

FORK EXPERT

LOGIMAT EDITION 01-2019

LOGISTICS IS FUTURE
... and VETTER provides the tool:
THE FORK⁺



SMARTFORK®

THE INTELLIGENT SENSOR FORK



6 GOOD REASONS TO USE SMARTFORK® IN YOUR LOGISTICS

1. INCREASE SAFETY
2. MINIMIZE DAMAGE
3. REDUCE COSTS
4. IMPROVE ERGONOMICS
5. SAFE TIME
6. FACILITATE LOADING

Note: As an assistance system, SmartFork® does not release you from due diligence and personal responsibility during the assignment. There are commercial representations of principles that do not form a contractual basis or guarantee services.

STORE WITH SAFETY
SMARTFORK[®] - THE INTELLIGENT SENSOR FORK

Each SmartFork[®] application is clever. But only when used in combination do they form an intelligent overall solution that guarantees more safety. The SmartFork[®] can be installed on all commercially available industrial trucks, on request also with radio transmission.

Best forward view!



SMARTFORK[®] CAMERA

Look along the fork!



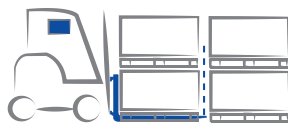
SMARTFORK[®] SIDECAM

Focus, approach, target!



SMARTFORK[®] LASER

Where is the fork?



SMARTFORK[®] SECURE

Length- and crosswise



SMARTFORK[®] EASYSECURE

Intelligent & functional



SMARTFORK[®] MANUTEL

For further information, please refer to the SmartFork[®] leaflet, www.smartfork.com or ask your contact at VETTER!



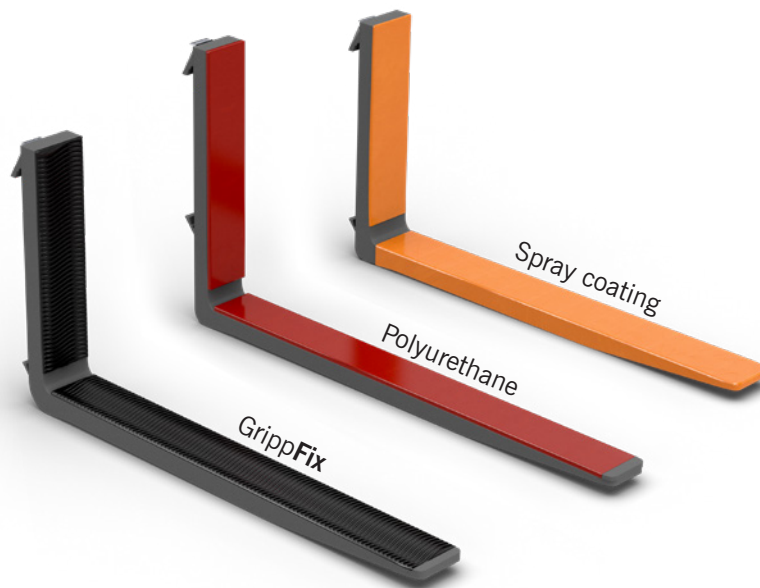
BIGFORKS

FOR THE HARDEST APPLICATIONS BIGFORKS QUALITYFORKS

- ▶ Up to 120 tons capacity / pair and beyond
- ▶ Triple static safety
- ▶ Best material quality and high durability
 - As standard manufactured of QualitySteel **VQ32+**
 - For highest demands: also available in high performance steel **VQ1300**
- ▶ Produced on the most modern production line for BIGForks world-wide
 - Tight tolerances and smooth surfaces
 - Standard or customized: large machinery park for mechanical processing
 - Highest welding quality, certified by ISO 3834-2
 - High-tech heat treatment for all applications
- ▶ Also available with guiding rolls
- ▶ Put to the acid test: VETTER is the only manufacturer with testing facilities for **BIGForks**
- ▶ The service plus: the perfect fork is often already in the VETTER database and can be offered short-term



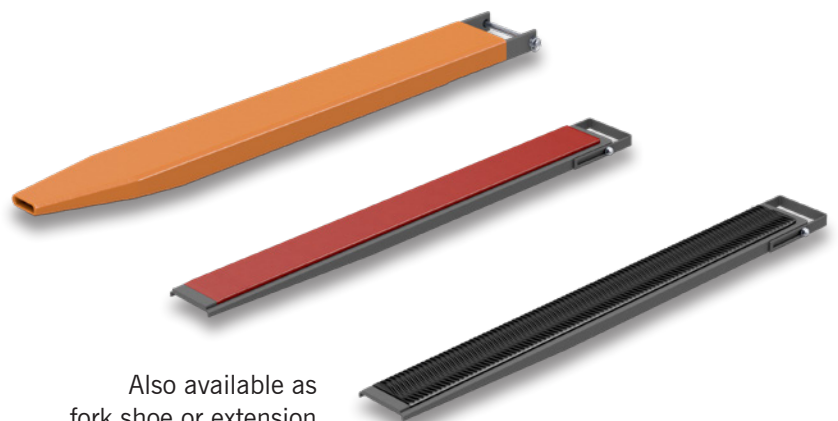
MADE IN
GERMANY



SLIP RESISTANCE AND LOAD PROTECTION **PROTECT FORKCOATINGS**

If the transported goods shall be protected, PROTECT Fork**Coatings** are an optimum solution. Application in a variety of industries, transports with or without load carrier - a wide range of designs offer the best solution for all demands.

- ▶ Protection of transported goods
- ▶ Slip resistance in dry and wet conditions (in case of humidity only Gripp**Fix**)
- ▶ Reduction of damages
- ▶ No scratches on goods
- ▶ Less vibrations
- ▶ Noise reduction, especially when transporting metal parts in residential areas / at night
- ▶ Abrasion and cut resistance for long operating life
- ▶ Higher safety at work: no risk because of slipping load
- ▶ Reduction of damages to the goods (impact protection at the fork back)
- ▶ **Spray coating:**
 - All-around coatings of the fork blade / fork back possible
 - Very small coating thickness
 - Optional: coloured markings in the coating to specify how deep to enter into the pallet

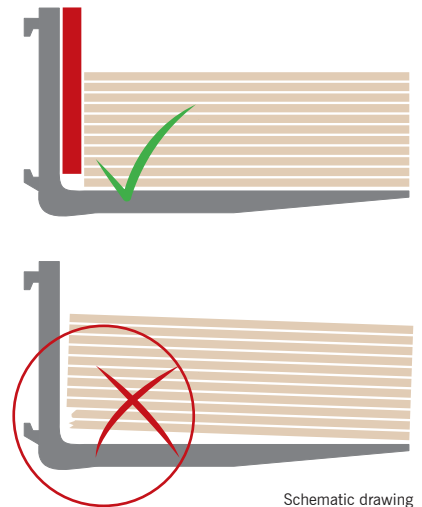


Also available as
fork shoe or extension



PROTECT THE LOAD KOALA IMPACTPROTECTOR

- ▶ Best possible protection for your goods – no damage due to the inner heel radius of the fork
- ▶ Collision protection in the fork back: preservation of sensitive surfaces
- ▶ Noise reduction
- ▶ Quick mounting – immediately ready for use
- ▶ Two options:
 - KOALA „red“ with two height-adjustable, integrated velcro strips, suitable for long-term application
 - KOALA „black“ with four integrated round magnets, suitable for short-term alternating use. During non-use simple fixing to the lift truck.
- ▶ Easy attachment on the lift truck (e.g. on the mast) when not in use



Schematic drawing

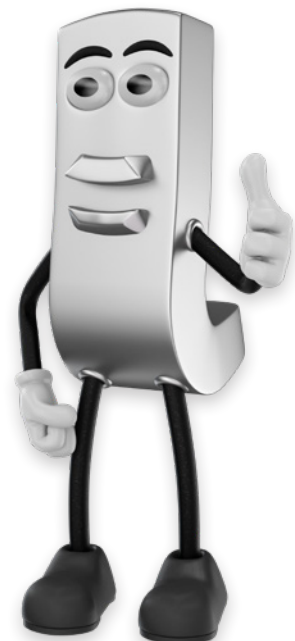
Article No.	Description	Dimensions (approx. mm)	Technical characteristics
KOALA-R	ImpactProtector red with adhesive strap (Velcro)	470x100x30	Polyurethane red Shore hardness standard DIN 53505: 60 Shore A Operating temperature -50°C to +100°C
KOALA-S	ImpactProtector black with 4 magnets	430x70x30	Polyurethane black Shore hardness DIN 53505: 63 Shore A Temperature range -50°C to +100°C

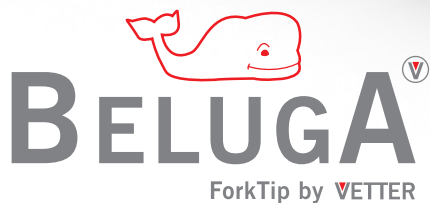


**FLEXIBLE LENGTH
ADJUSTMENT:**
Just continue the protruding
length in the fork back.

EASILY APPLIED AND REMOVED GEKKO MAGNETIC ANTI-SLIP LAYER

- ▶ Ideal protection for loads
- ▶ Easily applied and removed within a few seconds
- ▶ Magnetic adhesion on the forks
- ▶ Higher occupational safety: minimized risk of slipping loads
- ▶ Reduction of damages and protection of sensitive surfaces
- ▶ Less vibrations
- ▶ Noise reduction, especially when transporting metal components
- ▶ Abrasion and cut resistance for a long operating life
- ▶ Also suitable for pallet trucks
- ▶ Easy attachment on the lift truck (i.e. on the mast) when not in use
- ▶ For temporary use





INCREASE SAFETY! REDUCE DAMAGES! QUALITYFORKS WITH BELUGA FORK TIP

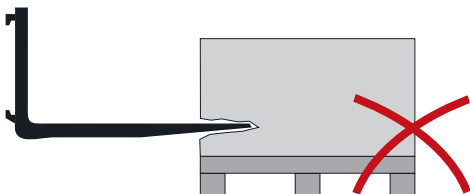
- ▶ Increased impact surface of fork tip upon contact with the load
- ▶ Minimal risk of pricking the cargo
- ▶ Rounded edges reduce damage of package and goods
- ▶ Time and cost saving
- ▶ Significantly increased work safety, e.g. when transporting liquid or gaseous substances
- ▶ Simple moving of pallets
- ▶ No interfering edges, thus safe pulling out of the pallet
- ▶ Optional in the ex-proof area: BELUGA with ATEX certification (made of 100% stainless steel or with DuplEx cladding)
- ▶ Suitable for a wide range of fork solutions (i.e. ForkExtensions, FoldingForks, ForkCoatings, ...)
- ▶ Additional tip forms upon request



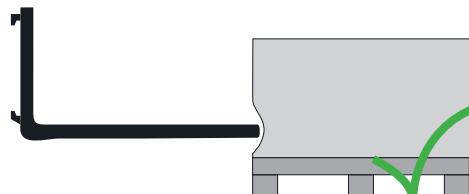
BELUGA fork tip
(stainless steel)



STANDARD FORK TIP



BELUGA FORK TIP





PERMANENT EX-PROOF AND UP TO 4 TIMES HIGHER DURABILITY SOLID STAINLESS-STEEL FORKS

- ▶ 100 % solid stainless steel (including fork hooks)
- ▶ Smooth and polished surface
- ▶ 100 % ISO 2330 conformity
 - Tested with a static safety factor 3 and dynamical 1,000,000 load cycles with 25% overload
- ▶ Extremely high durability: up to 4 times longer than cladde forks (i.e. cross-section 100 x 45 mm)
Exemplary calculation:

SOLID STAINLESS-STEEL FORK 100 x 45 mm	CLADDED FORK 100 x 45 mm
4.5 mm wear limit of the fork	3 mm wear limit of the cladding
+ 8 mm additional wear area OptimaForkHeel	
= 12.5 mm total wear zone	= 3 mm total wear zone

- ▶ Smaller cross-sections compared to fork claddings
- ▶ Easy fork inspection
- ▶ Corrosion-resistance

APPLICATION: EX-PROOF AREAS



- ▶ **Special steel VQ46-EX:** the only fork steel with ATEX conformity
- ▶ Highest safety: Explosion-proof operation is guaranteed after the wear limit is achieved
- ▶ No examination of remaining cladding thickness

APPLICATION: HYGIENE AREAS

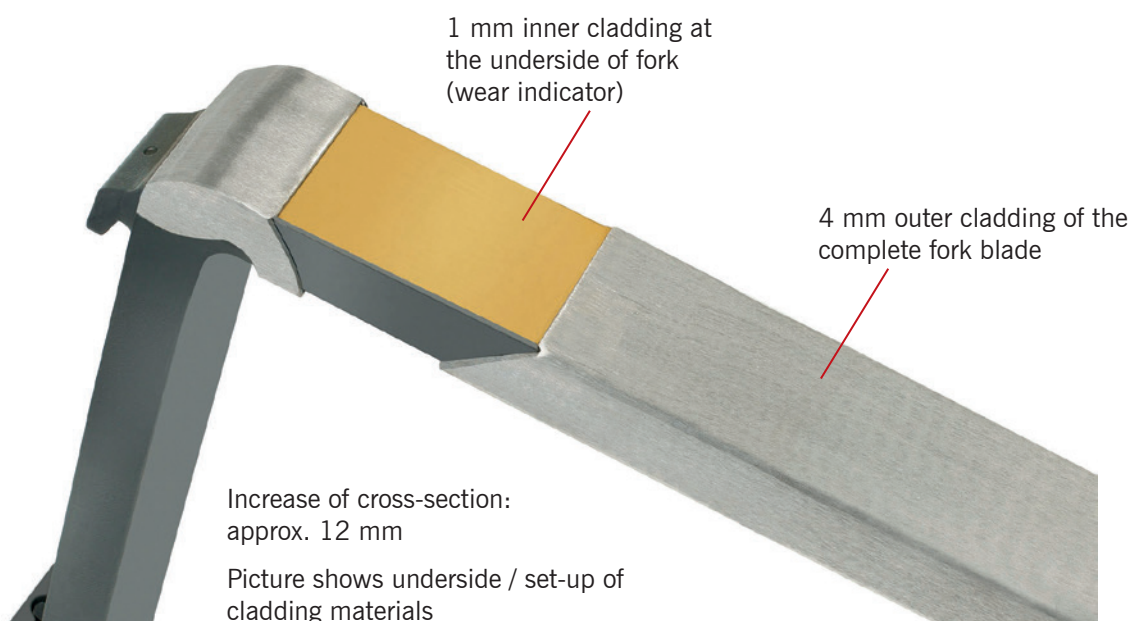
- ▶ **Special steel VQ45-HY:** The best choice for hygiene areas
- ▶ No interspaces
- ▶ Easy cleaning
- ▶ Resistance against dirt and environmental influences



Dupl  [®]
made by **VETTER**

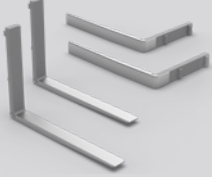
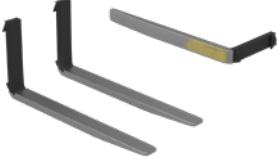


WEAR MEASUREMENT AT A GLANCE - AND READY! DUPLEX FORKCLADDINGS

- ▶ ATEX certification
- ▶ High safety by visual wear indicator:
the wear limit is achieved as soon as the the wear indicator is visible
- ▶ No daily measuring of remaining cladding thickness
- ▶ Time and cost saving
- ▶ Easy use: No tools, no expertise necessary



Take your forks immediately out of operation as soon as the wear indicator is visible!

COMPARISON: FORKS FOR EX-PROOF AND HYGIENE AREAS

	PROTECT cladding stainless steel	DuplEx cladding	Solid stainless steel fork (hygiene design)	Solid stainless steel fork (ex-proof design)
				
ATEX certification	yes, however, DIN EN 1755 recommends: a special characteristic at the underside of the fork to allow wear measurement	yes	not necessary	yes
Ex-proof	Until the wear limit is reached, i.e. 1 mm remaining cladding thickness	Until the wear limit of 1 mm remaining cladding thickness is reached (visual wear indicator)	Not used in ex-proof areas	Ex-proof is ALWAYS guaranteed
Durability	3 mm wear limit	4 mm wear limit	10 % of the fork cross-section (ISO 5057) + 8 mm additional OptimaForkHeel = up to 4 times higher durability	
Cross-section fork	+ 10 mm	+ 12 mm	+ 0 mm	+ 0 mm
Service expenditure wear measuring	Daily measuring and recording of cladding thickness is mandatory to ensure safe application	Daily visual control of the integrated wear indicator that offers ex-proof examination at a glance.	Regular measurement of wear limit (acc. to ISO 5057)	
Service expenditure fork exchange	Exchange of forks as soon as the wear limit of the cladding is reached	Exchange of forks as soon as the wear limit of the cladding is reached	Due to the higher total wear zone forks need to be exchanged 4 times less.	
Risk of corrosion	Possible corrosion of uncladded areas	Possible corrosion of uncladded areas	Corrosion-free	
Application hygiene: Cleaning	Easy cleaning of cladding, however, danger of deposits in interspaces	Easy cleaning of cladding, however, danger of deposits in interspaces	Easy and hygienic cleaning (no interspaces)	
Conclusion	Stainless steel claddings are work-intensive in ex-proof areas (daily wear measurement). Hence, they are not advisable for this application. In hygiene areas they are an inexpensive, but not 100% hygienic alternative to stainless steel forks.	The VETTER standard in ex-proof areas: DuplEx claddings offer benefits in terms of high safety and low service expenditure.	Stainless steel forks (hygiene and ex-proof) are cost-performance winners. A higher purchase price is justified by longer lifetime, higher safety and less service efforts.	





MANUTEL®

EFFICIENT AND SAFE MANUTEL® - MANUAL TELESCOPIC FORKS

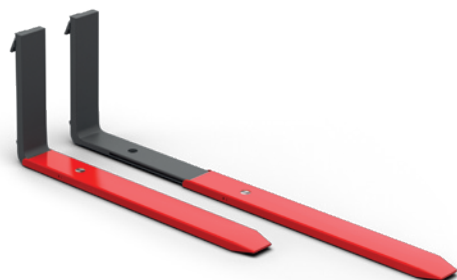
Fork and extension in one product - this is ManuTel® by VETTER. Easy! Efficient! Flexible!

- ▶ Efficient application: truck loading / unloading from one side resp. loading of 2 or 3 pallets at once
- ▶ High safety: Always the right blade length!
- ▶ Robust design, also for all-terrain use
- ▶ Significant time and cost savings compared to fork extensions
- ▶ Easy application without tools or hydraulics
- ▶ Legal conformity according to EC machinery directive (CE sign)



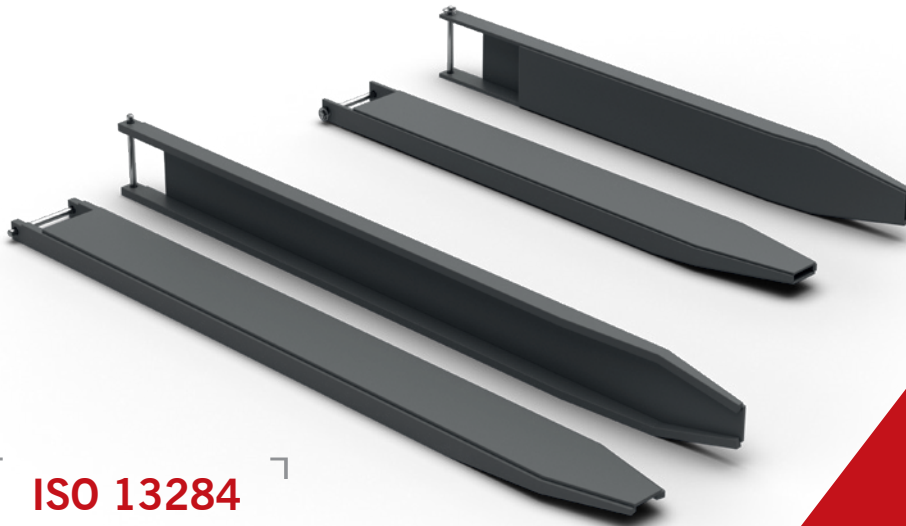
MANUTEL® G2 STANDARD EDITION

- ▶ Ideal for truck loading and unloading from one side
- ▶ Wear-resistant straight manganese steel plate on the lower side of the fork shoe
- ▶ Wide product range: Standard capacity up to 5 tons at load centre 600 mm, custom-made capacities on demand



MANUTEL® SLIMLINE EDITION

- ▶ Ideal for loads and pallets with small apertures
- ▶ Extra-thin blade - thickness only 40 mm
- ▶ Quick release pin-locking device for easy length adjustment
- ▶ Capacity up to 2 tons



「 **ISO 13284** 」
「 CONFORMITY 」

FORK EXTENSIONS FOR ALL APPLICATIONS:

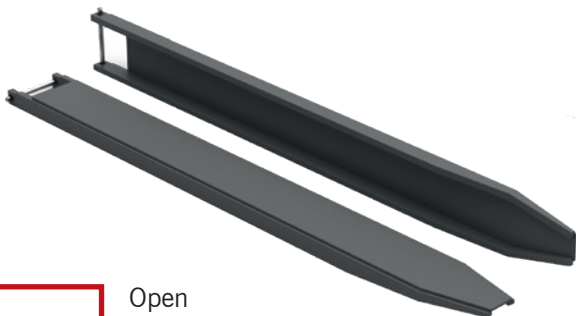
- ▶ in ATEX design
- ▶ for attachments
- ▶ for hand lift trucks
- ▶ in noise protection design
- ▶ and more

**FLEXIBLE AND VERSATILE
QUALITY FORK EXTENSIONS**



- ▶ Perfect for occasional transport of loads that are longer than the existing forks
- ▶ Robust and safe: solid welded box design made of strong sheet metal
- ▶ Optimum use by individual adaptation to the existing cross-section of the fork as well as tapered and chamfered tip
- ▶ Locking by safety bolt prevents unintentional slipping and facilitates mounting
- ▶ Legal safety: Designed according to ISO 13284 and EC machinery directive (CE sign)

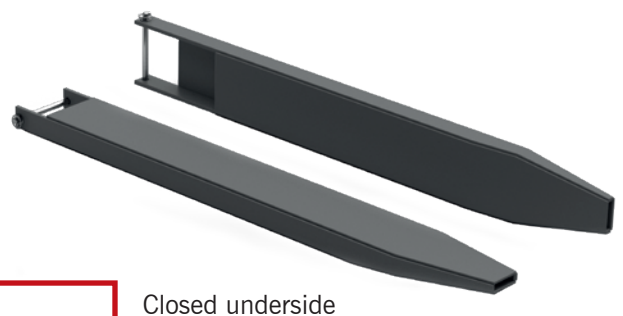
OPEN DESIGN



Open underside

- ▶ Exclusively for transports with load distribution over the entire length of fork extension
- ▶ Solid welded design
- ▶ Open underside
- ▶ Tip tapered and chamfered

CLOSED DESIGN



Closed underside

- ▶ For transport tasks with load centre outside the basic fork
- ▶ Welded and extra solid box design
- ▶ Closed underside
- ▶ Tip tapered and chamfered

Please observe:

The fork extension has to be supported by the fork to minimum **60 %** of its total length.



Easy mounting
on the forklift when
not in operation
(example of use)

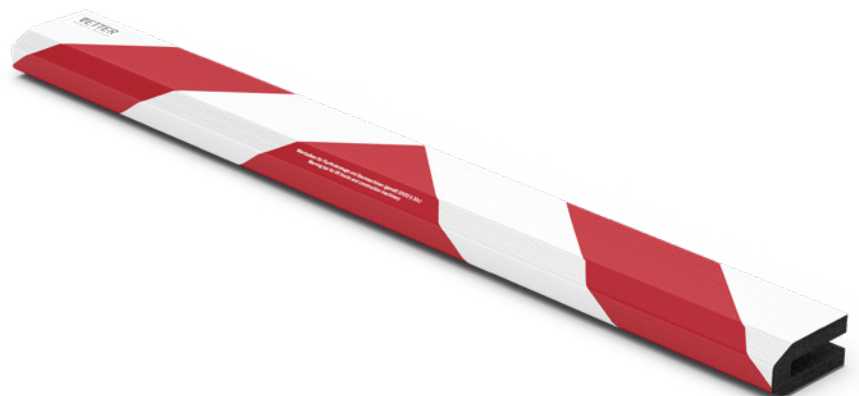


A MUST FOR ROAD TRAFFIC WARNING BARS

One reason for accidents with (fork) lift trucks: forks are hard to recognize at first sight. With the innovative warning bars made by VETTER you are on the safe side.

- ▶ Special reflector foil in red-white hatching is visible from afar
- ▶ Accident prevention
- ▶ Maximum security for example on car parks, at exits and in poor visibility
- ▶ Quick and easy assembly: magnetic pockets for all types of forks
- ▶ 4 additional magnets at the outer side of the warning bar: Easy mounting at the forklift when not in use

Article No.	Description	Dimensions	Weight
WBRW-800-8M	Warning bar red-white with 8 magnets	80 x 40 x 800 mm	2.3 kg





LOGISTICS OF THE FUTURE IS **GREEN!** QUALITY**FORKS** WITH ISO 50001 CERTIFICATE

Climate change is one of the major issues of our time, in line with conservation of resources, reduction of greenhouse gases and eventually curbing global warming. The particular question is how the growth in the logistics area combines with these subjects. By implementing the ISO 50001 **EnergyManagementSystems** VETTER continuously strives to contribute to this great common goal.

- ▶ Record, evaluate and optimize consumptions
- ▶ Constant improvement in terms of energy- and resource-conscious production processes
- ▶ Application of energy-efficient technology in production and administration
- ▶ Most modern equipment in manufacturing areas and offices
- ▶ Sensitizing staff to act resource-preserving



A START HAS BEEN MADE!

In 2018 alone an electricity demand of about 90 two-person-households could be saved by optimizing processes – while simultaneously increasing the production.

Further measures are planned!



By the way: VETTER is already certified since 1992 acc. to ISO 9001 (QualityManagement) and since 2007 acc. to ISO 14001 (Environmental-Management).

LET US DO THE
FWORK FOR YOU!



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