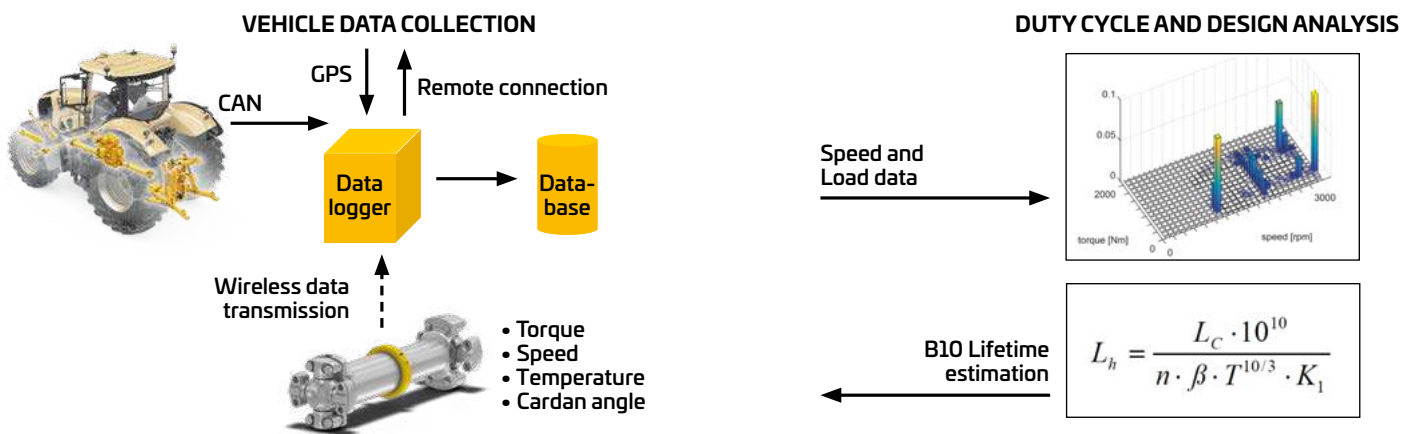


# SMART Duty Cycle Analysis



## Driveshaft selection done the „SMART“ way!

Every calculation model is only as good as the input. If only there was a clever way to capture real world duty cycles to avoid having shafts under/oversized based on estimations. With Walterscheid Powertrain Group's integrated SMART & Connected Technology, now there is! Through integrating sensor functionality into the driveshaft, we make duty cycle measurement under real conditions accessible to our customers. This service is an important enhancement to our existing capabilities of life estimation; especially in marginal applications.



### Our Deliverables

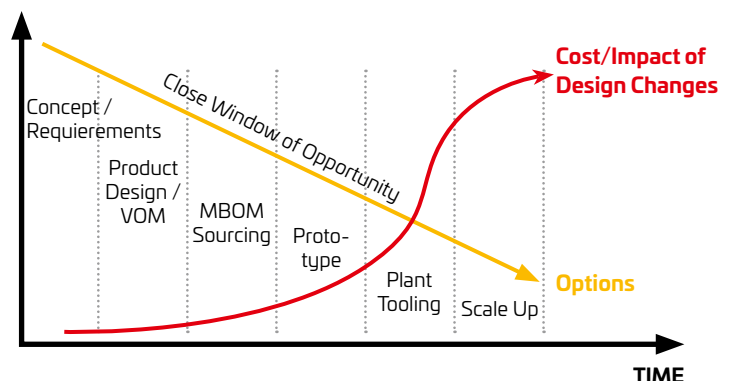
Engineering service including:

- ▶ Recording of driveline parameters under realistic driving conditions
  - Drive shaft torque
  - Bearing temperature
  - Rotation speed
  - Vibration
  - GPS Position
- ▶ Calculation of duty cycle and resulting component lifetime
- ▶ Assessment of drivetrain design
- ▶ **Risk assessment** of potential drive shaft failure modes
- ▶ **Detailed report from powertrain experts**
- ▶ Onsite presentation and discussions of implications

### Customer Value

- ▶ **Purchase decision-making simplified:** assists in selecting right drive shaft size for the application

- ▶ **Drivetrain design optimization** leading to, for example, noise reduction, efficiency improvement, lifetime improvement
- ▶ **Reduced total cost of quality:** Design review and risk assessment by drivetrain experts; avoiding costly redesign and recall at a later stage



# Walterscheid Powertrain Group Service Centre Locations



## FIELD SERVICE AND DIGITAL SOLUTIONS

### Service Centre Bönen

Off-Highway Powertrain Services  
Germany GmbH  
Siemensstr. 6  
59199 Bönen  
Germany  
Phone: +49 (0) 2383 921 15 0  
service.boenen@walterscheid.com

## CARDAN COMMERCIAL VEHICLES

### Service Centre Düsseldorf

Off-Highway Powertrain Services  
Germany GmbH  
Gutenbergweg 2  
40699 Erkrath  
Germany  
Phone: +49 (0) 2104 933 746  
customerservice.duesseldorf@  
walterscheid.com

## CARDAN INDUSTRY

### Service Centre Hamburg

Off-Highway Powertrain Services  
Germany GmbH  
Ottensener Straße 150  
22525 Hamburg  
Germany  
Phone: +49 (0) 40 5400 900  
customerservice.hamburg@  
walterscheid.com

## CONSTANT VELOCITY SHAFTS

### Service Centre Frankfurt

Off-Highway Powertrain Services  
Germany GmbH  
Gewerbepark Hasselroth  
Senefelder Str. 6  
63594 Hasselroth  
Germany  
Phone: +49 (0) 6055 883 09 - 48  
service.frankfurt@walterscheid.com

## PRODUCTION ONLY

### Service Centre Nürnberg

Off-Highway Powertrain Services  
Germany GmbH  
Am Keuper 1  
90475 Nürnberg  
Germany

### Service Centre München

Off-Highway Powertrain Services  
Germany GmbH  
Siemensstr. 11  
85221 Dachau  
Germany



### Service Centre Vienna

Powertrain Services Austria GmbH  
Slamastraße 32  
1230 Wien  
Austria  
Phone: +43 (0) 1616 38 800  
service.austria@walterscheid.com



### Service Centre Amsterdam

Powertrain Services Benelux BV  
Haarlemmerstraatweg 153-157  
1165 MK Halfweg  
Netherlands  
Phone: +31 (0) 20 4070 207  
service.netherlands@  
walterscheid.com



### Service Centre Sint-Truiden

Powertrain Services Benelux BV  
Groenstraat 5920, bus 2  
3800 Sint-Truiden  
Belgium  
Phone: +32 (0) 11 59 02 60  
service.belgium@walterscheid.com



### Aftermarket & Service China

万特赛传动技术 (中国) 有限公司  
Walterscheid Powertrain (China) Co. Ltd.  
Building 17, 188 East Guangzhou  
Rd, 215400 Taicang, Jiangsu  
China  
Phone: +86 512 535 818 00  
service.china@walterscheid.com



### Service Centre København

Powertrain Services Scandinavia AB  
Baldershøj 11 A+B  
2635 Ishøj  
Denmark  
Phone: +45 (0) 44 86 68 44  
service.denmark@walterscheid.com



### Service Centre Paris

Powertrain Services France SA  
8 Rue Panhard et Levassor  
78570 Chanteloup les Vignes  
France  
Phone: +33 (0) 130 068 400  
service.france@walterscheid.com

## ALL SERVICES AND PRODUCTS



### Service Centre Chalon sur Saône

Powertrain Services France SA  
6b rue Alfred Kastler  
71530 Fragnes  
France



### Service Centre Leek

Powertrain Services UK Limited  
Higher Woodcroft  
Leek  
Staffordshire ST13 5QF  
Great Britain  
Phone: +44 (0) 153 838 42 78  
service.uk@walterscheid.com



### Service Centre Milano

Powertrain Services Italy SpA  
Via G. Ferraris 125/C  
20021 Bollate, Milano  
Italy  
Phone: +39 02 38 33 81  
service.italia@walterscheid.com



### Service Centre Oslo

Powertrain Services Scandinavia AB  
Karihaugveien 102  
1086 Oslo  
Norway  
Phone: +47 (0) 23 286 810  
service.norway@walterscheid.com



### Service Centre Stockholm

Powertrain Services  
Scandinavia AB  
Alfred Nobels Allé 110  
146 48 Tullinge  
Sweden  
Phone: +46 (0) 8 603 97 00  
service.sweden@walterscheid.com



### Service Centre Regensdorf

Off-Highway Powertrain Services  
Germany GmbH  
Althardstraße 141  
8105 Regensdorf (Zurich)  
Switzerland  
Phone: +41 (0) 44 87 16 070  
service.switzerland@  
walterscheid.com



### Service Centre Madrid

Off-Highway Powertrain Service  
Spain, Sociedad Limitada  
Calle Garzas 10A  
28320 Pinto  
Spain  
Phone: +34 91 690 95 77  
service.spain@walterscheid.com



### Service Centre České Budějovice

Powertrain Services Austria GmbH  
Pekárenská 54  
370 04 České Budějovice  
Czech Republic  
Phone: +42 (0) 387 314 125  
service.czech@walterscheid.com



### Aftermarket & Service North America

Powertrain Rockford Inc  
1200 Windsor Road  
Loves Park, IL 61111, USA  
Phone: +1 815 633 746 0  
mechanics@walterscheid.com



### Service Centre Russia

Walterscheid (RUS) LLC  
Leninskaya Sloboda 19 room 21k  
115280 Moscow  
Russia  
Phone: +7 495 646 56 81  
service.russia@walterscheid.com