

MULAG

Innovative Technologies for Ground Support Equipment



Product Range

Airport



MULAG Ground Support Equipment

Being one of the leading manufacturers of Ground Support Equipment we are focusing for more than 50 years on the continuing development of a large and innovative product range:

Comet towing tractors



Orbiter conveyor belt vehicles



Pulsar container pallet transporters



MULAG in detail



Innovative drive concepts for your Airport Ground Support

The MULAG Ground Support Equipment product range offers the customer a good choice of innovative drive concepts that are perfect for different uses and applications and provide just the edge of advantage that is needed. Thus our customers are guaranteed to get a perfect equipment configuration for their special purposes.

In addition to diesel engines other drive concepts play an increasingly important role for the customers decision-making process, due to environmental and business efficiency considerations. This is where decades of experience with Ground Support Equipment and innovative engineering at MULAG come into play with a large choice of different alternative drive concepts:



Comet 3 FC prototype with innovative hydrogen fuel cell drive

Drive concepts overview

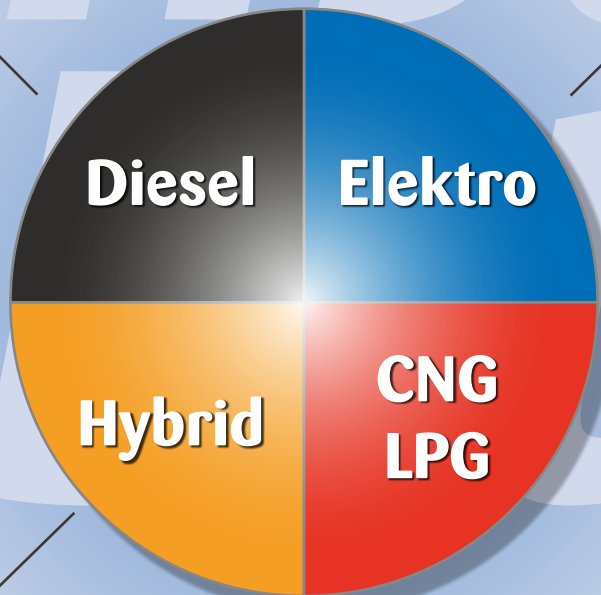
DIESEL

- tough, reliable technology
- large range / 24 hours duty possible
- easy available worldwide

ELECTRO

- zero-emission and low noise level
- energy reloading while decelerating
- unrestricted access to indoor applications
- low-maintenance drive engine (AC)
- available worldwide

This choice of different drive concepts gives our customers the decisive edge in special applications and situations.



HYBRID

- combines the advantages of diesel and electric: emission-free indoor use and large range on the airport apron
- available worldwide

CNG / LPG

- cost efficient
- environmentally friendly
- 24 hours duty possible
- indoor use possible
- availability depending on infrastructure (CNG)



Airport Towing tractors

*Baggage and Cargo handling
Pushback*



Comet



Comet Diesel Tractors

High availability

Flexible in use

Great agility

Our large range of Comet towing tractors is perfect to be used in many working situations on airports and in the industry. The design of our towing and pushback tractors is based on an independent chassis especially developed for that purpose: Thus we achieve optimal load balance and outstanding dynamical characteristics, as well as quick and easy access to all important service points and components.

Easy and effective handling is our plus!

Interesting equipment details like hydraulically suspended seats adjustable to the weight of the driver / co-driver and also adjustable length-wise and in height show our claim for ergonomical vehicles as well as the clearly arranged operating controls in the driver's field of vision and the adjustable steering wheel.



Comet 4 DK D

Dead weight	4300 kg
Drawbar pull / drive	28 kN / Deutz-Diesel, 46 kW (EU IIIA)*
Length / width / height	3900 / 1600 / 2160 mm
Miscellaneous	<ul style="list-style-type: none"> ■ integrated loading platform 1600 mm x 610 mm ■ transport of up to 5 operators

** other technical equipment upon request*

With many interesting options and additional space the Comet 4 DK is an attractive alternative for the ground support on airports. Combining many advantages like an additional row of seats for altogether up to 5 persons and integrated loading space for materials, tools and single pieces of baggage. The robust steel cabin is being stabilized with a specially welded construction.



Comet 3 **D**

Dead weight	3000 kg
Drawbar pull / drive	17 kN / Deutz-Diesel, 36.4 kW (EU IIIA)*
Length / width / height	2895 / 1400 / 2130 mm
Miscellaneous	<ul style="list-style-type: none"> ▪ automatic Transmission Graziano PST 1* ▪ small turning circle of approx. 3700 mm

** other technical equipment upon request*

The smallest towing tractor Comet 3 of the Comet series is ideally suited for baggage handling: Even with high driving comfort and excellent working conditions for the driver the outer dimensions of the vehicle are minimized thus enabling a great agility of the vehicle. Versions without cabin, open cabin or closed cabin are available.



Comet 4 **D**

Dead weight	4550 kg
Drawbar pull / drive	28 kN / 46 kW (EU IIIA) oder 33 kN / 55 kW (EU IIIB) 85 kW (EU IIIB)*
Length / width / height	3080 / 1600 / 2160 mm
Miscellaneous	<ul style="list-style-type: none"> ▪ automatic Transmission Allison LCT 1000*, ▪ different cabin types available (without/open/closed)

** other technical equipment upon request*

Being more powerful the Comet 4 is suitable for baggage handling tasks as well as cargo transport assignments. A considerable range of vehicle options and types of cabin types – available for all Comet towing tractors – enable the optimum adjustment to the task at issue.



Comet 6 **D**

Comet 8 **D**

Dead weight	6000 kg	8000 kg
Drawbar pull / drive	40 kN / 64 kW (EU IIIA) 45 kN / 85 kW (EU IIIB)*	55 kN / 90 kW (EU IIIB)*
Length / width / height	3230 / 1600 / 2160 mm	3402 / 1700 / 2210 mm
Miscellaneous	<ul style="list-style-type: none"> ▪ autom. Transmission Allison LCT 1000* ▪ different cabin types available (without/open/closed) 	<ul style="list-style-type: none"> ▪ 2500*

** other technical equipment upon request*

Ideally suited for cargo handling the Comet 6 is extremely versatile: The vehicle can be used for the reliable towing of large cargo as well as for pushback tasks on aircraft with an MTOW (in compliance with IATA) of up to 50 tons. Extremely robust components result in a powerful allround towing tractor. The Comet 8 provides an even higher performance for demanding tasks.



Comet 12 **D**

Dead weight	12000 kg
Drawbar pull / drive	60 kN / Deutz-Diesel, 90 kW (EU IIIB) oder 103 kW (EU IIIA)*
Length / width / height	3700 / 1980 / 2300 mm
Miscellaneous	<ul style="list-style-type: none"> ▪ permanent hydrostatic four-wheel drive, ▪ different cabin types available (without/open/closed)

** other technical equipment upon request*

The Comet 12 is the most powerful towing tractor of the Comet series, well suitable for pushback tasks on aircraft with an MTOW of up to 150 tons (in compliance with IATA). Being powerful without compromise, this allround tractor is suitable as well for cargo assignments, towing dollies and cargo trailers. The permanent hydrostatic four-wheel drive assures precise and at the same time safe working conditions with heavy loads.



Comet Drive Alternatives

Innovative CNG drive

High availability

Flexible in use

Great agility

Innovative drive technologies are our strength!

Our innovative low-emission drive concepts provide a powerful alternative to common diesel drives with the possibility of operating the towing tractor inside hangars and baggage terminals as well as on the airport apron. Following various technological approaches we provide a large selection of very effective vehicles for reliable ground support at airports.



Comet Compressed Natural Gas Towing Tractor



Comet 4 CNG

Dead weight	4200 kg
Drawbar pull / drive	18 kN/VW CNG, 65 kW
Length / width / height	3800 / 1600 / 2160 mm
Miscellaneous	<ul style="list-style-type: none"> ■ integrated loading platform 935 x 1575 mm ■ automatic transmission ■ powerful brake system

With its innovative characteristics the Comet 4 CNG is the ideal solution for work in confined indoor conditions, like baggage sorting areas on airports, with every advantage of a sophisticated CNG drive concept. A considerable range of vehicle options and types of cabin types – available for all Comet towing tractors – provide the best solution for the task at hand.

Comet Liquified Petroleum Gas Towing Tractor



Comet 3 LPG **G**

Dead weight	3100 kg (3500 kg with cabin)
Drawbar pull / drive	16 kN / Ford LPG, 46 kW oder 18 kN / VW LPG, 38 kW
Length / width / height	2895 / 1400 / 2130 mm
Miscellaneous	<ul style="list-style-type: none"> automatic transmission powerful brake system hydraulic steering system, gas bottle change-system (opt.)

The Comet 3 LPG is also a very cost efficient solution for emission reduced applications in baggage sorting areas etc. at airports, with all the advantages of a powerful and fast refuellable LPG-drive. The technical infrastructure necessary is being reduced to a minimum – the used fuel LPG is easy available.

Comet Hybrid Towing Tractor

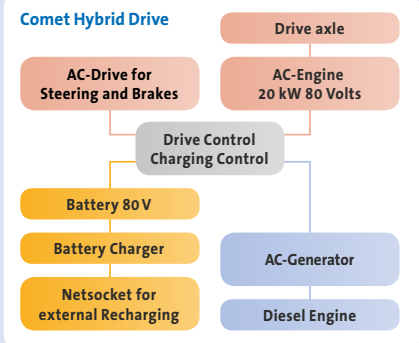


Comet 4 H **H**

Dead weight	4100 kg incl. battery
Drawbar pull / drive	20 kN / AC motor 20 kW und Diesel motor 35 kW
Length / width / height	3500 / 1320 / 2220 mm
Miscellaneous	<ul style="list-style-type: none"> AC motor directly connected with the rear axle low noise-emission great agility

Combining the advantages of electric towing tractors with the power profile of diesel engines the Comet 4 H is suitable for tasks in hangars and outdoor on the apron. The low-maintenance concept of the permanent electric drive – that is being charged by the diesel engine in outside areas – results in a reliable and highly economical towing solution:

Applying constant engine speed the integrated diesel engine charges a traction battery via a DC-generator thus providing energy for the asynchronous drive, steering and brake system. A central loading-device controls electronically the working cycles and the performance of the diesel-generator combination, in dependancy of the loading status of the traction battery. Additionally the battery can be loaded via an external loading adapter.



Comet Electric Towing Tractor



Comet 3 E **E**

Dead weight	4000 kg incl. battery
Drawbar pull / drive	20 kN / AC motor 20 kW or 30 kW
Length / width / height	3250 / 1320 / 1925 mm
Miscellaneous	<ul style="list-style-type: none"> sliding or hinged doors optimized steering geometry up to 70° integrated loading platform 1200 x 1500 mm

With its innovative characteristics the Comet 3 E is the ideal solution for work in cramped indoor conditions, like baggage sorting areas on airports, with every advantage of a sophisticated electric drive concept. Due to an especially developed modular design the vehicle is available with open drivers stand or open cabin under favourable cost conditions. A viewport for the driver enables an optimum view to the rear tow hitch.

PH-XRC



Conveyor Belt Vehicles

Baggage handling



 **Orbiter**



Orbiter Conveyor Belt Vehicles

All types of aircraft supported

Fast and easy handling

High reach

Perfect for the handling of all types of aircraft, with a choice of drive concepts like fully developed electric, LPG or diesel drives. This results in high reliability and low maintenance costs – over 50 years of experience in designing and manufacturing ground support equipment takes effect.

Ground Support with worldwide standards

Our Orbiter conveyor belt cars with hydrostatic drive can be controlled precisely during the maneuvering around the aircraft.

Optional extras such as protection guards, loading ramp, closed drivers cab, heating and preheating systems and many more guarantee an individual configuration to the customers needs. The conveyor belt cars can be delivered with closed sound-isolated cab, cab without door or with an open driver's platform.



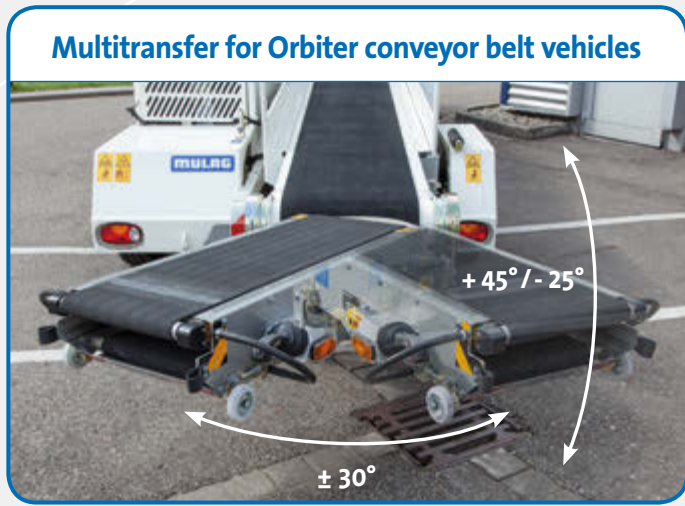
Orbiter 4.0 / Orbiter 5.5 **D E G**

Belt length	4170 - 6170 mm or 5570 - 7570 mm (telescopic)
Belt height min/max	1000 mm / 3600 oder 4200 mm
Drive	AC motor 8 kW bzw. Deutz-Diesel 36.4 kW
Length / width / height	4350 or 5750 / 1955 / 1945 or 1955 mm
Miscellaneous	<ul style="list-style-type: none"> ▪ telescopic conveyor belt ▪ hydraulic steering system

The Orbiter 4.0 / 5.5 has minimal dimensions and a great agility thanks to the telescopic design of the conveyor belt. The length of the conveyor belt can be adjusted during positioning of the vehicle at the aircraft. With the hydraulic drive/electric drive the vehicle is extremely well under control during navigating around aircraft. The maximum belt height of up to 4200 mm meets the IATA standards and is able to handle all standard types of aircraft.

The design of our conveyor belt vehicles is based on an independent chassis especially developed for that purpose: Thus we achieve optimal load balance and outstanding dynamical characteristics, as well as quick and easy access to all important service points and components.

The MULAG conveyor utility Multitransfer is an additional transfer conveyor with optional telescopic function and is mounted to the rear belt end of Orbiter conveyor belt vehicles. It is possible to pivot and extend it in a wide area of operation to establish the optimal transfer position to the baggage dolly. It has primarily been developed to reduce considerably the physical stress of the operating staff during loading and unloading of baggage and to speed up the overall ground handling procedure.



Multitransfer for Orbiter conveyor belt vehicles

Variations due to different configurations possible (approx. ±5%)



Orbiter 7.5 **D E G**

Belt length	7500 mm
Belt height min/max	1000 mm / 4200 mm
Drive	AC motor 12 kW or Deutz-Diesel 36.4 kW*
Length / width / height	7800 / 2190 / 2060 mm
Miscellaneous	hydraulic steering system, dual circuit brake system
<i>* other technical equipment upon request</i>	

The Orbiter 7.5 is available with diesel, gas or electric drive. Many details of the serial equipment like double telescopic rail at the front of the conveyor belt, turn the Orbiter 7.5 into an interesting vehicle for standard ground support.



Orbiter 9 **D E G**

Belt length	8800 mm
Belt height min/max	1010 mm / 4930 mm
Drive	AC motor 12 kW or Deutz-Diesel 36.4 kW*
Length / width / height	9100 / 2190 / 2060 mm
Miscellaneous	hydraulic steering system, dual circuit brake system
<i>* other technical equipment upon request</i>	

With its extended belt length the Orbiter 9 is applicable even under difficult conditions. Many useful features are available, for example different cabin types and customizable equipment configurations – this results in an interesting allrounder.



Orbiter 12 **D E G**

Belt length	12000 mm
Belt height min/max	1030 mm / 6000 mm
Drive	AC motor 12 kW or Deutz-Diesel 36.4 kW*
Length / width / height	12300 / 2190 / 2060 mm
Miscellaneous	hydraulic steering system, dual circuit brake system
<i>* other technical equipment upon request</i>	

The largest model of the Orbiter series with a belt length of 12 m and a maximum belt height of 6 m is able to reach the main deck of even the largest type of aircraft. It manages competently even the most challenging working assignments. Using a separate belt-extension the conveyor belt vehicle can be applied in other fields of work as well, for example to load and unload light cargo directly from a ship's side in ports.



Container-Pallet Transporters

Cargo handling



Pulsar



Pulsar Container Pallet Transporters

Innovative rolls/rollers concept

Individual configuration possible

Fast and easy handling

The adaptable MULAG transporter concept

The design of our container pallet transporters is based on an independent chassis especially developed for that purpose: Thus we achieve optimal load balance and outstanding dynamical characteristics, as well as quick and easy access to all important service points and components.

The Pulsar 7 turns into a real work animal at loading goods – also because of the innovative rolls and roller concept and convincing performance characteristics.

Ground Support is not always the same

We show you the difference: Our container-pallet transporter provides professional cargo handling qualities for a large range of different container and pallets. The vehicles can be customized to individual specifications – thus you always get the best configuration for your field of application, e.g. vehicles with closed sound-isolated cab, open cab or open driver's platform.



Besides standard LD and MD container pallets the Pulsar transporters can handle many different special pallet types.

Attractive Serial Equipment and Features

Not only powerful transport performance but attractive serial equipment and optional features make the Pulsar series highly successful:

- hydraulically suspended and adjustable seats
- clearly and ergonomically arranged operating controls
- adjustable steering wheel



All Pulsar container pallet transporters can be fitted with a series of different options to adapt to changing assignments and situations even better:

- Adjustable rear loading height – can be variable adjusted independently from the frontside
- Closed cabin with heating system
- Winter kit – vehicle equipment for toughest winter conditions
- Additional lateral lining for pallets
- Available with left- or right-handed steering system



Straight forward or around the corner – the SL sideloader system

Variations due to different configurations possible (approx. ±5%)



Pulsar 7 **D**

Load capacity	7000 kg
Drive	Deutz-Diesel, 45.9 kW (EU IIIA) oder 55 kW (EU IIIB)*
Rolls/Rollers sections	2 (independent)
Length / width / height	5670 (excl. finger loading system) / 3770 / 2150 mm
Miscellaneous	hydrostatic drive, opt. finger loading system

** other technical equipment upon request*

The Pulsar 7 handles easily cargo up to 7 tons: All standard LD and MD containers and pallets up to a size of 96" x 125" can be loaded and unloaded from the front and the rear. A finger loading system for dollies is available as an option to automate the transfer process of the handled container pallets.



Pulsar 7 SL **D**

Load capacity	7000 kg
Drive	Deutz-Diesel, 55 kW (EU IIIB)*
Rolls/Rollers sections	2 (independent)
Length / width / height	5110** / 3790 / 2150 mm
Miscellaneous	hydrostatic drive, sideloading system

** other technical equipment upon request **without bumper*

With the SL sideloader system the Pulsar 7 SL is not only able to load/unload front and rear sided, but as well lefthand (or righthand sided, depending on the layout of the steering system) all current LD- and MD-containers and pallets. Rolls and Rollers are divided into two independent sections, thus being able to transport sideways (90° angle), as well – changing the direction within 1 second! Thus the Pulsar 7 SL is extremely versatile in its application on airports.



Pulsar 14 **D**

Load capacity	14000 kg
Drive	Deutz-Diesel, 55 kW (EU IIIB)*
Rolls/Rollers sections	3 (independent)
Length / width / height	7170 (incl. finger loading system) / 4070 / 2230 mm
Miscellaneous	hydrostatic drive, opt. finger loading system

** other technical equipment upon request*

With a load capacity of up to 14 tons the Pulsar 14 is the workhorse of the Pulsar series. Besides normal LD- and MD-containers and pallets (up to 20' ULD) it is additionally suited for special pallets up to 5640 mm (196"-pallets) and 2 x 96", as well as 3 x 60,4" x 61,5" (LD-3). With its 3 independent rolls/rollers sections smaller cargo can be handled completely independent from each other.



MULAG Special Vehicles

Innovative vehicle concept

Effective work cycles

Fast handling

Advantages of the Pulsar 14 LT in detail

The Pulsar 14 LT can be used very efficiently for handling cargo because of its high loading capacity and a variable loading height. It is possible to provide professional ground support for a large range of containers and pallets.

The innovative rolls / rollers concept allows to work independently in 3 sections of the vehicle.

Besides standard LD and MD containers and pallets (up to 20'-ULD) the Pulsar 14 LT is able to handle special pallets up to 5640 mm (196"), as well as up to 2x 96" x 125" or 3x 60,4"x61,5" (LD-3) at the same time.



Pulsar Loading Transporter



Pulsar 14 LT **D**

Load capacity	14000 kg
Drive	Deutz-Diesel, 55 kW (EU IIIB)*
Rolls/Rollers sections	3 (independent)
Length / width / height	7100 (incl. finger loading system) / 4445 / 2230 mm
Miscellaneous	variable rave rail height: max 1600 mm, min 475 mm

** other technical equipment upon request*

With a load capacity of up to 14 tons and a loading height of up to 1600 mm the Pulsar 14 LT is an interesting special solution of the Pulsar series. Besides normal LD- and MD-containers and pallets (up to 20' ULD) it is additionally suited for special pallets up to 5640 mm (196"-pallets) and 2 x 96", as well as 3 x 60,4" x 61,5" (LD-3). With its 3 independent rolls/rollers sections smaller cargo can be handled completely independent from each other, with variable loading height for efficient working.

Baggage Conveyor / Transporter

Variations due to different configurations possible (approx. ±5%)



FBW 600 **D**

Belt length	3000 mm / 4800 mm (telescopic extension)
Belt height min/max	500 mm / 3800 mm*
Loading capacity / Drive	3000 kg / Deutz-Diesel, 45.9 kW (EU IIIA)*
Length / width / height	9150 (parking position) / 2300 / 3000 mm
Miscellaneous	end-to-end conveyor belt inside

* other technical equipment upon request

Advantages of the FBW 600 in detail

Interior

The clearly arranged inside with end-to-end conveyor belt allows the baggage to be presorted – completely independent of the weather conditions outside.



Loading space

Easy accessible loading space and baggage compartment – the compact design helps to save on personnel and extra vehicles.

The MULAG baggage conveyor FBW replaces a towing tractor with dollies and a conveyor belt car – this is straightforward and saves personnel: The FBW was especially designed for the loading and unloading of aircraft with up to 170 passengers and provides enormous advantages in the loading and unloading of baggage and efficient transport to the terminal.

The telescopic conveyor belt adjusts itself flexibly to different types of aircraft – ideally suited for the fast handling of baggage on regional airports. The FBW is able to directly transport baggage from the aircraft to the terminal after unloading and vice versa.

With the closed baggage compartment the FBW provides cover against adverse weather conditions like rain or snow. The interior can be adapted to the current working assignment with fold-away shelves on both sides of the vehicle.

Due to high-grade workmanship and MULAG quality the FBW concept works out to be excellent for fast and uncomplicated baggage handling.





The MULAG Fahrzeugwerk – long-term experience with innovation

The MULAG Fahrzeugwerk is developing and producing specialist airport ground support vehicles as well as roadside maintenance equipment.



The company name is the German abbreviation of **Motor Universal Lasten Arbeits Gerät** and refers to the company's origins in the field of agricultural vehicles. Even after 60 years, some of these MULAGs are still in use - thanks to MULAG quality.

High performance products for Ground Support

Being a manufacturer of airport ground support vehicles for more than 50 years now, we focus on the thorough design and production of our large range of products:

- Our powerful **Comet tractor** series with vehicles ranging from 3t to 12t dead weight presents itself innovative and strong – with the choice of diesel-, CNG-, hybrid- or electrical drive.
- The large range of **Orbiter conveyor belt vehicles** with belt lengths ranging from 4 to 12 m, either diesel-, LPG- or electrical-ly driven, confirms our claim of high competence in this field of engineering.
- With our extremely strong **Pulsar container pallet transporters** with either 7t or 14t load capacity as well as a sideloading option, we offer to our customers literally moving products.

Our trained sales representatives will answer all your questions regarding our products. Efficient after sales service and fast spare parts supply as offered by MULAG provides the all-important support needed for the operational readiness of our products.

Innovations made by MULAG

A flexible response to the needs and specification of the customer – and our innovative skills – are our main strength. Long-term experience in the field of high-quality production of ground support equipment guarantees high utilisation and long equipment life with low repair and maintenance costs.

Innovative Equipment for Roadside Maintenance

Our roadside maintenance equipment division manufactures products to the highest standards for municipal road work. MULAG has more than 40 years of experience and skill in the design and production of front mounted power arms, rear mounted power arms and combination mowers.



MULAG Quality – speaks for itself

Quality is the key to the success of MULAG products and is extremely important for us. Due to our long-term expertise and extensive experience in the field of airport ground support equipment and roadside maintenance equipment the standard of quality of our products has been developed to a level reflecting our market position.

In order to maintain this standard, we employ an extensive quality management system that is supervised by an independent department.



In order to be certified and attested by a third party's report, our QM-system is constantly being supervised by independent organisations and by customer audits such as:

- ISO 9001:2008 supervising audits by TÜV Süd
- EN 729-2 and DIN 18800-7 Supervising audits by SLV-Mannheim
- VDA8 audits by Daimler AG
- AQAP 130/151 audits by the Federal Armed Forces authorities for quality testing

The positive results of these audits confirm the successful implementation of our QM-strategy.



High-Tech production



Equipment specific qualified diagnosis and service

MULAG Milestones

Short history of the MULAG Fahrzeugwerk

- **1953** The company **MULAG was founded** in Bad Peterstal-Griesbach/Germany.
- **1958/59** Expansion in the export of agricultural vehicles to other European countries.
- **1964** Start of **the design and production of airport ground support vehicles**. At first only conveyor belt cars were manufactured, container transporters and towing tractors were introduced later.
- **1972** Development of **slope mowers with suction systems** for roadside maintenance.
- **1980** To expand the production capabilities, **Plant II in Oppenau/Germany** was built.
- **2000** Extension of Plant II with **a new assembly shop, extensive central store and a modern office and administration building** to keep up with the growing demand for special vehicles.
- **2004** Introduction continuous flow production for towing tractors.
- **2007** Investment in a state-of-the-art welding robot, extended office capacities and a fully automated small parts warehouse.
- **2011** Extension of the premises of plant II in Löcherberg.
- **2013** New **MULAG apprenticeship training center** in Bad Peterstal for the comprehensive training of our junior staff with the latest tools and machinery.



Aerial View of Plant II



Plant II



Plant I

Quality made in Germany

High-quality products need efficient production sites – the company MULAG relies on two locations: **Plant I in Bad Peterstal-Griesbach** (manufacture of components) and **Plant II in Oppenau** (assembly, dispatch and administration). 220 employees work on an area of altogether 35600 square metres with 6200 square metres of production hangars for the success of our current product range and its continuous enhancement.

Being in a very advantageous position in the southwest of the Federal Republic of Germany allows an ideal transport connection with France, Switzerland and Austria, as well as other neighbouring european and east-european countries. Important international airports like Frankfurt a. M. and Munich, as well as Stuttgart and Strasbourg are withing reach thus ensuring **a good logistic supply and connection.**

The location in the heart of the black forest – always a birthplace of innovative and creative ideas – provides an environment that is ideally suited for the design and construction of successful products, in short:

MULAG – Quality made in Germany.

Modern continous flow production

The **refinement and splitting-up of our vehicles in concise modules** – bearing in mind the different existing vehicle characteristics and customer options – and the introduction of continuous flow production resulted in an increased vehicle quality with reduced complexity and costs.

A **Comet towing tractor** for example **needs 4 work cycles** of continuous flow production to be assembled: Beginning with the implementation of components for the front and rear axle, continuing with the cabin, engine, wiring harness and electrics, tires and the installation of all inlying components and main braking drums, until the final electric installation, testing and adjustment the **throughput time was reduced by 50%.**

This is possible because of an efficient and consequent refinement of all production processes, considering and implementing the latest in production know-how.





Main entrance area of plant II in Oppenau



High-tech at all stages of our production

The **high quality** of our products results among other things from the consequent application of the latest production methods. Strict quality demands are being applied in every step – starting already with basic components of our ground support vehicles.



Flatbed milling machine in plant I

Reliable after-sales service

Our strength is the immediate availability of all major serviceable components of our vehicles – thus a fast replacement can be provided in case of service cutting down on repair time and saving costs.



Advanced warehousing helps keeping track of spare parts

Production with large capacities

With the construction of a new assembly shop for plant II and other projects the **capacities** were created early for a fast expanding market. The company is able to cope even with large assignments or projects in minimum time and is thus in a good starting position for the future.

The two production locations underwent a considerable change to their **state-of-the-art status** today: Consistent improvement of the production conditions, **the increased ergonomics of every workplace, the refinement in the staging of materials and the continued integration of test cycles** are only a few examples of a successful look at the future.



MULAG – Innovative Products for Ground Support and Industry

The sophisticated concept of MULAG ground support vehicles make their use highly economical and efficient: All tasks can be handled in a flexible and quick way.

Due to the high quality of workmanship downtime can be reduced and long repair times can be avoided. We can offer you conclusive solutions for your applications in airport and industry.

Long working-cycles result in highly economic operation

- High-quality workmanship of the vehicles based on latest standards in design and construction.
- Low wear due to the use of especially hardened material on critical points.
- Fast and reliable availability of spare parts and service information, long-term availability of spare parts for all MULAG vehicles.

Flexible use for many different applications

- Extensive range of different products enables to choose an optimal solution for the required application.
- Overdimensioned vehicle specifications establish powerful advantages in daily intensive use.
- Well-designed operator's ergonomics with excellent view onto the working area result in productivity.



Comet Towing Tractors – future-oriented drive technology



Orbiter Conveyor Belt Vehicles – high tech for our customers



Pulsar container pallet transporters – a reliable top-standard



Powerful tractor series with vehicles ranging from 3t to 12t, diesel-, CNG-, hybrid- and electrically driven – innovative and strong!



Large range of conveyor belt vehicles with a belt length from 4 to 12 m, either diesel-, LPG- or electrically driven – high ambitions!



Powerful container pallet transporters with 7t and 14t capacity, as well as a sideloading option – moving products!

The MULAG product range – versatile and powerful

MULAG

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