

TML

working solutions



SPECIAL SOLUTIONS FOR EXTREME CONDITIONS

ENGINEERING | PRODUCTION | SERVICE



SUCCESSFUL WORKING IN EXTREME CONDITIONS

WORKING SOLUTIONS – EXPERTISE WITHOUT COMPROMISE

Since 1963 our experts have been planning, developing, and manufacturing specialized equipments with telescopic rotary booms, as well as machines that prove themselves in the most extreme conditions day after day:




- in the metal, iron and steel industry
- in mining and tunnel construction
- in the building industry
- in the cement manufacturing industry

The hundreds of machines we have supplied are witness to the success of our products, each one of which is specifically tailored to meet challenging conditions – extreme temperatures, strong forces,

long distances, or very tight working areas. The many repeat orders, received from satisfied customers are proof that our machines and equipment are helping them to significantly raise their efficiency and increase productivity.

We know that with the extraordinarily difficult conditions in which our machines have to operate, it is the small details that count, which is why we consistently follow our guiding philosophy of **“working solutions”**. Working closely with our customers, we develop solutions that are tailored exactly to their special application requirement profiles, assuring reliable optimal results during harsh day-to-day work ... always on the basis of proven, robust, standard machines, innovative technology and the expertise gained over 50 years in the business.

TML GROUP ...OVER 50 YEAR'S KNOW-HOW

1963	1993	1997
<p>A legend is born: the first „UNIDACHS“ in operation.</p> 	<p>Founding of „TML Technik GmbH“ through Management-buy-out of the telescopic excavator division of Wieger GmbH.</p> <p>TML Technik is a family owned company and already running in the 2nd generation.</p>	 <p>Takeover „Leonard GmbH“</p> <p>Founding of the branch TML India</p> 



MADE IN GERMANY

At our headquarters in Monheim am Rhein, centrally located between Dusseldorf and Cologne - we develop, design and manufacture the machines in six workshops, covering an area of 22,000 m²: "made in Germany".

Easy access to two international airports and major sea ports mean that machines and components can be shipped by air or by sea without a problem.

We are represented throughout the world, with branches and representatives close to our customers, available at any time.

FIVE DECADES OF UNIDACHS

Many of our solutions are based on our legendary UNIDACHS series of telescopic excavators, first launched over 50 years ago. Since that time we have consistently enhanced our UNIDACHS machines. Today, with tried and tested materials, the latest hydraulics systems, and intelligent electronics, they now number among the most efficient, most reliable, and long-lasting machines on the market today.

The UNIDACHS machines have the flexibility of a compact design and multi simultaneous above those of conventional excavators. This means that it is suited for most applications where linear movement and rotation of the telescopic boom are required ... for example:

- debricking converters, electric arc furnaces and ladles
- contouring tunnel cross-sections
- specialist demolition operations at building sites
- sinking shafts
- debricking rotary kilns

We have consistently extended the products available on the UNIDACHS range and today we supply complete solutions for many different fields of use.



2005

Takeover the „MPT Masterpiece Technology“

MPT
A Branch of TML Technik GmbH

2007-2008

Founding of „TML Services GmbH“

TML
service solutions

Founding of the branch TML Ukraine

TML
Industrial Services OOO

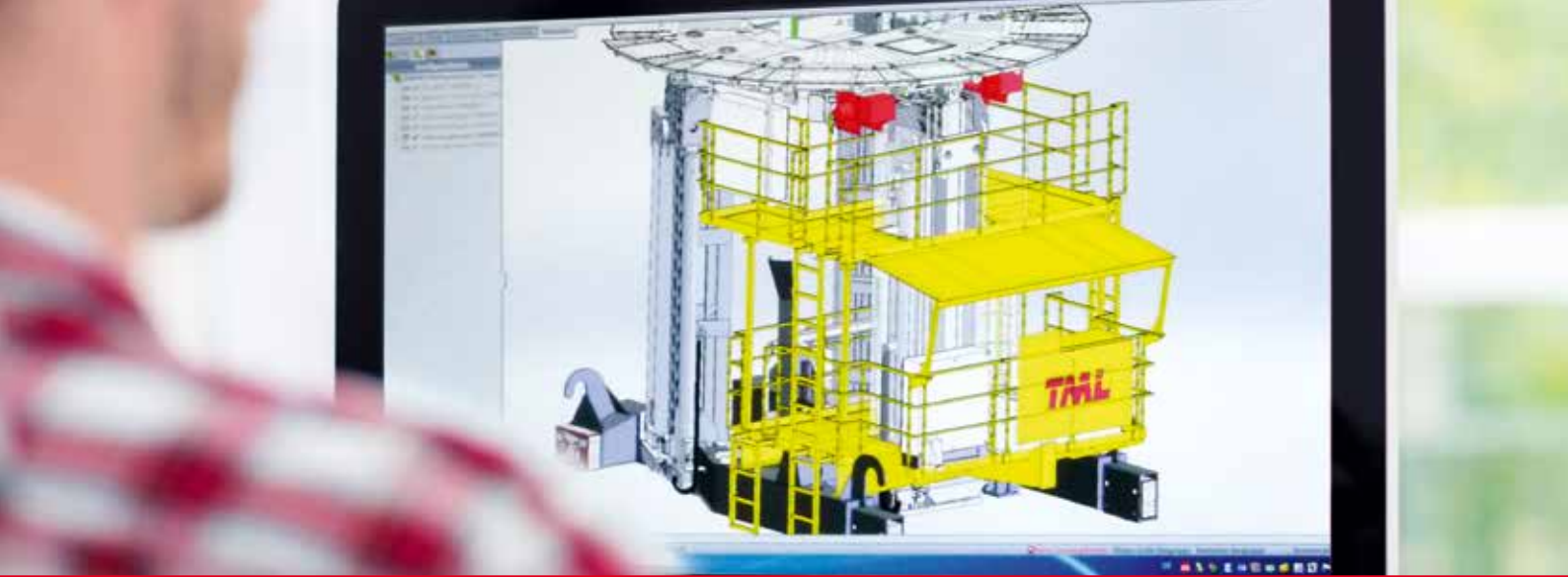
Founding of the branch TML South Africa

TML
Technik (SA) (Pty) Ltd.

TODAY

We take care of over 300 customers worldwide in 82 countries. Founding of the branch TML China

TML
Technik China Services



INNOVATION

Through significant and consistent improvements to our products we help our customers become more competitive in their operations.

The latest result, the new and particularly compact, remote-controlled UNIDACHS 220 debricking machine – the first in its class to be equipped with a 360° rotatable telescopic boom.

SAFETY

It's not just productivity that counts. The safety of the machine operator, especially in view of the conditions in which many of our machines are deployed, is paramount. Our own quality management guidelines exceed the requirements imposed by statutory regulations. Safety also applies to the investments our customers make. Many of our machines have been in operation for many decades - proof of a long and sustainable service life. With our flexible attachments concept, operators can use the same machine for several different tasks.

SERVICE SOLUTIONS – SERVICE WITH NO LIMITS

Our work does not end when we have delivered a machine. We see ourselves as a supplier of solutions, providing outstanding service and reliable assistance to our customers over the long term. Therefore, our services include commissioning, training, rapid supply of spares, maintenance, and repairs in equal measure.

And when it comes to logistics we think in terms of solutions too, dealing with all the details of the transports, on behalf of our customers.





OUR SERVICES

CONSULTANCY

Because we focus on specific sectors, we know all about the conditions in which our customers operate. After intensive “face to face” discussions, we work out the most appropriate – and economical – solution – **“working solutions”**.

ENGINEERING

As we progress along the path to the optimum end product we make use of Finite Element software and simulation programs to calculate forces, dimension each of the components, and to measure the hydraulics. We use simulation models to optimise the way each component interacts with the entire system.

MADE TO MEASURE PLANT ENGINEERING – MEETING STANDARDS

Throughout the world, customers trust us to construct their specialist telescopic excavators and machinery. But also when it comes to manufacturing special system components which we design, develop, and manufacture to individual requirements, our customers can rely on the expertise and experience of our engineers and technicians.

With our modern workshops and machines designed to meet the special mechanical engineering requirements imposed, we also manufacture devices and systems as per customer supplied engineering specifications.

METAL, IRON AND STEEL INDUSTRIES

“WE KNOW THE CONDITIONS THAT PREVAIL INSIDE A METALLURGICAL PLANT: THE MATERIALS, THE HYDRAULICS, THE CABLES, AND THE ELECTRONIC SYSTEMS IN OUR MACHINES ARE OPTIMALLY ADAPTED TO THE EXTREME AMBIENT TEMPERATURES.”





BLAST FURNACES



CLEANING THE RUNNERS

The UNIDACHS is so compact and agile that it is ideal for cleaning or refractory removal in the runners. Equipped with a hammering tool, rotary drum cutter or a ripper bucket, it can break out refractories and very heavy slag in a short time frame. The runner is then given a fresh refractory lining for which machinery of our own MPT brand can be used, and is thus ready for the next batch.



“EVEN AT EXTREME TEMPERATURES INSIDE THE CONVERTER, THE DESIGN OF OUR MACHINES DOWN TO THE LAST DETAIL ENSURES THAT THEY CAN COPE. WITH OUR EXPERTISE DERIVED FROM OVER 50 YEARS WE CAN HANDLE THE CONDITIONS INSIDE THE HOT ZONE.”



CONVERTERS

MOUTH SKULL CLEANING

Regular cleaning of the mouth and cone of the converter ensures smooth production and maintains the converter stability and production results at a high level. It is imperative to carry out this work on the glowing hot converter between the heats, this is what the UNIDACHS machines are purpose built for: The telescopic boom becomes the operator's "extended arm" that he can use to work at a safe distance.

TAP HOLE DRILLING AND SETTING

A camera and an angle indicator are used to precisely position the UNIDACHS 423, a dedicated solution developed especially for drilling and setting the tap hole sleeve. From this position the impact hammer drill is able to quickly and accurately remove the tap hole sleeve. Without moving the machine, the new tap hole sleeve is inserted and held in place until it has been fixed in position. This reduces the non-productive time of the vessel and keeps costs down. A remote controlled version of the machine is also available, and optionally, with or without an operators cab.

REPAIRS

When carrying out repairs on the refractory materials in the hot converter, the SHOOTER, a gunning manipulator with telescoping and rotating spraying arm, places the refractory materials accurately on the spot where the brick lining needs repair. The unformed materials are fed into the SHOOTER via a pressurised conveyor system, which we include in our solutions package.

DEBRICKING

For debricking tasks the UNIDACHS enables work to be carried out on the hot converter shortly after the last heat has been tapped. This saves time and money because work can start before the converter is completely cold.



RELINING

For relining the vessels, the KAMM relining device is the secure platform for working inside the converter. It has an integrated material lift and can be raised and lowered hydraulically bringing the refractory lining installer into the optimum working position to lift and set the refractory bricks.



ELECTRIC ARC FURNACE

DEBRICKING

The TML UNIDACHS debricking machines possess unique kinematics to allowing to work up to the far end of the furnace. From outside the furnace every point can be reached where the refractory lining materials need to be broken out and removed. Due to the machine's type of design and heat resistance capacities, the break out work can commence before the furnace has cooled down. So valuable time is gained.

CHARGING, RAKING AND CLEANING

Depending on the design, the charging machines are fitted with continuous rotating or telescopic booms. These machines, designed especially for the metallurgical smelting plant use are fitted with a wide range of tools that can be used efficiently to charge, clean, rake and scrape. Moreover, they are also extremely agile and can be used in the smallest of spaces.

CLEARING THE SLAG PIT

Our "Leonard" crawler-mounted loaders were designed for the speedy clearing of hot slag from below the furnace. They are suitable for iron and steel plant use and withstand the heat and the extreme conditions that prevail there.

The remote control option provides maximum safety for the machine operator. We supply the machine with or without an operator's cab, as required.





“WHEN IT COMES TO LADLE MAINTENANCE, AN ABSOLUTE NECESSITY IS BOTH LINEAR AND 360° ROTATABLE MOVEMENT. THE TELESCOPIC BOOM CONCEPT IS THE IDEAL WORKING SOLUTION.”

LADLE MAINTENANCE

CLEANING

Only a clean ladle can guarantee clean steel, with the aid of the ripper hook at the end of the telescopic boom the machine operator can work powerfully, accurately and safely. Removing the lip skulls and cleaning the bottom and side walls in hot condition.

PUSHING OUT THE POROUS PLUG

The telescopic boom on the UNIDACHS can be positioned precisely over the porous plug at the base of the ladle, and additionally, it has the power to push out the plug in a matter of seconds.

DEBRICKING

For hot debricking we supply ideally adapted machines with telescopic booms and a ripper hook to remove the wear lining so fast and accurately that the permanent lining is not damaged.

SLAG RAKING

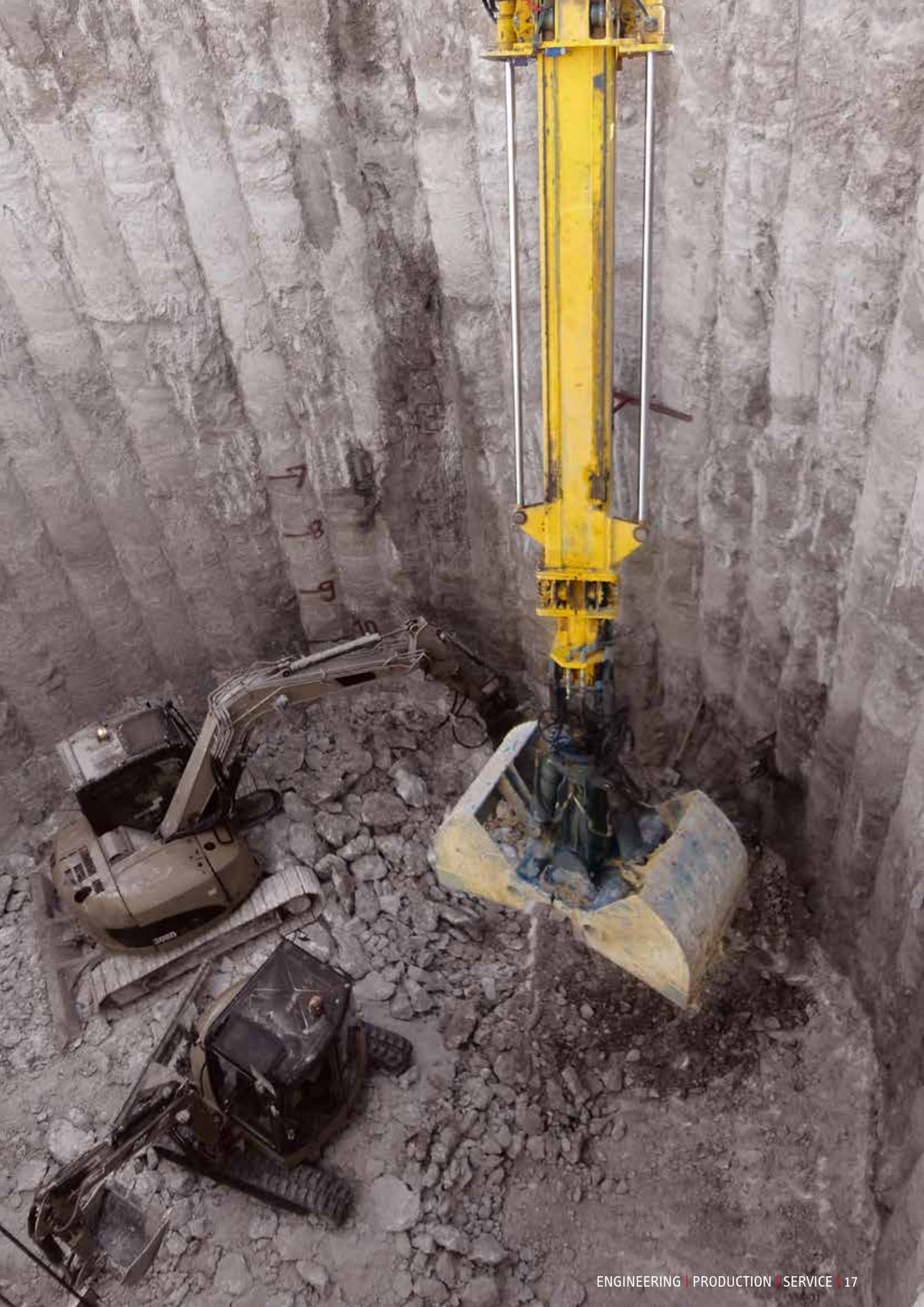
When raking slag from the hot metal - depending on local conditions - in many cases stroke lengths of 5,000 to 10,000 mm may be necessary. The "PAM" slag raking machines can be controlled accurately, even when dealing with such long reaches. It means that the slag can be removed with a minimum of hot metal loss.

The machine is designed to be easily incorporated into existing systems, for example into desulphurisation plants.



MINING AND TUNNEL CONSTRUCTION, SPECIAL HEAVY CONSTRUCTION BUILDING AND CEMENT INDUSTRY

*“EVEN WHEN DEALING WITH ROCK OR CONCRETE,
THE UNIDACHS IS THE SOLUTION FOR THE MOST CHALLENGING TASKS.
WITH ITS UNIQUE KINEMATICS IT GUARANTEES A LEVEL OF SAFETY THAT
CONVENTIONAL HYDRAULIC EXCAVATORS CANNOT ACHIEVE.”*





MINING AND TUNNEL CONSTRUCTION

When combined with the corresponding tools, the UNIDACHS is the ideal tunnel excavator and efficient work tool for:

- tunnel excavating with a rock bucket
- contouring tunnel cross-sections
- scaling with a percussion hook or hammer tool
- clearing with various bucket types

With its 360° rotating telescopic boom the UNIDACHS provides a high degree of flexibility and a wide range, yet is of a compact height. For example it enables you to safely contour even large cross-sections. The operator is always working at a safe distance.

SPECIAL HEAVY CONSTRUCTION

When it comes to sinking shafts our telescopic booms prove their worth. They are able to extend vertically up to 27m down into the ground. As opposed to cable excavators they provide hydraulic power directly at the attachment. So every shovel is filled to the optimum; and it is even possible to work on solid floors.

Particularly for excavation and digging work in tight spaces – for example beneath bridges – the UNIDACHS (system solution) is distinctive for its compact design.



DEMOLITION

When demolishing objects that are hard to access, our machines, with their 360° rotating telescopic booms, are accurate even in very tight spaces. At the same time, a remote control system offers maximum safety for workers at the site, and minimises the hazard potential – caused for example by toppling walls, or falling debris.

CEMENT INDUSTRY

The same technology implemented for debricking work in the iron and steel industry is also used to break out the refractories of rotary kilns used in the cement industry. The 360° rotating telescopic boom can reach every point of the kiln and provides the force necessary to break out the refractory lining which is often heavily sintered. With the extensive reach of the telescopic stroke, frequent machine repositioning becomes unnecessary.

UNIDACHS — SOLUTIONS THAT OFFER IT ALL



SOLUTIONS THAT OFFER IT ALL

In line with our “**working solutions**” philosophy we offer a range of products that are adapted to specific customer requirements. This is an overview; if you cannot find the solution for your particular need, we will be very pleased to design your own customised machine.



UNIDACHS DEBRICKING MACHINE 220

WEIGHT: 5,7 T. | TELESCOPIC STROKE: 2000 MM
REMOTE CONTROL | DIESEL DRIVE WITH 55 KW
ALTERNATIVE “ECO LINE” ELECTRO DRIVE WITH 55 KW



UNIDACHS DEBRICKING MACHINE 320

WEIGHT: 9,5 T. TO 10,5 T. | TELESCOPIC STROKE: 2000 MM
REMOTE CONTROL | DIESEL DRIVE WITH 50 KW
ALTERNATIVE “ECO LINE” ELECTRO DRIVE WITH 55 KW

UNIDACHS DEBRICKING MACHINE 430



WEIGHT: 15 T. TO 18 T. | TELESCOPIC STROKE: 3000 MM
REMOTE CONTROL, ALTERNATIVE OPERATIONS CABIN
DIESEL DRIVE WITH 74/91 KW | ALTERNATIVE "ECO LINE" ELECTRO DRIVE WITH 75 KW
K = COLLAPSIBLE, TO EXTEND THE OPERATING ANGLE

UNIDACHS DEBRICKING MACHINE 535



WEIGHT: 20 T. | TELESCOPIC STROKE: 3500 MM
ALTERNATIVE REMOTE CONTROL
DIESEL DRIVE WITH 129 KW
ALTERNATIVE "ECO LINE" ELECTRO DRIVE WITH 90 KW

SOLUTIONS THAT OFFER IT ALL

UNIDACHS DEBRICKING MACHINE 6 / 7 / 8 - SERIES

6-SERIES

WEIGHT: 25 T. TO 30,5 T.
TELESCOPIC STROKE: 3200 MM / 3700 MM / 4000 MM
ALTERNATIVE REMOTE CONTROL
DIESEL DRIVE WITH 129 KW
ALTERNATIVE "ECO LINE" ELECTRO DRIVE WITH 90 KW

7-SERIES

WEIGHT: 30 T. TO 35 T.
TELESCOPIC STROKE: 3200 MM / 3700 MM / 4000 MM
ALTERNATIVE REMOTE CONTROL
DIESEL DRIVE WITH 173 KW
ALTERNATIVE "ECO LINE" ELECTRO DRIVE WITH 132 KW

8-SERIES

WEIGHT: 40 T. TO 43 T.
TELESCOPIC STROKE: 4500 MM / 5000 MM / 5500 MM
ALTERNATIVE REMOTE CONTROL
DIESEL DRIVE WITH 173 KW
ALTERNATIVE "ECO LINE" ELECTRO DRIVE WITH 132 KW



UNIDACHS DRILLING MACHINE 4-SERIES



WEIGHT: 20,1 T.
WORKING LENGTH: 2000 MM / 2300 MM
ALTERNATIVE REMOTE CONTROL
DIESEL DRIVE WITH 74 KW
ALTERNATIVE "ECO LINE" ELECTRO DRIVE WITH 75 KW

**SLAG RAKING MACHINE
"PAM"**



WEIGHT: 7 T. TO 13 T.
TELESCOPIC STROKE: 5000 MM / 6000 MM / 7000 MM / 8000 MM / 9000 MM / 10000 MM
IN TYPE: STATIONARY, HANGING, MOBILE

**GUNNING MANIPULATOR
"SHOOTER"**



WEIGHT: 10 T.
LANCE STROKE: 2 X 4000 MM / 2 X 5000 MM
REMOTE CONTROL
DIESEL DRIVE WITH 49,5 KW

**CONVERTER RELINING MACHINE
"KAMM"**



SOLUTIONS THAT OFFER IT ALL



TS / TN-SERIES

TS = COLLAPSIBLE, WITH TWO ROCKING AXES | TN = RIGID, WITH ONE ROCKING AXIS
WEIGHT: 6,5 T. TO 13 T. *
TELESCOPIC STROKE: 3200 MM / 3700 MM / 4000 MM / 5000 MM

*ONLY BOOM WEIGHT



TS D / T-SERIES

TS D = COLLAPSIBLE, WITH TWO ROCKING AXES AND DOUBLE STROKE
TS T = COLLAPSIBLE, WITH TWO ROCKING AXES AND TRIPLE STROKE
WEIGHT: 6 T. TO 19,5 T. *
TELESCOPIC STROKE: 2 X 4500 MM / 2 X 6000 MM / 3 X 6000 MM

LEONARD: MORE THAN FOUR DECADES EXPERIENCE

The brand name of "Leonard" is known throughout the world for its **360° endlessly rotary telescopic booms** and **steel mill loaders** for use in hot environments. Under this brand name we adapt standard base machines and construction equipment made by leading manufacturers to be utilised in special applications.

K / E / S-SERIES



K-SERIE

WEIGHT: 7 T. TO 13 T. *

TELESCOPIC STROKE: 3000 MM / 3600 MM / 4000 MM

E-SERIE

WEIGHT: 8 T. *

TELESCOPIC STROKE: 4000 MM

S-SERIE

WEIGHT: 10,0 T. TO 10,5 T. *

TELESCOPIC STROKE: 3000 MM, 3600 MM



*ONLY BOOM WEIGHT

STEEL MILL LOADER



WEIGHT: 19,0 T. TO 24,0 T.

BUCKET CAPACITY: 1,5 M³ TO 2,1 M³



CHARGING MACHINE-SERIES



WEIGHT: (DEPENDING ON MODEL)
CHARGING BEAM ARM LENGTH: 2750 MM (DEPENDING ON MODEL)

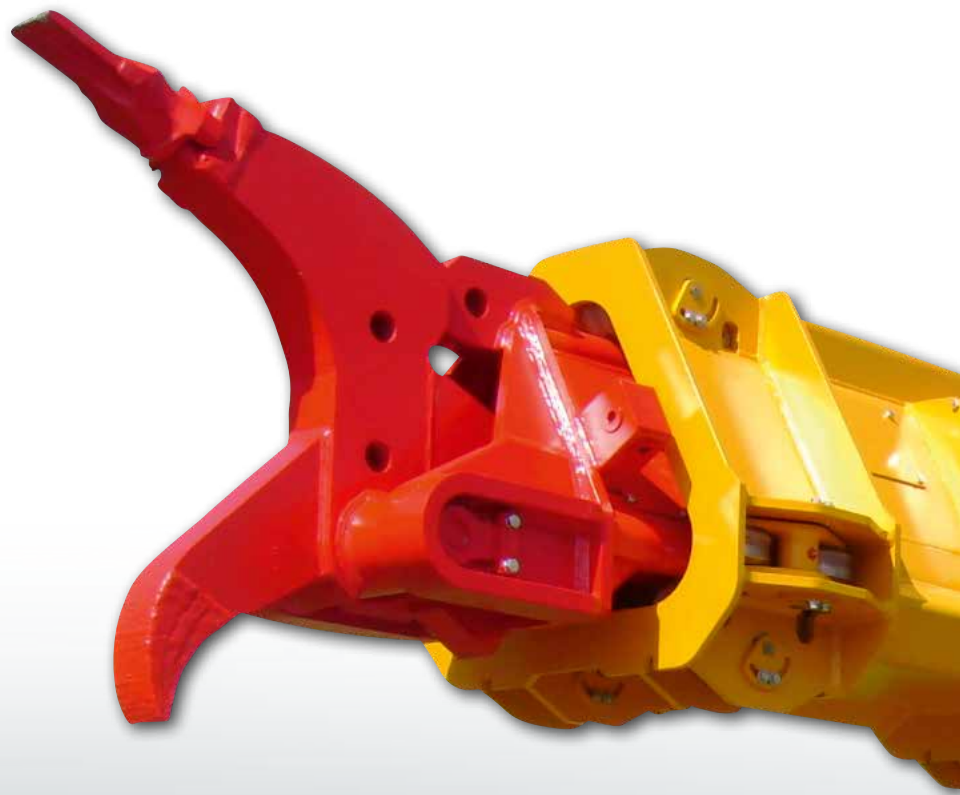
ATTACHMENTS

ACHIEVING FLEXIBILITY WITH ATTACHMENTS

The large number of attachments compatible with our machines ensures versatility, guaranteeing a high level of investment security. The attachments are very easy to change with the aid of the quick-change adapter.

AN OVERVIEW OF OUR ATTACHMENTS:

- Ripper hooks
- Double ripper hooks
- Pushing tools
- Tap hole drills
- Ripper buckets
- Boom extensions
- Single point lifting bail
- Hydraulic hammers
- Pneumatic hammers
- Rotary drum cutters
- Backhoes
- Trenching buckets
- Customised products



SERVICE SOLUTIONS

Our “service solutions” underline our “working solutions” philosophy. After we have delivered a machine we continue to help our customers make effective use of their equipment. This approach minimises plant down-time and increases the reliability and productivity.

TRAINING

We share our knowledge with you. Our team provides special user training courses on TML products:

- Operator training course
- Mechanics training course
- Electronics training course
- Hydraulics training course

COMMISSIONING

Our experienced and highly qualified technicians commission the machines strictly following our specific guidelines, thus ensuring that every machine can start work successfully.

MAINTENANCE, INSPECTIONS, AND REPAIRS

Regular inspections and preventative maintenance increase machine and plant availability. This leads to detection of any potential failures, that can be rectified and prevented at an early stage. To ensure an optimum supply of spare parts, our service engineers inspect your spare parts stock and make top-up recommendations. Maintenance and overhauling work is arranged, as far as possible, for the most appropriate timing, in order to not interrupt production schedules.

We also repair other makes of mobile equipment.



Commissioning of TS60D

SAFETY TESTS

We carry out regular safety tests (accident prevention tests) on equipment and machines, as specified by the accident prevention regulations ...in line with the German law.

ORIGINAL SPARE PARTS

Machines are only as reliable as their wearing parts and their replacement parts. For this reason we only use our own proven and authorised original spare parts.



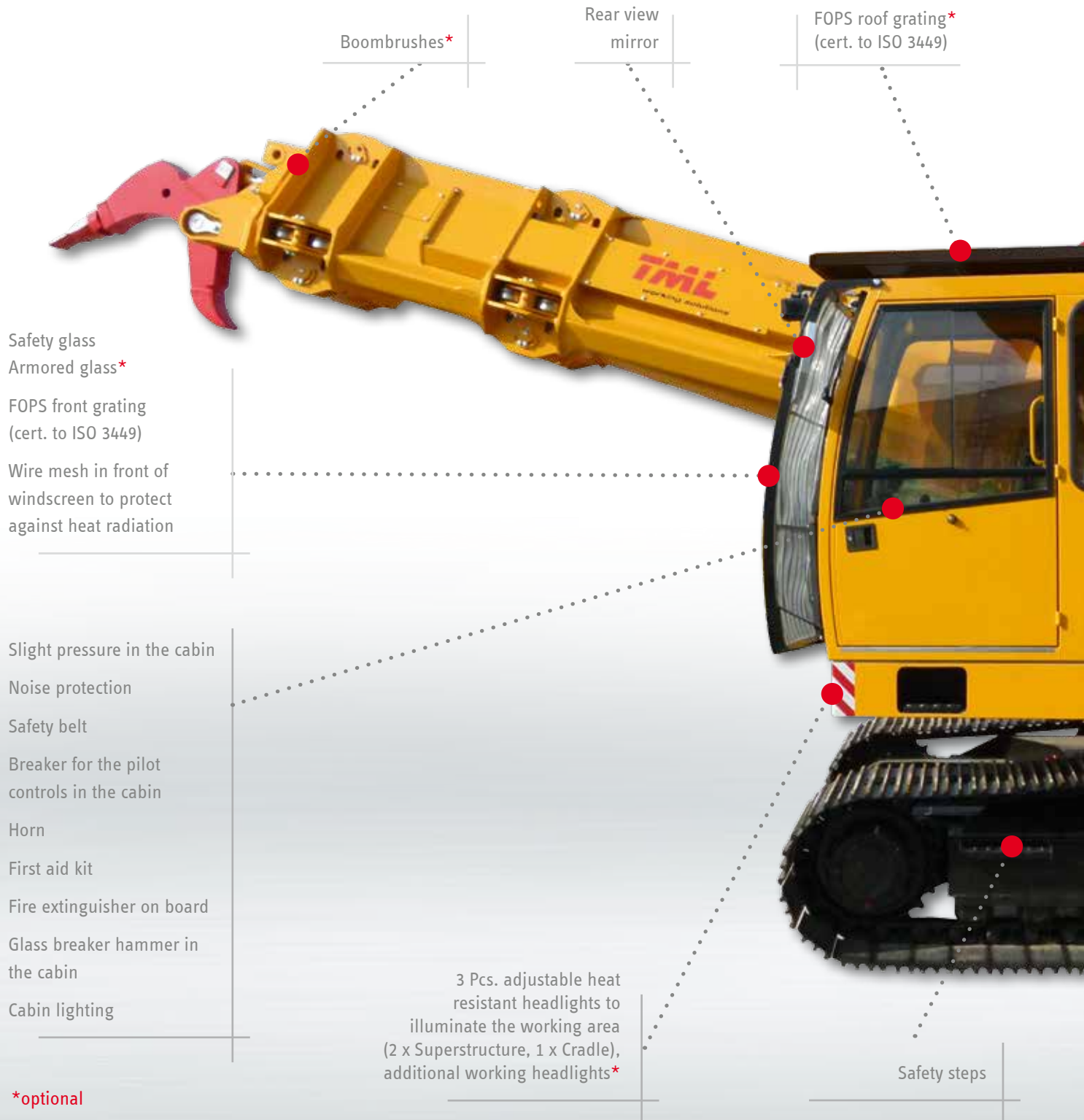
Spare parts stock



Service operator at work

SAFETY

“FOR US SAFETY IS ALWAYS OUR MAIN CONCERN. THAT IS WHY EVERY MACHINE LEAVES OUR FACTORY WITH MANY SAFETY FEATURES TO ENSURE A MAXIMUM LEVEL OF SAFETY IN OPERATION.”



Boombrushes*

Rear view mirror

FOPS roof grating* (cert. to ISO 3449)

Safety glass
Armored glass*

FOPS front grating (cert. to ISO 3449)

Wire mesh in front of windscreen to protect against heat radiation

Slight pressure in the cabin

Noise protection

Safety belt

Breaker for the pilot controls in the cabin

Horn

First aid kit

Fire extinguisher on board

Glass breaker hammer in the cabin

Cabin lighting

3 Pcs. adjustable heat resistant headlights to illuminate the working area (2 x Superstructure, 1 x Cradle), additional working headlights*

Safety steps

*optional



Remote control*

Single-point lifting bail
TUV certified - for safe and
easy Transport by crane*

Pipe-break protection
system on the boom
lift cylinders

1 yellow safety beacon on
the rear of the machine

Camera system*

Emergency brake release
system for towing* - for
safe recover of the
machine out of the hot area
Fire extinguisher system*

Emergency stop button on
the rear side of the machine

Fire resistant
hydraulic fluid*

Safety ladder

Handrails and steps for safe
access to the machine super-
structure and for re-fuelling

Cover for tracks*



CERTIFICATIONS AND ENVIRONMENTAL PROTECTION

ISO STANDARDS

Our products are manufactured in Monheim, Germany. Our staff undergoes regular training – including courses related to DIN EN ISO 9001 and DIN EN ISO 14001 certifications. We consistently invest in our modern manufacturing plant and machinery to ensure that we continue to produce efficient quality in the future.

Welding qualifications:

- Welding certificate as per DIN 18800, part 7
- Welding quality certificate as per DIN EN 729-2
- Approved for welding quality processes as per DIN 8560 and DIN EN 287, military-standard armoured components



ECOPROFIT measures at TML include:

- a solar panel power generator producing around 55,000 kWh a year
- a specialist recycling firm recovers production residues and feeds them into the recovered substance cycle
- a suction filter system to extract welding fumes
- a reduction in paper usage with the “FollowMe concept”



A FAMILY-FRIENDLY COMPANY

Since 2013 we have been involved with the Monheim Families Association, which in the summer of 2014 opened a day-care centre for the children of employees of small and medium-sized companies.

OUR PHILOSOPHY TOWARDS THE ENVIRONMENT

As a result of our strong belief in sustainable treatment of the environment, we are committed to using resources with care. Our commitment is active. The company has been ECOPROFIT certified since 2011. (ECOPROFIT®, the “ECOLOGICAL PROJECT for Integrated Environmental Technology”). The aim of this programme to promote sustainable economic and ecological development, while at the same time reducing costs by implementing a system of integrated measures. The main topics are: increasing materials efficiency, reducing water and energy consumption, and cutting the amount of waste produced.



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**MADE
IN
GERMANY**



- TML Technik GmbH & TML Services GmbH
- ▲ TML Service & Spare parts depot
- Partners

TML GROUP

TML
working solutions

TML
service solutions

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