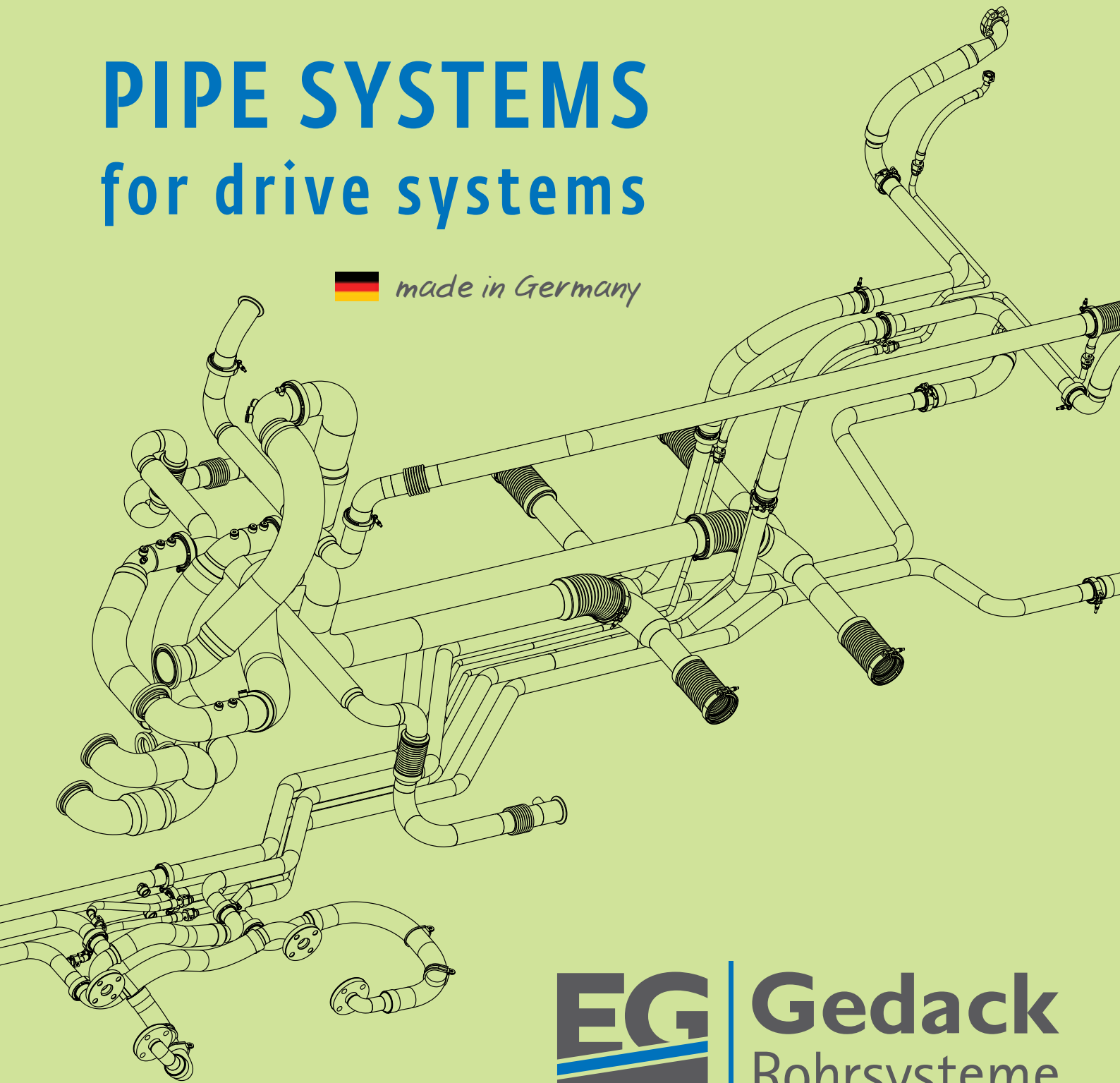


# PIPE SYSTEMS for drive systems

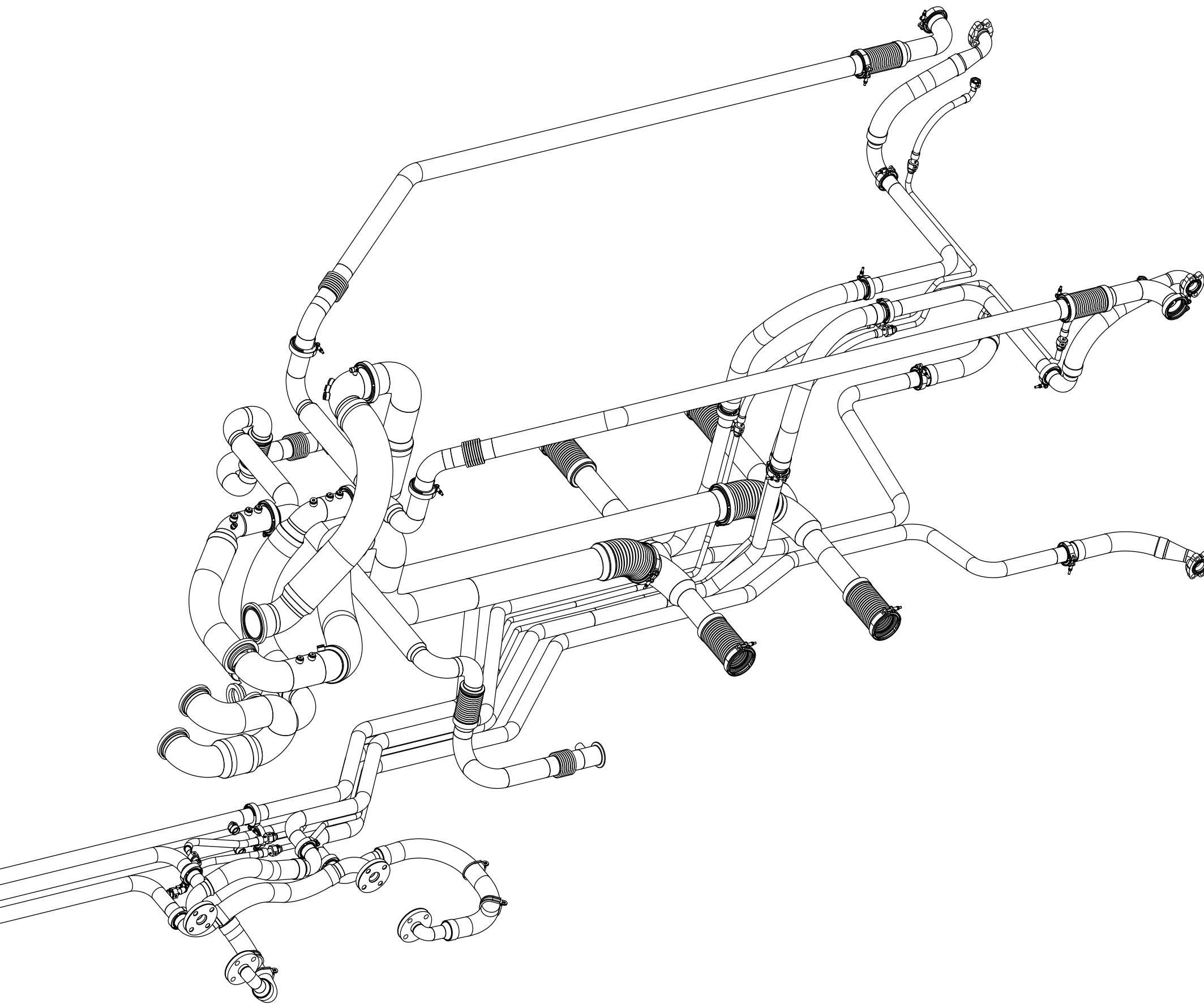
 made in Germany



**EG** | **Gedack**  
Rohrsysteme



*The Power of Dynamic Piping*



We develop, design and produce

# PIPE SYSTEMS for drive systems

with innovative solutions for:

- complex systems such as diesel engines, coolers and heaters
- converter and transformer cooling
- the combination of expansion joints, tubes and pipe assembly groups and exhaust gas systems
- fitting in confined spaces in vehicles
- easy assembly and maintenance

Our pipe systems reliably comply with the highest requirements with regards to:

- impermeability for gases or liquids
- decoupling of vibrations from structure borne or airborne sound
- thermal insulation and decoupling to surrounding plant components
- compensation of dimensional tolerances and relative movements
- corrosion resistance against aggressive media
- resistance against external influences
- fire protection-technical regulations
- longevity, favorable LCC.

The manufacturing processes comply with the EN ISO 9001-2015 certification for Quality Management Systems. We are accredited with the certificate for welding according to DIN EN 15085 CL1 as well as for crevice and burr free welding according to DIN 2827.





Picture: HARSOCO Rail Europe GmbH

**Maintenance and catenary vehicles for the Schweizer Bundesbahn**  
Development, design and production of the exhaust system for HARSOCO Rail Europe GmbH in collaboration with MTU Friedrichshafen GmbH and HUG Engineering GmbH



Picture: Vossloh Locomotives GmbH

**Vossloh Locomotives GmbH**  
**Shunting and mainline locomotive DE18 with stage IIIB-MTU-engine (Akiem)**  
Development, design and production of cooling water piping and exhaust piping for the MTU-engine even the cooling pipes for the power converter

4

We develop, design and produce

# Exhaust systems Silencers Cooling- and Air induction systems

Our business principles are the continuous research and development of our products, research and finding innovative ways in material selection and manufacturing methods.



Picture: Walter Ruetsch

**Alstom Transport S. A.**  
**Shunting and mainline locomotive Prima H4**  
Piping of exhaust gas, charge air and cooling water of the drive packages from Zeppelin Power Systems GmbH & Co. KG



Zeppelin Power Systems GmbH & Co. KG

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For more than 25 years of innovation and progress





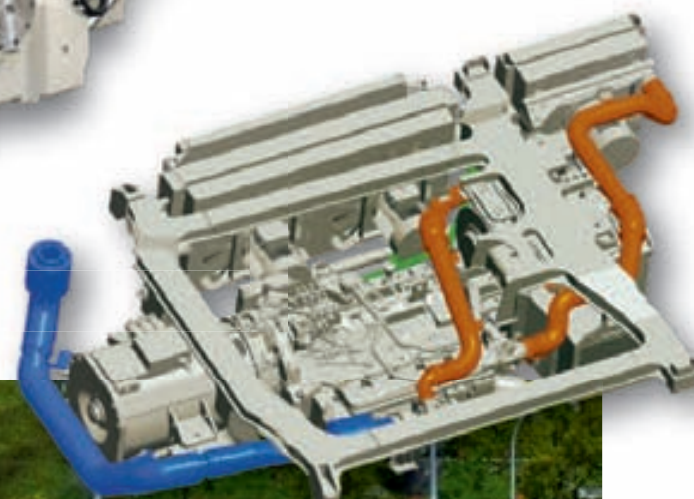
Picture: ŽOS Vrutky a. s.

**ŽOS Vrutky a. s.**  
DMU 861 "Regiomover"  
Design and production of exhaust piping in the drive system "Railpack T212", Voith Turbo GmbH & Co. KG



Picture: Voith Turbo GmbH & Co. KG

**Voith Engineering Services GmbH**  
Development, design and production of exhaust and intercooler piping hybrid drive system for the "VT642 EcoTrain"



Picture: Andreas Schaarschmidt

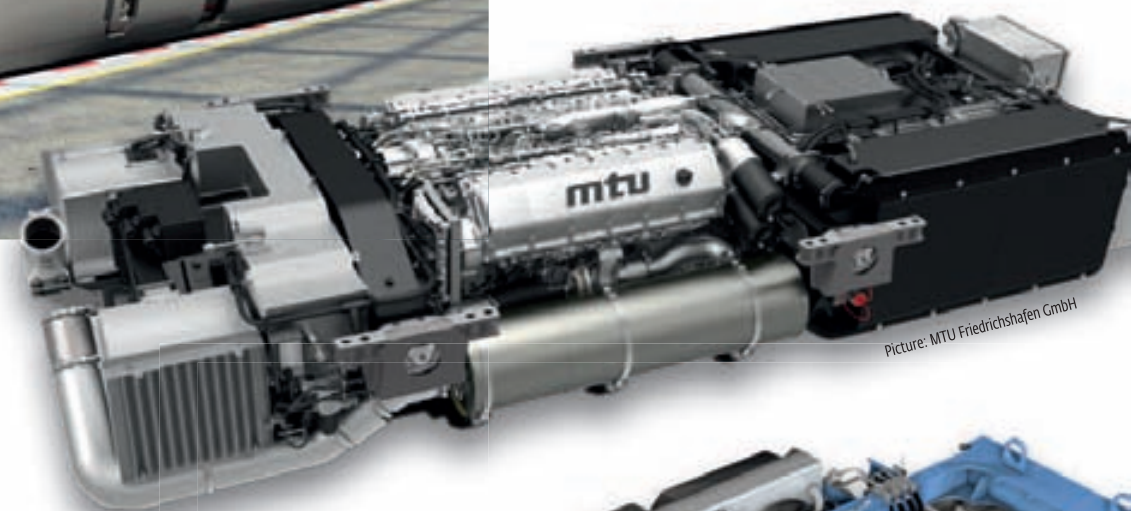
**DB RegioNetz Verkehrs GmbH / Erzgebirgsbahn**  
Hybrid train "VT642 EcoTrain"  
Functional dimensioning, development, design and production of the complete exhaust piping

6



Picture: HITACHI Rail Europe Ltd.

**HITACHI Rail Europe Ltd.**  
Class 800 bi-mode "SuperExpressTrain"  
Exhaust piping of PowerPack® BR1600, MTU Friedrichshafen GmbH



Picture: MTU Friedrichshafen GmbH

**MTU Friedrichshafen GmbH**  
Design and production of exhaust and intercooler piping PowerPack® BR1800 "Coradia Lint" Stage III B



Picture: Michael Gottlieb

**Alstom Transport Deutschland GmbH**  
DMU „Coradia Lint“  
Functional dimensioning, development, design and production of the complete exhaust piping

7









**Voith Turbo Lokomotivtechnik GmbH & Co. KG**  
**Shunting and mainline locomotive GRAVITA 15L BB**  
 Functional dimensioning, design, development and production of exhaust silencer (MTU engine 12V 4000 R43L)



**Robel Bahnbaumaschinen GmbH**  
**Track vehicle 54.22 for CFL**  
 Functional dimensioning, development, design and production of a specific silencer and supplier of GEDACK v-band-systems



**Liebherr plants Nenzing and Rostock**  
**Mobile Harbour Cranes**  
 Design and production of the exhaust piping in engine room



**Liebherr-Mining Equipment Colmar SAS**  
**Mining excavators**  
 Piping exhaust gas, charge air, cooling water and oil







In-house development

## Gedack v-band-systems

The secret of our unique v-band systems are the compression moulded couplings. They are considerably lighter and more cost efficient than other flange connections. The space required is very small and therefore even the tightest installation conditions turn out to be easy to handle.



In the high temperature range we use

## Metal seals

Our metal seals reliably comply with the highest demands for impermeability, corrosion resistance and durability. There is no wear and tear at the sealing cord. In addition, there are no costs for sealants or other auxiliaries.

**Comparison of a Gedack v-band-connection (pipe-pipe) with a traditional flange connector regarding measurements and weight**

**Gedack v-band-system**

Ø A mm	Ø B mm	H1 mm	weight
40,0	38,0	74,0	0,33 kg
50,0	47,0	84,0	0,50 kg
63,5	60,3	102,0	0,66 kg
80,0	78,0	123,0	1,03 kg
101,6	97,6	139,0	1,10 kg

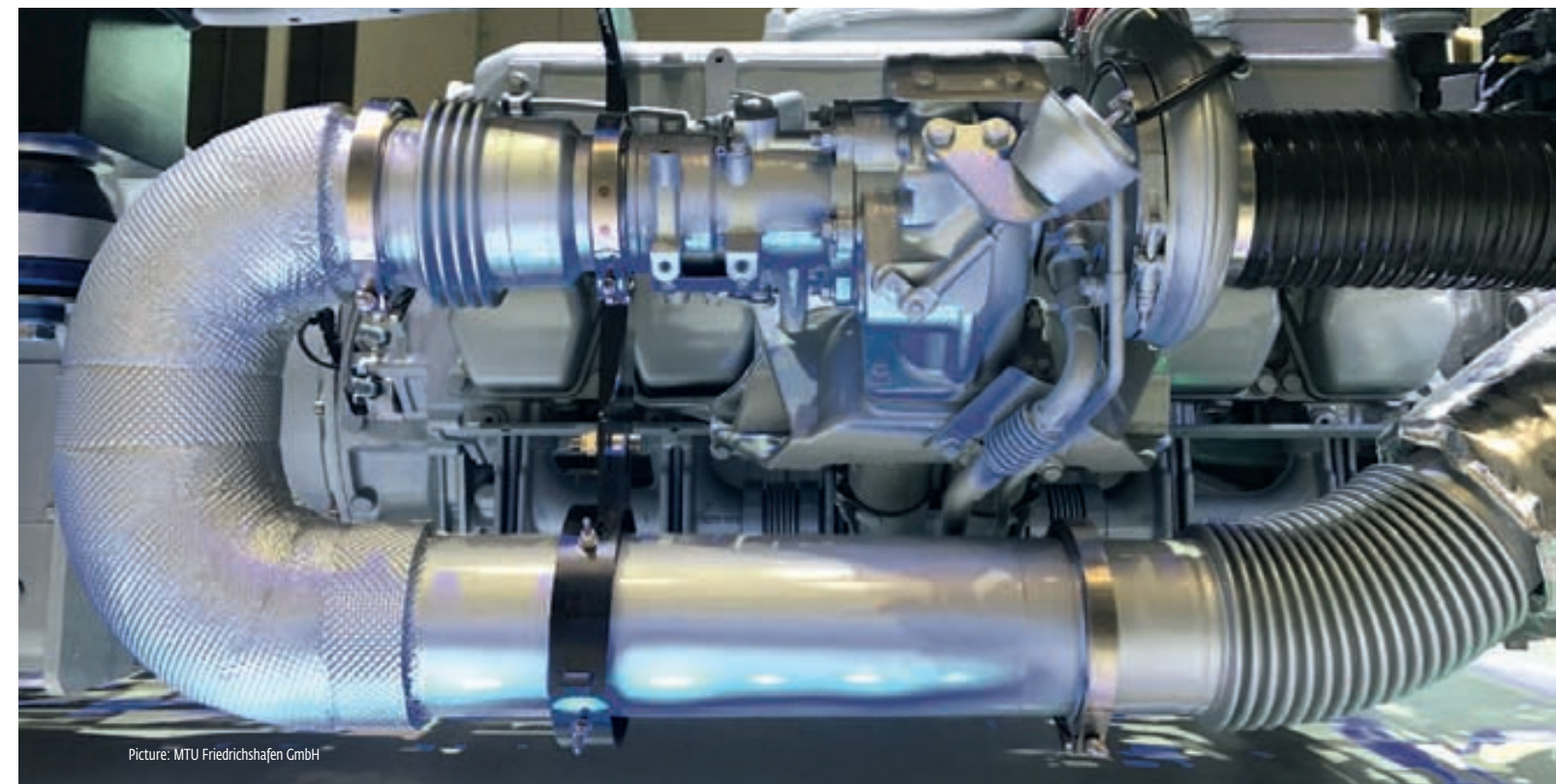
material 1.4301

**Traditional flange connector**  
(SAE-flange connector No 40/500 PSI, type DFC)

Ø A mm	Ø B mm	D mm	F mm	weight
42,5	34,0	79,0	68,0	1,24 kg
61,0	53,0	102,0	90,0	2,36 kg
77,0	64,0	114,0	105,0	2,88 kg
90,0	80,0	134,0	124,0	5,00 kg
103,0	93,0	152,0	136,0	6,00 kg

material 1.4404

PowerPack® with integral insulated exhaust piping



Picture: MTU Friedrichshafen GmbH



# Flexible metal tubes, Expansion joints and PTFE-tubes

Intensive activities in research and development guarantee our customers products which measure up to the highest quality standards. Our modern production processes ensure an efficient mode of operation, a long life cycle and a high reliability. Our scope of delivery includes various types of flexible metal tubing, metal expansion joints and PTFE corrugated flexible tubing. The direct selling route makes short delivery times a matter of course.

## Flexible metal tubes

The design of the tubing depends on the operational conditions and stretches from the value for money design to the top quality designs with multilayered tresses or special finished inner surfaces.

Prior to delivery our flexible metal tubes undergo a pressure test. The pressure test is 1.3 times the operating pressure. Material test certificates and acceptance test certificates are supplied on request.

### We produce flexible metal tubes

- Nominal diameter DN 6 to DN 250 (Larger diameters are available on request.)
- For pressures up to PN 400
- In stainless steel 1.4301 / 1.4541 / 1.4571 as standard offer (different materials are possible depending on the intended use)
- With all the customary connections and faucets or as desired
- With v-band-clamps with compression-moulded ends for the direct connection to aggregates or further tube runs

Various corrugated hose types with different bending radii and stainless steel braiding are always in stock.

## Expansion joints

For the production of the following expansion joints, we possess considerable calculation procedures to ensure the optimum dimensioning for the respective application.

### Axial expansion joints

- Single and double-walled design in the nominal diameters DIN 16 to DIN 300 for pressures of up to PN 16 with welded ends, flanges or threaded connections
- Multi-walled design in the nominal diameters DIN 40 to DIN 2000 for pressures of up to PN 25 with flared tube end flanges, for pressures of up to PN 400 with welded ends or fixed flanges

### Angular expansion joints

- In the nominal diameters DIN 40 to DIN 2000 for pressures of up to PN 100 multi-walled design with welded ends or flanges, **movable on one level** with pin joint bracing **all sides movable** with fully suspended drive joint bracing also with movement limitation

### Lateral expansion joints

- In the nominal dimensions DIN 40 to DIN 2000 for pressures of up to PN 100 multi-walled design with welded ends or flanges, **all sides movable** by means of tie-rod bracing with ball joint discs
- In the nominal dimensions DIN 40 to DIN 2000 for pressures of up to PN 100 multi-walled design with welded ends or flanges, **movable on one level** by means of pin joint bracing **multi-directional movement** by means of a suspended drive joint

Models with internal and external protective piping can be delivered on request.

## PTFE-tubes

Polytetrafluorethylen (PTFE) – corrugated flexible tubing can be installed without any problems due to its flexibility and it lives up to the highest demands regarding operating reliability. It is kink-proof and has a 3.5 fold bursting pressure reserve. PTFE is fatigue resistance.

- On principle we use pure PTFE fine powder without any material from recycling processes. Choice of material and tube production are subject to the strictest quality controls.
- Material variants: PTFE white and PTFE black (antistatic and electrically conductive)



**Flexflon® FF hf**  
DN 10 to DN 100, highly flexible, heavy-walled, low in diffusion, coil corrugated. The optimized corrugated profile provides for the highest flexibility with medium pressure capacity without supporting coils.



**Flexflon® FF hfZ**  
DN 10 to DN 100, highly flexible, heavy-walled, low in diffusion, coil corrugated with threaded coil, suitable for high pressures and temperatures



**Flexflon® FF fg**  
DN 10 to DN 50, flat corrugated, heavy-walled, low in diffusion, coil corrugated with wire coil, suitable for the medium pressure range, especially easy to clean



**Flexflon® FF eb**  
DN 6 to DN 32, highly flexible, medium-walled, coil corrugated

On request Flexflon®-PTFE-corrugated tubes are equipped with a braiding of stainless steel wire or PBT.







Company headquarters in Dessau-Roßlau

**DIE BAHNINDUSTRIE.**  
VDB VERBAND DER BAHNINDUSTRIE IN DEUTSCHLAND E.V.



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*The Power of Dynamic Piping*