

Rail Couplings

We drive solutions

We drive solutions

A global leader in railway drive systems since 1993, IGW is leveraging its know-how to expand the range of solutions we offer to our customers. From a leading gearbox manufacturer, we are transforming into a supplier of more comprehensive drive solutions.

The first coupling designed by IGW was delivered in 2004. Today, we have a complete offering of standard and tailor-made couplings, covering all needs of rolling stock manufacturers.

IGW couplings are designed and manufactured according to the standards of innovation and excellence that have made us a trusted brand in the railway market. Just like our gearboxes, the couplings are developed and tested in-house, giving us complete control over all process steps.

Our commitment to operational excellence makes the difference, enabling us to combine the best value on the market with a tailor-made approach. The unrivalled efficiency, reliability and long service life of our solutions all contribute to the lowest total life cycle cost for the customer.

With plants in Belgium, the Czech Republic, Romania, India, China and the USA, IGW is close to customers all over the globe.

Designed to perfection

Adding couplings to our product portfolio is a natural step for IGW. We have traditionally supplied couplings, mostly originating from qualified subcontractors. Now we are proud to present our own in-house coupling capability.

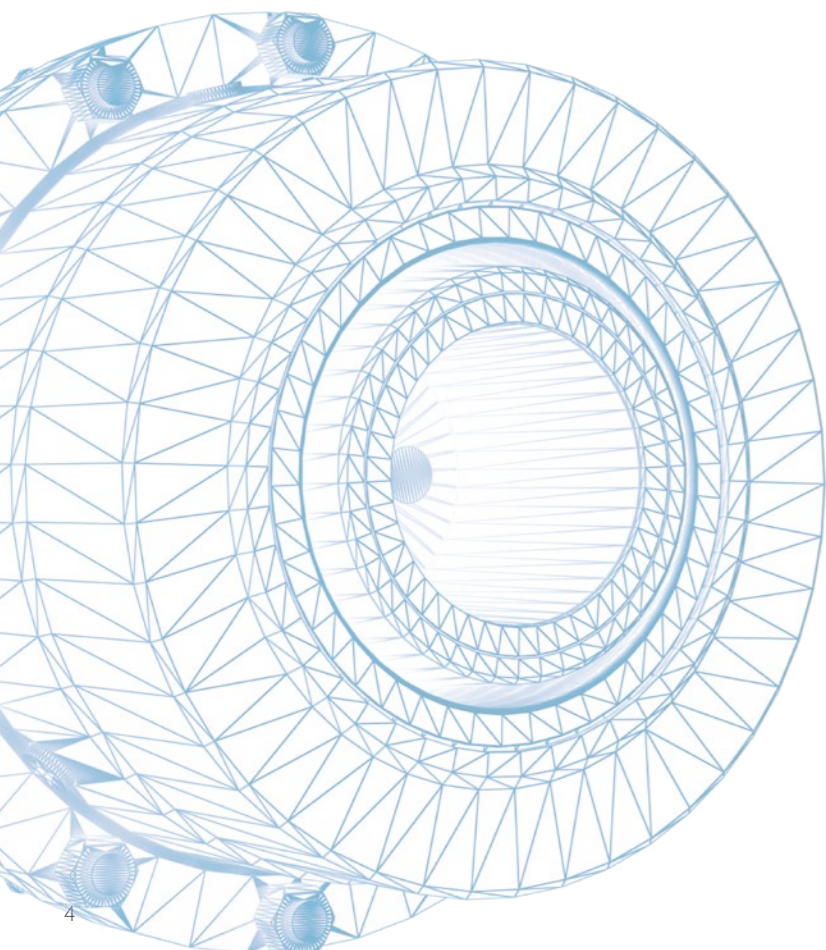
Many years of field experience have given us the insight to focus on design features with a proven reliability, and to avoid those that have caused problems in the field. Using the latest engineering software and simulation tools, we ensure lifetime performance and minimal life cycle cost are built in from the design phase.

All IGW couplings are subjected to rigorous prototype testing, using our gearbox testing equipment and experience to their full advantage.

In cooperation with leading industrial partners and universities, we continue to innovate coupling technology, improve energy efficiency and reduce life cycle cost, making sure the coupling market is always moving forth.

A coupling for every need

Be it a standard coupling or an original design, IGW has the solution you need. The overview below shows you our main products. However, our full range of tailor-made solutions stretches beyond what is listed here.



INPUT

01

GEAR COUPLING

- Gear coupling with metal bellow seal
- Gear coupling with flexible seal

Semi-suspended

Loco, tram, metro

02

MEMBRANE COUPLING

- Membrane coupling
- Double membrane coupling
- Membrane coupling with fan

Fully suspended

Loco, tram

OUTPUT

03

COUPLING FOR SEMI/ FULLY SUSPENDED DRIVES

- Rubber wedge coupling with one joint

Semi/fully suspended

EMU

04

GEAR COUPLING WITH TWO JOINTS

- Rubber wedge coupling with two joints

Fully suspended

Loco, tram

05

RUBBER WEDGE COUPLING

- Coupling combination gear coupling – gear coupling
- Coupling combination gear coupling – rubber wedge coupling (wheel interface)
- Coupling combination gear coupling – rubber wedge coupling (axle interface)

Fully suspended

Loco, tram

- Rubber wedge coupling (wheel interface)
- Rubber wedge coupling (axle interface)

Fully suspended

Tram

01 GEAR COUPLINGS

GEAR COUPLING *With metal bellow seal*



Max. speed: up to 5,500 RPM
Operation torque: up to 5,500 Nm
Short-circuit torque: up to 17,000 Nm

- Double cardanic, torsionally rigid and self-centering gear teeth
- Metal bellow seal for zero leakage of the coupling
- Suitable for high axial, radial and angular misalignments
- Suitable for high-speed and very high-speed trains
- Easy mounting and dismounting of gear coupling half without interference fits loose
- Easy lubricant (oil) change without disassembly of the drive
- Self-lubricated (oil)
- Long lifetime and wear resistant
- Long interval between overhaul (lower service cost)

Optional

- Overload protection by slipping element
- Electrical insulation
- Extra seal against very dusty environment

GEAR COUPLING *With flexible seal*



Max. speed: up to 5,500 RPM
Operation torque: up to 5,500 Nm
Short-circuit torque: up to 17,000 Nm

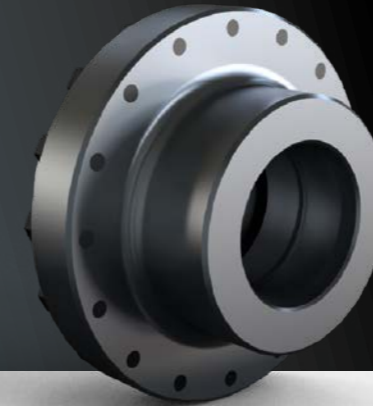
- Double cardanic, torsionally rigid and self-centering gear teeth
- Suitable for axial, radial and angular misalignments
- Easy mounting and dismounting of gear coupling half without interference fits loose
- Self-lubricated (grease)
- Long lifetime and wear resistant
- Long interval between overhaul (lower service cost)

Optional

- Overload protection by slipping element
- Electrical insulation

02 MEMBRANE COUPLINGS

MEMBRANE COUPLING



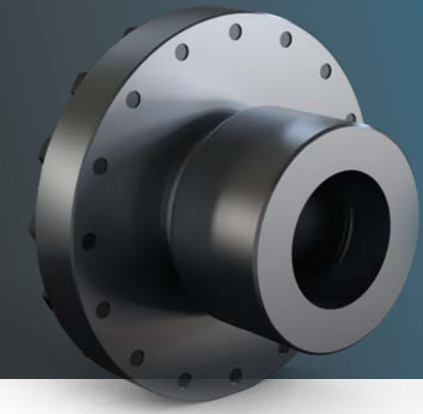
Max. speed: up to 5,000 RPM
Operation torque: up to 10,500 Nm
Short-circuit torque: up to 25,000 Nm

- Torsional rigid and bending flexible coupling
- Suitable for minor axial and angular misalignments
- High radial stiffness
- Easy mounting and dismounting of gear coupling half without interference fits loose
- Wear-free
- Delivery possible as an assembly motor-coupling-gearbox

Optional

- Overload protection by slipping element
- Electrical insulation
- Engine speed sensor toothing

DOUBLE MEMBRANE COUPLING



Max. speed: up to 5,000 RPM
Operation torque: up to 10,500 Nm
Short-circuit torque: up to 25,000 Nm

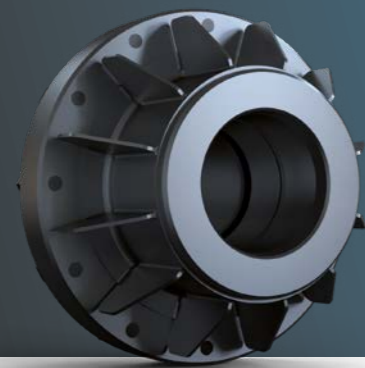
- Torsional rigid and bending flexible coupling
- Suitable for minor axial and angular misalignments
- High radial stiffness
- Easy mounting and dismounting of gear coupling half without interference fits loose
- Wear-free
- Delivery possible as an assembly motor-coupling-gearbox

Optional

- Overload protection by slipping element
- Electrical insulation
- Engine speed sensor toothing

02 MEMBRANE COUPLINGS

MEMBRANE COUPLING With fan



Max. speed: up to 5,000 RPM
Operation torque: up to 10,500 Nm
Short-circuit torque: up to 25,000 Nm

- Torsional rigid and bending flexible coupling
- Fan function
- Suitable for minor axial and angular misalignments
- High radial stiffness
- Easy mounting and dismounting of gear coupling half without interference fits loose
- Wear-free
- Delivery possible as an assembly motor-coupling-gearbox

Optional

- Overload protection by slipping element
- Electrical insulation
- Engine speed sensor toothing

03 COUPLINGS FOR FULLY SUSPENDED DRIVES

RUBBER WEDGE COUPLING With one joint



Max. speed: up to 1,100 RPM
Operation torque: up to 20,000 Nm
Short-circuit torque: up to 55,000 Nm

- Single cardanic and torsionally flexible elastic coupling
- Suitable for axial and angular misalignments
- High radial stiffness
- Change of rubber elements without drive disassembly

03 COUPLINGS FOR FULLY SUSPENDED DRIVES

RUBBER WEDGE COUPLING With two joints



Max. speed: up to 1,100 RPM
Operation torque: up to 40,000 Nm
Short-circuit torque: up to 110,000 Nm

- Single cardanic and torsionally flexible elastic coupling
- Suitable for axial and angular misalignments
- High radial stiffness
- Change of rubber elements without drive disassembly

04 GEAR COUPLINGS WITH TWO JOINTS

COUPLING COMBINATION Gear coupling - Gear coupling



Max. speed: up to 900 RPM
Operation torque: up to 7,000 Nm
Short-circuit torque: up to 23,000 Nm

- Double cardanic, torsionally rigid and self centering gear teeth
- Direct interface to wheel axle
- Ring gear is part of gearbox hollow shaft (reduces installation space and additional cost)
- Suitable for axial, radial and angular misalignments
- Low maintenance cost
- Self-lubricated (grease)

04 GEAR COUPLINGS WITH TWO JOINTS

COUPLING COMBINATION

Gear coupling - Rubber wedge coupling (wheel interface)



Max. speed: up to 900 RPM

Operation torque: up to 7,000 Nm

Short-circuit torque: up to 23,000 Nm

- Combination of torsionally rigid gear teeth with self-centering and torsionally flexible elastic coupling
- Direct wheel connection (single-wheel driver)
- Ring gear part of gearbox hollow shaft (reduces installation space and additional cost)
- Suitable for axial, radial and angular misalignments
- High axial misalignments compensated by gear coupling half
- Gear coupling half self-lubricated (grease)

COUPLING COMBINATION

Gear coupling - Rubber wedge coupling (axle interface)



Max. speed: up to 900 RPM

Operation torque: up to 7,000 Nm

Short-circuit torque: up to 23,000 Nm

- Combination of torsionally rigid gear teeth with self-centering and torsionally flexible elastic coupling
- Direct connection to wheelset axle by face gear
- Ring gear part of gearbox hollow shaft (reduces installation space and additional cost)
- Suitable for axial, radial and angular misalignments
- High axial misalignments compensated by gear coupling half
- Gear coupling half is self-lubricated (grease)

05 RUBBER WEDGE COUPLINGS

RUBBER WEDGE COUPLING (Wheel interface)



Max. speed: up to 900 RPM

Operation torque: up to 7,000 Nm

Short-circuit torque: up to 23,000 Nm

- Double cardanic and torsionally flexible elastic coupling
- Suitable for axial, radial and angular misalignments
- Coupling through gearbox
- Connection directly to the wheel
- Gearbox connection with face gear

RUBBER WEDGE COUPLING (Axle interface)



Max. speed: up to 900 RPM

Operation torque: up to 7,000 Nm

Short-circuit torque: up to 23,000 Nm

- Double cardanic and torsionally flexible elastic coupling
- Suitable for axial, radial and angular misalignments
- Coupling through gearbox
- Connection directly to wheelset axle

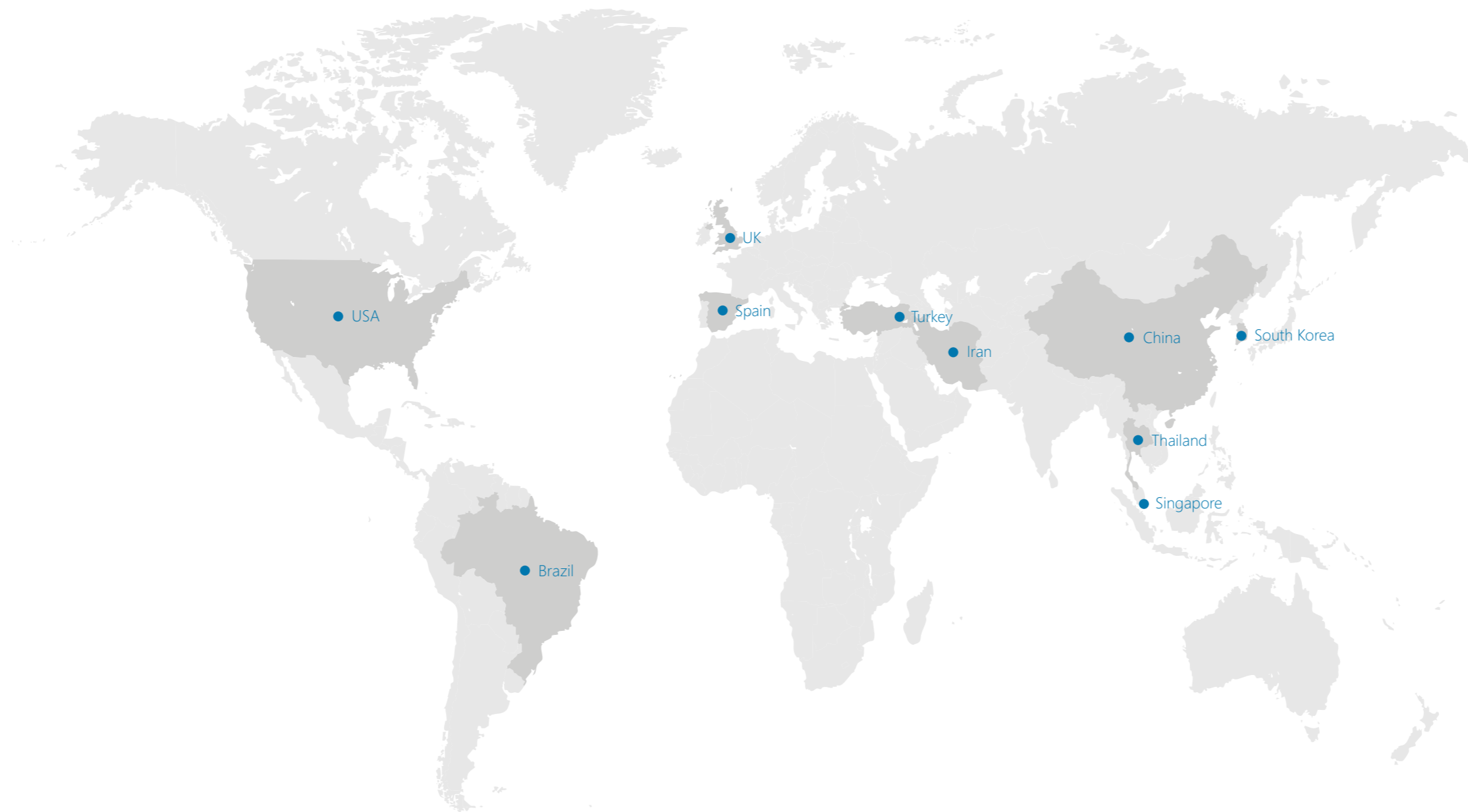
7 good reasons to trust IGW couplings

1. Exclusive use of **quality components**
2. A fully IGW-controlled process with **in-house development and testing**
3. Advanced **teeth surface treatment** for the **prolonged lifetime** of our couplings
4. **Supply chain optimization** and **design standardization** for shorter lead times and delivery assurance
5. Unrivalled capacity to offer **fully customized solutions**
6. **Integrated solution** within the gearbox package
7. **One-source procurement** for gearbox and coupling



A proven track record

For many years, we have been providing drive solutions to the railway industry. So far, we have delivered approximately 7,500 grease-lubricated couplings and over 100,000 gearboxes globally. Many industry-leading customers have placed their trust in our expertise, state-of-the-art capabilities and the quality of our products.



IGW COUPLING PROJECTS

Region	Project	Year	Quantity
Spain, Barcelona	Metro Line 5	2004	642
Spain, Madrid	Metro Lines 2, 3, 4 & R	2005	588
Spain, Palma de Mallorca	Metro Line Extension	2005	32
United Kingdom	Channel Tunnel Rail Link	2006	448
China, Shanghai	Metro Line 9	2007	816
USA, Chicago	South shore Line	2007	62
China	CRH1E Sleeper cars	2009	1500
China, Shenzhen	Metro Line 2 (Shekou Line)	2009	352
Singapore	Downtown Line	2009	736
China, Shanghai	Metro Line 7	2011	532
Iran, Tehran	Metro line 1 extension	2012	393
Korea, Incheon	Metro Line 2	2012	296
Korea, Seoul	UI-Sinseol Line LRV	2012	72
Thailand, Bangkok	BTS Skytrain	2012	40
Izmir, Turkey	EMU for Suburban Service	2013	344
Brazil, Salvador	Metro Lines 1 & 2	2015	544
Korea, Seoul	Gimpo Subway	2016	96

In good company

IGW is part of BMT drive solutions, a division of the BMT Group. The drive solutions division serves customers in three business lines: automotive, industrial and rail. Our shared know-how, commitment to innovation and global presence makes us a formidable force in the gear system market.



CONTACT US

Our plants for the business line rail

IG Watteeuw ČR s.r.o.

Vídeňská 130
61900 Brno
Czech Republic

T +420 547 139 513
HQ of Rail

IG Watteeuw (Suzhou) Co. Ltd.

N° 1 Fenghe Road
Fengting Avenue, SIP
Suzhou 215122. P.R. China

T +86 512 6287 5601

IG Watteeuw USA LLC

1000 Linden Avenue
Zanesville
Ohio 43701 – 3098 USA

T +1 740 588 1722

Involute Technologies Pvt. Ltd.

Gat No. 156, 157, 158, 159 Alandi
Markal Road, Village Dhanore,
Taluka Khed, Pune 412105,
Maharashtra India

T +91 9822559845

General e-mail address for all plants: rail@igwpower.com