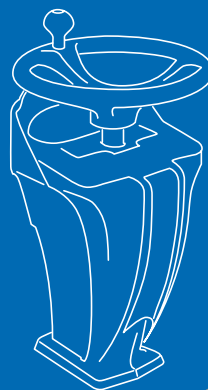




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**STEER  
TOWARDS  
THE FUTURE**  
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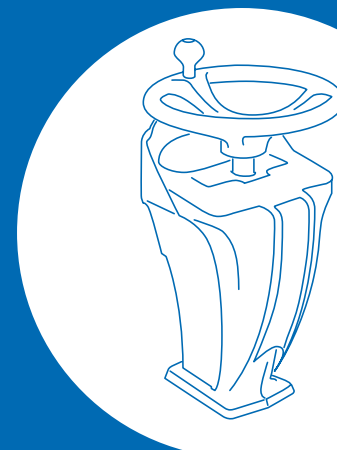
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**AGITA**

THE FIRST MODULAR STEERING COLUMN SYSTEM  
FOR COMMERCIAL VEHICLES "MADE IN GERMANY"  
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THE RIGHT ONE –  
**FOR ALL DIRECTIONS**



## AGITA

THE FIRST MODULAR STEERING COLUMN SYSTEM  
FOR COMMERCIAL VEHICLES “MADE IN GERMANY”

Steer towards the future – and get there. This has always been our directive at Miunske. In the case of AGITA, our new steering column system for commercial vehicles, that is meant literally. With its novel, ergonomic design, well-conceived engineering and modular construction, it steers you in the right direction, in all senses of the word.

Besides design and functionality, quality was foremost priority during the development. After all, know what our customers deserve. With AGITA, Miunske is the only supplier offering a steering column system “made in Germany”. This integrated, modular steering column system has got what it takes to get on the road to success, so you can be sure of achieving your goal – whether as a manufacturer of vehicles or as a driver.

- The modular design makes customer-specific configuration possible not to mention profitability even in batch production
- “Made in Germany” quality reduces warranty claims and pays off as regards Total Costs of Ownership
- Four standard variations for the most diverse commercial vehicles
- Delivered and ready to install with simple assembly
- Joint advancement of the system and integration of existing components is possible, if requested
- Miunske guarantees punctual delivery in A1 quality



## NEW TERRITORY FOR FUNCTIONALITY AND AESTHETICS

“The AGITA steering column is designed to be the partner of the driver who uses it, in order to allow for safe and agile control of great technologies. The strength is in the construction, the dynamics in the design.”

Susan Bremer, product designer for Miunske

### New product design

During product development, in days gone by, functionality was the most important aspect. Later, man stepped into the foreground and ergonomic factors became the focus of attention. Today, design is becoming more and more one of the most important criteria of decision-making. Products are being procured increasingly for reasons of design with important consequences for the manufacturers and for the entire market.

We are convinced that design is not only a question of aesthetics but an integral component of each product. For this reason, product designers and engineers were equal participants from the beginning of development of Miunske's steering column systems. When design competency and product competency meet, outstanding products are often the result. Such as AGITA.

### Harmonious overall impression

The result of constructive and creative cooperation makes an impression. The new steering column system combines functionality and ergonomics to an aesthetically attractive “complete piece of art”. The tulip form adapts itself harmoniously to the seating position of the driver. At the same time it offers the possibility to integrate the operative and display elements in a clear and user-friendly manner.

As a component that is visible through the wind-screen, AGITA influences the overall impression of the vehicle. The design of AGITA is intended to make a contribution to heightening the overall impression

of the machine. Colours can be chosen to correspond with the colour of the machine. In this way, the steering column merges with the vehicle to create a well-balanced single entity.

### Packed with German quality

Design and function of the AGITA concept are inseparably connected with a third, very important aspect: quality. We have packed the new design from top to bottom with first-class content. This is valid for all components, also the unseen ones, such as the steering mechanisms themselves. The steering column construction of the system is manufactured by highly qualified Saxonian professionals in the German state of Saxony with a combination of solid tradesmanship and newest technologies. Quality is the highest priority. Furthermore, this process makes high flexibility possible for small and middle-sized batches. In this way, new developments can be promptly implemented in the vehicle.

“We wanted a characteristic design that combines functionality fit for practice with an aesthetic overall impression.”

Stephan Kirstein, technical manager at Miunske



## “MADE IN GERMANY” THE PEAK OF QUALITY



### Robust and fit for pressure

At Miunske, “Made in Germany” is not only a value of the finished product; it is also a description for the production processes. After all, quality cannot be tested into a product. It has to be designed, manufactured and lived. It starts right at the beginning of

product development – when our professionals define which pressures a steering column system is exposed to every day. How high are the transverse, longitudinal, axial and radial forces that have to be shored. At which temperatures does everything still have to run smoothly? The fact that our products fulfil the terms of the specifications booklet – that is Miunske quality. AGITA is robust and designed for the hard working conditions of commercial vehicles.

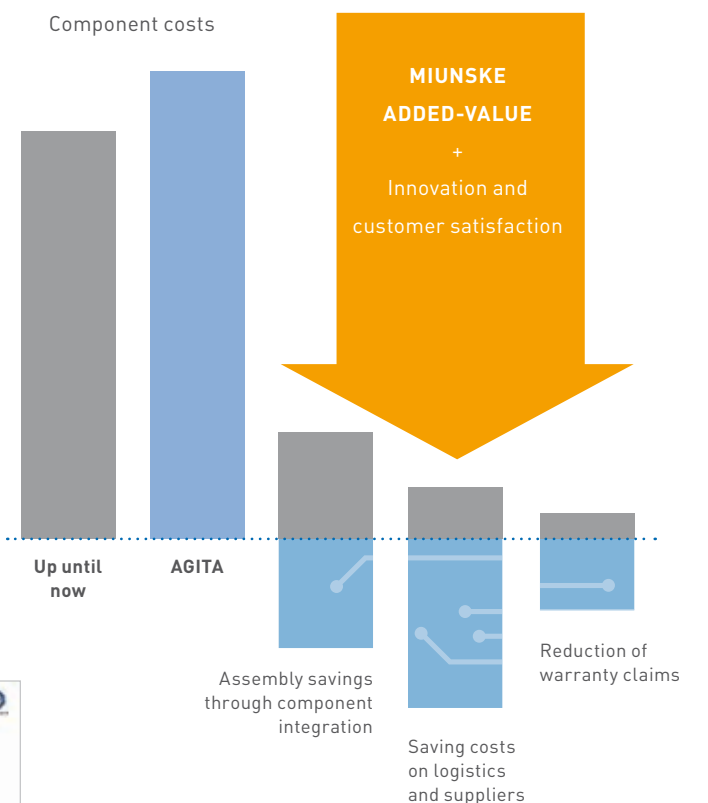
### Certified production

We manufacture Miunske steering column systems with certified production methods, plants and machines. Our ISO certification guarantees a constant high standard of quality. Before a product leaves our factory it is tested from top to bottom. The results of quality control are documented on the test certificate of every single steering column.

### Total Cost of Ownership

For every machine, availability is the highest priority. Quality defects or shifting deadlines mean additional rigmarole. And that means costs. With the steering column system AGITA you obtain a high level of delivery reliability, allowing you to indirectly reduce the manufacturing costs of your vehicles. So it's worth the effort to set your sights on the Total Costs of Ownership and on a high-grade product. AGITA is the right solution for everyone that connects “Made in Germany” with A1 quality and great service.

Component costs







# STEERING OASIS IN THE DRIVING SEAT



## Optimum driving feeling

When we start thinking about commercial vehicles, we start with the driver. We see our task in creating optimum conditions so that he or she can work well. Our engineers and product designers have this goal firmly in mind. The result is an integrated steering column system that offers the driver safe and simple operation and a comfortable driving feeling, regardless of whether he or she is sitting in a forklift truck, a digger, a harvester or a vineyard tractor. The future user will be pleased from the very first moment of seeing this workplace.

## Safe and maintenance-free

AGITA steering column system is extremely stable and completely maintenance-free. The robust cover and the cold-pressed connections are among the aspects making this possible. The steering torque is safely transmitted through a smooth, ball-bearing supported linkage. The modular design allows for a wide selection of customer-specific configurations with the desired operational and display elements.



AGITA 500 M      AGITA 500 S      AGITA 800 M      AGITA 800 S

	AGITA 500 M	AGITA 500 S	AGITA 800 M	AGITA 800 S
Operating temperature range	-40 °C to +85 °C			
Total height [mm] (installed without steering wheel)	500	500	800	800
Height adjustment	60 mm infinitely variable			
Tilt adjustment	to driver 0° to 25° infinitely variable			
Total width [mm] (without steering wheel and control stalk)	300	210	300	210
Total depth [mm]	330	320	330	320

## Simple assembly

Miunske delivers AGITA completely assembled, tested and ready for installation. The system only has to be connected at the appropriate interfaces with the machine and then bolted tightly. This makes simple commissioning possible and reduces costs and errors of assembly.

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### Welcome to Miunske's realm of ideas

The task of the engineers at Miunske is often comparable to squaring a circle. They often have to satisfy opposing requirements to create a balanced overall entity. The steering column system should be light but still robust; it should be modular and at the same time homogenous. These are the necessities that define the direction. To achieve this, not only experience is needed but ideas. Of this much we can be sure: if you drive in the tracks of others, you can't overtake. AGITA meets all demands equally and still has more to offer.

Whether adapting standard steering columns to the vehicle or developing a customer-specific solution, even for small batches you can expect maximum flexibility from us. We will gladly provide your development department with the CAD data of our AGITA models. The data for planning the new generation of your machines will be provided to you after registration with: [www.agita.miunske.com](http://www.agita.miunske.com).

AGITA product family is characterised by consistent design, with two different construction heights and two widths. Our basic system includes the four standard versions AGITA 500 S, 500 M, 800 S and 800 M.

### Overall heights: short or long

**AGITA 500 S / M** – the short version: if the steering column is mounted on a platform

**AGITA 800 S / M** – the long version: for a greater field of view and unobstructed view downwards

### Designs: narrow or wide

#### AGITA 500 / 800 S

if it gets tight – for smaller needs of functional integration

#### AGITA 500 / 800 M

offers greater functional integration



### Shell

- 3-component shell design
- Material: ABS
- Surfaces: ABS, paint or soft paint
- Colours: according to choice
- Available graining for ABS: fine, middle, leather

### Construction

- Robust steel construction, blasted and zinc-plated
- All maintenance and tolerance-free
- Made in Germany
- Adaptable connection plate
- One-point adjustment for adapting height and inclination
- Optional: memory function



Fig.: Agita 500 M

	AGITA 500 M	AGITA 500 S	AGITA 800 M	AGITA 800 S
<b>Underside covering:</b>				
with bellows as foot protection and connection to passenger cell	•	•		
3-component ABS shell			•	•
<b>Steering wheel</b>	ø 380 mm (optionally with turning knob)			
<b>Max. cable section</b>	up to ø 22 mm (including cable insulation)			
<b>Max. static torque</b>	M = 240Nm			
<b>Axial retention force</b> (vertically onto steering wheel)	Fy2 = 750N			
<b>Max. horizontal retention force on steering wheel</b> (right/left)	Fy1 = 750N			
<b>Max. horizontal retention force, direction towards driver</b> (forwards/back)	Fx = 750N			





## PARADISE FOR CUSTOMER WISHES



### The right thing for every vehicle

A finished Miunske steering column system is always the sum of individual customer wishes. Every commercial vehicle has its specialities which are visible in control stalk, operation and in the display elements on the steering column.

### Freely configurable

Whether short or long, narrow or wide design, the AGITA steering column is, depending on the demands of your machine – with regard to function and comfort – freely configurable and grows as the diversity of the various series increases. From the simple control light to the TFT screen, from the lever switch to the CAN-capable switching system, every display and operation element you desire can be integrated. Additionally, individual electrical components are embedded on the inside of the steering column too. If you wish, we can further develop the system together with you or integrate existing components.



### Selection of display instruments

- Display instrument ø 100 mm
- A round instrument ø 80 mm and two ø 60 mm diameter round instruments
- Semi-circular instrument
- TFT display

### Memory function

For both variations the height is adjustable by 60 mm; also the inclination is adjustable. In this way, height and inclination can be custom adapted by the driver. These driver-specific settings remain set upon activation of the memory function, simply by pressing a button when getting in or out of the vehicle.



### Selection of control stalks

- Indicator switch: indicators, horn, headlights, headlight flasher
- Multi-function switch: indicators, horn, low beam, high beam, headlight flasher, wiper and washer
- Windscreen wiper switch: windscreen wiper and washing unit
- Direction switch (F/N/R)



### Selection of switches and indicators

- Ignition or pre-heat starter switch
- Up to 6x mounted section for rocker switch/button or: two lights, modular per mounting box
- 4-key, 6-key or 12-key CAN keyboard with appropriate display and/or switching elements





## ON TRUSTED TERRAIN

[www.agita.miunske.com](http://www.agita.miunske.com)

[www.miunske.com](http://www.miunske.com)



### Quality is always first priority

For many customers, cooperation with Miunske is trusted territory. You know that you can be sure of our reliability, commitment to deadlines and quality. And we know that long-term cooperation between supplier and manufacturer can be successful only if we go the extra mile in all areas. That is our daily challenge. And we have the best basis to meet this challenge, in sales as well as in development and manufacture.



### With experience, competence and responsibility

**Sales:** For more than 15 years we have been delivering articles and systems for vehicle electrics and electronics to renowned commercial vehicle manufacturers and their suppliers.

**Production:** In our own production we manufacture electric and electronic components and assemblies for commercial vehicles.

**Innovation:** In our Development Department innovative, mainly customer-specific solutions for commercial vehicle electronics are created, for example the CAN keyboard or the multi-sound module.

**Experience:** Our employees are professionals in vehicle electrics. Their know-how and their experience are the basis for your satisfaction and our success.

### We have always had good ideas

**2000** We began with the development of electronic components such as the time relay, the latching relay.

**2001** The manufacture of assemblies started. Customer specific solutions increasingly became the focal point of our manufacture.

**2003** We started with the in-house construction of plastic parts. Among other things, a complete system for relay sockets and fuse holders emerged, as well as many customer-specific solutions.

**2006** Since then we have increasingly been developing customer-specific electronic components such as multichannel flashers, power windows, etc.

**2007** Thanks to our newly developed power contact for soldering technology, our printed circuit board bases can transfer currents of up to 70 A onto the board.

**2008** We developed innovative CAN-communications modules and keyboards for the development of custom solutions and/or for the extension of existing networks.

**2009** At Agritechnica, we presented the first prototype of AGITA steering column system.

**2013** At Bauma 2013, AGITA was presented for the first time as a product suitable for series production.



[www.miunske.com](http://www.miunske.com)

PRIZE WINNER  
**2012**

[www.miunske.com](http://www.miunske.com)



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