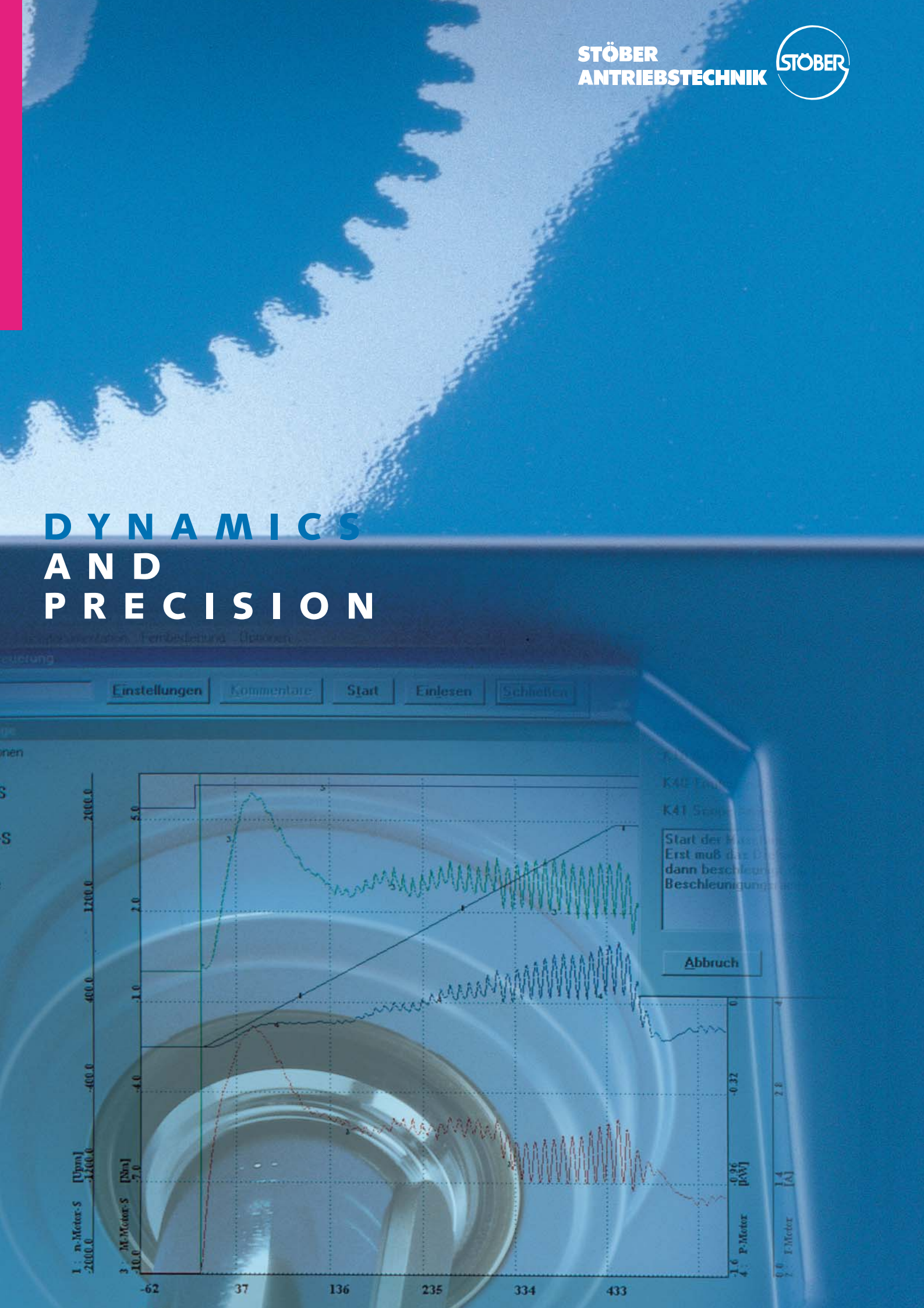
STÖBER
ANTRIEBSTECHNIK

DYNAMICS AND PRECISION



Making the speed of a gear motor variable appeared to the Company's founders Paul and Wilhelm Stöber to be the right future-proof technology for sustained industrial development – and for the growth of the Company founded in 1934.

The Central Company Concept

INFINITELY VARIABLE DRIVES

Beginning with a pioneering design

The STÖBER variable speed drive was introduced on the market in **1943** and is still in the range.

By infinitely variable adjustment of the shaft centre distance between motor shaft and drive shaft, it is possible to set any gear ratio. The development of the STÖBER friction wheel design led to a crucial technological advance. The drive pressure on the race is automatically regulated to suit the load. This means that the speed can be varied by a handwheel when at rest as well as in operation.

Innovative milestones

After the **STÖBER variable speed drive** was launched, it was continuously perfected and adapted to the needs of the time in later years. This drive is still manufactured today in two series – because it is used where digital control is impossible or of little use.

With the development of the **MGS Modular Gear System** the basis was created for a totally new drive philosophy. Logical speed stages and consistent modularity of assemblies and components led to a new standard of rationalization.

STÖBER ANTRIEBSTECHNIK had already begun to add to its development and production experience in gears and motors years before by developing its own electronics expertise. In conjunction with the MGS presentation at the '91 Hanover Fair, the completely new **FDS frequency inverter series** was launched by STÖBER ANTRIEBSTECHNIK.

This was followed only two years later in 1993 by the innovative **SMS servo modular system**. Consisting of a digital inverter, compact servo motor and precision planetary gear, this series was also newly developed from scratch with no hangover of old technology.

Both drive series, the inverters and the associated software have been further developed, with many – often unobtrusive – improvements. The interchangeability of the components enables uncompromising individual drive solutions to be created on the basis of standard gears.

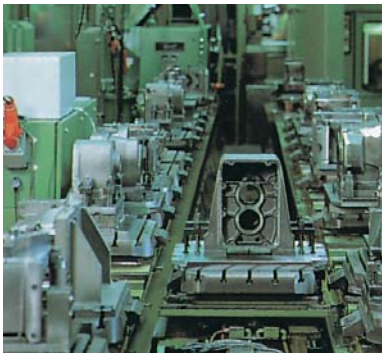
Insights

When looked at closely, modern drive engineering is seen to be a highly complex subject. It includes the mechanical, electrical and electronic/digital hardware components, the inverter operating software and the user software as the man/machine interface. Rational **innovations** and systematic **product main-tenance** are the result of close contacts with customers and users. The objective of the STÖBER development strategy is to pick up market trends and bring new trends to the market.

DEVELOPMENT AND PRODUCTION

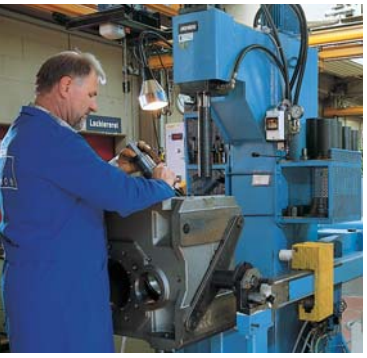
Joint objectives and continuous dialogue create the conditions for synergy between the very different development areas of **electromechanics and control technology**.

Proximity encourages informal communication for "synchroniza-tion". Both development divisions have high tech laboratories and modern test rigs for new develop-ments and continuous product maintenance.



The unusual business strategy of 'Safeguarding product quality by great production depth' results in continuous expansion of the STÖBER production expertise. The main parts of the gears such as gearing parts and housings are manufactured only in internal production facilities. The mecha-nical components of the motors are also manufactured in house.

For manufacture of the electro-nics STÖBER ANTRIEBSTECHNIK uses the expertise of specialist production plants not far from the Company headquarters. The external production partners are integrated into a close service concept of trust. Assembly work is also carried out by selected partner companies in many countries.



The learning company

The technical knowledge of the employees, their social skills in teamwork, their ability to take responsibility and their motivation to gain further skills are the solid foundation of a learning company.

When these virtues and abilities are available, the management targets of innovation, quality, reliability and strict customer orientation can really be achieved.

Systematic Technological development

The application experience of STÖBER ANTRIEBSTECHNIK over many decades comes to the fore in its highly practical innovation strategy for modern drive system solutions.

Two product lines – POSIDRIVE® and POSIDYN® – and a fully modular concept now form the technological basis for a wide variety of solutions. All the components – inverters, gears and motors – are products of the system manufacturer STÖBER ANTRIEBSTECHNIK.

With the development of the **MGS** Modular Gear Motor System STÖBER ANTRIEBSTECHNIK created a new standard for logically designed gear motors. The **POSIDRIVE® FDS 4000** vector-controlled frequency inverters are specially designed for MGS system motors.

The **SMS** servo modular system provides a versatility of use which is exceptional for servo technology.

The very compact motors can be used in combination with various planetary gears and also with the MGS gears. The unit software for the **POSIDYN® SDS 4000** digital servo inverter is set up for every conceivable type of application.

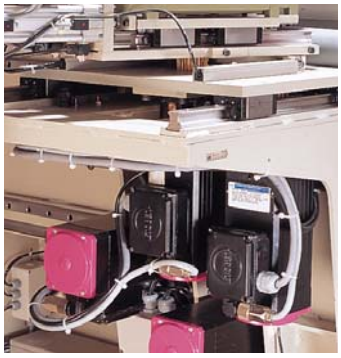
DIGITALLY CONTROLLED DRIVE SYSTEMS

Application experience and system expertise

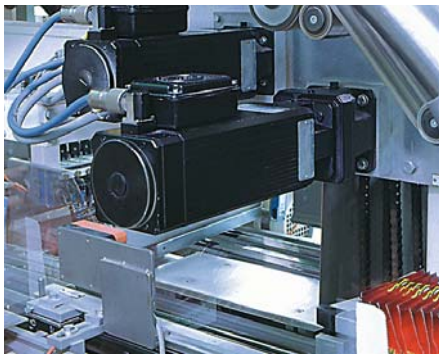
To get the most out of drives, they must be harmonized with their system environment.

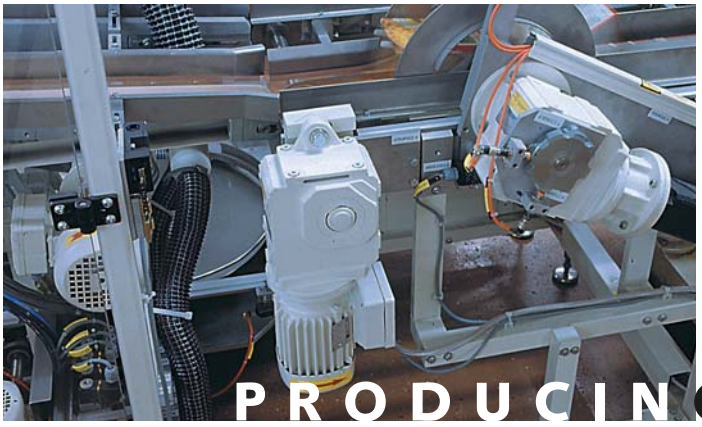
Technological assistance from the STÖBER application advisers helps to establish the necessary characteristics, functionality and performance.

Their knowledge of specific application problems, including typical industry features, normally achieves a rapid result. **Advice on drives at an early stage can save time and money**, especially on innovative projects.

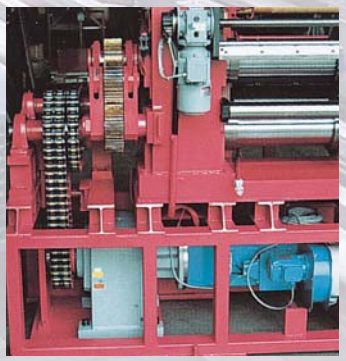


THE FLEXIBLE INTERFACE WITH OUR CUSTOMERS' IDEAS





PRODUCING,



Photos Pages 4/5: some factory photos.
We thank the following companies for their kind assistance:
Bestfoods Deutschland GmbH & Co. oHG, Heilbronn
Campina AG, Heilbronn
Carl Cloos Schweisstechnik GmbH, Haiger
Ensinger Mineral Heilquellen GmbH, Vaihingen
Kranservice Rheinberg, Rheinberg
Ostma Maschinenbau GmbH, Zülpich
L.R. Schmitt Sondermaschinenbau mbH, Stockstadt
Schön & Sandt AG, Primasens
Ungerer GmbH + Co., Pforzheim
Brauerei C. & A. Veltins GmbH, Meschede

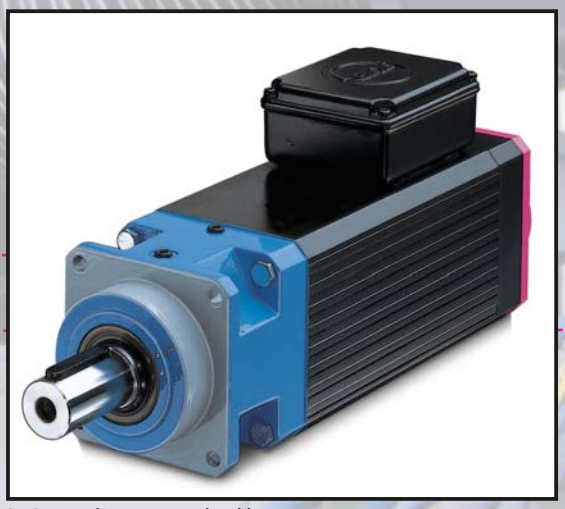
STÖBER ANTRIEBSTECHNIK offers extensive application experience in the following fields:
Automation,
Building material machinery,
Brewery and bottling systems,
Conveyor systems,
Glass industry,
Handling systems,
Lifting and hoisting systems,
Wood working machinery,
Plastics machinery,
Food technology,
Pumps,
Robotics,
Textile machinery,
Process engineering,
Packaging machinery,
Machine tools

CONVEYING, MOVING

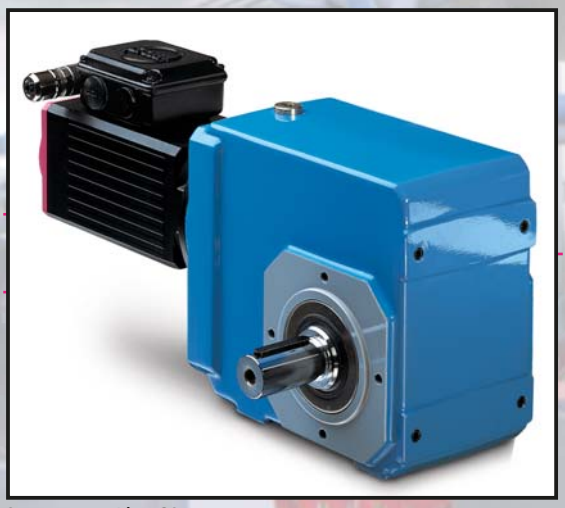
The STÖBER modular system offers unique combination possibilities. For instance, MGS gears, in the standard or low backlash version, can be combined with a servo motor to form a rigid, compact unit. Individually optimized gears remain economic this way.

SYSTEMATIC MODULAR SYSTEM FOR COST-EFFECTIVE DRIVES

POSIDRIVE® MDS 5000 + POSIDYN® SDS 4000 servo inverters
Rational parameterization with function blocks

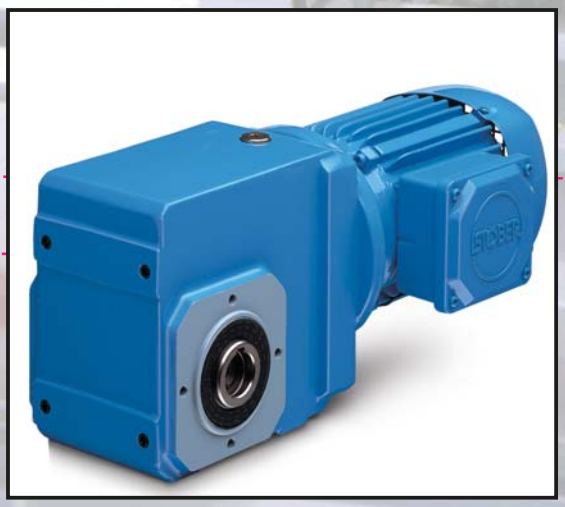


SMS servo drive, compact brushless motor with planetary gear

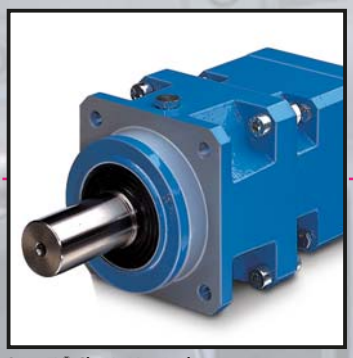


Servo motor with MGS gear
Good price/performance ratio for servo technology

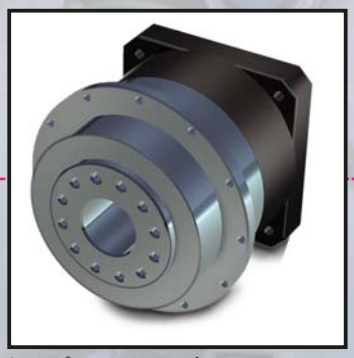
POSIDRIVE® FAS + FDS 4000 frequency inverters
Comprehensive functionality, optimized for MGS system motors



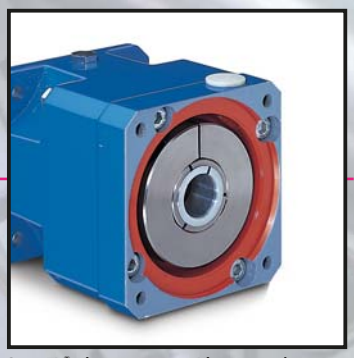
MGS gear motor
MGS bevel gear with MGS system motor



ServoFit® Classic Line P planetary gear
for servo motors



ServoFit® Power Line PH planetary gear
High-rigidity axis gear with flanged shaft



ServoFit® planetary gear with motor adapter
for standard commercial servo motors

MGS gear in low backlash version
Example: MGS bevel gear

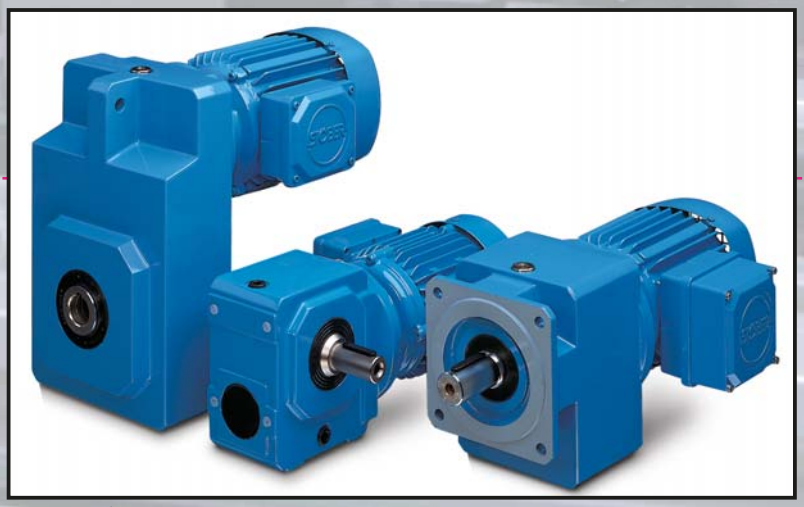
Interesting options

STÖBER ANTRIEBSTECHNIK offers perfectly coordinated complete solutions and yet opens its systems to combination with components (motors and inverters) from other manufacturers.

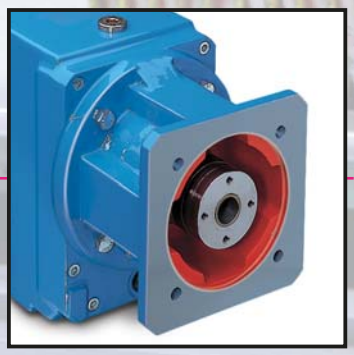
This product flexibility can ease the change to STÖBER drives so that the technological advances of the new generation of STÖBER system gears can be utilized.

For large-scale users of drives, the consistency of the MGS gears provides the basis for an in-house gear standard. Because the system offers huge rationalization potential for comprehensive or frequent planning.

A CD-ROM with a gear selection program and 3D-CAD installation drawings is available to designers as a planning aid.



The MGS shaft mounted helical gears, helical gears, bevel gears and worm gears are impressive due to their precision, maximum torque and exceptional continuous duty characteristics



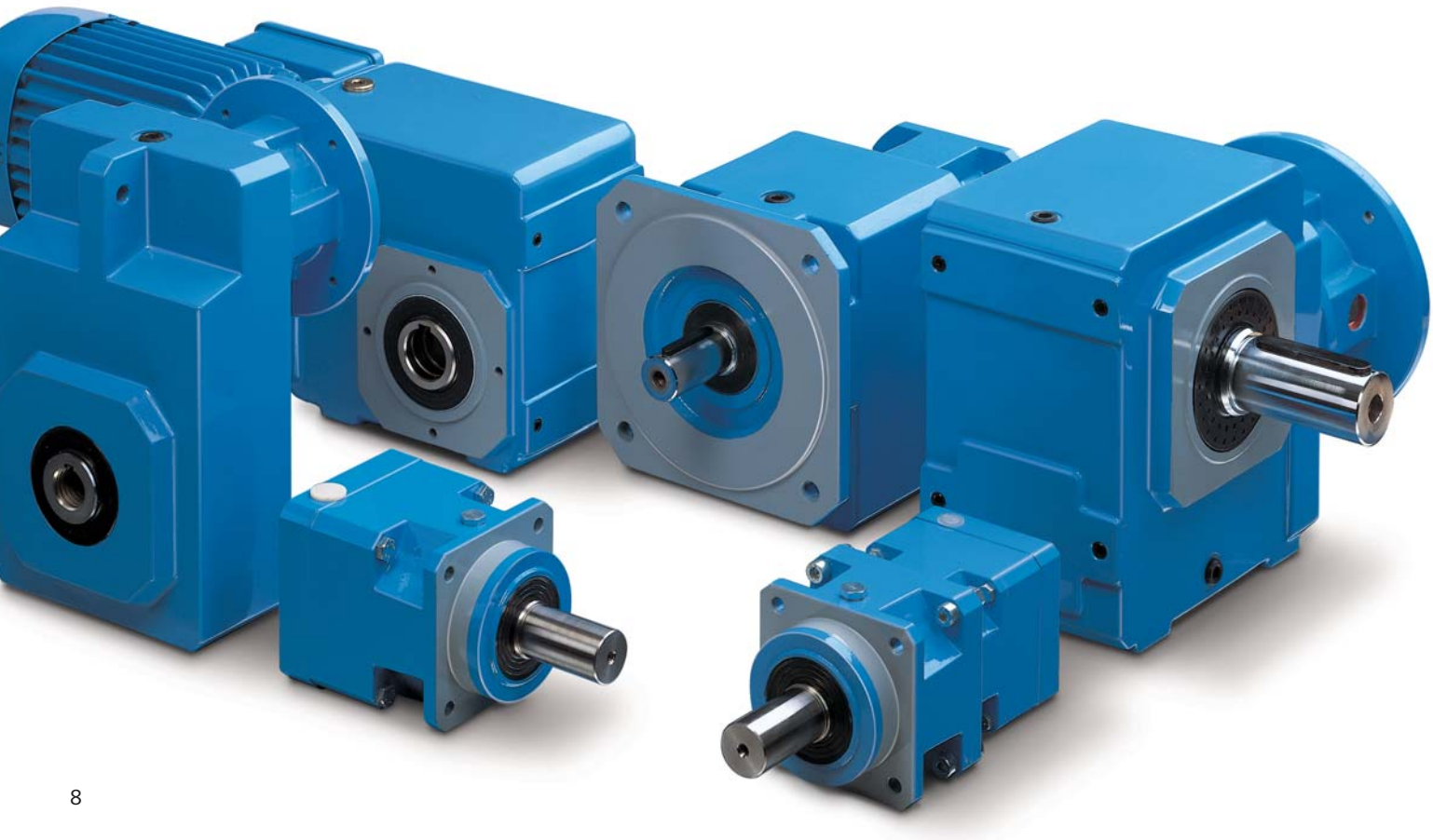
MGS motor adapters allow
universal motor attachment

Enclosed block construction of all gear housings and the modular structure of the gear system mark the appearance of all STÖBER gears. With R & E effort and internal test equipment, the gear engineering has been intensively developed and the production process maximized as a result.

Maximum precision in series

An extremely high standard of precision, quiet running, low heat generation and lifetime lubrication are the result of this high technology. If appropriate for the size and type, all gears can be supplied in the even higher precision 'low backlash' version.

GEAR ENGINEERING



Internally-produced motors have a long tradition at STÖBER ANTRIEBSTECHNIK.
The **MGS system motor** was developed from a standard three-phase AC motor. With its modular concept, it offers 14 optional parameters as standard.
The brake, incremental encoder and forced cooling fan can be fitted separately or in combination on the non drive end.
Special versions are available for hazardous areas (Ex-protected), high hygiene requirements or underwater use.

The **SMS servo motors** with UL approval offer maximum dynamics, perfect creep speed and optimum power output. Resolvers or incremental encoders can be fitted on the non-drive end or sine/cosine encoders installed.

Compact, adjustable, robust

MOTOR ENGINEERING

STÖBER ANTRIEBSTECHNIK

The POSIDYN® SDS 4000 + POSIDRIVE® MDS 5000 servo inverters and the POSIDRIVE® FAS + FDS 4000 vector-controlled frequency inverters for MGS drives offer a large number of shared functionalities and the same parameterization dialogue. For mixed equipment use, this conformity makes planning, commissioning and field bus access easier.

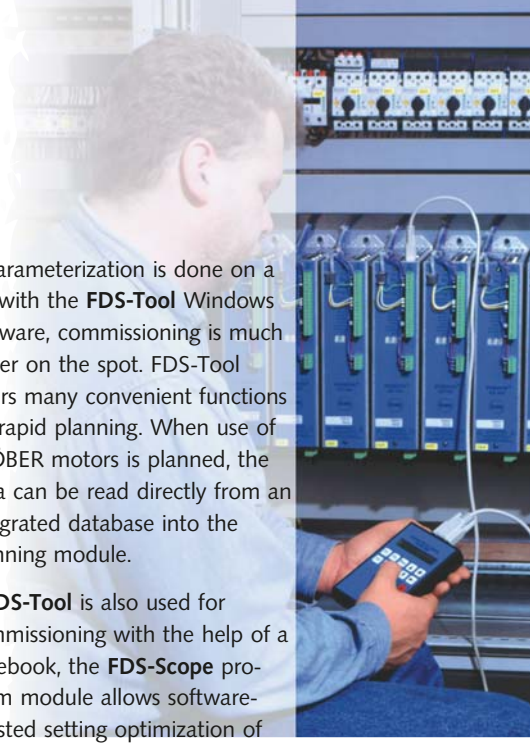
The solid metal housing in narrow book size format is part of the standard full EMC shielding.

With power reserves for top performance

With development, manufacture and product maintenance under its own control, STÖBER ANTRIEBSTECHNIK has the ability to react flexibly to market needs and technological developments.

The flexible or fixed control box provides convenient parameterization and operation. A notebook is used for commissioning with the FDS-Tool unit software.

POWER ELECTRONICS



System support for user programming and commissioning

Technical drive expertise, application know-how and software development in house have led to consistent, application-oriented software structures at STÖBER ANTRIEBSTECHNIK.

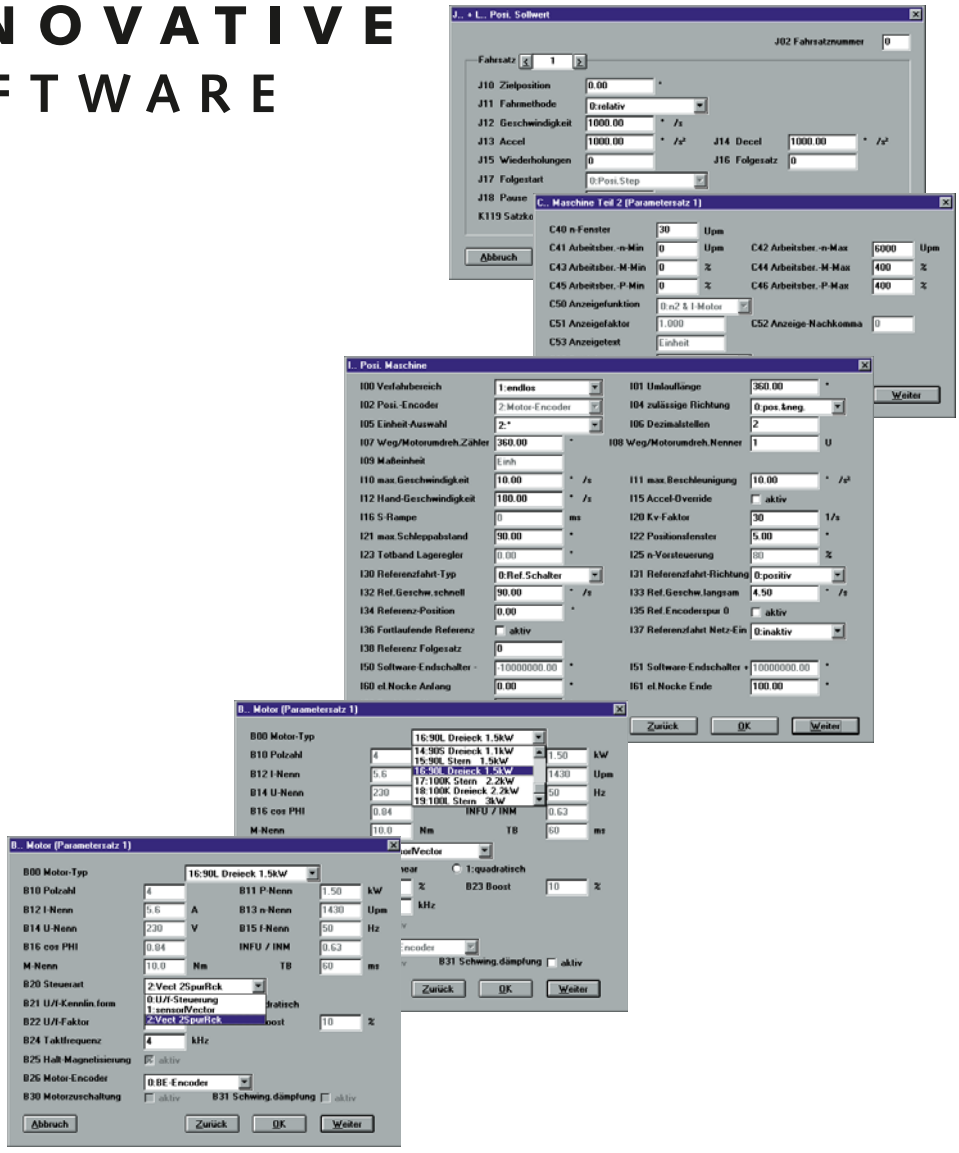
Typical drive patterns such as 'Change in the positioning target during travel' or 'Winding with dancer arm' can be found in **function blocks** of the **unit software**. These modules support the target-oriented parameterization – and impressively reduce the time spent on parameterization and commissioning.

Whether an MGS drive with a POSIDRIVE® FDS 4000 vector-controlled frequency inverter or an MGS servo drive with the POSIDYN® SDS 4000 servo inverter is used is irrelevant as far as operation is concerned because the parameterization dialogue is the same in both systems.

If parameterization is done on a PC with the **FDS-Tool** Windows software, commissioning is much easier on the spot. FDS-Tool offers many convenient functions for rapid planning. When use of STÖBER motors is planned, the data can be read directly from an integrated database into the planning module.

If **FDS-Tool** is also used for commissioning with the help of a notebook, the **FDS-Scope** program module allows software-assisted setting optimization of any individual drive.

INNOVATIVE SOFTWARE



Technical support

In many cases the specification for high-performance drives is very complex.

Time pressures and the pace of innovation and complexity of digital drive systems make it almost impossible for designers to develop their own drive expertise.

So it makes sense to use the special know-how of the STÖBER technical advisers – for specific industry solutions too. Early dialogue often leads to new ideas and optimization of the project.

Information
For all STÖBER drive systems and components there are detailed brochures for initial information and comprehensive catalogues (also on CD-ROM) available to you.

Obtain information quickly from the STÖBER websites
http://www.stoeber.de
http://www.stober.com

SYSTEM PARTNERSHIP

As a system supplier STÖBER ANTRIEBSTECHNIK is responsible for the functionality and efficiency of drive solutions supplied completely.

In modern drive engineering it is most efficient and cost-effective to obtain *'everything from a one-stop shop'*.

The virtues of STÖBER ANTRIEBSTECHNIK as a system supplier are:
- *a complete product range*
- *varied application experience*
- *specific support expertise*
- *a complete service network*

For system partnerships STÖBER ANTRIEBSTECHNIK offers individual formulation options – including special maintenance agreements. These are particularly interesting if major production losses are likely in the event of faults.

Application training

The STÖBER training programs for hardware and software are held at the Pforzheim training center or directly at customers' and users' (in Germany and abroad).

For designers, installers, plant managers and other interested parties, the training concentrates on the following subjects:

MGS gears
Modular system structure of system motor and gear family

SMS servo drives
Modular system structure and individual components

Control electronics
Commissioning and optimization

FDS-Tool user software
Program creation,
Program maintenance, preparation for commissioning

Participants can try out the components on demonstration systems and obtain system experience. The potential for individual programming of the control software is taught systematically. All participants are also given comprehensive information and training material.

One-day commissioning courses are held on how to implement and use special system supports correctly.

The special service course is mainly aimed at companies with their own maintenance department. The personnel responsible is trained in servicing work on STÖBER drive systems and kept regularly informed of new developments.

Service partner system

In the German market STÖBER customers are handled by 47 skilled service partner companies. Their regional responsibility allows rapid servicing and personal contact.
In addition to commissioning and rapid troubleshooting, the work of the STÖBER service partners includes technical support in real situations.
All STÖBER service partners have their own components and spares stores.

24 hour hotline

For telephone support 24 hours a day worldwide and for urgent requirements at unusual times, qualified English-speaking STÖBER technical advisers are available to customers and users at all times for help and advice.

STÖBER SERVICE NETWORK

Worldwide

Support and service for installations worldwide are guaranteed by the STÖBER Service Network International.
99 trained service partners in 38 countries work in close communication with STÖBER ANTRIEBSTECHNIK. This is augmented by additional support points which are increasing in number all the time.

Egypt
Import-Commerce-Agents
Eng. NN. Matta (Cairo)

Argentina
Hillmann S.A. (Wilde)

Australia
Reynolds Dynamics PTY Ltd. (Dingley)

Belgium
Van Doren - Pille N.V. (Melle)

Brazil
Fraphe Comercial Ltda. (Sao Paulo)

Bulgaria
Z & M Private Co. (Sofia)

Canada
Ainsworth Electric Co. Ltd. (Toronto)
Delstar Inc. (Montreal)
GMR Electric Motors Ltd. (Saskatoon)

Chile
Koenig e Hijos Ltda. (Santiago)

China
WK Intersales (Beijing)

Columbia
Socomex Ltda. (Santafe d. Bog)

Denmark
Eegholm A/S (Sonderborg)

Finland
EIE Maskin AB (Tammisaari)

France
STÖBER S.A.R.L. (Caluire et Cuire)
ISM Inter Services Maintenance
N.T. Transmissions (Templemars)

Great Britain
STOBER Drives Ltd. (Essex)

India
Jega Precision Drives (P) Ltd.
(Coimbatore)

Indonesia
PT. Haluan Utama Maju (Jakarta)

Israel
Elektromechanic (1984)
M.S. Ltd. (Haifa)

Italy
STÖBER Trasmissioni s.r.l. (Milano)

Korea
Dae Kwang Stoeber Co.

Luxembourg
Köhl AG (Wecker)

Mexico
Servicios
Keystone Mexico S.A. (Nancalpan)

Netherlands
Mijnsbergen B.V. (Mijdrecht)

Norway
Elmeko AS (Gjettum)

Austria
STÖBER ANTRIEBSTECHNIK
GmbH (Linz)
Erwin Reumüller TEWA (Wien)
Lenzing AG (Lenzing)
Hans Mariacher (Villach)
motoren hain (Innsbruck)
Armin Jenni (Schnifis)

Peru
Powermatic S.A. (Lima)

Philippines
Leeleng Com. (Manila)

Poland
STOEBER Polska (Wroclaw)
Huber Technology (Ploch)

Republic of South Africa
Bearing Man Ltd. (Johannesburg)

Saudi Arabia
Ashoor Electric Motors (Jeddah)

Sweden
EIE Maskin AB (Bandhagen)

Switzerland
STÖBER Schweiz AG (Baar)

Spain
S.p.i.t. KOOM s.l.
Tahfer Comercial S.A. (Madrid)

Thailand
German Engineering &
Machinery Co. Ltd. (Bangkok)

Türkei
Yüre Makina San. (Istanbul)

Hungary
BDI Hungary Ltd. (Budapest)

USA
STOBER DRIVES Inc. (Maysville)

Venezuela
Plantas y Equipos Industr.

Vietnam
Mekong Asia Co. Ltd.
(Hochiminh City)

STÖBER ANTRIEBSTECHNIK

STÖBER ANTRIEBSTECHNIK
GmbH + Co. KG
Kieselbronner Str. 12
75177 PFORZHEIM
GERMANY
Phone +49 7231 582-0
Fax +49 7231 582-1000
eMail: mail@stoeber.de
www.stoeber.de

24 hour hotline +49 180 5 786323

STOBER DRIVES, INC.
1781 Downing Drive
MAYSVILLE, KY 41056
USA
Phone +1 606 7595090
Fax +1 606 7595045
eMail: sales@stober.com
www.stober.com

THE COMPLETE DRIVE SYSTEM

STOBER DRIVES LTD.
Waltham Abbey
ESSEX EN9 1JH
GREAT BRITAIN
eMail: mail@stober.co.uk
www.stober.co.uk

STÖBER ANTRIEBSTECHNIK GmbH
4662 STEYRERMÜHL
AUSTRIA
eMail: office@stoeber.at
www.stoeber.at

STÖBER Schweiz AG
6341 BAAR
SWITZERLAND
eMail: info@stoeber.ch
www.stoeber.ch

STÖBER S.a.r.l.
69300 CALUIRE ET CUIRE
FRANCE
eMail: mail@stober.fr
www.stober.fr

STÖBER TRASMISSIONI s.r.l.
20017 MAZZO DI RHO (MILANO)
ITALY
eMail: info@stoeber.it
www.stoeber.it

STOEBER POLSKA
51-126 WROCLAW
POLAND
eMail: biuro@stoeber.pl
www.stoeber.pl

DAE KWANG STOEBER CO. LTD.
SIHEUNG CITY, GYUNGGI DO
REPUBLIC OF KOREA
eMail: dkstoeber@stoeber.co.kr