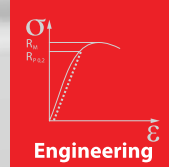
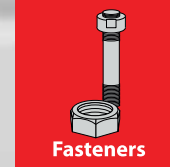


Tools



Engineering



Fasteners



Service

## Nut Runners

Electric, battery-driven, pneumatic, manual

[www.ith.com](http://www.ith.com)



SCAN ME

# Content

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## Nut Runners

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## More than 40 years of continuous development

Continuity, quality and a high vertical range of manufacture are the prerequisites to offer our customers the technically and economically best solution for their bolting needs. Since 1979, all bolting tools have been developed and produced at ITH Bolting Technology's headquarters in Meschede, Germany.

All options - including documentation or angle-controlled tightening - can be selected according to your requirements. Personal contact is essential - contact our team for individual technical advice. All contact information can be found on our website [www.ith.com](http://www.ith.com).

We are looking forward to working with you,

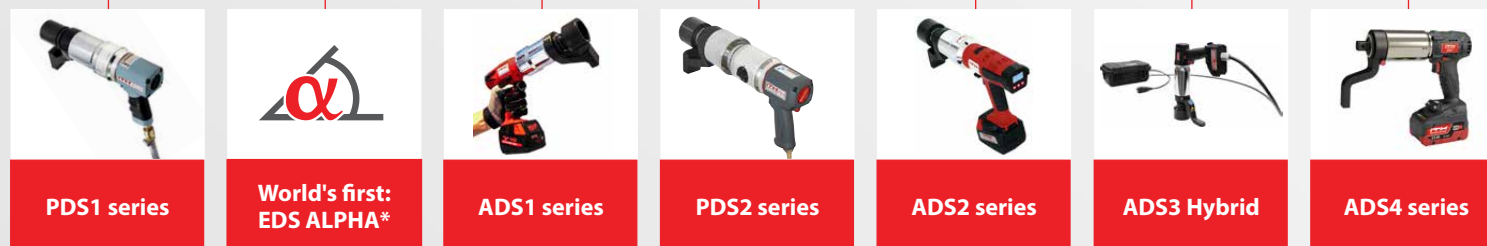
**Dipl.-Ing. Frank Hohmann**  
Managing owner | CEO

**Dipl.-Ing. Jörg Hohmann**  
Managing owner | CEO



1979

Innovation and development



Innovation

\*ALPHA-version: angle-controlled tightening, digital control.

# Type ADS 4 Battery Nut Runner



## Features

Bolting data and machine settings directly on the ADS:

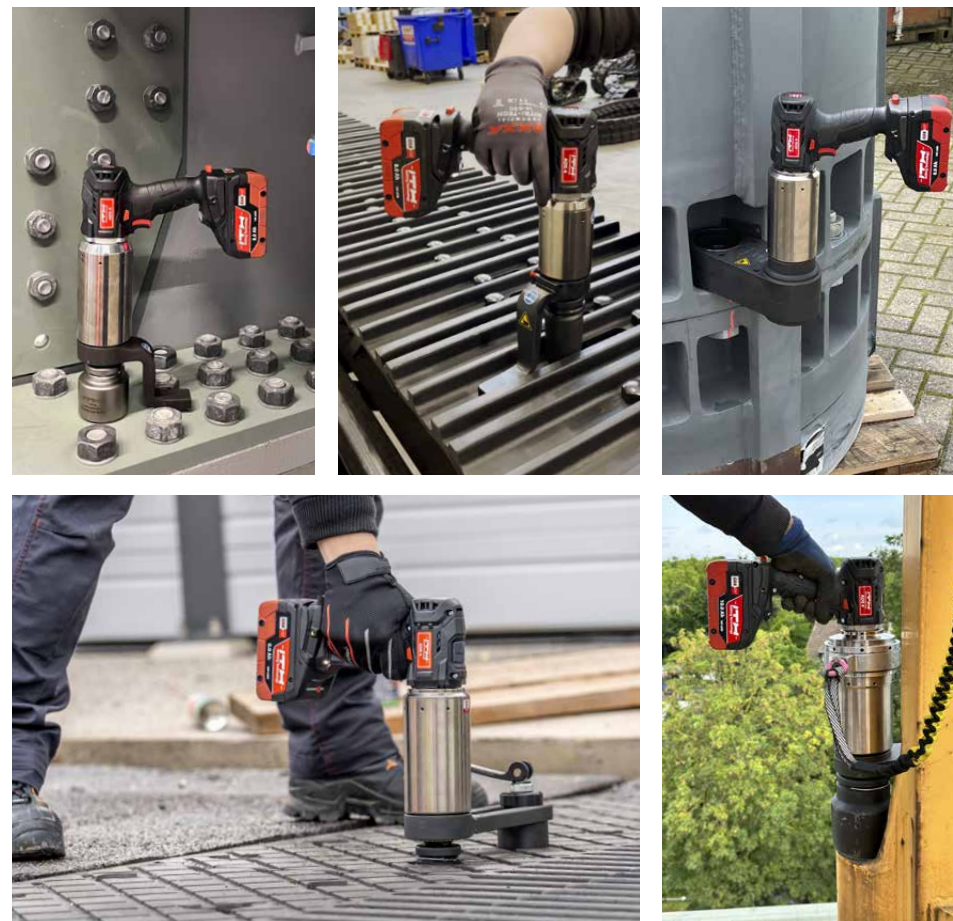
- ✓ Input of torque and angle of rotation
- ✓ Selection of unit
- ✓ Setting of standby and free turning time
- ✓ Setting of brightness of LCD color display and LED work lights
- ✓ Display of cycle counter and software version

**See more product details and videos on our website:**

Simply scan the QR code with your smartphone.



## Application examples



\* Under comparable bolting conditions \*\*Not combinable with option Basic

## Battery Nut Runner

# Type ADS 4

## Functions & advantages

- ✓ **New:** compact high-performance planetary gearbox with higher speeds for faster work
- ✓ **New:** 1-gear solution, full power spectrum across the entire torque range
- ✓ **New:** bolting data and machine settings directly on the ADS 4 via a color LCD display with OK and n.OK indicator
- ✓ Automatic shut-off and free-turn: After reaching torque, the ADS 4 stops automatically and turns freely
- ✓ Torque accuracy of  $\pm 4\%$ \*
- ✓ Flexible, even faster and easier to use without cables
- ✓ Expandable application possibilities thanks to customized supports, ITH Extensions and ITH Side-drives
- ✓ Choice of batteries (LiHD) according to your requirements: 5.5 Ah or 8.0 Ah. The ITH ADS 4 is officially part of the Cordless Alliance System CAS



## Options:



**Basic:** One or more preset torques as factory setting



**ALPHA:** Angle-controlled tightening\*\*



**Docu:** With ITH documentation software Docu (incl. ALPHA)\*\*

# Type ADS 4 Battery Nut Runner



**New, compact high-performance planetary gearbox**

**Fine-tooth spline**  
for individual 360° adjustment of the reaction arm

**Square drive**  
for individual power wrench sockets including locking clip

**Quick release mechanism**  
allows the support to be changed or repositioned in seconds without the need for tools

**Setting buttons on the LCD color display**  
for bolting data and machine settings

**LED lights**  
as work light and indicator light

**Safety turning knuckle**  
wrist-friendly, simple and quick positioning in 360°

**1-gear solution**  
full power spectrum across the entire torque range

**Powerful drive unit**  
brushless, low-wear design for longer life

**Directional switch**  
for Tighten / Loosen

**On / Off switch**  
ergonomically positioned

**Pistol grip**  
non-slip



Picture: ADS 4 with optional accessories

# Type ADS 4 **Technical data**



## Scope of delivery

The scope of delivery can be customized.

Standard:

- ITH Nut Runner
- Support
- LiHD batteries (2 pieces)
- Quick charging station
- Operating instructions incl. calibration certificate
- Hard case

More options:

- Alternative packaging
- Smart Control
- Power wrench socket
- Additional LiHD battery
- Additional accessories (page 20)
- ...

## Technical data

ITH type	ITH order no.	Max. torque		Max. rpm	Square-drive A	Gearbox diameter d		Length l		Weight*	
		[Nm]	[ft·lbs]			[R/min]	[mm]	["]	[mm]	["]	[kg]
<b>ADS50-4</b>	24.312.0050-y	500	370	35	3/4	55	2.2	242	9.5	2.5	5.5
<b>ADS100-4</b>	24.312.0100-y	1,000	740	15.9	3/4	70	2.8	270	10.6	3.7	8.2
<b>ADS150-4</b>	24.312.0150-y	1,500	1,110	10.2	1	70	2.8	297	11.7	4.3	9.5
<b>ADS230-4</b>	24.312.0230-y	2,300	1,700	6.8	1	72	2.8	303	11.9	4.5	9.9
<b>ADS320-4</b>	24.312.0320-y	3,200	2,360	4.5	1	79	3.1	319	12.6	4.9	10.8
<b>ADS470-4</b>	24.312.0470-y	4,700	3,470	3.2	1 1/2	90	3.5	338	13.3	6.9	15.2
<b>ADS700-4</b>	24.312.0700-y	7,000	5,160	2.3	1 1/2	98.5	3.9	364	14.3	9.0	19.8

ADS 4: y = 0  
 ADS 4 incl. ALPHA: y = 1  
 ADS 4 Basic: y = 3  
 ADS 4 Docu incl. ALPHA: y = 1-24

\*Weight without support and battery

# Type ADS 4 CAS



## 100 % Compatibility

## ITH extends CAS

### 1 battery for more than 450 tools

- ✓ More than 45 brands and over 450 machines but only 1 battery system: The Cordless Alliance System (CAS) is a cross-manufacturer battery pack system with 100 % compatibility for tools with 18 volt class batteries
- ✓ Latest LiHD battery high-performance technology from Metabo

#### Available battery packs:

1. 18 V; **5.5 Ah**, LiHD (standard up to ADS320 4)
2. 18 V; **8.0 Ah**, LiHD (standard for ADS470 4)
3. 18 V; **10.0 Ah**, LiHD

Every standard delivery contains 2 batteries.



### 45 brands. 450 machines. 1 battery.



# Type ADS 4 Documentation

## 100 % Traceability



## Documentation of torque values and rotation angles

The ITH documentation software Docu is a user-oriented software solution that actively supports the worker during the bolting process and at the same time enables simple, digital management and documentation of all application parameters relevant to the bolting case, such as:

- ✓ Torque and angle of rotation (ALPHA version) as control and monitoring variables
- ✓ Bolt dimension and bolt quality
- ✓ Application, bolt or worker identification numbers
- ✓ Creation of Excel- or PDF reports
- ✓ Docu-Software usable on Windows devices

### Process:

1. Create a bolting job with definition of control and monitoring variables
2. Data transfer to the ITH ADS 4 by wireless Bluetooth connection
3. Start the job
4. Save the results
5. Data read-out and automatic creation of reports

### Functions of the Docu-Software:

Scan the QR code and watch the demo video on your smartphone.



# Type EDS Electric Nut Runner



See more product details on our website:

Simply scan the QR code with your smartphone.



## Application examples

### Electric Nut Runner

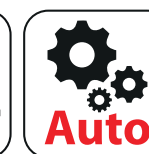
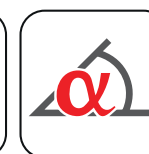
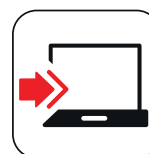
# Type EDS

### Functions & advantages

- ✓ Comprehensive control electronics: The bolting process is constantly measured. The software automatically adjusts the RPM due to the current load
- ✓ Automatic free-run: After reaching the preset torque, the EDS shuts off automatically and runs free. This prevents the socket from jamming on the bolt head
- ✓ Site suitability: Automatic indication of fluctuations in the power supply due to operation on generators
- ✓ Optimal for international tool centers: Automatic detection and adjustment to 50 Hz or 60 Hz
- ✓ 2-speed gearbox for changing between fast and load gear (automatic change with "Auto-Shift" option)
- ✓ High reproducibility and precision of  $\pm 4\%$ \*
- ✓ The safety swivel joint always guarantees optimum positioning of the ITH EDS



\*Under comparable bolting conditions



# Type EDS Electric Nut Runner

## Rotary switch

for load or high gear  
(not available with Auto-Shift)

## Compact high performance planetary gearbox

## Fine-toothed spline

to individually adjust the support  
in 360°.  
See page 20 for all supports

## Square drive

for individual power wrench  
sockets including  
fixation mechanism

## User-friendly multi-function display

only for version "EDS Digital"

## Directional switch

for Tighten / Loosen,  
construction site friendly  
positioning

## Ergonomically positioned On / Off switch and lock switch

## Ergonomic and comfortable spade-handle

## Strong 1,300 W-Motor

Motor and housing stand for  
quality made in Germany



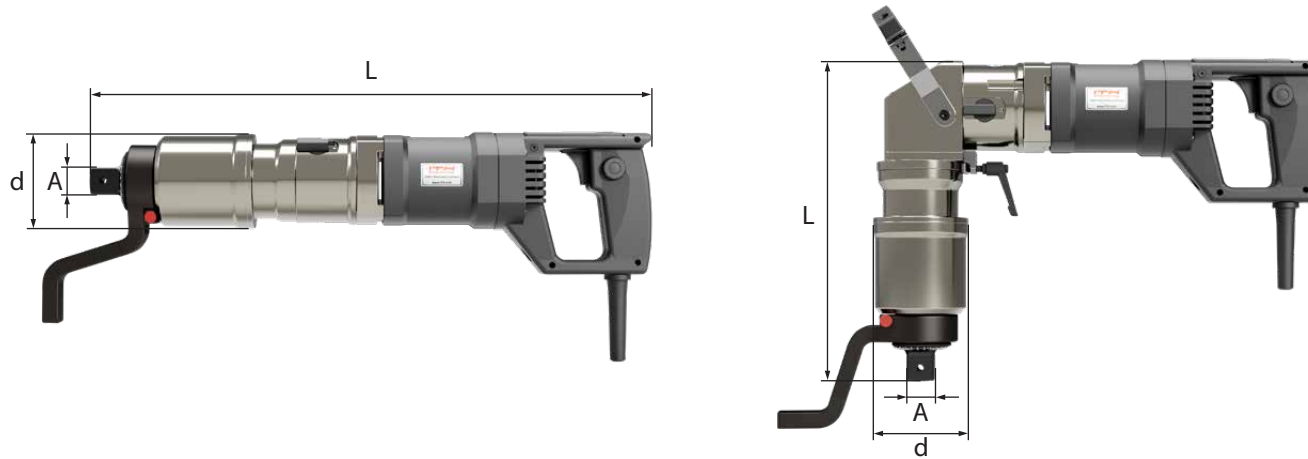
## Multi-function display

**Easy and convenient:** Input of all relevant application parameters by multi-function display.  
**Control:** the parameters can be read continuously on the display during operation.

### Clear display:

- ✓ Process status indication
- ✓ Tighten / Loosen
- ✓ Angle of rotation (optional with ALPHA)
- ✓ Torque
- ✓ Load gear or high gear (not available for Auto-Shift option)

# Type EDS **Technical data**



## Technical data

ITH type	ITH order no.	Max. torque (gear 1)		Max. rpm (gear 2)	Square-drive A	Gearbox diameter d		EDS, straight				EDSw, 90° angle			
								Length L		Weight*		Length L		Weight*	
		[Nm]	[ft-lbs]	[R/min]	["]	[mm]	["]	[mm]	["]	[kg]	[lbs]	[mm]	["]	[kg]	[lbs]
<b>EDS-40</b>	2x.30040-yzz7	400	295	30	3/4	70	2.76	468	18.42	5.2	11.46	243	9.57	6.2	13.67
<b>EDS-400</b>	2x.30400-yzz7	4,000	2,960	3	1 1/2	93	3.66	568	22.36	9.1	20.06	342	13.47	10.1	22.27
<b>EDS-600</b>	2x.30600-yzz7	6,000	4,440	3	1 1/2	105	4.13	590	23.23	14.7	32.41	364	14.33	15.7	34.61
<b>EDS-800</b>	2x.30800-yzz7	8,000	5,900	1.4	1 1/2	125	4.92	644	25.35	21.0	46.30	417	16.41	22.0	48.50
<b>EDS-1000</b>	2x.31000-yzz7	10,000	7,350	1.4	1 1/2	127	5.00	644	25.35	21.0	46.30	417	16.41	22.0	48.50
<b>EDS-1300</b>	2x.31300-yzz7	13,000	9,550	0.9	2 1/2	180	7.09	700	27.56	44.0	97.00	495	19.49	28.0	61.73

EDS, straight: x = 8  
 EDSw, angle: x = 9  
 EDS Digital: y = 0  
 EDS Digital with option ALPHA: y = 1  
 EDS Standard: y = 2  
 EDS Basic: y = 3  
 Power plugs:  
 230 V (50 + 60 Hz): zz = 23  
 110 V: zz = 11

\*Weight without support and power wrench socket.

# Type PDS Pneumatic Nut Runner



See more product details on our website:

Scan the QR code with your smartphone.



## Application examples

### Pneumatic Nut Runner

# Type PDS

### Functions & advantages

- ✓ **New:** compact high-performance planetary gearbox with higher speeds for faster work
- ✓ No electric power supply required: Pneumatic air motor can be powered by standard air compressors
- ✓ The required torque is set via the compressed air precision control valve at idling according to the tabular data
- ✓ The safety turning knuckle always guarantees optimum positioning of the ITH PDS



# Type PDS Pneumatic Nut Runner

**Compact high performance planetary gear**

**Square drive**

for individual power wrench sockets including fixation mechanism

**Fine-toothed spline**

to individually adjust the support in 360°. See page 20 for all supports



**Air-powered pneumatic motor**

**4-step rotary switch** to set-up the torque



**Directional switch** for Tighten / Loosen, positioning suitable for construction sites

**Pistol grip** impact resistant and non-slip



**Maintenance unit with compressed air precision control valve**

Included in every delivery.

For setting the required torque. Including lubricator, water separator, inlet air pressure gauge and pneumatic hose line (3 m as per standard).

ITH order no.: 74.08450-7000

Coupling nominal diameter 7.2 mm

# Type PDS Technical data



## Technical data

ITH type	ITH order no.	Max. torque		Square drive A	Gearbox diameter d		Length L		Weight*	
		[Nm]	[ft·lbs]	["]	[mm]	["]	[mm]	["]	[kg]	[lbs]
<b>PDS-100</b>	26.311.0100-0	1,000	738	3/4	70	2.76	265	10.43	4.2	9.26
<b>PDS-150</b>	26.311.0150-0	1,500	1,106	1	70	2.76	291	11.46	4.5	9.92
<b>PDS-230</b>	26.311.0230-0	2,300	1,696	1	72	2.83	297	11.69	6.5	14.33
<b>PDS-400</b>	26.311.0400-0	4,000	2,950	1 1/2	87	3.43	335	13.19	7.4	16.33
<b>PDS-1400</b>	26.311.1400-0	14,000	10,326	2 1/2	180	7.09	475	18.70	41.5	91.49

\*Weight without support and power wrench socket.

# Type MDS Mechanical Nut Runner

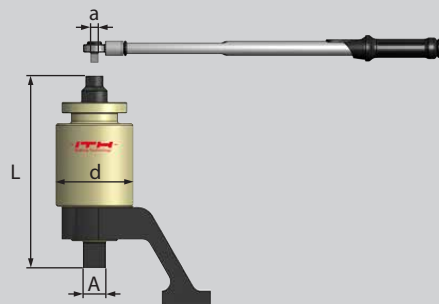


# Mechanical Nut Runner

## Type MDS

### Features

- ✓ Backstop, reversible for Tighten or Loosen
- ✓ Overload protection by shear pin
- ✓ Planetary gearbox
- ✓ Square-drive A 1" or 1 1/2" for common power wrench sockets



### Technical data MDS

ITH type	ITH order no.	Max. torque	Gear reduction ratio	Technical data				
				A	a	D	L	Weight*
				["]	["]	[mm]	[mm]	[kg]
<b>MDS-150-4</b>	30.10150	1,500	1:4	1	1/2	85	190	3,4
<b>MDS-320-18</b>	30.10320	3,200	1:18	1	1/2	88	230	5,2
<b>MDS-420-16</b>	30.10420	4,200	1:16	1 1/2	1/2	88	244	5,9
<b>MDS-600-18</b>	30.10600	6,000	1:18	1 1/2	3/4	102	257	7,0
<b>MDS-800-22**</b>	30.10800	8,000	1:22	1 1/2	3/4	130	279	10,5
<b>MDS-1000-62**</b>	30.11000	10,000	1:62	1 1/2	3/4	130	315	15,7

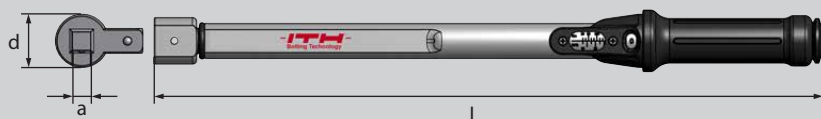
\*without support, power wrench sockets and manual torque wrench.  
\*\*MDS-800 and MDS-1000 include double backstop.

### Accessories

## Manual Torque Wrench

### Features

- ✓ Inserts can be interchanged; delivery includes ratchet head
- ✓ Precise torque adjustment by fine adjustment scale



### Technical data Manual Torque Wrench

ITH order no.	Technical data						
	Torque range		a	D		L	
	[Nm]	[ft*lbs]	["]	[mm]	["]	[mm]	["]
31.10016-5012	10 - 50	7.4 - 36.9	1/2	35	1.38	320	12.6
31.10021-5012	20 - 100	14.8 - 73.7	1/2	35	1.38	370	15.6
31.10022-5012	40 - 200	29.5 - 147.5	1/2	47	1.85	470	18.5
31.10024-5012	60 - 360	44.2 - 265.5	1/2	47	1.85	560	22.0
31.10026-5019	200 - 850	147.5 - 626.9	3/4	68	2.68	1,480	58.27
31.10028-5019	300 - 1.250	221.7 - 922	3/4	68	2.68	1,650	65.0

# Accessories **Supports, Extensions and Side-drives**

**Support type ATS**  
curved for wheel bolts  
(adjustable)



**Support type ATS**  
square-drive  
(adjustable)



**Support type ATS**  
inner hexagon  
(adjustable)



**Support type ATS**  
outer hexagon  
(adjustable)



**Customized**  
individual supports  
possible

**Supports**  
standard and custom-  
ized supports

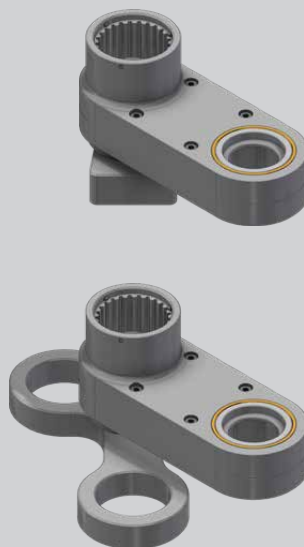
**Side-drive type ST**  
for axial limited spaces  
or long projecting  
threads

**Extension type TE**  
for radial limited  
spaces



## Side-drive Type ST

- ✓ Fine-toothed socket and inner square drive input – matching the ITH Nut Runner output
- ✓ Individual hexagonal output A / F, application-specific
- ✓ Support
- ✓ Use for axial limited spaces or long projecting threads (e.g. heat exchangers) or other support options in radial environments



## Technical data Side-drive

ITH type	ITH order no.	Technical Data			
		Drive A	Min. output A / F	Max. output A / F	Max. Torque
		["]	[mm]	[mm]	[Nm]
ST - 36	78.00700-1036	3/4	24	36	1,000*
ST - 55	78.00700-2055	1	36	55	2,000*
ST - 65	78.00700-2565	1	46	65	2,500*
ST - 75	78.00700-4075	1 1/2	55	75	4,000**
ST - 85	78.00700-4085	1 1/2	65	85	4,000**

\*Fine-toothed spline input matches EDS / ADS / PDS 75 - 250.  
\*\*Fine-toothed spline input matches EDS / ADS / PDS 400 and bigger.  
Further designs upon request.

## Extension Type TE

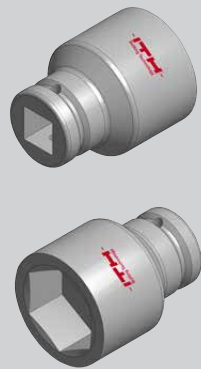
- ✓ Ideal for applications with radially limited space or deep-lying bolts
- ✓ Swivel foot on support (optional)



## Technical data Extension

ITH type	ITH order no.	Max. Torque	L	Input A1 Output A2	D1	D2	Suitable ITH Nut Runner
		[Nm]	[mm]	["]	[mm]	[mm]	
TE - 100	31.00802-2-200	1.000	200	3/4	64	46	ADS 50, ADS 100, EDS 40, PDS 100
	31.00802-2-300		300	3/4	64	46	
	31.00802-2-400		400	3/4	64	46	
TE - 250	31.00803-3-250	2.500	250	1	64	56	ADS 150, ADS 230, PDS 150, PDS 230
	31.00803-3-350		350	1	64	56	
	31.00803-3-450		450	1	64	56	
TE - 470	31.00804-4-250	4.700	250	1 1/2	90	70	ADS 470, EDS 400, PDS 400
	31.00804-4-450		450	1 1/2	90	70	

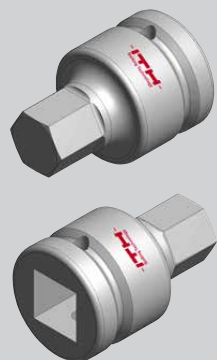
## Power Wrench Socket



**Order example**  
**ITH order no.** **31.000 04 - 0046**

inch sockets	
Power Wrench Socket version	
short	02 = drive 1/2"
	03 = drive 3/4"
	04 = drive 1"
	05 = drive 1 1/2"
	06 = drive 2 1/2"
long	08 = drive 1/2"
	09 = drive 3/4"
	10 = drive 1"
	11 = drive 1 1/2"
	12 = drive 2 1/2"
	A/F-width SW 46

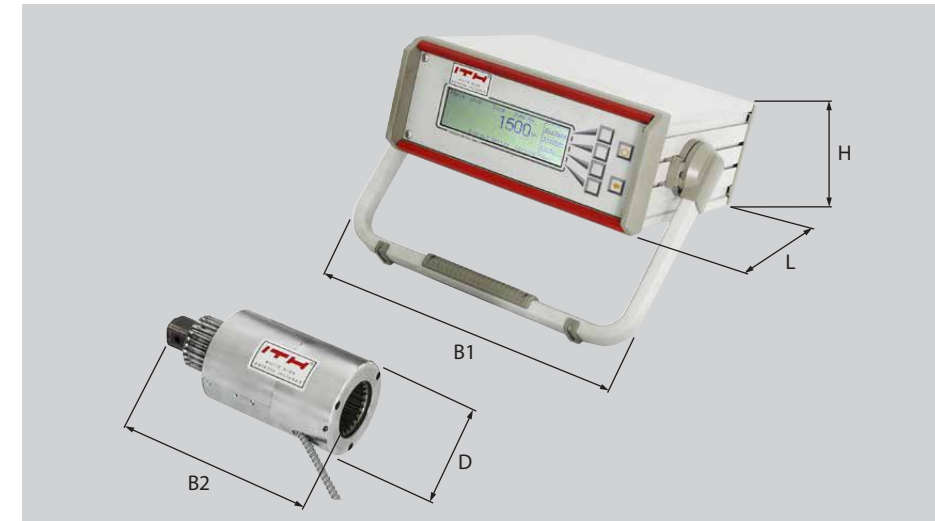
## Inner Hexagon Socket



**Order example**  
**ITH order no.** **31.00128 - 0024**

inch sockets	
Inner Hexagon Socket version	
126 = drive 3/4"	
128 = drive 1"	
130 = drive 1 1/2"	
A/F-width SW 24	

\*Special dimensions on request



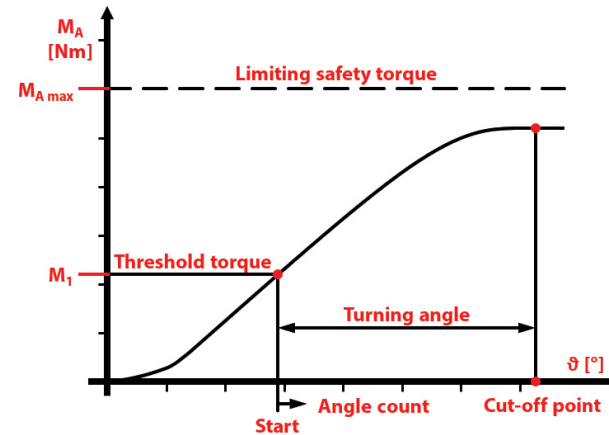
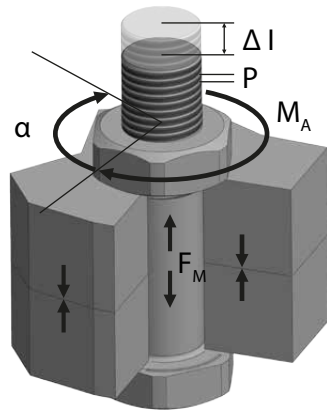
## ITH Torquemeter

- ✓ **Control during bolting procedures:**  
 Measuring, testing and applied torque values and rotation angles are displayed and documented during the bolting procedure
- ✓ **Features**
  1. On-site ready by robust design, internal battery for flexible, wireless use
  2. Available versions are 110 V or 230 V. Digital display shows measurement results clearly
- ✓ **Certified precision**  
 Accredited by the strict regulations of the German Accreditation Body (DAKKS)

ITH type	ITH order no.	Range	L	B1	H	B2	D	Weight*	
		[Nm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]	[lbs]
DMW-100	20.00295-206	50 - 1,000	290	315	116	211.7	89	5.0	11.02
DMW-700	20.00257	350 - 7,000	290	315	116	264.5	115	11.4	25.13

\*Weight of the sensor unit,  
 Weight of the control unit: 4,8 kg

# System ALPHA Angle-controlled tightening



## Introduction

Angle-controlled tightening is a method, where the achieved bolt elongation  $\Delta l$  is measured indirectly.

$\Delta l$  is calculated from the (theoretical) relation between bolt pitch  $P$  and rotation angle  $\alpha$

$$\text{Simplistic: } \Delta l = \text{bolt pitch } P \cdot \frac{\text{rotation angle } \alpha}{360^\circ}$$

From achieved bolt elongation  $\Delta l$  you can gain insights about the reached assembly preload  $F_M$ , which is your target value when tightening bolt connections (cf. VDI 2230).

## Process

- Torque range:** One pre-defined torque  $M_1$  is applied on the bolt connection until all gaps between all components are closed. That is the point where the threshold torque is reached.
- Angle range:** After threshold torque the angle range begins: An angle of rotation  $\alpha$  is applied on the bolt connection.
- ITH ALPHA sensor controls** torque  $M_1$  and  $\alpha$ .
- Tightening process ends** after reaching  $\alpha$ .
- ITH ALPHA software** offers process evaluation, for example automatically generated Excel-or PDF-protocols.

## Advantage of less affection by friction: higher precision

- ✓ **Angle range is not affected by friction values:** The angle range is not affected from friction variables, which could be occurring. This leads to higher precision and higher repeatability of the bolting procedure.
- ✓ **Digital ITH application software:** Easy set-up and management of all relevant application parameters.
- ✓ **Low tightening factors  $\alpha_A$ :** When designing bolted joints, it can be calculated with small tightening factors from 1.2 to 1.4 in most cases (cf. VDI 2230).

$$*\alpha_A = \frac{F_{M \max}}{F_{M \min}}$$

# Technical information **Assembly preload $F_M$ and tightening torque $M_A$**

Bolt size			Strength grade DIN EN ISO 898 - 1					
			8.8		10.9		12.9	
d [mm]	P	A/F	$F_M$ [kN]	$M_A$ [Nm]	$F_M$ [kN]	$M_A$ [Nm]	$F_M$ [kN]	$M_A$ [Nm]
M16	2	24	79	228	112	324	131	379
M20	2.5	30	123	446	176	635	205	743
M22	2.5	34	154	613	220	873	257	1,022
M24	3	36	178	768	253	1,094	296	1,281
M27	3	41	234	1,133	333	1,613	390	1,888
M30	3.5	46	285	1,551	406	2,209	475	2,585
M33	3.5	50	355	2,105	506	2,998	592	3,508
M36	4	55	417	2,706	594	3,853	696	4,509
M39	4	60	502	3,512	715	5,002	836	5,853
M42	4.5	65	575	4,339	819	6,179	959	7,231
M45	4.5	70	673	5,426	959	7,728	1,122	9,044
M48	5	75	758	6,563	1,079	9,347	1,263	10,938
M52	5	80	909	8,447	1,295	12,031	1,516	14,079
M56	5.5	85	1,049	10,524	1,494	14,989	1,749	17,540
M60	5.5	90	1,226	13,076	1,746	18,623	2,044	21,793
M64	6	95	1,388	15,749	1,977	22,430	2,313	26,248
M68	6	100	1,590	19,082	2,265	27,177	2,651	31,803
M72	6	105	1,807	23,149	2,573	32,970	3,011	38,582
M80	6	115	2,281	32,140	3,248	45,775	3,801	53,566
M90	6	130	2,950	46,505	4,202	66,234	4,917	77,508
M100	6	145	3,706	64,782	5,278	92,266	6,176	107,970
M110	6	155	4,547	86,375	6,476	123,019	7,579	143,958
M120	6	170	5,475	113,235	7,798	161,274	9,125	188,725

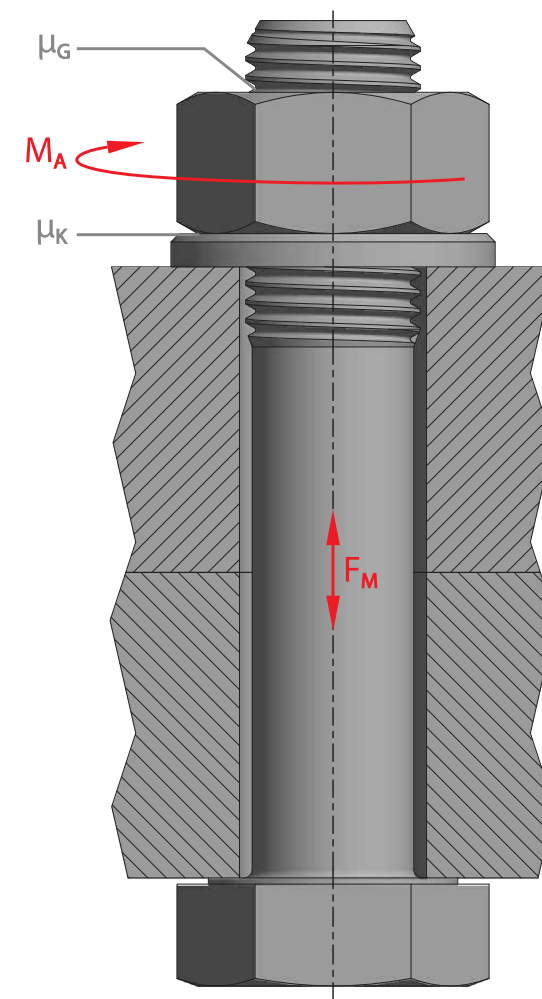
ITH reference: 09.80053

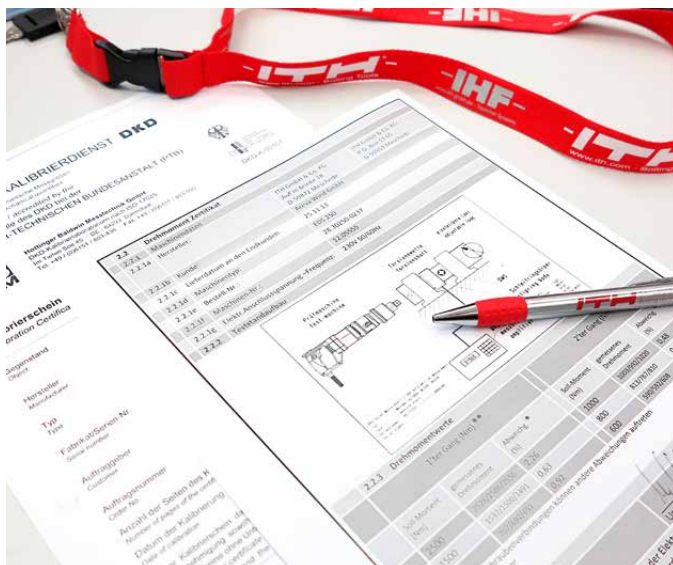
## Calculation basis

Utilisation factor of the yield stress  $v = 0,9$  for shank bolts with metric standard thread acc. to DIN 13-20 (minimum dimensions) resp. calculated acc. to DIN 13-19, tolerance class 6g; diameter of the bearing face  $d_w$  acc. to DIN EN ISO 4014 resp. DIN EN ISO 4032 up to M64, from M72 acc. to. DIN 2510-5 ( $d_2$ ); Clearance hole "medium" acc. to DIN EN 20273. Friction coefficients  $\mu_G = \mu_K = 0,14$ .

The friction coefficient depends on material/surface and used lubricant.  $d$  = nominal diameter of thread,  $P$  = pitch,  $s$  = width across flats.

All values and data are calculated and checked prudently. However, we accept no responsibility for the correctness, completeness and topicality. Technical modifications reserved.





### ITH quality management

Before first delivery and after maintenance all ITH Nut Runners are tested and calibrated on dynamic torque measurement units (DAkKS-certified). Measured values are recorded on an ITH calibration certificate.

All ITH business processes – including the development, production, and distribution of bolting tools and measurement technology – are certified according to the ISO 9001 quality management standard, the ISO 14001 environmental management standard, and the 45001 occupational health and safety standard.



### Qualification in bolting technology

The ITH training courses in reference to **VDI/VDE-MT 2637** combine theory and practice efficiently – independent of the bolting tools you use:

- Level A - ITH On-site Training** - Tool instruction on-site
- Level B - ITH Tool Training** - Safety and tool operation
- Level C - ITH Service Training** - Maintenance and service

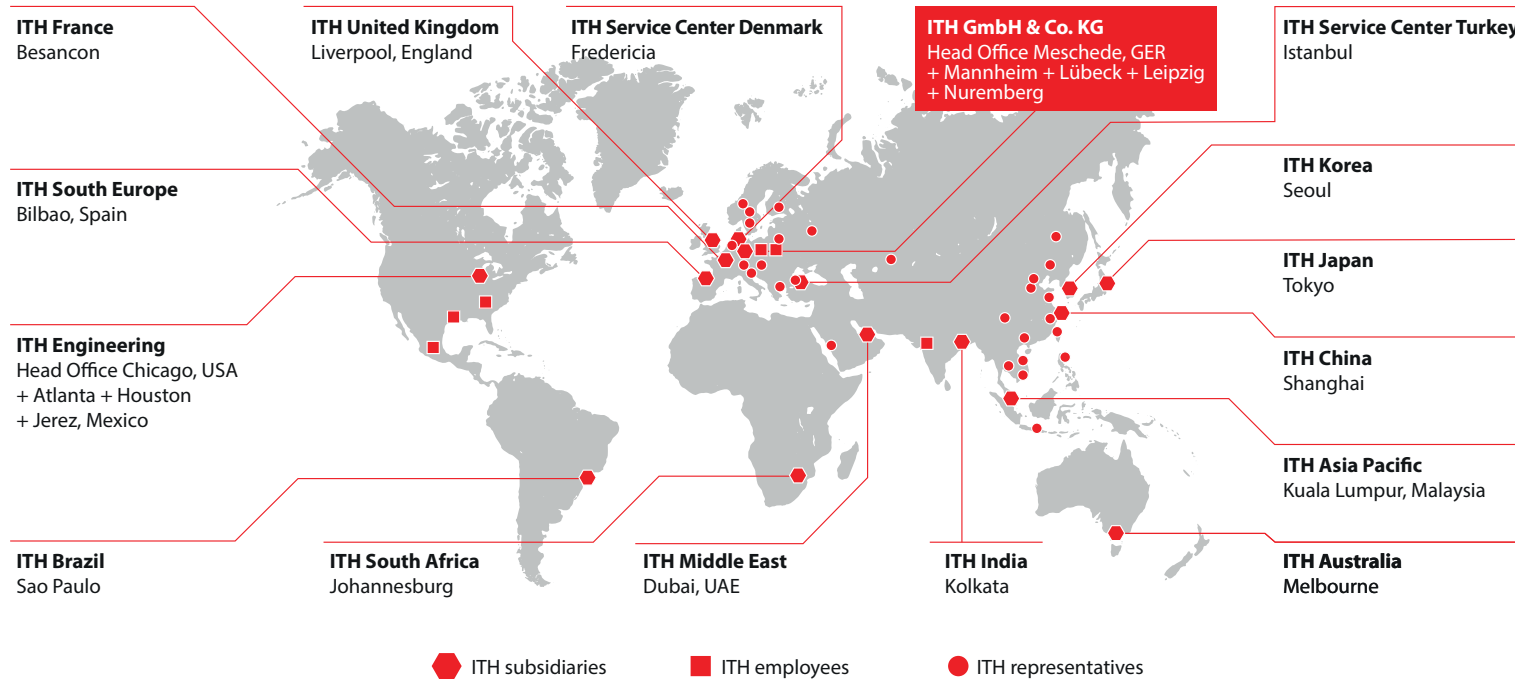
In cooperation with you we create an individual training course according to your requirements. By its modular design, ITH training contents can be adapted easily.

We mediate bolting competencies in terms of safety, technical physical fundamentals, maintenance, service and bolting tool operation. After the theory courses, learned contents will be applied practically to guarantee most efficient learning success. Participants receive a certification after passing a final test.

### Service, rental and bolting service

- ✓ **Service on-site**  
ITH offers global, qualified tool maintenance and calibration performed locally by the global ITH network. These services can be carried out on-site by ITH Calibration Centers or ITH Service-Vans.
- ✓ **Fast & traceable**  
All services are handled quickly, reliably and are recorded internally. Tool calibrations are certified.
- ✓ **Customer-oriented, qualified and flexible**  
Experienced ITH bolting service teams have successfully performed a various number of bolting jobs worldwide fast and safely. All ITH bolting tools are available for rent.

# Contact **Global leading system supplier in bolting technology**



## ITH drives innovation

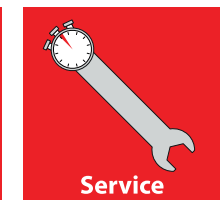
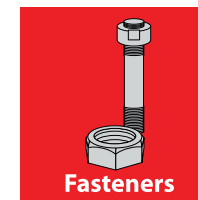
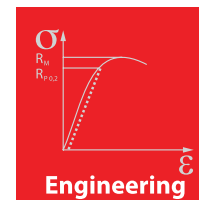
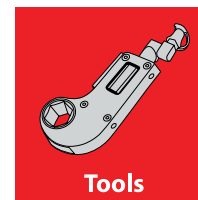
With more than 40 years in the bolting industry, ITH continuously invests experience and know-how into new technical developments. More than 200 national and international patents prove the innovative capabilities of ITH. Many of these developments have become standards of bolting technology.

- ✓ Global technical sales & service network
- ✓ Qualified, flexible service and fast spare parts availability
- ✓ Individual industry- or branch specific customer solutions
- ✓ Synergy effects being a whole system supplier
- ✓ Competent advice in all bolting cases
- ✓ Lean Production & certified quality, environmental and occupational safety management according to DIN ISO 9001, 14001 and 45001

## ITH offers synergy

The technical and economic efficiency of a bolted connection is decisively determined by the design, the fasteners, the bolting tools and the assembly.

As a whole system supplier, ITH combines the expertise of these 4 sub-divisions (Tools, Engineering, Fasteners, Service) and configures the components with each other to achieve the best technical and economic result for our business partners.





## Global ITH network

Individual consultation is important for us. Visit the contact section on the ITH website to find the contact information of the local person in your country. We will be happy to advise you.

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