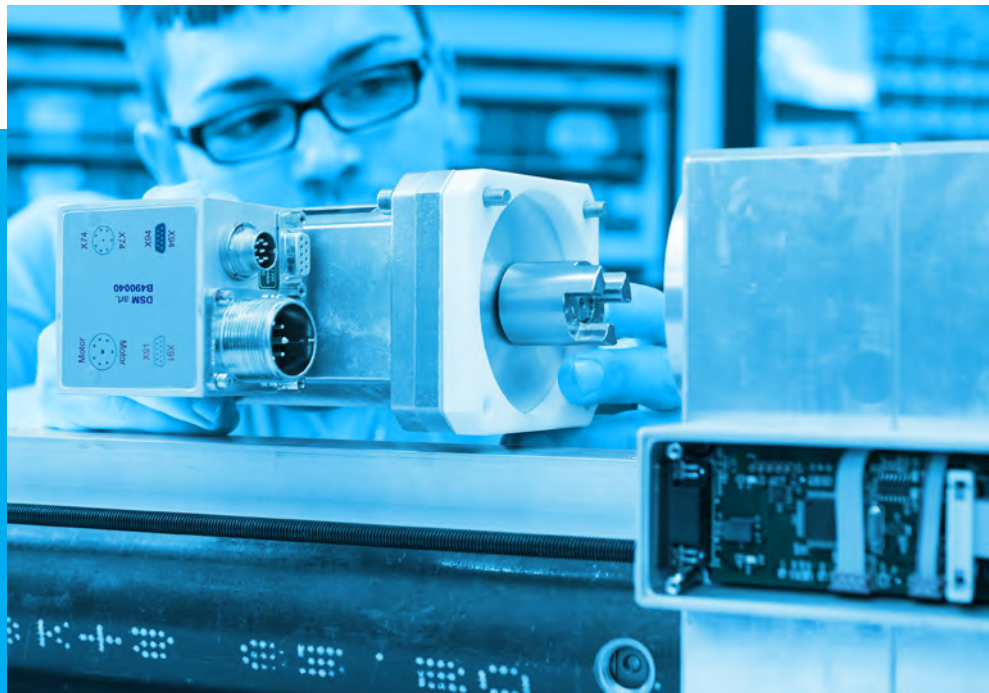


DSM MESSTECHNIK GMBH

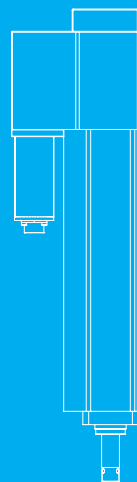
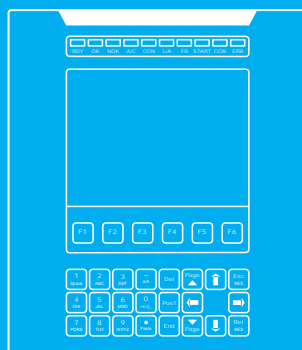
SURVEY 2018



TIGHTEN, PRESS-IN, MEASURE, HANDLE.
EXACT, RELIABLE, INDIVIDUAL CUSTOMISABLE.



English



www.dsm-messtechnik.de

*Tightening Technique
Press-in Technique
Measuring Technique*

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0,01 up to 2400 Nm
Torque

**Individual customised technology
for millions of precise connections.**



50 up to 120 000 N
Press-in force



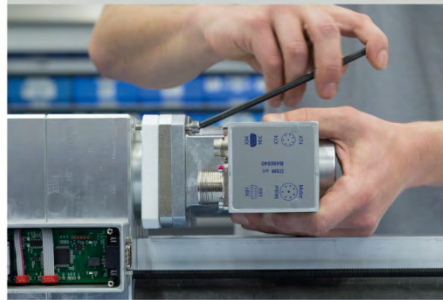
Tightening technique

Hand-held nutrunners
Built-in nutrunners
Tightening control systems
Handling systems
Tightening working stations



Press-in technique

Press-in units
Press-in control systems
Press-in working stations



Measuring technique

QS reference measurement
system for calibration and
monitoring
DAkkS accredited calibration
laboratory



The company DSM Messtechnik GmbH was established in 1982 and represents than 35 years efficient products, excellent quality and elaborate special solutions in the sectors tightening technology, press-in technology and measuring technology. Good and reliable products don't arise by accident, but are always the result of remarkable planning and a brilliant manufacturing quality. As owner managed company we're currently among the global leading suppliers. We mainly deal with the automotive sectors but provide solutions to quite a few other industries as well.

More than a thousand companies in Europe, South America and Asia are our customers. Our strength is the permanent continued development of our technologies and to customise these to individual requirements. So are e.g. in the tightening technique ten patents applied for DSM. We use our innovation to implement customised solutions for you or also to develop completely new solutions, if required. All DSM products are developed and manufactured at our head office in Aalen, Germany.

Customer demands, discovered by e.g. our sales representatives on site, are an incentive for our electrical, mechanical and software engineers. They shortly turn these into marketable products. This image brochure introduces you the versatile standard product range of DSM. Should you have further demands, we're looking forward to your inquiry. Get to know the DSM Messtechnik a little more detailed – you will see, it will be profitable!



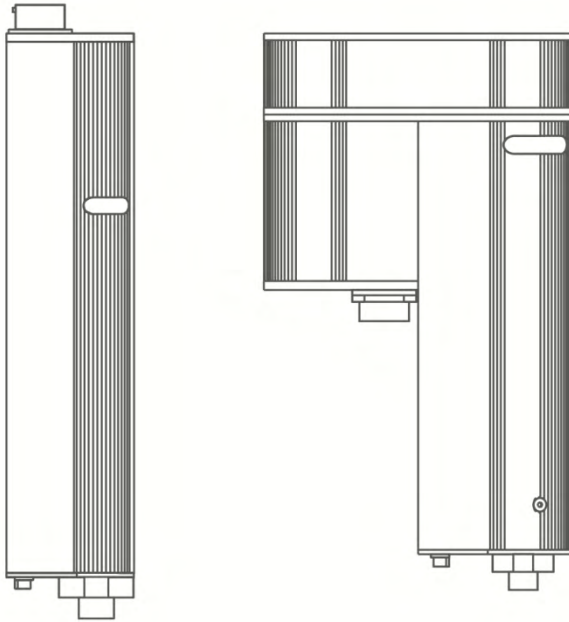
MultiPro 3G

Tighten / Press-in
One system for your assembly.

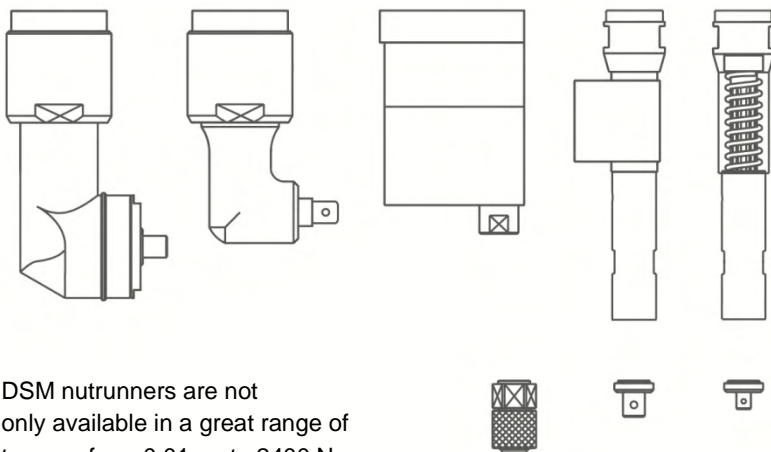
Plug-ins and hardware option modules for solution
of process-specific requirements.

Modular design – custom-fit technique.

Motor modules



Output modules



DSM nutrunners are not only available in a great range of torques from 0,01 up to 2400 Nm, but also with various modules of motors and outputs.






If it is possible to receive the DSM high technology for nearly every application.






DSM offers electrical hand-held nutrunners and those nutrunners to be installed for manual, automated and fully automated assembly processes. They are characterised by their proliferation of options, highest reliability and precision.

The data transfer is made digitally by nutrunners of the **DS series**. The advantage: The nutrunner has an independent decentred intelligence and to that, only one connection cable is needed in the power class up to 60 Nm. Further distinctive details are the LED's at the nutrunner. These show the status of the tightening. The control electronic and the servo controller are in the same case. Thanks to the plaintext menu navigation, the programming of the tightening control systems is especially easy to handle.

Hand-held nutrunners DS series

				
DSH 26	DSH 34	DS 34-P	DSH 44	DS 44-P
0,5/1/2/4 Nm	5/10/20 Nm	2,5/5/10/15 Nm	20/30/40/60 Nm	2,5/5/10/20/35 Nm

Built-in nutrunners DS series

		
DS 26	DS 34	DS 44
0,5/1/2/4 Nm	2,5/5/10/15 Nm	2,5/5/10/20/35 Nm

MultiPro 3G – easy to use and flexible

From the combination of intuitive operator convenience and of a modular hardware and software concept a forward-looking basis has been created which meets the current requirements in the tightening technology.

Equipped with a lot of functions, the scope of work of the MultiPro 3G can be formed individually.

DSM puts special process specific requirements customer-focussed and competent into practice – a new generated function is easily integrated as add-on into the control system.

Built-in nutrunner DS series



DS 57

50/70/90/140 Nm



DS 80

220/300/420/500/600 Nm



DS 80-130

900/1000/1500/2000/2400 Nm

Tightening control systems

- CPU 4 -



MultiBasic Blue TA



MultiBasic TA



MultiClassic TA



MultiPro TA





- CPU 5 -



MultiPro 3G

The accurate control system for every assembly process

Control units with digital processing of the measuring signals for nutrunners of the DS series. Applicable for manual work stations and automatic stations. The control module and the basic module are combined in one case. Consequently the control unit does not require a control cabinet and therefore little space.

Control module (CPU 4)	MultiBasic Blue TA	MultiBasic TA	MultiClassic TA	MultiPro TA
				
LCD display	2,5"	2,5"	2,7"	5,7"
Function keys	4	4	4	6
Keypad	no	no	no	yes
Number of programs	16	32	128	255
Lines per program / total	max. 50 / 800	max. 50 / 1600	max. 100 / 2000	max. 200 / 3000
Instruction set (commands)	33	33	31	37
Tightening stages per program	max. 49	max. 49	max. 99	max. 199
Tightening processes	5	5	5	5
Untightening processes	1	1	2	2
Envelope monitoring	no	no	yes	yes
Graphic recording	no	no	yes	yes
Freely direct inputs	4	4	4	4
Freely direct outputs	4	4	4	4
Inputs and outputs extendable	no	yes	yes	yes
Sampling rate	1 kHz	1 kHz	1 kHz	1 kHz
Interfaces	V24	V24, System bus	V24, System bus	V24, System bus, Profibus
Interfaces optional	no	Profibus, Profinet, TCP/IP	Profibus, Profinet, TCP/IP	Profinet, TCP/IP
Other features	2 x 3 LED status reports for torque and angle of rotation; freely programmable tightening operations; automatic self test of the control system and of the nutrunner; mobile backup and production memory 128 MB (CF card); parameter and program backup in EEPROM; firmware bilingual, reversible			

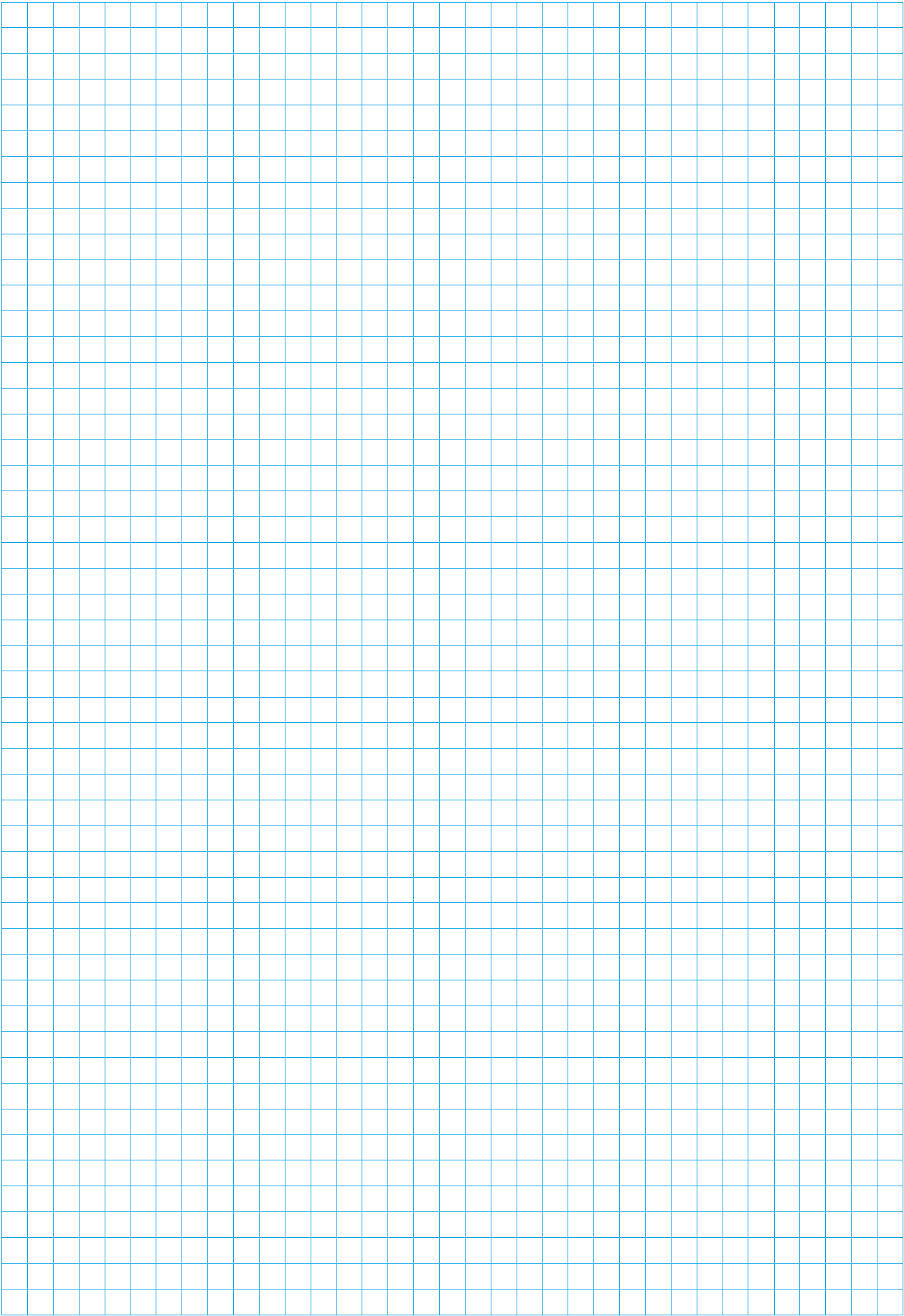
Matching servo controllers for all control modules

The basic module supplies the control unit and the connected tool. There are different basic modules available. This depending on the required performance of the nutrunner.

Important accessory for the safety of persons is the integrable safety interface.


Basic module	Nutrunner SA / MDW
DS-S Type 1	DS26/005; DSH 26/005
DS-S Type 2	DS 26/01/02/04; DSH 26/01/02/04
DS-L Type 1	DS 34/025/05
DS-L Type 3	DS 44/025/05/10/20
DS-L Type 4	DS 34/10/15; DSH 34/05/10/20; DSH 44/20/30/40/60
DS-L Type 5	DS 44/35
DS-H Type 4	DS 57/25/50/70/90/140
DS-V Type 4	DS 80/220/300/420/500/600; DS 80-130/900/1000/1500/2000/2400

For your notes



The perfect choice for every assembly process

MultiPro 3G is compatible with all nutrunners of the DS series and the perfect choice for the uncritical as well as for the function critical and safety critical assembly. Suitable for hand-held, semi-automatic and fully automatic tightening processes. Thanks to the modular design of the MultiPro 3G, the control module can be integrated in every DSM basic module. Compact housed in one case – the control unit require little space and no additional control cabinet.

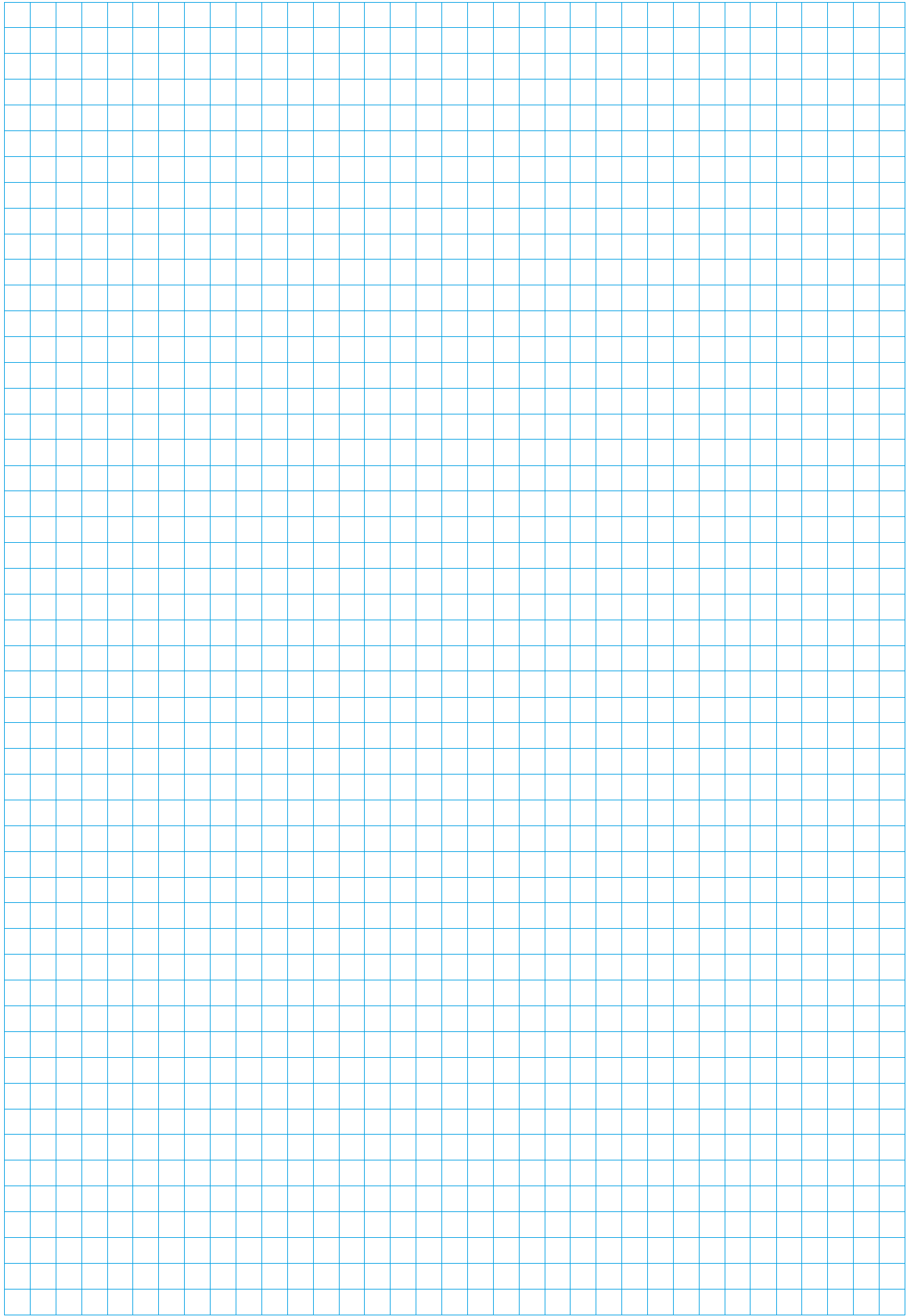
Control module (CPU 5)		MultiPro 3G
Firmware <i>TIGHTEN</i>		
Colour touchscreen		5,7" (resolution 320x240 pixel, TFT 262k colours, touchscreen, measurement display, static display, graphic display with full screen mode and zoom function, user interface with intuitive operable icons)
Status LED		12 (ready, OK, NOK, memory A / C, connection, network, field bus, start, counterclockwise, error)
Function keys		6 (for configuration and programming directly on the device)
Keypad		yes (alphanumeric keypad with 15 keys, 8 navigation keys)
Number of programs		255 (1 -128 startable programs, 129 - 255 subprograms)
Lines per program / total		max. 200 / 3000
Instruction set (commands)		40
Tightening stages per program		max. 99 (measurement data memory, graphic memory, error memory and statistic memory for each tightening stage)
Tightening processes		5
Untightening processes		2
Envelope monitoring		yes
Graphic recording		yes
Freely direct inputs		8
Freely direct outputs		8
Inputs and outputs extendable		yes
Sampling rate		1 kHz
Field bus		DSM system bus
Field bus option modules		Profinet, Profibus
Interfaces		COM, E/A, USB type A, USB type B, LAN (TCP/IP)
Other option modules		measurement module, DIPPC module, BT module, WLAN module
Other features	Freely programmable tightening operations; automatic self test of the control system and of the nutrunner; 2 GB internal memory + 4 MB RAM; 2 GB external memory, USB memory stick (SLC); parameter and program backup; language switchable; filter (low-pass, smoothing, head contact)	

Matching servo controllers for all nutrunners of the DS series

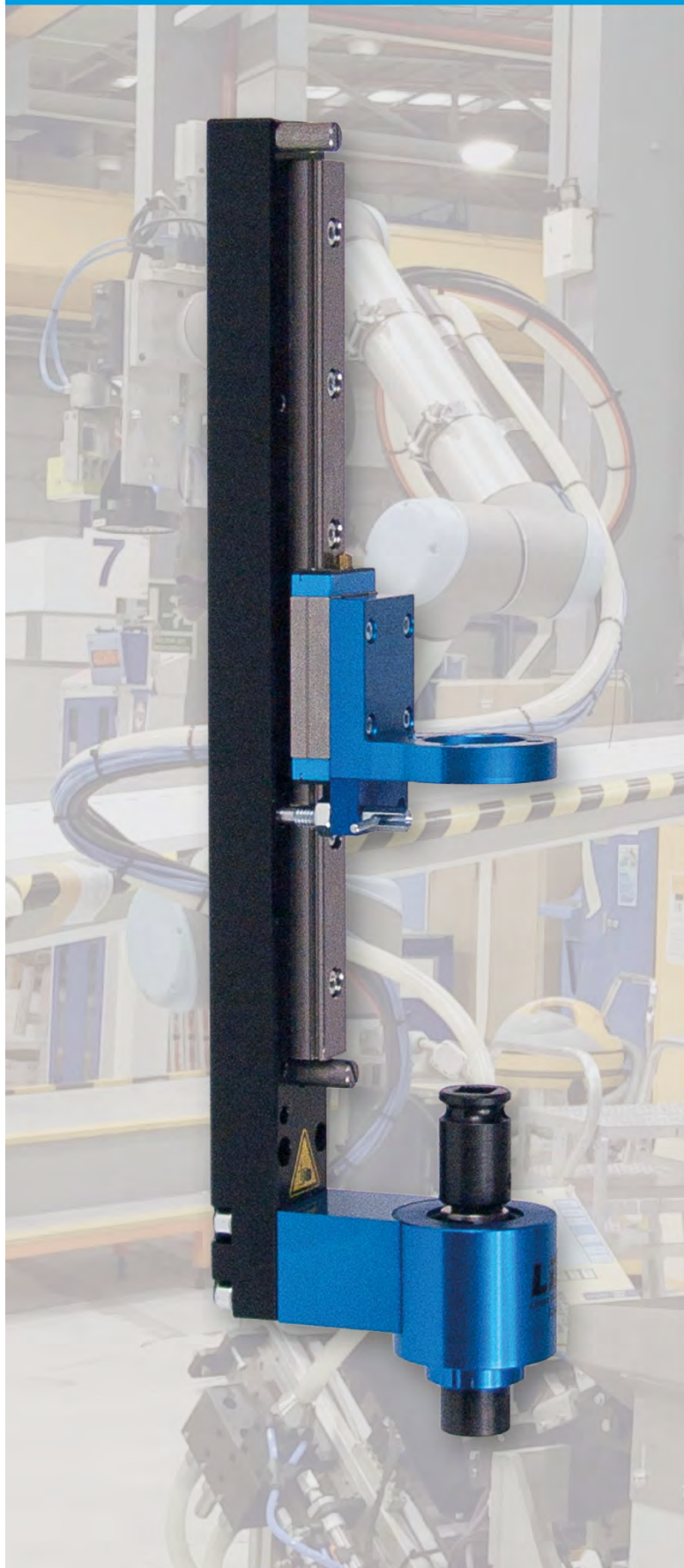
The basic module supplies control unit and nutrunner. For personal safety – execution with STO (Safe Torque Off).

Basic module (standard)	with STO	Nutrunner MDW
BM-S-1	BM-S-1-STO	DS26/005; DSH 26/005
BM-S-2	BM-S-2-STO	DS 26/01/02/04; DSH 26/01/02/04
BM-L-1	BM-L-1-STO	DS 34/025/05
BM-L-3	BM-L-3-STO	DS 44/025/05/10/20
BM-L-4	BM-L-4-STO	DS 34/10/15; DSH 34/05/10/20; DSH 44/20/30/40/60
BM-L-5	BM-L-5-STO	DS 44/35
BM-H-4	BM-H-4-STO	DS 57/25/50/70/90/140
BM-V-4	BM-V-4-STO	DS 80/220/300/420/500/600; DS 80-130/900/1000/1500/2000/2400

For your notes



Assemble test equipment without using tools – no long process interruption.

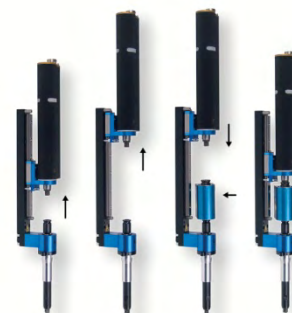


DSM linear modules for the assembly of test equipment (rotating torque transducers) to the DSM nutrunner of the DS 34 / DS 44 series without using tools and without long process interruption.

In basic position the nutrunner is fixed by a locking device at the output. The nutrunner can be manually moved with the linear slide by pulling the locking bolt and can be fixed on two further snap-in points for the integration / assembly of the torque transducer. Precondition for this is a firm connection between linear module and output (e.g. spring output) as well as the direct mounting of the nutrunner at the linear slide.



Standard use of the nutrunner in the assembly process



Assemble torque transducer without using tools



Measure via a reference measuring system during the production process and record the data, e.g. with the DSM QS-Box

Fatigue-free working without error – DSM technology for manual assembly.



Handling devices are essential for the tasks and the applications of the hand-guided and the semi-automated assembly.

Daily recurring operations makes the tool with time heavier and heavier for the user - if you also considers the reaction torque and incorrect holding of the tool, a disorder of the hand-arm-shoulder system cannot be excluded.

Preserve the health of your employees!

The weight of the tool is balanced by the DSM handling system, so that a safe, easy and effortless handling is guaranteed.

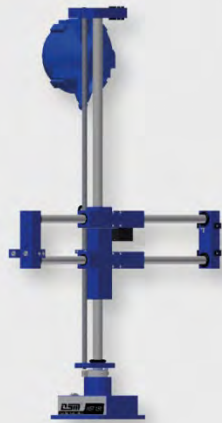
Equipped with positioning-electronic and sensors for the XY(Z) coordinates the position of the tool can be monitored.

No screw will be forgotten - even complex tightening sequences can be specified and monitored.

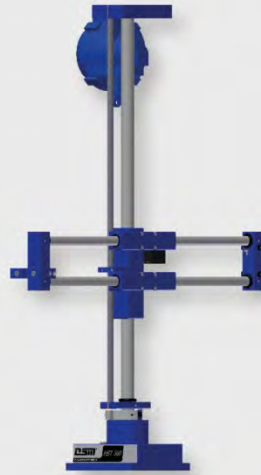
Handling stand HST



HST 40



HST 150



HST 300



HST 600

Handling stand POSI 1



POSI 1 GG-40



POSI 1 GG-150



POSI 1 GG-300

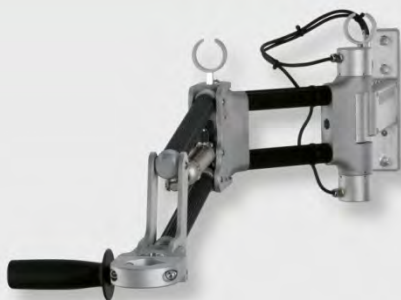


PosiControl



PosiControl4

Handling swivel arm POSI 2



POSI 2



PosiControl



PosiControl4

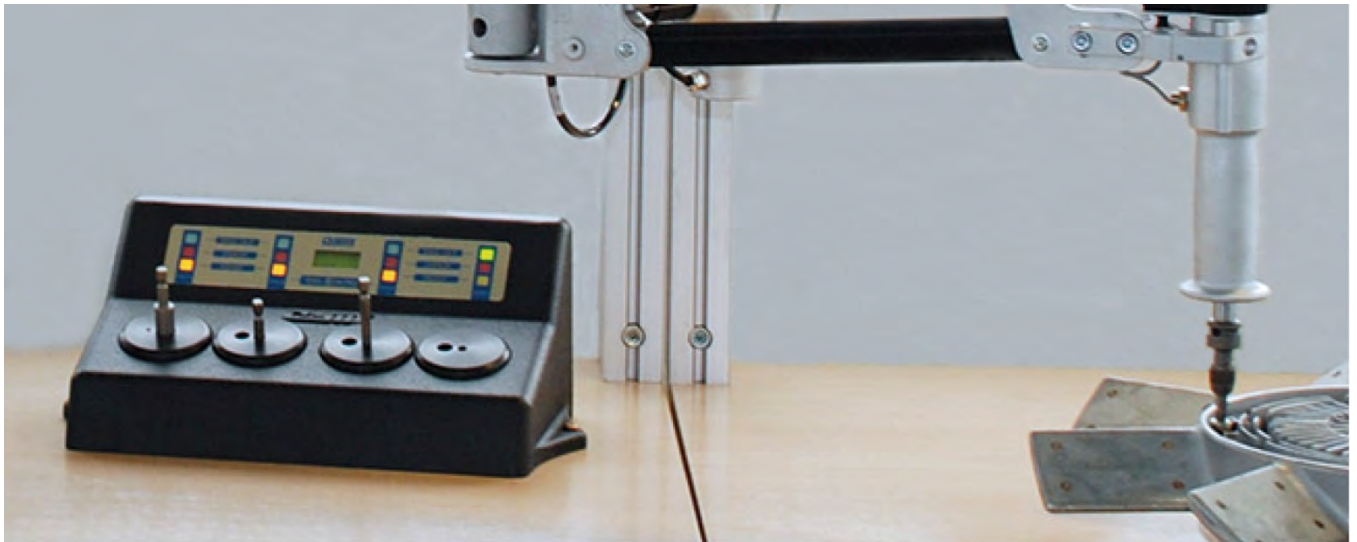
Advanced handling – precise, reaction-free and clever.



DSM offers with the HST series advanced handling devices.

The model series is available in 4 sizes as pure handling stand or in the execution with integrated position monitoring – positioning controller is installed in the pedestal.

Thanks to the modular design of both versions and the variety of innovative equipment options allows to realise modern and ergonomically structured workplaces.



ToolControl – the intelligent socket box.

If a tool is taken out, ToolControl automatically calls up the correct sequence program. After appropriate activation, ToolControl shows the operator the tool that is required for the current assembly process.

Features ToolControl

- Processor monitored tool removal
- Status reports via LCD plain text display
- Status indication for each tool
- Available with two, four or eight tool inserts
- Cascatable up to 32 tools
- Connection to the control unit by a systembus cable
- Optional interfaces: Profibus, Ethernet for the integration in a PLC
- Stable aluminium pressure die housing with mounting plate
- Customised tool inserts made of synthetic material

ToolControl



TC2 TC4 TC8
Basic systems



TC2-E TC4-E
Expansion systems



In the sector of electro-mechanical presses, DSM covers a range of 50 N up to 120 000 N press-in force.

As required, we equipped the press with a stroke extension or with an electro-mechanical brake.

Our own production enables customer-specific versions at any given time.

DSM offers two series for digital press-in technology:

The QMP series and the SMP series.

DSM precision presses of the **QMP series** are construed for press and pull forces.

They are designed very slim in a square-cut stainless steel case.

This results in a low permanent weight of the press unit, so that consequently high increases in speed, speeds and cycle time can be implemented.

The digital load cell (measuring accuracy 0,5 % of the final value), which is protected against overload, is located directly in the plunger. Length/stroke measurement is carried out by a absolute length/stroke measuring system with a resolution of 0,002 mm. LED status report at the press unit show the operating status and the result.

Precision presses of the **SMP series** are construed only for press forces. They are designed very robust and low-maintenance. The simple construction convinced in the rough industrial environment.

The digital load cell (measuring accuracy 1 % of the final value) is located directly near the plunger.

Length/stroke measurement is carried out by a absolute length/stroke measuring system with a resolution of 0,003 mm.

The press units of the SMP series cannot equipped with optional accessories.

The control electronic and the servo controller are in the same case. Thanks to its plaintext menu navigation, the programming of the QMP / SMP control systems is especially easy to handle.

QMP press-in units



		
QMP 80	QMP 100	QMP 140
2,5/5/10/20 kN	30/40/50/60 kN	70/100/120 kN
200/300/500 mm	200/300/500 mm	200/300/500 mm




MultiPro 3G – easy to use and flexible

From the combination of intuitive operator convenience and of a modular hardware and software concept a forward-looking basis has been created which meets the current requirements in the press-in technology.

Equipped with a lot of functions, the scope of work of the MultiPro 3G can be formed individually.

DSM puts special process specific requirements customer-focussed and competent into practice – a new generated function is easily integrated as add-on into the control system.



SMP press-in units			
			
SMP 300	SMP 300	SMP 400	SMP 500
0,5 kN	1/2 kN	5/10 kN	20/30/50/70 kN
100/200/400 mm	100/200/400 mm	100/200/400 mm	100/200/400 mm

Press-in control systems		
<div>- CPU 4 -</div>		
		
MultiClassic FL	MultiPro FL	
<div>- CPU 5 -</div>		
		
		MultiPro 3G

The accurate control system for every assembly process

Control units with digital processing of the measuring signals for press-in units of the QMP / SMP series. Applicable for manual work stations and automatic stations for assembly and forming applications.

The control module and the basic module are combined in one case. Consequently the control unit does not require a control cabinet and therefore little space.

Control module		MultiClassic FL	MultiPro FL
			
LCD display		2,7"	5,7"
Function keys		4	6
Keypad		no	yes
Number of programs		128	255
Lines per program / total		max. 100 / 2000	max. 200 / 3000
Instruction set (commands)		31	37
Press-in stages per program		max. 99	max. 199
Standard press-in processes		8	8
Envelope monitoring		yes	yes
Graphic monitoring		yes	yes
Freely direct inputs		4	4
Freely direct outputs		4	4
Inputs and outputs extendable		yes	yes
Sampling rate		1 kHz	1 kHz
Interfaces		V24, System bus	V24, System bus, Profibus
Interfaces optional		Profibus, Profinet, TCP/IP	Profinet, TCP/IP
Other features	2 x 3 LED status report for force and stroke; freely programmable press-in operations; automatic self test of the control system and of the press-in unit; mobile backup and production memory 128 MB (CF card); parameter and program backup in EEPROM; firmware bilingual, reversible		

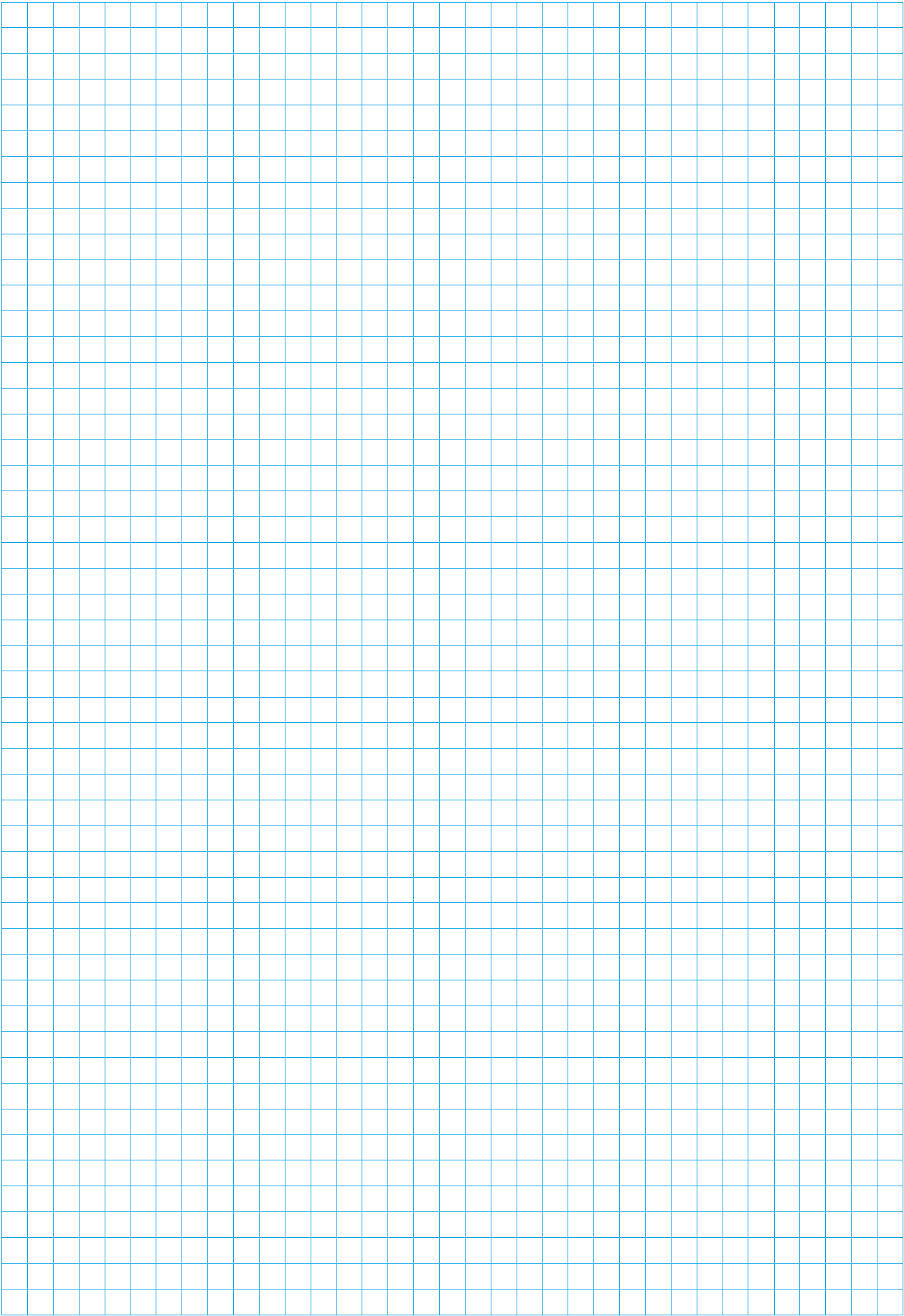
Matching servo controllers for all control modules

The basic module supplies the control unit and the connected tool. There are different basic modules available. This depending on the required performance of the press-in unit.

Important accessory for the safety of persons is the integrable safety interface.


Basic module	Press-in unit
DS-L Type 3	SMP 300/005/01/02
DS-H Type 2	SMP 400/05/10
DS-H Type 5	QMP 80/025/05/10/20/25
DS-V Type 5	QMP 100/30/40/50/60; QMP 140/70/100/120; SMP 500/20/30/50/70

For your notes



The perfect choice for every assembly prozess

MultiPro 3G is compatible with all press-in units of the QMP and SMP series and the perfect choice for simple as well as for high-precision press-fit, joining and forming operations. Suitable for semi-automatic and fully automatic assembly processes. Thanks to the modular design of the MultiPro 3G, the control module can be integrated in every DSM basic module. Compact housed in one case – the control unit require little space and no additional control cabinet.

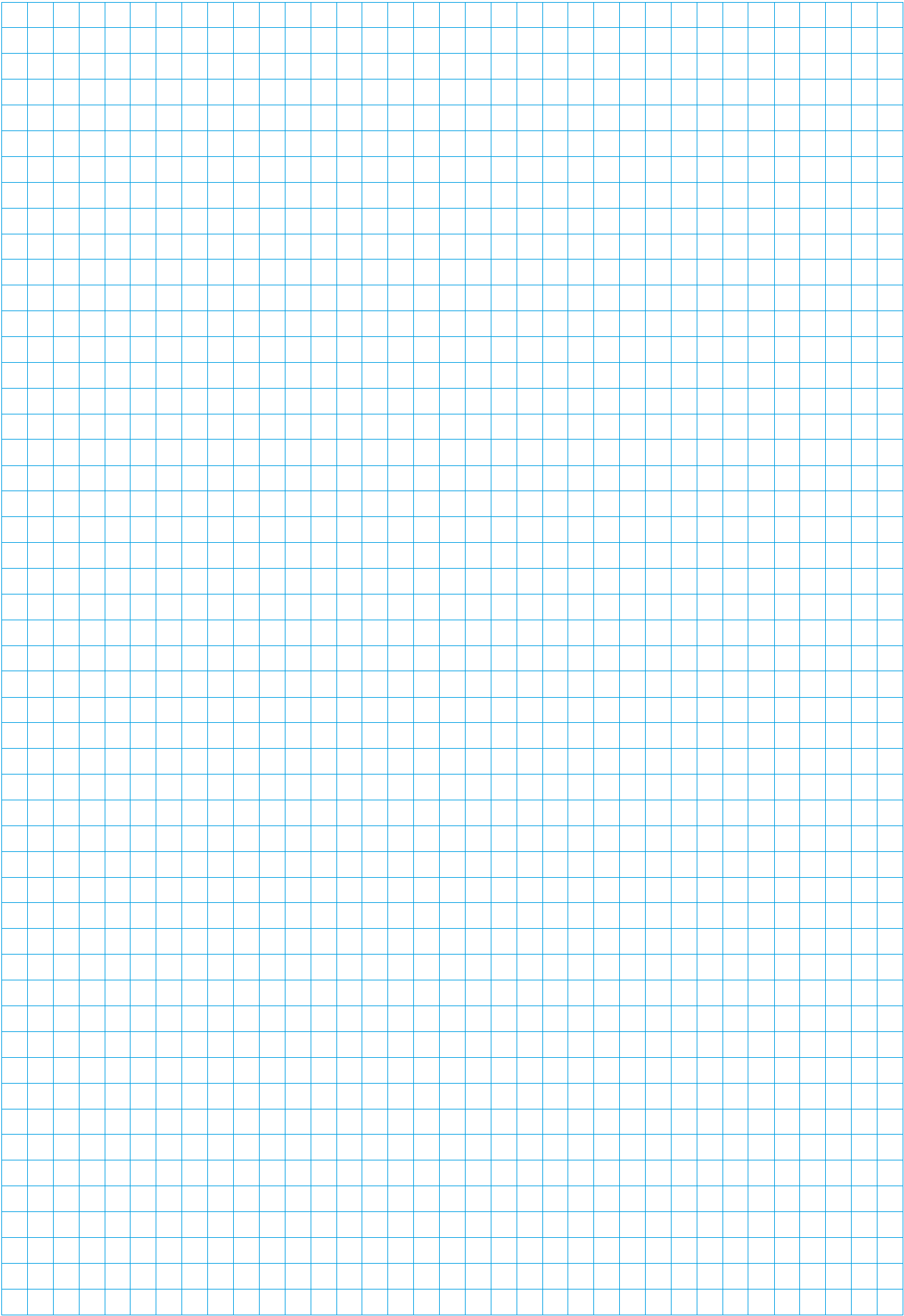
Control module (CPU 5)		MultiPro 3G
Firmware PRESS-IN		
Colour touchscreen	(resolution 320x240 pixel, TFT 262k colours, touchscreen, measurement display, statistic display, graphic display with full screen mode and zoom function, user interface with intuitive operable icons)	5,7"
Status LED	(ready, OK, NOK, memory A / C, connection, network, field bus, start, counterclockwise, error)	12
Function keys	(for configuration and programming directly on the device)	6
Keypad	(alphanumeric keypad with 15 keys, 8 navigation keys)	yes
Number of programs	(1 -128 startable programs, 129 - 255 subprograms)	255
Lines per program / total		max. 200 / 3000
Instruction set (commands)		40
Press-in stages per program	(measurement data memory, graphic memory, error memory and statistic memory for each press-in stage)	max. 99
Press-in processes		8
Envelope monitoring		yes
Graphic recording		yes
Freely direct inputs		8
Freely direct outputs		8
Inputs and outputs extendable		yes
Sampling rate		1 kHz
Field bus		DSM system bus
Field bus option modules		Profinet, Profibus
Interfaces		COM, E/A, USB type A, USB type B, LAN (TCP/IP)
Other option modules		measurement module, DIPPC module, BT module, WLAN module
Other features	Freely programmable press-in operations; automatic self test of the control system and of the press-in unit; 2 GB internal memory + 4 MB RAM; 2 GB external memory, USB memory stick (SLC); parameter and program backup; language switchable; filter (low-pass, smoothing)	

Matching servo controllers for all press-in units of the QMP and SMP series

The basic module supplies control unit and press-in unit and is equipped with the safety interface STO (Safe Torque Off) for personal safety.

Basic module	Press-in unit
BM-L-3-STO	SMP 300/005/01/02
BM-H-2-STO	SMP 400/05/10
BM-H-5-STO	QMP 80/025/05/10/20/25
BM-V-5-STO	QMP 100/30/40/50/60; QMP 140/70/100/120; SMP 500/20/30/50/70

For your notes



Work stations from DSM – always a good basis.

Next to single components for the tightening technique and press-in technique, DSM also offers complete single work stations and rebuilding for existing stations. Our long-time experience on this sectors assures you a cost-effective and technical projecting overall solution, at which all components are ideal harmonised on each other.

All dimensions can be specified individually. We equipped your work station with required DSM products and, if necessary, also with components of other manufacturers.

The personnel safety with the applicable standard for example is assured by a two-hand control, a lockable automatic lift door or a light curtain.



DSM assembly station for the automated tightening of thread nuts.



DSM press-fit station with protected working space for caulking of bushings.

Special solutions



△
Test nutrunner for radial clearance measurement.

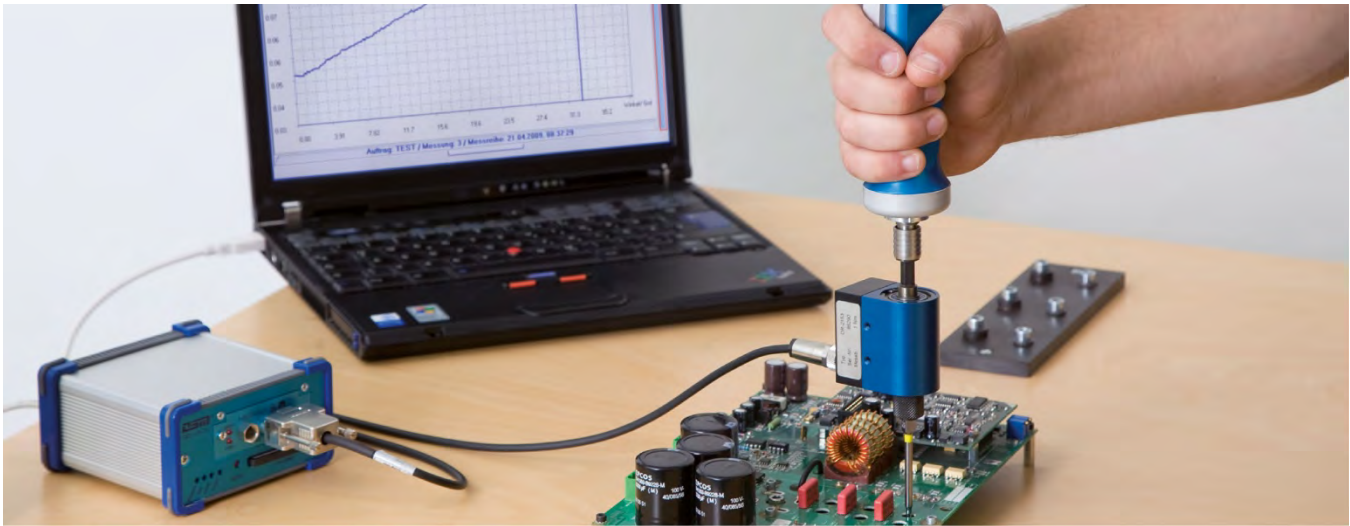
Special angle output for positioning the opening of the crow foot. ▽



△
SMP with fan unit for short cycle times.

Individual technical solutions for hardware and software, are our strength.

Beyond our versatile standard product proposal, we produce special designs and completely new products for you. In close cooperation with you, we develop customised solutions for the application ranges tightening technique, press-in technique and quality assurance.



Reference measuring system

The QS-Box is a compact, extremely versatile reference measuring system. It processes analogue as well as digital measuring signals. All established measuring sensors can be connected with corresponding plug-in modules. The channel DSM-Digital offers you all the options of a modern, digital measuring system with the QS-Box.

Features QS-Box

- Exchangeable plug-in modules for analogue and digital measuring signals: DSM-Digital, $\pm 1 \text{ mV/V}$, $\pm 2 \text{ mV/V}$, $4\text{-}20 \text{ mA}$, $\pm 5 \text{ V}$, $\pm 10 \text{ V}$, $\pm 15 \text{ V}$
- Measurements possible in online and offline mode
- Exchangeable CF data storage
- Synchronisation input for angle of rotation and length/stroke control
- Recording of measurements with graphics monitoring
- Interfaces: USB, RS232, TCP/IP, Profibus (optional)

DSM Digital plug-in module

The QS-Box unfolds its complete potential with DSM-Digital:

- Insensible signal transfer
- Direct status report at the measuring sensor
- QS-Box-Software for administration, parameterisation and evaluation
- Automatic recording of the sensor data's
- Automatic adjustment of the measuring parameters
- Data transfer and remote control via TCP/IP



SCI module

We convert your analogue sensors: Equipped with a SCI module, every existing transducer can be connected to the digital-interface of the QS-Box. This allows you to use all advantages of the digital system cost-effectively.

Measuring sensors

According to requirements, DSM delivers analogue and digital measuring sensors of any type: e.g. force load cell, length/stroke sensors, length/stroke measuring sensors, torque transducers and temperature sensors.



Torque transducer



Force load cells

Play it safe right from the beginning with the experts service of DSM.

DAkkS accredited calibration laboratory

DSM runs a calibration laboratory, which is accredited and controlled from the DAkkS (German Accreditation Body) and is also a member of the DKD. We check your measuring system and your measuring sensors in our calibration lab in Aalen, Germany, or at your place. Of course, we calibrate older DSM products as well as nutrunners and measuring sensors of a lot of other manufacturers.

The calibration certificates, issued by DSM, are a confirmation for the traceability to the national standards.

Commissioning and maintenance

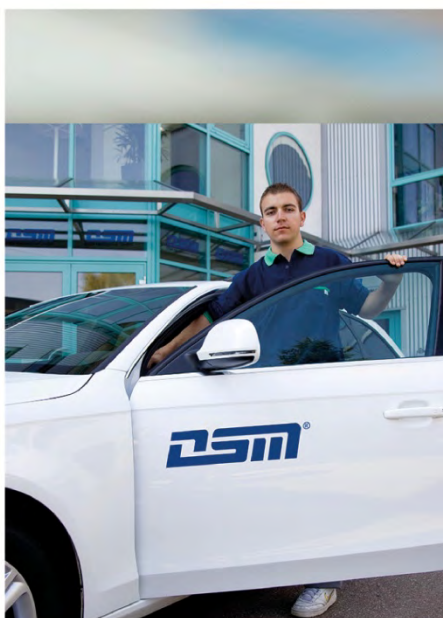
DSM escorts you during the complete life time cycle of your product. Whether it is initial commissioning, extension or rebuilding – we take care of the perfect integration of DSM products into your applications on site. Experienced DSM specialists support you by starting your plant, by the process specification and by the training of your employees. With unbureaucratic assistance, we care fore, to get the operations running quickly again in very urgent situations.

Trainings

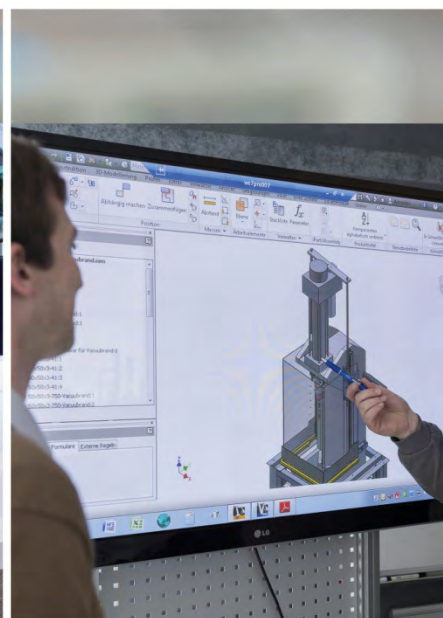
In our training centre in Aalen, Germany, we offer you the most modern technology and a comfortable ambience. There, all DSM products are at the participants disposal. To that, we also provide units for tightening as well as press-in technology and for calibration by trainings at your place. Our experts not only communicate the professional handling with DSM products, but also their long-time experience in tightening and press-in processes. The contents of the trainings are tailored especially to the requirements of the participants.



Calibrations conforming to standards: The DSM calibration laboratory in Aalen, Germany, is accredited acc. to DAkkS.



Expert advice and service at your place – we're always on the go.



The operation of the DSM products can be practised under competent instruction in the DSM training centre.

DSM

Custom-made innovative tools

■ ■ ■ made in Germany

Company headquarters in Aalen, Dieselstraße 16
Development, production, administration and sales





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