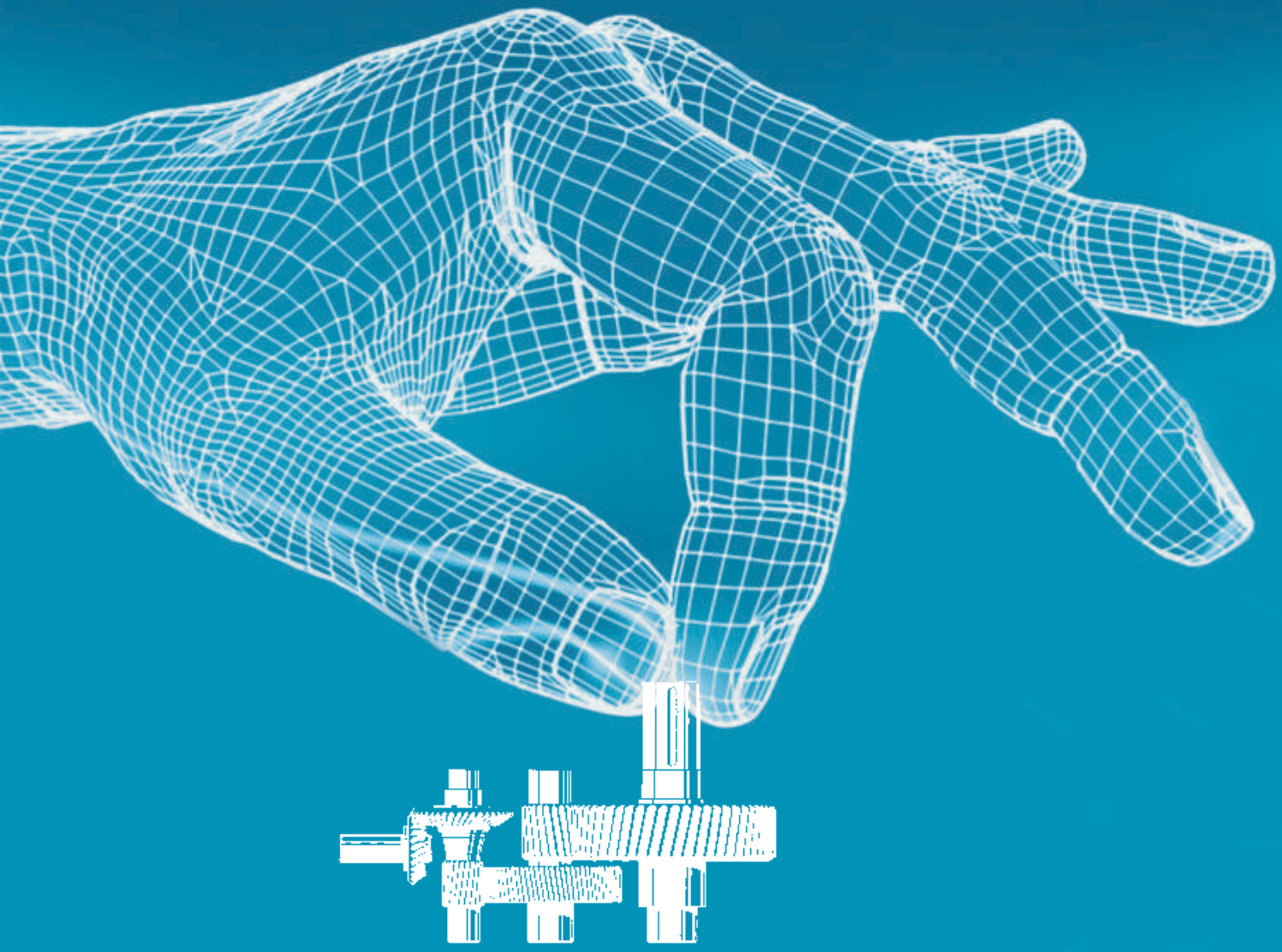
PREMIUM INTELLI POWER



PREMIUMCARE

INSTALLATION AND
ROUTINE MAINTENANCE

# PREMIUM HELICAL GEARED MOTOR UNIT

# Introduction

*The Premium Helical Geared Motor units incorporate the best in modern gear design. Each gear unit is produced using the most up-to-date machinery and production techniques ensuring the highest standards of accuracy and precision.*

*The entire range is of a modular construction with a high degree of interchangeability of parts and assemblies. This enables a large range of sizes and ratios to be built from a relatively small number of parts so allo unitwing comprehensive stocks of parts to be kept.*

*Maintenance of the Premium Helical Geared Motor Units was one of the criteria considered at the design stage, and has led to the development of a unit that requires little maintenance but when needed may be worked on without moving it from its place of installation.*

*This publication outlines all necessary steps for the correct installation and maintenance of the units, following this sequence should ensure the long trouble-free life of your unit.*

## CHARACTERISTICS OF THE GEAR REDUCERS

The PUJOL speed reducers series "I" are suitable for driving all types of reduced speed equipment and machines.

Due to their housing being completely closed, they can be installed in the open, in dusty places or damp or salty environments, etc.

The reducers are fitted with synthetic rubber oil seals and top quality ball bearings.

The direction of rotation of the output shaft may be clockwise or anti-clockwise, as required.

The components of this speed reducer have been subject to strict controls throughout their production process. Once mounted, this speed reducer has satisfactorily passed, among others, the following controls: Noise volume, sealing, shaft eccentricity and misalignment, speed, power and finish.

## POSITIONS OF MOUNTING

This speed reducer can be mounted in any position and needs no maintenance.

## GENERAL INSTRUCTIONS FOR MOUNTING

Ensure that the gear reducer is installed in such a way that it is mounted on a clean and flat surface, which will not cause stress or tension in the gear reducer.

It is advisable to use an elastic coupling for transmitting the force directly from the speed reducer to the driven machine.

The pulleys and pinions used should not be forced into the shafts by a hammer or mallet but should be eased on by the pressure exerted by a bolt screwed into the threaded hole at the end of the shaft. Otherwise the bearings could be damaged.

We recommend a tolerance of H7 for the bores of the machine parts to be fitted to the shaft.

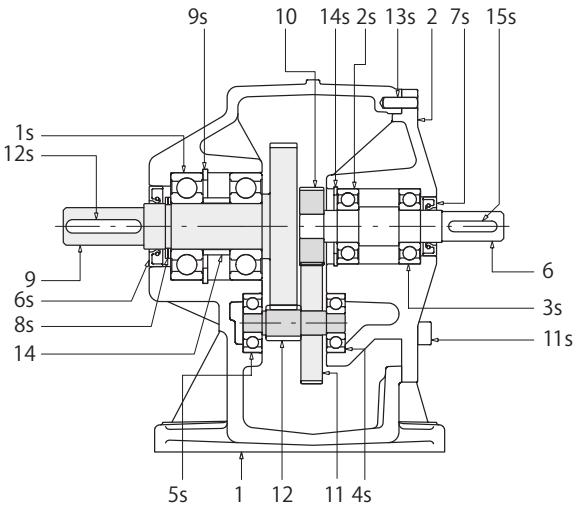
## LUBRICATION

These gear reducers are supplied with long life grease.

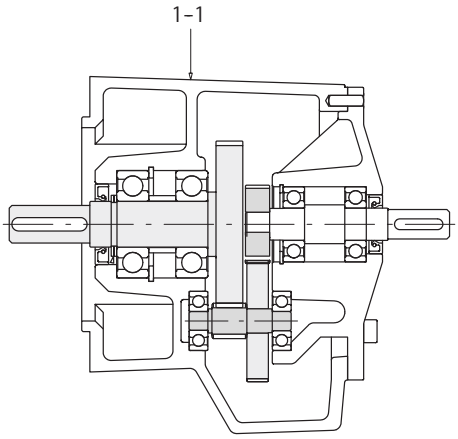
Only in the case of an occasional loss of lubricant should the latter be topped up with the type stated on the specifications plate.

Do not mix greases.

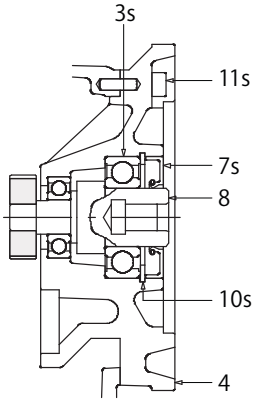
Geared units series IP




Geared units series IB
The remaining references are identical to those shown in IP




***Detail Ipc - Ibc***
*The remaining references are identical to those shown in Ip-Ib*




| Ref. | Denomination |
|---|---|
| 1 | Leg box |
| 1-1 | Flange box |
| 2 | Input cover |
| 4 | Motor flange (1) |
| 6 | Input shaft (2) |
| 8 | Transmission shaft (3) |
| 9 | Output shaft (4) |
| 10 | Input pinion (4) |
| 11 | Secondary wheel (5) |
| 12 | Third gear (4) |
| 14 | Bush |
| 1s | DIN 625 bearing |
| 2s | DIN 625 bearing (6) |

| Ref. | Denomination |
|---|---|
| 3s | DIN 625 bearing (6) |
| 4s | DIN 625 bearing |
| 5s | DIN 625 bearing |
| 6s | DIN 3760 oil seal |
| 7s | DIN 3760 oil seal (6) |
| 8s | DIN 471 elastic ring |
| 9s | DIN 4 72 elastic ring |
| 10s | DIN 4 72 elastic ring (7) |
| 11s | DIN 912 cylinder screw (8) |
| 12s | DIN 6885 adjusted key |
| 13s | DIN 1474 cylinder passing screw |
| 14s | DIN 472 elastic ring |
| 15s | DIN 6885 adjusted key |

**Additional data**

| | | | |
|---|---|---|---|
| (1) | Motor flange diameter | (2) | Toothed or with pinion |
| (3) | Toothed or with pinion-Bore | (4) | Number of teeth |
| (5) | Number of teeth-Bore | (6) | Ø external, Ø internal and wide |
| (7) | Ø external rubber ref. Bs | (8) | Ø and screw length |

**ORDERING EXAMPLE FOR SPARE PARTS**

| Quantity | Denomination | Ref. | Speed reducer type | Additional data |
|---|---|---|---|---|
| 1 | Transmission shaft | 8 | Ipc-128 | Toothed (19 teeth) 0 24 |

## CHARACTERISTICS OF THE GEAR REDUCERS

The PUJOL speed reducers series "S" are appropriate for driving all types of reduced speed machines and equipment requiring speed reduction.

A completely enclosed construction, allows for installation in the open air and hostile enviorements, such as moisture, dust and salt laden atmospheres.

The reducers are fitted with synthetic rubber oil seals and top quality ball bearings.

The direction of rotation of the output shaft may be clockwise or anti-clockwise, as required.

The components of this speed reducer have been subject to strict controls throughout their production process. Once mounted, this speed reducer has satisfactorily passed, among others, the following controls: Noise volume, sealing, shaft eccentricity and misalignment, speed, power and finish.

## GENERAL INSTRUCTIONS FOR MOUNTING

Ensure that the gear reducer are installed in such a way that they are mounted on a clean and flat surfaces, which will not cause stress or tension in the gear reducer. It is advisable to use a stretch coupling for transmitting the force directly from the speed reducer to the machine to be driven. The pulleys and pinions should not be forced into the shafts by a hammer or mallet but should enter smoothly by the pressure exerted by a bolt screwed into the threaded hole at the end of the shaft. Otherwise the bearings could be damaged. We recommend a tolerance of H7 for the holes of the machine parts to be fitted on the shaft.

## LUBRICATION

This speed reducer has been constructed for splash lubrication with oil. Unless otherwise specified, the geared units are supplied without oil and it is the responsibility of the customer to fill it to the required level and follow the maintenance instructions accordingly.

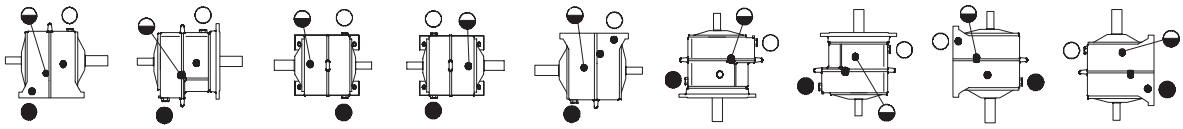
The oil inlet hole has to be provided with the delivered breather plug which has to be put always in the highest existing hole of the box according to the working position of the speed reducer.

With a price surcharge, the geared units can be supplied directly from the factory with long lasting grease lubrication, to which purpose the operating position of the reducer must be indicated. In this case the geared units will not need any maintenance.

## MAINTENANCE

After 500 hours of service empty the lubricant and refill the box up to the level. Once the running-in period is over, monitor the status of the lubricant after 12000 hours of work (approx. 30 months working 14 hours a day) (In case of synthetic oil) or 2500 hours of work (approx. 6 months working 14 hours a day) **(in case of mineral oil)** and replace when necessary.

**Working position**



| Type | B3 | B5 | B6 | B7 | B8 | V1 (1) | V1 (2) | V3* | V5 (1) | V5 (2) | V6* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **S - 160** | 2.8 | 3 | 4.2 | 4.5 | 4.2 | 5 | 6.5 | 5.5 | 4.5 | 7 | 6.1 |
| **S -180** | 5 | 4.5 | 7.5 | 8 | 6 | 7 | 9.5 | 7.5 | 7.5 | 10 | 8 |
| **S - 195** | 7 | 6 | 10 | 11 | 8.5 | 11 | 14.5 | 11.5 | 11.5 | 15 | 12 |
| **S - 218** | 8 | 7.5 | 13 | 14 | 9.5 | 13 | 18 | 14 | 14 | 19 | 15 |
| **S - 238** | 10.5 | 9 | 17 | 18 | 12 | 15 | 21 | 16 | 16.5 | 22.5 | 18 |
| **S - 268** | 14 | 12.5 | 24 | 26 | 16 | 24 | 32.5 | 26 | 26 | 34.5 | 28 |
| **S - 302** | 19 | 17 | 32 | 35 | 22 | 33 | 44.5 | 35 | 35 | 46.5 | 38 |
| **S - 330** | 26 | 24 | 42 | 45 | 30 | 45 | 58.5 | 47 | 47 | 60.5 | 49 |
| **S - 360** | 35 | 39 | 55 | 60 | 40 | 68 | 86.5 | 64 | 62 | 80.5 | 65 |

(1) Nominal output speed 30 to 300 1/min
(2) Nominal output speed *3 to 25 1/min*
* If the gear unit is required to operate in one of the positions shown, please specify when ordering.

## Lubricants CLP acc. to DIN 51517, part 3

### RECOMMENDED OIL VISCOSITY

| Oil type | Service temperature | Ambient temperature °C | Viscosity ($mm^2/s$ (cSt) at 40° C) Input speed: $n_1$ 500 at 1000 1/min | Viscosity ($mm^2/s$ (cSt) at 40° C) Input speed: $n_1$ 1000 at 1500 1/min |
|---|---|---|---|---|
| | | -10 ÷ +5 | VG 100 | VG 100 |
| FL BAKU TO 4/50 | -5 ÷ +70 _C | 0 ÷ +40 | VG 320 | VG 220 |
| FL GEARSYNT 320 | -25 ÷ +150 _C | +35 ÷ +60 | VG 460 | VG 320 |

* For input speeds $n_1$ < 500 1/min please contact. Permissible deviation VG = ± 10%
The maximum working temperature of a lubricant is approximately 95° C,
above which its characteristics may vary substantially.

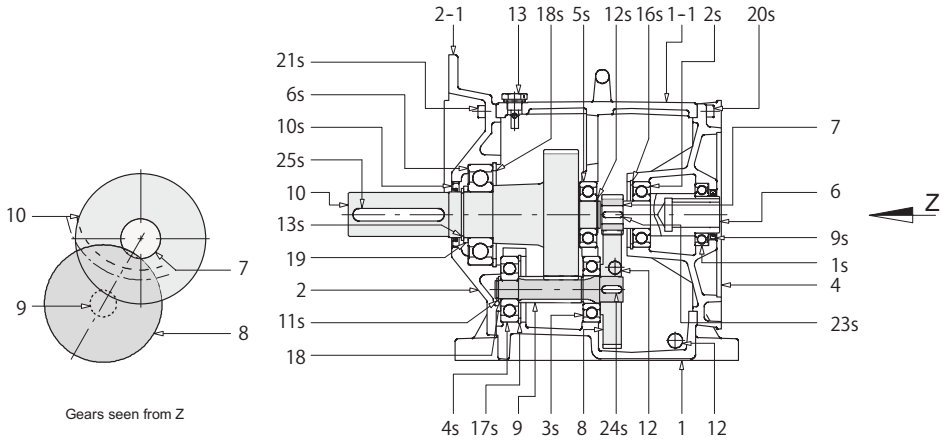
### RECOMMENDED SYNTHETIC OILS

| *Viscosity $mm^2/s$ (cSt) at 40 °C* | FL IBERIA | BESLUX SINCART | Mobil SHC | SHC XMP | Tivela Oil | Engranajes HPS | Klübersynth GH6 | ARAL Degol | TRIBOL |
|---|---|---|---|---|---|---|---|---|---|
| **VG 320** | FL GEARSYNT 320 | 320W | 632 | 632 | WB | 320 | 320 | | |
| **VG 220** | FL GEARSYNT 220 | 220W | 630 | 630 | WB | 220 | 220 | GS 220 | 800/220 |
| **VG 150** | FL GEARSYNT 150 | 150W | 629 | 629 | WA | 150 | 150 | | |
| **VG 100** | FL GEARSYNT 100 | 100W | - | -- | WA | - | 100 | | |

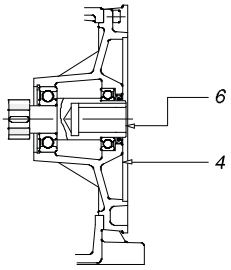
### RECOMMENDED MINERAL OILS

| *Viscosity $mm^2/s$ (cSt) at 40 °C* | TRAXOL | FL IBERIA | Extra Gear | BP Energol | SPARTAN | Mobilgear | Shell Omala Oil | Engranajes HP | Klüberoil GEM 1 | Super Tauro | ARAL Degol | Castrol Alpha | FALCON | TRIBOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **VG 320** | G - 32 | - | 320 | GR-XP 320 | EP 320 | 632 | 320 | 320 | 320 | 320 | BG 320 | MW 320 | CLP 320 | 1100 / 320 |
| **VG 220** | - | FL BAKU TO 4/50 | 220 | GR-XP 220 | EP 220 | 630 | 220 | 220 | 220 | 220 | BG 220 | MW 220 | CLP 220 | 1100 / 220 |
| **VG 150** | - | - | 150 | GR-XP 150 | EP 150 | 629 | 150 | 150 | 150 | 150 | BG 150 | MW 150 | CLP 150 | 1100 / 150 |
| **VG 100** | - | - | 100 | GR-XP 100 | EP 100 | 627 | 100 | 100 | 100 | 100 | BG 100 | MW 100 | CLP 100 | 1100 / 100 |

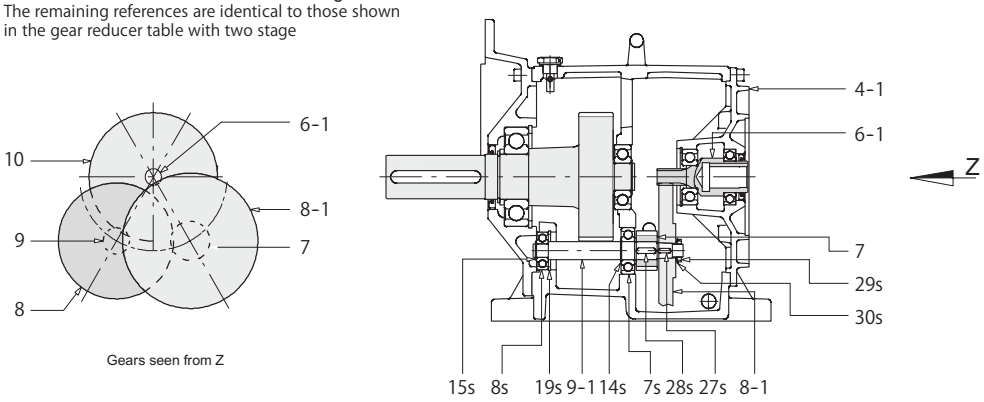
Geared units series SPC-SBC two stage



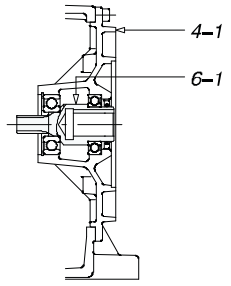

**Series Spc-Sbc**
The remaining references are identical to those shown in Sp-Sb




Geared units series SPC-SBC three stage
The remaining references are identical to those shown in the gear reducer table with two stage




**Series Spc-Sbc**
The remaining references are identical to those shown in Sp-Sb




| Ref. | Denomination |
|---|---|
| 1 | Leg box (1) |
| 1-1 | Flange box (1) |
| 2 | Leg output cover |
| 2-1 | Flange output cover |
| 3 | Input cover |
| 3-1 | Input cover |
| 4 | Motor flange (2) |
| 4-1 | Motor flange (2) |
| 5 | Input shaf (3) |
| 5-1 | Input shaf (3) |
| 6 | Transmission shaft (4) |
| 6-1 | Transmission shaft (4) |
| 7 | Pinion (5) |
| 8 | Wheel (5) |
| 8-1 | Wheel (5) |
| 9 | Third gear (5) |
| 9-1 | 2nd reduction shaft (3) |
| 10 | Output shaft (5) |

| Ref. | Denomination |
|---|---|
| 12 | Bull plug |
| 13 | Devaporising plug |
| 18 | Third gear ring |
| 19 | Output shaft ring |
| 1s | DIN 625 bearing (6) |
| 2s | DIN 625 bearing (6) |
| 3s | DIN 625 bearing |
| 4s | DIN 625 bearing (6) |
| 5s | DIN 625 bearing |
| 6s | DIN 625 bearing |
| 7s | DIN 625 bearing |
| 8s | DIN 625 bearing |
| 9s | DIN 3760 oil seal (6) |
| 10s | DIN 3760 oil seal |
| 11s | DIN 471 elastic ring (7) |
| 12s | DIN 471 elastic ring |
| 13s | DIN 471 elastic ring |
| 14s | DIN 471 elastic ring |

| Ref. | Denomination |
|---|---|
| 15s | DIN 471 elastic ring |
| 16s | DIN 472 elastic ring (8) |
| 17s | DIN 4 72 elastic ring |
| 18s | DIN 472 elastic ring |
| 19s | DIN 472 elastic ring |
| 20s | DIN 912 cylinder screw (9) |
| 21s | DIN 912 cylinder screw |
| 22s | DIN 6885 adjusted key (10) |
| 23s | DIN 6885 adjusted key |
| 24s | DIN 6885 adjusted key |
| 25s | DIN 6885 adjusted key |
| 26s | DIN 6885 adjusted key |
| 27s | DIN 6885 adjusted key |
| 28s | DIN 6885 adjusted key |
| 29s | DIN 5415 fixing bolt |
| 30s | Retainer washer |

**Additional data**

| | | | |
|---|---|---|---|
| (1) | Two or three stage reduction | (2) | Motor flange diameter |
| (3) | Toothed or with pinion | (4) | Toothed or with pinion-Bore |
| (5) | Number of teeth | (6) | Ø external, Ø internal and wide |
| (7) | Neck shaft Ø ref. 9-1 | (8) | Ø external bearing ref. 2s |
| (9) | Ø and screw length | (10) | Wide, high and long of ke |

**ORDERING EXAMPLE FOR SPARE PARTS**

| Quantity | Denomination | Ref. | Speed red ucer type | Additional data |
|---|---|---|---|---|
| 1 | Transmission shaft | 6 | Spc-160 | Toothed 028 |


## Premium Transmission Limited

Head Office : Premium House, Mumbai-Pune Road, Chinchwad, Pune - 411019, India.
Tel. : (91-20) 27488886 / 27488947, Fax : (91-20) 27450287 / 27472384
Website : www.premiumtransmission.com

**Manufacturing Units : Unit-I :** Old Mumbai - Pune Road, Chinchwad, Pune - 411 019, India. Tel. : 91-20- 66314100 Fax : 91-20- 27450287, 27472384. **Unit-II :** Falta Industrial Growth Centre, Sector-III, Falta, 24 Parganas (South), West Bengal 743504, India. Tel.: 91-3174-222231 / 32 / 33 / 37, Fax : 91-31749 222234. **Unit-III :** G-56 / 57, MIDC Industrial Area, Chilkalthana, Aurangabad - 431 210, India. Tel.: 91-240-2485521, 2485856, 2485056, Fax : 91-240-2485756. **Unit-IV :** 31-P, MIDC Industrial Area, Chilkalthana, Aurangabad - 431 210, India. Tel.: 91-240-2482858, 2471298, Fax : 91-240-2482857.

**Regional Offices : Mumbai :** Corporate Park II, 4th Floor, Sion, Trombay Road, Chembur, Mumbai - 400071, India. Tel.: 91-22-25264750, 25264763, Fax : 91-22-25262622, 25264800. **New Delhi :** Express Building Annexe, 9-10, Bahadhur Shah Zafar Marg, New Delhi - 110 002, India. Tel. : 91-11-23730554 (8 Lines), Fax : 91-11-23359782 / 23357739. **Kolkata :** Thapar House, 25, Brabourne Road, Kolkata - 700 001, India. Tel.: 91-33-22424316, 22423780, 22423805, 22424317 / 20 / 21, 22438815, 22420817, Fax : 91-33-22424325. **Chennai :** "Wavoo Mansion", 7th Floor, New No. 48 (Old No. 39) Rajaji Salai, Chennai - 600 001, India. Tel.: 91-44-25255200, 91-44-25224557. **Nagpur :** Plot No 15, State Bank Colony, Ujjwal Nagar, Somalwada, Wardha Road, Nagpur - 25. Mobile : (0) 9425009827

**Branch Offices : Ahmedabad :** 'Jaldarshan' Ashram Road, Navrangpura, Ahmedabad - 380 009, India. Tel.: 91-79-26580428 / 0518 / 1856 / 1857 / 1861, Fax : 91-79-26587783. **Bangalore :** 16/3, Ali Asker Road, Off Cunningham Road, Bangalore - 560 052, India. Tel.: 91-80-22262062, Fax : 91-80-22253472. **Hyderabad :** 6-2-47, A, C. Guards, 1st Floor, Hyderabad - 500 004, India. Tel.: 91-40-23314025, 23316446, 23390544, Fax : 91-40-23318557. **Kochi :** 39/5567, M. G. Road, Emakulam, Kochi - 682 015, India. Tel.: 91-484-2359661, 2359372, 2359190, Fax : 91 484-2359589.

**Representative Offices : Lucknow :** G-901, Halwasiya Utsav Enclave, Opposite HAL, Faizabad Road, Lucknow - 226 016, India. Tel.: 91-522-4001344, Mobile : (0) 9793581144. **Mohali :** House No. 33, 1st Floor, Phase - XI, Sas Nagar (Mohali), Punjab - 160 062, Tel.: 91-172-2230633, Mobile : (0) 9814640863. **Jamshedpur :** Flat No. 61 A, First Floor, Rajendranagar Colony, Sakchi, Jamshedpur 831001, Jharkhand. Mobile : (0) 9771844408. **Rourkela :** A/72, Sector - 13, Rourkela - 769009. Orissa. Mobile : (0) 9437122066. **Jaipur :** B-1A, Vivekanand Colony, Naya Kheda Near Ambabari, Jaipur - 302012, Rajasthan. Mobile : (0) 9887720845. **Coimbatore :** Door no. 55, Rangsamy Layout, Pellamedu, Coimbatore - 641004. Mobile : (0) 9894295769. **Baroda :** B 24, Deep Darshan 1 Society, Ataladra, Padra Road, Baroda, Gujarat. Mobile : (0) 9375122012. **Raipur :** A-10, Shubham Vihar, Behind Anmol Super Market, New Puraina, Mahavir Nagar, Raipur - 492 001 Chhatisgarh, Mobile : (0) 9826903132. **Indore :** C-6, Shreevardhan Complex, 4, RNT Marg., Indore - 452001. Ph : 0731-2510943. Mobile : (0) 9302690943. **Vishakhapattnam :** Flat No. 101, Yadu Residency, Rednum Garden, Ramnagar, Vishakhapattnam-530002, Mobile : (0) 9866167594.

# *Product life cycle, safety instructions, disposal criteria*

## *2 General Information*

### *2.1 Use of the Operating Instructions*

The operating instructions are part of the product and contain important information about its operation and service. The operating instructions are directed at all persons who perform the assembly, installation, start-up, and service work on the product.
The operating instructions must be made accessible in a readable condition. Make sure that the personnel responsible for the systems and operation, as well as persons who work on the device under their own responsibility, have read and understood the operating instructions completely. If anything is unclear or there is a need for additional information, please contact Premium Transmission.

### *2.2 Symbols Used and their Meaning*

 Note

### *2.3 Warranty for Defects*

Compliance with these operating instructions is essential to ensure trouble-free operation and in order for any warranty entitlements to be honored. For this reason, please read these operating instructions before you start working with the drive!

### *2.4 Disclaimer*

Compliance with these operating instructions is a basic requirement for safe operation of the gear units and geared motors, for achieving the stipulated product features and performance characteristics. Premium Stephan assumes no liability for injury caused to persons or damage to property or financial losses caused by not observing the operating instructions. Warranty for defects is excluded in such cases.

## *3 Safety instructions*

### *3.1 Application as directed*

 **Only use the drive system under the following conditions.**

**Exception:** The manufacturer has designed the drive system specifically for other applications and ambient conditions.
**The drive system ...**

- Must only be used for the intended purposes and those confirmed in the shipping documents.
- Must only be operated under the operating conditions stipulated in the operating instructions and within the power limits.
- is a component for use in machines and plants.
- Complies with the valid standards and regulations.
- Fulfills the requirements under Low-Voltage Directive 2006/95/EC.

### *3.2 Non-intended use*

- Use in explosion-protected areas
- Use in harsh environments (acids, gases, vapours, dust, oil)
- Use under water
- Use under radiation

### *3.3 Operating conditions*

Operating ambient temperature: 0°C - +40°C
Site altitude: up to 1000 m above sea level

#### *3.3.1 Temperatures*

The permissible temperature range is defined by:

- the lubricant specifications in connection with the oil temperature that is to be expected in operation.
- the heat class of the motor in connection with the motor temperature that is to be expected in operation (see name plate and/or operating instructions of the motor).

The operating temperature is determined by the power dissipation, the ambient temperature and the cooling conditions.

### *3.3.2 Ambient Media*

- Drive units are protected against dust and water jets.
- Motors correspond to their protection rating (see name plate and/or operating instructions of the motor
- Ambient media – especially chemically aggressive media – can attack the shaft seals and paint (gen. plastics). Abrasive media can possibly endanger the shaft seals.

### *3.4 General safety and application notes*

At the time of delivery, the drive system is considered to be state of the art and fundamentally safe to operate. All transport, storage, installation/assembly, connection, commissioning, maintenance and servicing work may only be performed by qualified personnel.
During such work, qualified personnel must observe:

- The supplementary safety instructions in the individual chapters of this documentation
- The safety instructions in attached supplementary sheets and further documents from subcontractors
- This documentation, the detailed operating instructions and the circuit diagrams in the terminal box
- The warning and safety signs on the drive system
- The plant-specific regulations and requirements
- The national and regional regulations for safety and accident prevention


The drive system can pose a risk to persons, the drive system itself and other material assets belonging to the operator:

- if unqualified personnel work on or with the drive system.
- if the drive system is used improperly.
- if the drive system is installed and operated incorrectly.
- if the following notes are disregarded

o The drive system may only be operated when in sound condition.
o As a general rule, any retrofitting, changes or reconstruction of the drive system is prohibited. The above work may only be performed after consultation with Premium Stephan.
o During operation and for a long time afterwards, drive systems have live parts, moving parts and may also have hot surfaces.
o Commissioning (starting intended operation) may only be performed once there is confirmation that the machine complies with EMC Directive 2004/108/EC and that the end product conforms with Machinery Directive 2006/42/EC.
o Observe EN 60204.

Should you have any questions or problems, please contact your Premium Stephan representative

### *3.5 Installation*

Before you begin:
The drive unit may be installed only if:

- The drive unit is intact.
- There are no potentially explosive atmospheres, oils, acids, gases, vapours etc. in the area during installation
- The lubricant viscosity agrees with the ambient temperature on site
- Steps have been taken to ensure that the drive unit is sufficiently ventilated and that there are no sources of external heat input.

### *3.5.1 General Conditions*

The drive units must be installed or attached free of vibration or mounted on a flat, rigid and solid frame or foundation in order to avoid vibration.


The drive units must be aligned with the utmost care! Stress and strain in the housing must be avoided.

To align the gear unit, place it on the 3 mounting points and use shims to match the other point to an accuracy of less than 0.2 mm.

After the gear unit has been correctly aligned, and after all the shims have been fitted, the gear unit must be firmly screwed down onto the foundation. Screw class 8.8 in accordance with DIN 267. see dimensioned drawings. The screws must be tightened to the torque requirements as specified by the manufacturer

Trouble-free lubrication and ventilation are ensured only when the gear unit is mounted in the correct position


It is necessary to correct the amount of lubricant and the position of the breather screw if the mounting position of the gear unit is changed

Before start-up, check the position-dependent oil level at the oil inspection window on the drive unit.
Sizes 1 and 2 feature lifetime lubrication, they do not have an oil filler screw and no oil control element.
Intermediate inserts or pads made of plastic must be used if there is a risk of electrochemical corrosion between the gear unit and system.
Connect the gear unit housing to earth.
The cooling air intake of the motor must not be obstructed.

### *3.6 Disposal*

The personnel entrusted with the handling, storage, installation, start-up, inspection and maintenance of the drive unit must be qualified for industrial, mechanical and electrical equipment.
The drive unit must be disposed of in compliance with currently applicable regulations.
Housing parts, gearwheels, shafts, covers and flanges of the gear units are to be disposed of as steel scrap.
Used oil is to be disposed of in accordance with applicable environmental protection regulations.
Used plastic & rubber are to be disposed of in accordance with applicable environmental protection regulations.(recycle it).

## *Scope of supply / transport*

### *4.1 Scope of supply*

- The drive systems are individually assembled in accordance with the modular system. The scope of supply is detailed in the accompanying shipping documents.
- Upon receipt of the order, immediately check to ensure that the scope of supply corresponds to the details in the shipping documents.

 Premium Stephan does not offer warranty for claims submitted at a later date.

- Report any visible transport damage to the deliverer immediately.
- Report any obvious missing parts / deficiencies to your representative immediately.

### *4.2 Transport*

- If necessary, use suitable, sufficiently dimensioned means of transport.
- Securely tighten ring bolts.
- They are only designed to hold the weight of the drive.
- Do not apply any further loads.
- Avoid jolts during transport!

## *5 Long-term Storage*

### *5.1 Storage time up to 12 month*

The drive systems can be stored up to 12 month in a dry, dust-free and low-vibration environment with a temperature range from +5°to +40°C (41°to- 104°F) and a maximum of 50% humidity without the need for any special measures.
The gearboxes are to be stored in the ordered mounting position.

 The venting elements must not be used during storage. The transmission must be hermetically sealed.

For commissioning refer to section initial start-up!

 For longer storage, we recommend the Premium Stephan specification for long-term storage! Gear boxes in this version are marked accordingly.

### *5.2 Storage time up to 24 month*
### *5.2.1 Preparation*


The following recommendations relate to the storage of the drive unit to a maximum of 24 months **before the first commissioning**. The measures must be carried out by the customer. The legal requirements of the guarantee as well as the standard warranty period of 12 months after delivery or other written contractual arrangements are not affected by these recommendations.

The following measures must be carried out:

- Drain any existing oil from the gearbox and **completely** fill with **rust protective oil.**
- All openings in the gear unit (oil drain plug, breather valve etc.) must be hermetically closed.
- **At the gear attach a clearly visible warning indicating "No operational lubricant".**
- Unprotected metal surfaces like the shaft ends and flanges must be given a long-term corrosion protection in addition
- Packing with a moisture-absorbing material must be placed in the terminal box of the motor.
- Motors with reinforced bearings are usually supplied with a transport safety device. Do not remove the transport safety device!
- Every 3 months, rotate the output shaft by 2 turns

**The gear unit must not be placed into operation with the storage oil. The drained oil must be stored or disposed of corresponding to environmental protection regulations**

### *5.3 Storage Location*


The following instructions must be observed for a storage of a maximum of 24 months:

- Shock free Environment.
- Closed, dry rooms with a temperature range of +5° to +40°C (41° to 104°F) and maximum of 50% humidity.
- Store in an atmosphere without aggressive gasses, vapors, dusts, and salts.
- VCI Corrosion-proof bags must be used for storage.

Make regular inspection for cleanliness and damage to the packaging

### *5.4 Standstill in-situ up to 24 month*

The protective oil film slowly dissipates from the untreated surfaces during prolonged standstill periods of the gear unit. Consequently, rust may form on the internal parts of the gear unit. The risk of rust formation depends to a large extent on the environmental conditions (damp, maritime, tropical or chemically aggressive environment).
To prevent the formation of corrosion and to form a new protective film of oil, it is necessary to allow the gearbox to rotate for a few minutes every two weeks (depending on the environmental conditions).
A special ventilation filter (marked with sticker) should be fitted in order to avoid the penetration of moisture into the gear unit.
If, in spite of an increased risk of rust formation, it is not possible to allow the gearbox to rotate at regular intervals, the following protective measures are required during a lengthy period of non-use:

- An oil-soluble concentrate with anticorrosion additives that are effective both in liquid as well as gaseous form should be added at a concentration of approx. 2 % to the oil. Refer to the manufacturer's specifications provided by the oil supplier for the effective duration, compatibility and exact concentration of the additive.
- All openings in the gear unit (oil drain plug, breather screw etc.) must be hermetically sealed.

**Before restarting the gear unit, completely drain the old oil and rinse with flushing oil. For refilling follow the information on the nameplate and the portion 12**


During downtime no vibration or shock from the foundation to the drive may be transferred.

NOTE


**Where long term warranties (over 12 months) have been specifically provided by Premium Stephan (please refer to order acknowledgement), the above actions must be followed. Records must be kept and sent to Premium Stephan every 6 months, stating gearbox nameplate details and detailing actions taken during the 6 month period with authorized signatures of approved maintenance personnel, failure to do so will invalidate the extended warranty.**

**For storage or transmission arrest of more than 24 months special measures are necessary and depend on the specific requirements at the storage place or at the site. Please contact in these cases Premium Stephan or one of our contractors**