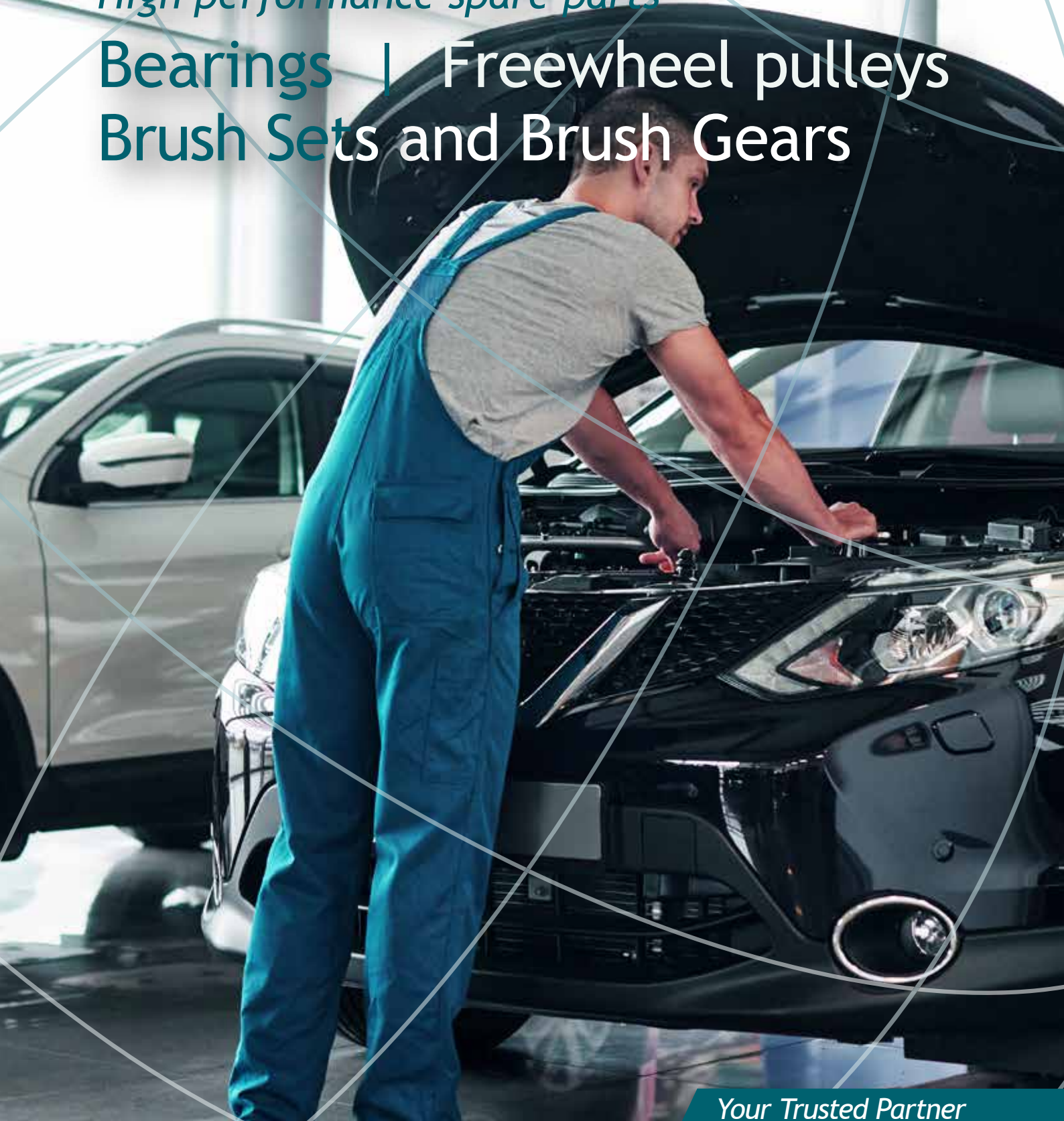




*High performance spare parts*

**Bearings | Freewheel pulleys  
Brush Sets and Brush Gears**



*Your Trusted Partner*

# Freewheel Pulleys

More and more cars are mounted with freewheel pulley on to the alternator.

The series from HC-CARGO features all the most popular items securing a high vehicle park coverage.

### Technical features:

#### Grease

- high temperature resistant formula with high performance that works in extreme conditions for long periods

#### Spring

- designed with a new elastic constant
- avoids slippage in high rotational speeds

#### Bearing design

- radial clearance specification to increase bearing life
- dual sealing each side
- sealing between bearings and one-way clutch

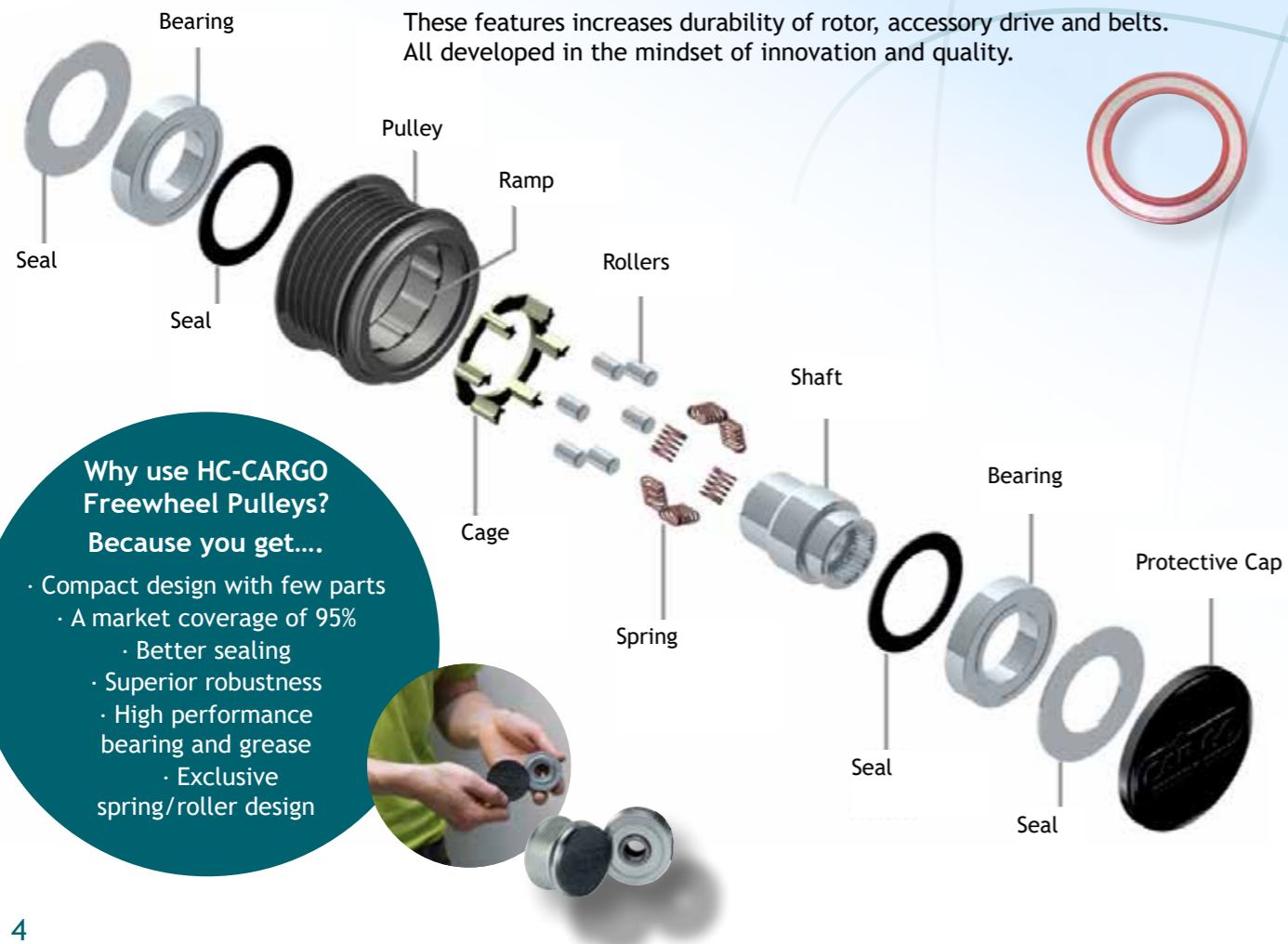
#### Ramp Angle

- a redesigned ramp angle leads to low overrunning torque and no slippage in rotational speeds higher than 18.000 rpm
- the pulley is made of heat treated SAE 10B22 steel

#### Bearing Seal

- optimal characteristics for operation at high temperatures
- extended testing to evaluate the sealing of the pulley with a brine and mud test

These features increases durability of rotor, accessory drive and belts. All developed in the mindset of innovation and quality.



### Why use HC-CARGO Freewheel Pulleys? Because you get....

- Compact design with few parts
- A market coverage of 95%
  - Better sealing
  - Superior robustness
  - High performance bearing and grease
  - Exclusive spring/roller design

# High performance HC-CARGO Bearings

### Meeting future OE standard specifications today

HC-CARGO bearings are designed to meet present and future OE standard specifications and requirements.

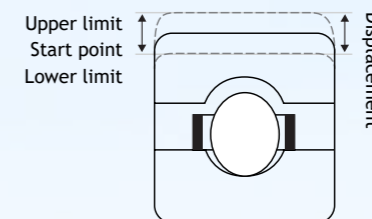
Our bearings are developed to operate under higher temperatures, at higher speeds with less friction and ensure long lifetime. All HC-CARGO bearings are the next generation high-end quality bearings designed and developed for rotating electric motors.

Modern combustion engines have been in constant evolution since the very beginning of motoring. Today engines are more powerful, quieter, more durable, less polluting and more fuel-efficient than ever before.

Requirements for high performance alternators and starter motors are constantly increasing. Alternators are being designed to fit in smaller engine compartments and to generate more power at less RPM, which results in higher operating temperatures. Starter motors are optimized for more durability and long lifetime and start stop systems for more frequent starting.

### Technical Features

- Geometrical tolerance class P6 (DIN 620-2) and internal clearance group C3 (DIN 620-4)
- Optimized oscillation, improved raceway surfaces and reduced frictional torque
- Smooth running and low noise properties
- Excellent mechanical shear stability and kinematics



### Improved and optimized sealing:

- 3-lip (1-axial) light contact sealing
- Low friction at high speeds
- Less heat generation
- Reduced and improved grease retention
- Maximum protection from moisture and contaminants

### Grease:

- Synthetic oil + UREA
- High performance grease formulated for alternators and starters
- Long operating life
- Operating temperature range -40~+200°

Standard Bearing

Electric Motor Bearing Quality



CNC-Spindle /Aerospace Bearing

Standard

Aftermarket Quality

High

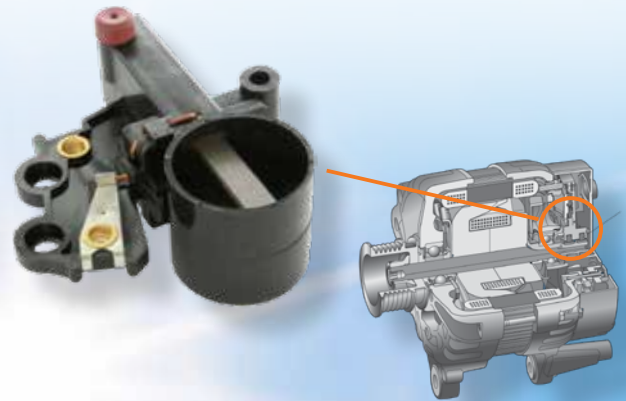
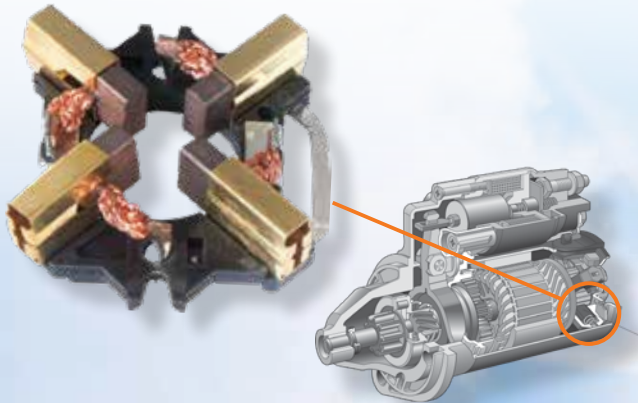
### Why use HC-CARGO bearings vs. traditional aftermarket bearings?

- ✓ are exclusively designed, developed and tested in Germany to meet future OE standards and specifications.
- ✓ are developed to fulfil all high requirements of modern cars, trucks, agriculture applications.
- ✓ are designed to perform under extreme conditions and with durability to match only the highest OE-Standards and lifetime requirements.
- ✓ are the best choice on price, quality and reliability.



Your Trusted Partner!

# HC-CARGO Brush Gears and Sets



HC-CARGO's comprehensive components portfolio includes a substantial range of brush gears and sets, and we continuously extend our range of brush gears and sets.

Analysis shows that customers demand quality solutions for older applications at a favorable price.

HC-CARGO brush gears and sets are based on more than 60 years of experience with dealings and remanufacturing of both starters and alternators.

All of our replacement parts are tested according to defined specifications to reach high quality levels. Our brushes and brush holders secure the maximum performance, durability, fit and measurements.

We have a huge range of brush and brush holders for Bosch, CAV, Denso, Valeo, Hitachi, Mitsubishi, Vistion, Ford, Briggs & Stratton, Butec and many others.

## HC-CARGO Brush Gears



## HC-CARGO Brush Sets



### Did you know..?

**When starter brushes wear out:** Worn brushes don't make as good contact, which means resistance goes up between the brushes and the commutator for the starter to engage and crank the engine, causing the requirement for the battery to go up and have to work harder for electrical flow.