HUNGER
Hydraulik

Leading through Experience

As a medium-sized company acting in the international markets, the Hunger Group is one of the leading suppliers of hydraulic components and customer-specific hydraulic system solutions.

The company, which was founded in 1945, has diversified in the past few years in accordance with customer requirements. The main focus of its business today is problem solutions that require intensive consulting services in the hydraulic and automotive fields. The hydraulic business segment is divided up into cylinders, seals, abrasives, machines and power units, as well as commissioning and repair services. As a manufacturer of vehicle components we see ourselves in the automotive field as a partner of the automobile and supply industry.

Hydraulics is the main business segment of the company group. The components and systems produced by Hunger Hydraulics are considered internationally to be leading brand names, fulfilling as they do the highest requirements and being employed throughout the world. Our many years' experience in all aspects of hydraulics is incorporated in the form of application expertise into the development of customer-specific problem solutions and is also expressed in the Hunger product and production know-how, which is essential for the manufacture of components and systems at the highest quality level.

The interplay of experience, the use of state-of-the-art technologies and the application of hydraulic components to customer-specific modules and systems is the basis for fulfilling customer requirements.

The automotive business segment comprises the fields of couplings and sheet metal processing. The fully hydraulic semi-trailer and trailer couplings stand out due to their maintenance-free operation. In the field of sheet metal processing the definitive factors are our production expertise in the manufacture of complicated formed and punched parts, our engineering services and intensive customer contacts.

The foundations for the business segments of the Hunger Group were laid by the company founder Walter Hunger when he began producing hydraulic tipper trucks in Saxony in 1945. Today the company works internationally with its subsidiaries in Europe, North America, China, India, and a number of other agencies worldwide.

The Origins of a Success Story

The history of the Hunger Group begins in 1945 in the Saxon town of Frankenberg.

After returning from the war Walter Hunger takes over an old forge. Three years later the then 23-year-old orphan constructs his first hydraulic truck tipping plant. An important component of this was a shock-absorbing strut which he removed from the wreck of an aircraft. Then things really take off: In the Saxon town of Frankenberg the first employees produce hydraulic pumps, valves and telescopic cylinders, which are then built into trucks and trailers and marketed. Groundbreaking new designs are created, such as the first 8-tonne trailer with brake air tilting mechanism. A 3-tonne truck is equipped for the first time with a motor hydraulic tipping device.

Trade fair in Cairo in 1954

1948 – Walter Hunger's home town of Chemnitz begins the task of rebuilding.
A truck-trailer combination produced by him from the wrecks of cars and tanks is used.

"One cannot change one's century, but one can oppose it and prepare the way for positive influences."

Johann Wolfgang von Goethe

Horse-drawn carts with rubber tires are produced from the scrap of the Second World War.

At the Leipzig trade fair in 1954 Hunger presented three Hunger tippers and a 40-tonne low loader trailer

"Everything we encounter leaves its mark."

Johann Wolfgang von Goethe

KURT LANG

Karl-Marx-Stadt, d. 23.12.58

Herrn
Walter H u n g e r
L e h r / Wein
postlagernd

Sehr geehrter Herr H u n g e r !

Ich danke Ihnen für Ihren Brief vom 11.11.58.

Bitte glauben Sie mir, daß mich Ihr Entschluß, die Deutsche Demokratische Republik zu verlassen, stark bewegt hat. Trotz der von Ihnen genannten Gründe bin ich nicht davon überzeugt, daß Ihnen alles zu Ihrem Vorteil gelingen wird. Sie waren doch bei einem großen Kreis als ein ausgezeichneter Fachmann geachtet und geschätzt, und eben aus Ihren Erfahrungen in Geschäftsleben ist Ihnen bekannt, daß bei der täglichen Arbeit immer wieder Schwierigkeiten auftauchen, vor denen man nicht verzweifeln darf.

Sie sagen in Ihrem Brief an, daß auch in meiner Umgebung Menschen sind, die Ihnen durch ihr Verhalten nicht nur Schwierigkeiten bereitet haben, sondern die durch diese Willkürlichkeiten in Ihrem Entschluß nach Westdeutschland zu gehen, bestärkten. Ich bitte Sie, mir darüber noch etwas mehr mitzuteilen, damit ich derartigen Dingen ein für allemal ein Ende machen kann.

Ich [illegible] Sie in Ihrer Sache [illegible] für richtig [illegible], daß mich die Neugierde [illegible] zu wissen, daß ich nicht nur leere Worte rede, daß Sie an der Zurückkehrer, wenn [illegible] haben.

[illegible] warte auf Nachricht, [illegible] bald von Ihnen in dieser Sache [illegible] erwarte.

Escape from the Clutches of Socialism

The rapid and turbulent rise of the young company is abruptly stopped 10 years later.

In 1957 Walter Hunger enlarges the main factory in Frankenberg, where in the meantime overhead loaders and bulldozers are also produced. In the same year he acquires a factory in Chemnitz, to which the mechanical department, galvanics and construction of the low loaders TL 40 and TL 80 are transferred. In 1958 he leases a motor vehicle business with a total area of 5,000 m².

But the political direction in which the former GDR is going makes life more and more difficult for the private entrepreneur due to its tighter tax laws and state-controlled distribution. The threatened socialization of private companies drives Walter Hunger to flee to the West with his family and a few of his employees. Back in the East he leaves behind him factories in Frankenberg, Chemnitz and Leipzig, as well as more than 1,000 employees.

Sonnabend, 27. Sept. 1958

10 Pf

Bild ZEITUNG

Berliner Illustrierte Nachtausgabe

UNABHÄNGIG · ÜBERPARTEILICH

Alle Patente wurden gerettet

Gesamte Fabrik-Leitung floh aus Sachsen

Weil der Staat die 750-Mann-Firma auf kaltem Wege kassieren wollte, sind sie alle zusammen geflüchtet: Der Chef, zwei Prokuristen, der technische Direktor und der Chefkonstrukteur. Ihre Frauen und Kinder brachten sie mit rüber.

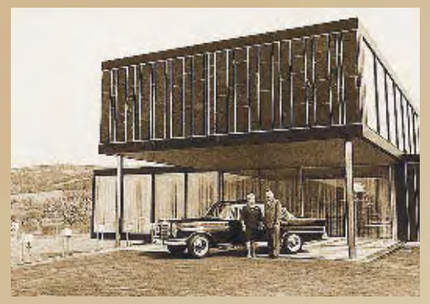
BILD-Exklusiv-Photo

Neuhaus gab in der 6. Runde auf

US-Satellit funkt nicht

HUNGER Kipper

Hunger vehicle factories in Frankenberg



Construction of the new house in 1960

The New Start in Lohr am Main

Walter Hunger is faced with ruin. Together with a few employees who have also fled he makes a new start in the Franconian town of Lohr.

The new administration building

Building discussions on factory expansion

"It is always safest to do only what we see immediately in front of us."

Johann Wolfgang von Goethe

From the very beginning there were plans to work together with a local hydraulics firm. But the negotiations do not result in the hoped-for success and most of the employees who had fled with him decide to leave Walter Hunger.

The mayor at the time, Dr. Nebel, then successfully forged close contacts with the firm Rexroth. In November 1958 Walter Hunger Comp. OHG is founded. Walter Hunger brings his patents and his entire expertise with him. In the first six months Rexroth provides the premises and the money.

On newly acquired land in Rodenbacher Strasse the first production and administration building is erected in 1959. As early as the middle of 1959 production can begin – with success, for very soon the company is one of the top German hydraulic cylinder manufacturers.

Hunger Hydraulik

"Starting is easy, but perseverance is an art."

Reprivatization of the factory in Frankenberg

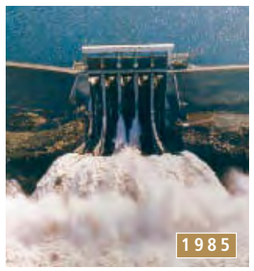
Company History

Hunger DFE

Hunger Hydraulics, USA

Hunger Hydraulics, China

Hunger Weltweit Service



Milestones

1940

1945
Takeover of the forge in Gunnersdorf

1950
Development of the production facility in Frankenberg

1950

Leipzig trade fair [1954]
Presentation of the 40-tonne low loader and Hunger tippers

Foreign trade fair in Cairo [1954]
Large order for 50 dump trucks for Egypt

"Kosmo Plane"- The Hunger carousel [1956]
Hunger hydraulic cylinders for use in fairground rides

1957-1958
New production facilities in Leipzig and Karl-Marx-Stadt

1958
Walter Hunger KG, Lohr a. Main

1960

Tilting cylinders for Unimog [1961]
Hunger supplies the first four and five-stage telescopic cylinders for Daimler-Benz

Extension of an oil tanker [1963]
Production and services for full enlargement

Nuclear Research Center, Jülich [1964]
Manipulating cylinder for Oberjoch

Aluminum dump trucks [1966]
Hunger supplies body and hydraulics for dump trucks

1970

Iron gate, Yugoslavia [1968-72]
Hunger designs and produces all hydraulic cylinders

Extinguishing mast for fire boat [1970]
Development of a fully integrated fire extinguishing mast

Bucket wheel excavator [1971]
Steering cylinders for large open cast mining equipment

Tunnel boring machine [1972]
Hydraulic cylinders for various series of tunnel boring machines

1973
Hunger Hydraulics, UK

1977
Hunger DFE, Würzburg

1979
Hunger Schleifmittel, Würzburg

1980

Highest telescopic antenna in the world [1977]
Telescopic cylinder with a stroke length of 40 m

Vertical casting cylinder [1980]
First casting cylinder with integrated anti-rotation protection

1981
Hunger Hydraulics, USA

1983
Hunger Maschinen, Würzburg

Large wind plant "GROWIAN" [1983]
Special 2 metre diameter seal

Launching gantry for ICE railroad section [1984]
Fully hydraulic bridge building gantry for ICE section Würzburg-Hanover

1987
Hunger Hydraulics, China
Hunger Hydraulics, Indien

1990

Tanakpur Dam [1985]
Complete hydraulic system

1,000-tonne mobile crane [1985]
Hunger supplies telescopic and tilting cylinders

Research commission from NASA following Challenger accident [1986]
Hunger develops new seal

Bridge over the Grosser Belt [1990]
Balancer cylinders for bridge bearings

1991
Hunger Werke für Fahrzeugbau und Mobilhydraulik, Frankenberg

Wuqianxi Dam [1993]
Complete hydraulic system for dam in China

Development of the maintenance-free semi-trailer coupling [1993]
BDI environmental protection prize for grease-free fifth wheel truck coupling

Ceraplate 2000 [1996]
Commissioning of the new thermal coating plant in the Hunger factory

1999
Hunger Weltweit-Service, Lohr a. Main

2000

Offshore equipment for drilling ship [1999]
Compensation cylinders for deep-sea oil drilling equipment

Puttgarden ferry berth [1999]
Large cylinders for landing stage leveling

Canary Wharf Bridge [2004]
Telescopic cylinders with a stroke length of 18 m

The Chemnitz University of Technology awards Walter Hunger an honorary doctorate for his work, 1991

Dr.-Ing. E. h. Walter Hunger
Patents and Honors

1996 – Dr.-Ing. E. h.Walter Hunger receiving the Federal Cross of Merit

Award of the BDI environmental protection prize for industry, Cologne 1995

Philip Morris Prize 1987

The honorary doctorate, the Federal Cross of Merit, over 200 patents and industrial property rights, the Philip Morris Prize – to name just a few examples – document the innovative strengths of Dr.-Ing. E.h. Walter Hunger.

Improvisation, research and development as well as entrepreneurial spirit are the main features of his life. His inventions have resulted in more than 200 patents which have been incorporated into highly specialized products. There is cooperation with the universities and other institutes, with degree dissertations and doctoral theses awarded and supported.

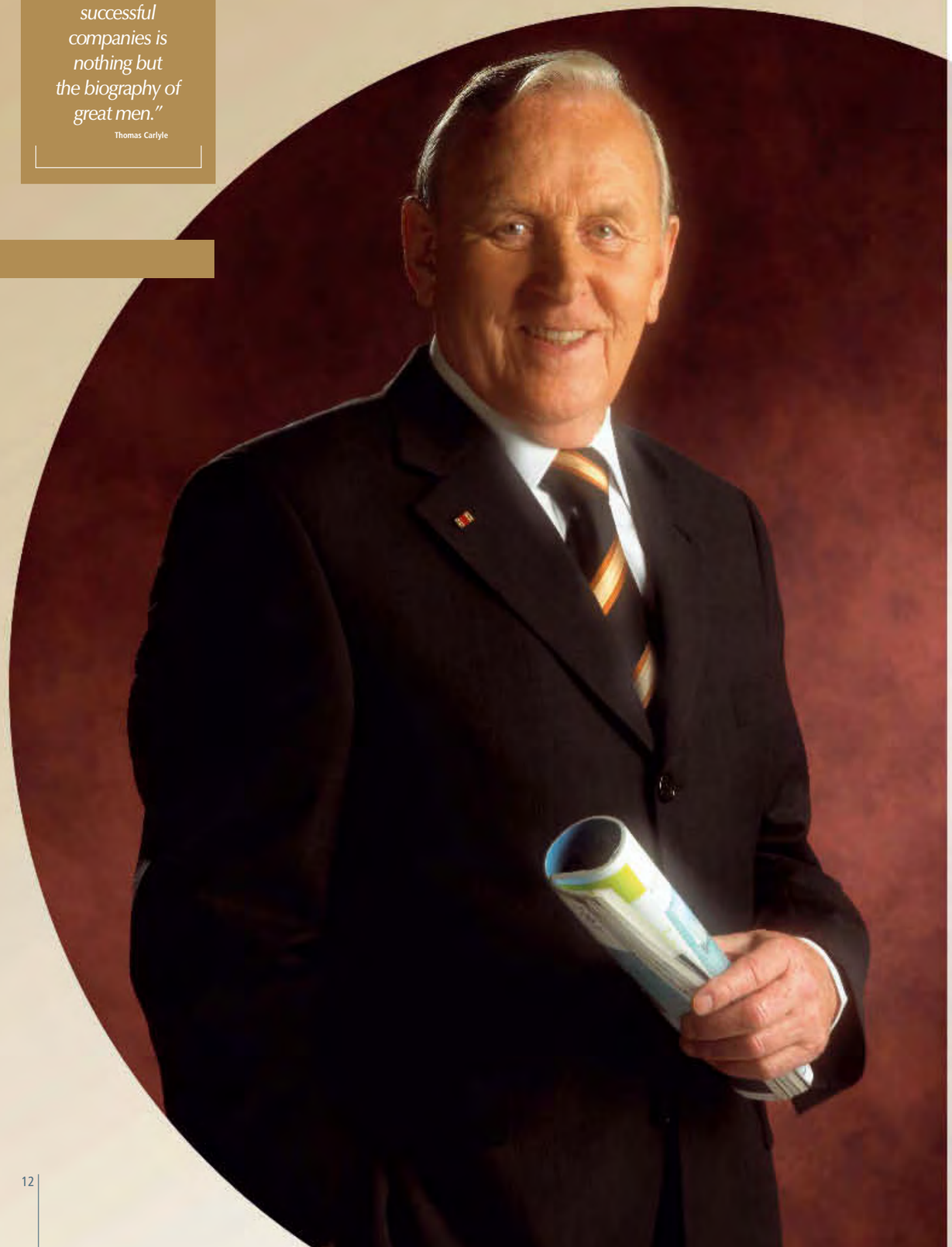
Innovations and inventions clearly show the orientation towards environmental protection and environmental compatibility. In 1995 Walter Hunger received the BDI environmental protection prize for industry in the category of Environmentally Compatible Products for the patented, maintenance-free semi-trailer coupling. In 1991 Chemnitz University of Technology awards him his honorary doctorate for his outstanding services in the fields of production and in the hydraulics engineering .

For his work and entrepreneurial commitment in the reconstruction of the former East German states the Bavarian State Parliament awards him the Federal Cross of Merit in 1996. In 2004 the Indian Hydropower Association (INHA) honors Dr.-Ing. E. h. Walter Hunger for his expertise and experience in hydraulic steel structures.

"Only those who research and develop will have long-term success"

"The story of successful companies is nothing but the biography of great men."

Thomas Carlyle



Family Company with Tradition

Dr Walter Hunger's continuous striving to manufacture technically sophisticated products of the highest level of quality has led to the creation of a group of medium-sized companies.

The background to this has always been his wish that his five children should one day join the company for which they have received a commercial and technical education.

His son Armin and daughter Gisela join the company in 1974. Today Armin lives in the USA, where he manages the local subsidiary. Gisela leaves the firm in 1979. Two years later his daughter Ingrid joins the company, from where she still controls the fate of the Hunger Group today. As the Chief Executive Officer and authorized signatory she is fully committed to the firm and is a guarantor that Walter Hunger's life's work will be continued in the future.

Just in time for Dr. Walter Hunger's 80th birthday his youngest son Jan joins the management of the company. He studied mechanical engineering as well as industrial engineering and management, and worked for four years in a management consultancy firm.

So there is a fresh breeze blowing in the Hunger family business. Dr. Walter Hunger has achieved his goal by simultaneously handing over his company to two younger generations of the family. And following them are now five grandsons, three of whom are already studying mechanical engineering or business administration, certain to have entrepreneurial blood in their veins.

The Hunger family

Armin Hunger

Ingrid Hunger

Jan Hunger

HUNGER Hydraulik

HUNGER Service

HUNGER Dichtungen

HUNGER Automotive

HUNGER Maschinen

HUNGER Schleifmittel

Lohr site, Germany

The Hunger Group's Worldwide Presence

The fact that international markets continue to grow together makes it imperative for companies to orientate themselves beyond their national boundaries. A modern industrial company must develop a global commitment in order to be able to sell the items it produces in its own country on the world market. In this way it can ensure that services are provided wherever they are required, both quickly and of a uniformly high standard.

The Hunger Group has fulfilled this requirement since 1975 when it took its first step abroad with the foundation of Hunger Hydraulics UK in England and Hunger Hydraulique in France. Foundation of the American subsidiary followed in 1981. The group is now also represented in China and India and is able to offer the entire range of Hunger products in these markets, thus ensuring the group's presence in the most important economic regions of the world.

HUNGER Hydraulics UK

HUNGER Hydraulics USA

HUNGER Hydraulique France

HUNGER Hydraulik Schweiz

HUNGER Hydraulics China

HUNGER Hydraulics India

Hunger Hydraulics C.C. Ltd., USA

Würzburg facility, Germany

Hunger Hydraulics, China

"Only those who know the world and have studied the mentality of its people will be successful."

HUNGER Hydraulik

EIN UNTERNEHMEN DER HUNGER-GRUPPE

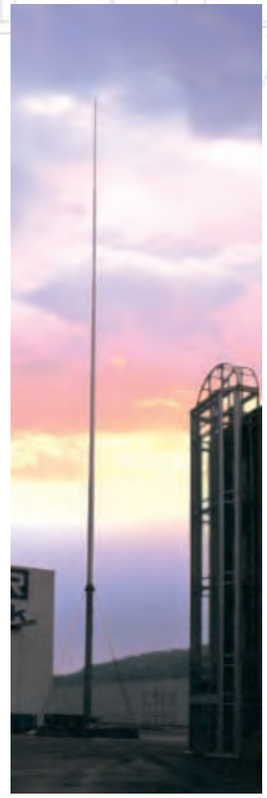
Walter Hunger GmbH & Co. KG – Hydraulic Solutions from one Source

The magic words for exceptional hydraulic cylinders and complete hydraulic systems are "Hunger Hydraulics" – the core business of the company group.

From the first customer advisory session, through engineering, the certification procedure and production, to services such as installation and commissioning – our customers need only one contact person.

With our specialization in large and special cylinders, our high level of in-depth knowledge with our own surface coatings and processing methods together with our very diversified range of customers and applications we are a competent partner for machine and plant construction worldwide.

Quality and reliability, together with due consideration of special customer requirements, are the core of our company philosophy and have developed over the past few decades to become the hallmark of Hunger Hydraulics products.



Five-stage hydraulic telescopic antenna with an overall length of 50 m

"All good principles already exist in the world; one only needs to apply them."

Blaise Pascal

Hydraulic cylinders for an offshore platform

Turning of large parts, dimensions of up to 4 m in diameter and 25 m in length

HUNGER Hydraulik
EIN UNTERNEHMEN DER HUNGER-GRUPPE

Production Machinery for Outstanding Cylinders

The team of specialists and highly qualified skilled workers who perform deep hole drilling, turning and drawing work with these large and special machines profit from the decades of experience of Walter Hunger GmbH & Co. KG.

CNC machine

Drilling and milling

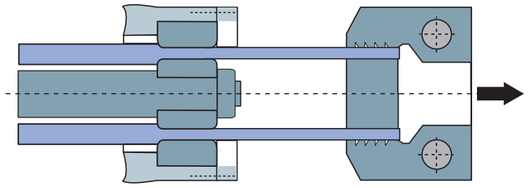
Tube Drawing

Components weighing 70 t, diameters up to 4 m or a machining length of 25 m are nothing unusual for the engineers, planners and skilled workers of Walter Hunger GmbH & Co. KG. Large-dimension lathes, deep hole drilling machines and boring and milling machines designed specifically for processing cylinder components form the core of the mechanical processing technologies.

But at least as important as the machinery are the skills and experience of our highly qualified employees in the processing and assembly of such large components.

With the help of tube drawing technology it is possible to change the pipe diameter and the wall thickness of pipes, or precision steel pipes can be manufactured from boiler tubes. Here the material is cold formed.

Tube drawing from the inside and outside



Drawing jaws pull the pipe (blue) through a drawing die and over the mandrel, thus reducing the wall thickness and diameter of the component.

Surface processing on a horizontal honing machine

Coating plant for Ceraplate 2000 ceramic metal oxide coating

HUNGER Hydraulik
EIN UNTERNEHMEN DER HUNGER-GRUPPE

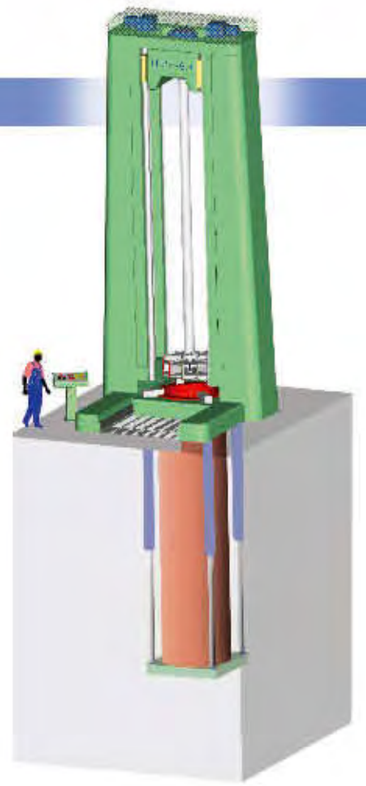
Surface Coating and Processing Technologies

Today hydraulic cylinders are used successfully under ambient conditions which only a few years ago would have presented insurmountable restrictions or only permitted a very limited lifetime of the cylinder.

Users can be provided with hydraulic cylinders with highly specialized piston rod coatings which are guaranteed to be the ideal technical and economic solution for any application.

In addition to the traditional chrome and chrome-nickel coatings we also offer plastic coatings, thermal sprayed coatings and overlays applied by means of plasma welding processes. Important contributory factors to the expertise of our company are our coating machines, qualified employees, our know-how and the continuous refinement of our surface technologies. In addition to the requirements that result from the individual application of the hydraulic cylinders, the interplay between sealing and guide elements and the piston rod surface is also significant. In order to produce optimum running surfaces for the sealing and guide elements, honing and polishing processes are used for all types of coating.

The vertical and horizontal honing machines developed by us, together with the patented Hunger honing stones, guarantee excellent surface quality and a high level of cost effectiveness for the process.



Electronically controlled vertical honing machine with a processing length of up to 10 m

MPC® plastic coating of a piston rod

Surface of a cylinder tube treated after honing

Superfinishing of a ceramic coated piston rod

P.T.A. plasma-powder welding of an offshore piston rod

MPC® is a registered trademark of Enthone OMI (Deutschland) GmbH.

Hydraulic cylinders for operating lock gates and water control gates

"Water is the source of all life."

Hydraulic cylinders for valve operation on the Lower Colorado River dam

HUNGER Hydraulik

EIN UNTERNEHMEN DER HUNGER-GRUPPE

Natural Forces tamed by Human Hand

To be used commercially water requires outstanding engineering and a high level of construction skills

Hunger is the qualified partner for hydro-electric engineering. Large-dimension hydraulic cylinders with drive and control units made by Hunger are now in use in over 130 dams, locks and weirs all over the globe. They control the functioning of segment, sluice, roller gates and also lock gates and ensure the safe regulation of turbines for the large-scale use of water and its energy resources.

Our customer advisory service, project planning, state-of-the-art engineering technology, production and acceptance testing (according to DIN, ASME or national standards) of complete hydraulic solutions and the almost maintenance-free operation of Hunger hydraulic products are our reference and are in worldwide demand. In order to guarantee long operational reliability, piston rods are protected against corrosion and wear with a ceramic coating. Hunger also carries out modernization products where mechanical drives are replaced by hydraulic units. In cramped installation conditions special solutions such as telescopic cylinders are used

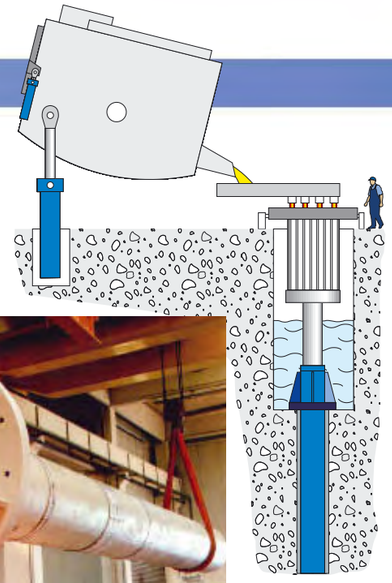
The modern drives have hydraulic control and safety blocks, mechanical and electronic position measuring systems and automatic locking devices.

Highlights

- Aswan, Egypt
- Ataturk, Turkey
- Djerdap, Yugoslavia
- Gachi Dam, Costa Rica
- Guri, Venezuela
- Huites, Mexico
- Kali Gandaki, Nepal
- Karakaya, Turkey
- Lower Colorado River, USA
- Mahibaja Sagar, India
- Manwan, China
- Marsyangdi, Nepal
- Sahand Dam, Iran
- Supa Dam, India
- Tanakpur, India
- Tarbela, West Pakistan
- Rheinfelden, Germany
- Wuqianxi, China

HUNGER Hydraulik
EIN UNTERNEHMEN DER HUNGER-GRUPPE

Precision Meets a Tough Application – Steel and Aluminum



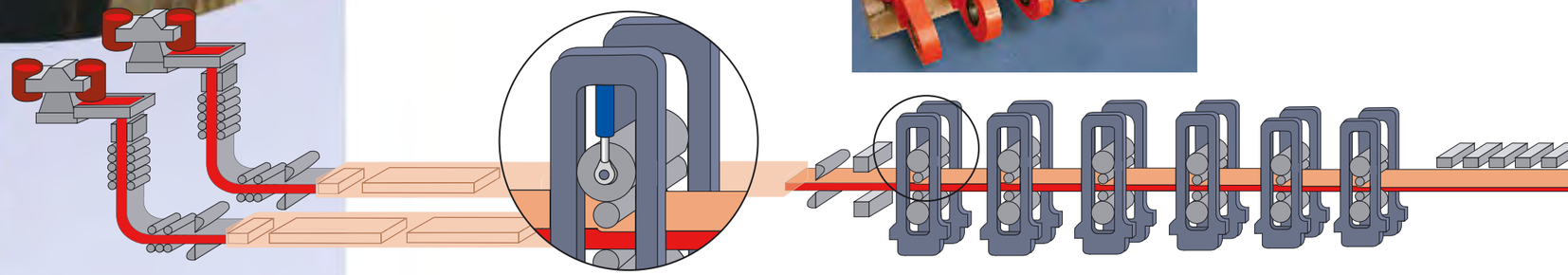
High temperatures and extreme conditions – in aluminum and steel production Hunger cylinders nevertheless work with extreme accuracy.

Hydraulic cylinders are used in aluminum casting plants for furnace tilting, furnace door operation, safety functions and operation process as the main cylinders in the casting machine. Vertical casting cylinders have an extremely accurate integrated casting platform guide mechanism as well as anti-rotation protection system, and are produced in dimensions of up to 900 mm plunger diameter and a 12 m stroke for casting weights of up to 120 t.

Hydraulic equipment is used in steelworks due to the high density of forces and its robustness. Roller adjusting cylinders for example can reach a piston diameter of more than 1 m, whereby in addition to the high forces control accuracies of a few hundredths of a millimeter are required.

Vertical casting cylinder for aluminum continuous casting
Shown schematically on the right when installed

Hunger standard products for various applications in steelworks



Roller positioning using hydraulic cylinders for enormous pressure forces
In the steelworks thick-walled raw steel is rolled to thin sheets.

Tube bending press
for pipelines

Hydroforming press
with four pressing cylinders
(Photo and sketch:
University of Stuttgart,
Institute for Forming Technology)

HUNGER Hydraulik
EIN UNTERNEHMEN DER HUNGER-GRUPPE

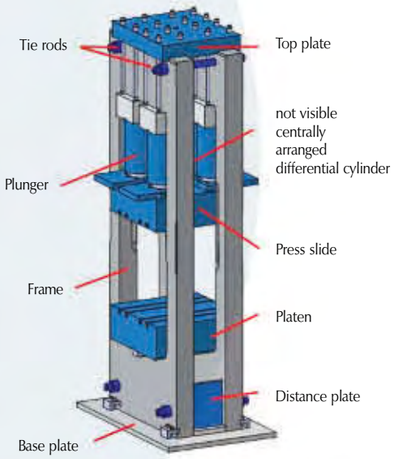
Hydraulic Presses – Getting Materials into Shape

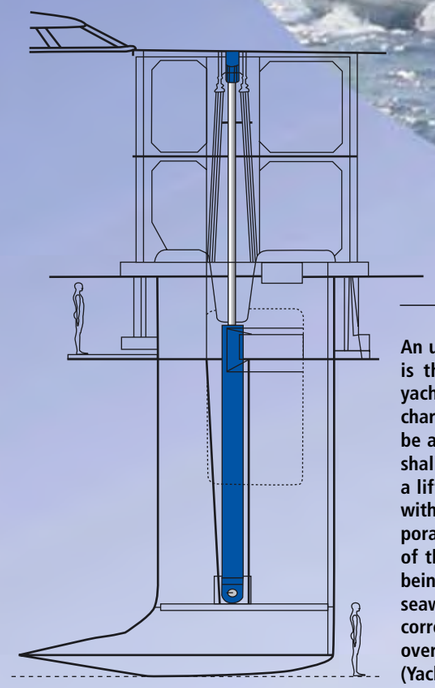
Hunger hydraulic cylinders are used in forging, forming and bending presses where enormous forces of up to 10,000 t per hydraulic cylinder are required.

As a result of the forming processes the hydraulic cylinders are subject to enormous dynamic pressure surges which can only be controlled by precise design calculations, sophisticated cylinder designs and accurate manufacturing.

High-strength aluminum components are used in aircraft construction. In order to provide the raw material with the required properties aluminum plates are cold compacted in a special press according to precisely specified parameters. The special hydraulic press cylinders when fully assembled are 12 m long, have integrated feed, oil supply and damping units and are operated at peak pressures of up to 600 bar.

For bodywork panel production in motor vehicle construction hydroforming presses are used in which a hydraulic compression force replaces the lower die. This modern forming technology places special demands on the field of high-pressure hydraulics and requires large cylinders for the clamping forces needed during the forming process.





Mirabella V

An unusual project: The Mirabella V is the largest single mast sailing yacht in the world and is used as a charter vessel for cruises. In order to be able to enter smaller ports with shallower waters it was fitted with a lifting keel. A hydraulic cylinder with a stroke length of 6 m is incorporated into the keel, with the body of the cylinder and the piston rod being permanently immersed in the seawater. For protection against the corrosive seawater the piston rod is overlaid with Hunger P.T.A. coating. (Yacht data: 75 m long, mast height 90 m, water displacement 750 t, keel weight: 150 t)

Modern oil drilling ship with Hunger hydraulic compensation cylinders

HUNGER Hydraulik
EIN UNTERNEHMEN DER HUNGER-GRUPPE

Offshore – Hunger Hydraulics on all the World's Oceans

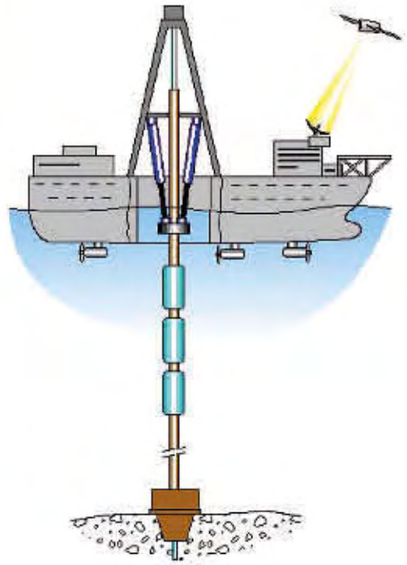
The offshore fields of application for hydraulics range from oil drilling platforms through mobile tools and fire extinguishing equipment to technical equipment for luxury yachts.

Modern oil drilling platforms are used in deep sea regions where a fixed construction is not possible. Special compensation cylinders with long stroke lengths compensate for relative vertical movements.

Special hydraulic fire extinguishing masts, which position a fire extinguishing monitor at a great height and supply it with water, are provided with a power unit and control signals to combine complex functional and supply elements in a single hydraulic cylinder. The product range includes installation sizes of up to 20,000 l/min water flow rate and an 18 m stroke length.

Enormous dimensions of 1 m piston diameter and a stroke of approximately 12 m are achieved by a hydraulic cylinder installed on a floating pile driver which is used to erect a 92 m-high mast.

Telescopic fire extinguishing monitor



Pile driver for forming bridge pier foundations and the construction of wharves for a Chinese customer

Bascule bridge cylinders with cylinder-mounted hydraulic control and safety systems

"Bridges can bring nations together."

HUNGER Hydraulik
EIN UNTERNEHMEN DER HUNGER-GRUPPE

New Dimensions in Bridge Building

Modern bascule or swing bridges are in use throughout the world and require highly sophisticated hydraulic equipment

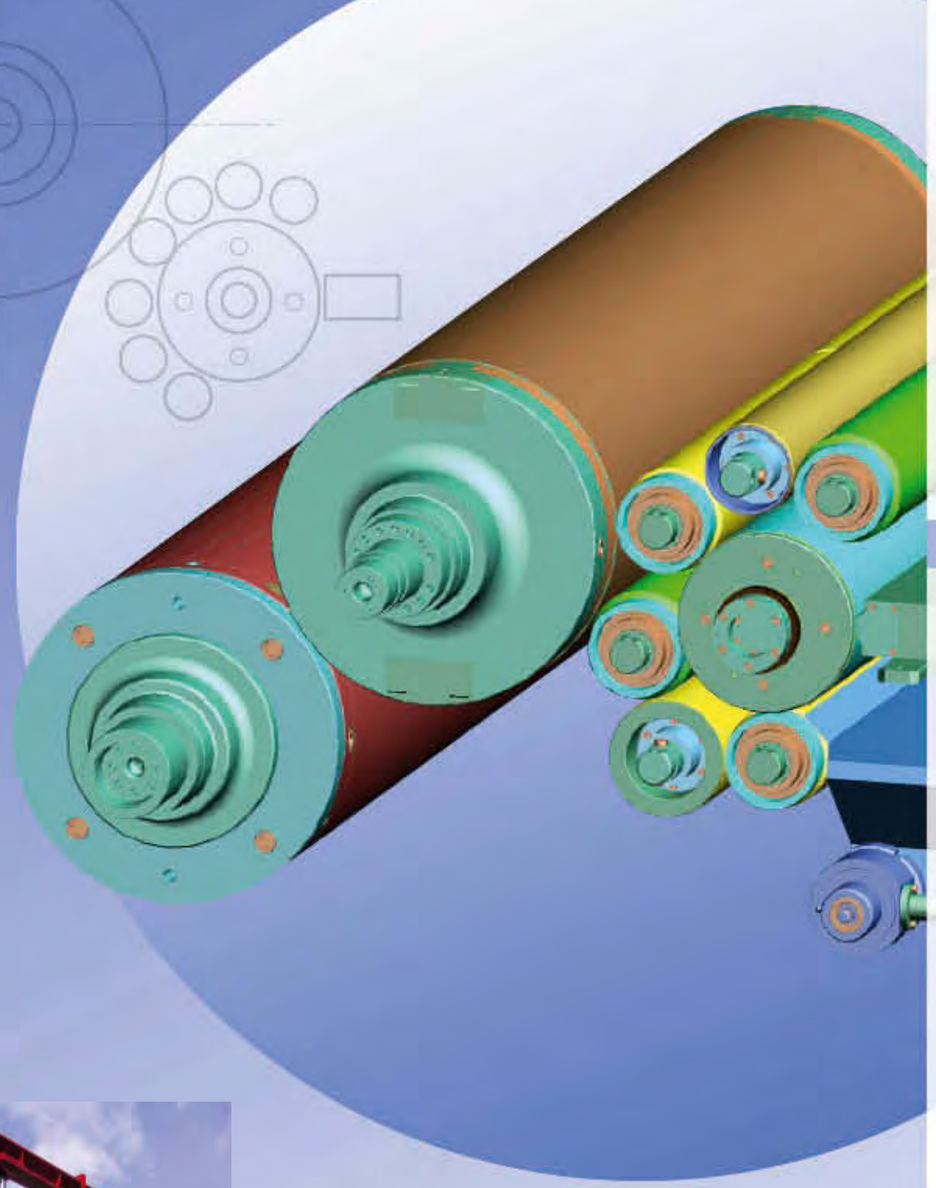
Thanks to the power density of hydraulics it is possible today to move even the largest of bridges. Often several bridge spans are moved simultaneously in order that wider rivers can be crossed or to enable the building of wider roads.

Depending on the requirements and size of the project we supply not only hydraulic cylinders, but also the entire hydraulic drive system with power units and electronic control systems. During the project planning stage great value is placed on safety and quality. In extensive testing and final inspection cycles all hydraulic components must prove their reliability. When in use the hydraulic cylinders not only have to move the weight of the wings of the bridge, but may also have to withstand enormous additional stresses from snow and wind loads.

A recent highlight is the 67 m-long bridge which makes possible the new fast connection to the Canary Wharf District, the new business centre of London. The bridge is operated by a single two-stage telescopic cylinder which lifts the northern end of the 800 t bridge by 18.2 m so that shipping can pass underneath.

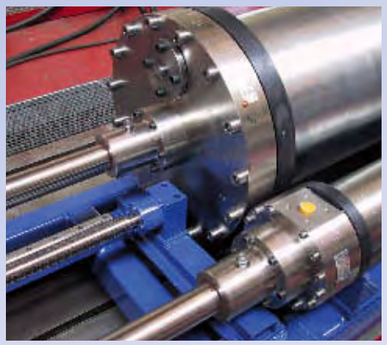
New Schlei Bridge in Kappeln

Canary Wharf
Cylinder: vertical test



The technical know-how of the Hunger Group is also in demand from outside the hydraulics industry, for example in the production of ink rollers for offset printing machines. A modern ink roller today combines sound mechanical engineering with special plastic shaped elements to provide integrated cooling. Special forming technologies are used for the production and assembly of the multiple-layer roller structure, as well as thermal spraying processes and surface technologies for producing the functional ceramic surface.

Hydraulic lifting system with 100 tonnes lifting capacity



Metering cylinder for a gas pumping plant

HUNGER Hydraulik
EIN UNTERNEHMEN DER HUNGER-GRUPPE

Complete Tailor-Made Solutions for any Application

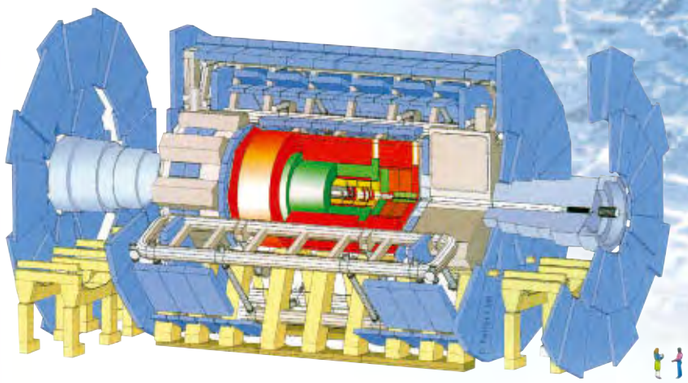
The high level of in-depth knowledge and the research and development facilities for all types of components and technologies within the Hunger Group make it possible to create tailor-made technical and technological solutions for specific customer wishes.

For the calibration of flow meters a special gas pumping plant has been developed and constructed which can be operated with all types of technical gases with extremely high accuracy. All components are made of stainless steel or stainless steel composite components, while special seals made of special materials guarantee leak-free operation and low-friction running without the addition of lubricants.

Hydraulic lifting systems elevate and move large loads within the smallest of spaces and are used, for example, for erecting machine tools in factory buildings. Hydlift consists of four independent units with lifting and travel drives that are controlled from a central desk, either individually or synchronously.

Loads of up to 5,000 t have to be moved when experimental setups at the CERN nuclear research center are transferred to the particle accelerator. Using the pneumatic air pad lifters of the firm Noell Konecranes. Hydraulic lifting cylinders which are fitted with special securing systems and which may have to withstand high side forces ensure that the load is spread evenly over the supporting structure, while at the same time compensating for differences in height.

Lifting cylinder with air pad lifter



Atlas experimental setup, CERN nuclear research center

HUNGER Dichtungen

EIN UNTERNEHMEN DER HUNGER-GRUPPE

Sealing Systems and Bearing Elements – Hunger DFE

Sealing and bearing elements play a definitive role in hydraulic and pneumatic cylinders in the interaction between the individual cylinder components.

Over the past few decades Hunger has with great intensity pressed ahead with continous development of existing sealing technologies . The proven superiority of Hunger technologies soon convinced other cylinder manufacturers of the benefits of the new products, leading to corresponding supply and license agreements. In 1977 Hunger DFE GmbH Sealing and Bearing Elements was founded, which continues to set the standard in the field of modern seal and bearing technology, both in Germany and worldwide.

Distinctive characteristics of the patented Hunger sealing and bearing elements are the outstanding sealing effect with minimum friction and the exclusion of any metal-to-metal contacts within the hydraulic cylinder. Scoring on the piston rod and cylinder tube is therefore prevented, increasing the cylinder life. The basic materials used are high-quality plastics and elastomers, which are further refined using special processes. Additives improve the sliding properties and resistance to pressure and abrasion of the end products. Maintenance work during the operational life of the cylinder is considerably reduced.

Today Hunger DFE has at its disposal a wide range of skills in the development, project planning and manufacture of standard and special seals for numerous fields of application. Components for fixing electronic parts used in measuring technology and elements for plastic processing, chemical and plant engineering form just as much a part of the daily production range.

"Unusual requirements demand unusual solutions."

Injection moulding machinery

Large stocks of standard seals

Injection moulding tool

HUNGER Dichtungen
EIN UNTERNEHMEN DER HUNGER-GRUPPE

Innovative Technology from Tradition

Special seals and bearing elements from Hunger DFE –

the result of continuous research and development work

Tensile tester

Digital measurement technology

Seal test bed

Hunger has deliberately not specialized in the production of seals for specific applications. Through their own developments, project planning and special seal construction, Hunger was already practicing "rapid prototyping" before the term came into existence.

The company's own tool making and the large number of available production tools make it possible to manufacture the desired product within a few hours of a specific customer enquiry. For various dimensions and geometries, and for different types of injection moulding, vulcanization, pressing and chip-removing processes the company has the corresponding machines and the necessary test equipment available.

The smallest production unit starts at one piece – because a satisfied customer and a specific solution to his problem is very important to us.

Microscopic analysis

Vulcanizing machine

Concrete pump M47 with five hydraulic segments (Photo: Putzmeister)

(Photo: Neuson)

Hunger standard seals for mobile hydraulics

HUNGER Dichtungen
EIN UNTERNEHMEN DER HUNGER-GRUPPE

Sealing and Bearing Elements for Mobile Hydraulics and Press Construction

With the methodical arrangement of Hunger DFE standard elements it is possible to cover any requirements placed on the hydraulics.

Hunger seals, wipers and bearing elements are optimized for applications in supporting cylinders and swivel wrists on pistons and rods. It is not without reason that renowned manufacturers in the construction machine sector make use of products from Hunger DFE.

In the manufacture of presses modern DFE seals replace traditional V-rings used in various types of press. Higher operating pressures can therefore be reached and simultaneously higher processing speeds. The "worst case scenario" for hydraulic components occurs in scrap baling presses. Extremely high pressures form briquettes out of metal cuttings, and due to explosive decompressions peak pressures occur during pressing while the working environment is rough and dirty.

Hunger DFE has developed a complete system which meets all the application requirements and which in the case of repairs compensates for the reworking of the existing piston rod, even after this has been repaired several times. Last but not least, where such problem solutions provide the customer with every opportunity to reduce costs the innovative expertise of the engineers comes to the fore.

Pressing cylinder

Scrap press

Briquetting press

Hydraulic rod assembly of a glass lift

HUNGER Dichtungen
EIN UNTERNEHMEN DER HUNGER-GRUPPE

Concepts for Lift Hydraulics and Forestry Machines

Hydraulic panorama lifts offer a direct insight into the technology of the lift. "Wet" cylinder rods from leaking seals are therefore taboo.

There is a fine difference between an effective seal and static friction levels that are as low as possible, thus enabling good start-up characteristics to be achieved. It is this very effect that is required in lift hydraulics, as otherwise the people in the lift may feel uneasy or even endangered. In these situations the sealing and bearing elements are subjected to the same requirements as when used in forestry machines. The forestry companies expect their machines to be fast and productive when harvesting the wood.

In order to meet these requirements the Finnish manufacturer Ponnse, one of the world's leading producers of forest machines, uses Hunger sealing and bearing elements almost exclusively in its vehicles. Depending on the type machine, 10 to 20 hydraulic cylinders of varying diameters and designs (support cylinders, telescopic cylinders, steering cylinders) are used, enabling the machine to lift, lower, clamp and swivel. From the high demands placed on these items it becomes clear that even the wearing parts such as sealing and bearing elements are of special significance.

"Where brute force is meaningfully used ..."

Mobile forestry machining centre

Periscope seal for periscopes and probes (Gabler Maschinenbau GmbH Photo: HDW)

Landing gear cylinder

Locking hook for landing gear

Locking hook for landing gear at a low temperature of -54°C

Landing gear hydraulics

HUNGER Dichtungen
EIN UNTERNEHMEN DER HUNGER-GRUPPE

Flying High in Safety - Taylor Made Complete Solutions

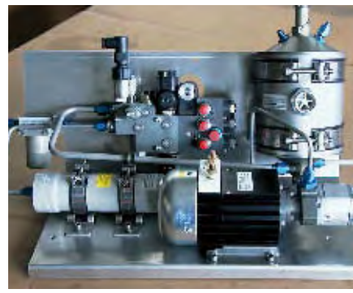
On land, in the water and in the air – innovative technology for testing the elements.

Only precision seals made of high quality materials which are produced with care under controlled manufacturing processes and in accordance with precisely defined technical specifications can stand up to the demands of aviation, nautical and deep sea technology. The sealing elements must be able to resist extreme temperature fluctuations and guarantee maximum adjustment precision with the lowest possible friction moments - and of course with the system hermetically sealed.

For this reason the seals have to prove their reliability in strictly monitored trials before they can be released for series production. The sealing elements are used in hydraulic motors for rudder adjustment, for example, as well as in cylinders and locking units in the landing gear hydraulics of aircraft.

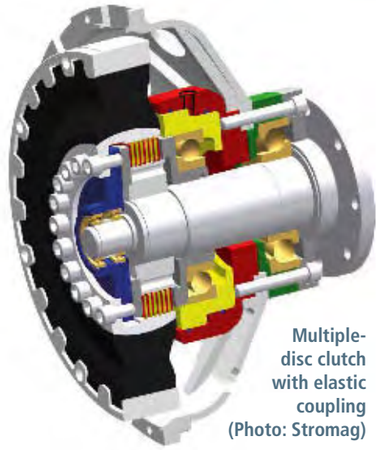
Further fields of application for precision seals are hydraulic brakes and couplings in general use in mechanical engineering, in chassis and conveyor drives, in winches, lifting, rotating and swivel drives, as well as in onboard and mobile cranes. Here, maximum seal tightness is required with a sensitive adjustment range for braking or coupling under a load.

In many cases the functioning of entire plant depends on the reliability of the seals. One small component therefore becomes a decisive element. That is why world-renowned manufacturers place their faith in the products of Hunger DFE.



Power units and pressure accumulators for aviation

Hydraulic coupling (Photo: Stromag)



Multiple-disc clutch with elastic coupling (Photo: Stromag)

HUNGER Maschinen

EIN UNTERNEHMEN DER HUNGER-GRUPPE

Hunger Maschinen

The hydraulic components produced by Hunger Maschinen are an important supplement to the components to be found in the hydraulics sector.

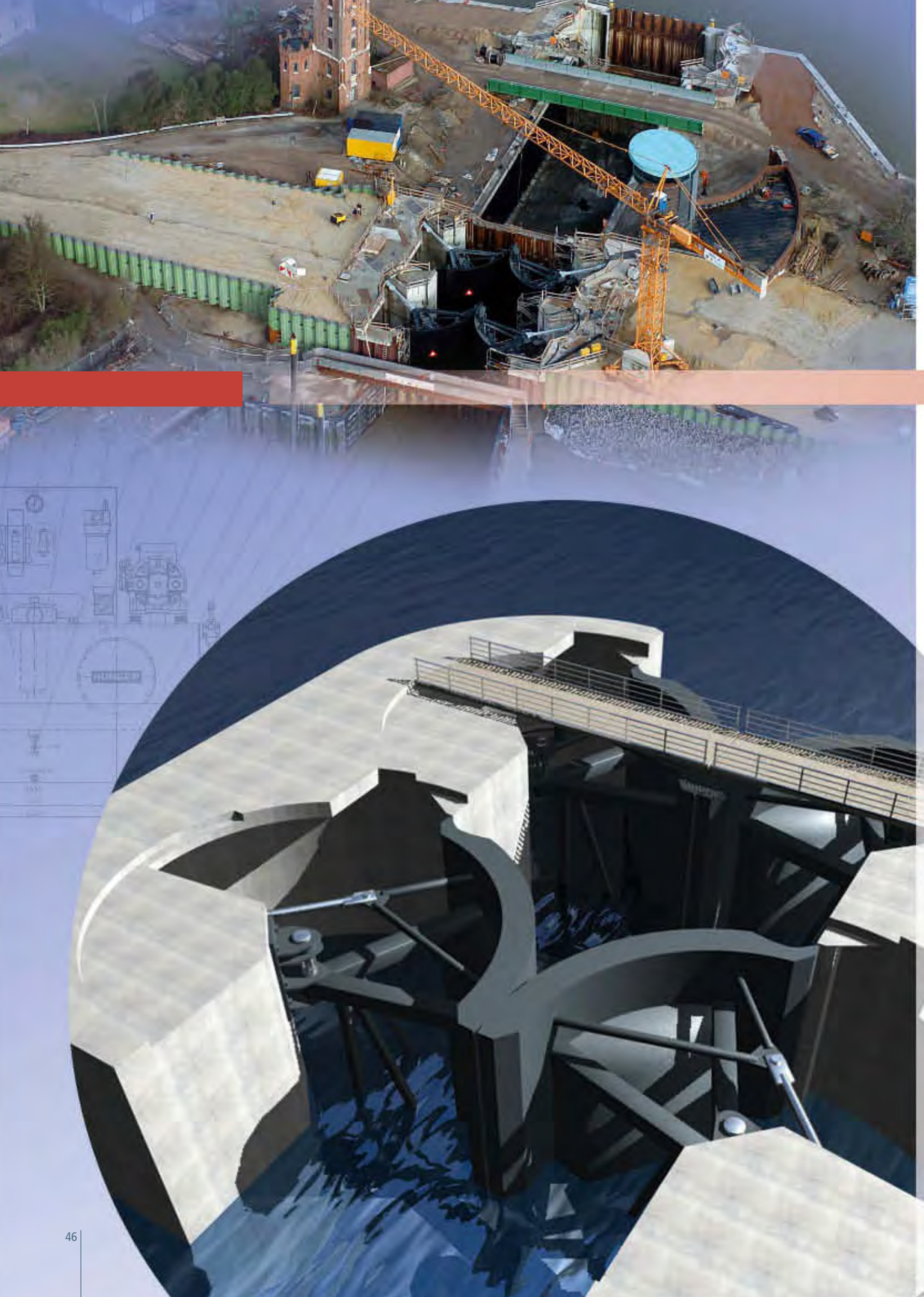
The product range covers hydraulic components such as rotary transmissions rotary actuators, pressure intensifiers, special valves and hydraulic control blocks as well as complete hydraulic systems. The production program is rounded off by self-aligning and rod end bearings in maintainable and maintenance-free designs for hydraulic cylinders and other drive applications. Optimum functionality, freedom from maintenance and long service life are world-renowned properties of all products. This proverbial quality standard is only achieved by continuous inspection of all dimensions and functions. Due to the high performance and quality standards it has been possible to develop new sales markets all over the world.

Hunger Maschinen designs, project plans, produces and installs complete customer-specific hydraulic systems for all fields of application.

Planning and engineering

Assembly area for hydraulic power packs

"The art is not in the development, but in adapting to the market."



HUNGER Maschinen
EIN UNTERNEHMEN DER HUNGER-GRUPPE

Tailor-Made Hydraulic System Solutions

Complete solutions from one source – only components that are fine-tuned to one another guarantee reliable functioning of a hydraulic system.

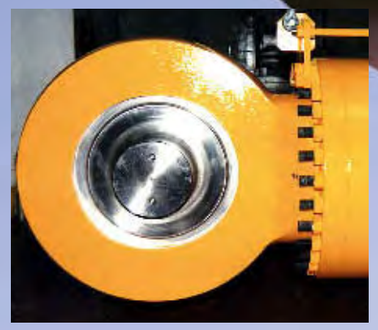
Hydraulic system solution for driving and controlling the rotating sector gates of the New Harbor lock in Bremerhaven – from planning and design to production and installation.

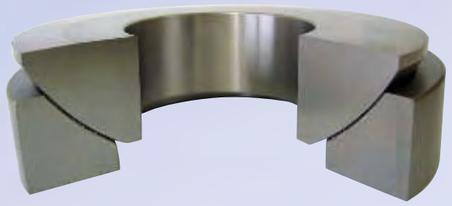
Hunger hydraulic power units are used in a wide range of fields:

- Hydro-electric engineering
- Industrial furnaces and aluminum casting plant
- Offshore
- Ship construction
- Machine-tool manufacture
- Iron and steel industry
- Special technologies
- Press construction
- Test bed engineering

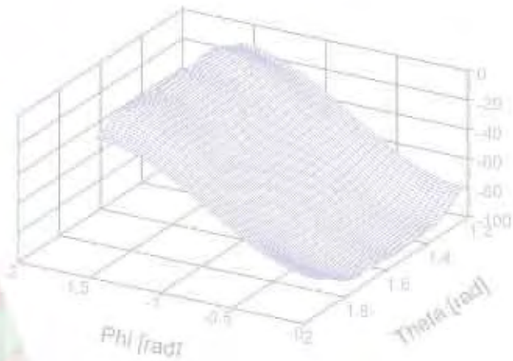
In addition to the production of special hydraulic components, Hunger Maschinen devotes itself above all to the production of hydraulic power units and hydraulic and electric control units. The advantages of such complete solutions have been appreciated by customers throughout the world for decades. Hunger Maschinen supplies plants of all sizes and for all types of application. The range includes power units with nominal volumes of up to 10,000 litres, for pressure ranges from 50 to 700 bar and pump deliveries up to 5,000 l/min.

Hydraulic power units for the New Harbor lock in Bremerhaven





Axial thrust bearings and plain bearing bushes of all sizes are also supplied.



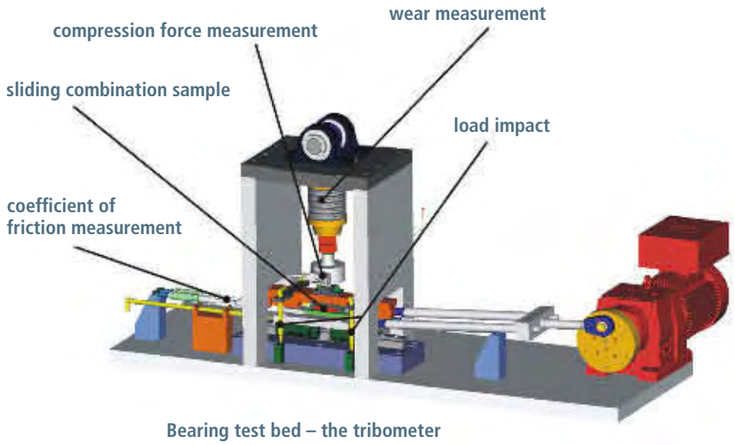
HUNGER Maschinen
EIN UNTERNEHMEN DER HUNGER-GRUPPE

Self-aligning Bearings and Rod Eyes – fully maneuverable and tough

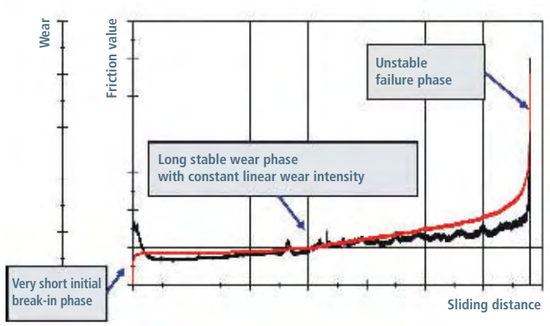
Hunger Maschinen supplies standard and special-size self-aligning bearings and rod eyes in various product designs.

Sizes between 20 and 1,000 mm bore diameter are standard, and special production runs in small or large quantities are possible. For hydroelectric applications there are product ranges available which meet the special requirements of this field.

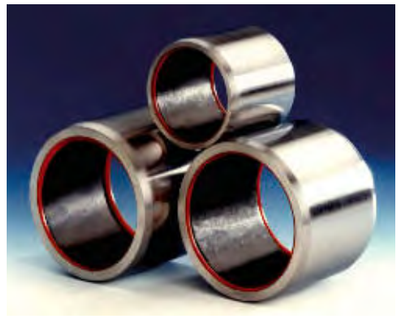
The particular quality of Hunger bearings results from the use of high-grade materials and coatings. Depending on requirements, stainless steel, bronze or plastic is used. The general design of the bearings including elastic wiper rings prevents soiling of the sliding surfaces and guarantees an optimum service life.



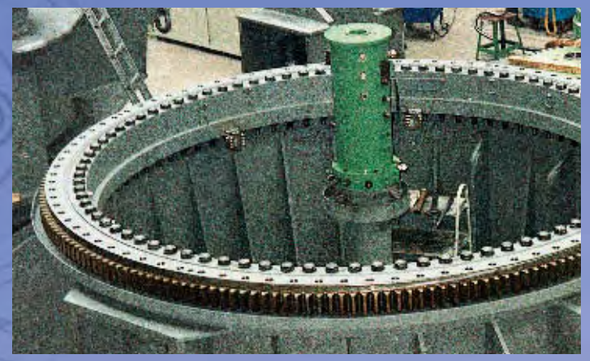
Bearing test bed – the tribometer

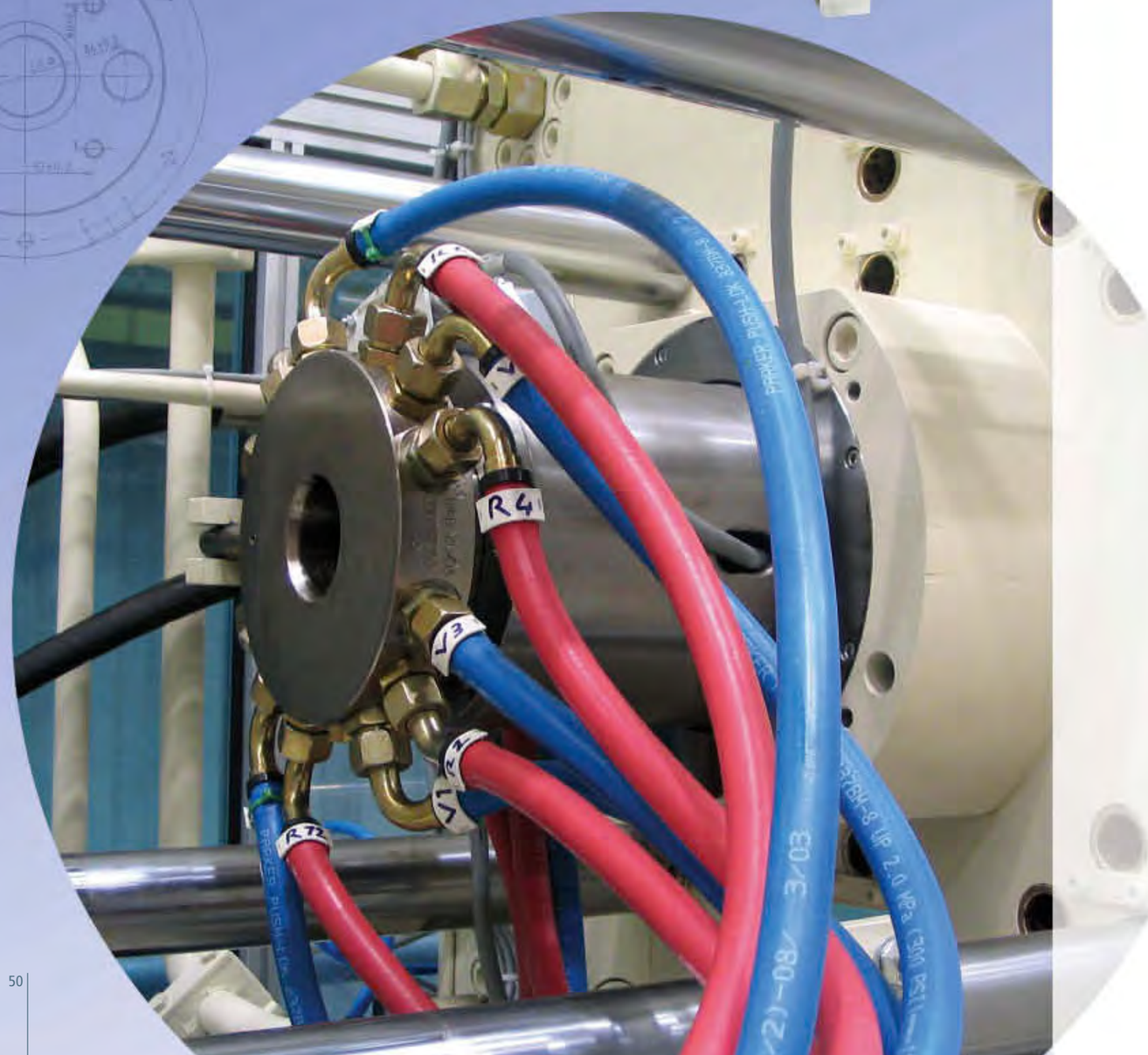


Sliding combination experiment - The black curve shows the friction value, while the red line represents wear and tear.



Dust and splash proof maintenance-free plain bearing bushes





HUNGER Maschinen
EIN UNTERNEHMEN DER HUNGER-GRUPPE

Rotary Transmissions in Special and Standard Designs

Hydraulic rotary transmissions, suitable for use with various liquid and gaseous media, are an important component of the range of products on offer.

In special designs, transmissions with up to 44 channels and operating pressures of 30 to 400 bar have been designed and produced. The rotary transmissions are equipped with special Hunger DFE rotor seals for hydraulic oils, greases, gases, water and other operating media.

Low internal friction, good start up characteristics due to rolling bearing mountings on both sides – as well as a low idling torque – guarantee a particularly long maintenance-free lifetime.

Applications for slow rotating and swiveling movements with circumference speeds of up to 1.5 m/sec are just as easy to produce as high-speed items moving at up to 8 m/sec.

Rotary transmissions are used in the automobile industry for transfer lines and welding robots as well as in commercial vehicle construction for rotating assemblies and feeds. Further examples of their application are to be found in heavy machinery construction and injection molding plant in which the rotary transmissios are used for forming plant.

Sectional drawing of a rotary transmission made of light metal

Special rotary transmission with 44 channels for a 4-station special machine with an operating pressure of 300 bar (medium: hydraulic oil)

Special rotary transmission for cutting and welding machines

Special valves for hydrocylinders, preferably of manifold or cartridge design, are used in hydraulic press construction.

HUNGER Maschinen
EIN UNTERNEHMEN DER HUNGER-GRUPPE

Special Hydraulic Valves and Rotary Actuators

Hunger Maschinen produces special valves for hydrocylinders for the functions of filling, protection against pressure loss, pressure regulation and counter-torque regulation.

Due to their streamlined design, Hunger pre-fill valves are used for feeding and filling the main cylinders of presses. As non-return valves they are used to ensure that press cylinders subject to high pressures are leak free. Hunger pressure valves safeguard the pressure in a hydrosystem or components of a system. Flow control valves are used to regulate the speed of movement of loads and influence the flow of the liquid.

Hunger non-return valves stop the flow of the liquid in one direction, while allowing the liquid to flow freely in the opposite direction. Stop valves are of a seat-type design and shut without leaking oil.

Hunger rotary actuators are used in all technical applications where rotating movements are required with a constant momentum. The single and double piston rotary actuators have been further refined by Hunger in order to optimize performance parameters. Standard and special constructions of 190,000 Nm and 720° pivoting angle have been successfully used for many years.

Filling valve

Toothed rack and pinion

special
rotary actuator

HUNGER
Schleifmittel
EIN UNTERNEHMEN DER HUNGER-GRUPPE

Hunger Abrasives

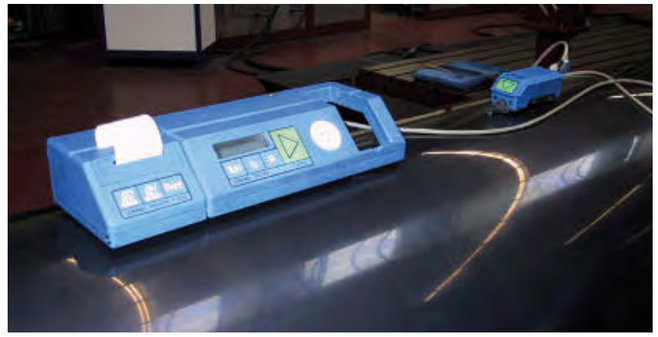
Within the Hunger Group a good deal of attention has always been paid to the intensive processing of metal surfaces.

The subsidiary Hunger Schleifmittel GmbH, founded in 1979, not only supplies its products within the Hunger group of companies, but due to its high performance and quality standards also works for external customers at home and abroad. The production range comprises plastic-coated ceramic honing stones, honing tools, diamond honing tools and diamond stones for the microfinishing of metal surfaces. Their defining qualities are a high removal rate, perfect accuracy of shape and consistent quality. The main customers are cylinder manufacturers, and in particular machine builders, and the automobile industry.

New developments are tested on the company's own premises under real conditions – a guarantee of absolute first-class technology. For the processing of large diameter and long ceramically coated piston rods Hunger used their many years' experience in the manufacturing of cylinders to develop special diamond honing stones to meet the friction and surface finish requirements. Here the company drew on its many years' experience of cylinder manufacture.

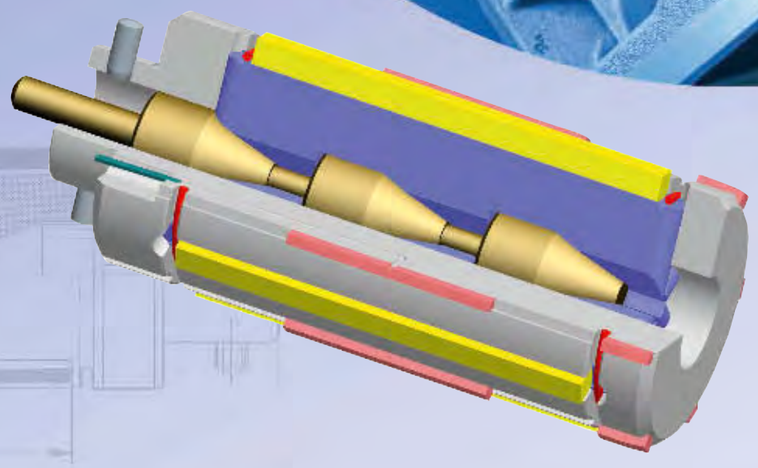
The sheathing of the ceramic honing stones is a plastic case which allows considerably higher contact pressures, as the honing stone is stabilized at the side and can therefore achieve better abrasion performance. The plastic sheathing means that the honing stone can be used to the full extent. Furthermore, the sheating acts as a "dirt wiper" to keep the honing sludge away from the honing stone, thus increasing the cutting performance of the stone. Metal contact between the honing stone and the item being honed – with the resultant development of scoring – is therefore avoided.

"Efficiency is persuasive, while quality breeds confidence."



Surface measurement device

(Photo: Hydro-Aluminium)



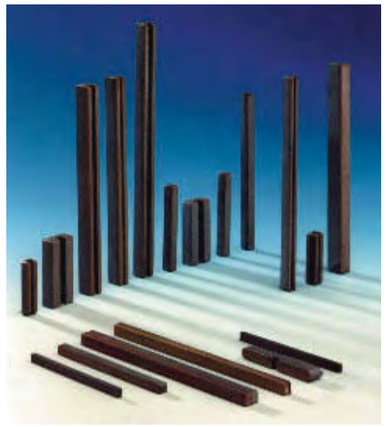
HUNGER Schleifmittel
EIN UNTERNEHMEN DER HUNGER-GRUPPE

Precious Stones for the Automobile Industry

The items from the Hunger abrasives product line that are in particularly high demand by the automobile industry are the CBN diamond honing stones and diamond tools.

These high-quality Hunger honing stones tools are used universally in automatic production processes for finishing a large number of components, including honing motor blocks, brake cylinders, connecting rods and valve shafts.

The types of diamond, their bonding, concentration and grain size is crucial for a long service life, good shape retention tolerance and the finest surface qualities with an R_a below 0.1 µm. Special diamond honing stones and tools with and without an air nozzle control stone system for symmetrical and asymmetrical applications are produced in line with customer requests.



Diamond honing stones for honing motor blocks and valve seats

The optimum design of the required special tool guarantees uniform quality of the work pieces.

HUNGER Service

EIN UNTERNEHMEN DER HUNGER-GRUPPE

Flexibility is Key – Hunger Hydraulic's Worldwide Service

Time is money. The repair service for hydraulic and pneumatic cylinders of the Hunger Group also repairs the products of other firms as quickly as possible.

Hunger Hydraulic Worldwide Service is prepared for all types of damage to cylinders and hydraulic components, whether leaks, wear or mechanical deformation. Highly qualified and experienced specialists ensure that the products of other manufacturers can be repaired inexpensively and within the shortest possible time.

Our production capacities make it possible to process diameters of up to 2,000 mm and lengths of up to 25 m. In the case of damage to the piston rod surface the coating technologies developed by Hunger usually mean that it is possible to repair the cylinder while continuing to use the same piston rod. For special sizes or reworked rod and tube diameters Hunger DFE is able to supply tailor-made special seals within a very short time. Rapid reaction times minimize your production downtime. The reuse of viable components means that the repair of your hydraulic plant is relatively inexpensive.

The repair of the cylinders is always carried out in line with the latest technologies and Hunger's high quality standards. After a final inspection it is possible to provide an all-round warranty irrespective of the original brand and size of the product.

Take advantage of the experience and efficiency of the Hunger Hydraulic Service.

"All knowledge stems from experience"

Imanuel Kant

Gas metering and closing cylinders for thermal deburring

Even the products of other manufacturers are repaired by Hunger Hydraulic's Worldwide Service.

Supporting foot for folding seat

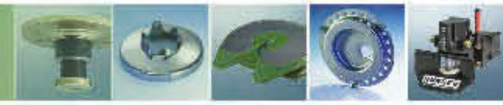
Detent – component in the automobile industry

Headrest retainer for the chair industry

HUNGER Automotive

EIN UNTERNEHMEN DER HUNGER-GRUPPE

Hunger Works for Vehicle Construction and Mobile Hydraulics



Top-quality sheet metal working – from prototype and process development to the delivery of series parts Hunger support their customers as a development partner with experience and creativity.

Until the commercially viable punched or deep-drawn part falls out of the machine close cooperation is required with the customer. Our specialist personnel are available at all times for the customer to provide him with advice based on their experience and production expertise. During this phase intense coordination with the customer is a significant lever in reducing costs and improving customer satisfaction. The start-up phase comprises prototype development, tool design, a preproduction series and then the SOP (start of production).

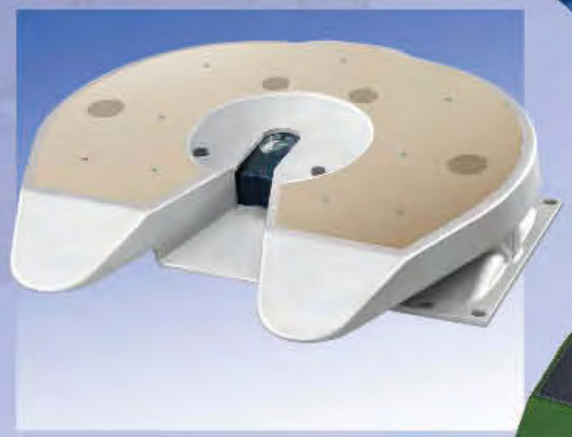
The punched and deep-drawn parts are mainly used in the automotive supply industry and machine construction. In addition, polished stainless steel parts for use in medical technology and the leisure industry are also produced. The range comprises almost all types of alloy and all geometries. Production is carried out on hydraulic and eccentric presses of 25 to 250 t. If required, these can be equipped with belt feed devices and strip straightening machines. We consider the mechanical processing of the manufactured components to be one of our greatest strengths. This includes joining technologies such as welding, riveting or crimp technology just as much as the production of assemblies and modules with subsequent surface finishing. Here we have at our disposal all standard procedures such as glass bead blasting, cathodic immersion painting or powder coating and galvanizing

Part of a burner

Pivot bracket for hospital beds

Glowing cylinder cover for terrace radiant heater

Patented kingpin – lubrication and maintenance-free



Maintenance-free semi-trailer coupling made of full aluminum

Maintenance-free semi-trailer coupling

HUNGER Automotive
EIN UNTERNEHMEN DER HUNGER-GRUPPE

Interconnecting World Firsts – Innovations for Vehicle Construction

The developments in modern vehicle construction aim at weight reduction, energy savings and, last but not least, environmental protection.

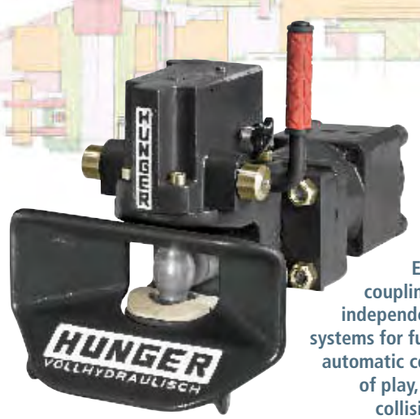
As long ago as 1995 the Hunger works for vehicle construction and mobile hydraulics presented a world first with the patented maintenance-free luxury semi-trailer coupling. The coupling plate stands out due to its sintered-on antifriction coating, while the closing mechanism is designed in such a way that the kingpin is enclosed by divided maintenance-free roller bearings.

In addition, Hunger has developed a maintenance-free kingpin so that semi-trailer couplings that are equipped with a low-maintenance antifriction coating can be expanded to form a completely maintenance-free coupling system. The regreasing that is required for standard couplings and the supply of grease are no longer necessary. At the IAA commercial vehicles fair in 2004 Hunger again presented a world first – the first maintenance-free semi-trailer coupling made of full aluminum. The clear advantages of this innovation are a reduction in fuel consumption and an increase in the possible load.

The fully hydraulic trailer coupling, which is characterized by the interplay of three hydraulic systems that work completely independently of one another, has also been available since 2004 in a version with full remote control. Products such as the hydropneumatic suspension and forked drawbars with pivoting lugs round off the range.

„Working on behalf of vehicles and the environment"

Maintenance-free semi-trailer coupling and fully hydraulic trailer coupling.



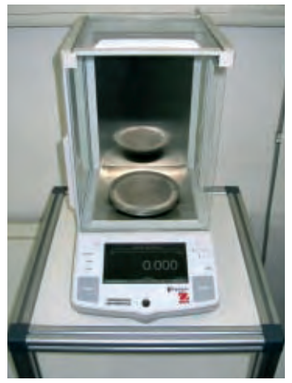
Europa trailer coupling with three independent hydraulic systems for fully hydraulic automatic compensation of play, start-up and collision buffering

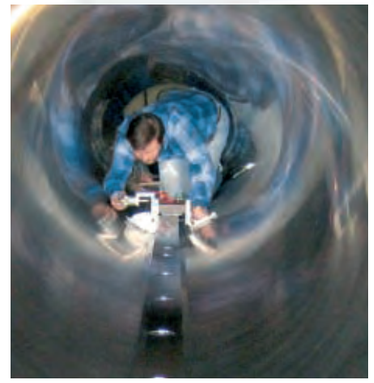
The Hunger Hydraulic Group – Known throughout the World for Quality

The demand for high quality that we place on our products and the services that accompany them sets the standard worldwide.

As we understand it, the term quality comprises the entire range of services at all levels throughout our company, from determining customer requirements, through punctual delivery of the products in line with specifications, to additional services such as commissioning and repairs. The high quality requirement is reflected in close and individual cooperation with our customers and suppliers.

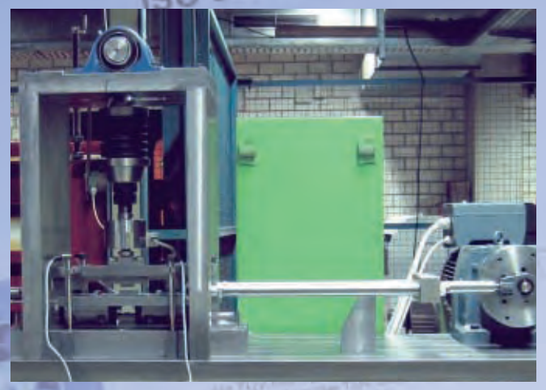
In order to maintain and continuously improve the Hunger quality standard, continual further training measures are required. Hunger train their qualified specialists and invest in the future of the employees and the company with targeted further training programs.





In order to maintain the high quality level state-of-the-art equipment is used.

Trainees at Walter Hunger GmbH & Co. KG



Tribometer

Working together towards an Excellent Future

The decisive factors in the successful development of the company group in the past few decades have been our own innovative powers, the highest quality demands and flexibility. And we shall continue to a hold up these success factors as the leitmotif for the Hunger Group.

The power of innovation, highest quality and flexibility are essential if one wishes to offer customer-specific problem solutions associated with an all-round advisory service. With the wide-ranging expertise of the Hunger Group in the area of hydraulics and the automotive field we are a partner to our customers in the efficient development of application and system solutions. The range of services offered by Hunger comprises engineering services, product components and system solutions, together with other complimentary services to accompany our products.

On the basis of our application skills acquired over several decades and our wide-ranging system expertise we are able to provide our customers with technological advice in the selection of components as well as the planning and projecting of special application-related solutions. We offer excellent engineering services that are specifically attuned to your requirements.

Our permanent striving to achieve the best quality demands the use of the latest technologies and has resulted in a portfolio of components and solutions which complement one another so that they can be readily combined. On this basis we develop system solutions in accordance with your individual requirements - independently of proprietary systems. We supply outstanding products and solutions which will exceed your expectations.

The integrative concept of a solution provider naturally includes services. Upon request we will also take over the commissioning, maintenance, modernization and repair work. We offer excellent service that is second to none.

This holistic approach results in an improvement in benefits to the customer as a result of the coordinated solutions, the simplification of processes and the reduction in investment. This leads to an increase in eliability and cost effectiveness. Why not profit today from the excellent engineering, excellent products and excellent service that we have to offer?

"The future has already begun..."

The Hunger Hydraulics Group
Your Partner for Problem Solutions Worldwide

HUNGER Hydraulik – EIN UNTERNEHMEN DER HUNGER-GRUPPE

Walter Hunger GmbH & Co. KG Hydraulikzylinderwerk
Mail: info@hunger-hydraulik.de
Web: www.hunger-hydraulik.de

HUNGER Service – EIN UNTERNEHMEN DER HUNGER-GRUPPE

HWS Hunger Hydraulik Weltweit-Service GmbH
Mail: info@hunger-service.de
Web: www.hunger-service.de

HUNGER Marketing – EIN UNTERNEHMEN DER HUNGER-GRUPPE

Hunger Marketing GmbH
Mail: info@hunger-marketing.de
Web: www.hunger-marketing.de

HUNGER Dichtungen – EIN UNTERNEHMEN DER HUNGER-GRUPPE

Hunger DFE GmbH Dichtungs- und Führungselemente
Mail: info@hunger-dichtungen.de
Web: www.hunger-dichtungen.de

HUNGER Maschinen – EIN UNTERNEHMEN DER HUNGER-GRUPPE

Hunger Maschinen GmbH
Mail: info@hunger-maschinen-gmbh.de
Web: www.hunger-maschinen-gmbh.de

HUNGER Schleifmittel – EIN UNTERNEHMEN DER HUNGER-GRUPPE

Hunger Schleifmittel GmbH
Mail: info@hunger-schleifmittel.de
Web: www.hunger-schleifmittel.de

HUNGER International – EIN UNTERNEHMEN DER HUNGER-GRUPPE

W. Hunger International GmbH
Mail: info@hunger-international.de
Web: www.hunger-international.de

HUNGER Automotive – EIN UNTERNEHMEN DER HUNGER-GRUPPE

Hunger GmbH & Co. Werke für Fahrzeugbau und Mobilhydraulik KG
Mail: info@hunger-automotive.de
Web: www.hunger-automotive.de

HUNGER Hydraulics UK – A MEMBER OF THE HUNGER-GROUP

Hunger Hydraulic UK Ltd.
Mail: info@hunger-hydraulics.co.uk
Web: www.hunger-hydraulics.co.uk

HUNGER Hydraulik Schweiz – EIN UNTERNEHMEN DER HUNGER-GRUPPE

Hunger Hydraulik (Schweiz) AG
Mail: info@hunger-hydraulik.ch
Web: www.hunger-hydraulik.ch

HUNGER Hydraulics China – A MEMBER OF THE HUNGER-GROUP

Hunger (Tianjin) Hydraulic Engineering Co., Ltd. (China)
Mail: info@hunger-hydraulics.cn
Web: www.hunger-hydraulics.cn

HUNGER Hydraulics India – A MEMBER OF THE HUNGER-GROUP

Hunger International India
Mail: info@hunger-hydraulics.in
Web: www.hunger-hydraulics.in

HUNGER Hydraulics USA – A MEMBER OF THE HUNGER-GROUP

Hunger Hydraulics C.C. Ltd. (USA)
Mail: info@hunger-hydraulics.com
Web: www.hunger-hydraulics.com

HUNGER Hydraulique France – A MEMBER OF THE HUNGER-GROUP

Hunger Hydraulic France SARL
Mail: info@hunger-hydraulique.fr
Web: www.hunger-hydraulique.fr

HUNGER Hydraulik – EIN UNTERNEHMEN DER HUNGER-GRUPPE

Walter Hunger GmbH & Co. KG Hydraulikzylinderwerk, Rodenbacher Str. 50, DE-97816 Lohr am Main
Tel: +49-(0)9352-501-0, Fax: +49-(0)9352-501-106
Email: info@hunger-hydraulik.de, Web: www.hunger-hydraulik.de