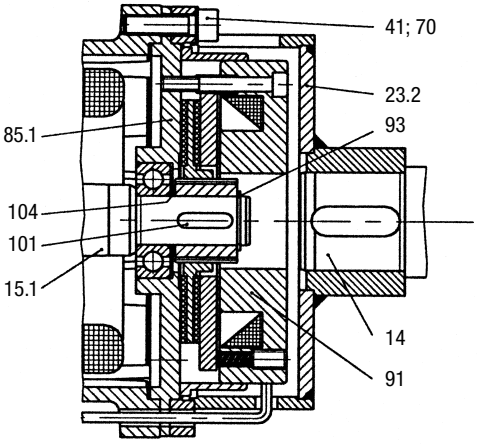


(Straight connector)

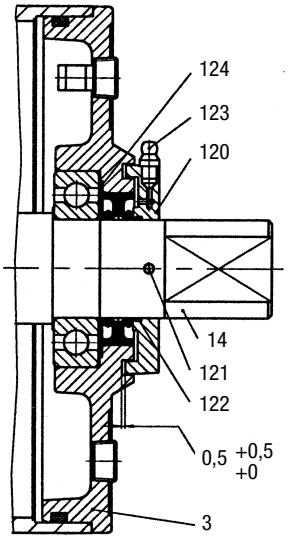
Backstop option



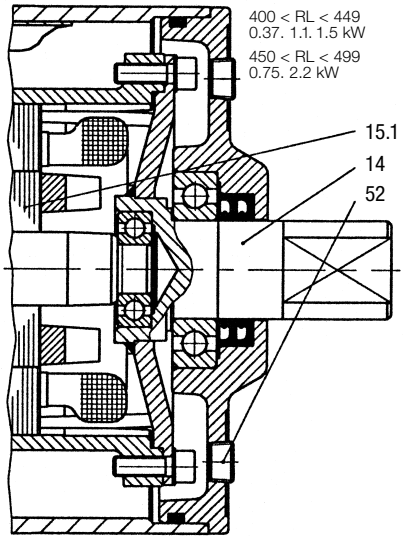
Electromagnetic brake (ELB)



Labyrinth option

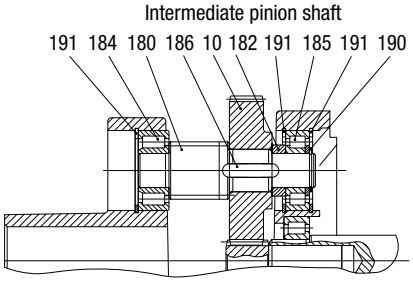


Short version



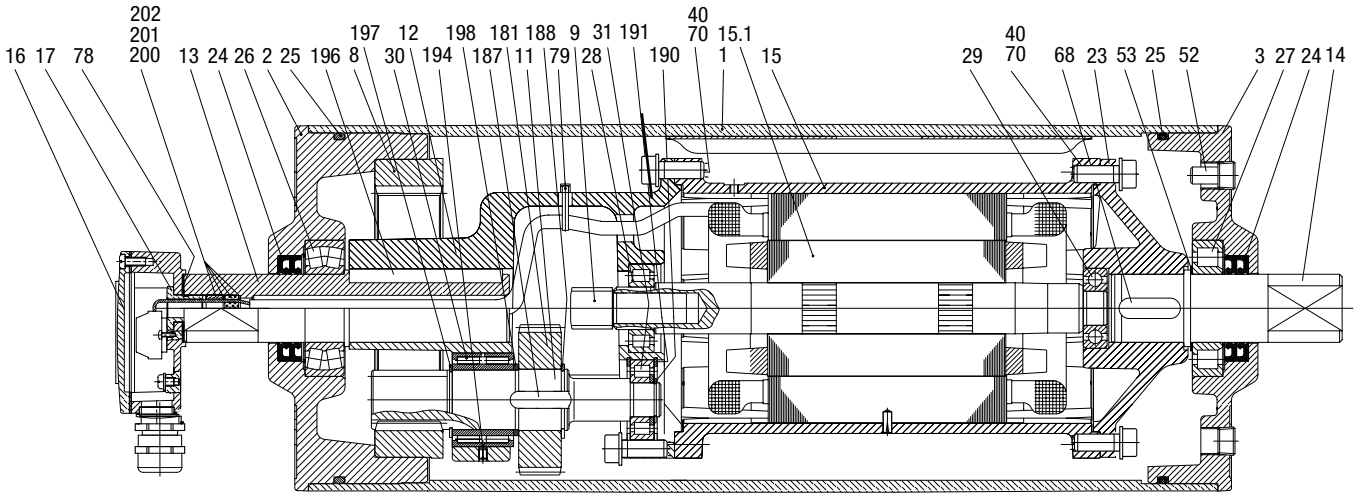
Interroll
Motorised Pulley
Series 6700
Ø 216 mm
TM 220 – 3-stage

Sectional Drawing



Pos.	Description
1	Shell
2	End housing with geared rim
3	End housing
8	Geared rim
9	Rotor pinion
10	Input wheel
11	Output pinion
12	Gearbox
13	Front shaft
14	Rear shaft
15	Stator complete
15.1	Rotor
16	Terminal box complete
17	Nipple
23	Rear flange
23.1	Rear flange for backstop
23.3	Rear flange for electromagnetic brake
24	2 Dust lip seals
24	1 double lip seal at labyrinth option
25	O-ring
26	Bearing
27	Bearing
28	Bearing
29	Bearing (for backstop solution a one way bearing is used)
30	Bearing
31	Bearing
39	Hexagon socket screw
40	Hexagon socket screw
41	Hexagon socket screw
52	Magnetic oil plug
53	Distance washer
66	Waved spring washer
68	Key

Pos.	Description
70	Toothed washer
78	Gasket
79	Holding clip or plastic tie
85	Intermediate flange for brake assembly
91	Electromagnetic brake
93	Spring washer
95	Straight connector
96	Elbow connector
101	Key
104	Distance washer
120	Labyrinth cover
121	Fixing bolt
122	O-ring
123	Grease nipple
124	Distance washer
180	Intermediate shaft
181	Intermediate pinion
182	Distance washer
183	Roller bearing
184	Roller bearing
185	Roller bearing
186	Key
187	Key
188	Spring washer
190	Spring washer
191	Spring washer
194	Set screw
196	Key
197	Spring washer
198	Distance washer
200	Gasket
201	Threaded nipple
202	Washer



Interroll Motorised Pulley Series 6300 ∅ 320 mm TM 321 TM 323

Specification of standard Motorised Pulley

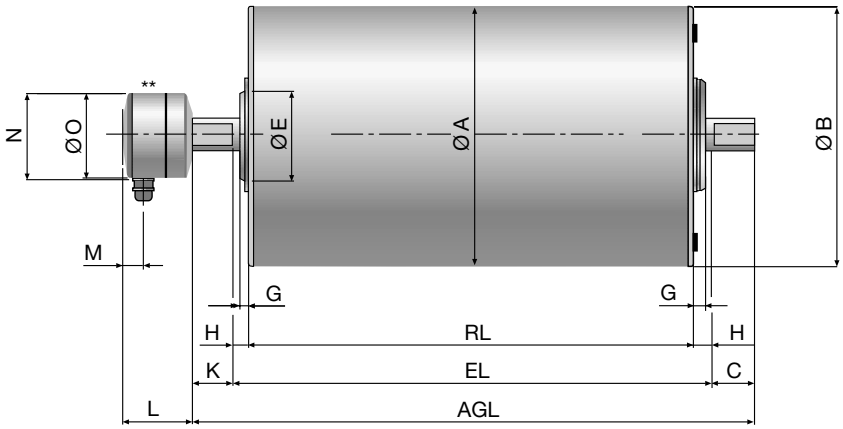
- Crowned mild steel shell treated with anti-rust wax
- Powder coated cast iron bearing housings
- Mild steel shaft treated with ant-rust wax
- Protection to IP66/67
- Powder coated aluminium terminal box
- Motor winding insulation class F
- 3-phase induction motor
- Thermal protector
- Magnetic oil plug
- Dynamically balanced rotor
- Factory oil filled for 10.000 operational hours – refer to installation and maintenance chapter
- Maximum standard shell width 2000 mm

Please note:

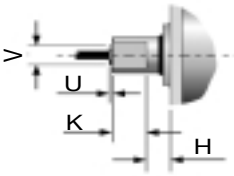
- Single phase motors, special speeds and special pulley widths available on request
- Straight or elbow connector available on request
- The high speed of 2-pole motors can cause higher noise levels and are therefore not recommended in noise sensitive areas
- For regreasable seals refer to page 40 & 42
- For brackets refer to page 74
- For environmental condition and important information refer to page 8/9
- For rust-free and semi rust-free option TS 9–12 refer to page 23

Series 6300
Ø 320 mm
TM 321
TM 323

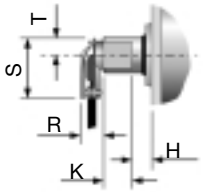
Standard Motorised Pulley TM 321/TM 323

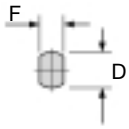


Straight connector



Elbow connector

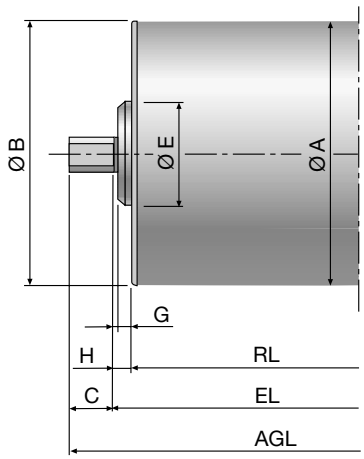




	Motorised Pulley with terminal box												***		Straight connector		Elbow connector		
Type	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	K mm	L mm	M mm	N mm	N1 mm	O mm	U mm	V mm	R mm	S mm	T mm
TM 321	321	319	50	40	96	30	15	25	54	41	24	95	14		4	27	20	48	12
TM 323	321	319	50	40	125	30	15	25	54	87	27	107		105	4	27	20	48	12
TM 323*	321	319	50	50	148	40	11	25	55	87	27	107		105	4	27	20	48	12
	Idler Pulley																		
UT 323	321	319	50	40	125	30	14	25											

* 3-stage gearbox
** shown terminal box used for TM 323 from 5.5 kW
*** The dimension "N1" is used for the small terminal box, refer to page 24

Idler Pulley UT 323

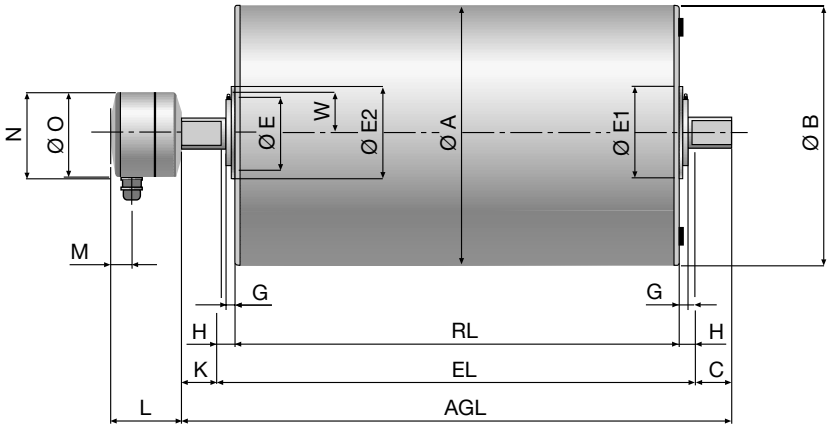


Special Execution

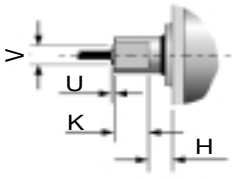
Series 6700
Ø 216 mm
TM 220

Series 6300
Ø 320 mm
TM 321
TM 323

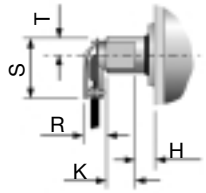
Standard Motorised Pulley with regreasable labyrinth TM 220/TM 321/TM 323

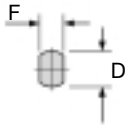


Straight connector



Elbow connector

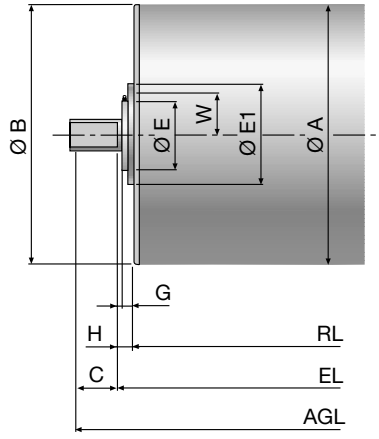




	Motorised Pulley with terminal box														***			Straight connector		Elbow connector		
Type	A mm	B mm	C mm	D mm	E mm	E1 mm	E2 mm	F mm	G mm	H mm	K mm	L mm	M mm	N mm	N1 mm	O mm	W mm	U mm	V mm	R mm	S mm	T
TM 220	216	214.5	43.5	40	85			30	19.5	21.5	41.5	41	24	95	14	95	52	4	27	20	48	12
TM 321	321	319	50	40	85			30	19.5	21.5	54	41	24	95	14	95	52	4	27	20	48	12
TM 323	321	319	50	40	79	125	125	30	19.5	25	54	87	27	107		105	52	4	27	20	48	12
TM 323*	321	319	50	50	92	148	148	40	11	25	55	87	27	107		105	56	4	27	20	48	12
Idler Pulley																						
UT 220	216	214.5	43.5	40	85			30	19.5	21.5												
UT 323	321	319	50	40	79	125	125	30	19.5	25												

* 3-stage gearbox
** shown terminal box used for TM 323 from 5.5 kW
*** The dimension "N1" is used for the small terminal box, refer to page 24

Idler Pulley UT 220/UT 323



Series 6300
Ø 320 mm
TM 321

	Motor		Nominal belt speed at full load 50 Hz	Torque	Belt pull	Max. radial load $T_1 + T_2$	Weight* in kg for standard width									
	Power	No. of poles					RL in mm									
	kW/HP		m/sec	Nm	N	N	400	450	500	550	600	650	700	750	800	850	per 50 mm up to 1500
Standard Motorised Pulley	0.75/ 1.00	8	0.32 0.40 0.50 0.63 0.80	356 285 228 181 142	2218 1776 1421 1128 885	11500	– – – – –	78	82	86	90	94	98	102	106	110	4 kg
	1.10/ 1.50	4	0.63 0.80 1.00 1.25	265 209 167 134	1651 1302 1040 835	11500	72	76	80	84	88	92	96	100	104	108	4 kg
	1.50/ 2.00	4	0.63 0.80 1.00 1.25	362 285 228 182	2255 1776 1421 1134	11500	72	78	82	86	90	94	98	102	106	110	4 kg
	2.20/ 3.00	4	0.80 1.00 1.25 1.60 2.00 2.50	418 334 265 209 167 134	2604 2081 1651 1302 1040 835	11500	– – – – – –	82	86	90	94	98	102	106	110	114	4 kg
	3.00/ 4.00	4	1.25 1.60 2.00 2.50	362 285 228 182	2255 1776 1421 1134	11500	– – – –	– – – –	90	94	98	102	106	110	114	118	4 kg
	4.00/ 5.50	2	1.60 2.00 2.50	380 304 243	2368 1894 1514	11500	– – –	– – –	90	94	98	102	106	110	114	118	4 kg
	Idler Pulley UT 323					20000	48	50	54	58	62	66	70	74	78	82	4 kg

* Weight for RL >1500 mm on request

Series 6300
Ø 320 mm
TM 323

	Motor		Nominal belt speed at full load 50 Hz	Torque	Belt pull	Max. radial load $T_1 + T_2$	Weight** in kg for standard width RL in mm									
	Power	No. of poles														
	kW/HP		m/sec	Nm	N	N	500	550	600	650	700	750	800	850	900	per 50 mm up to 1500
Standard Motorised Pulley	0.75/ 1.10	12	0.13	953	5938	35000*	–	135	139	144	149	154	159	164	169	5 kg
			0.16 0.20 0.25	712 570 456	4453 3562 2841	14000	110	114	118	122	126	130	134	138	142	4 kg
	1.10/ 1.50	12	0.13 0.16	1393 1045	8706 6531	35000*	– –	135	139	144	149	154	159	164	169	5 kg
			0.20	836	5225	20000										
		8	0.25 0.32 0.40 0.50	669 522 418 334	4181 3252 2604 2081	14000	110	114	118	122	126	130	134	138	142	4 kg
	1.50/ 2.00	8	0.16 0.20	1425 1140	8906 7125	35000*	– –	135	139	144	149	154	159	164	169	5 kg
			0.25 0.32	912 712	5700 4436	20000										
			0.40 0.50	570 456	3551 2841	14000	110	114	118	122	126	130	134	138	142	4 kg
	2.20/ 3.00	8	0.20 0.25	1672 1338	10450 8362	35000*	– –	135	139	144	149	154	159	164	169	5 kg
			0.32 0.40 0.50	1045 836 669	6581 5225 4181	20000	110	114	118	122	126	130	134	138	142	4 kg
		4	0.63	522	3252	14000	100	104	108	112	116	120	124	128	132	
	3.00/ 4.00	6	0.25 0.32 0.40	1824 1425 1140	11400 8906 7125	35000*	– – –	135	139	144	149	154	159	164	169	5 kg
		4	0.50 0.63	912 727	5700 4525	20000										
			0.80 1.00	570 456	3562 2841	14000	100	104	108	112	116	120	124	128	132	4 kg
	4.00/ 5.50	6	0.32 0.40 0.50	1900 1520 1216	11875 9499 7600	35000*	– – –	135	139	144	149	154	159	164	169	5 kg
		4	0.63 0.80	965 760	6031 4735	20000										
			1.00 1.25	608 486	3788 3028	14000	110	114	118	122	126	130	134	138	142	4 kg
	5.50/ 7.50	4	0.40 0.50 0.63 0.80	2090 1672 1327 1045	13062 10450 8294 6531	35000*	– – – –	135	139	144	149	154	159	164	169	5 kg
			1.00 1.25	836 671	5225 4180	20000	– –									
			1.60 2.00 2.50	524 418 334	3259 2604 2029	14000	– – –	114	118	122	126	130	134	138	142	4 kg
	7.50/ 10.00	2	0.80 1.00 1.25	1424 1140 911	8909 7125 5700	35000*	– – –	135	139	144	149	154	159	164	169	5 kg
			1.60	712	4453	20000	–									
			2.00 2.50	570 456	3562 2850	14000	– –	114	118	122	126	130	134	138	142	4 kg
	Idler Pulley UT 323					20000	54	58	62	66	70	74	78	82	85	4 kg

* 3-stage gearbox
** Weight for RL >1500 mm on request

Series 6300
Ø 320 mm
TM 323 P

	Motor		Nominal belt speed at full load 50 Hz	Torque	Belt pull	Max. radial load $T_1 + T_2$	Weight* in kg for standard width						
	Power	No. of poles					RL in mm						
	kW/HP		m/sec	Nm	N	N	500	550	600	650	700	750	per 50 mm up to 1500
Two Speed Motor (dual voltage connection not possible)	1.30/1.80 2.20/3.00	8 4	0.25 0.50 0.32 0.63 0.40 0.80 0.50 1.00 0.63 1.25	790 668 617 531 494 418 395 334 314 268	4970 4180 3844 3308 3078 2604 2461 2081 1956 1670	14000	110	114	118	122	126	130	4 kg
	2.20/3.00 2.80/3.80	4 2	0.50 1.00 0.63 1.25 0.80 1.60 1.00 2.00 1.25 2.50 1.60 3.15	669 425 533 342 418 285 334 228 268 182 209 145	4181 2656 3321 2131 2604 1776 2081 1421 1670 1134 1302 903	14000	100	104	108	112	116	120	4 kg
	3.00/4.10 3.50/4.80	4 2	0.50 1.00 0.63 1.25 0.80 1.60 1.00 2.00 1.25 2.50 1.60 3.15	912 608 724 486 570 380 456 304 365 243 285 193	5700 3800 4525 3037 3551 2368 2841 1894 2274 1514 1776 1202	14000	110	114	118	122	126	130	4 kg

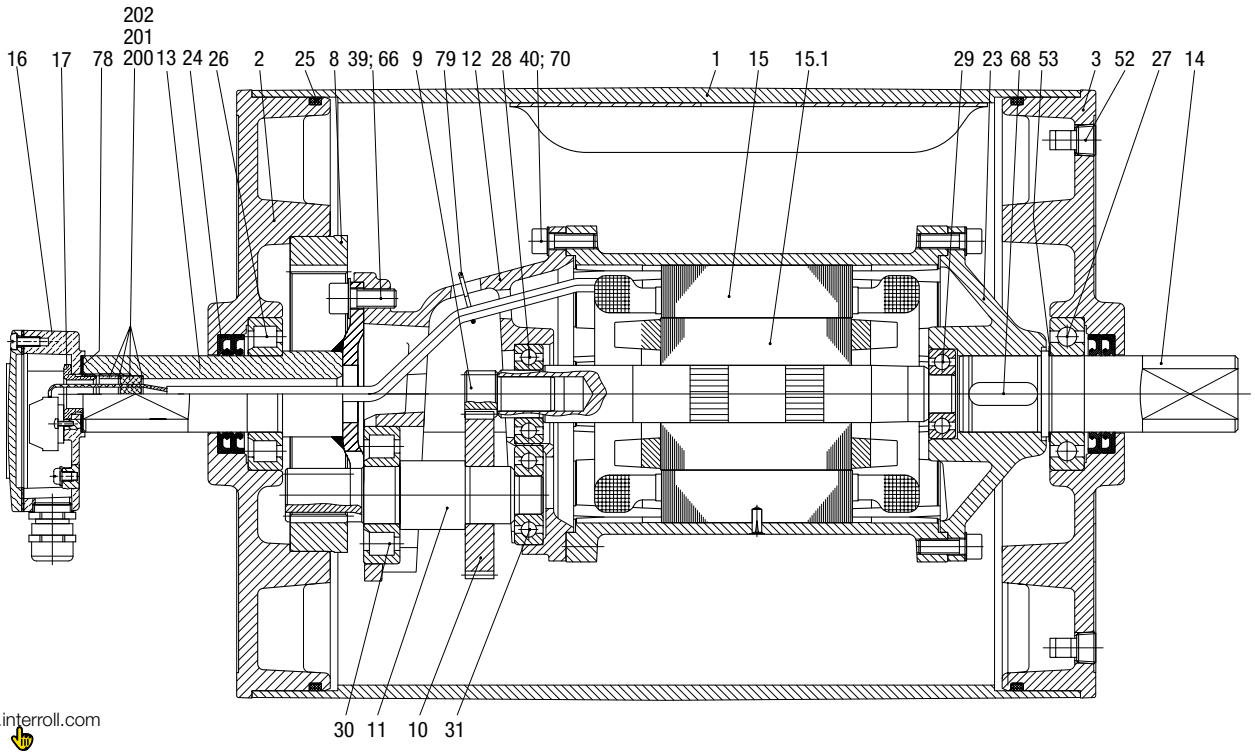
* Weight for RL >1500 mm on request

Interroll
Motorised Pulley
Series 6300
Ø 320 mm
Type TM 321

Sectional Drawing

Pos.	Description
1	Shell
2	End housing with geared rim
3	End housing
8	Geared rim
9	Rotor pinion
10	Input wheel
11	Output pinion
12	Gearbox
13	Front shaft
14	Rear shaft
15	Stator complete
15.1	Rotor
16	Terminal box complete
17	Nipple
23	Rear flange
23.1	Rear flange for backstop
32.2	Rear flange for electromagnetic brake
24	2 Dust lip seals
24	1 Double lip seal for labyrinth option
25	O-ring
26	Bearing
27	Bearing
28	Bearing
29	Bearing (for backstop solution a one way bearing is used)

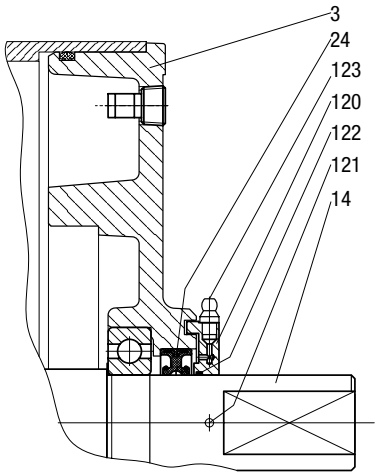
Pos.	Description
30	Bearing
31	Bearing
39	Hexagon socket screw
40	Hexagon socket screw
52	Magnetic oil plug
53	Distance washer
66	Waved spring washer
68	Key
70	Toothed washer
78	Gasket
79	Holding clip or plastic tie
85	Intermediate flange for brake assembly
91	Electromagnetic brake
93	Spring washer
95	Straight connector
96	Elbow connector
101	Key
104	Distance washer
120	Labyrinth cover
121	Fixing bolt
122	O-ring
123	Grease nipple
200	Gasket
201	Threaded nipple
202	Washer



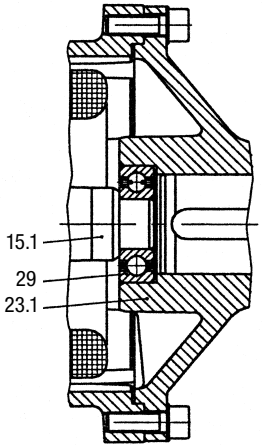
Interroll
Motorised Pulley
Series 6300
Ø 320 mm
Type TM 321

Sectional Drawing

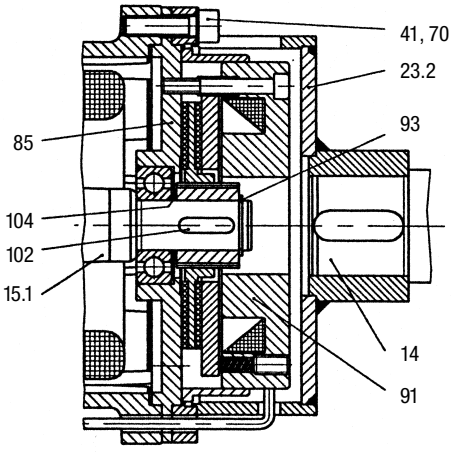
Labyrinth option



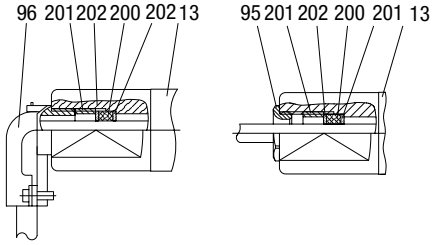
Backstop option



Electromagnetic brake option



Cable option



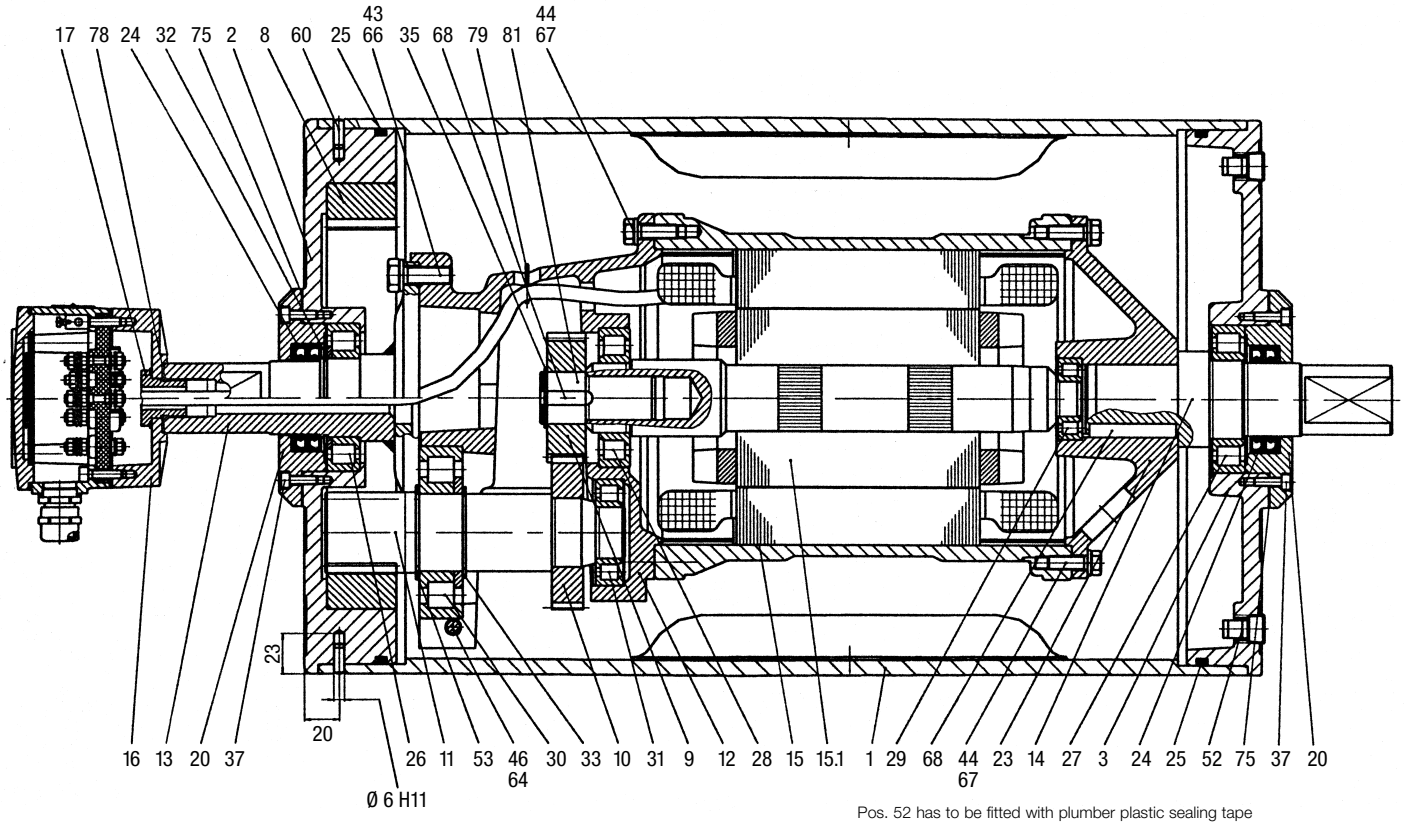
(Elbow connector)

(Straight connector)

Interroll Motorised Pulley Series 6300 Ø 320 mm Type TM 323

Sectional Drawing

Pos.	Description	Pos.	Description	Pos.	Description
1	Shell	24	2 Dust lip seals	68	Key
2	End housing with geared rim	25	O-ring	70	Waved spring washer
3	End housing	26	Bearing	75	Gasket
8	Geared rim	27	Bearing	78	Gasket
9	Rotor pinion	28	Bearing	79	Holding clip or plastic tie
10	Input wheel	29	Bearing	84	Rear flange for brake
11	Output pinion	30	Bearing	85	Intermediate flange for brake assembly
12	Gearbox – cast aluminium	31	Bearing	91	Electromagnetic brake
13	Front shaft	32	Retaining ring	93	Spring washer
14	Rear shaft	33	Retaining ring	94	Hexagon head screw
15	Stator complete	35	Retaining ring	95	Straight connector
15.1	Rotor	37	Hexagon socket screw	96	Elbow connector
16	Terminal box complete	43	Hexagon head screw	99	Waved spring washer
17	Nipple	44	Hexagon head screw	101	Key
20	Cover	45	Hexagon head screw	104	Distance washer
20.1	Cover with labyrinth groove	46	Hexagon head screw	120	Labyrinth cover
23	Rear flange	52	Magnetic oil plug	121	Fixing bolt
23.1	Rear flange for backstop	53	Distance washer	122	O-ring
		60	Parallel pin	123	Grease nipple
		64	Hexagon head nut		
		66	Waved spring washer		
		67	Waved spring washer		



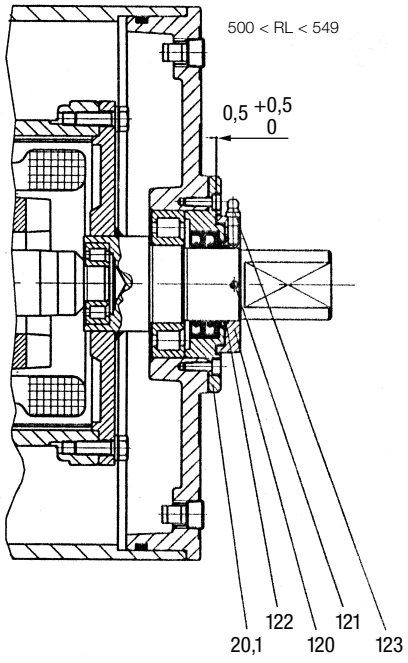
Pos. 52 has to be fitted with plumber plastic sealing tape

This terminal box is valid for TM 323/400 5.5 kW

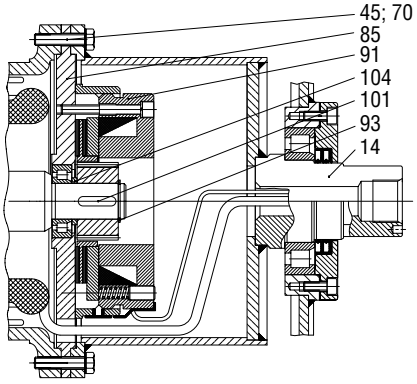
Interroll
Motorised Pulley
Series 6300
Ø 320 mm
TM 323

Sectional Drawing

Labyrinth option

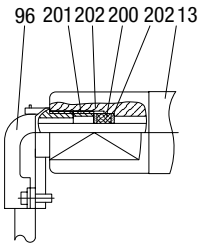


Electromagnetic brake option

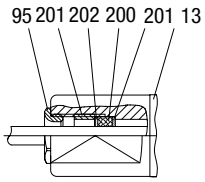


Backstop option

Cable option



(Elbow connector)

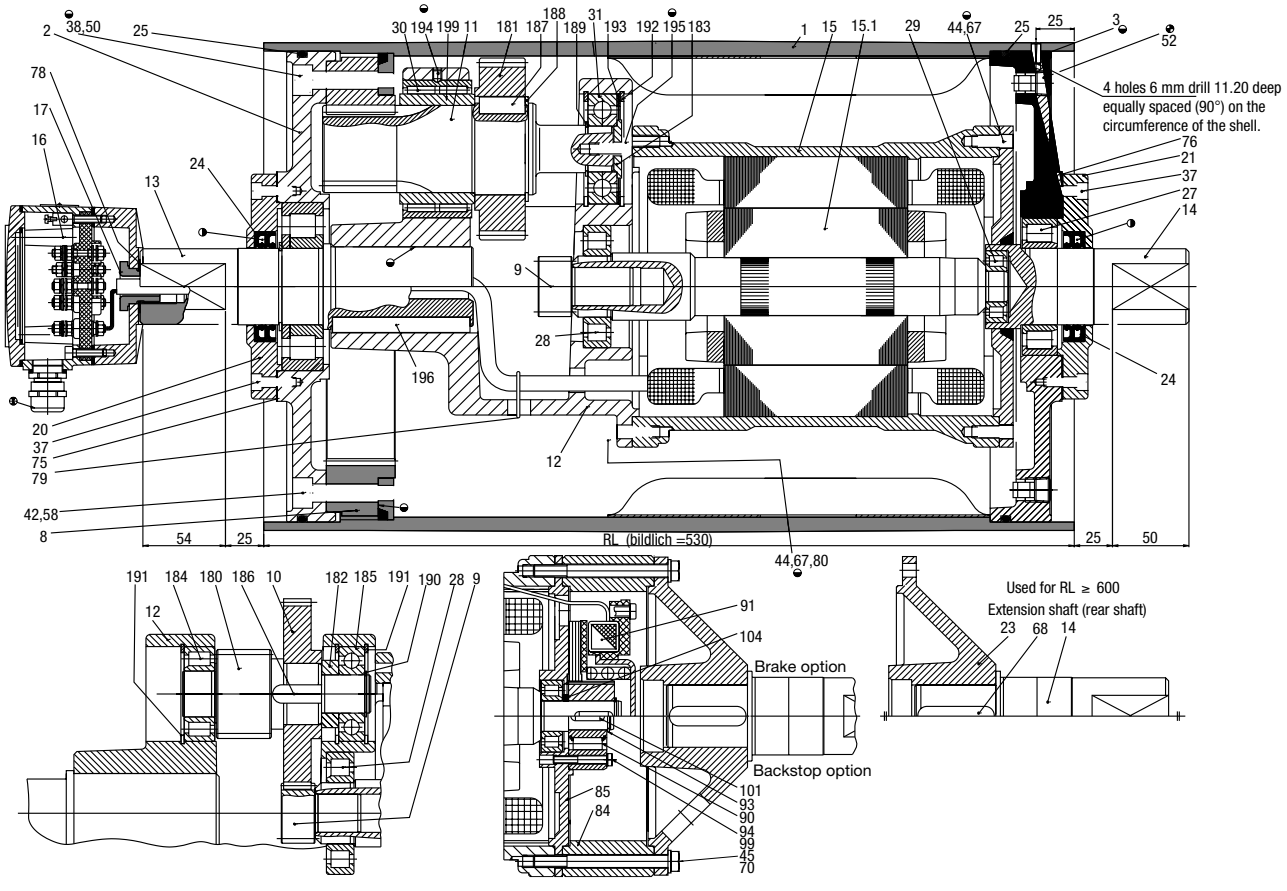


(Straight connector)

Interroll Motorised Pulley Series 6300 Ø 320 mm TM 323 – 3-stage

Sectional Drawing

Pos.	Description
1	Shell
2	End housing with geared rim
3	End housing
8	Geared rim
9	Rotor pinion
10	Input wheel
11	Output pinion
12	Gearbox – cast aluminium
13	Front shaft
14	Rear shaft
15	Stator complete
15.1	Rotor
16	Terminal box complete
17	Nipple
20	Cover front side
20.1	Cover with labyrinth groove
21	Cover gear side
21.1	Cover with labyrinth groove
23	Rear flange
24	2 Dust lip seals
25	O-ring
26	Bearing
27	Bearing
28	Bearing
29	Bearing
30	Bearing
31	Bearing
32	Retaining ring
33	Retaining ring
35	Retaining ring
37	Hexagon socket screw
43	Hexagon head screw
44	Hexagon head screw
45	Hexagon head screw
46	Hexagon head screw
52	Magnetic oil plug
53	Distance washer
60	Parallel pin
64	Hexagon head nut
66	Waved spring washer
67	Waved spring washer
68	Key
70	Waved spring washer
75	Gasket
78	Gasket
79	Holding clip or plastic tie
84	Rear flange for brake
85	Intermediate flange for brake assembly
90	Backstop
91	Electromagnetic brake
93	Spring washer
94	Hexagon head screw
95	Straight connector
96	Elbow connector
99	Waved spring washer
101	Key
104	Distance washer
120	Labyrinth cover
121	Fixing bolt
122	O-ring
123	Grease nipple
180	Intermediate pinion shaft
181	Intermediate pinion
182	Distance washer
183	Distance washer
184	Roller bearing
185	Roller bearing
186	Key
187	Key
188	Retaining ring
190	Retaining ring
191	Retaining ring
194	Set screw
196	Key
197	Retaining ring
198	Distance ring



Interroll Motorised Pulley Series 6500 ∅ 400 mm TM 400 TM 401

Specification of standard Motorised Pulley

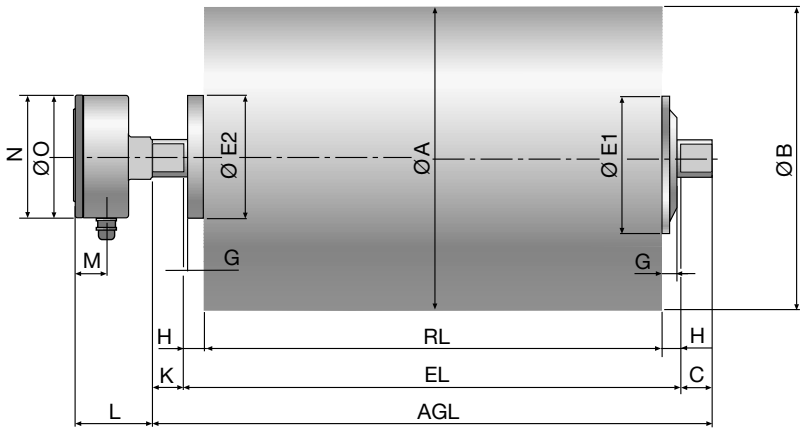
- Crowned mild steel shell painted yellow
- Bolted cast iron bearing housings and covers
- Mild steel shaft treated with ant-rust wax
- Protection to IP66/67
- Powder coated aluminium terminal box (TM 400)
- Cast iron terminal box painted yellow (TM 401)
- Motor winding insulation class F
- 3-phase induction motor
- Thermal protector
- Magnetic oil plug
- Dynamically balanced rotor
- Factory oil filled for 10.000 operational hours – refer to installation and maintenance chapter
- Maximum standard shell width 2000 mm

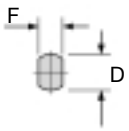
Please note:

- Cable option on request (for TM 400 only)
- For brackets refer to page 74
- For environmental condition and important information refer to page 8/9
- For rust-free and semi rust-free option TS 11–12 refer to page 23

Series 6500
Ø 400 mm
TM 400
TM 401

Standard Motorised Pulley TM 400/TM 401

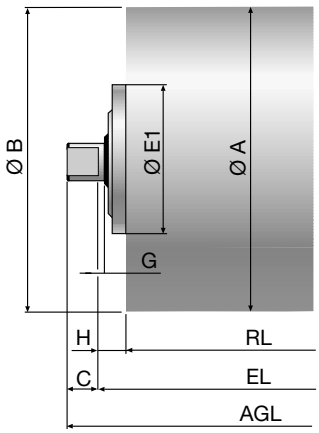




Type	A mm	B mm	C mm	D mm	E1 mm	E2 mm	F mm	G mm	H mm	K mm	L mm	M mm	N mm	O mm
	Motorised Pulley with terminal box													
TM 400	404	400	50	40	125	125	30	20	25	53	87	27	107	105
TM 401	404	400	50	60	194	168	45	20	25	50	100	36.5		156
	Idler Pulley													
UT 400	404	400	50	40	125		30	20	25	50				
UT 401	404	400	50	60	168		45	20	25	50				

* shown terminal box is used for TM 401
- Dimension for cable option at TM 400 up to 4.0 kW consult Interroll.

Idler Pulley UT 400/UT 401



Series 6500
Ø 400 mm
TM 400

	Motor		Nominal belt speed at full load 50 Hz	Torque	Belt pull	Max. radial load $T_1 + T_2$	Weight in kg for standard width RL in mm									
	Power	No. of poles														
	kW/HP		m/sec	Nm	N	N	550	600	650	700	750	800	850	900	950	per 50 mm up to 1500
Standard Motorised Pulley	2.20/ 3.00	4	1.00 1.25 1.60 2.00 2.50	418 334 265 209 167	2090 1670 1325 1045 835	14000	125	130	135	140	145	150	155	160	165	5 kg
	3.00/ 4.00	4	0.80 1.00 1.25 1.60 2.00 2.50	712 570 456 356 285 228	3562 2850 2280 1780 1425 1140	14000										
	4.00/ 5.50	4	0.80 1.00 1.25 1.60 2.00 2.50	950 760 608 475 380 304	4750 3800 3040 2375 1900 1520	16700	135	140	145	150	155	160	165	170	175	5 kg
	5.50/ 7.50	4	1.25 1.60 2.00 2.50	836 653 524 418	4180 3265 2620 2090	14000										
	7.50/ 10.00	2	2.00 2.50 3.15	712 570 452	3525 2822 2238	14000										
	Idler Pulley UT 400					19500	85	90	95	100	105	110	115	120	125	5 kg

Series 6500
Ø 400 mm
TM 401

	Motor		Nominal belt speed at full load 50 Hz	Torque	Belt pull	Max. radial load $T_1 + T_2$	Weight** in kg for standard width RL in mm									
	Power	No. of poles														
	kW/HP		m/sec	Nm	N	N	600	650	700	750	800	850	900	950	1000	per 50 mm up to 1500
Standard Motorised Pulley	2.20/ 3.00	8	0.16 0.20 0.25	2638 2111 1688	13062 10450 8360	50000*	– – –									5 kg
			0.32 0.40 0.50 0.63 0.80	1306 1045 836 663 522	6465 5173 4139 3282 2584	40500	194	200	206	212	218	224	230	236	242	
	4.00/ 5.50	8	0.25 0.32 0.40	3070 2399 1919	15200 11875 9500	50000*	– – –									5 kg
			0.50 0.63 0.80 1.00 1.25 1.60	1520 1206 960 760 608 475	7525 5970 4750 3800 3040 2375	40500	203	209	215	221	227	233	239	245	251	
	5.50/ 7.50	4	0.40 0.50 0.63	2638 2111 1675	13063 10450 8294	50000*	– – –									5 kg
			0.80 1.00 1.25 1.60 2.00 2.50 3.15	1306 1045 844 660 528 422 332	6465 5173 4180 3265 2620 2090 1659	40500	194	200	206	212	218	224	230	236	242	
	7.50/ 10.00	6	0.50 0.63 0.80	2878 2284 1799	14250 11310 8906	50000*	– – –	– – –	– – –							5 kg
		4	1.00 1.25 1.60 2.00 2.50 3.15	1425 1140 891 712 570 452	7054 5644 4411 3525 2822 2238	40500	200	206	212	218	224	230	236	242	248	
	11.00/ 15.00	4	0.80 1.00 1.25	2638 2111 1688	13063 10450 8360	50000*	– – –	– – –	– – –							5 kg
			1.60 2.00 2.50 3.15	1306 1045 835 663	6465 5173 4139 3282	40500	– – – –	– – – –	– – – –	230	236	242	248	254	260	
	15.00/ 20.00	2	1.00 1.25 1.60	2878 2303 1799	14250 11400 8906	50000*	– – –	– – –	– – –							5 kg
			2.00 2.50 3.15	1439 1142 907	7125 5700 4523	40500	– – –	– – –	– – –	230	236	242	248	254	260	
	Idler Pulley UT 401					40500	113	119	126	132	138	142	148	154	160	5 kg

* 3-stage gearbox
** Weight for RL >1500 mm on request

Series 6500
Ø 400 mm
TM 400 P

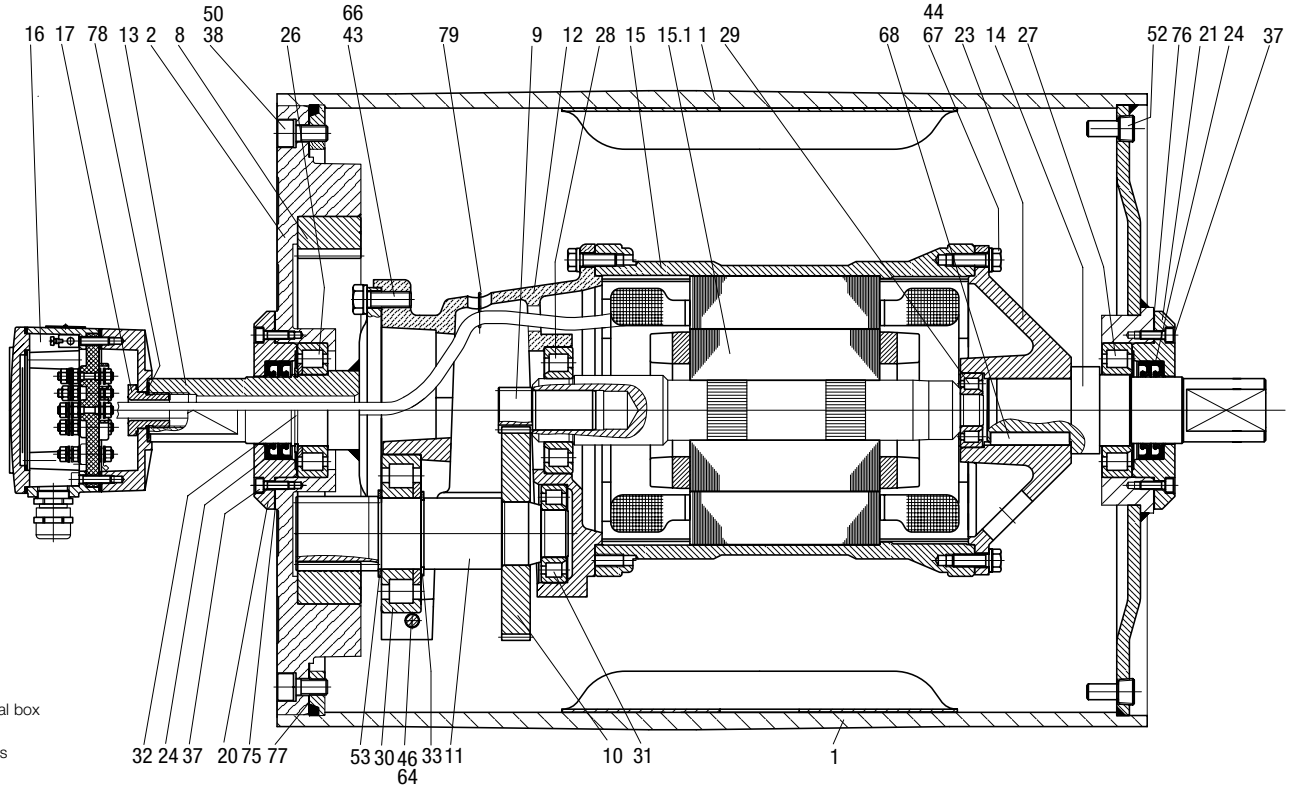
	Motor		Nominal belt speed at full load 50 Hz	Torque	Belt pull	Max. radial load $T_1 + T_2$	Weight in kg for standard width RL in mm									
	Power	No. of poles														
	kW/HP		m/sec	Nm	N	N	550	600	650	700	750	800	850	900	950	per 50 mm up to 1500
Two Speed Motor (Dual voltage connection not possible)	1.30/1.80 2.20/3.00	8 4	0.40 0.80 0.50 1.00 0.63 1.25 0.80 1.60 1.00 2.00 1.25 2.50	617 531 494 418 392 334 309 261 247 209 198 167	3085 2655 2470 2090 1960 1670 1545 1305 1235 1045 990 835	14000	142	146	151	156	161	166	171	176	181	5 kg
	2.20/3.00 2.80/3.80	4 2	0.80 1.60 1.00 2.00 1.25 2.50 1.60 3.15 2.00 4.00	523 333 418 285 334 228 268 182 209 145	2615 1665 2090 1425 1670 1140 1340 910 1045 725	14000	131	141	146	151	156	161	166	171	173	5 kg
	3.00/4.10 3.50/4.80	4 2	1.00 2.00 1.25 2.50 1.60 3.15 2.00 4.00	570 380 465 304 365 243 285 193	2850 1900 2325 1520 1825 1215 1425 965	14000	141	146	151	156	161	166	171	176	181	5 kg

Interroll
Motorised Pulley
Series 6500
Ø 400 mm
TM 400

Sectional Drawing

Pos.	Description
1	Shell
2	End housing with geared rim
8	Geared rim
9	Rotor pinion
10	Input wheel
11	Output pinion
12	Gearbox – cast aluminium
13	Front shaft
14	Rear shaft
15	Stator complete
15.1	Rotor
16	Terminal box complete
17	Nipple
20	Cover – front side
20.1	Cover with labyrinth groove (not shown)
21	Cover – rear side
21.1	Cover with labyrinth groove (not shown)
23	Rear flange
24	2 Dust lip seals
24	1 Double lip seals for labyrinth option
26	Bearing
27	Bearing
28	Bearing

Pos.	Description
29	Bearing
30	Bearing
31	Bearing
32	Retaining ring
33	Retaining ring
37	Hexagon socket screw
38	Hexagon socket screw
42	Hexagon screw
43	Hexagon screw
44	Hexagon screw
46	Hexagon screw
48	Washer
49	Washer
50	Washer
52	Magnetic oil plug
53	Distance washer
54	Washer
64	Hexagon head nut
66	Waved spring washer
67	Waved spring washer
68	Key
75	Gasket
76	Gasket
77	Gasket
78	Gasket

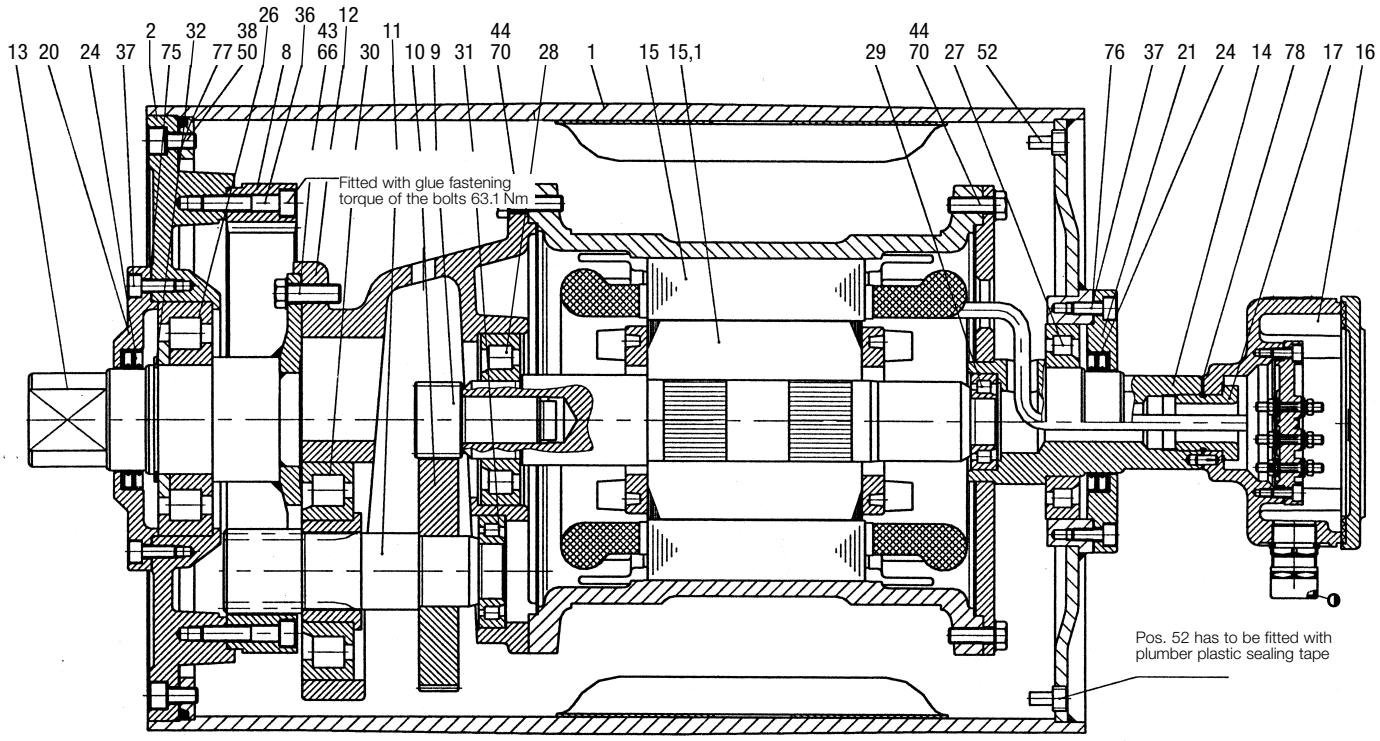


shown terminal box
is used for
5.5 kW motors

Interroll
Motorised Pulley
Series 6500
Ø 400 mm
TM 401

Sectional Drawing

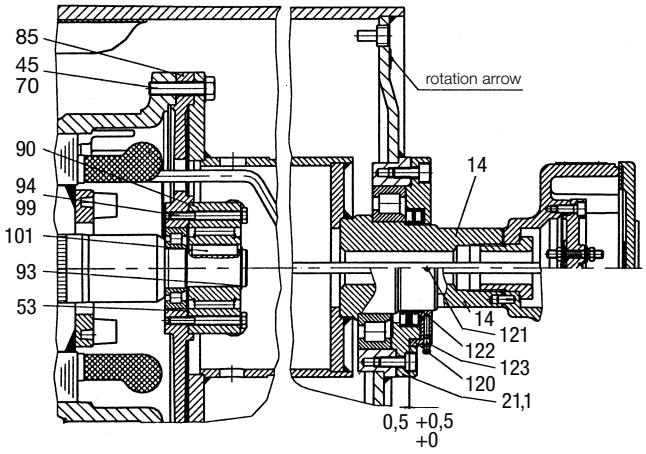
Pos.	Description	Pos.	Description
1	Shell	36	Hexagon head screw
2	End housing with geared rim	37	Hexagon socket screw
8	Geared rim	38	Hexagon socket screw
9	Rotor pinion	43	Hexagon screw
10	Input wheel	44	Hexagon screw
11	Output pinion	45	Hexagon screw
12	Gearbox – cast aluminium	50	Waved spring washer
13	Rear shaft	52	Magnetic oil plug
14	Front shaft	66	Waved spring washer
15	Stator complete	70	Waved spring washer
15.1	Rotor	75	Gasket
16	Terminal box complete	76	Gasket
17	Nipple	77	Gasket
20	Cover – rear side	78	Gasket
20.1	Cover with labyrinth groove (not shown)	85	Intermediate flange
		90	Backstop
21	Cover – front side	91	Electromagnetic brake
21.1	Cover with labyrinth groove (not shown)	93	Spring washer
		94	Hexagon head screw
24	2 Dust lip seals	99	Waved spring washer
26	Bearing	101	Key
27	Bearing	104	Distance washer
28	Bearing	120	Labyrinth cover
29	Bearing	121	Fixing bolt
30	Bearing	122	O-ring
31	Bearing	123	Grease nipple
32	Retaining ring		



Interroll
Motorised Pulley
Series 6500
Ø 400 mm
TM 401

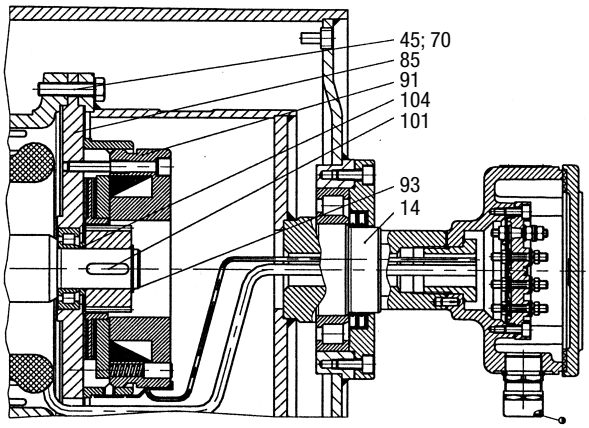
Sectional Drawing

Backstop option



Backstop option with labyrinth RL > 750

Electromagnetic brake option

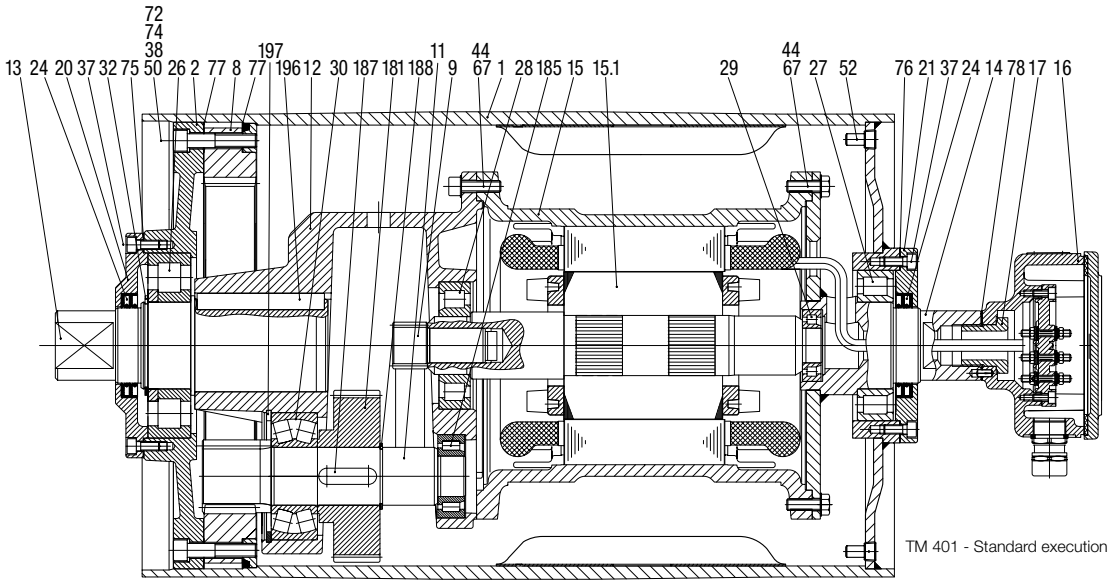


RL > 750

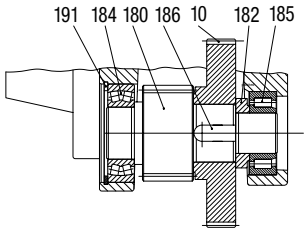
Interroll Motorised Pulley Series 6500 Ø 400 mm TM 401 3-stage

Sectional Drawing

Pos.	Description	Pos.	Description	Pos.	Description
1	Shell	27	Bearing	93	Spring washer
2	End housing with geared rim	28	Bearing	94	Hexagon head screw
8	Geared rim	29	Bearing	99	Waved spring washer
9	Rotor pinion	30	Bearing	101	Key
10	Input wheel	31	Bearing	104	Distance washer
11	Output pinion	32	Retaining ring	120	Labyrinth cover
12	Gearbox – cast aluminium	33	Retaining ring	121	Fixing bolt
13	Rear shaft	36	Hexagon socket screw	122	O-ring
14	Front shaft	38	Hexagon socket screw	123	Grease nipple
15	Stator complete	43	Hexagon socket screw	180	Intermediate pinion shaft
15.1	Rotor	44	Hexagon socket screw	181	Intermediate pinion
16	Terminal box complete	45	Hexagon socket screw	182	Distance washer
17	Nipple	50	Waved spring washer	183	Distance washer
20	Cover rear side	52	Magnetic oil plug	184	Roller bearing
20.1	Cover with labyrinth groove	66	Waved spring washer	185	Roller bearing
21	Cover front side	70	Waved spring washer	186	Key
21.1	Cover with labyrinth groove	75	Gasket	187	Key
23	Rear flange	76	Gasket	188	Retaining ring
24	2 Dust lip seals	77	Gasket	190	Retaining ring
26	Bearing	78	Gasket	191	Retaining ring
		85	Intermediate flange for brake assembly	194	Set screw
		90	Backstop	196	Key
		91	Electromagnetic brake	197	Retaining ring



TM 401 - Standard execution



For backstop and electromagnetic brake drawnig refer to page 52.

Interroll Motorised Pulley Series 6600 ∅ 500 mm TM 500

Specification of standard Motorised Pulley

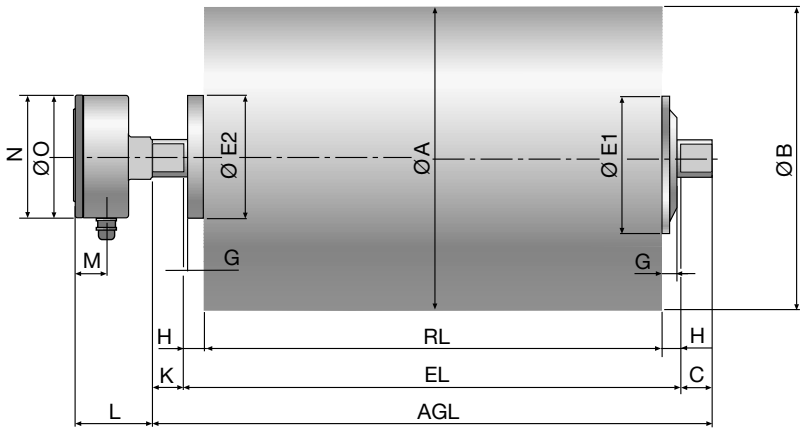
- Crowned mild steel shell painted yellow
- Bolted cast iron bearing housings and covers
- Mild steel shaft treated with ant-rust wax
- Protection to IP66/67
- Cast iron terminal box painted yellow
- Motor winding insulation class F
- 3-phase induction motor
- Thermal protector
- Magnetic oil plug
- Dynamically balanced rotor
- Factory oil filled for 10.000 operational hours – refer to installation and maintenance chapter
- Maximum standard shell width 2000 mm

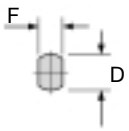
Please note:

- Special shell widths on request
- For brackets refer to page 74
- For environmental condition and important information refer to page 8/9
- For rust-free and semi rust-free option TS 11 – 12 refer to page 23

Series 6600
Ø 500 mm
TM 500

Standard Motorised Pulley TM 500

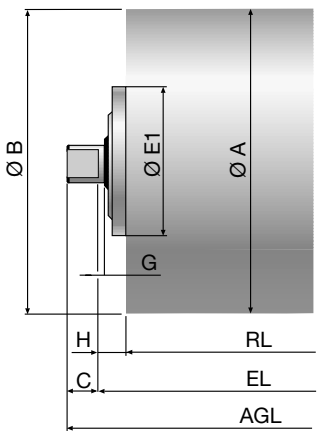




Type	Motorised Pulley with terminal box A mm	B mm	C mm	D mm	E1 mm	E2 mm	F mm	G mm	H mm	K mm	L mm	M mm	O mm
TM 500	501	497	50	60	194	168	45	23	25	50	100	43	156
TM 500*	501	497	50	60	194	168	45	23	25	50	100	43	156
	Idler Pulley												
UT 401	404	400	50	60	168		45	20	25	50			

* a TM 401 terminal box is shown

Idler Pulley UT 401



Series 6600
Ø 500 mm
TM 500

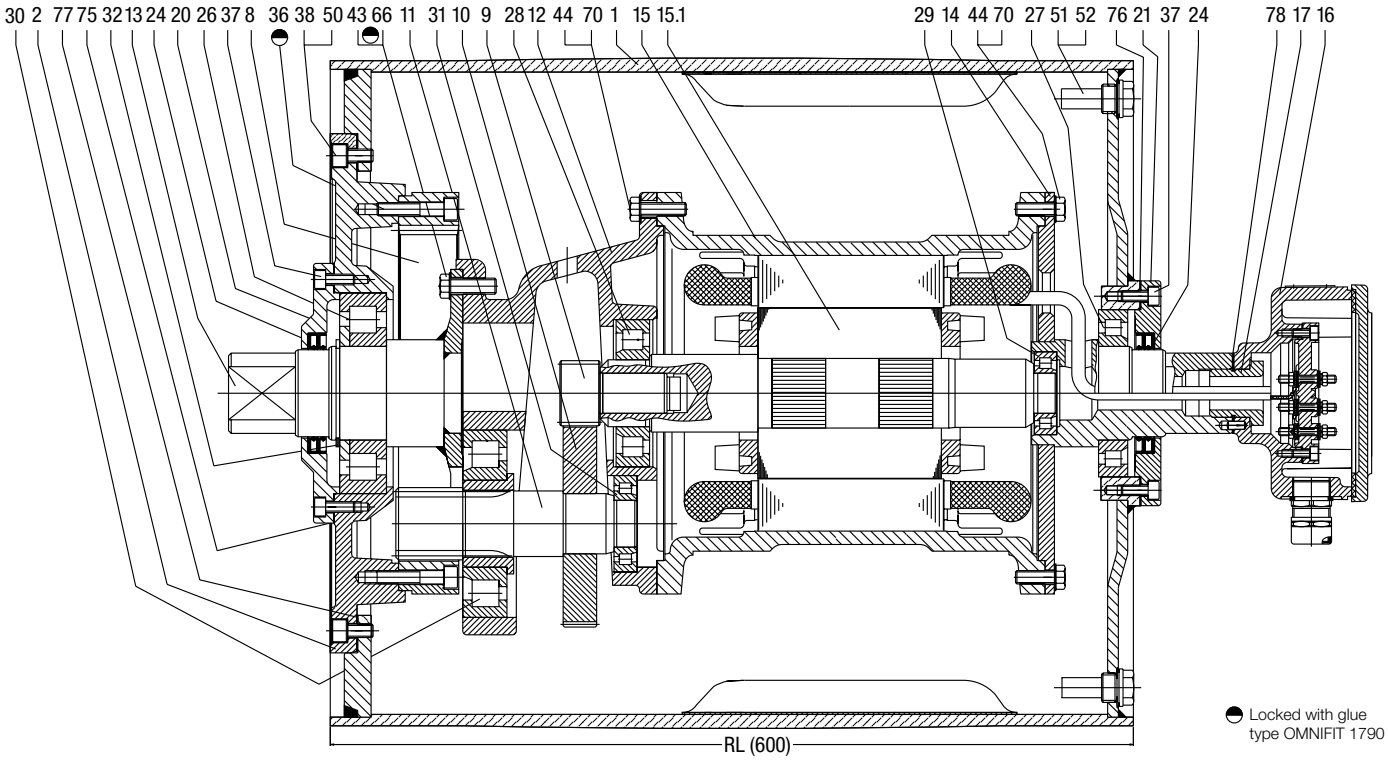
	Motor		Nominal belt speed at full load 50 Hz	Torque	Belt pull	Max. radial load $T_1 + T_2$	Weight in kg for standard width RL in mm									
	Power	No. of poles														
	kW/HP		m/sec	Nm	N	N	600	650	700	750	800	850	900	950	1000	per 50 mm up to 1500
Standard Motorised Pulley			0.32*	1633	6532		–	258	265	272	279	286	293	300	307	
	2.20/ 3.00	8	0.40 0.50 0.63 0.80 1.00	1306 1045 836 663 522	5224 4180 3344 2652 2088	40500	216	223	230	237	244	251	258	265	272	
	4.00/ 5.50	8	0.32* 0.40* 0.50*	2969 2375 1900	11876 9500 7600	50000	– –	267	274	281	288	295	302	309	316	
			0.63 0.80 1.00 1.25 1.60 2.00 2.50	1520 1206 950 760 608 475 380	6080 4824 3800 3040 2432 1900 1520	40500	225	232	239	246	253	260	267	274	281	
	5.50/ 7.50	4	0.50* 0.63* 0.80*	2612 2073 1632	10448 8292 6528	50000	– –	258	265	272	279	286	293	300	307	
			1.00 1.25 1.60 2.00 2.50 3.15	1306 1045 844 660 528 424	5224 4180 3376 2640 2112 1696	40500	216	223	230	237	244	251	258	265	272	+ 7 kg
	7.50/ 11.00	6	0.63* 0.80* 1.00*	2827 2226 1781	11308 8904 7124	50000	– –	– –	– –	278	285	292	299	306	313	
		4	1.25 1.60 2.00 2.50 3.15	1425 1140 891 712 570	5700 4560 3564 2848 2280	40500	– – – –	– – – –	– – – –	243	250	257	264	271	278	
	11.00/ 15.00	4	1.00* 1.25* 1.60*	2612 2090 1633	10448 8630 6532	50000	– –	– –	– –	290	297	304	311	318	325	
			2.00 2.50 3.15	1306 1045 835	5224 4180 3340	40500	– –	– –	– –	255	262	269	276	283	290	
	15.00/ 20.00	2	1.25* 1.60* 2.00*	2850 2227 1782	11400 8908 7128	50000	– –	– –	– –	290	297	304	311	318	325	
			2.50 3.15	1439 1142	5756 4568	40500	– –	– –	– –	255	262	269	276	283	290	
	Idler Pulley UT 401					40500	113	119	126	132	138	142	148	154	160	5 kg

* 3-stage gearbox

Interroll Motorised Pulley Series 6600 Ø 500 mm Type TM 500 – 2-stage

Sectional Drawing

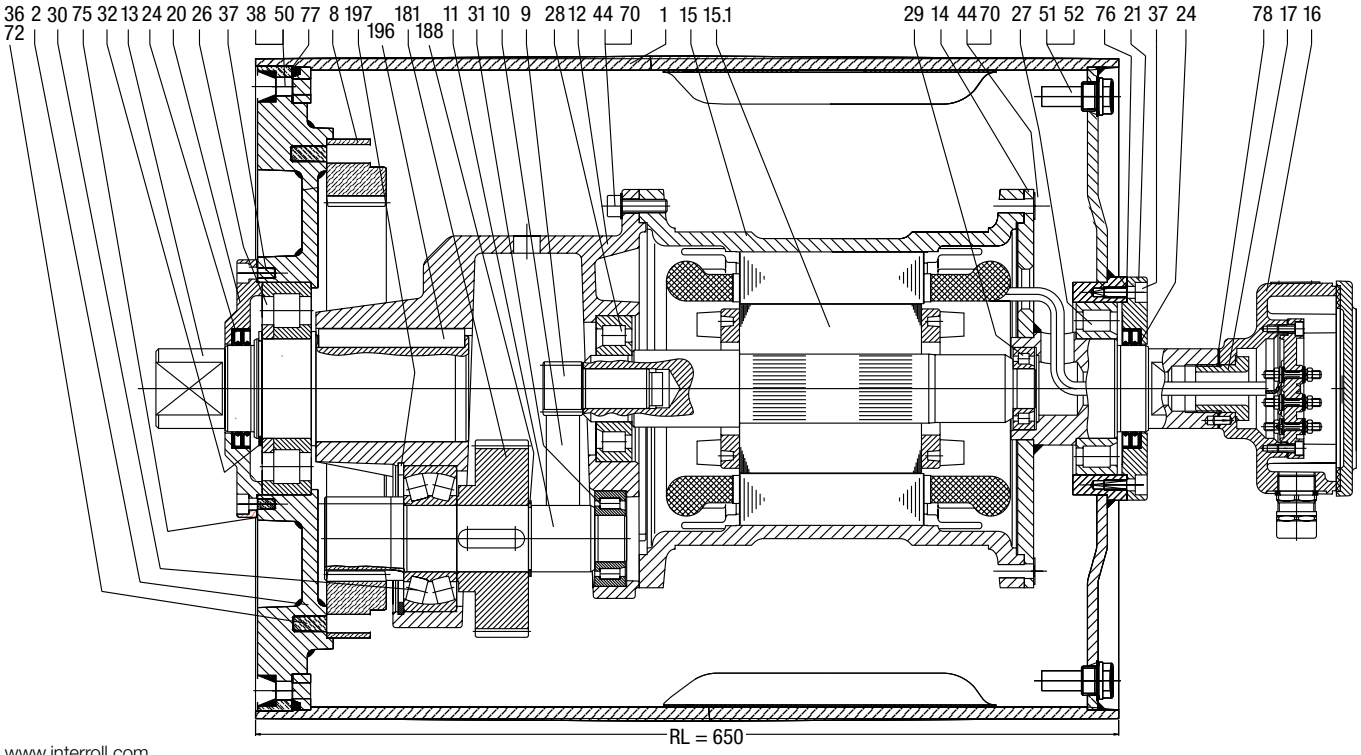
Pos.	Description	Pos.	Description	Pos.	Description
1	Shell	24	2 Dust lip seals	93	Retaining ring
2	End housing with geared rim	26	Bearing	94	Hexagon head screw
3	End housing	27	Bearing	99	Waved spring washer
8	Geared rim	28	Bearing	100	Key
9	Rotor pinion	29	Bearing	104	Distance washer
10	Input wheel	30	Bearing	120	Labyrinth cover
11	Output pinion	31	Bearing	121	Fixing bolt
12	Gearbox – cast aluminium	32	Retaining ring	122	O-ring
13	Rear shaft	36	Hexagon socket screw	123	Grease nipple
14	Front shaft	37	Hexagon socket screw	180	Intermediate pinion shaft
15	Stator complete	38	Hexagon socket screw	181	Intermediate pinion
15.1	Rotor	43	Hexagon head screw	182	Distance washer
16	Terminal box complete	44	Hexagon head screw	183	Distance washer
17	Nipple	45	Hexagon head screw	184	Roller bearing
20	Cover rear side	50	Waved spring washer	185	Roller bearing
20.1	Cover with labyrinth groove (not shown)	52	Magnetic oil plug	186	Key
21	Cover front side	66	Waved spring washer	187	Key
21.1	Cover with labyrinth groove (not shown)	70	Waved spring washer	188	Retaining ring
23	Rear flange	75	Gasket	191	Retaining ring
		76	Gasket	194	Set screw
		77	Gasket	196	Key
		78	Gasket	197	Retaining ring
		85	Intermediate flange		
		90	Backstop		
		91	Electromagnetic brake		



Interroll Motorised Pulley Series 6600 Ø 500 mm TM 500 – 2- and 3-stage

Sectional Drawing

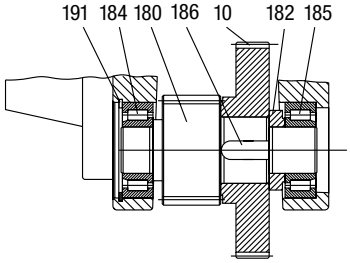
Pos.	Description	Pos.	Description	Pos.	Description
1	Shell	26	Bearing	93	Retaining ring
2	End housing with geared rim	27	Bearing	94	Hexagon head screw
3	End housing	28	Bearing	99	Waved spring washer
8	Geared rim	29	Bearing	101	Key
9	Rotor pinion	30	Bearing	104	Distance washer
10	Input wheel	31	Bearing	120	Labyrinth cove
11	Output pinion	32	Retaining ring	121	Fixing bolt
12	Gearbox – cast aluminium	36	Hexagon socket screw	122	O-ring
13	Rear shaft	37	Hexagon socket screw	123	Grease nipple
14	Front shaft	38	Hexagon socket screw	180	Intermediate pinion shaft
15	Stator complete	43	Hexagon head screw	181	Intermediate pinion
15.1	Rotor	44	Hexagon head screw	182	Distance washer
16	Terminal box complete	45	Hexagon head screw	183	Distance washer
17	Nipple	50	Waved spring washer	184	Roller bearing
20	Cover rear side	52	Magnetic oil plug	185	Roller bearing
20.1	Cover with labyrinth groove (not shown)	66	Waved spring washer	186	Key
21	Cover front side	70	Waved spring washer	187	Key
21.1	Cover with labyrinth groove (not shown)	75	Gasket	188	Retaining ring
23	Rear flange	76	Gasket	191	Retaining ring
24	2 Dust lip seals	77	Gasket	196	Key
		78	Gasket	197	Retaining ring
		85	Intermediate flange		
		90	Backstop		
		91	Electromagnetic brake		



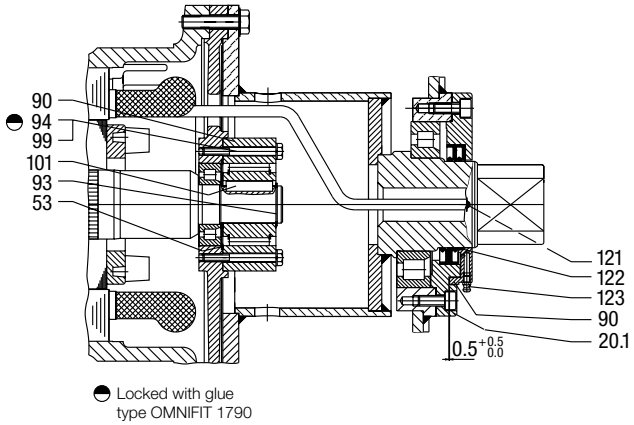
Interroll
Motorised Pulley
Series 6600
Ø 500 mm
Type TM 500 –
2- and 3-stage

Sectional Drawings

Intermediate pinion shaft

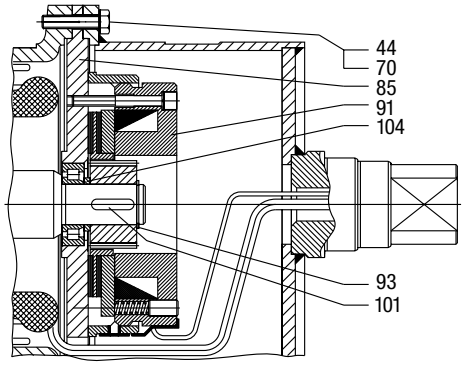


Backstop option



Backstop option with labyrinth

Electromagnetic brake option



Interroll Motorised Pulley Series 6600 ∅ 500 mm TM 501

Specification of standard Motorised Pulley

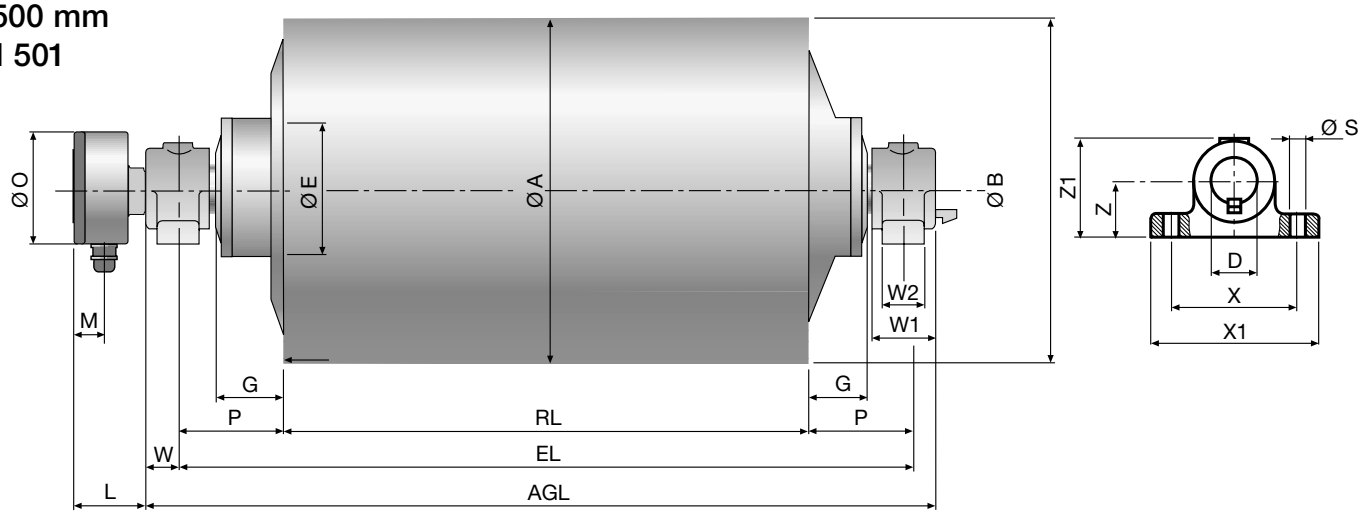
- Crowned mild steel shell painted yellow
- Bolted cast iron bearing housings and covers
- Mild steel shaft treated with ant-rust wax
- Protection to IP66/67
- Cast iron terminal box painted yellow
- Motor winding insulation class F
- 3-phase induction motor
- Thermal protector
- Magnetic oil plug
- Dynamically balanced rotor
- Yellow painted graphite cast iron mounting brackets
- Factory oil filled for 10.000 operational hours – refer to installation and maintenance chapter
- Maximum standard shell width 2000 mm

Please note:

- Special shell widths on request
- For brackets refer to page 74
- For environmental condition and important information refer to page 8/9
- For rust-free and semi rust-free option TS 11 – 12 refer to page 23

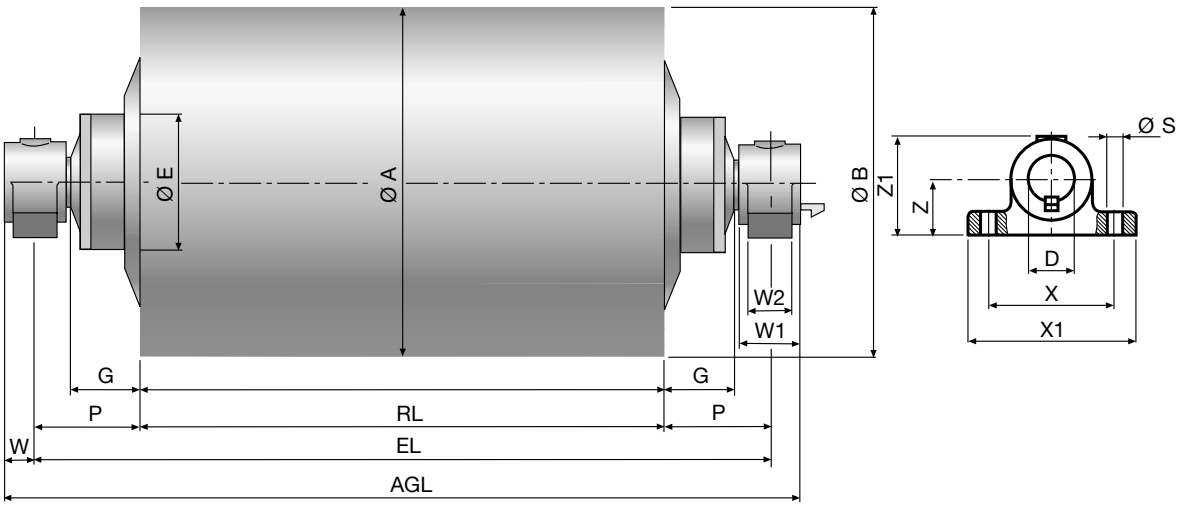
Series 6600
Ø 500 mm
TM 501

Standard Motorised Pulley TM 501



Type	A mm	B mm	D mm	E mm	G mm	L mm	M mm	O mm	P mm	W mm	X mm	S mm	Z mm	W1 mm	W2 mm	X1 mm	Z1 mm
	Motorised Pulley with terminal box																
TM 501	501	497	65	192	95	102	36.5	156	150	47	180	23	80	90	60	240	141
	Idler Pulley																
UT 501	501	497	65	192	95				150	47	180	23	80	90	60	240	141

Idler Pulley UT 501



Series 6600
Ø 500 mm
TM 501

	Motor		Nominal belt speed at full load 50 Hz	Torque	Belt pull	Max. radial load $T_1 + T_2$	Weight in kg for standard width RL in mm								
	Power	No. of poles													per 50 mm up to 1500
	kW/HP		m/sec	Nm	N	N	750	800	850	900	950	1000	1050	1100	
Standard Motorised Pulley	4.00/ 5.50	8	0.50 0.63 0.80 1.00 1.25 1.60 2.00 2.50	1900 1508 1186 950 760 594 475 360	7585 6020 4735 3793 3034 2372 1897 1437	28400	325	333	340	348	355	364	373	381	8 kg
	5.50/ 7.50	8	0.50 0.63 0.80	2612 2073 1632	10427 8276 6515	42200 42200 28400	339	348	357	365	374	381	387	395	8 kg
		6	1.00 1.25 1.60 2.00 2.50	1306 1045 816 653 522	5214 4172 3258 2607 2084	28400									
	7.50/ 10.00	8	0.63 0.80	2827 2226	11285 8887	42200	349	358	367	375	384	390	397	405	8 kg
		6	1.00 1.25 1.60 2.00 2.50	1780 1424 1113 890 712	7106 5685 4443 3553 2843										
	11.0/ 15.0	6	1.00 1.25 1.60 2.00 2.50	2611 2089 1632 1306 1045	10423 8340 6515 5214 4172	42200	359	369	379	389	399	405	412	420	8 kg
	15.0/ 20.0	4	1.25 1.60 2.00 2.50 3.15	2850 2226 1781 1425 1131	11377 8886 7110 5689 4515	42200	370	378	385	393	400	409	418	426	8 kg
	18.5/ 25.0	4	1.60 2.00 2.50 3.15	2746 2197 1757 1395	10962 8771 7014 5569	42200	380	388	395	403	410	419	428	436	8 kg
	22.0/ 30.0	2	2.00 2.50 3.15	2611 2089 1600	10423 8340 6385	42200	380	388	395	403	410	419	428	436	8 kg
	Idler Pulley UT 501					42200	212	220	229	237	246	255	263	271	8 kg

Interroll Motorised Pulley Series 6800 ∅ 630 mm TM 631 TM 633

Specification of standard Motorised Pulley

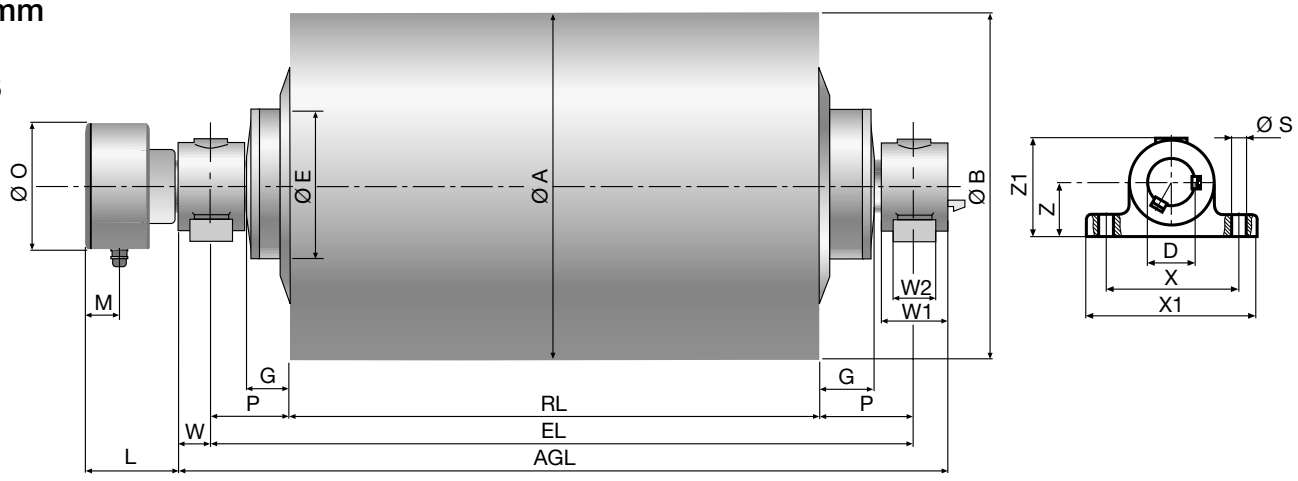
- Crowned mild steel shell painted yellow
- Bolted cast iron bearing housings and covers
- Mild steel shaft treated with ant-rust wax
- Protection to IP66/67
- Cast iron terminal box painted yellow
- Motor winding insulation class F
- 3-phase induction motor
- Thermal protector
- Magnetic oil plug
- Dynamically balanced rotor
- Yellow painted cast steel mounting brackets
- Factory oil filled for 10.000 operational hours – refer to installation and maintenance chapter
- Maximum standard shell width 2000 mm

Please note:

- Special shell widths on request
- For brackets refer to page 74
- For environmental condition and important information refer to page 8/9
- For rust-free and semi rust-free option TS 11 – 12 refer to page 23

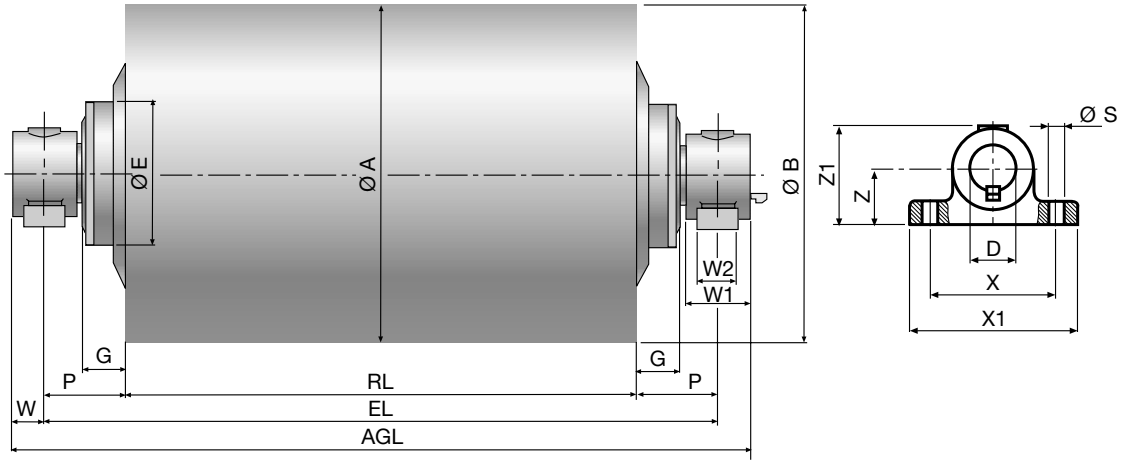
Series 6800
Ø 630 mm
TM 631
TM 633

Standard Motorised Pulley TM 631/TM 633



Type	A	B	D	E	G	L	M	O	P	W	X	S	Z	W1	W2	X1	Z1
	Motorised Pulley with terminal box																
TM 631	630	626	65	192	95	100	42	156	150	47	180	23	80	90	60	240	141
TM 633	630	626	90	268	88	165	54	230	150	61	250	26	100	117	80	320	183
	Idler Pulley																
UT 502	501	497	90	268	88				150	61	250	26	100	117	80	320	183

Idler Pulley UT 502



Series 6800
Ø 630 mm
TM 631

	Motor		Nominal belt speed at full load 50 Hz	Torque	Belt pull	Max. radial load $T_1 + T_2$	Weight in kg for standard width RL in mm								
	Power	No. of poles													per 50 mm up to 1500
	kW/HP		m/sec	Nm	N	N	750	800	850	900	950	1000	1050	1100	
Standard Motorised Pulley	5.50/ 7.50	8	0.63 0.80 1.00	2612 2057 1645	8292 6530 5222	28400	395	404	413	422	431	441	450	459	9 kg
		6	1.25 1.60 2.00 2.50 3.15	1316 1028 823 658 522	4178 3264 2613 2089 1657										
	7.50/ 10.00	8	0.80 1.00	2805 2243	8905 7121	42200	404	413	422	431	440	450	459	468	9 kg
		6	1.25 1.60 2.00 2.50 3.15	1795 1402 1122 897 712	5699 4451 3562 2848 2261										
	11.00/ 15.00	6	1.25 1.60 2.00 2.50 3.15	2631 2056 1645 1316 1045	8356 6527 5222 4178 3318	42200	419	428	438	447	456	466	475	484	9 kg
	15.00/ 20.00	4	1.60 2.00 2.50 3.15	2804 2243 1795 1424	8902 7121 5699 4521	42200	430	439	449	458	467	477	486	495	9 kg
	18.50/ 25.00	4	2.00 2.50 3.15	2767 2213 1757	8784 7026 5578	42200	440	449	459	468	477	487	496	505	9 kg

Series 6800
Ø 630 mm
TM 633

	Motor		Nominal belt speed at full load 50 Hz	Torque	Belt pull	Max. radial load $T_1 + T_2$	Weight in kg for standard width RL in mm								
	Power	No. of poles													
	kW/HP		m/sec	Nm	N	N	950	1000	1050	1100	1150	1200	1250	1300	per 50 mm up to 1500
Standard Motorised Pulley	22.00/ 30.00	8	1.00 1.25 1.60 2.00 2.50 3.15	6583 5265 4113 3290 2632 2089	20899 16714 13057 10445 8356 6632	73600	805	818	830	843	855	865	878	891	13 kg
	30.00/ 40.00	8	1.25 1.60 2.00 2.50 3.15	7179 5609 4487 3589 2849	22791 17807 14245 11394 9045	98100	825	838	850	863	875	885	898	911	13 kg
	37.00/ 50.00	6	1.60 2.00 2.50 3.15	6920 5534 4427 3513	21969 17569 14054 11153	98100	825	838	850	863	875	885	898	911	13 kg
	45.00/ 61.00	4	2.50 3.15 4.00	5384 4273 3365	17092 13565 10683	88300	845	858	870	883	895	905	918	931	13 kg
	55.00/ 75.00	4	2.50 3.15 4.00	6580 5223 4113	20995 16581 13057	98100	845	858	870	883	895	905	918	931	13 kg
	Idler Pulley					98100	287	296	305	314	322	331	340	349	9 kg

Interroll Motorised Pulley Series 6900 ∅ 800 mm TM 800 TM 801

Specification of standard Motorised Pulley

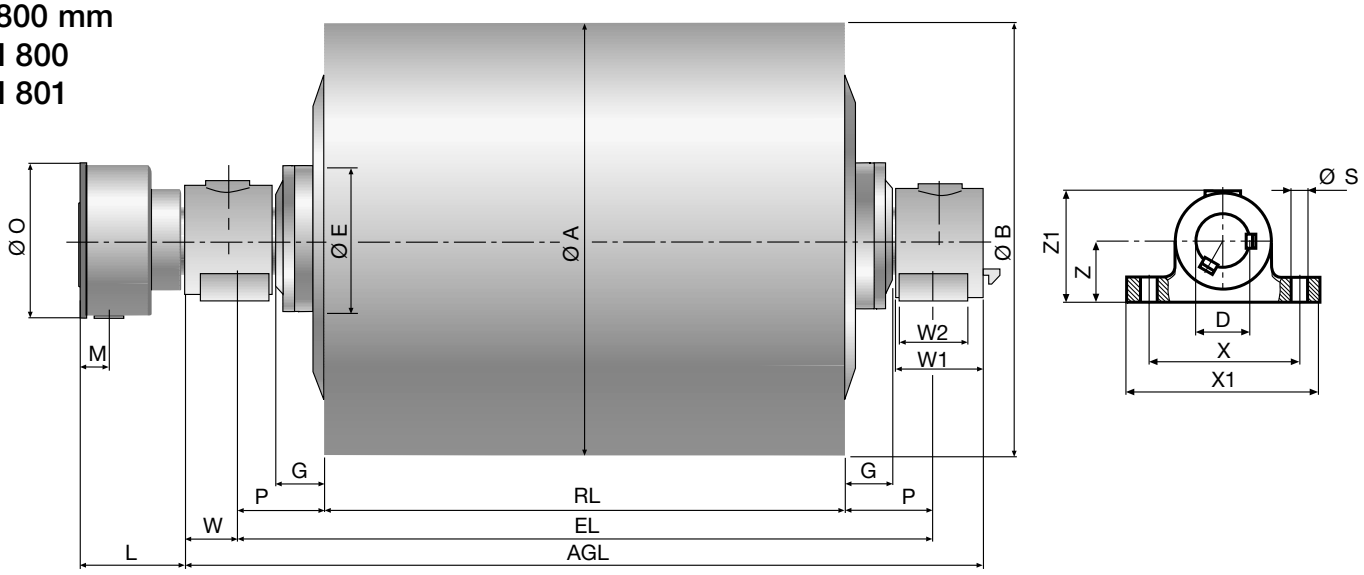
- Crowned mild steel shell painted yellow
- Bolted cast iron bearing housings and covers
- Mild steel shaft treated with ant-rust wax
- Protection to IP66/67
- Cast iron terminal box painted yellow
- Motor winding insulation class F
- 3-phase induction motor
- Thermal protector
- Magnetic oil plug
- Dynamically balanced rotor
- Yellow painted cast steel mounting brackets
- Factory oil filled for 10.000 operational hours – refer to installation and maintenance chapter
- Maximum standard shell width 2000 mm

Please note:

- Special shell widths on request
- For brackets refer to page 74
- For environmental condition and important information refer to page 8/9
- For rust-free and semi rust-free option TS 11 – 12 refer to page 23

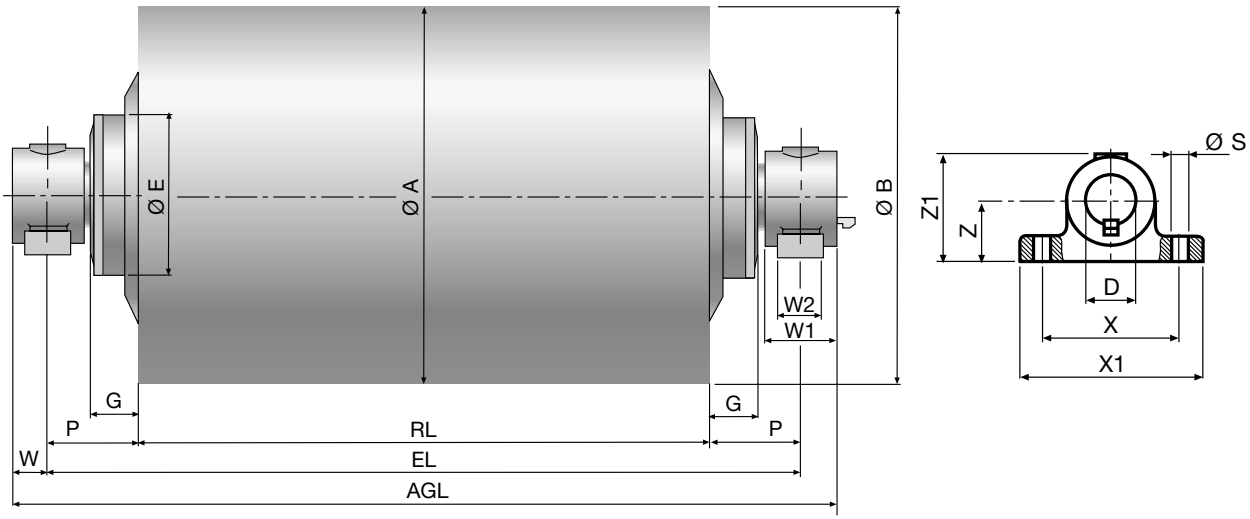
Series 6900
Ø 800 mm
TM 800
TM 801

Standard Motorised Pulley TM 800/TM 801



Type	A mm	B mm	D mm	E mm	G mm	L mm	M mm	O mm	P mm	W mm	X mm	S mm	Z mm	W1 mm	W2 mm	X1 mm	Z1 mm
	Motorised Pulley with terminal box																
TM 800	800	796	90	268	88	165	54	230	150	61	250	26	100	117	80	320	183
TM 801	800	796	120	330	80	200	62	260	150	95	300	33	110	160	120	370	213
	Idler Pulley																
UT 630	630	626	120	330	80	–	–	–	150	95	300	33	110	160	120	370	213

Idler Pulley UT 630



Series 6900
Ø 800 mm
TM 800

	Motor		Nominal belt speed at full load 50 Hz	Torque	Belt pull	Max. radial load $T_1 + T_2$	Weight in kg for standard width RL in mm							
	Power	No. of poles												per 50 mm up tp 1500
	kW/HP		m/sec	Nm	N	N	950	1000	1050	1100	1150	1200	1250	
Standard Motorised Pulley	22.00/ 30.00	8	1.25 1.60 2.00 2.50 3.15	6688 5223 4178 3343 2653	16720 13058 10445 8358 6633	73600	935	948	960	973	985	995	1005	13 kg
	30.00/ 40.00	8	1.60 2.00 2.50 3.15	7122 5698 4558 3617	17805 14245 11395 9043	98100	975	988	1000	1013	1025	1035	1045	13 kg
	37.00/ 50.00	6	2.00 2.50 3.15 4.00	7030 5622 4462 3513	17575 14055 11155 8783	98100	975	988	1000	1013	1025	1035	1045	13 kg
	45.00/ 61.00	4	3.15 4.00	5426 4273	13565 10683	88300	995	1008	1020	1033	1045	1055	1065	13 kg
	55.00/ 75.00	4	3.15 4.00	6580 5223	16491 13058	98100	995	1008	1020	1033	1045	1055	1065	13 kg

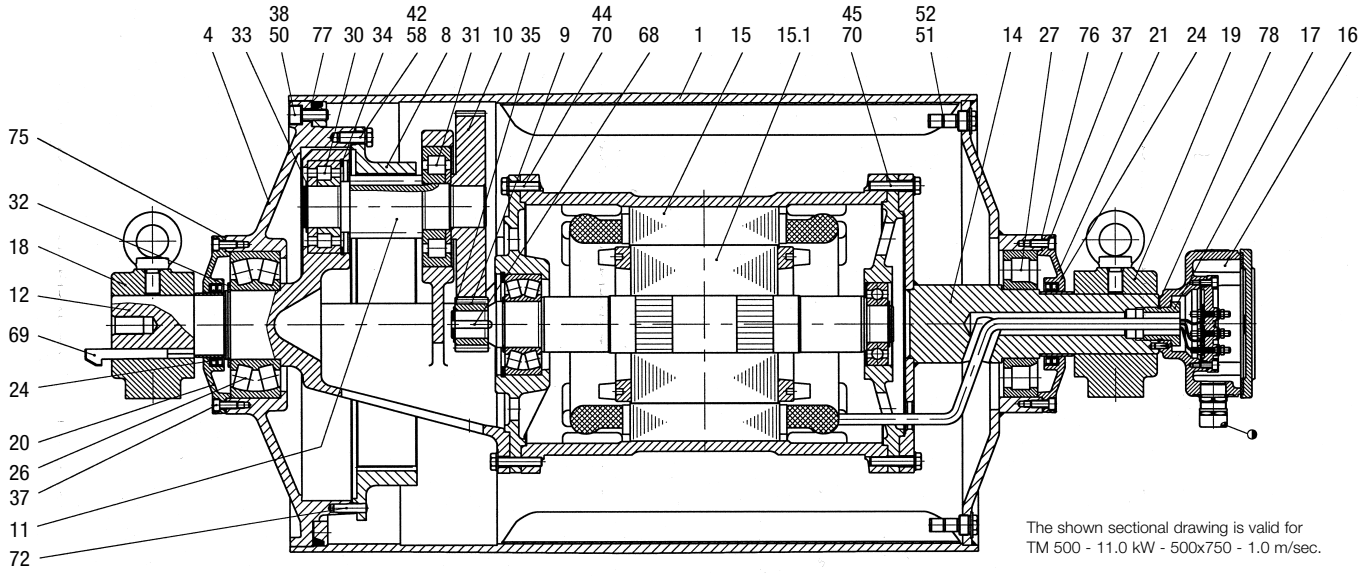
Series 6900
Ø 800 mm
TM 801

	Motor		Nominal belt speed at full load 50 Hz	Torque	Belt pull	Max. radial load $T_1 + T_2$	Weight in kg for standard width RL in mm									
	Power	No. of poles														per 50 mm up to 1500
	kW/HP		m/sec	Nm	N	N	1400	1450	1500	1550	1600	1650	1700	1750	1800	
Standard Motorised Pulley	55.00/ 75.00	8	1.60	13052	32630	200000	2150	2175	2200	2225	2250	2275	2300	2325	2350	25 kg
		6	2.00 2.50 3.15 4.00 4.50	10450 8360 6635 5223 4644	26125 20900 16588 13063 11610											
	75.00/ 100.00	6	2.00 2.50 3.15 4.00 4.50	14244 11395 9044 7122 6331	35610 28488 22610 17805 15828	200000	2150	2175	2200	2225	2250	2275	2300	2325	2350	25 kg
	90.00/ 122.00	6	2.50 3.15 4.00 4.50	13674 10852 8546 7597	34185 27130 21365 18993	200000	2200	2225	2250	2275	2300	2325	2350	2375	2400	25 kg
	110.00/ 150.00	4	3.15 4.00 4.50	13264 10445 9265	33160 26113 23163	180000	2150	2175	2200	2225	2250	2275	2300	2325	2350	25 kg
	132.00/ 180.00	4	4.00 4.50	12535 11142	31338 27855	180000	2080	2105	2130	2155	2180	2205	2230	2255	2280	25 kg
	Idler Pulley UT 630					200000	Weight on request									

Interroll
Motorised Pulley
Series
6600
6800
6900
Ø 500 mm – 800 mm
Types TM 501 – 801

Sectional Drawing

Pos.	Description	Pos.	Description
1	Shell	31	Bearing
2	End housing with geared rim	32	Retaining ring
3	End housing	33	Retaining ring
8	Geared rim	34	Retaining ring
9	Rotor pinion	35	Retaining ring
10	Input wheel	37	Hexagon socket screw
11	Output pinion	38	Hexagon socket screw
12	Gearbox – cast aluminium	42	Hexagon head screw
13	Rear shaft	44	Hexagon head screw
14	Front shaft	45	Hexagon head screw
15	Stator complete	47	Hexagon head screw
15.1	Rotor	50	Washer
16	Terminal box complete	52	Magnetic oil plug
17	Nipple	57	Waved spring washer
18	Mounting brackets rear side	58	Waved spring washer
18.1	Mounting brackets rear side	68	Key
19	Mounting brackets front side	69	Gib key
19.1	Mounting brackets front side	70	Waved spring washer
20	Cover rear side	72	Grooved pin
20.1	Cover with labyrinth groove (not shown)	75	Gasket
		76	Gasket
21	Cover front side	77	Gasket
21.1	Cover with labyrinth groove (not shown)	78	Gasket
		85	Intermediate flange for backstop
23	Rear flange		
24	2 Dust lip seals	90	Backstop
26	Bearing	94	Hexagon head screw
27	Bearing	99	Waved spring washer
30	Bearing	101	Key
31	Bearing	123	Grease nipple

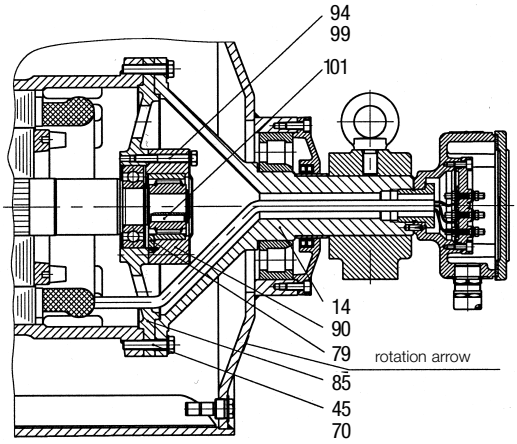


The shown sectional drawing is valid for
TM 500 - 11.0 kW - 500x750 - 1.0 m/sec.

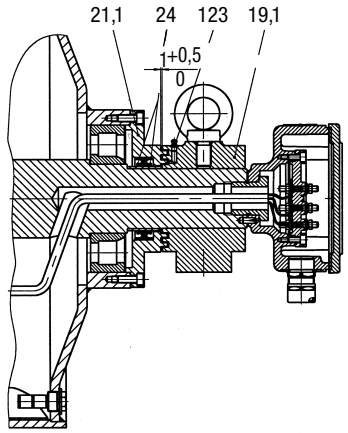
Interroll
Motorised Pulley
Series
6600
6800
6900
Ø 500 mm – 800 mm
Types TM 501 – 801

Sectional Drawing

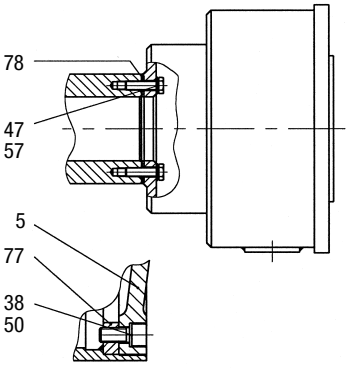
Backstop option



Labyrinth option



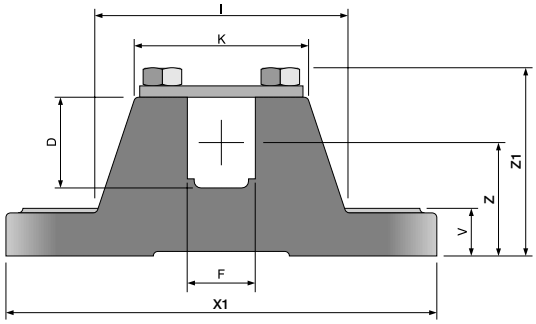
Used for TM 800, TM 801

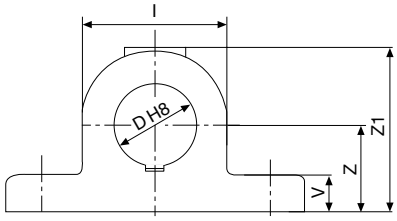


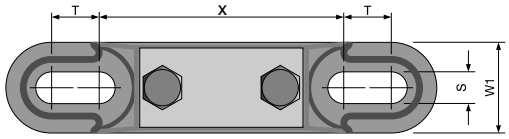
Series
6300/6500
6600/6700
6800/6900

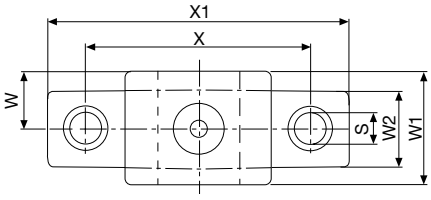
Type KL 41/KL 41-HD/KL 42/KL 60
Powder coated black

Type AL = with gib key
Type ALO = without gib key
Painted yellow



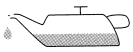






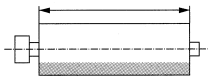
Motorised Pulley Type	Material	Description	Dimension in mm D	F	I	K	S	T	V	W	W1	W2	X	X1	Z	Z1	Weight in kg
TM 220 / TM 321 TM 323, 2-stage TM 400, 2-stage	Graphite cast iron	KL 41	40	30	110	62	14	20	22		40		110	190	50	83	1.9
TM 220, 3-stage TM 323, 2-stage (5.5 & 7.5 kW)	Steel	KL 41-HD	40	30	84	62	14	20	22		40		110	190	50	83	2.1
TM 323, 3-stage	Steel	KL 42	50	40	121	90	18	30	25		50		150	250	70	110	4.5
TM 401	Steel	KL 60	60	45	130	90	18	30	25		50		150	270	70	115	4.8
TM 501 / TM 631	Graphite cast iron	AL65/AL0 65	65		115		23		34	45	90	60	180	240	80	141	8.0
TM 633 / TM 800	Cast steel	AL90/AL0 90	90		160		26		42	58.5	117	80	250	320	100	183	19.0
TM 801	Cast steel	AL120/AL0120	120		200		33		50	95	160	120	300	370	110	213	38.0

Oil Types



Motorised pulley	Insul.-Class acc. IEC 34	☼	ISO 3498 DIN 51519	DIN 51517	Castrol	BP	ESSO	Mobiloil	Shell	Texaco	DEA
∅ 216–800 (Standard)	F	–25°C•+40°C	CC ISO VG 150	CLP ISO VG 150	ALPHA SP 150	ENERGOL GR-XP 150	SPARTAN EP 150	MOBILGEAR 629	OMALA 150	MEROPA CLP 150	FALCON CLP 150
	H	–25°C•+40°C	CC 150 VG 220	CLP 150 VG 220	ALPHA-SYNTH 220		SPARTAN SYNTH EP 220	SHC 629			
Food Grade Oil	F/H	–30°C•+40°C	CC ISO VG 220	Complies with Food Additive Regulation 12 CFR					Cassida GL 220		

Oil Contents for Standard Horizontal Application



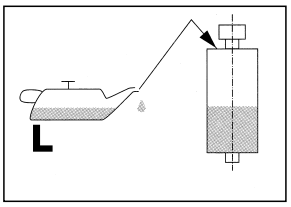
Litres (L)

RL mm	TM 220 0.55 & 1.1–1.5 kW	0.75 & 2.2–4.0 kW	TM 321/TM 323 0.75– 3.0 kW	4.0– 5.5 kW	7.5 kW	TM 400	TM 401	TM 500	TM 631	TM 633	TM 800	TM 801
450 500	3.0	4.0	7.0	7.0								
550 600	4.0	5.0	8.0	8.0	10.0	6.0	7.0					
650 700	4.5	5.5	9.0	9.0	11.0	7.0	8.0					
750 800	5.0	6.0	10.0	10.0	13.0	7.5	9.0	10.0	25.0			
850 900	5.5	6.5	11.0	11.0	14.0	8.5	10.0	12.0	28.0			
950 1000	6.0	7.0	14.0	14.0	16.0	9.5	11.0	13.0	30.0	52.0	59.0	
1050 1100	6.5	7.5	15.0	15.0	18.0	10.5	12.5	15.0	34.0	54.0	64.0	
1150 1200	7.0	8.0	18.0	18.0	19.0	11.5	14.0	16.0	38.0	59.0	69.0	
1250 1300	7.5	8.5	20.0	20.0	23.0	14.0	15.0	18.0	42.0	63.0	73.0	
1350 1400	8.0	9.0	22.0	22.0	25.0	15.0	16.0	19.0	45.0	66.0	76.0	130.0
1450 1500	8.5	9.5	24.0	24.0	28.0	16.0	18.0	21.0	48.0	70.0	80.0	135.0
1550 1600	9.0	10.0	26.0	26.0	30.0	17.0	19.0	22.0	50.0	74.0	84.0	140.0
1650 1700	9.5	10.5	28.0	28.0	33.0	18.0	20.0	24.0	53.0	78.0	88.0	145.0
1750 1800	11.5	11.5	30.0	30.0	35.0	19.0	21.0	26.0	55.0	82.0	92.0	150.0
1850 1900	13.0	13.0	31.0	31.0	37.0	20.0	23.0	28.0	58.0	86.0	96.0	155.0

	TM 220	TM 320	Special design Cable outlet/terminal box must be at the top
	10 Litres	25 Litres	

For vertical mounting the oil quantity is independent on the shell width.

Note: the given oil contents are valid for standard unlagged Motorised Pulleys only. For special options the oil quantity can deviate. Therefore always use the given oil quantity shown on the data plate



Information Required when Ordering a Motorised Pulley

Please give the following information when ordering:

Motorised Pulley	
Quantity	pieces
Diameter of pulley	[mm]
Power	[kW]
Phases	pieces
Voltage	[V]
Frequency	[Hz]
Belt speed	[m/sec]
Shell width RL	[mm]
Idler pulley	
Quantity	pieces
Shell diameter	[mm]
Type + special options	
Shell width RL	[mm]
Mounting brackets	
Quantity	pieces
Shaft diameter	[mm]
Bracket type	
Single parts	
Quantity	pieces
Position no. of the parts	

Important
Please refer to Interroll regarding:

- Motorised Pulleys connected to frequency converters (speed controllers).
- Motorised Pulleys for low noise applications – e.g. airports, post etc.
- For special execution described in this catalogue.

Please copy this page and attach it to your inquiry or order.

For claims use data given on the data plate.

Most important is the manufacture no. stamped on the shaft end and on the data plate.

BELT PULLEYS

2

Technical Information

The following types of Interroll belt pulleys are used in bulk and unit handling conveyors.

Drive Pulley	**AT**
Idler Pulley	**UT**
Snub Pulley	**DT**

Interroll Belt Pulleys are designed according to customers request. The design and calculation is based on the FEM Method and the drawings are made on CAD systems.
Interroll standard belt pulleys will be delivered with friction lock assemblies.
Other shaft to end disc connections are available on request.
Interroll belt pulleys mainly consist of:

Pulley Shell:
- Cylindrical or crowned
- With speed control lugs

Rubber Lagging:
- Smooth or grooved
- Hot or cold vulcanised
- Ceramic

Shaft/Axles:
- Drive shaft: single or double drive shaft end
- With shrink fitting disc or keyless friction lock assembly

Axle:
- with holes for speed control device

Bearings:
- Pillow bearings, sliding bearings, and flange bearings of known suppliers.
- Sealing systems according to the application (e.g. double lip seals, labyrinth seals, Taconite seals, shaft sealing rings etc.)

Corrosion Protection:
- The paint coat will be selected according to the application.
- Shaft and Axle ends are temporary protected against corrosion.

General:
- All pulleys are statically balanced.
- Dynamically balancing on request.

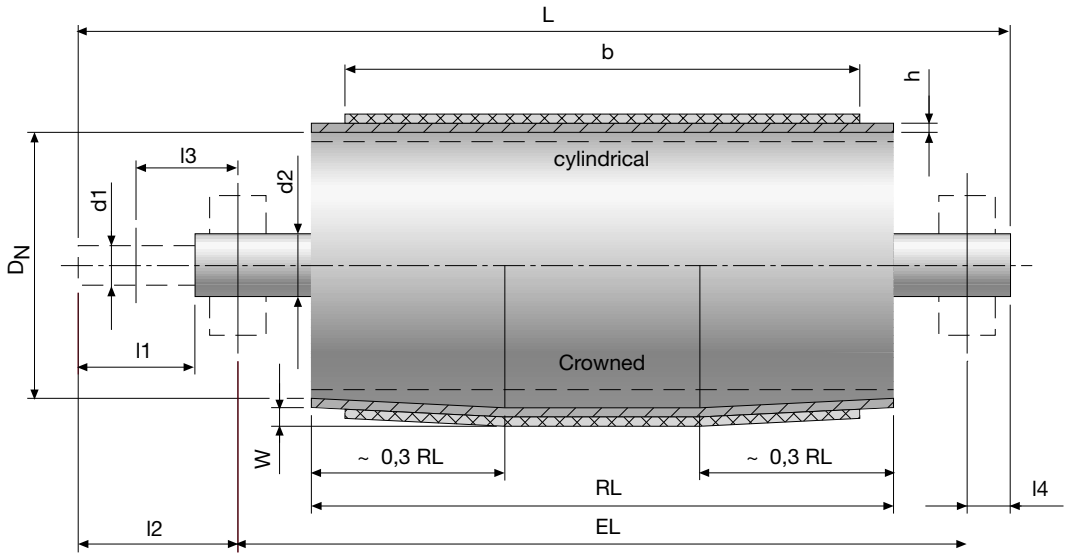
Interroll offers the following standard sizes of belt pulleys:

Diameter:	220 – 1000 mm (other dimensions on request)
Shell width:	up to 4000 mm

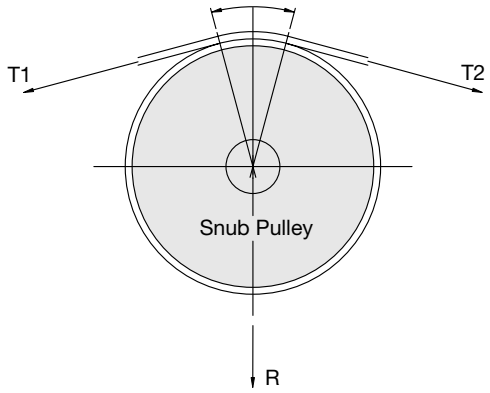
Belt Pulleys

Important Information for Inquiring or Ordering

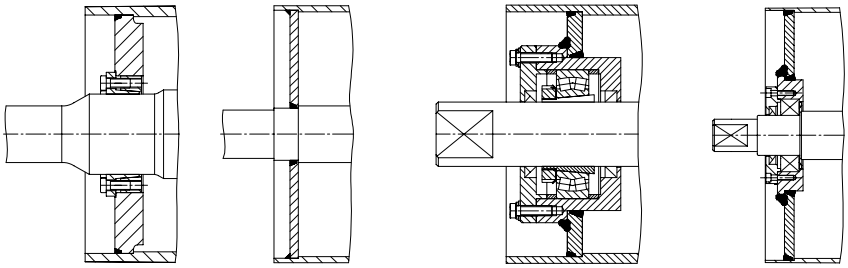
Identification Example



Wrap Angle



Design Variants of Shaft/End Disc Connection



Friction lock assembly (N)

Welded shaft / end disc connection (S)

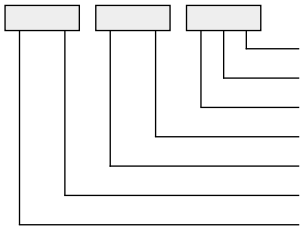
Internal mounting (I)

Heavy version

Light version

Belt Pulleys

Interroll Type Description



Required torque	[kN x m] on Drive Pulleys	
Resultant belt pull	R_{max}	[kN]
Centre- to centre distance	EL	[mm]
Shell width	RL	[mm]
Shell diameter	DN	[mm]
Execution		
Pulley type		

Example

ATN 500 x 950/1190 – 25/2.4

Drive pulley with friction lock assembly [N],

Diameter	DN	= 500 mm
Shell width	RL	= 950 mm
Centre- to centre distance	EL	= 1190 mm
Resultant belt tension	R_{max}	= 25 kN
Required torque	Ma_{max}	= 2.4 kN x m

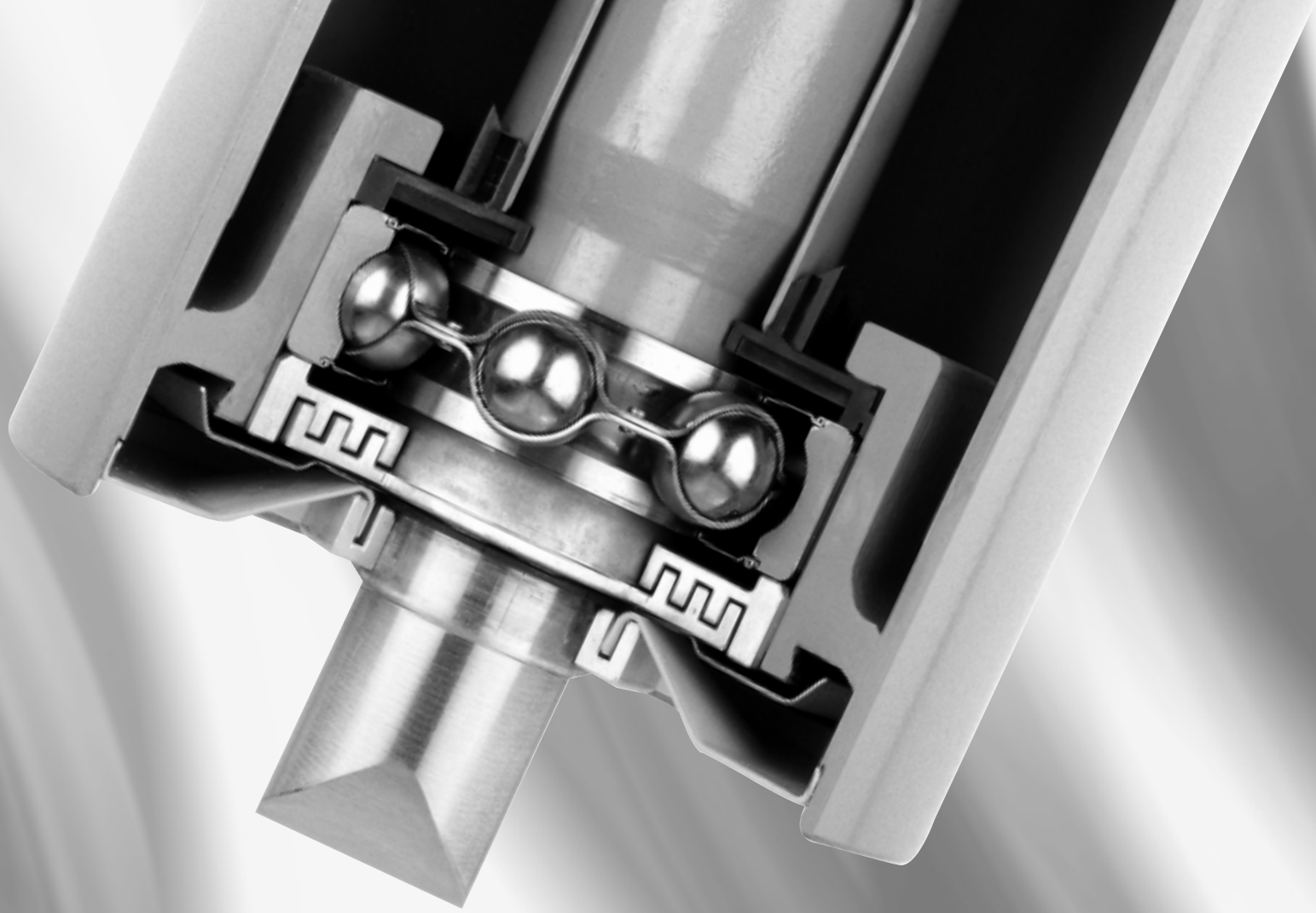
Important Information for Making an Offer

Content	Specification	Abbreviation	Description
	Belt pulley type	AT UT DT	Drive pulley Idle pulley Snub pulley
	Execution	N S I	friction lock assembly welded shaft internal mounting
	Shell diameter	DN (mm)	unlagged dimension
	Shell width Belt width Centre- to centre distance	RL (mm) b (mm) EL (mm)	
	Bearing type		
	Resultant belt tension	R_{max} (kN)	= T1 + T2 incl. Safety factor
	Required torque	Ma_{max} (kN x m)	= max. torque on the pulley incl. Safety factor
	Type and thickness of the rubber lagging	h (mm)	
	Belt speed	v (m/sec)	

Additional Information if Known

Length of the gear shaft Diameter of the gear shaft	l_1 (mm) d_1 (mm)	if possible data sheet of the gear supplier
Diameter of the bearing seat	d_2 (mm)	will be defined by Interroll design engineers
Distance between middle of bearing and end of the pulley shaft	l_2 (mm)	will be defined by the customer
Distance between middle of the bearing and gear box	l_3 (mm)	will be defined by the customer
Crowning	W (mm)	will be defined by Interroll
Distance between middle of the bearing and end of the pulley shaft	l_4 (mm)	will be defined by Interroll
Total length of the pulley	L (mm)	will be defined by Interroll

Please consult Interroll for more information.



HEAVY DUTY ROLLERS AND GARLANDS

General Information

Rollers
The heavy-duty rollers are especially designed for carrying heavy loads in coal mining and iron ore mining applications.
The Interroll range of heavy-duty rollers include dimensions and bearing sizes which are larger than most of other suppliers.
It is our aim to deliver rollers which can operate under heavy loads and which are immune against aggressive environmental conditions, which include dirt, dust, rain, and high temperature differences.
Interroll rollers can be delivered as single rollers, or complete as garlands.
The sealing system is based on a multi-chamber labyrinth, to protect the bearings against any kind of environmental influences.
Rollers with a high internal volume due to larger diameters are additionally equipped with an inner tube, which protect the bearings against condensation and rust.

Due to the non-contacting sealing system and using high precision bearings, Interroll rollers run quiet and easy, especially at high belt speeds.
All rollers can be equipped with rubber discs, buffer rings or smooth rubber lagging.
The shaft dimensions will be designed according to customer requests and the selected bearing size.

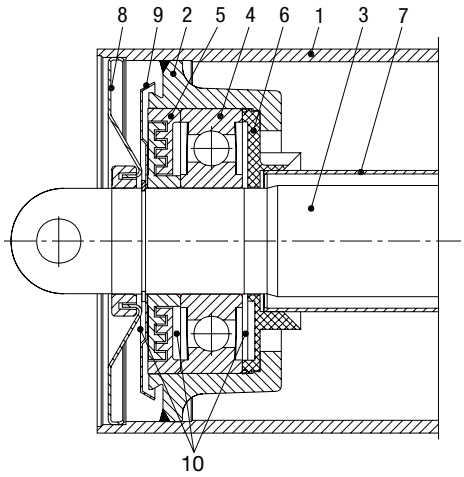
Technical Information

The Interroll heavy-duty rollers are assembled with high quality bearings size 6308 – 6312. They can be used in high-speed belt conveyors with a large amount of carrying loads.
The mounting dimensions (roller length and shaft ends) are mainly designed according to DIN 1520 Part1 with the dimensions (A2, B2, G1 and G2).
Other Shaft end dimensions are according to DIN 15207 as well as roller lengths.
Various types of rubber lagging or special options are available on request.
For garland assembly, different types of fastening elements, assembly variants or suspension variants are available on request.

Field of Application
Interroll rollers are used on the carrying side and return side of the belt conveyor as well as at feed points or transfer points.
Due to their high load carrying capacity, they can also be used as snub pulleys or return pulleys. They can also be used on heavily loaded roller conveyors for unit handling applications.
The illustrated roller design can be used for the following applications:
- Single mounting
- Mounted on rigid roller frames (Transoms)
- Mounted in garlands
- Mounted at special applications

Standard Dimensions
Interroll heavy-duty rollers are available from Ø 108 up to Ø 219.1mm.
The standard bearing sizes used are: 6308, 6310 and 6312.
For the modification of garlands a large selection of accessories are available.

Construction/ Design of Standard Types



The rollers are standardized and designed according to DIN 15207 and DIN 22112

1 Roller Shell
We use high quality tube with excellent tolerances to limit out of balance forces and give quiet running. When special tolerances are required the roller shell can be turned and balanced.

2 Roller End Housings
The end housings are made of forged steel, which are welded into the shell.

3 Roller Shafts
The roller shafts are made of round bars C 45. The bearing seats are ground. Other types of material are available on request.

4 Antifriction Bearings
The roller shell is supported on the shaft with high precision roller bearings design XXXX - 2 ZR. C3 long life filled with grease. (according to DIN 625)

5 Labyrinth Seals
The bearing space at the front side is sealed with a three-chamber labyrinth sealing system with closely spaced airgaps. The chambers are filled with grease.

6 Inner Plastic Seals
The inner plastic seals protect the bearings from inside and support the inner protective tube.

7 Inner Protective Tube
The inner protective tube reduces the inner air volume and thereby the air imbalance from the inner shell through the bearing and seals if there are temperature differences. This effect simultaneously reduces the contamination of the grease.

8 Outer Protective Cover
The outer sealing of the roller consist of a dust cover made from a deep drawn steel sheet, which is pressed into the shell. Plus, an inner splash protective cover made of pressure cast zinc, is pressed onto the axle so that the dust cover and the splash cover are meshed like a single chamber labyrinth.

9 Protective cover
An additional protective cover is fitted in front of the labyrinth seal to prevent water or dust to enter into the labyrinth.

10 Grease Chamber
A grease chamber is located at each side of the bearing to keep dirt and water from it. The bearings are grease packed for long life.

Preservation
The roller shell and the exterior axle are lubricated with special long-life wax to withstand rust. The dust covers are painted yellow RAL 1021.

Roller Selection

The loading capacity of a roller is determined by the bearing size, the axle diameter and the thickness of the shell.

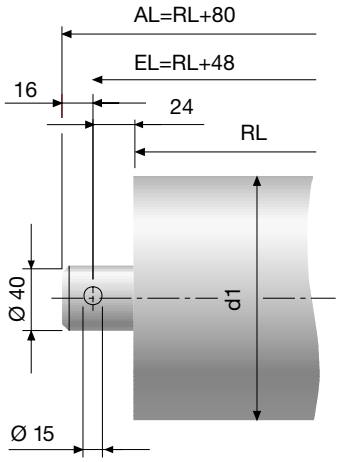
Interroll Standard Dimensions

Shell diameter	Bearing size
Ø 108 mm	6308
Ø 133 mm	6310
Ø 159 mm	6308 6310 6312
Ø 193 mm	6308 6310 6312
Ø 219 mm	6310 6312

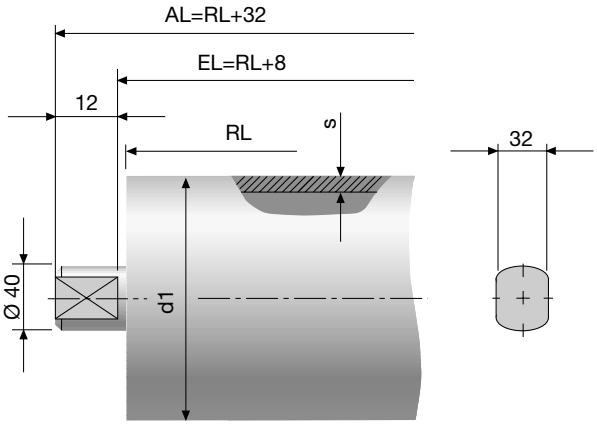
The rollers and the roller frames are calculated according to VDI 2341 with regard to the bearing life.

Roller Type ST-A with Bearing Size 6308

Roller with shaft end G1



Roller with shaft end A2



Information Required when Ordering

Standard shell thickness

d1	s
108.0	4.0
159.0	5.6
193.7	5.6

Other shell thickness

d1	s		
159.0	4.5	6.3	
193.7		5.0	6.3

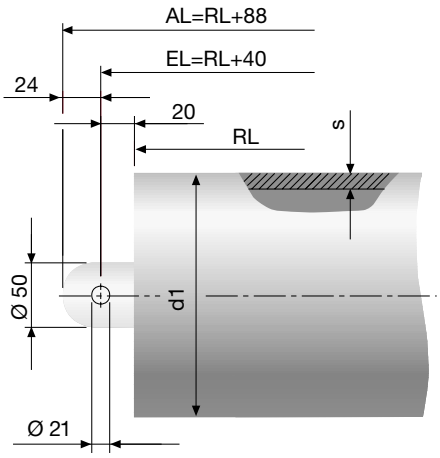
Order example ST-A 108 x 4.0 x 1000 – A2 – 6308

- Bearing size
- shaft end type
- RL
- s
- d1
- Roller type

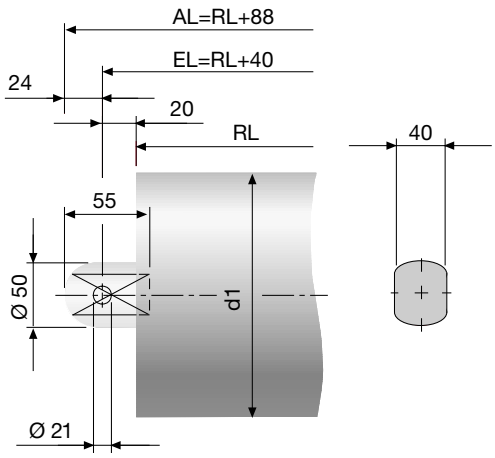
Shaft ends according to DIN 15207.
Other shaft ends on request.

Roller Type ST-A with Bearing Size 6310

Roller with shaft end G1



Roller with shaft end G2



Information Required when Ordering

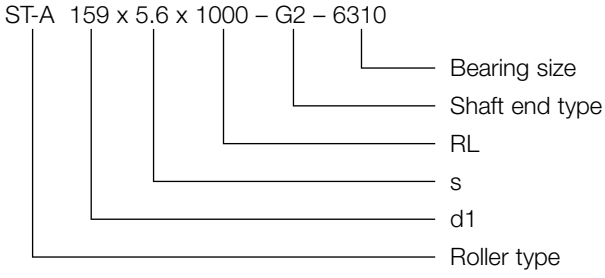
Standard shell thickness

d1	s
133.0	4.0
159.0	5.6
193.7	6.3
219.1	6.3

Other shell thickness

d1	s		
133.0			7.1
159.0	4.5	6.3	7.1
193.7	5.0	5.6	7.1
219.1	5.6	7.1	8.0

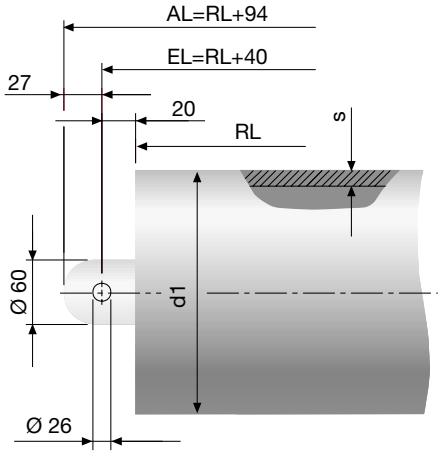
Order example



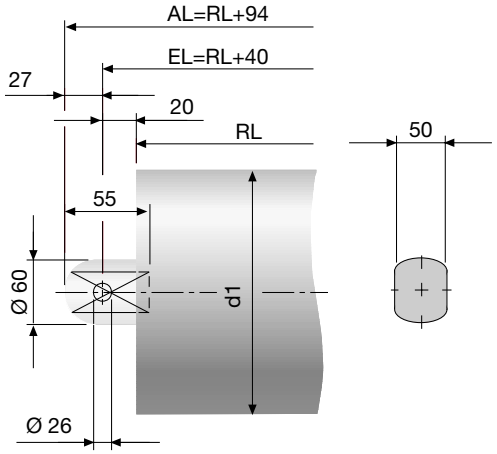
Shaft ends according to DIN 15207.
Other shaft ends on request.

Roller Type ST-A with Bearing Size 6312

Roller with shaft end G1



Roller with shaft end G2



Information Required when Ordering

Standard shell thickness

d1	s
159.0	7.1
193.7	6.3
219.1	6.3

Other shell thickness

d1	s	
159.0		
193.7	7.1	
219.1	7.1	8.0

Order example: ST-A 159 x 6.3 x 1000 – G2 – 6312

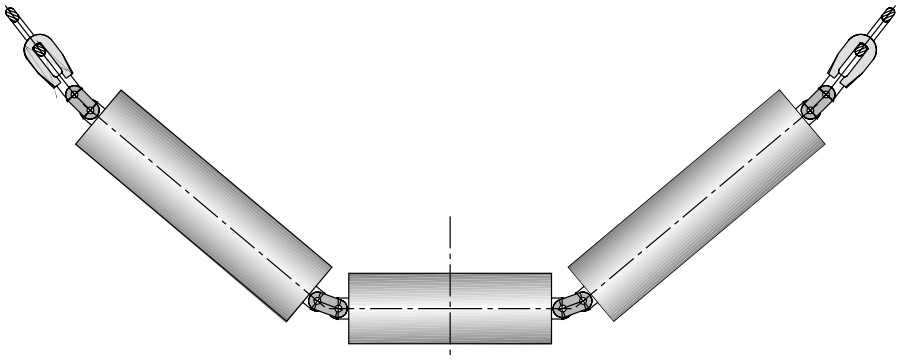
- Bearing size
- Shaft end type
- RL
- s
- d1
- Roller type

Shaft ends according to DIN 15207.
Other shaft ends on request.

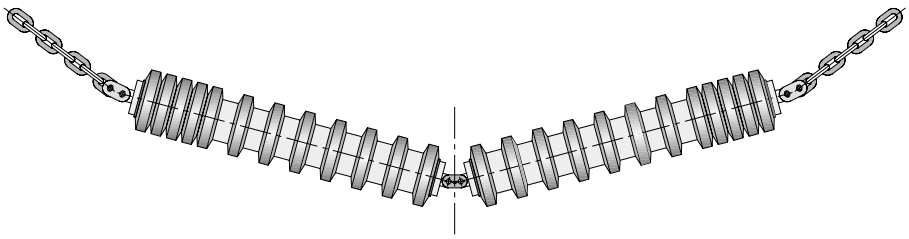
Garlands

General Description
With the available rollers and accessories, it is possible to group different types of garlands according to customer needs.

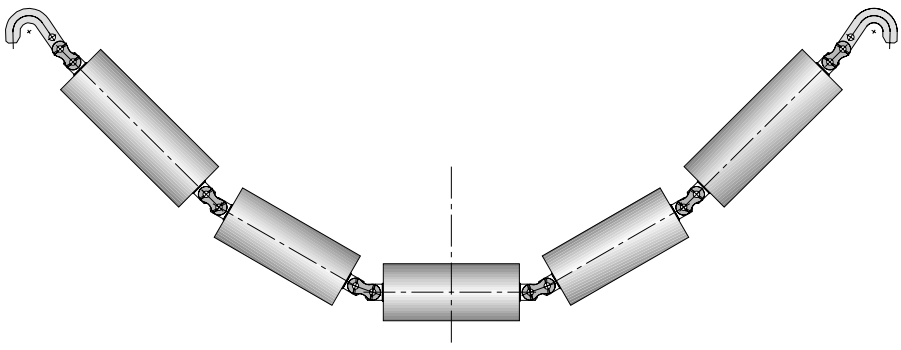
Example of a carrying garland



Example of a return garland



Example of an impact garland



Accessoires for Assembly of Garlands

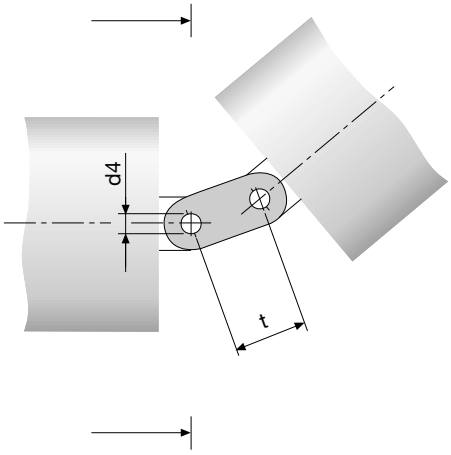
Accessories

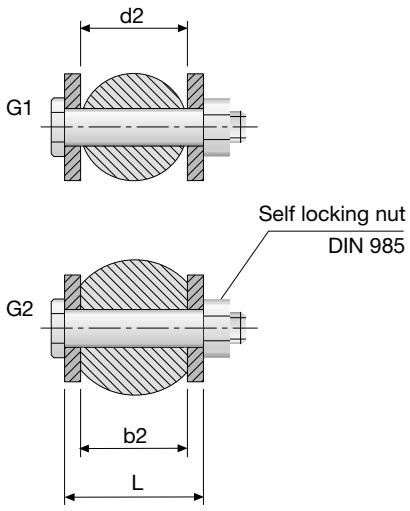
A wide range of accessories are avaible for the assembling of garlands.
If in doubt, please refer to Interroll.

Selection of Garland Suspensions

Links and Bolts

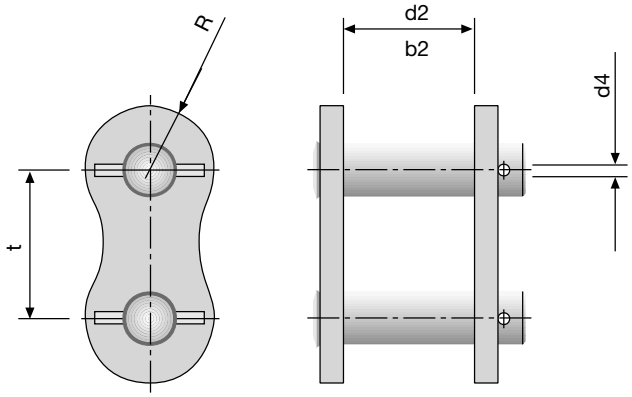
Important for the selection of links is the Pitch dimension ”t”. This dimension depends on the shaft end as well on the through angle of the garland.





Chain Link

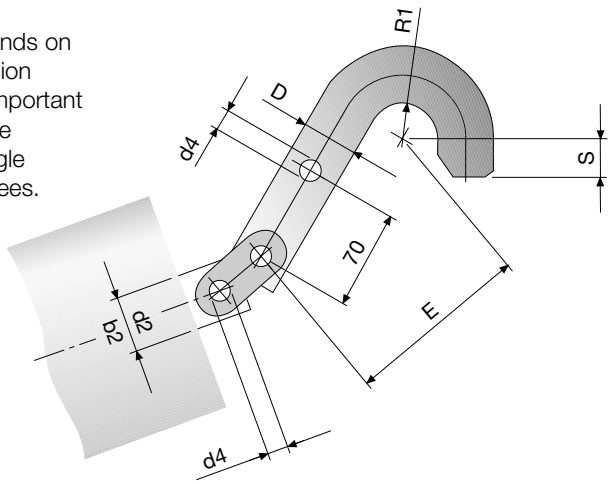
The chain link already has two fixed bolts. The second link will be fixed with the aid of pins. The clearance between the links are 0.5 to 1.0 mm.



Selection of Garland Suspensions

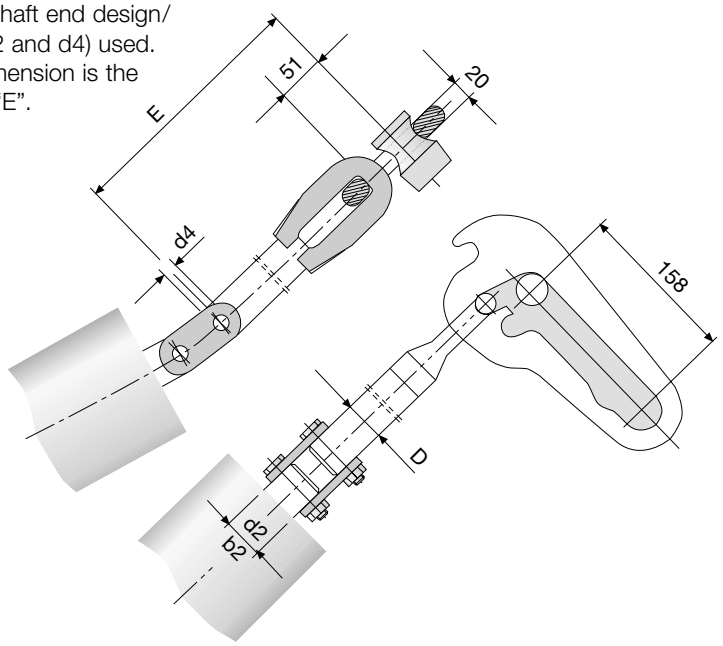
Hooks

The selection of hooks depends on the shaft end design/dimension (d2; b2 and d4) used. The important dimension of the hooks is the dimension “E”. The wrap angle of the hook is 30 to 40 degrees.



Quick-Release Lug

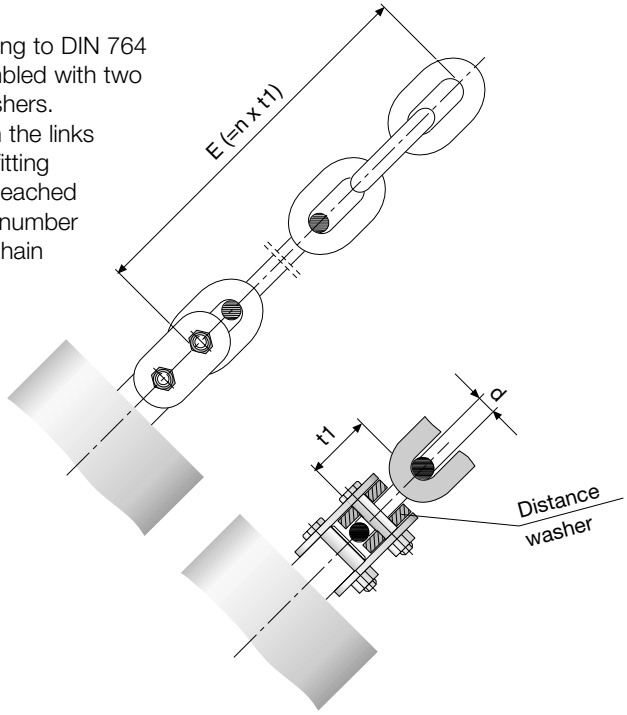
The selection of the quick-release lug depends on the shaft end design/dimension (d2; b2 and d4) used. The important dimension is the fitting dimension “E”.



Selection of Garland Suspensions

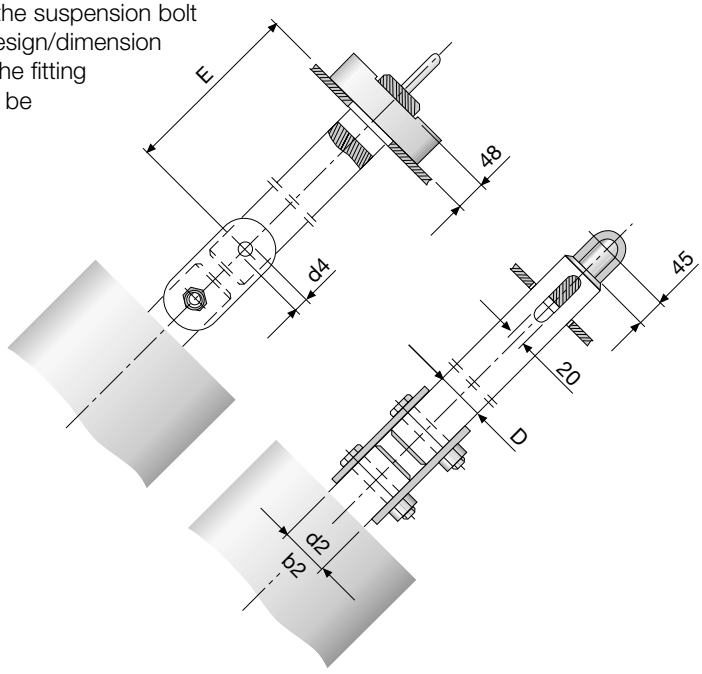
Steel Chain

The steel chain according to DIN 764 part 1 has to be assembled with two additional distance washers. The clearance between the links Should be 1 mm. The fitting dimension “E” will be Reached through the necessary number of chain links and the chain pitch used.



Suspension Bolt

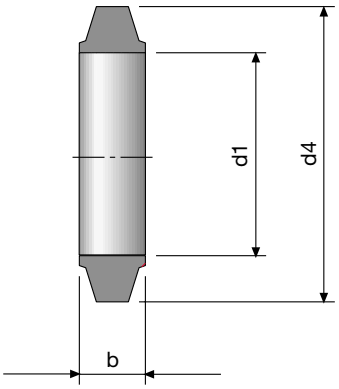
The dimension of the suspension bolt depends on the design/dimension (d2; B2 and d4). The fitting dimension “E” can be selected freely.



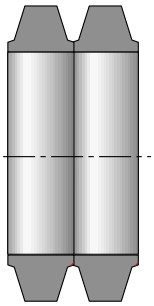
Rubber Discs

Rubber Discs for Return Rollers
All roller types ST-A with diameter 108; 133; and 193.7 can be supplied with rubber discs according to DIN 15210.
A wide section of rubber discs or rubber lagging are available.
The inner dimension “d1” is based on the outer diameter of the shell.
Between each rubber disc a spacer sleeve of 50 mm is fitted.
Please state the required dimension and number of rings when ordering.

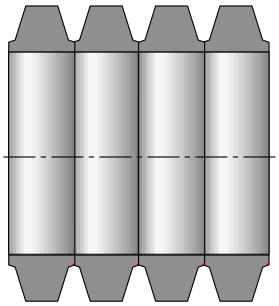
Rubber Disc Design



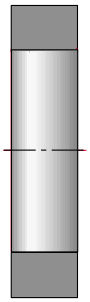
Standard: Design A



double disc
Design A



quadruple disc
Design A



Others: Design B

Standard Discs

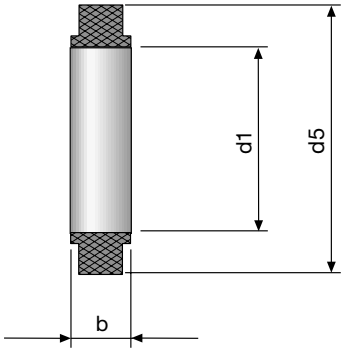
Dimension d1 mm	d 4 mm	b mm	Description
108	193.7	50	Single
		100	Double
		200	Quadruple
133	219.1	50	Single
		100	Double
		200	Quadruple
193.7	250	160	Quadruple

Other dimensions on request.

Impact Rubber Discs

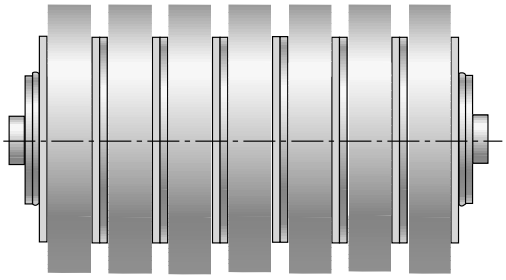
Rubber Discs for Impact Rollers
All roller types ST-A with diameter 108; 133; and 159 can be supplied with rubber discs according to DIN 15209.
A wide section of rubber discs or rubber lagging are available.
The inner dimension “d1” is based on the outer diameter of the shell.
Please state the required dimension and number of rings when ordering.

Impact Disc Design



Standard Impact Discs

Dimension d1 mm	d5 mm	b mm
108	193.7	40
133	219	45
159	250	60



BULK HANDLING

Headquarters worldwide
Interroll SBU Bulk Handling

Förder- und Antriebstechnik
Aschersleben GmbH
Wilslebener Chaussee 12-14
D-06449 Aschersleben
Tel. +49 3473 956 0
Tel. Sales +49 3473 956 253
Fax +49 3473 956 210
faa@interroll.com
www.interroll.com

Your local Bulk Handling Representative: