

PRODUCTION



WILHELM HERM. MÜLLER

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Full Service: complete WHM range



Rubber and Plastics Technology

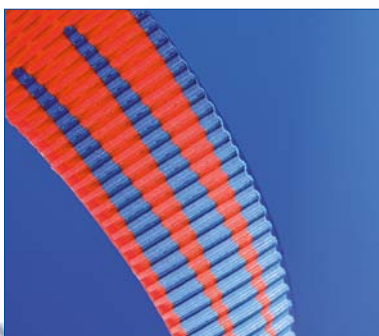
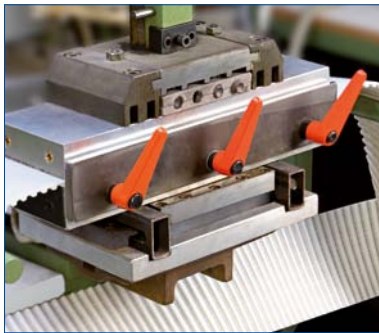
On a world wide scale, WHM as a service and quality conscious service provider assists customers in all fields of industry based on high consultation and system solution competence . Almost 100 years of experience make us a reliable supplier of technical components and semi-finished products made of rubber and plastic. From moulded rubber parts, profiles, water jet processing through to die cutting, WHM provides cutting edge individual components, assembly groups as well as complex individual solutions. In our own plastics processing workshop, we reliably produce milled and turned parts on our modern CNC equipment, paired with excellent know-how. High-tech processing centres for individual component and small series production, or the manufacture of high-precision acrylic components ensure exceptional and effective workmanship at a fair value for money. WHM is one of the founding members of Kooperation Federungstechnik (FETECH).



Drive engineering

WHM has been highly experienced in mechanical drive engineering for more than 50 years. Be it polyurethane or neoprene timing belts, Vee-belts, flat or round belts, WHM can always offer a suitable solution from its comprehensive product range of belt types, belt dimensions, synchronous pulleys and components. Designers in the fields of mechanical drive, linear and transport engineering are offered full service solutions from one source. A comprehensive offer for belt finishing as well as our own pulley production round off our full service in drive engineering. WHM is a founding member of Mulco and Kooperation PDM (Power Drive Motion).





Welding of polyurethane timing belts

WHM offers a comprehensive range of high-quality and durable polyurethane timing belts of the BRECO®, BRECOFLEX® and SYNCHROFLEX® brand, which can be quickly delivered worldwide. Polyurethane timing belts, polyurethane round belts and polyurethane Vee-belts are welded on high-performance belt welding machines forming open

length belts that are subsequently cut to the desired fixed length in conformity with the customers' specifications.

The portable welding device TSG for polyurethane timing belts

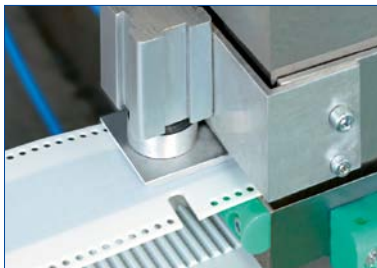
Even polyurethane timing belts need to be replaced occasionally. With the portable welding device TSG, WHM offers the in-situ solution for timing belt replacement in drive units in difficult to access locations. The TSG consists of a control and a welding unit with exchangeable welding plates, its operation/control is easy, and it offers the possibility to weld polyurethane timing belts in-situ or at the machine without costly dismantling of the machine itself.

- Suitable for all belt profiles.
- Short machine down times.
- High heating capacity.
- Welding time including cool-down phase only approx. 30 minutes.
- Air cooling, no water connection required.
- Flexible through long connection cables.





Belt surface finishing



Mechanical timing belt processing

Almost any belt width and shape can be milled, sanded and punched with the tightest possible tolerances. CNC milling machines are used to produce timing belt contours, for finishing the back of the belts as well as for the manufacture of suction pockets for vacuum belts.

Many years of experience, qualified personnel and optimised production methods as well as special machines ensure optimum product quality.

Belt milling

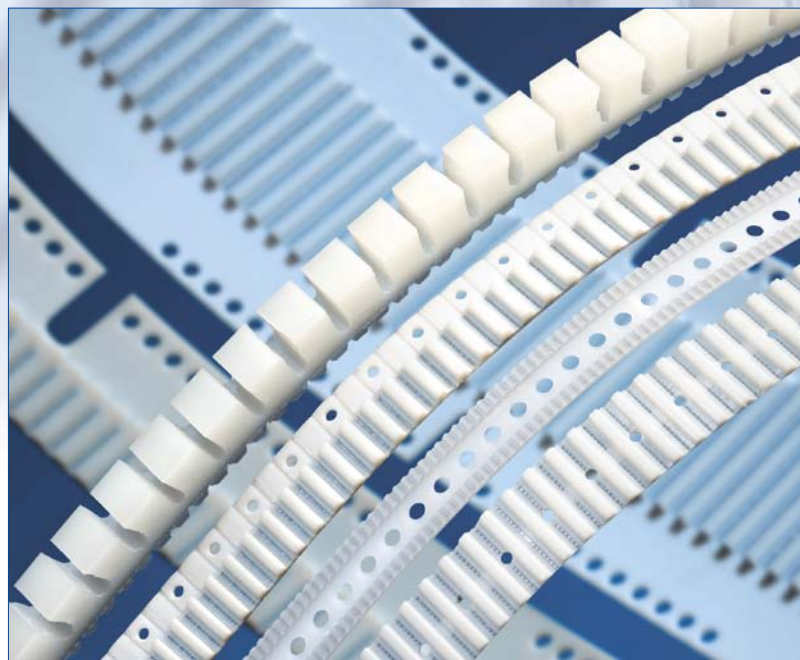
- Contour milling.
- Tooth removal.
- Longitudinal/cross

Belt sanding

- Face sanding
- Edge sanding
- Precise dimension sanding of belt backs.
- Contour sanding of coatings.
- Longitudinal and cross sanding.

Belt punching

- Round holes.
- Square/rectangular, oval or customised through holes.

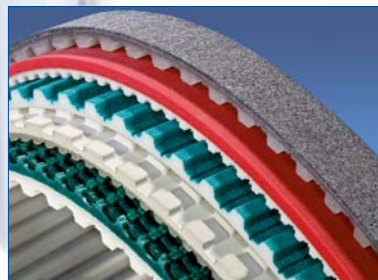
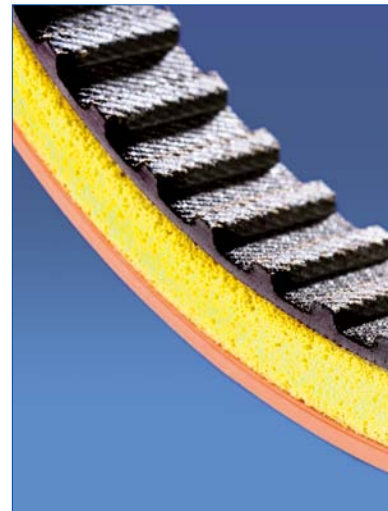
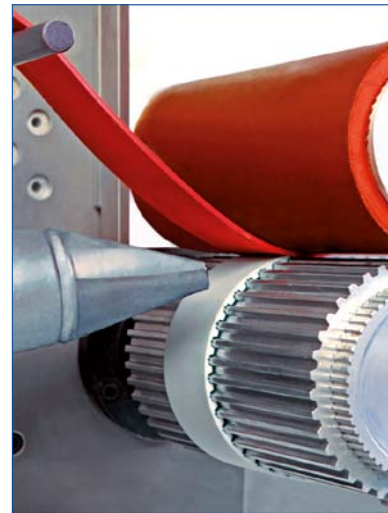


Timing belt coating

Be it soft, hard, elastic, low noise with little or high friction. WHM produces timing belts for the most varied fields of application. Backed by our know-how, we ensure that each timing belt receives the desired pre-defined properties to accomplish its optimum drive performance for each application.

WHM offers a large spectrum of different coatings for rubber timing belts, polyurethane timing belts as well as Vee-belts: Supergrip, Lnatex (also without butt-joint),

HV film, PU yellow and many other materials of different thickness, hardness and structure. Special applications and colours are also available. Just ask for detailed information.



WHM coating materials

Celloflex	PAR	PVC Fishbone
Chrome-leather	PAZ	PVC Mini-fishbone
Correx	PAZ-PAR	PVC white
FG 385	Polythane D 15	RP 400
HV1-Film	Polyurethane version T	Supergrip green / blue / black
Linatex / Linard / Linaplus	Porol	Sylomer
Linatrilite	PU-yellow	TT 60
NBR	PUR 385	Viton
NP 385	PVC-blue	



Belt surface finishing Flight welding

The use of flights allows designers to realize innovative and individual timing belt solutions. This is of special significance in transport technology and for special material flow solutions, such as precise cyclic positioning.

In this regard, the particularly safe bond between the back of the belt and the flight during welding is essential. This is ensured by WHM's state-of-the-art production methods.

WHM production methods

- Timed belt and mirror welding.
- Circular friction welding

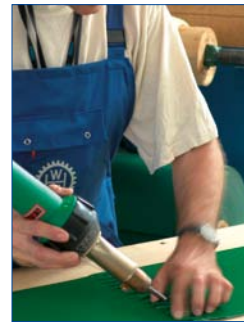
Flight production and processing

All plastics materials for timing belt flights can be processed on our CNC processing centres. The flight designs are manufactured on the basis of drawings. Special designs are, of course, also possible.

Upon request, we produce small flight series as CNC milled flights, representing an economic alternative to the injection moulding method. If you decide in favour of the injection moulding variant, you can choose from an

extensive range, since WHM currently has more than 2500 injection moulds for timing belt flights at its disposal.





On modern production lines in our own factory in Poland, transport belts are finished, bonded, coated, laminated, rubber coated and, depending

on their final application, fitted with flights, cams and edge elements. The delivery range includes one, two or three-ply transport belts made

of PVC, polyurethane, fabric and rubber, as well as individual special versions.

Transportbänder

PVC transport belts

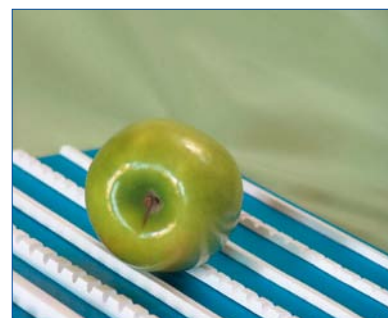
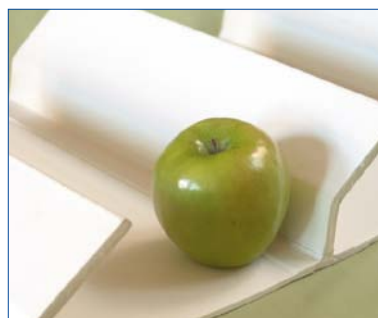
- PVC or fabric on the running face.
- Anti-static.
- Low noise (depending on the material).
- Certification for foodstuff.
- Max. width 3000 mm.
- Application temperature max. 90°C.

Polyurethane transport belts

- Impregnated fabric on the running face.
- Certification for foodstuff.
- Max. width 2,000 mm.
- TPU colours, white, blue, green or transparent honey.
- Application temperature from - 25°C to max. 80°C.

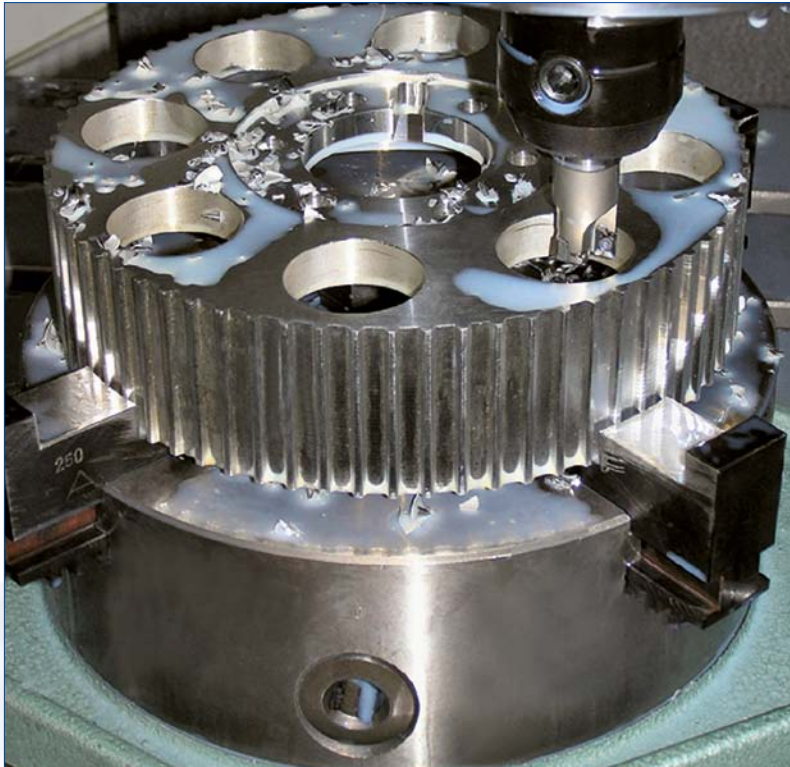
Fabric transport belts

- Coated with 1.8 mm polyester felt, cotton fabric, impregnated fabric/PVC.
- Polyester/cotton combination, running face of fabric, impregnated fabric, 1.35 mm PVG.
- Max. width 3000 mm.
- Anti-static.
- Certification for foodstuff.
- Application temperature max. 130°C.





Pulleys and accessories



Timing belt pulleys and accessories

For drives with polyurethane timing belts, make BRECO®, BRECOFLEX® and SYNCHROFLEX® WHM offers a carefully matched range of timing belt pulleys, bed plates, tension rollers, clamp plates and other drive accessories. Among the network of WHM partners, about

3500 different components for polyurethane timing belt drives are constantly warehoused. High-quality synchronising pulleys, tension rollers and clamp plates in standard execution or as special elements according to drawing stem from our own production.

One of our specialties are timing belt pulleys with internal teeth. All drive elements of the Mulco range meet the requirements of the RoHS directive 2002/95/EC for the restriction of the use of hazardous substances.

Surface treatment/finishing

- **Aluminium**

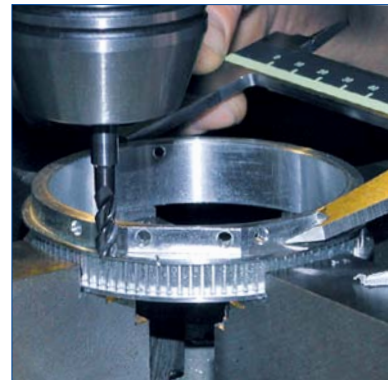
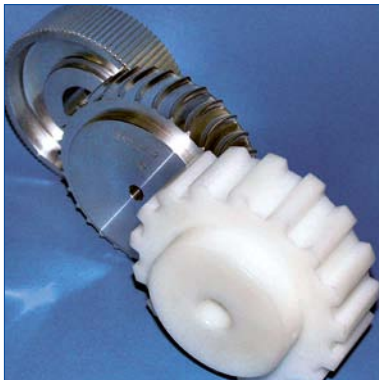
Anodising, electrolytic nickel-plating, chemical nickel-plating, hard anodising, hard coating and teflon coating.

- **Steel**

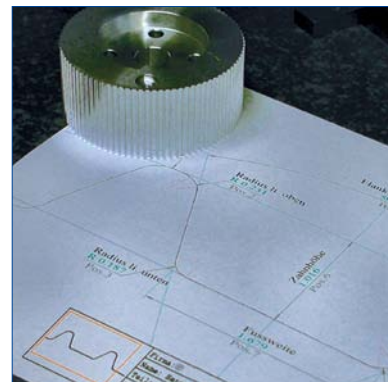
Chromium-plating, zinc-plating, burnishing, phosphating, electrolytic nickel-plating, chemical nickel-plating, hardening.

Further surface treatment/finishing upon request.





We process all standard and special materials, such as aluminium, steel alloys, stainless steel, cast materials and plastics.



Timing belt pulleys

Types / tooth shapes

K1,0	AT3	T20-0	ATN10
K1,5	AT3-0	HTD3M	ATP10
T2	AT5	HTD5M	ATP15
T2-SE	AT5-SE	HTD8M	ATN12,7
T2,5	AT5-0	HTD14M	ATN20
T2,5-SE	AT10	MXL	ST-A
T2,5-0	AT10-SE	XL	ST-B
T5	AT10-0	L	ST-C
T5-SE	AT20	H	ST-D
T5-0	AT20-SE	XH	STD S8M
T10	AT20-0		
T10-SE	T20		
T10-0	T20-SE		

Further dimensions and special productions upon request.



Pulleys



V-rib belt pulleys

WHM manufactures V-rib belt pulleys from aluminium, steel and grey cast iron on CNC controlled automatic turning machines. Their manufacture in four different profiles follows customer specification.

- P J • P K
- P L • P M



Vee-belt pulley balancing

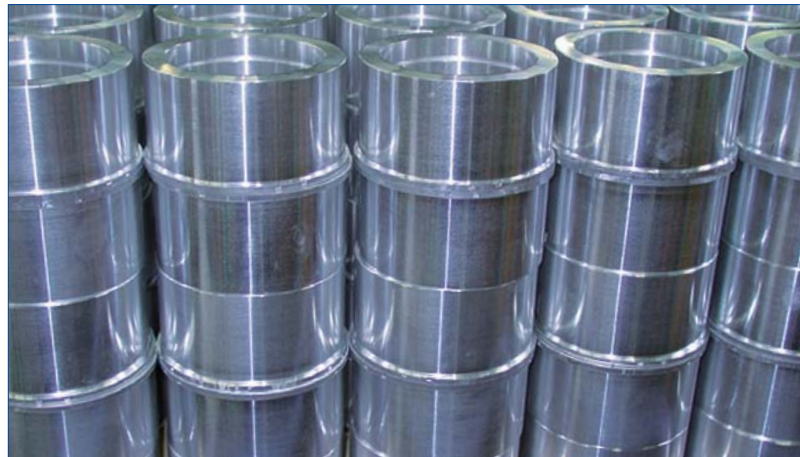
Dynamic balancing of Vee-belt pulleys is also part of our extensive WHM service offer. Balancing is made on two levels according to quality Q 6.3.

Clamp plates for timing belts

T2,5	AT3	ATP10	HTD3M	H
T5	AT3-0	ATP15	HTD5M	L
T10	AT5	ATN10	HTD8M	XL
	AT10		HTD14M	XH

From standard components through to special elements

Based on drawings, WHM produces medium sized and large series on its CNC controlled lathes. Conventional lathes are available for the production of prototypes and small series. The product range includes standard parts through to special elements. We process steel, stainless



steel, aluminium as well as thermosetting and thermoplastic materials. Upon custo-

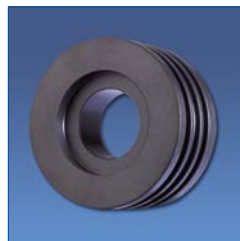
mer request, WHM provides finished elements with a surface finish.

Performance range of turned parts

- Metal/plastics.
- Conventional chuck parts up to \varnothing 450 mm.
- CNC turning parts up to \varnothing 280 mm.
- CNC parting up to \varnothing 85 mm.

Surface treatment/finishing

- **Aluminium**
Anodising, electrolytic nickel-plating, chemical nickel-plating, hard anodising, hard coating and teflon coating.

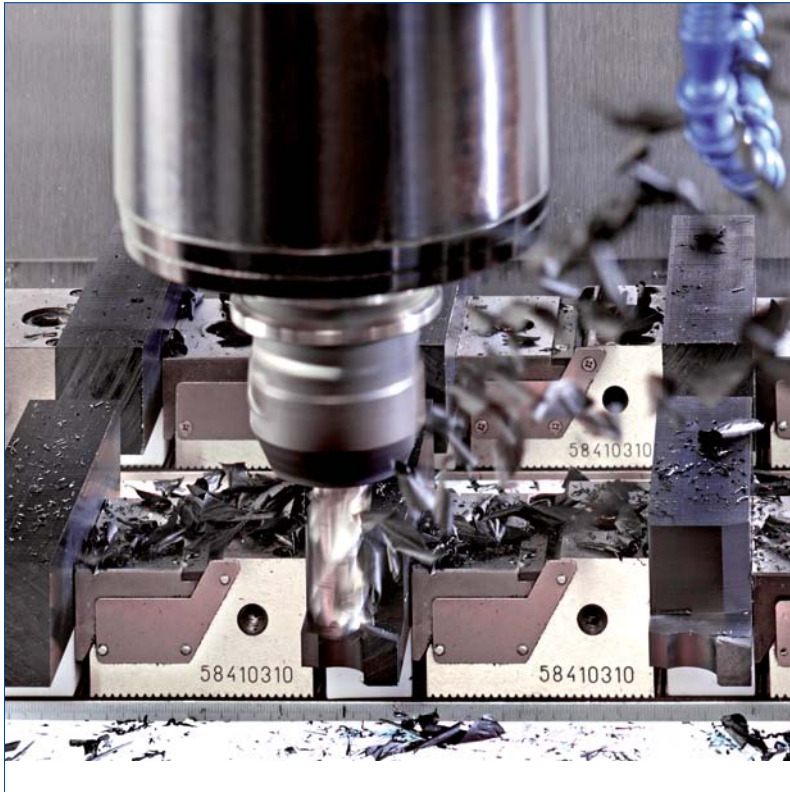


- **Steel**
Chromium-plating, zinc-plating, burnishing, phosphating, electrolytic nickel-plating, chemical nickel-plating, hardening.

Further surface treatment/finishing upon request.



CNC milling

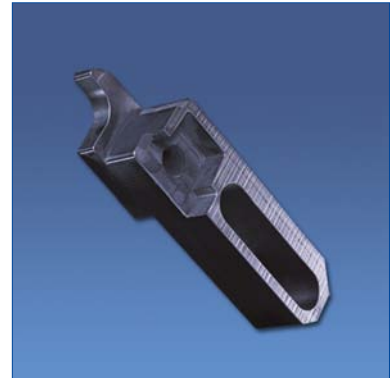


Precise workmanship

CNC machining on state-of-the-art milling machines permits the manufacture of small and medium sized series. The product range includes components of simple through to complex geometry based on 3D data.

Machinery used by WHM includes modern 3 axis and 5 axis CNC machining centres permitting all thermosetting and thermoplastic materials as well as metals to be machined with high precision and surface quality. In addition, profilators, gear shaving and console milling machines are used for gear milling.





Surfaces

- All galvanic and chemical forms of surface treatment.
- All forms of heat treatment.
- Inductive hardening.
- Round sanding, surface sanding.
- Polishing.
- Sand blasting.

Dimensions of plastic components

- 3 axis machining, max. 1000 x 500 x 600 mm.
- 5 axis machining, max. 600 x 620 x 620 mm.
- Production of 3D contours and free formed surfaces.

Materials

- All plastics materials, e.g. PE, PAG, POM, PET, PEEK, PVDF etc.
- Brass, copper, aluminium.
- Cast metals.
- All steel alloys, e.g. corrosion and acid resistant stainless steel.

Service offer for metal milling

- Milling of gears/teeth and special machining up to \varnothing 450 mm.
- Milling of grooves in shafts.
- General milling work.



Mechanical machining



Grinding/sanding

- Metal.
- Plastic rods up to \varnothing 65 and up to 3000 mm length.



Groove

- 2 up to 22 mm in P9 and JS9 quality.

Bottoming grooving

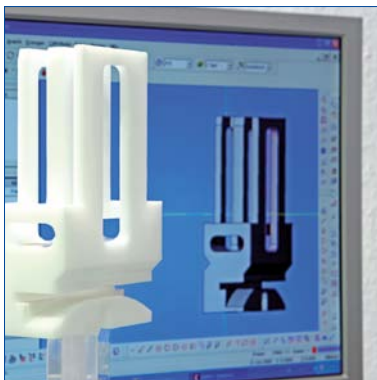
- In widths from 4 to 20 mm.

Drilling & reaming

- Drilling, reaming and thread cutting.



Before the background of production costs, it is frequently necessary to reduce the production or assembly depth respectively, and, in parallel, to streamline the number of sub-suppliers. WHM has realised customer requirements for entire assembly groups on time, and is ready today to offer excellent assembly group management. Providing many possibilities for you!



- Production of required plastic and metal drawing parts.
- Procurement of the standard components belonging to the assembly groups.

- Provision and installation of components produced by you.

Design service is another customer-oriented WHM service within the framework of our Full Service offer with all services from one source. Experienced employees carry out the most varied tasks for you, with expertise and competence.

- Manufacture of components according to customer drawings.
- Processing of external design data (dwg, dxf, step or iges-file).
- Creation of design drawings with CAD.
- Consultation for the selection of technical plastics.

Any questions?

**We would be happy to receive
your call, fax, or e-mail.**

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Our Range of Services:

- **Drive technology**
- **Plastics technology**
- **Rubber technology**
- **Production**
- **Technical consultation**
- **Design service**

WILHELM HERM. MÜLLER

Development. Service. Partnership.

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