

GSS
GLOBAL SPINDLE
SOLUTIONS



GSS | GLOBAL SPINDLE SOLUTIONS

WEISS

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WEISS Spindeltechnologie GmbH
A Siemens Company

THE ENTIRE WORLD OF
MECHATRONIC SPINDLE SYSTEMS



GSS

„LOOK FORWARD, WHEN OTHERS
ARE STILL LOOKING BACK“

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WHAT DOES **GSS** STAND FOR?

GSS

Quality and Power

GSS is the short form of "Global Spindle Solutions" and stands for what is probably the most comprehensive and innovative range of products in the field of spindle technology. Whether turning, milling, grinding, or special applications, whether motor spindles, external drives, roller bearings, or fluid bearings, you can find all of these options and more in the GSS product lines offered by Siemens and WEISS. Best of all: **more than 200 satisfied machine makers and more than 500 well-known end users attest: "WEISS spindles are the leaders in the area of quality and power."**





GLOBAL SPINDLE SOLUTIONS

GSS stands for innovative power.

This is the result of our customers' requirements to continually develop their machinery both technically and economically. At the beginning, all they have is frequently just a vision. At the end, however, is a progressive solution.

GSS ensures that your visions become reality – quickly and efficiently.

GSS stands for efficiency.

WEISS's leading industry expertise and Siemens' group power make GSS into the most efficient brand available in the spindle industry. By applying synergies, we create crucial advantages for our business partners.

The efficiency of GSS guarantees our customers' success.

GSS stands for perfection.

Just as our customers aren't satisfied with the mark "good" for their machinery, as a supplier, we don't accept "good" as adequate, either. GSS Spindles claim "outstanding" performance compared to its competitors.

The aspiration towards perfection is what drives on GSS.

GSS stands for experience.

WEISS, as a specialist for spindles, and Siemens, as a full-service provider of machine tools, combine the experience made during several decades of an active presence on the market. Partnerships with universities and leading suppliers contribute new stimuli into the network.

GSS combines the experience made by universities and industry leaders.

GSS stands for individuality.

Each year, designer engeniery at WEISS develop well in excess of 200 new, customer-oriented spindle solutions. Whether it is developed as part of a cooperation project or is commissioned by the customer, each and every spindle is an individual highlight.

GSS stands for over 2,500 individual spindle constructions.

GSS stands for quality.

The demand for quality shared by Siemens and WEISS competes with the highest standards – globally. No spindle leaves the factory without having undergone a 100% function and quality test. All GSS spindles are "made in Germany" and are composed exclusively of parts of the highest quality.

GSS is the brand name of the leader in quality.

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WHAT CAN GSS OFFER YOU?

GSS

THE ENTIRE WORLD OF MECHATRONIC SPINDLE SYSTEMS

WEISS-GSS offers a comprehensive programme of spindle solutions for turning, milling, grinding, and special applications. Within these fields, a breakdown of the models into cata-

logue spindles (currently milling only), standard series, and individual designs helps to determine economically optimal drive solution.

CATALOGUE

Catalogue spindles are technically high-class, field tested large volume production spindles that are requested by many customers. Economic advantages that WEISS gains through the production of these uniform spindle types is passed on to the customer through extremely affordable prices. Made possible by reasonable procurement costs, catalogue spindles offer decisive economic advantages and are unchallenged in their price/performance ratio, even for small purchase quantities.

STANDARD

INDIVIDUAL

Advantages of catalogue spindles:

- ⊕ very affordable to procure
- ⊕ very short delivery times
- ⊕ field tested and proven
- ⊕ highly technically advanced
- ⊕ affordable spindle service through stocking of replacement spindles and parts





CATALOGUE

STANDARD

INDIVIDUAL

Standard series offer the chance to design spindle units individually with certain parameters. Like a construction kit, our standard lines start with predefined basis units upon which options like connections and sensors are then individually placed and designed.

The predominant use of non-variable parts in the production of spindle units allows WEISS to pass on savings through the economy of scale. By working with this medium level of individuality, you nevertheless benefit from a decisive cost benefit over individual constructions.

Advantages of standard series:

- ⊕ affordable to procure
- ⊕ short delivery times
- ⊕ field tested and proven
- ⊕ latest state-of-the-art design technology
- ⊕ affordable spindle service through optional stocking of replacement spindles and parts



CATALOGUE

STANDARD

INDIVIDUAL

For many machine builders, the freedom to pursue individual design is an important part of their drive solutions. WEISS engineers design more than 200 new spindle solutions annually for use in various machines around the world.

The motivation to pursue an individual construction is often based on a desire to optimise a drive solution perfectly for its intended machine concept. This drive, coupled with a clear focus on leadership in the areas of cost, quality, or innovation, has helped us forge tight partnerships that produce drive concepts of the future.

Advantages of GSS individual constructions:

- ⊕ to meet the required price, quality and efficiency of every machine concept
- ⊕ chance to distinguish oneself
- ⊕ possibility of realising vision



CORE COMPETENCE TURNING

GSS

Core competence "Turning"

As varied as the demand on the market may be, just as varied is WEISS GmbH palette of offerings in its core competence of turning spindles.

Well over 250 turning spindle models with a spindle nose (DIN55026) have already been individually designed for customers from all corners of the globe. More models join their ranks each year.

Our spindle models are used in various machine concepts, stretching from horizontal and vertical single spindles to multi-function machines and on to

horizontal and vertical multi-spindle machines.

Individual designs for specialised machine construction rounds out the myriad application ranges.

WEISS GmbH's competencies range from external drive solutions up to the most modern high-power motor spindles. Variations based on bearings, motor, lubrication, and coolants allow for the selection or compilation of drive solutions based on individual viewpoints.

Product line for turning includes standard and individual spindles of every specification. Units can be purchased in quantities ranging from individual pieces up to large production lots. An overview of various selected models can be found in our brochure "TURNING SPINDLES | BEST SELECTION" (see contact form) or on our homepage at

www.weissgmbh.de/turning



References (extract):

Boehring
Brinkmann
Gildemeister
Hegenscheidt
Index-Werke

Lindenmaier
Monforts
Niles-Simmons
Pittler

Scherer Feinbau
Schuster
ThyssenKrupp M.C.
Weisser



Realised performance parameters:

- Output: up to 124 kW (S1-100%)
- Torque: up to 3,900 Nm
- Max RPM: up to 10,500 rpm
- Spindle weight: up to 2,000 kg
- Precision: from 1 μm

Product line

- Spindles with external drive (i.e. belts)
- Spindles with direct drive (motor spindles)

- Synchronous motors
- Asynchronous motors

- Spindles with ball bearings (chromium steel, ceramic,...)
- Spindles with fluid bearings (hydrostatic)

- Grease-based for life lubrication
- Oil-air lubrication

- Without integrated gearbox
- With integrated gearbox (up to 1:4)

- Spindle noses of DIN 55026-A4 to -A11

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CORE COMPETENCE MILLING

GSS

Core competence "Milling"

Its more than 1,000 spindle constructions underscoring WEISS GmbH's to claim as the number one spot globally in the area of milling. The current customer list includes 200 machine builders and users in more than 25 countries.

WEISS offers solutions for nearly all machines: from small milling machines to machining centres up to large portal milling machines. The power characteristics for the spindles can be optimally tuned to the application.

From the cutting of soft materials like aluminium at high speed to heavy chip removal at high torques, the comprehensive portfolio offers a large selection of both standardised and custom made solutions.

WEISS developers are eager to tackle new challenges and design new spindles and drive solutions during the course of a commission or in close cooperation with their business partners. This led to the recent development of a spindle

series with integrated gearbox, unique and setting new standards in the field of high strength material cutting.

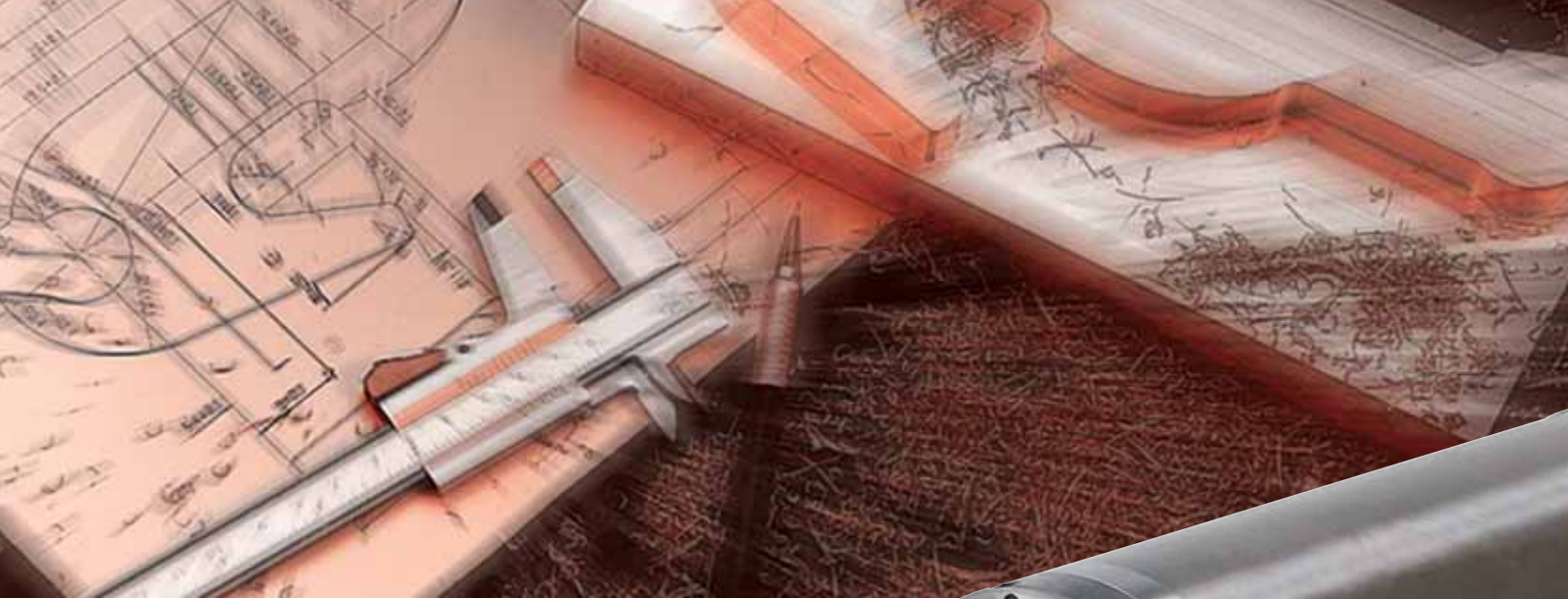
The milling product line includes catalogue, standard, and individual spindles of every kind. Volumes are offered in quantities ranging from individual units up to large production lots. An overview of several selected models can be found in our brochure „MILLING SPINDLES I BEST SELECTION“ (see contact form) or on our homepage at

www.weissgmbh.de/milling



References (extract)

Berthold Hermle	Hedelius	Quick Jet
BMEI	Gebr. Heller	Round Top
Brötje Automation	Goratu	Samag
Chiron	Grob	Sterlitamak
Cincinnati Machine	Henri Line	Streparava
COMAU	Honsberg	Tong Tai
Deckel MAHO	Jiang Su Duoleng	VOGTLAND
Depo / TRIMILL	Liechi	Waldrich
DS Technologie	Moore Tool	WIA
Ex-Cell-O	Park Industries	Zimmermann



Previously realised performance parameters:

- Output: up to 130 kW (S1-100%)
- Torque: up to 3,280 Nm
- Max RPM: up to 40,000 rpm (4 pole)
up to 80,000 rpm (2 pole)
- Spindle weight: between 10 kg and 1,500 kg
- Precision: from 1 μ m

Product line

- Spindles with external drive (i.e. belts)
- Spindles with direct drive (motor spindles)

- Synchronous motors
- Asynchronous motors

- Spindles with ball bearings (chromium steel, ceramic, ...)

- Grease-based for life lubrication
- Oil-air lubrication

- Without integrated gearbox
- With integrated gearbox (up to 1:4)

- Tool interface HSK, ISO, and others

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CORE COMPETENCE GRINDING

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Core competence "Grinding"

Product lines grinding application completely cover both internal and external grinders in almost any variation.

With a successful standard series of internal grinding and over 100 individual designs, WEISS GmbH provides the market with mature yet technically progressive spindle solutions.

The new spindle types recently put its own distinct accent on the grinding market. The spindle prove once again that the standard solutions from WEISS GmbH rise consistently to the highest levels. Preferred areas of usage for motor spindle

units for internal grinding include the grinding of drilled holes and tracks for ball bearings, as well as the grinding of drilled holes for pumping, connection, and transmission parts.

Grinding spindles from WEISS are very popular not just from a technical standpoint, but also in terms of the bottom line, since the customer benefits from the affordability of WEISS spindles as well.

The grinding range of products includes standard and individual spindles of every kind. Volumes are offered in quantities ranging from individual units up to

large production lots. An overview of several selected models can be found in our brochure "GRINDING SPINDLES | BEST SELECTION" (see contact form) or on our homepage at

www.weissgmbh.de/grinding



References (extract)

Buderus	Giustina International	Overbeck
Elb-Schliff	Guehring	Schaudt Mikrosa
EMAG-Gruppe	Kapp	Shanghai Heavy
FAG	Klingelnberg	Supfina Grieshaber
Gleason Pfauter	Liebherr-Verzahntechnik	Voumard



Realised performance parameters:

- Output: up to 100 kW
- Max RPM: up to 120,000 rpm
- Spindle weight: between 10 and 975 kg
- Precision: from 1 μm

Product line

- Spindles with external drive (i.e. belts)
- Spindles with direct drive (motor spindles)

- Synchronous motors
- Asynchronous motors

- Spindles with ball bearings (chromium steel, ceramic,...)
- Spindles with fluid bearings (hydrostatic, hydrodynamic)

- Grease-based for life lubrication
- Oil-air lubrication

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CORE COMPETENCE SPECIAL APPLICATIONS

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Core competence "SPECIAL APPLICATIONS"

Thinking outside the box is the innovation secret of successful machine builders. It's not uncommon for WEISS and Siemens employees to receive enquiries in reference to drive solutions that simply do not fall into the normal application ranges for machine tools. Projects of that ilk carry a special importance for WEISS, because they offer us the chance to present our developmental skill outside of our standard processes.

It is generally special machine builders who take advantage of our services and product capacity in the field of special applications.

We have drawn up and implemented more than 100 projects in recent years with our business partners.

Special spindles are not always just used in machine processing. Special machine builders redirect our focus again and again to alternative areas of use like milk poluder production, milling plants, or testing facilities. The special spindles developed for these applications are less intended for tools and components than to use their rotation to bring other processes into gear.

The palette of offerings in the field of special applications is restricted to indivi-

dual constructions of every stripe. Pieces can be purchased in quantities ranging from individual units to small serial lots. An overview of several selected models can be found in our brochure "SPECIAL APPLICATIONS | BEST SELECTION" (see contact form) or on our homepage at www.weissgmbh.de/specials



References (extract)

BMW
Bosch
Daimler Chrysler
Federal Mogul
Fiat
Ford
General Motors

Hegenscheidt
KS Kolbenschmidt
Lübbers
Mahle
Miba
Pallmann
Park

Präwema
Schumag
Sidmar
STERLING SIHI
Swiss Optik



Picture:
With 2 tons the heaviest ever
built spindle unit at WEISS.

Examples of realised projects:

- Milk powder production
- Wire winder
- Milling plants
- Glass processing
- Testing facility
- Vacuum pumps
- Centrifuges

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CONCRETE DESIRES?

GSS

PROXIMITY TO THE CUSTOMER – WORLDWIDE!

SIEMENS AND WEISS – THE UNBEATABLE DUO

Now that WEISS Spindeltechnologie GmbH has been integrated into the Siemens portfolio of automation and drives, we want to take advantage of the synergies that resulted, for the benefit of our customers and business partners. Proximity to the customer is an important aspect of this.

Siemens on site

The Siemens automation & drives division is present around the world through its branches – near you as well! Qualified and competent contact partners stand ready to work at your side, on site, and provide support.

In addition to technical and organisational needs, your personal sales partner will tend to your wishes, desires, and problems. He or she will serve as a direct partner for discussion as well as an intermediary to the competency centres in the Siemens network.

The complexity of spindle technology makes it impossible for every question to be answered directly on site. When issues arise, your partner at Siemens has direct access to the resources of the spindle specialists at Weiss and will make them completely available to you, at no cost. You need not have any worries, since Siemens will handle coordination and internal process issues for you.

Our tip! Take advantage of the synergies that Siemens is offering you! – Integrate your Siemens partner into your new machine tools during the conception phase and profit from the technical and economic advantages that you and your customers can draw from this partnership.





WEISS Centres of Competence

WEISS Spindeltechnologie GmbH and its 6 current centres of competence in 5 countries serve as the competency centre for Siemens in all questions related to spindle technology. Near on 300 employees are currently employed for all questions related to spindles, from development to production to service.

As a brand for global sales of new spindles, GSS handles more than 200 projects annually, involving the development, design, and construction of new spindles, either in cooperation with business partners or on their behalf. GSS spindles have always striven to set new technical and/or economic benchmarks.

Our tip! Test the spindle know-how and the innovative skills of our GSS employees. Talk to us about your visions, so that we can work together to make them real.

Each Siemens and WEISS business partner can rest assured that GSS guarantees them a competent and experienced sales engineer at their side. Customers are encouraged to take advantage of our know-how through direct discussions with and integration of the engineer or through their on-site Siemens partner.

Our export consulting comes at no charge, of course. Costs are first levied once the spindle is actually contracted to be constructed.



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CONCRETE DESIRES?

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BROCHURES | CONSULTING | OFFERS

Making Contact

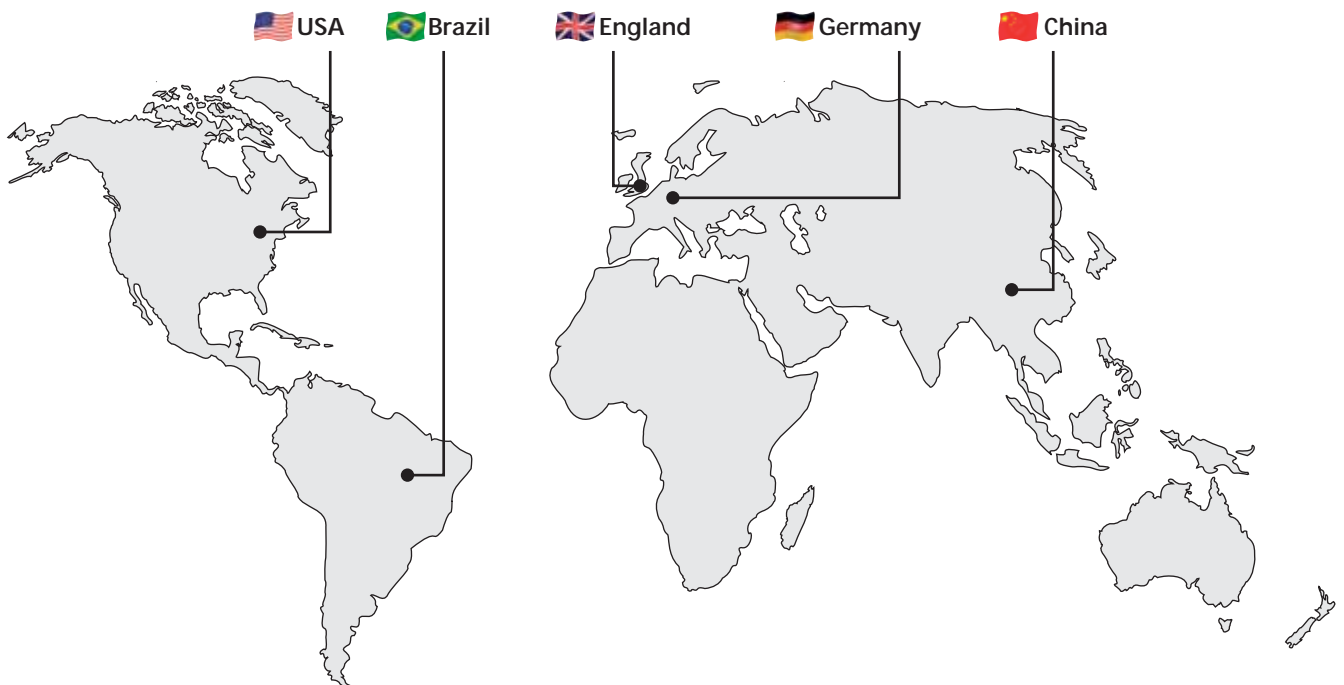
We would gladly help you find answers to any questions you might have: Whether you are interested in more brochures, have specific questions, or are ready to enquire about a detailed offer. **We'll help you, quickly and simply.**

If you already know your personal contact partner at Siemens or WEISS you may contact them immediately regarding your enquiry.

We also recommend the following alternative options for initiating contact with us:

1. **Fax Enquiry Form (see right)**
2. **Internet enquiry:**
www.weissgmbh.de/kontakt
3. **Hotline: +49 (0) 9721 / 7701-0**

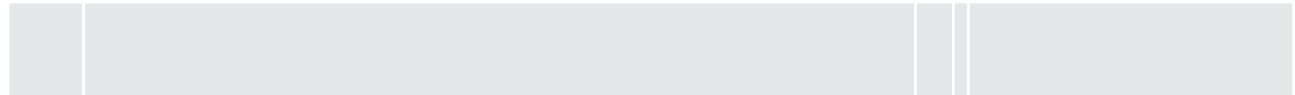
We'll automatically forward your enquiry to the appropriate sales employee who will contact you immediately, as desired.



+ 49 (0) 9721 / 7701 - 133

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Central fax number Your enquiry will be automatically forwarded to your personal customer care representative.



ENQUIRY FORM

Company _____

Contact Person _____

Address _____

Country _____

Telephone _____

Fax _____

E-Mail _____

Please send me the following information:

- WEISS – The Company (Brochure) – from June 2006
- WEISS – The Company (Film) – from October 2005

- GSS – Global Spindle Solutions (Overview – Product catalogue)
- SWSS – Siemens WEISS Spindle Services (Overview – Service catalogue)

- Product catalogue **TURNING**
- Product catalogue **MILLING**
- Product catalogue **GRINDING**
- Product catalogue **SPECIAL APPLICATIONS** – from March 2006
- Product catalogue **HEAVY CHIP REMOVAL**

- Language **GERMAN**
- Language **ENGLISH**

Please phone me back regarding ...

All brochures and catalogues are also available on the Internet for downloading: www.weissgmbh.de/downloads

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