

Electro- mechanical Application Solutions

The efficient
and open drive
technology
platform



 **Bauer**[®]
Gear Motor

An Altra Industrial Motion Company



TRANSMISSION ELEMENTS

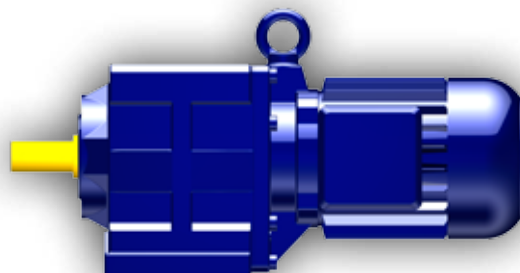
Simple mechanical connection to your machine



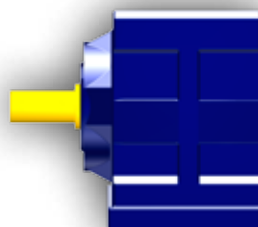
Couplings

GEAR TECHNOLOGY

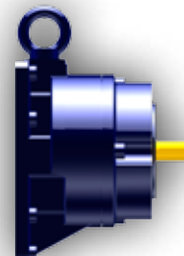
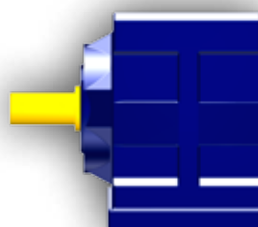
Low complexity through intelligent modular system



Integral motor connection



Flange motor connection (C/IEC, C/NEMA)



Free running input shaft (SN)



Your own solution for series production (SSD)

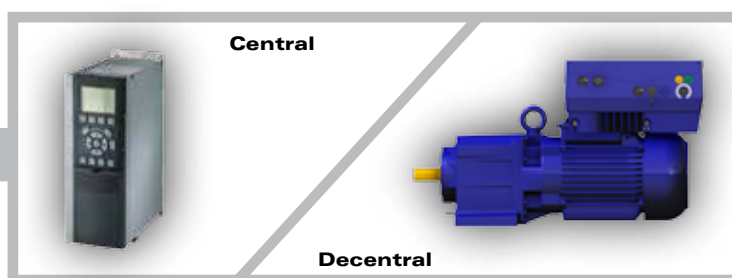


TRANSMISSION ELEMENTS

Simple mechanical connection between motor, machine and gearbox

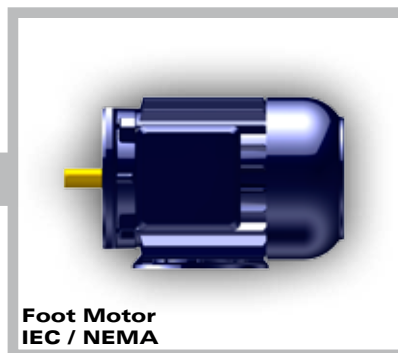
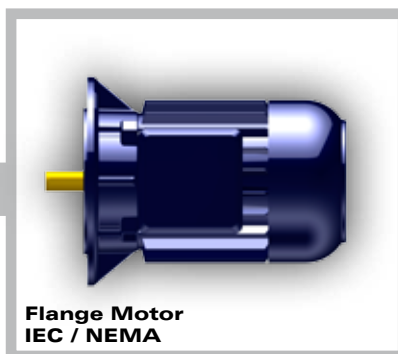
CONTROL ELECTRONICS

Open systems for your application



MOTOR TECHNOLOGIES

Open systems for your application



MAINS SUPPLY



BAUER - HOLISTIC OPTIMISATION APPROACH

Energy Efficiency and Conservation of Resources in the complete System

- The **optimisation** of the Altra Bauer drivetrain is achieved in the **individual components** (I - III) using the holistic approach, **integrating your machine** and your application.
- Besides achieving greater **energy efficiency of the drivetrain**, the aim is to simplify the system (for example, by way of reducing the components).

Working Machine

Drive Concept

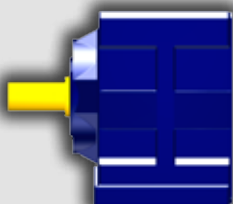
Driving Machine



Motors



Speed Control



Gear Technologies



Optimisation of your Drivetrain

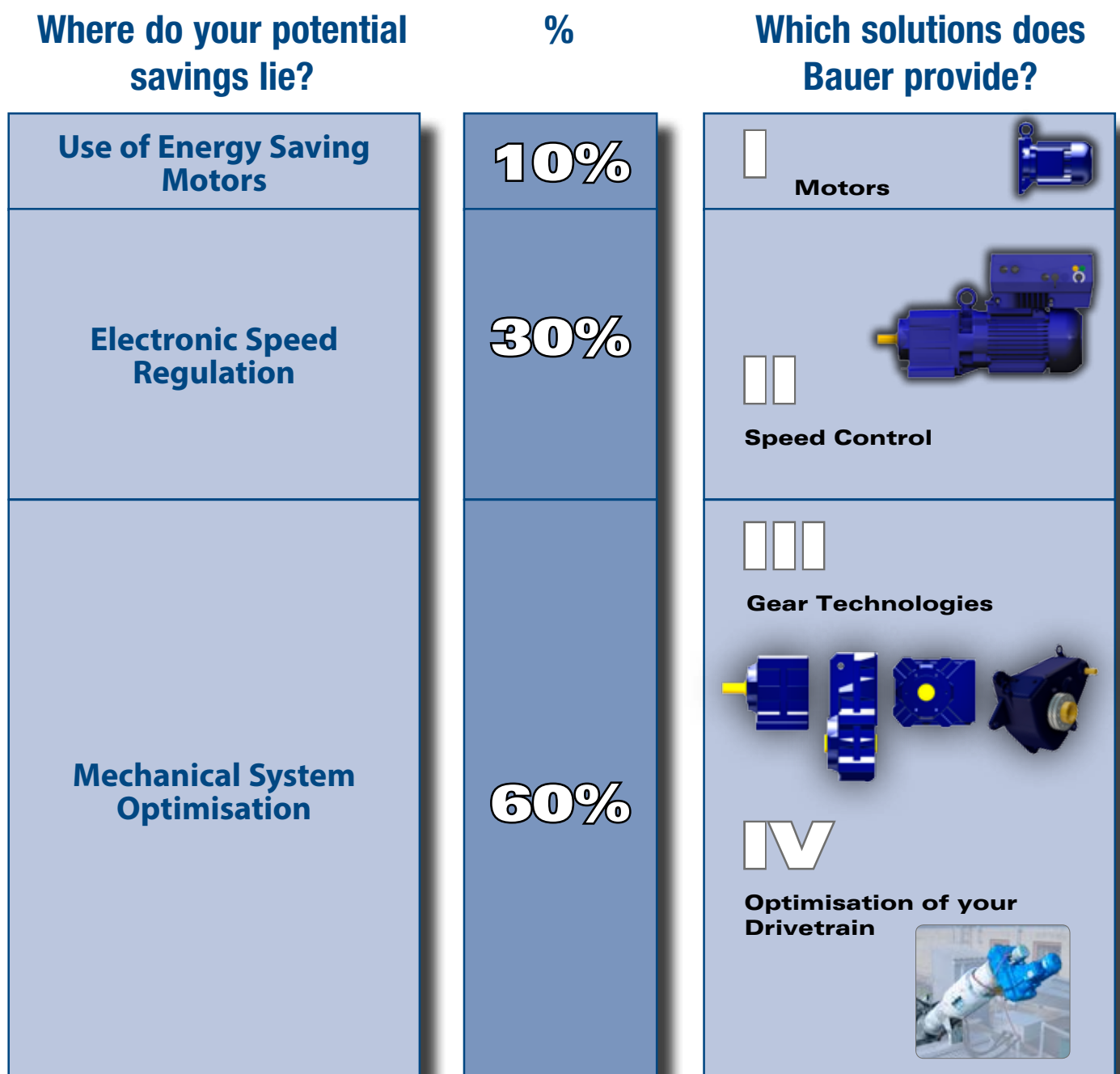




ENERGY SAVING POTENTIAL

Consideration of the complete
Electromechanical Drive System

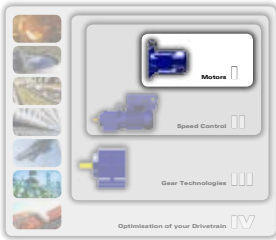
- The potential energy savings in electro-mechanical drive systems are distributed according to the ZVEI model as shown in the graphic below.
- BAUER provides **products for all areas of the system** and, on the basis of the Pareto Principle, focuses on the **optimisation** of the **mechanical system** as that is where the **greatest saving potential** lies.



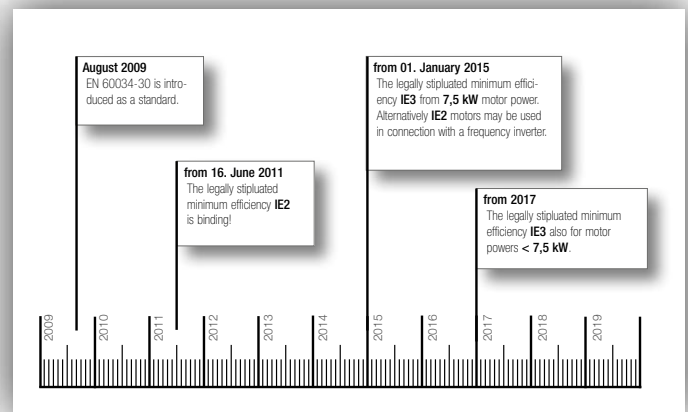
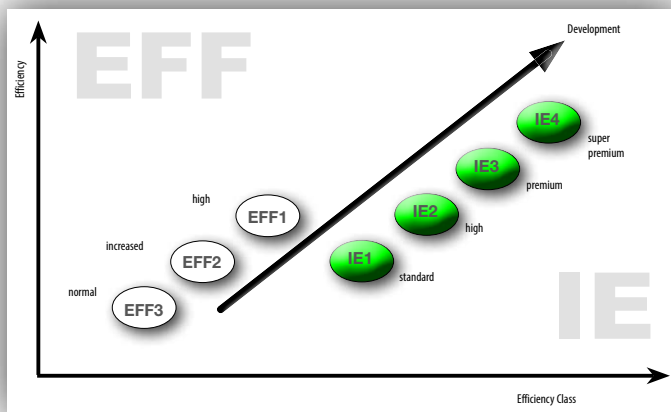


BAUER MOTORS - AHEAD OF THE TIMES

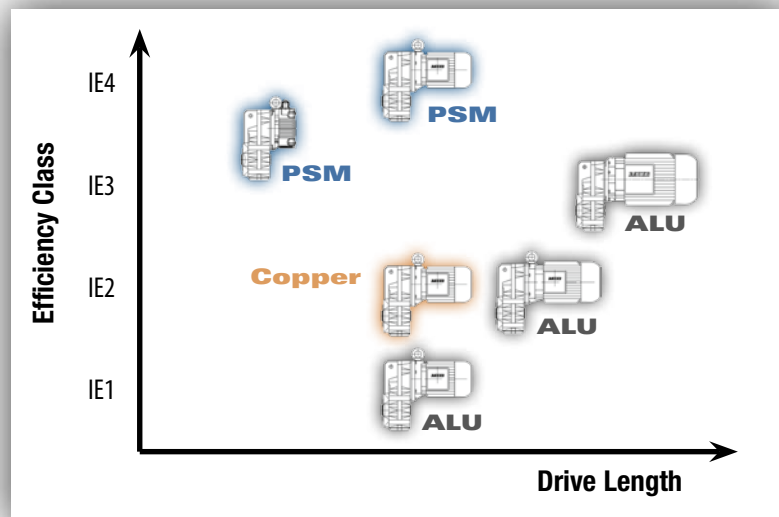
The first step to success -
Motor Competence in-House



- At Bauer, all the **motor competence** – from design to manufacture – **is maintained in-house**.
- The statutory regulations intended to increase motor efficiency are implemented for classes IE1 to IE4 through an economic motor programme.
- Bauer's development of the **Permanent Magnet Synchronous Motor** – which meets the requirements of class IE4 energy efficiency – means Bauer is far **ahead of schedule** regarding the timeline for the **statutory regulations**.
- Bauer supplies a **full modular range of motors for all energy efficiency classes (IE1 to IE4)** to ensure the optimal motor choice can be made for each application.



Through the flexible implementation of three available rotor systems - aluminium, copper, and permanent magnet - highly efficient drive solutions in efficiency classes IE1 to IE4 can be attained without additional space requirements.



	ALU	COPPER	PSM
IE4			X
IE3	X	X	
IE2	X	X	
IE1*	X		

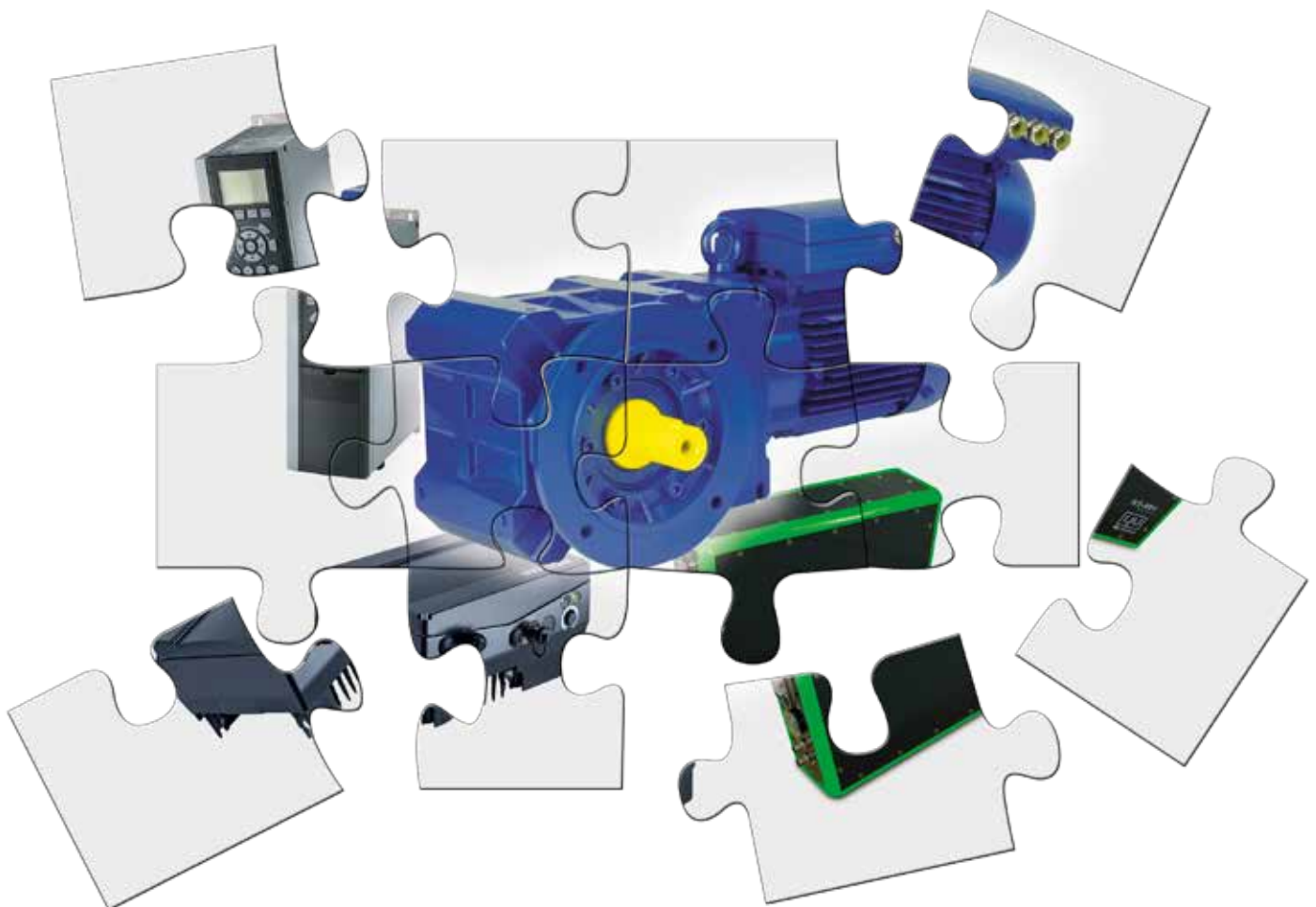
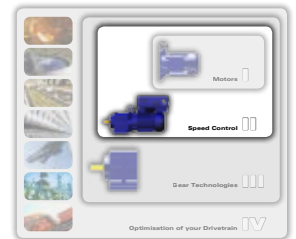
* for special applications



SPEED CONTROL

The second step to success -
System experts through strong partnerships

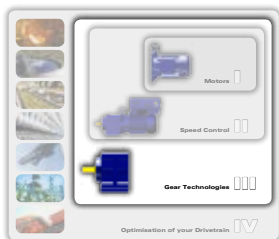
- The use of a speed control device generally leads to an increase in the efficiency of the drive system.
- Various control and monitoring concepts have established themselves for optimal use in several application areas.
- Based on the particular application, Bauer works with **experts** who **understand the monitoring and control tasks for the application environment the best**. There are different challenges, for example, in the automobile industry, in iron and metallurgical engineering or in the food processing industry.
- The application experts at Bauer work hand-in-hand with our system partners to further optimise the electro-mechanical drivetrain.





GEAR TECHNOLOGIES

The third step to success -
The Gear Motor Specialist since 1927



- Bauer supplies a **standard modular gear programme** and develops **special gearboxes**.
- Supported by the **Bauer Pilot Plant**, the application experts optimise gears in relation to energy efficiency, smoothness of running, noise characteristics, impact resistance and much more.
- Through the use of a rapid prototyping process, Bauer achieves the **shortest time to market for special gearing solutions**.
- Bauer provides **small industrial gear motors** in a torque range of **less than 100Nm** in all four ranges BG, BF, BK, and BS. This means that you can find exactly the right drive for your application and avoid unnecessary oversizing. **That saves money!**



Modular

The "All-Rounder" for multiple applications.

- Conveying
- Material Handling

Helical BG-Range

Power	0,03 ... 75	kW
Torque	20 ... 18.500	Nm
Your Benefit	Robust design leads to long service intervals.	

Parallel Shaft BF-Range

Power	0,03 ... 75	kW
Torque	90 ... 18.500	Nm
Your Benefit	Compact mounting and multiple possibilities for attachment reduce the space requirements.	

Bevel BK-Range

Power	0,03 ... 75	kW
Torque	80 ... 18.500	Nm
Your Benefit	Energy efficient due to the highly efficient two-stage base design.	

Worm BS-Range

Power	0,03 ... 5,5	kW
Torque	25 ... 1.000	Nm
Your Benefit	Compact and resilient through high quality worm gearing. Thus long lifetime and low servicing costs.	



Application Specific

The "Application Master" - the perfect fit for your application.

- Basic Metal
- Food & Beverage
- Crane Technologies
- Bulk Material Handling
- Water / Waste Water
- Textile
- Chemical Industry
- Automotive



Customer Specific

The "Integration Expert" - optimally integrated in your machine.

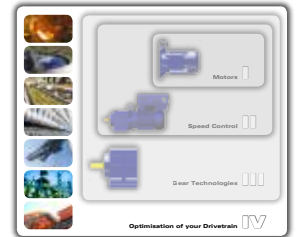
- Textile Industry
 - Flat bed knitting machine
 - Circular knitting machine
 - Weaving machine
- Printing Industry
 - Offset printing machine:
 - Web and sheet offset
- Packaging Industry
 - Band strapping devices
 - Pallet packing presses
 - Rotary arm winder



IV WORKING MACHINE

The fourth step to success - Application Consultancy and Integration

- The aim of optimising the drivetrain in several dimensions (energy efficiency, dynamic, static, vibrations, etc.) requires a systemic view including the machine and the customer application.
- Bauer has built up an **organisation with application experts** who consider in great detail the requirements of the respective application and develop an appropriate solution.
- Application solutions are characterised, for example, by gearing that takes over the bearing functions from the machine, thereby **reducing the components in the entire electro-mechanical drivetrain**.



Automotive

- Application
- Monorail
 - Points
 - Heat Exchanger



Basic Metal

- Application
- Roller Table
 - Chain Conveyor
 - Swedish Lever



Logistics

- Application
- Monorail
 - Floor transport
 - Automatic Stocking



Food & Beverage

- Application
- Chain Conveyor
 - Turning Drive
 - Guidance Rollers



Packaging

- Application
- Plastic
 - Box
 - Automatic Arm Winder



Crane Technologies

- Application
- Drive
 - Hoist
 - Turn



Wood Processing

- Application
- Chain Conveyor
 - Needle Roller
 - Guidance Rollers



Bulk Material Handling

- Application
- Bucket Conveyor
 - Conveyors
 - Separator



Machine Tooling

- Application
- Tube Processing
 - Swarf Conveyor
 - Pallet Changer



Water / Waste Water

- Application
- Clarifier
 - Disk Thickener
 - Agitator / Aerator



Pumps

- Application
- Centrifuge
 - Spinning
 - Screw



Textile

- Application
- Pumps
 - Carding
 - Weaving



Printing Industry

- Application
- Offset
 - Digital
 - Cutting and Folding



Chemical Industry

- Application
- Agitator
 - Mixer
 - Centrifuge





ELECTROMECHANICAL APPLICATION SOLUTIONS

- In addition to motor and transmission components, electro-mechanical drivetrains usually include joining elements such as clutches or belt drives.
- Within the Altra Group, application experts from various product areas work together to ensure the optimal combination of these drive components.
- An example of a vibration optimised drive system for a roller table in a steel plant, is the combination of the Bauer helical gear motor from the BG series and the highly elastic DURA-FLEX couplings.
- Bauer application experts select the **best suited gear-clutch combination** for every application from the comprehensive range of **Altra couplings**, ensuring the optimal electro-mechanical system in terms of energy efficiency and conservation of resources.
- However, should couplings not be desired due to design or space considerations, Bauer engineers will **integrate** the entire gear motor **directly into the machine**.

BG-Range

Helical Geared Motors

- Motor power from 0.03 kW to 75 kW
- 13 gearbox sizes for torques from 20 Nm to 18500 Nm
- High efficiency through 2 stage base design
- Enclosure IP 65 as standard
- New attachment possibilities with low design height



BF-Range

Parallel Shaft Geared Motors

- Motor power from 0.03 kW to 75 kW
- 10 gearbox sizes for torques from 90 Nm to 18500 Nm
- High efficiency through 2 stage base design
- Enclosure IP 65 as standard
- Gearbox housing with integral torque arm



BK-Range

Bevel Geared Motors

- Motor power from 0.03 kW to 75 kW
- 10 gearbox sizes for torques from 80 Nm to 18500 Nm
- High efficiency through 2 stage base design
- Enclosure IP 65 as standard
- The right angle gearbox with universal attachment



BS-Range

Worm Geared Motors

- Motor power from 0.03 kW to 5.5 kW
- 8 gearbox sizes for torques from 25 Nm to 1000 Nm
- Hollow shaft version already available from 25 Nm
- High loadable worm gearing for long lifetime
- Enclosure IP 65 as standard



Source: Hans Huber AG



Energy Efficiency and Conservation of Resources in the complete System

	DURA-FLEX <p>up to 4.500 Nm</p> <ul style="list-style-type: none"> • Easy to assemble/replace • High misalignment ratings • No maintenance/lubrication • Part-for-part interchangeable with industry standard design • In-stock versatile spacer design can accommodate many configurations with few parts 	Typical Applications <ul style="list-style-type: none"> • Pumps • Fans/Blowers • Compressors • Electric Motors • Conveyors
	FORM-FLEX <p>up to 270.000 Nm</p> <ul style="list-style-type: none"> • No maintenance • Zero backlash • Close couple, spacer and floating shaft designs available • Easy interchangeability 	Typical Applications <ul style="list-style-type: none"> • Engine Driven Equipment • Printing Presses • Machine Tools • Positioning Systems • Food Processing Equipment • Reciprocating compressors
	III Series <p>up to 147.000 Nm</p> <ul style="list-style-type: none"> • Models available for use on vertical and/or horizontal shafts • Bore capacity up to 510 mm • High torque to weight ratio • Half per half interchangeability 	Typical Applications <ul style="list-style-type: none"> • Steam Turbines • Printing Presses • High Torque Motors
	SURE-FLEX <p>up to 8.200 Nm</p> <ul style="list-style-type: none"> • Easy assembly • Spacer, bushed hub, and clamping hub designs in stock • Flexible design accommodates misalignment and protects equipment • No maintenance/lubrication 	Typical Applications <ul style="list-style-type: none"> • Pumps • Fans/Blowers • Compressors • Electric Motors • Mixers • Conveyors
	L-JAW <p>up to 700 Nm</p> <ul style="list-style-type: none"> • No maintenance/lubrication • Part-for-part interchangeable with industry standard design • Fail-safe design – equipment will continue to drive if elastomer fails • Wide range of in-stock inch and metric bore sizes 	Typical Applications <ul style="list-style-type: none"> • Pumps • Fans/Blowers • Electric Motors • Compressors
	TORSIFLEX <p>up to 60.000 Nm</p> <ul style="list-style-type: none"> • No maintenance • Zero backlash • Custom designs including close coupled, long spacer arrangements available • Easy interchangeability • Standard sizes available from stock 	Typical Applications <ul style="list-style-type: none"> • API610 Pumps • Screw Compressors • Turbo Compressors • Electric Motors

Couplings
Ameridrives Couplings
Mill Spindles, Ameriflex, Ameridisc

 Erie, PA - USA
 1-814-480-5000

Gear Couplings

 San Marcos, TX - USA
 1-800-458-0887

Bibby Turbobox
*Disc, Gear, Grid Couplings,
Overload Clutches*

 Dewsbury, England
 +44 (0) 1924 460801
 Boksburg, South Africa
 +27 11 918 4270

TB Wood's
Elastomeric Couplings

 Chambersburg, PA - USA
 1-888-829-6637 – Press #5

*For application assistance:
1-888-829-6637 – Press #7*
General Purpose / Disc Couplings

 San Marcos, TX - USA
 1-888-449-9439

Ameridrives Power Transmission
*Universal Joints, Drive Shafts,
Mill Gear Couplings*

 Green Bay, WI - USA
 1-920-593-2444

Huco Dynatork
*Precision Couplings
and Air Motors*

 Hertford, England
 +44 (0) 1992 501900
 Chambersburg, PA - USA
 1-800-829-6637

Lamiflex Couplings
*Flexible Couplings, Bearing Isolators,
and Coupling Guards*

 São Paulo, SP - Brasil
 (11) 5679-6533

Linear Products
Warner Linear
Linear Actuators

 Belvidere, IL - USA
 1-800-825-6544

*For application assistance:
1-800-825-9050*

 St Barthelemy d'Anjou, France
 +33 (0) 2 41 21 24 24

**Electromagnetic
Clutches and Brakes**
Warner Electric
*Electromagnetic Clutches
and Brakes*

 New Hartford, CT - USA
 1-800-825-6544

*For application assistance:
1-800-825-9050*

 St Barthelemy d'Anjou, France
 +33 (0) 2 41 21 24 24

*Precision Electric Coils and
Electromagnetic Clutches and
Brakes*

 Columbia City, IN - USA
 1-260-244-6183

Matrix International
*Electromagnetic Clutches
and Brakes, Pressure Operated
Clutches and Brakes*

 Brechin, Scotland
 +44 (0) 1356 602000

 New Hartford, CT - USA
 1-800-825-6544

Inertia Dynamics
*Spring Set Brakes; Power On and
Wrap Spring Clutch/Brakes*

 New Hartford, CT - USA
 1-800-800-6445

Overrunning Clutches
Formsprag Clutch
*Overrunning Clutches
and Holdbacks*

 Warren, MI - USA
 1-800-348-0881 – Press #1

*For application assistance:
1-800-348-0881 – Press #2*
Marland Clutch
*Roller Ramp and Sprag Type
Overrunning Clutches
and Backstops*

 South Beloit, IL - USA
 1-800-216-3515

Stieber Clutch
*Overrunning Clutches
and Holdbacks*

 Heidelberg, Germany
 +49 (0) 6221 30 47 0

**Heavy Duty
Clutches and Brakes**
Wichita Clutch
Pneumatic Clutches and Brakes

 Wichita Falls, TX - USA
 1-800-964-3262
 Bedford, England
 +44 (0) 1234 350311

Twiflex Limited
Caliper Brakes and Thrusters

 Twickenham, England
 +44 (0) 20 8894 1161

Industrial Clutch
*Pneumatic and Oil Immersed
Clutches and Brakes*

 Waukesha, WI - USA
 1-262-547-3357

Gearing
Boston Gear
*Enclosed and Open Gearing,
Electrical and Mechanical
P.T. Components*

 Charlotte, NC - USA
 1-800-825-6544

*For application assistance:
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Bauer Gear Motor
Geared Motors

 Esslingen, Germany
 +49 (711) 3518-0

**Nuttall Gear and
Delroyd Worm Gear**
*Worm Gear and
Helical Speed Reducers*

 Niagara Falls, NY - USA
 1-716-298-4100

Belted Drives and Sheaves
TB Wood's
Belted Drives

 Chambersburg, PA - USA
 1-888-829-6637 – Press #5

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**Engineered
Bearing Assemblies**
Kilian Manufacturing
Engineered Bearing Assemblies

 Syracuse, NY - USA
 1-315-432-0700

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