

 **TEREX**® | **FUCHS**

PORT HANDLING MACHINES



WORKS FOR YOU.™

FOR MORE OPERATING E ON WATERWAYS



Mobile high-performance loading machines for reloading points in port basins

Since ancient times, seaports and inland ports have always been central nerves of the world economy. If it had not been for them, we would never have seen today's global flow of goods. Over the centuries, trading centres rich in tradition have evolved into ultra-modern logistics centres. A new challenge for port operators is to act as a reliable interface between water transport, roads and railways. That means providing customers a goods handling platform, which is both highly efficient and competitive, keeping costs in view at the same time.

Through many years of experience in materials handling Terex® Fuchs has gained an extensive know-how in the development and production of first-class machines for modern harbour logistics. Many years ago Fuchs loading machines were first optimised for their use in harbours. Based on this experience, its designing engineers created a unique system which allowed the loading machines to be adapted to the individual needs of port operations.

The uncompromising and extremely stress-resistant loading machines from Terex® Fuchs provide support in every respect. They move heavy loads quickly and precisely and create only minimum downtimes due to their ruggedness and ease of maintenance. Thanks to their ease of use they allow for comfortable operation even on long working days without getting tired. Owing to a variety of individually configurable features, each loading machine can be optimally adapted to the user's needs and requirements.

Standard versions of some BlueEVOLUTION® models are also equipped with the desirable sustainable attributes: High performance motors shine forth with even lower fuel consumption rates, and are already starting to take responsibility towards the Emission Standard 2014 with TIER4i/IIIB. That is a concentrated package of power, which helps the environment in a sustainable way.



EFFICIENCY



"The modern economy with its worldwide flow of goods is unthinkable without efficient port operations. For this purpose, we supply loading machines that meet today's and future requirements."

Ron de Vries, General Manager of Terex® Fuchs





"Annually transshipping 5 million tonnes of goods of a wide variety, we need loading and unloading machinery that is as reliable as rapid. In this respect, we have seen Terex® Fuchs machines at their best. We are absolutely satisfied with their quality, trustworthiness and, primarily, with their efficiency and performance."

*Andrey Nikolaevich Letschenko,
Managing Director of Rostov Universal Port*

MAXIMAL HANDLING CAPACITY

Dynamic and effective work

Modern harbour facilities on coastal and inland waterways are logistic centres with high demands on performance. Terex® Fuchs has developed loading machinery especially for such needs, which is extremely efficient and cost-saving due to its high handling capacity. Unlike classical cable ways and gantry cranes, Terex® Fuchs mobile loading machines arrive exactly where they are needed as quickly as possible. Operating ranges up to 22 m and a grab volume of up to 8 cubic metres make sure that a large volume can be moved with every individual step and that shunting expenses can be minimised.

High-torque turbo-diesel engines supply up to 273 kW power. This enables powerful hydraulics to perform pin-point manoeuvres at high velocities despite high loads, thus guaranteeing the maximal handling capacity. Whoever has steered Terex® Fuchs hydraulics, knows its advantages. Add to that, their legendary ruggedness and resilience guarantee the highest performance on all sites.

No matter whether you transfer goods directly from ship to ship, or load trucks, waggons, or dispatch to conveyer belts and sorting plants: Terex® Fuchs machines offer the optimum balance of performance, dynamism, economic efficiency and mobility. Thus you can shorten ship downtime and save handling costs in almost any application.

- ▶ **Quick on site:** straight line velocities up to 20 km/h provide for maximum mobility.
- ▶ **Flexible use:** the machine can move from a harbour quay to other workplaces and is optimally available for different applications.
- ▶ **Impressive working tempo:** up to 150 working cycles per hour are possible.
- ▶ **Solid mechanics:** reliable and millimetre-exact positioning of the grip arm - no oscillating and no decay typical for cable cranes.
- ▶ **Stable statics:** Terex® Fuchs specific kinematics and the centred slewing ring allow high loads across the entire boom range.
- ▶ **Optimum balance:** pivoting and moving of the loading equipment harmonizes with grip arm operation to provide perfect manoeuvring.
- ▶ **Powerful cooling:** separate cooling systems guarantee optimum working temperatures and allow trouble-free operation up to an outside temperature of 50°C.





“Conservation of resources and reduction of pollution are mega trends in engine technology, and Terex® Fuchs is quite clearly the trendsetter. Low consumption, low emissions, low operating expenses – this pays off both for the environment and for our customers.”

Christian Engelhardt, Head of Engineering at Terex® Fuchs

EFFICIENT. AHEAD OF THE FUTURE

Rugged design combined with an innovative engine technology

In port handling, efficiency counts above all. Therefore, the conceptual design of Terex® Fuchs loading machines targets the maximum achievable economic efficiency and reliability. This already begins with the steel structure which is designed for the maximum possible resilience. With engine and mechanics, electronics and hydraulics, Terex® Fuchs accepts no compromises. Only high-quality components are used which have been put to the acid test and which are available as spare parts within the shortest time if required.

Comprehensive thinking and acting with a view to the optimal economic viability is also reflected in details. The fuel tank is also designed in such a way that three complete work shifts can be finished with a single tank filling. That saves valuable time. In any case, Terex® Fuchs machines meet their image as real fuel savers: they use up to 25 per cent less than their competitors with the same handling capacity.

Particular attention is paid to engines that impress with both the highest reliability and low consumption rates that are significantly below the current emission limit. Strong performance is thereby adapted to the requirements of the individual machine so that there are always enough reserves for high load manoeuvring, too. The new MHL350 machine is a highlight in sustainability. With reduced emission rates complying with TIER4i/IIIB and civilized running quietness this machine is already starting to take responsibility towards the 2014 Emission Standard.

- ▶ **High performance, low consumption:** all state-of-the-art engines are equipped with more powerful turbo-diesel units which not only boast an impressive increase in output, but also use significantly less fuel and keep emission values on a lower level – protecting the environment and your company's finances at the same time.
- ▶ **Continuous use:** all machine components are intended and designed for continuous running, which reduces fall-out and downtimes to the minimum.
- ▶ **Load-bearing fulcrum and centre of rotation:** the ring gear is designed as double-row ball ring gear for a particularly long lifecycle.
- ▶ **Full load, full grab:** using additional pressure via hydraulics upon request the grab penetrates deep into material and thereby avoids inefficient empty space.
- ▶ **Remaining value:** thanks to their legendary ruggedness and high longevity Terex® Fuchs loading machines regularly achieve high prices on the used machines market, too.



A powerful new heart beats quietly inside the MHL350: a 6-cylinder turbo diesel engine at the cutting edge of technology – a great platform for efficient energy use. BlueEVOLUTION means an all-embracing intelligent set of energy-related measures harmonizing economic viability, performance and resource conservation.



All-round comfort as a standard: ergonomic comfortable seat, air conditioning contributing to physical fitness, as well as a reversing alarm camera with a wide angle of view behind the machine ensure safe and fatigue-free working



COMFORT IS STANDARD

Intuitive operating system for concentrated and fatigue-free working

The higher the work load, the higher the risk of mistakes. Thus Terex® Fuchs development engineers do everything in their power to provide a working area to the operator which is as comfortable as ergonomic. A comfortable cab with an elevating and advancing system, which always provides an ideal overview, is a professional solution putting all principles of comfortable and stress-free working into practice.

Such equipment as sound-insulation, air conditioning, a cooling box and a back-friendly comfort seat creates an operator's working place which allows fatigue-free working. A clearly structured multifunctional display acting as a control and information centre shows all important operation conditions in the real time mode. The display together with a joystick and the multifunctional button with direct access to machine functions are ergonomically arranged and easily reachable. Such things are called "best practice", when it is a matter of intuitive operating systems.

The best safety is provided in other respects, too. The safety concept of Terex® Fuchs embraces everything from the certified structural steel cell of the cab to the intense Xenon floodlights for working at night and the wide-ranging means of protection on the service platforms. Safe is safe. And Terex® Fuchs loading machines are particularly safe.

- ▶ **Bird's eye view:** the special cab design of Terex® Fuchs allows views from up to 12 metres high. Large windows ensure a perfect overview of the entire working range and increase handling capacity.
- ▶ **Intrinsic values:** air conditioning, cooling box, sound insulation, reversing camera and a comfortable back-friendly seat are standard in all models, optionally available with a CD player.
- ▶ **Plaintext for everyone:** functions, information and warning messages are shown on a glare-free high-resolution colour display in various languages depending on the selection.
- ▶ **A personal touch:** joystick allocation and number of direct switches can be adapted to your personal needs.
- ▶ **Certification:** the safety concept of the cab was developed in a close co-operation with the Mutual Indemnity Association (Berufsgenossenschaft) of the building sector and is certified in accordance with the new EU Machinery Directives.

"The better I feel at my working place, the better and more accurate I can work. The cab of my Terex® Fuchs loading machine is the optimal working place for me."

*Richard White,
driver with
RASTRUM LTD,
England
for 22 Years*

Off to new shores! Maximum mobility thanks to ready-to-use combination of loading and transportation equipment





“For an uncompromising quality and performance in port handling, long intervals between maintenance of machinery alone are not enough. When maintenance and inspection are then due I want the work done without waiting long. Terex® Fuchs machines provide both these qualities as well as their already legendary continuous running.”

Ömer AYDIN, AydinVincgrup
Manager of Harbour Equipment
Department

UNSHAKEABLE. LOW-MAINTENANCE.

On-board maintainability. First-class-support on demand

Long lifecycle, short downtimes – that is what Terex® Fuchs loading machines are uncompromisingly designed for. Therefore, Terex® Fuchs design engineers' attention always has its focus on both the maximum lifecycle of all components as well as on ease of maintenance as a second important aspect. The rule of thumb is following: when maintenance or part replacement becomes due, it must be quickly and easily performable. Replacement-related components are placed at accessible locations and can be replaced within the shortest time. A consequent realization of such a philosophy can be seen in many small details, e.g. a standardized fuse quick tester drastically reducing time of searching for a faulty fuse, if necessary.

And safety and protection always ranks first. A good example for this is promotion systems that are all certified by the Technical Mutual Indemnity Association of Construction Industry (Technische Bau-Berufsgenossenschaft). Another success factor is a worldwide network of highly skilled service partners and certified specialists who are promptly on the spot and render professional assistance in serious cases. In the process, Terex® Fuchs service partners can always refer to comprehensive and updated online documentation as well as on quick spare part delivery service, regardless of their location.

- ▶ **Long lifecycle:** all components are designed for the maximum lifecycle and long maintenance intervals.
- ▶ **Reliable and stable:** optimal lifecycle of steel structure owing to continuous steel sheets with as few welding seams as possible.
- ▶ **In and out:** daily machine check is done within few minutes.
- ▶ **Maintenance is as fast as the wind:** optimal accessibility of all maintenance-related components means minimum downtimes caused by maintenance and servicing.
- ▶ **Be prepared:** a highly modern central spare parts store in Rothenburg ob der Tauber (Germany) is ready for deliveries day and night on all seven days of the week.
- ▶ **Experts' network:** a number of high-skilled service partners are available on all continents and arrive on the spot in the shortest time possible.
- ▶ **Always up-to-date:** regular workshops in the in-house training centre always keep our service specialists informed on the latest state of the art.



Accessibility: comfortable ascension to service platforms makes any machine servicing easier and quicker

CONFIGURE. COMBINE.

Terex® Fuchs modular design principle



Always the right loading equipment, adapted to the client's needs



Comfortable entrance into the operator cab either with swing doors or with sliding ones

Climbing systems fitted to a specific machine or tailored to a special application case can immensely facilitate maintenance and servicing



Port operators' requirements on loading machines are quite specific. Having equipped modern port logistics for many years, Terex® Fuchs completely understands the demands and requirements of its customers. Thus, in addition to a standard product range, Terex® Fuchs design engineers have also adapted individual extras according to the various challenges in port handling. Terex® Fuchs enables port operators to upgrade and retrofit their new loading machines with custom-fit and true-to-size equipment applications. In the result, each loading machine provides exactly the features which the user are requires. In addition, the experts from the Terex® Fuchs Application Center can guide and navigate you through a variety of options for an ideal machine configuration using their branch-related know how.

Terex® Fuchs machines impress by static stability and large operation radii providing maximum views and overviews at the corresponding pylon heights



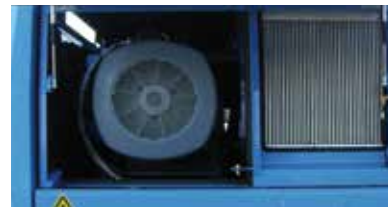
"We have developed a perfect modular design. There are not only many years of design work behind it, but also the practical experience and desires of innumerable machine users are implemented. Therefore, our clients receive practical ready-to-combine modules and upgrade applications to individually organize their efficient daily work."

Thomas Berners,
Head of Terex® Fuchs Application Center

OPTIMIZE.



Always suitable booms for the best work kinematics



Future-oriented and environmentally sound technologies: from energy-efficient turbo-diesel engines up to zero-emission electric motors



Cable drum – standard-sized or tailored to a special application



Motion force on tracks or on wheels



High ground adhesion at ideal pressure: flat or triple-point feet



Plug & Play

ADVANTAGE THROUGH V

Custom-designed machines. Tools as requested.



Flexibly configurable loading machines, complete with the right tools. Terex® Fuchs equips port operators for all related application ranges with custom-designed machines. Within the scope of a sophisticated modular design principle, a variety of options is provided in addition to standard models, so that modifications of proved FUCHS quality can be realised without long procurement lead time. Whenever it is a question of adapting loading machines to the individual demands of port operators – including specially required tools – Terex® Fuchs sets standards in the branch.



VARIETY



- ▶ **Competent consultation:** experienced specialists from Terex® Fuchs and skilled local distributors determine together with the customer which individual upgrade and retrofitting option would be the best.
- ▶ **Modular mobility:** whether electric drive or diesel, whether tracks, wheels, or stationary body – mobility of the machine can exactly be adapted to the demands of each individual case.
- ▶ **Component kits:** if necessary, you can combine, for example, a large undercarriage, a height-adjustable cab, and various pylons.
- ▶ **Standardized components:** in spite of all the individuality, we try to mostly use standardized high-quality components to ensure a short-term supply of spare parts, if necessary.
- ▶ **First-class implementation:** at the Terex® Fuchs Application Center, high-qualified and skilled experts make sure that each step of adapting the loading machine is carried out to the highest quality level.

- ▶ **Tools as requested:** There is a variety of selectable tools enabling the user to perfectly master material flow: clamshell grabs and cactus grabs of different dimensions, as well as load hooks and special appliances, e. g. for timber handling. You can also order a grab of a special type and size designed for your individual applications.

MHL350



blue evolution®

AHL850

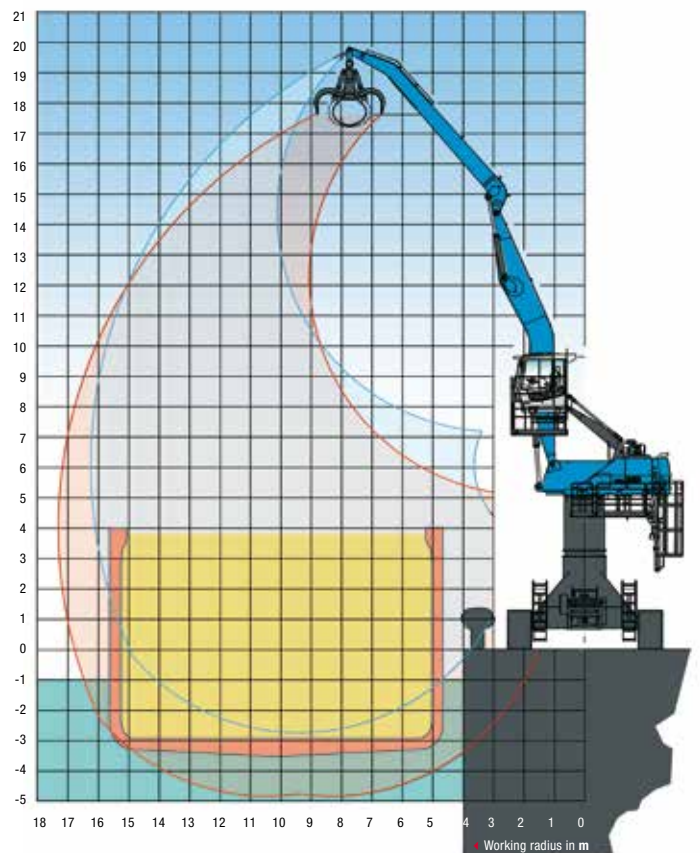


BlueEVOLUTION®: The new class of harbour logistics efficiency

The new MHL350 is the starting platform for an increased performance, reduced emissions and low fuel consumption. BlueEVOLUTION® is a mature set of energy measures which helps sustain the environment. Owing to manoeuvrability, strong performance and high load capacity of the machine, loading tasks can be performed as swiftly as efficiently. The client therefore not only benefits from ruggedness and solidity of Terex® Fuchs loading machines, but also gets the machine optimally adapted to individual demands of his business operation thanks to the cunning FUCHS modular design principle.

Technical Data

Max. operating weight	MHL 37 t / RHL 58 t
Engine output	150 kW
Max. working radius	16 m



Exemplary operating ranges:
RHL850 on pylon and 11 m ship width

For load capacity values, see the technical brochure!

RHL860 XL-trac



MHL360

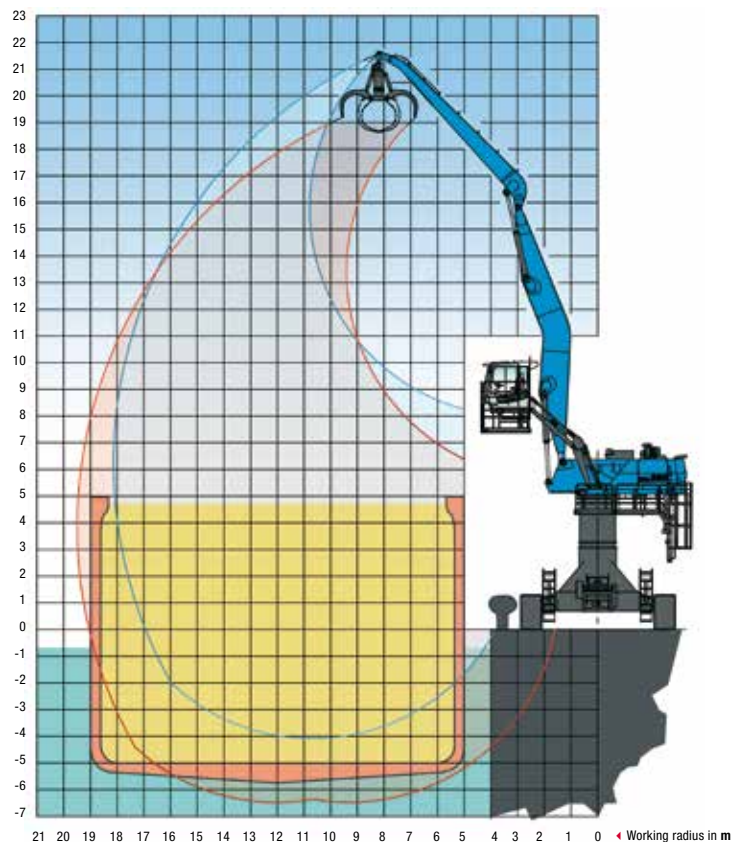


A proven classic and a foundation for versatile port handling

The MHL360 is the leader in new loading technologies for port handling due to high load capacity, quick and precise work cycles and a high-torque engine with minimised emissions. The proven classic with the most modern technique ensures a high performance on harbour quays and keeps operating costs down thanks to its low fuel consumption rates and long maintenance intervals. Individual upgrade and retrofitting of the MHL360 with various features of Terex® Fuchs modular principle is a matter of course.

Technical Data

Operating weight	MHL up to 46 t / RHL up to 67 t
Engine output	168 kW
Max. working radius	18 m



Exemplary operating ranges:
RHL860 on pylon and 14 m ship width

For load capacity values, refer to the technical brochure!

RHL880 XL-trac



AHL380

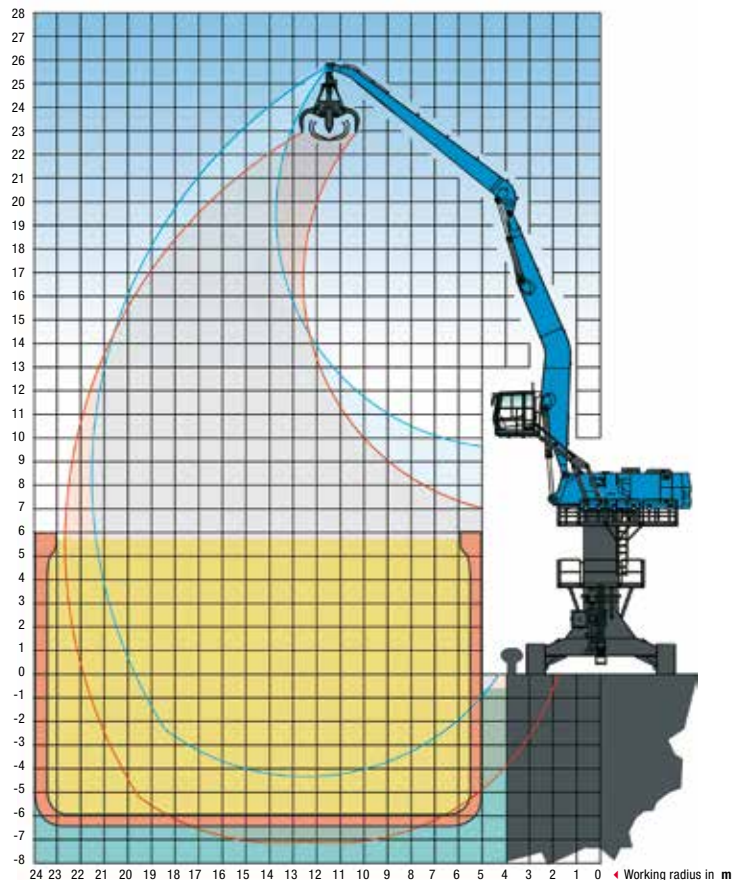


Best qualified for a rugged service with high operational ranges

MHL380 machine really makes any heavy work move. Owing to its high loadability and carrying capacity, large working radii and uncompromising performance, it makes child's play of the toughest challenges. From the cab which can be moved smoothly upwards to a height of 11.5 m above the ground and forwards by 2.2 m, you can comfortably oversee the working area, even with high loads. Customised equipping and retrofitting modules, as, for example, pylons, electric drives, quick-connect tools, or a stationary body provide the best basis and suitable munition for an advanced port logistics.

Technical Data

Max. operating weight	MHL 66 t / RHL 96 t
Engine output	273 kW
Max. working radius	22 m



Exemplary operating ranges:
RHL880 on pylon and 19 m ship width

For load capacity values, refer to the technical brochure!

PURPOSE-BUILT









PURPOSE-BUILT

SERIES OF SUCCESSES

A history of great ideas – since 1888

Ever since the business was founded in 1888, the Fuchs name has signified a wealth of ideas and innovation. Whether developing the legendary Fuchs 301 cable excavator in 1957 or patenting the elevatable cab in 1975, pioneering technical advances have shaped the company's history right up to the present day, and helped Terex® Fuchs machines to win their reputation for top quality workmanship and endurance. Terex® Fuchs focuses its resources on clearly defined areas of application, offering high-performance materials handlers to the recycling, scrap handling, port and timber industries. This concentration on core sectors delivers important user benefits: instead of standard 'off-the-shelf' products, we provide tailored, highly customisable machine solutions, which can be adapted to the precise needs of the individual business.

Record loading and unloading rates with an equally high precision is the topical motto when using mobile loading machines from Terex® Fuchs in port handling. Through the ages, innovative machines have been continually adapted to the requirements of modern logistics in every detail. Massive grabs, large work radii even at full load and extremely short loading cycles: these are the plus points which make the Terex® Fuchs mobile powerhouses the perfect link between ship, road transport, train, conveyor belt, and storage facility.



Product range/Standard machines

MHL320	MHL331	MHL335	MHL340	MHL340 FQC	MHL350	MHL350 FQC	MHL360	MHL380	MHL454	MHL474
85 kW	114 kW	114 kW	128 kW	128 kW	160 kW	160 kW	190 kW	273 kW	176 kW	213 kW
8.2-10.4 m	10.7-12.0 m	10.7-12.0 m	12.2-13.7 m	11.0-11.2 m	14.0-16.0 m	12.5-13.0 m	16.5-18.0 m	18.5-22.0 m	9.8-10.85 m	11.15 m
17.8-19.0 t	22.0-23.5 t	23.5-25.0 t	27.5-29.0 t	28.5-31.3 t	33.0-35.5 t	33.0-37.8 t	43.5-48.8 t	62.5-68.5 t	31.0-32.5 t	41.5-44.0 t
0.4-0.6 m³	0.4-0.6 m³	0.4-0.8 m³	0.4-0.8 m³	Attachments on request	0.6-0.8 m³	Attachments on request	0.6-1.0 m³	1.0-1.4 m³	1.7-2.5 m³	2.0-4.0 m³

FIRST CLASS SERVICE & SUPPORT



If you choose a first-class product, you expect a first-class service – before and after you buy. At Terex® Fuchs, it's not only our loaders that are optimized to meet customer needs: it's our service as well. So you can be sure that, with your Terex® Fuchs material handler, reliability and availability are assured.



Comprehensive documentation and practical service support – which can include a mobile service container – enable our local dealers to carry out servicing and repairs quickly and professionally. A hotline is available to our service partners for urgent requirements outside normal business hours.



Education, training and workshops

The Terex® Fuchs global service network is the interface between user and manufacturer. Highly qualified advisors and engineers are available to answer any questions users may have regarding Terex® Fuchs material handlers. They are supported by a sophisticated training and workshop program held in the Terex® Fuchs Training Center, which is used by around 450 participants every year. Our specially trained service engineers look after communications with our service partners, and help them to resolve particularly challenging issues.

Faster spares delivery

If it's needed, it's got to go fast. So the Terex® group has established a state-of-the-art spare parts warehouse in Rothenburg ob der Tauber, which makes around 47,000 dispatches a year. Over 95 % of consignments are dispatched within 24 hours.





FUCHS

www.terex-fuchs.com

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WORKS FOR YOU.™