

Modular System of Electrical Drives for Forklifts- New Bevel Gearbox now Available

The mobile drive systems specialist **ABM Greiffenberger Antriebstechnik GmbH** offers a comprehensive modular system, which can be adapted to the individual needs of the manufacturers of material handling equipment. The new **ABM AC Bevel Geared unit** is available as a series product form now on.



Newly launched industrial trucks excel by higher output, better ergonomics and greater efficiency. This is possible thanks to a good portion to new electrical drives. Especially on battery powered industrial trucks actual performance leaps from generation to the next can be listed.

ABM Greiffenberger GmbH has decisively advanced these developments. As a systems supplier, working closely with international industrial truck manufacturers as well as niche suppliers to the material handling industry, complete drive systems for electrical industrial trucks are being produced. Very early on ABM has been engaged with AC induction motors that today in many output ranges obsolete the previously dominating DC systems.

Building on the long standing know-how with AC induction motors ABM was able to provide industrial truck manufacturers with a comprehensive line of Bevel Gearbox that incorporates all the advantages of AC traction drive systems. The bevel gearbox design feature optimized efficiencies allowing minimal space requirements in industrial trucks. This is possible by using the largest feasible reduction ratio in the tightest possible space envelope of the gearbox. The modular design minimizes cost and eases adaptability to customer vehicles.

1) Platform Programs for Different Output Levels

The platform concept of AC induction motors for industrial trucks covers different output levels. For pallet trucks ABM offers complete-systems with outputs up to 3.2 kW. For orderpickers complete drive systems are also available and can include steering and lifting functions. And for counter balance forklifts ABM manufactures traction, lifting and steering motors making matched complete system solutions available from a single source.



ABM traction / pump motor



ABM traction drive with integrated steering drive

2) Cost and Quality Advantages

The modular design of the drive systems benefits users with individual solutions that relatively easily can be finalized. And this is possible without incurring any initial design cost and low-cost components because they are being manufactured in high volumes. This allows medium-sized industrial or specialty truck manufacturers to take advantage of the “economy of scale” and top notch quality of high volume series production.

3) Know-How and Quality optimally combined

Experiences, gained by the ABM engineering group, are the base for project planning of solutions that have been developed on the strength of individual, custom applications. This applies for example to AC induction motors that have been designed for tough service with frequent reversing operations and high output torques at low speeds. The controllability of these motors also meets the highest demands.

For the gearboxes premium gearing is being used, the basis for outstanding efficiencies and low-noise drives. Our own aluminum die cast operation guarantees manufacturing of compact and lightweight aluminum housings in highest cast quality.

As a matter of course just like the ultra-modern manufacturing processes our testing technology meets the highest demands: New solutions and series products are continually being evaluated with comprehensive tests in the ABM test field.

4) Pallet Trucks: Maximum Dynamics, Minimal Energy Consumption

For pallet trucks ABM developed solutions with outstanding drive dynamics and – due to very high efficiencies and regeneration rates – sustained battery life. These are advantages that directly benefit industrial truck users. The same can also be said with our drives being completely maintenance free.

Manufacturers of pallet trucks that are collaborating with ABM can profit from a continuous modular design and a comprehensive product program: Drives are available as helical-, bevel gear or hub wheel gearboxes and can be equipped with integrated electrical steering drives. For medium and small volumes ABM recommends our standard platform products to configure an optimum drive solution. For high volume requirements ABM develops customized traction drives for your application based on our proven modular concept.

5) New Bevel Gearbox with Optimum Power Density - Now available for Series Production



ABM Bevel Gearbox

ABM presents at the CeMAT with the new bevel gearbox for pallet trucks and other material handling vehicles the latest module of our platform concept. This drive is available in outputs from 0.6 kW to 2.0 kW and excels with outstanding efficiencies. The drive is maintenance free due to life time oil filling of the gearbox and a tight swing radius with ratios up to $i = 28$ allows its

installation even in cramped conditions. Optionally, an electrical steering drive can be integrated.

Within its platform concept ABM has developed a new bevel geared unit for pallet trucks and other material handling equipment. The unit is specified in the power range of 1.2 to 3.2 kW, comes with a high efficiency and is available as a series product.

6) Orderpicker: “Plug and Play”-Drive Concept

“Plug and play” is not just our slogan for pallet trucks but also for ABM order picker drives and applies from traction drives to lifting and steering solutions. Traction drives consisting of bevel gearboxes, brakes and optionally combined with steering drives are being delivered pre-finished and ready for assembly. Lifting drives that can be mounted to different pump types are also easily integrated into individual customer designs. This eases assembly procedures for industrial truck builders and creates the basis for optimum tolerance requirements for other components – this saves the industrial truck builder real money.

7) Counter Balance Forklifts: “Plug and Play”-Drive Concept

The modular concept for counter balance forklift drives contains AC traction drives as single wheel units with outputs up to 4.9 kW and up to 1.6 tons capacity and for larger load capacities AC axle drives with outputs up to 16 kW. All our traction drives can be equipped with ABM electromagnetic brakes conserving mechanical brakes and extending battery life. Complementing these system solutions are lifting drives with outputs up to 25 kW and adaptability to most commercially available pumps.

8) Even for Small Volumes

ABM is developing customized drive solutions for companies in the “Top Ten” of the industrial truck industry. Our comprehensive product platforms with their modular concepts are also interesting for manufacturers with medium or small volumes or customized special vehicle builders. They can profit by purchasing pre-finished, ready to assemble drives that excel with high quality and efficiency offering noticeable advantages to users – for example battery life, optimum drive behavior and productivity.

Marktrechwitz, October 2006

Author: Division „Battery-Powered
Drives“ at ABM Greiffenberger
Antriebstechnik GmbH