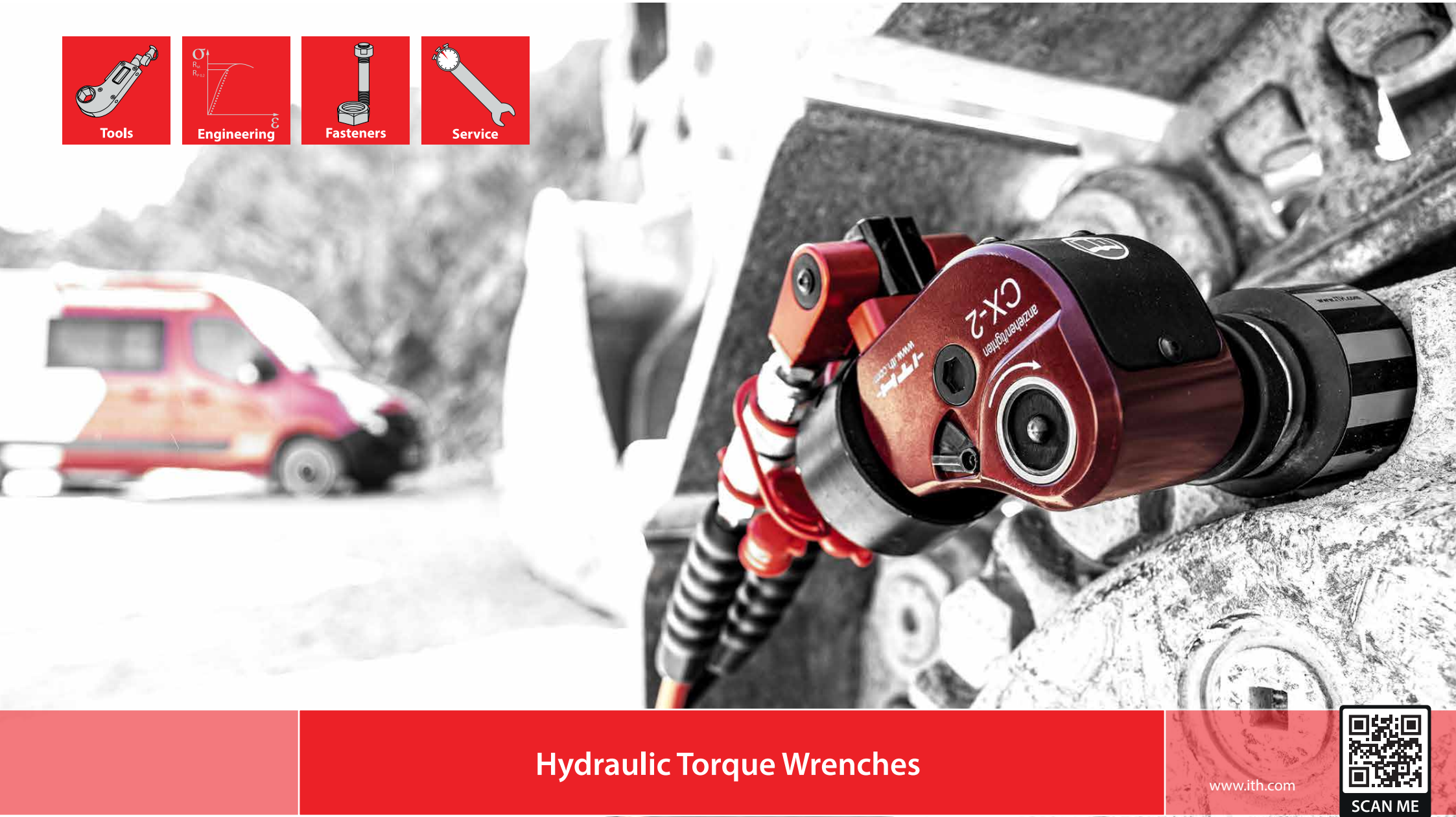
Bolting Technology

Tools

Engineering

Fasteners

Service



Hydraulic Torque Wrenches

www.ith.com

SCAN ME

Content

Development 3
System ALPHA – angle-controlled tightening 4
Multi-Torque 6
Automatic bolting 7

Hydraulic torque wrenches
Type CX 8
Type D-Flex 20
Type DRS 34
Type DKS 40

Hydraulic pump unit
Type Hydro-DAX 46
Type Hydro-DAX V18 Battery 48
Type Aero-DAX 19 53
Type DA 16 53
Pump accessories 54

Technology
Technical information 55
Measurement 56
General information 57
Contact 58



More than 45 years of continuous development

Continuity and quality: since 1980 all hydraulic torque wrench types and corresponding pump units are developed and produced at the ITH headquarters in Germany.

Continuous innovation also includes digital application control systems like ITH Auto-Torque and ITH System ALPHA (angle-controlled tightening) and data-logging system Docu.

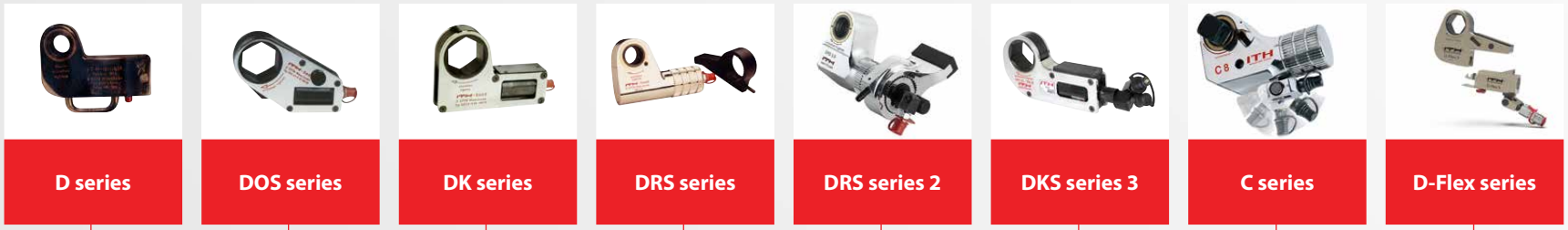
All options can be selected according to your wishes. Personal contact is decisive - contact our team for individual technical advice. All contact information can be found on our website www.ith.com.

We are looking forward to working with you,

Dipl.-Ing. Frank Hohmann
Owner | CEO

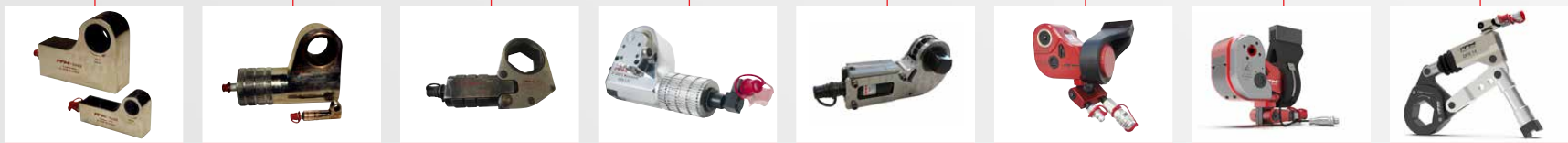
Dipl.-Ing. Jörg Hohmann
Owner | CEO

ITH Hydraulic Torque Wrenches - Continuous development competence



D series | DOS series | DK series | DRS series | DRS series 2 | DKS series 3 | C series | D-Flex series

1980 — Innovation and development

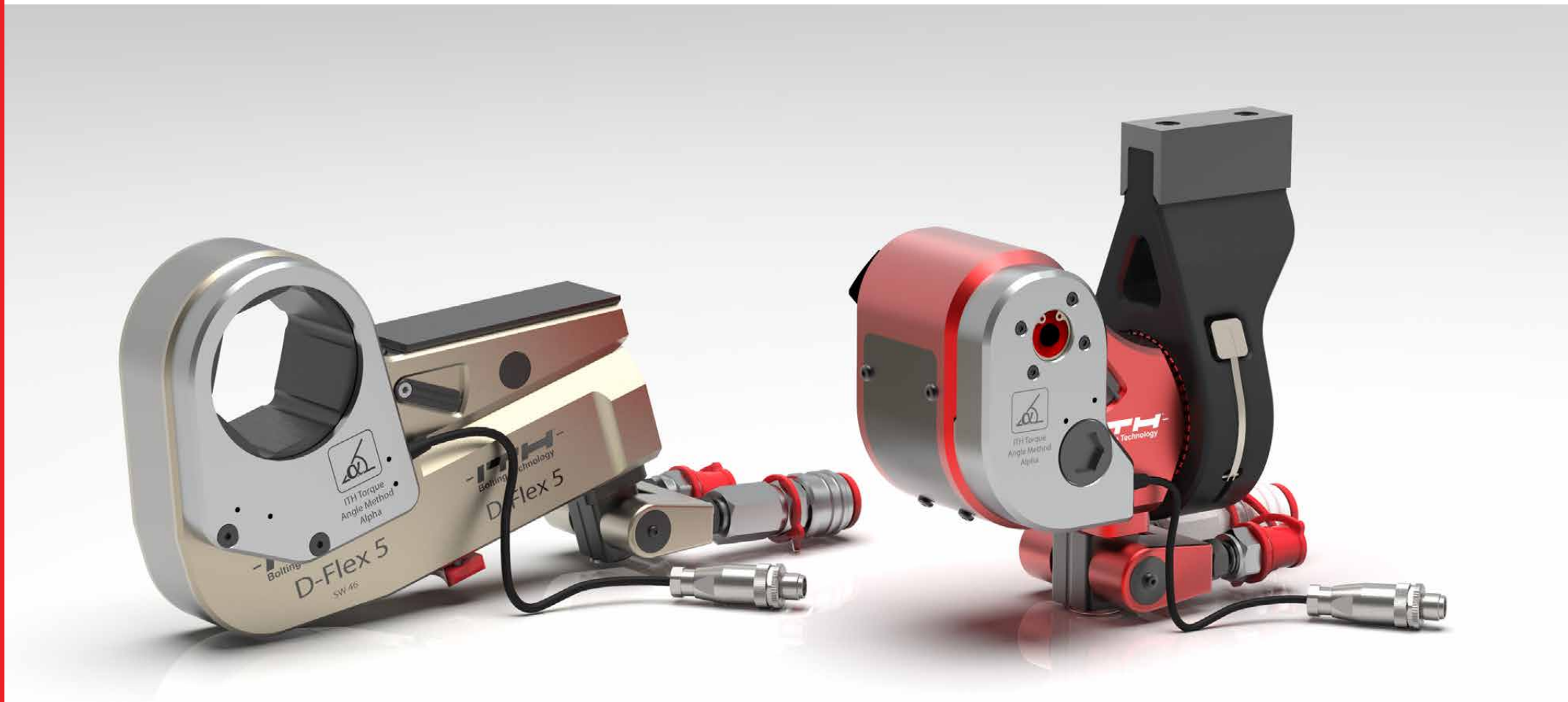


DG series | DR series | DV series | ALPHA-version* | DC series | CX series | Auto-Torque** + ALPHA* | DPX series

Development

*ALPHA-version: angle-controlled tightening, digital control.
**Auto-Torque: automatic function, digital control.

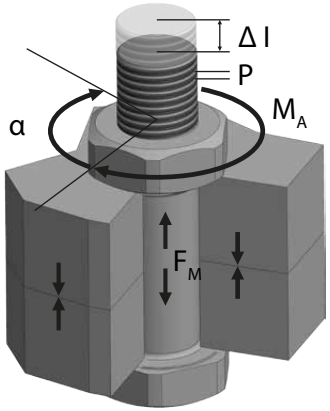
System ALPHA Angle-controlled tightening

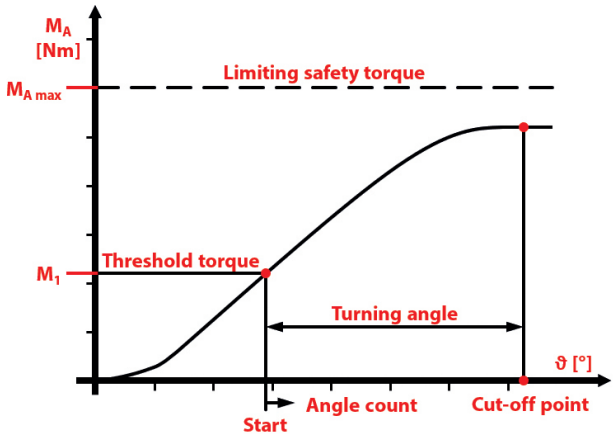


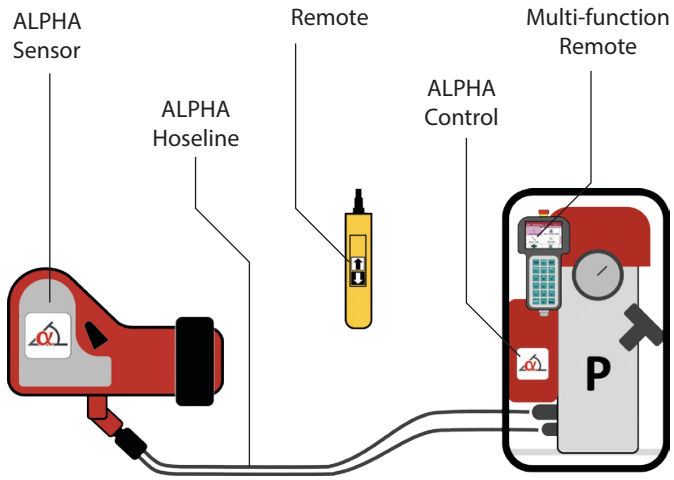
Technology:
System ALPHA

Angle-controlled tightening with hydraulic torque wrenches can be performed by ALPHA-sensors.
The ALPHA housing elements can be updated for existing hydraulic torque wrenches.

System ALPHA Angle-controlled tightening







Introduction

Angle-controlled tightening is a method, where the achieved bolt elongation Δl is measured indirectly.

Δl is calculated from the relation between bolt pitch P of the thread and rotation angle α (turning angle).

$$\textit{Simplistic: } \Delta l = \textit{bolt pitch } P \cdot \frac{\textit{rotation angle } \alpha}{360°}$$

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

Process

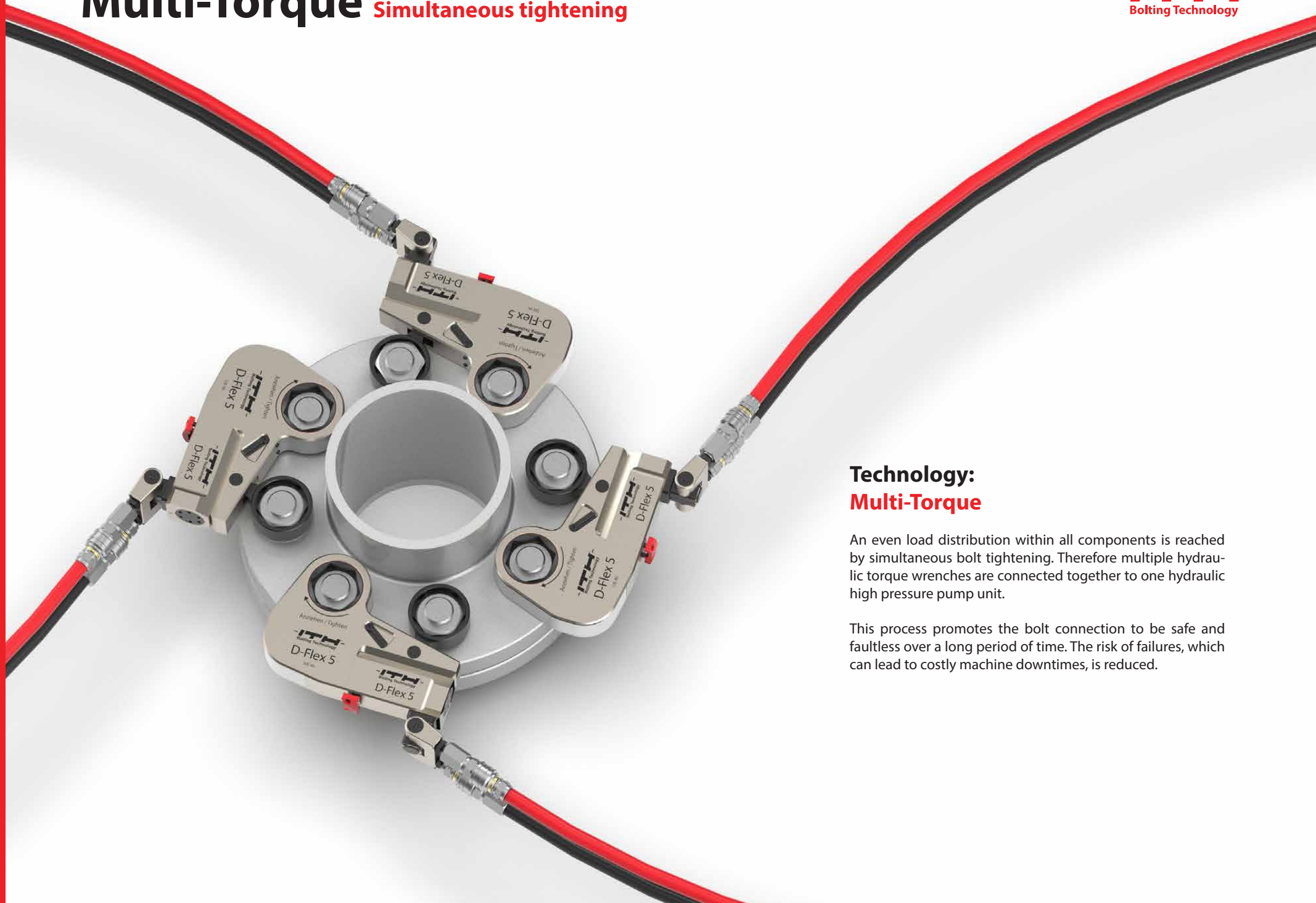
1. **Torque range:** one pre-defined torque M_1 is applied on the bolt connection until all gaps between all components are closed. That is the point where the threshold torque is reached.
2. **Angle range:** after threshold torque the angle range begins. An angle of rotation α is applied on the bolt connection.
3. **ITH ALPHA sensor controls** torque M_1 and α.
4. **Tightening process ends** after reaching α.
5. **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:** since the angle of rotation serves as a control variable, changes in the friction coefficient from the angle count onwards do not affect the process. This results in higher assembly preload.
- ✓ **Digital ITH application software:** easy set-up and management of all relevant application parameters.
- ✓ **Low tightening factors α_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).

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

Multi-Torque Simultaneous tightening



Technology:
Multi-Torque

An even load distribution within all components is reached by simultaneous bolt tightening. Therefore multiple hydraulic torque wrenches are connected together to one hydraulic high pressure pump unit.

This process promotes the bolt connection to be safe and faultless over a long period of time. The risk of failures, which can lead to costly machine downtimes, is reduced.

Automatic bolting

ITH Auto-Torque

- ✓ **Pre-setting** of the target values torque and turning angle α (only with optional system ALPHA) via the multifunction display
- ✓ **The required pressure** is applied automatically and gradually by the hydraulic unit
- ✓ **Work safety by „Dead man's switch":** the system only works if the user activates the „Dead man's switch"
- ✓ **Easy control for the user:** when reaching the pre-set target values the system stops automatically and signals „Bolt ready" by a green light on the remote
- ✓ **Compatibility:**
  - ITH-Auto-Torque can be used and upgraded on any existing ITH Hydraulic Torque Wrench systems
  - Auto-Torque is a standard system component of CX ALPHA and D-Flex ALPHA units when they are first delivered







Type CX Hydraulic torque wrench



SCAN ME

Hydraulic torque wrench

Type CX

Advantages

- ✓ Universal use for service-jobs and serial application
- ✓ Different support conditions
- ✓ For radial limited spaces and difficult to loosen bolts
- ✓ Fast-acting 2-hose system
- ✓ Weight-optimised and maintenance-friendly assembly design
- ✓ Compatible with all ITH high-pressure units with 2-hose systems
- ✓ Extendable application possibilities through various wrench inserts
- ✓ Adaptability to standard power wrench sockets (KSE) through square insert CX VE (no new power wrench sockets necessary)

Application










Types



CX 1 CX 2 CX 5 CX 8 CX 12 CX 18 CX 28 CX 40 CX 60 CX 80

Type CX Hydraulic torque wrench

ITH Bolting Technology



Click & Change
various inserts can be exchanged without tools and fixed in place with the insert lock

Handle
for easier handling. Tool-free setting allows adjustment to the desired position

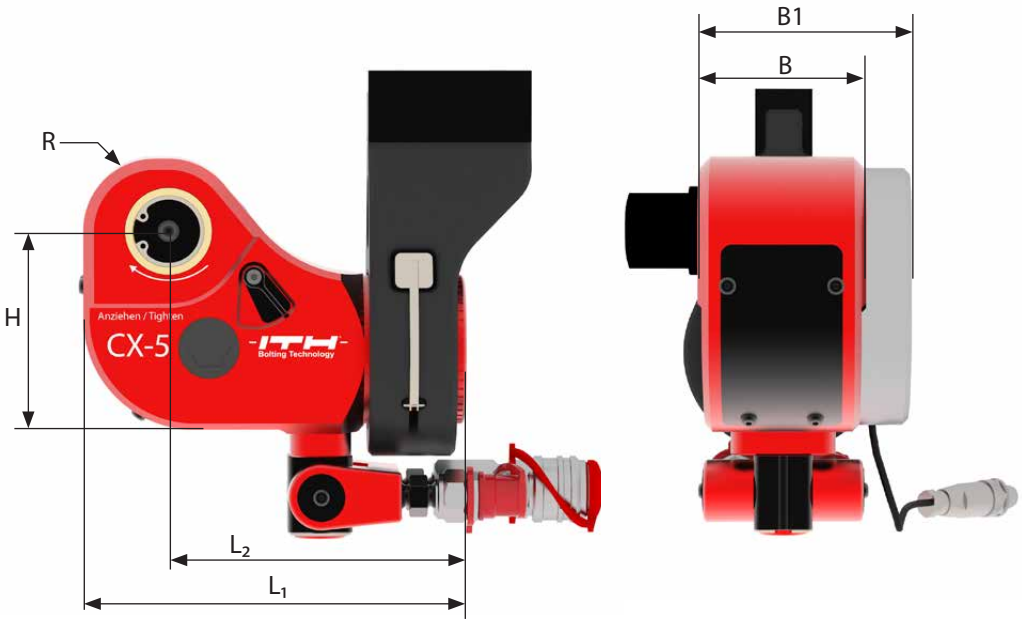
Dual-hose hydraulic connection
high-flow coupling and nipple for high delivery volumes

Asymmetric support
weight-optimized support including reinforced support shoe. Can be placed on both sides, positioned at a 360° angle and easily fixed in place with the recessed push button

High-performance housing
made of UL material (ultra-light): compact, weight-optimized, high-strength treatment

Dual swivel connection
rotatable in two dimensions for optimal positioning of the hydraulic hose

Type CX Technical data





ALPHA-Sensor

Optional, adaptable

Read more on page 4.

Technical data

ITH type	Max. Torque		L1		L2		B		B1		R		H		Weight		ITH order no.
	[Nm]	[ft•lb]	[mm]	["]	[mm]	["]	[mm]	["]	[mm]	["]	[mm]	["]	[mm]	["]	[kg]	[lb]	
CX 1	1,200	855	128	5.04	100	3.94	58	2.28	-	-	24	0.94	58	2.28	2.0	4.4	56.10001-5000
CX 2	2,000	1,475	143	5.63	114	4.49	61	2.40	77	3.03	25	0.98	63	2.48	2.1	4.6	56.10002-5000
CX 5	5,000	3,688	175	6.89	136	5.35	73	2.87	93	3.66	33	1.30	91	3.58	4.0	8.8	56.10005-5000
CX 8	8,000	5,900	198	7.80	147	5.79	85	3.35	108	4.25	40	1.57	110	4.33	5.8	12.8	56.10008-5000
CX 12	12,800	9,441	222	8.74	165	6.50	104	4.10	126	4.96	47	1.85	122	4.80	9.1	20.1	56.10012-5000
CX 18	18,000	13,276	263	10.35	196	7.72	112	4.41	133	5.24	53	2.09	134	5.28	12.0	30.4	56.10018-5000
CX 28	28,000	20,652	310	12.20	235	9.25	129	5.08	150	5.90	60	2.56	155	6.10	19.0	49.4	56.10028-5000
CX 40	40,000	29,502	335	13.19	253	9.96	159	5.91	180	7.09	66	3.23	185	7.28	28.5	75.0	56.10040-5000
CX 60	60,000	44,254	413	16.26	305	12.00	170	6.69	-	-	80	3.19	210	8.27	42.0	92.6	56.10060-5000
CX 80	80,000	59,005	445	17.52	334	13.15	190	7.48	-	-	85	3.35	231	9.09	57.0	125.7	56.10080-5000

Contact us for additional or custom designs.

Type CX Accessories






Supports

ITH type	Support-A Vertical standard	Support-B Vertical long	Support-C Vertical standard, rounded	Support-D Vertical ring
	ITH order no.	ITH order no.	ITH order no.	ITH order no.
CX 1	56.10001-1010	56.10001-1020	56.10001-1030	56.10001-1040
CX 2	56.10002-1010	56.10002-1020	56.10002-1030	56.10002-1040
CX 5	56.10005-1010	56.10005-1020	56.10005-1030	56.10005-1040
CX 8	56.10008-1010	56.10008-1020	56.10008-1030	56.10008-1040
CX 12	56.10012-1010	56.10012-1020	56.10012-1030	56.10012-1040
CX 18	56.10018-1010	56.10018-1020	56.10018-1030	56.10018-1040
CX 28	56.10028-1010	56.10028-1020	56.10028-1030	56.10028-1040
CX 40	56.10040-1010	56.10040-1020	56.10040-1030	56.10040-1040
CX 60	56.10060-1010	56.10060-1020	56.10060-1030	56.10060-1040
CX 80	56.10080-1010	56.10080-1020	56.10080-1030	56.10080-1040

Elongation horizontal

ITH type	Elongation		
	Length		ITH order no.
	[mm]	["]	
CX 1	50	1.97	56.00001-1202-050
CX 2	50	1.97	56.00002-1202-050
CX 5	60	2.36	56.00005-1202-060
CX 8	65	2.56	56.00008-1202-065
CX 12	80	3.15	56.00012-1202-080
CX 18	100	3.93	56.00018-1202-100
CX 28	115	4.53	56.00028-1202-115
CX 40	130	5.11	56.00040-1202-130
CX 60	140	5.51	56.00060-1202-140
CX 80	150	5.91	56.00080-1202-150



Support horizontal LX

ITH type	Support							
	Length		ITH order no.	ITH type	Length		ITH order no.
	[mm]	["]			[mm]	["]	
CX 1	100	3.94	56.00001-1201-100	CX 18	250	9.84	56.00018-1201-250
	200	7.87	56.00001-1201-200		400	15.75	56.00018-1201-400
CX 2	100	3.94	56.00002-1201-100	CX 28	250	9.84	56.00028-1201-250
	200	7.87	56.00002-1201-200		450	17.72	56.00028-1201-450
CX 5	150	5.91	56.00005-1201-150	CX 40	300	11.81	56.00040-1201-300
	250	9.84	56.00005-1201-250		500	19.69	56.00040-1201-500
CX 8	200	7.87	56.00008-1201-200	CX 60	400	15.75	56.00060-1201-400
	300	11.81	56.00008-1201-300		550	21.65	56.00060-1201-550
CX 12	200	7.87	56.00012-1201-200	CX 80	450	17.72	56.00080-1201-450
	350	13.78	56.00012-1201-350		600	23.62	56.00080-1201-600



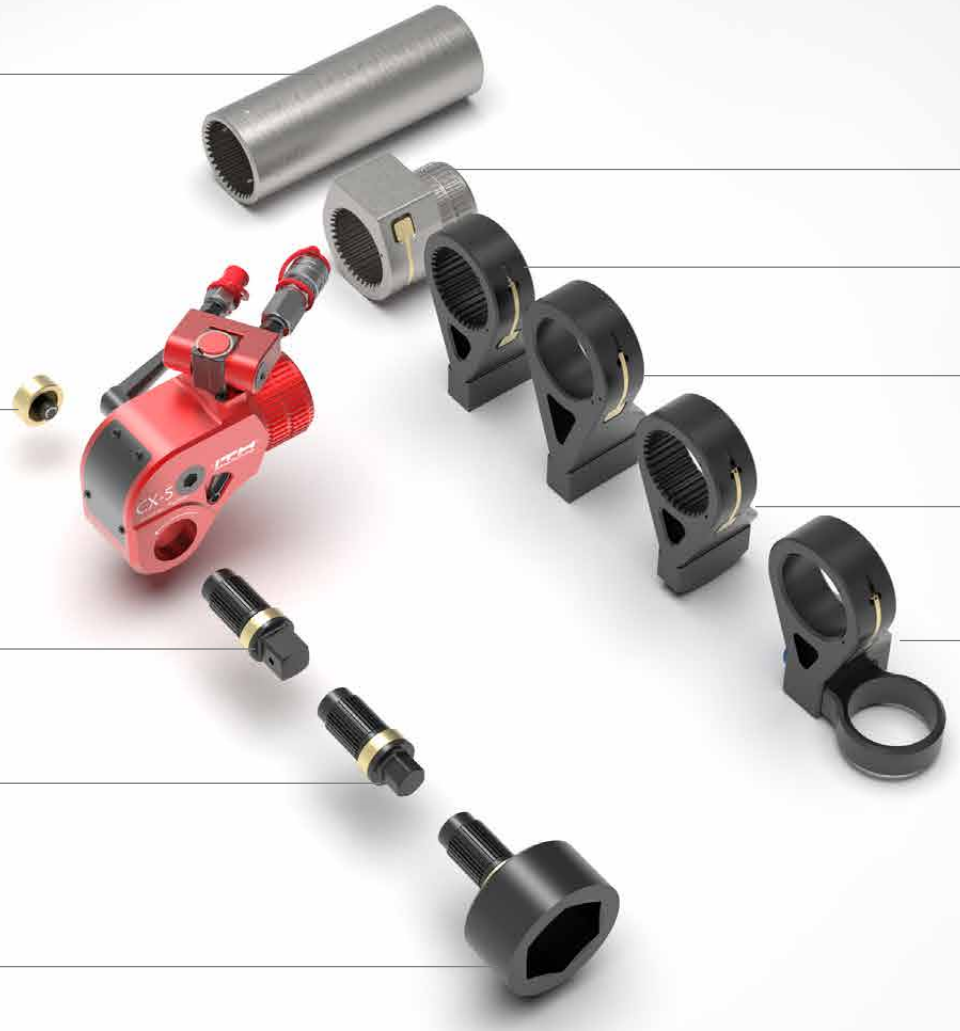
Support
horizontal

Click & Change
various inserts can be exchanged without tools and fixed in place with the insert lock

Type CX-VE
square insert for all standard power wrench sockets

Type CX-SE
hexagon insert for inner hexagon bolts

Type CX-KSE
power wrench socket for hexagon bolts



Elongation
horizontal

Support A
vertical standard

Support B
vertical long

Support C
vertical standard, rounded

Support D
vertical ring

Accessories: Inserts and Supports

The vertical ring support (Support D) allows the hydraulic torque wrench to be fixed on the next bolt.
All accessories can be exchanged flexibly and quickly.

Inserts VE – 3/4" - 3 1/2"

ITH type	VE ITH order no.	3/4“	1“	1 1/2“	2 1/2“	3 1/2“
		ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.
CX 1	56.02201-	3-4				
CX 2	56.02202-	3-4	1			
CX 5	56.02205-		1	1_1-2		
CX 8	56.02208-		1	1_1-2		
CX 12	56.02212-			1_1-2		
CX 18	56.02218-			1_1-2	2_1-2	
CX 28	56.02228-				2_1-2	
CX 40	56.02240-				2_1-2	3_1-2
CX 60	56.02260-				2_1-2	3_1-2
CX 80	56.02280-					3_1-2

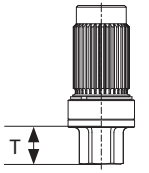


CX-VE

Square insert for all standard power wrench sockets

Inserts SE – A/F 14 mm - 65 mm

ITH type	T [mm]	A/F 14	A/F 17	A/F 19	A/F 22	A/F 24	A/F 27	A/F 32	A/F 36	A/F 41	A/F 46	A/F 55	A/F 65
		8	10	13	15	18	19	32	28	34	38	43	48
	SE ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.
CX 1	56.02001-	0014	0017	0019									
CX 2	56.02002-		0017	0019	0022	0024							
CX 5	56.02005-		0017	0019	0022	0024	0027	0032					
CX 8	56.02008-			0019	0022	0024	0027	0032	0036				
CX 12	56.02012-				0022	0024	0027	0032	0036	0041			
CX 18	56.02018-					0024	0027	0032	0036	0041	0046		
CX 28	56.02028-						0027	0032	0036	0041	0046	0055	
CX 40	56.02040-							0032	0036	0041	0046	0055	0065
CX 60	56.02060-							0032	0036	0041	0046	0055	0065
CX 80	56.02080-							0032	0036	0041	0046	0055	0065



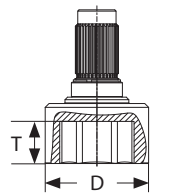


CX-SE

Hexagon insert for inner hexagon bolts

Sockets KSE – A/F 22 mm - 65 mm

ITH type		A/F 22	A/F 24	A/F 27	A/F 30	A/F 32	A/F 36	A/F 41	A/F 46	A/F 50	A/F 55	A/F 60	A/F 65
	D [mm]	37	39	46	49	52	57	63	76	81	87	93	100
	T [mm]	14	16	18	20	22	24	27	30	33	36	39	42
	KSE ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.
CX 1	56.02301-	0022	0024	0027	0030	0032	0036	0041					
CX 2	56.02302-		0024	0027	0030	0032	0036	0041	0046	0050			
CX 5	56.02305-				0030	0032	0036	0041	0046	0050	0055	0060	0065
CX 8	56.02308-						0036	0041	0046	0050	0055	0060	0065
CX 12	56.02312-								0046	0050	0055	0060	0065
CX 18	56.02318-									0050	0055	0060	0065
CX 28	56.02328-										0055	0060	0065
CX 40	56.02301-											0060	0065
CX 60	56.02301-												0065

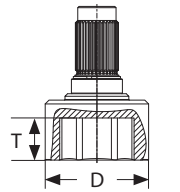




CX-KSE
Power wrench socket for hexagon bolts

Sockets KSE – A/F 70 mm - 115 mm

ITH type		A/F 70	A/F 75	A/F 80	A/F 85	A/F 90	A/F 95	A/F 100	A/F 105	A/F 110	A/F 115
	D [mm]	106	112	118	125	131	142	149	155	162	169
	T [mm]	45	48	52	56	60	64	68	72	76	80
	KSE ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no	ITH order no.	ITH order no.	ITH order no.
CX 5	56.02305-	0070	0075								
CX 8	56.02308-	0070	0075	0080							
CX 12	56.02312-	0070	0075	0080	0085	0090					
CX 18	56.02318-	0070	0075	0080	0085	0090	0095				
CX 28	56.02328-	0070	0075	0080	0085	0090	0095	0100	0105	0110	
CX 40	56.02340-	0070	0075	0080	0085	0090	0095	0100	0105	0110	0115
CX 60	56.02360-	0070	0075	0080	0085	0090	0095	0100	0105	0110	0115
CX 80	56.02380-	0070	0075	0080	0085	0090	0095	0100	0105	0110	0115





CX-KSE
Power wrench socket for hexagon bolts

Inserts SE – A/F 1/2" - 1 3/8"

ITH type	SE ITH order no.	1/2"	9/16"	5/8"	3/4"	13/16"	7/8"	1"	1 1/16"	1 1/8"	1 3/16"	1 1/4"	1 3/8"
		ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.
CX 1	56.02001-	1-2	9-16	5-8	3-4	13-16							
CX 2	56.02002-	1-2	9-16	5-8	3-4	13-16	7-8	1					
CX 5	56.02005-		9-16	5-8	3-4	13-16	7-8	1	1_1-16	1_1-8	1_13-16		
CX 8	56.02008-				3-4	13-16	7-8	1	1_1-16	1_1-8	1_13-16	1_1-4	1_3-8
CX 12	56.02012-					13-16	7-8	1	1_1-16	1_1-8	1_13-16	1_1-4	1_3-8
CX 18	56.02018-						7-8	1	1_1-16	1_1-8	1_13-16	1_1-4	1_3-8
CX 28	56.02028-								1_1-16	1_1-8	1_13-16	1_1-4	1_3-8
CX 40	56.02040-										1_13-16	1_1-4	1_3-8



Type CX-SE
Hexagon insert for inner hexagon bolts

Continued inserts SE – A/F 1 1/2" - 2 1/8"

ITH type	SE ITH order no.	1 1/2"	1 5/8"	1 3/4"	1 13/16"	1 7/8"	2"	2 1/8"					
		ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.					
CX 18	56.02018-	1_1-2	1_5-8	1_3-4	1_13-16								
CX 28	56.02028-	1_1-2	1_5-8	1_3-4	1_13-16	1_7-8							
CX 40	56.02040-	1_1-2	1_5-8	1_3-4	1_13-16	1_7-8	2	2_1-8					
CX 60	56.02060-			1_3-4	1_13-16	1_7-8	2	2_1-8					
CX 80	56.02080-			1_3-4	1_13-16	1_7-8	2	2_1-8					



Type CX-SE
Hexagon insert for inner hexagon bolts

Sockets KSE – A/F 7/8" - 1 9/16"

ITH type	KSE ITH order no.	7/8"	15/16"	1"	1 1/16"	1 1/8"	1 3/16"	1 1/4"	1 5/16"	1 3/8"	1 7/16"	1 1/2"	1 9/16"
		ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.
CX 1	56.02301-	7-8	15-16	1	1_1-16	1_1-8	1_3-16	1_1-4	1_5-16	1_3-8	1_7-16		
CX 2	56.02302-	7-8	15-16	1	1_1-16	1_1-8	1_3-16	1_1-4	1_5-16	1_3-8	1_7-16	1_1-2	1_9-16
CX 5	56.02305-									1_3-8	1_7-16	1_1-2	1_9-16
CX 8	56.02308-											1_1-2	1_9-16



Type CX-KSE
Power wrench socket
for hexagon bolts

Continued sockets KSE – A/F 1 5/8" - 2 5/16"

ITH type	KSE ITH order no.	1 5/8"	1 11/16"	1 3/4"	1 13/16"	1 7/8"	1 15/16"	2"	2 1/16"	2 1/8"	2 3/16"	2 1/4"	2 5/16"
		ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.
CX 5	56.02305-	1_5-8	1_11-16	1_3-4	1_13-16	1_7-8	1_15-16	2	2_1-16	2_1-8	2_3-16	2_1-4	2_5-16
CX 8	56.02308-	1_5-8	1_11-16	1_3-4	1_13-16	1_7-8	1_15-16	2	2_1-16	2_1-8	2_3-16	2_1-4	2_5-16
CX 12	56.02312-	1_5-8	1_11-16	1_3-4	1_13-16	1_7-8	1_15-16	2	2_1-16	2_1-8	2_3-16	2_1-4	2_5-16
CX 18	56.02318-					1_7-8	1_15-16	2	2_1-16	2_1-8	2_3-16	2_1-4	2_5-16
CX 28	56.02328-								2_1-16	2_1-8	2_3-16	2_1-4	2_5-16



Type CX-KSE
Power wrench socket
for hexagon bolts

Sockets KSE – A/F 2 3/8" - 3 1/16"

ITH type	KSE ITH order no.	2 3/8"	2 7/16"	2 1/2"	2 9/16"	2 5/8"	2 11/16"	2 3/4"	2 13/16"	2 7/8"	2 15/16"	3"	3 1/16"
		ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.
CX 5	56.02005-	2_3-8	2_7-16	2_1-2	2_9-16								
CX 8	56.02008-	2_3-8	2_7-16	2_1-2	2_9-16	2_5-8	2_11-16	2_3-4	2_13-16	2_7-8	2_15-16		
CX 12	56.02012-	2_3-8	2_7-16	2_1-2	2_9-16	2_5-8	2_11-16	2_3-4	2_13-16	2_7-8	2_15-16	3	3_1-16
CX 18	56.02018-	2_3-8	2_7-16	2_1-2	2_9-16	2_5-8	2_11-16	2_3-4	2_13-16	2_7-8	2_15-16	3	3_1-16
CX 28	56.02028-	2_3-8	2_7-16	2_1-2	2_9-16	2_5-8	2_11-16	2_3-4	2_13-16	2_7-8	2_15-16	3	3_1-16
CX 40	56.02040-	2_3-8	2_7-16	2_1-2	2_9-16	2_5-8	2_11-16	2_3-4	2_13-16	2_7-8	2_15-16	3	3_1-16
CX 60	56.02060-							2_3-4	2_13-16	2_7-8	2_15-16	3	3_1-16
CX 80	56.02080-											3	3_1-16



Type CX-KSE
Power wrench socket for hexagon bolts

Continued sockets KSE – A/F 3 1/8" - 3 13/16"

ITH type	KSE ITH order no.	3 1/8"	3 3/16"	3 1/4"	3 5/16"	3 3/8"	3 7/16"	3 1/2"	3 9/16"	3 5/8"	3 11/16"	3 3/4"	3 13/16"
		ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.
CX 12	56.02012-	3_1-8	3_3-16										
CX 18	56.02018-	3_1-8	3_3-16	3_1-4	3_5-16	3_3-8	3_7-16	3_1-2	3_9-16	3_5-8			
CX 28	56.02028-	3_1-8	3_3-16	3_1-4	3_5-16	3_3-8	3_7-16	3_1-2	3_9-16	3_5-8	3_11-16	3_3-4	3_13-16
CX 40	56.02040-	3_1-8	3_3-16	3_1-4	3_5-16	3_3-8	3_7-16	3_1-2	3_9-16	3_5-8	3_11-16	3_3-4	3_13-16
CX 60	56.02060-	3_1-8	3_3-16	3_1-4	3_5-16	3_3-8	3_7-16	3_1-2	3_9-16	3_5-8	3_11-16	3_3-4	3_13-16
CX 80	56.02080-	3_1-8	3_3-16	3_1-4	3_5-16	3_3-8	3_7-16	3_1-2	3_9-16	3_5-8	3_11-16	3_3-4	3_13-16



Type CX-KSE
Power wrench socket for hexagon bolts

Sockets KSE – A/F 3 7/8" - 4 1/2"

ITH type	KSE ITH order no.	3 7/8"	3 15/16"	4"	4 1/16"	4 1/8"	4 3/16"	4 1/4"	4 5/16"	4 3/8"	4 7/16"	4 1/2"
		ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.
CX 28	56.02028-	3_7-8	3_15-16									
CX 40	56.02040-	3_7-8	3_15-16	4	4_1-16	4_1-8						
CX 60	56.02060-	3_7-8	3_15-16	4	4_1-16	4_1-8	4_3-16	4_1-4	4_5-16	4_3-8	4_7-16	4_1-2
CX 80	56.02080-	3_7-8	3_15-16	4	4_1-16	4_1-8	4_3-16	4_1-4	4_5-16	4_3-8	4_7-16	4_1-2



Type CX-KSE
Power wrench socket for hexagon bolts

Type D-Flex Hydraulic torque wrench



SCAN ME

Hydraulic torque wrench

Type D-Flex

Advantages

- ✓ **Flexible cassette-type hydraulic torque wrench:** one cylinder unit can operate various cassettes with different width across flats (A/F)
- ✓ **Quick change mechanism:** enables quick replacement of the cassettes - no extra tools required
- ✓ **Reduced head radii:** suitable for various applications and compatible with common flange standards

Application







Types



D-Flex 2 | D-Flex 5 | D-Flex 8 | D-Flex 12 | D-Flex 18 | D-Flex 28 | D-Flex 40

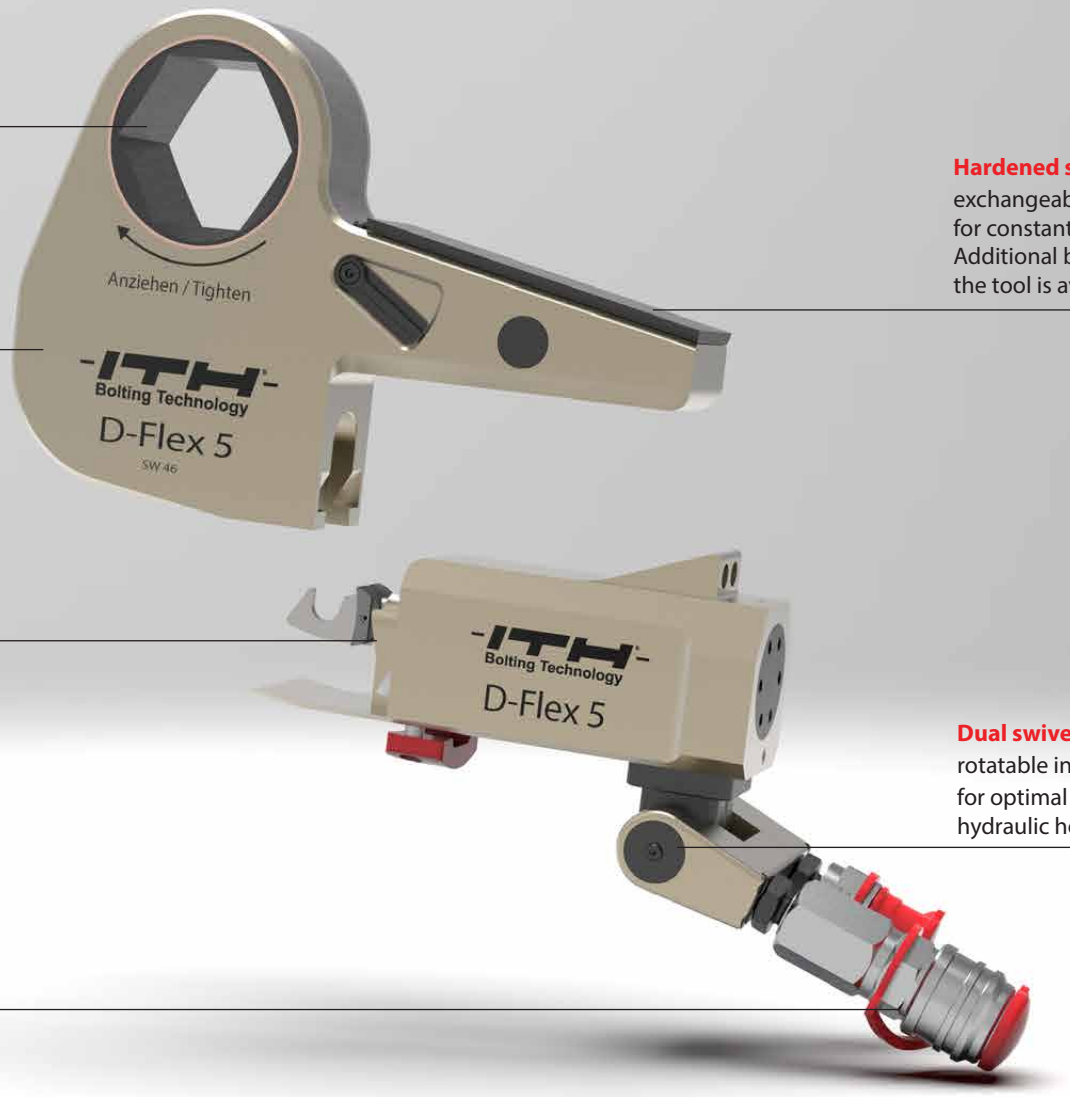
Type D-Flex Features

Smallest head radii
reduced outer diameter, suitable for smallest bolt pitches. Suitable for flange connections according to ASME B16.5 - 2003 and MSS SP-44 - 2006

Cassette unit
for different width across flats (A/F)

Cylinder unit
fast and robust: the CLICK-AND-GO mechanism for easy locking by hand. No extra tools required

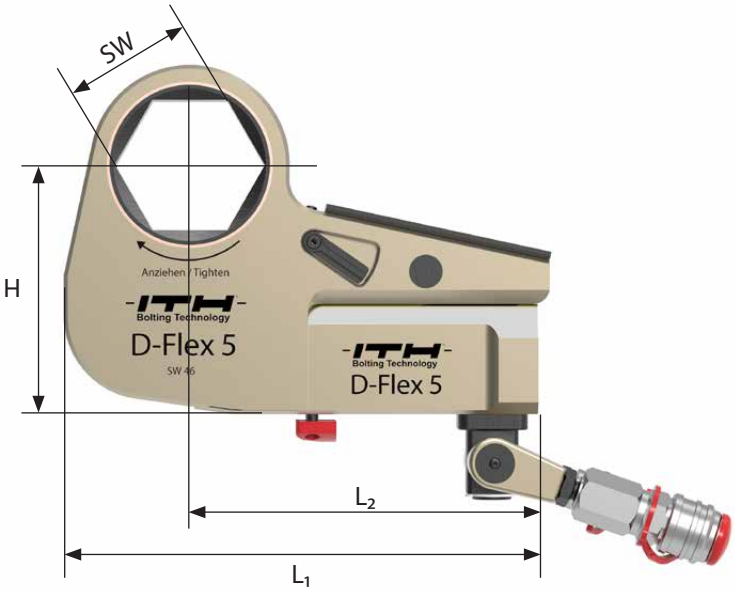
Dual-hose hydraulic connection
high-flow coupling and nipple for high delivery volumes



Hardened support plate
exchangeable, direct support for constant support conditions. Additional bending moment in the tool is avoided

Dual swivel connection
rotatable in two dimensions for optimal positioning of the hydraulic hose

Type D-Flex Technical data







ALPHA Sensor

Optional, adaptable

Read more on page 4.

Technical Data

ITH type	Max. Torque		L1 min. to max.*		L2 min. to max.*		B		B1		H		ITH order no. cylinder unit
	[Nm]	[ft•lb]	[mm]	["]	[mm]	["]	[mm]	["]	[mm]	["]	[mm]	["]	
D-Flex 2	2,000	1,475	183 - 193	7.20 - 7.60	135 - 144	5.31 - 5.67	34	1.34	50	1.97	88,7	3.49	58.00002-2000
D-Flex 5	5,000	3,688	238 - 260	9.37 - 10.24	174 - 195	6.85 - 7.68	42	1.65	59	2.32	124	4.88	58.00005-2000
D-Flex 8	8,000	5,900	253 - 273	9.96 - 10.75	176 - 203	6.93 - 7.99	48	1.89	64	2.52	141	5.55	58.00008-2000
D-Flex 12	12,000	8,851	285 - 301	11.22 - 11.85	200 - 224	7.87 - 8.82	56	2.20	77	3.03	158	6.22	58.00012-2000
D-Flex 18	18,000	13,276	357 - 376	14.06 - 14.80	250 - 270	9.84 - 10.63	68	2.68	84	3.31	196	7.72	58.00018-2000
D-Flex 28	28,000	18,439	400 - 428	15.75 - 16.85	280 - 310	11.02 - 12.20	77	3.03	93	3.66	215	8.46	58.00028-2000
D-Flex 40	40,000	29,502	458 - 509	18.03 - 20.04	328 - 368	12.91 - 14.49	94	3.70	110	4.33	240	9.45	58.00040-2000

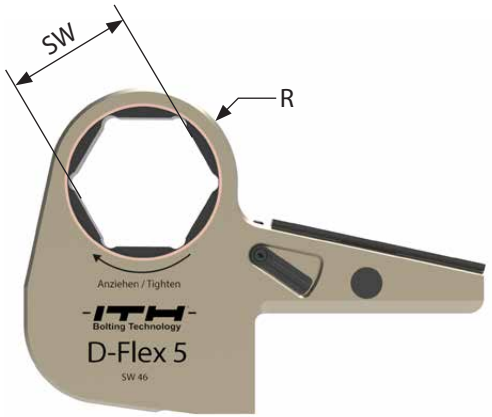
*depending on cassette unit.

Type D-Flex Head radii cassette unit

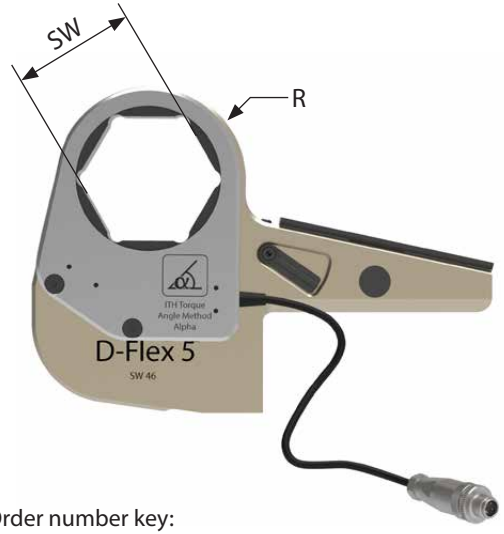
A/F		D-Flex 2	D-Flex 5	D-Flex 8	D-Flex 12	D-Flex 18	D-Flex 28	D-Flex 40	ITH order no.*	ALPHA ITH order no.
[mm]	["]	Head radius R [mm]								
19		28							58.000xx-3019	-A01
22		28							58.000xx-3022	-A01
24	15/16	28							58.000xx-3024	-A01
27		28	36						58.000xx-3027	-A01
30	1 1/4	28	36						58.000xx-3030	-A01
32		28	36						58.000xx-3032	-A01
36	1 4/9	28	39	44					58.000xx-3036	-A01
41	1 5/8	32	39	44					58.000xx-3041	-A01
46	1 4/5	35	39	44	48				58.000xx-3046	-A01
50	2	42	42	44	48	58			58.000xx-3050	-A01
55	2 1/5	42	44	44	48	58			58.000xx-3055	-A01
60	2 3/8	44	46	48	52	58			58.000xx-3060	-A01
65	2 4/7	48	50	48	52	58			58.000xx-3065	-A01
70	2 3/4		56	57	57	61			58.000xx-3070	-A01
75	3		56	57	57	61			58.000xx-3075	-A01
80	3 1/8		62	63	63	66	69		58.000xx-3080	-A01
85	3 3/2			63	63	66	69		58.000xx-3085	-A01
90	3 3/4			70	70	72	72	80	58.000xx-3090	-A01
95	3 7/8			70	70	72	72	80	58.000xx-3095	-A01
100	4 1/4				77	78	79	87	58.000xx-3100	-A01
105	4 5/8				77	78	79	87	58.000xx-3105	-A01
110						87	89	92	58.000xx-3110	-A01
115	5					87	89	92	58.000xx-3115	-A01
120**							94	97	58.000xx-3120	-A01
125							94	97	58.000xx-3125	-A01
130**	5 3/8						100	102	58.000xx-3130	-A01
135							100	102	58.000xx-3135	-A01
140**							105	107	58.000xx-3140	-A01
145	6 1/8						105	107	58.000xx-3145	-A01
150**								115	58.000xx-3150	-A01
155	6 1/2							115	58.000xx-3155	-A01
160**								122	58.000xx-3160	-A01
165								122	58.000xx-3165	-A01
170**								128	58.000xx-3170	-A01
175	7 1/8							128	58.000xx-3175	-A01
180	7 5/8							133	58.000xx-3180	-A01
185	8							133	58.000xx-3185	-A01
190								136	58.000xx-3190	-A01
195								136	58.000xx-3195	-A01
200	8 3/8							141	58.000xx-3200	-A01

Reduced head radii
matching flange standards:
ASME B16.5
Pipe flanges, class 300 to class 2,500
MSS SP-44
Steel pipe flanges, class 150 to 900.

Cassette unit standard



Cassette unit with ALPHA-Sensor



* Order number key:
xx = Size cylinder unit. Example D-Flex 8: xx = 08.
** These wrench sizes can be adapted.

Type D-Flex Cylinder units and accessories

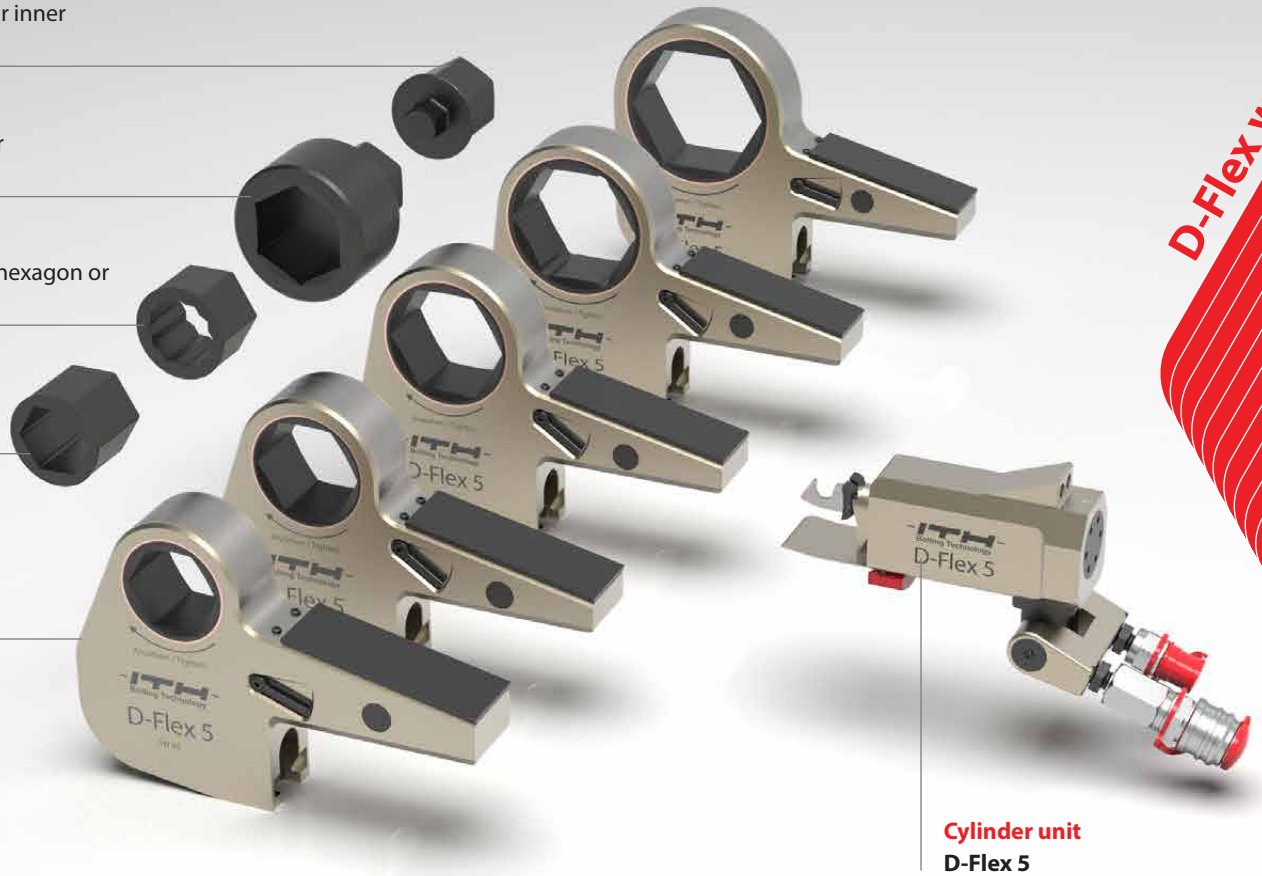
Type D-Flex-AS
Outer hexagon adapter for inner hexagon bolts

Type D-Flex-AN
Inner hexagon adapter for hexagon bolts

Type D-Flex-A (Z)
Twelve-sided adapter for hexagon or twelve-sided bolts

Type D-Flex-A
Hexagon adapter for hexagon bolts

Cassette unit
D-Flex 5



Cylinder unit
D-Flex 5

Accessories: Adapters

All adapters and supports can be replaced quickly - no extra tools required.

D-Flex wrench sizes

A/F 200
A/F 195
A/F 190
A/F 185
A/F 180
A/F 175
A/F 170
A/F 165
A/F 160
A/F 155
A/F 150
A/F 145
A/F 140
A/F 135
A/F 130
A/F125
A/F 120
A/F 115
A/F 110
A/F 105
A/F 100
A/F 95
A/F 90
A/F 85
A/F 80
A/F 75
A/F 70
A/F 65
A/F 60
A/F 55
A/F 50
A/F 46
A/F 41
A/F 36
A/F 32
A/F 30
A/F 27
A/F 24
A/F 22
A/F 19

Type D-Flex Supports







Supports

ITH type	ITH order no. Support-A Horizontal standard	ITH order no. Support-B Vertical long	ITH order no. Support-C Horizontal low
D-Flex 2	58.00002-1xxx-01	58.00002-1xxx-02	58.00002-1xxx-03-Lyyy
D-Flex 5	58.00005-1xxx-01	58.00005-1xxx-02	58.00005-1xxx-03-Lyyy
D-Flex 8	58.00008-1xxx-01	58.00008-1xxx-02	58.00008-1xxx-03-Lyyy
D-Flex 12	58.00012-1xxx-01	58.00012-1xxx-02	58.00012-1xxx-03-Lyyy
D-Flex 18	58.00018-1xxx-01	58.00018-1xxx-02	58.00018-1xxx-03-Lyyy
D-Flex 28	58.00028-1xxx-01	58.00028-1xxx-02	58.00028-1xxx-03-Lyyy
D-Flex 40	58.00040-1xxx-01	58.00040-1xxx-02	58.00040-1xxx-03-Lyyy





Supports

ITH type	ITH order no. Support-D Horizontal ring	ITH order no. Support-E Horizontal long
D-Flex 2	58.00002-1xxx-04-Lyyy	58.00002-1xxx-05-Lyyy
D-Flex 5	58.00005-1xxx-04-Lyyy	58.00005-1xxx-05-Lyyy
D-Flex 8	58.00008-1xxx-04-Lyyy	58.00008-1xxx-05-Lyyy
D-Flex 12	58.00012-1xxx-04-Lyyy	58.00012-1xxx-05-Lyyy
D-Flex 18	58.00018-1xxx-04-Lyyy	58.00018-1xxx-05-Lyyy
D-Flex 28	58.00028-1xxx-04-Lyyy	58.00028-1xxx-05-Lyyy
D-Flex 40	58.00040-1xxx-04-Lyyy	58.00040-1xxx-05-Lyyy

Accessories:
Supports

Horizontal supports ("in-line") can avoid additional bending moments in the tool.

All supports can be easily replaced and secured by a push button.

Order number key
xxx = A/F Cassette
yyy = Support length

Type D-Flex 2 Adapter A, AN, AS



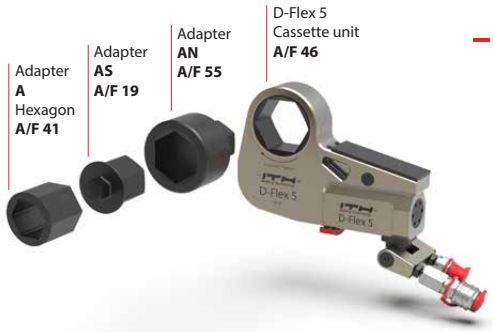
ITH Bolting Technology

D-Flex 2 Adapter A, AN, AS

ITH type	ITH order no. D-Flex-2	A/F D-Flex [mm]	ITH order no. Adapter	Adapter A/F [mm]															Type
Type D-Flex-A				**24**	**30**	**34**	**36**	**41**	**46**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	
D-Flex 2	58.00002-3036	36	58.02502-3036-	0024	0030															**D-Flex-A** Hexagon-adapter* for hexagon bolts
	58.00002-3041	41	58.02502-3041-	0024	0030	0034	0036													
	58.00002-3046	46	58.02502-3046-	0024	0030	0034	0036	0041												
	58.00002-3055	55	58.02502-3055-	0024	0030	0034	0036	0041	0046	0050										
	58.00002-3065	65	58.02502-3065-	0024	0030	0034	0036	0041	0046	0050	0055	0060								
Type D-Flex-AN				**24**	**30**	**34**	**36**	**41**	**46**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	
D-Flex 2	58.00002-3036	36	58.02702-3036-	0024	0030	0034	0036	0041	0046	0050										**D-Flex-AN** Inner hexagon adapter* for hexagon bolts
	58.00002-3041	41	58.02702-3041-		0030	0034	0036	0041	0046	0050	0055									
	58.00002-3046	46	58.02702-3046-			0034	0036	0041	0046	0050	0055	0060								
	58.00002-3055	55	58.02702-3055-					0041	0046	0050	0055	0060	0065	0070						
	58.00002-3065	65	58.02702-3065-							0050	0055	0060	0065	0070	0075	0080				
Type D-Flex-AS				**14**	**17**	**19**	**22**	**27**	**32**	**36**	**41**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	
D-Flex 2	58.00002-3036	36	58.02802-3036-	0014	0017	0019	0022	0027	0032											**D-Flex-AS** Outer hexagon adapter for inner hexagon bolts
	58.00002-3041	41	58.02802-3041-	0014	0017	0019	0022	0027	0032											
	58.00002-3046	46	58.02802-3046-	0014	0017	0019	0022	0027	0032											
	58.00002-3055	55	58.02802-3055-	0014	0017	0019	0022	0027	0032											
	58.00002-3065	65	58.02802-3065-	0014	0017	0019	0022	0027	0032											

*Also available as twelve-sided adapter.

Type D-Flex 5 Adapter A, AN, AS



ITH Bolting Technology

D-Flex 5 Adapter A, AN, AS

ITH type	ITH order no. D-Flex-5	A/F D-Flex [mm]	ITH order no. Adapter	Adapter A/F [mm]																Type
Type D-Flex-A				**24**	**30**	**34**	**36**	**41**	**46**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	
D-Flex 5	58.00005-3046	46	58.02505-3046-	0024	0030	0034	0036	0041													 **D-Flex-A** Hexagon adapter* for hexagon bolts
	58.00005-3055	55	58.02505-3055-	0024	0030	0034	0036	0041	0046	0050											
	58.00005-3065	65	58.02505-3065-	0024	0030	0034	0036	0041	0046	0050	0055	0060									
	58.00005-3075	75	58.02505-3075-	0024	0030	0034	0036	0041	0046	0050	0055	0060	0065	0070							
	58.00005-3085	85	58.02505-3085-	0024	0030	0034	0036	0041	0046	0050	0055	0060	0065	0070	0075	0080					

Type D-Flex-AN				**24**	**30**	**34**	**36**	**41**	**46**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	
D-Flex 5	58.00005-3046	46	58.02705-3046-			0034	0036	0041	0046	0050	0055	0060									 **D-Flex-AN** Inner hexagon adapter* for hexagon bolts
	58.00005-3055	55	58.02705-3055-					0041	0046	0050	0055	0060	0065	0070							
	58.00005-3065	65	58.02705-3065-							0050	0055	0060	0065	0070	0075	0080					
	58.00005-3075	75	58.02705-3075-									0060	0065	0070	0075	0080	0085	0090			
	58.00005-3085	85	58.02705-3085-											0070	0075	0080	0085	0090	0095	0100	

Type D-Flex-AS				**14**	**17**	**19**	**22**	**27**	**32**	**36**	**41**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	
D-Flex 5	58.00005-3046	46	58.02805-3046-	0014	0017	0019	0022	0027	0032	0036											 **D-Flex-AS** Outer hexagon adapter for inner hexagon bolts
	58.00005-3055	55	58.02805-3055-	0014	0017	0019	0022	0027	0032	0036											
	58.00005-3065	65	58.02805-3065-	0014	0017	0019	0022	0027	0032	0036											
	58.00005-3075	75	58.02805-3075-	0014	0017	0019	0022	0027	0032	0036											
	58.00005-3085	85	58.02805-3085-	0014	0017	0019	0022	0027	0032	0036											

*Also available as twelve-sided adapter.

Type D-Flex 8 Adapter A, AN, AS



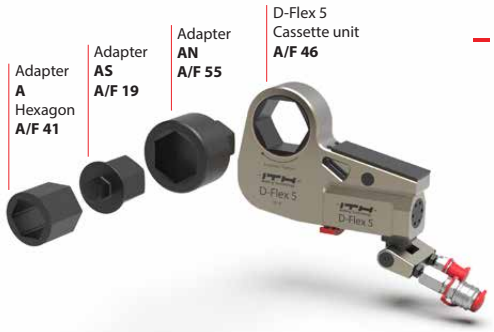
ITH Bolting Technology

D-Flex 8 Adapter A, AN, AS

ITH type	ITH order no. D-Flex-8	A/F D-Flex [mm]	ITH order no. Adapter	Adapter A/F [mm]															Type
Type D-Flex-A				**36**	**41**	**46**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	**105**	**110**	
D-Flex 8	58.00008-3055	55	58.02508-3055-	0036	0041	0046	0050													
	58.00008-3065	65	58.02508-3065-	0036	0041	0046	0050	0055	0060											
	58.00008-3075	75	58.02508-3075-	0036	0041	0046	0050	0055	0060	0065	0070									
	58.00008-3085	85	58.02508-3085-	0036	0041	0046	0050	0055	0060	0065	0070	0075	0080							
	58.00008-3095	95	58.02508-3095-	0036	0041	0046	0050	0055	0060	0065	0070	0075	0080	0085	0090	0095				 **D-Flex-A** Hexagon adapter* for hexagon bolts
Type D-Flex-AN				**36**	**41**	**46**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	**105**	**110**	
D-Flex 8	58.00008-3055	55	58.02708-3055-		0041	0046	0050	0055	0060	0065	0070									
	58.00008-3065	65	58.02708-3065-				0050	0055	0060	0065	0070	0075	0080							
	58.00008-3075	75	58.02708-3075-						0060	0065	0070	0075	0080	0085	0090					
	58.00008-3085	85	58.02708-3085-								0070	0075	0080	0085	0090	0095	0100			
	58.00008-3095	95	58.02708-3095-										0080	0085	0090	0095	0100	0105	0110	 **D-Flex-AN** Inner hexagon adapter* for hexagon bolts
Type D-Flex-AS				**22**	**27**	**32**	**36**	**41**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	**105**	**110**	
D-Flex 8	58.00008-3055	55	58.02808-3055-	0022	0027	0032	0036													
	58.00008-3065	65	58.02808-3065-	0022	0027	0032	0036													
	58.00008-3075	75	58.02808-3075-	0022	0027	0032	0036													
	58.00008-3085	85	58.02808-3085-	0022	0027	0032	0036													
	58.00008-3095	95	58.02808-3095-	0022	0027	0032	0036													 **D-Flex-AS** Outer hexagon adapter for inner hexagon bolts

*Also available as twelve-sided adapter.

Type D-Flex 12 Adapter A, AN, AS



ITH Bolting Technology

D-Flex 12 Adapter A, AN, AS

ITH type	ITH order no. D-Flex-12	A/F D-Flex [mm]	ITH order no. Adapter	Adapter A/F [mm]																Type
Type D-Flex-A				**36**	**41**	**46**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	**105**	**110**	**115**	 **D-Flex-A** Hexagon adapter* for hexagon bolts
D-Flex 12	58.00012-3065	65	58.02512-3065-	0036	0041	0046	0050	0055	0060											
	58.00012-3075	75	58.02512-3075-	0036	0041	0046	0050	0055	0060	0065	0070									
	58.00012-3085	85	58.02512-3085-	0036	0041	0046	0050	0055	0060	0065	0070	0075	0080							
	58.00012-3095	95	58.02512-3095-	0036	0041	0046	0050	0055	0060	0065	0070	0075	0080	0085	0090					
	58.00012-3105	105	58.02512-3105-	0036	0041	0046	0050	0055	0060	0065	0070	0075	0080	0085	0090	0095	0100			
Type D-Flex-AN				**36**	**41**	**46**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	**105**	**110**	**115**	 **D-Flex-AN** Inner hexagon adapter* for hexagon bolts
D-Flex 12	58.00012-3065	65	58.02712-3065-				0050	0055	0060	0065	0070	0075	0080							
	58.00012-3075	75	58.02712-3075-						0060	0065	0070	0075	0080	0085	0090					
	58.00012-3085	85	58.02712-3085-								0070	0075	0080	0085	0090	0095	0100			
	58.00012-3095	95	58.02712-3095-										0080	0085	0090	0095	0100	0105	0110	
	58.00012-3105	105	58.02712-3105-												0090	0095	0100	0105	0110	0115
Type D-Flex-AS				**22**	**27**	**32**	**36**	**41**	**46**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	 **D-Flex-AS** Outer hexagon adapter for inner hexagon bolts
D-Flex 12	58.00012-3065	65	58.02812-3065-	0022	0027	0032	0036	0041	0046											
	58.00012-3075	75	58.02812-3075-	0022	0027	0032	0036	0041	0046											
	58.00012-3085	85	58.02812-3085-	0022	0027	0032	0036	0041	0046											
	58.00012-3095	95	58.02812-3095-	0022	0027	0032	0036	0041	0046											
	58.00012-3105	105	58.02812-3105-	0022	0027	0032	0036	0041	0046											

*Also available as twelve-sided adapter.

Type D-Flex 18 Adapter A, AN, AS



ITH Bolting Technology

D-Flex 18 Adapter A, AN, AS

ITH type	ITH order no. D-Flex-18	A/F D-Flex [mm]	ITH order no. Adapter	Adapter A/F [mm]															Type
Type D-Flex-A				**36**	**41**	**46**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	**105**	**110**	
D-Flex 18	58.00018-3065	65	58.02518-3065-			0046	0050	0055												
	58.00018-3075	75	58.02518-3075-			0046	0050	0055	0060	0065										
	58.00018-3085	85	58.02518-3085-			0046	0050	0055	0060	0065	0070	0075								
	58.00018-3095	95	58.02518-3095-			0046	0050	0055	0060	0065	0070	0075	0080	0085						
	58.00018-3105	105	58.02512-3105-			0046	0050	0055	0060	0065	0070	0075	0080	0085	0090	0095				
Type D-Flex-AN				**36**	**41**	**46**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	**105**	**110**	
D-Flex 18	58.00018-3065	65	58.02718-3065-				0050	0055	0060	0065	0070	0075	0080							
	58.00018-3075	75	58.02718-3075-						0060	0065	0070	0075	0080	0085	0090					
	58.00018-3085	85	58.02718-3085-								0070	0075	0080	0085	0090	0095	0100			
	58.00018-3095	95	58.02718-3095-										0080	0085	0090	0095	0100	0105	0110	
	58.00018-3105	105	58.02718-3105-												0090	0095	0100	0105	0110	
Type D-Flex-AS				**22**	**27**	**32**	**36**	**41**	**46**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	
D-Flex 18	58.00018-3065	65	58.02818-3065-		0027	0032	0036	0041	0046											
	58.00018-3075	75	58.02818-3075-		0027	0032	0036	0041	0046											
	58.00018-3085	85	58.02818-3085-		0027	0032	0036	0041	0046											
	58.00018-3095	95	58.02818-3095-		0027	0032	0036	0041	0046											
	58.00018-3105	105	58.02818-3105-		0027	0032	0036	0041	0046											



D-Flex-A
Hexagon adapter* for hexagon bolts



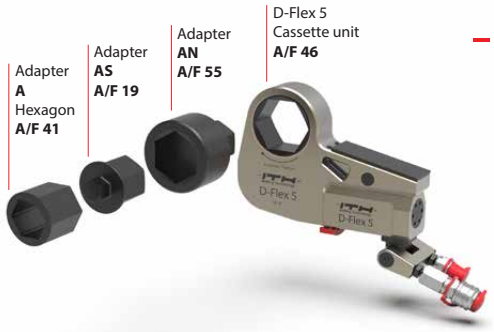
D-Flex-AN
Inner hexagon adapter* for hexagon bolts



D-Flex-AS
Outer hexagon adapter for inner hexagon bolts

*Also available as twelve-sided adapter.

Type D-Flex 28 Adapter A, AN, AS



Bolting Technology

D-Flex 28 Adapter A, AN, AS

ITH Type	ITH order no. D-Flex-28	A/F D-Flex [mm]	ITH order no. Adapter	Adapter A/F [mm]																Type
Type D-Flex-A				**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	**105**	**110**	**115**	**120**	**125**	**130**	**135**	 **D-Flex-A** Hexagon adapter* for hexagon bolts
D-Flex 28	58.00028-3085	85	58.02528-3085-	0050	0055	0060	0065	0070	0075													
	58.00028-3095	95	58.02528-3095-	0050	0055	0060	0065	0070	0075	0080	0085											
	58.00028-3105	105	58.02528-3105-	0050	0055	0060	0065	0070	0075	0080	0085	0090	0095									
	58.00028-3115	115	58.02528-3115-	0050	0055	0060	0065	0070	0075	0080	0085	0090	0095	0100	0105							
	58.00028-3125	125	58.02528-3125-	0050	0055	0060	0065	0070	0075	0080	0085	0090	0095	0100	0105	0110	0115					
	58.00028-3135	135	58.02528-3135-	0050	0055	0060	0065	0070	0075	0080	0085	0090	0095	0100	0105	0110	0115	0120	0125			
	58.00028-3145	145	58.02528-3145-	0050	0055	0060	0065	0070	0075	0080	0085	0090	0095	0100	1005	0110	0115	0120	0125	0130	0135	
Type D-Flex-AN				**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	**105**	**110**	**115**	**120**	**125**	**130**	**135**	 **D-Flex-AN** Inner hexagon adapter* for hexagon bolts
D-Flex 28	58.00028-3085	85	58.02528-3085-							0080	0085	0090	0095	0100	0105	0110						
	58.00028-3095	95	58.02728-3095-							0080	0085	0090	0095	0100	0105	0110						
	58.00028-3105	105	58.02728-3105-									0090	0095	0100	0105	0110	0115	0120				
	58.00028-3115	115	58.02728-3115-											0100	0105	0110	0115	0120	0125	0130		
	58.00028-3125	125	58.02728-3125-													0110	0115	0120	0125	0130	0135	
	58.00028-3135	135	58.02728-3135-															0120	0125	0130	0135	
	58.00028-3145	145	58.02728-3145-															0120	0125	0130	0135	
Type D-Flex-AS				**22**	**27**	**32**	**36**	**41**	**46**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	**105**	 **D-Flex-AS** Outer hexagon adapter for inner hexagon bolts
D-Flex 28	58.00028-3085	85	58.02528-3085-			0032	0036	0041	0046													
	58.00028-3095	95	58.02828-3095-			0032	0036	0041	0046													
	58.00028-3105	105	58.02828-3105-			0032	0036	0041	0046													
	58.00028-3115	115	58.02828-3115-			0032	0036	0041	0046													
	58.00028-3125	125	58.02828-3125-			0032	0036	0041	0046													
	58.00028-3135	135	58.02828-3135-			0032	0036	0041	0046													
	58.00028-3145	145	58.02828-3145-			0032	0036	0041	0046													

*Also available as twelve-sided adapter.

Type D-Flex 40 Adapter A, AN, AS



ITH Bolting Technology

D-Flex 40 Adapter A, AN, AS

ITH type	ITH order no. D-Flex-40	A/F D-Flex [mm]	ITH order no. Adapter	Adapter A/F [mm]																Type
Type D-Flex-A				**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	**105**	**110**	**115**	**120**	**125**	**130**	**135**	**140**	**145**	 **D-Flex-A** Hexagon adapter* for hexagon bolts
D-Flex 40	58.00040-3095	95	58.02540-3095-	0065	0070	0075	0080	0085												
	58.00040-3105	105	58.02540-3105-	0065	0070	0075	0080	0085	0090	0095										
	58.00040-3115	115	58.02540-3115-	0065	0070	0075	0080	0085	0090	0095	100	105								
	58.00040-3125	125	58.02540-3125-	0065	0070	0075	0080	0085	0090	0095	100	105	110	115						
	58.00040-3135	135	58.02540-3135-	0065	0070	0075	0080	0085	0090	0095	100	105	110	115	120	125				
	58.00040-3145	145	58.02540-3145-	0065	0070	0075	0080	0085	0090	0095	100	105	110	115	120	125	130	135		
	58.00040-3175	175	58.02540-3175-	0065	0070	0075	0080	0085	0090	0095	100	105	110	115	120	125	130	135	140	145
Type D-Flex-AN				**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	**105**	**110**	**115**	**120**	**125**	**130**	**135**	**140**	**145**	 **D-Flex-AN** Inner hexagon adapter* for hexagon bolts
D-Flex 40	58.00040-3095	95	58.02740-3095-				0080	0085	0090	0095	0100	0105	0110							
	58.00040-3105	105	58.02740-3105-						0090	0095	0100	0105	0110	0115	0120					
	58.00040-3115	115	58.02740-3115-								0100	0105	0110	0115	0120	0125	0130			
	58.00040-3125	125	58.02740-3125-										0110	0115	0120	0125	0130	0135	0140	
	58.00040-3135	135	58.02740-3135-												0120	0125	0130	0135	0140	0145
	58.00040-3145	145	58.02740-3145-														0130	0135	0140	0145
	58.00040-3175	175	58.02740-3175-														0130	0135	0140	0145
Type D-Flex-AS				**22**	**27**	**32**	**36**	**41**	**46**	**55**	**65**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**	 **D-Flex-AS** Outer hexagon adapter for inner hexagon bolts
D-Flex 40	58.00040-3095	95	58.02840-3095-			0032	0036	0041	0046	0055	0065									
	58.00040-3105	105	58.02840-3105-			0032	0036	0041	0046	0055	0065									
	58.00040-3115	115	58.02840-3115-			0032	0036	0041	0046	0055	0065									
	58.00040-3125	125	58.02840-3125-			0032	0036	0041	0046	0055	0065									
	58.00040-3135	135	58.02840-3135-			0032	0036	0041	0046	0055	0065									
	58.00040-3145	145	58.02840-3145-			0032	0036	0041	0046	0055	0065									
	58.00040-3175	175	58.02840-3175-			0032	0036	0041	0046	0055	0065									

*Also available as twelve-sided adapter.

Type DRS Hydraulic torque wrench



SCAN ME

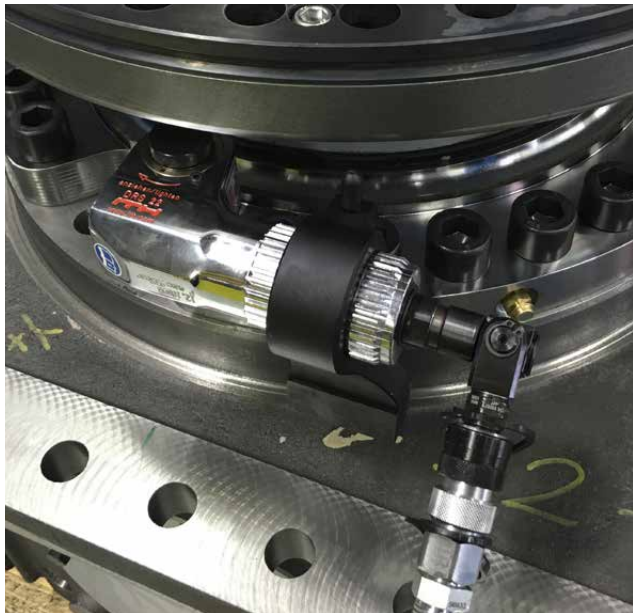
Hydraulic torque wrench

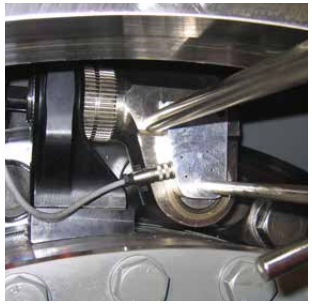
Type DRS

Advantages

- ✓ Single-hose system, compatible with all ITH Torque Wrench High-Pressure Units
- ✓ Closed housing for universal use
- ✓ Use of standard power wrench sockets through square adapters
- ✓ Space-saving single-hose system, single-acting hydraulic cylinder with automatic retraction

Application





Types



DRS 12 | DRS 22 | DRS 50 | DRS 83 | DRS 140

Type DRS Features

ITH Bolting Technology

Fine-toothed spline
for power wrench sockets
type KSE, square inserts type VE
and hexagon inserts type SE

External toothing
to accommodate the support,
three horizontal levels can be
selected on the housing

Tip lock
for fixing the support,
360° rotatable



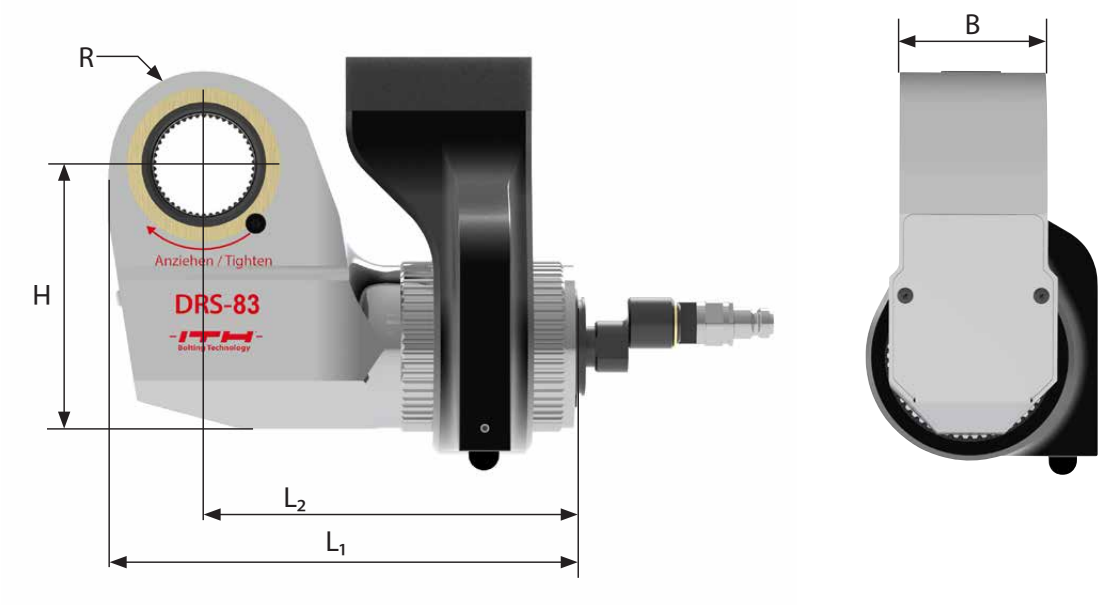
Closed and chromed steel housing

Asymmetric support
weight-optimized support,
including reinforced support shoe.
Can be placed on both sides,
positioned at a 360° angle and
easily fixed by the push button

Swivel connection
rotatable in two dimensions
for optimal positioning of the
hydraulic hose

Single hose hydraulic connection
space saving

Type DRS Technical Data



Technical Data

ITH type	Max. Torque		L1		L2		B		R		H		Weight		ITH order no.
	[Nm]	[ft-lb]	[mm]	["]	[mm]	["]	[mm]	["]	[mm]	["]	[mm]	["]	[kg]	[lb]	
DRS 12	1,250	922	124	4.88	103	4.06	38	1.50	21.5	0.85	58	2.28	1.7	3.75	51.10001-5000
DRS 22	2,200	1,623	161	6.34	136	5.35	45	1.77	25	0.98	68	2.68	2.3	5.07	51.10004-5000
DRS 50	5,000	3,688	180	7.09	150	5.91	54	2.13	30	1.18	90	3.54	4.1	9.04	51.10006-5000
DRS 83	8,300	6,122	219	8.62	179	7.05	60	2.36	40	1.57	118	4.65	6.8	14.99	51.10008-5000
DRS 140	14,000	10,326	224	8.82	179	7.07	70	2.76	45	1.77	127	5.00	9.6	21.16	51.10010-5000

Contact us for additional or custom designs.

Type DRS Inserts VE - SE

Inserts VE – 3/4" - 2 1/2"

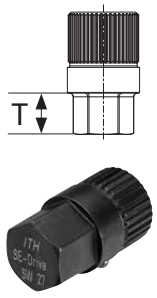
ITH type	VE	3/4“	1“	1 1/2“	2 1/2“
	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.
DRS 12	51.12201-	3-4	1		
DRS 22	51.12204-		1	1_1-2	
DRS 50	51.12206-		1	1_1-2	
DRS 83	51.12208-			1_1-2	
DRS 140	51.12210-			1_1-2	2_1-2



DRS-VE
Square insert for all power wrench sockets

Inserts SE – A/F 14 mm - 41 mm

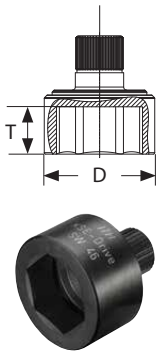
ITH type		A/F 14	A/F 17	A/F 19	A/F 22	A/F 24	A/F 27	A/F 32	A/F 36	A/F 41
	T [mm]	8	10	13	15	18	19	32	28	34
	SE ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.
DRS 12	51.12001-	0014	0017	0019	0022					
DRS 22	51.12004-		0017	0019	0022	0024				
DRS 50	51.12006-		0017	0019	0022	0024	0027	0032		
DRS 83	51.12008-			0019	0022	0024	0027	0032	0036	
DRS 140	51.12010-				0022	0024	0027	0032	0036	0041



DRS-SE
Hexagon insert for inner hexagon bolts

Sockets KSE – A/F 22 mm - 50 mm

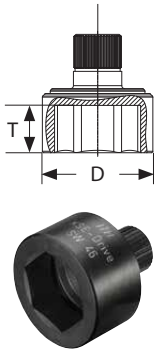
ITH type		A/F 22	A/F 24	A/F 27	A/F 30	A/F 32	A/F 36	A/F 41	A/F 46	A/F 50
	D [mm]	37	39	46	49	52	57	63	76	81
	T [mm]	14	16	18	20	22	24	27	30	33
	KSE ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.
DRS 12	51.12301-	0022	0024	0027	0030	0032	0036	0041	0046	
DRS 22	51.12304-		0024	0027	0030	0032	0036	0041	0046	0050
DRS 50	51.12306-				0030	0032	0036	0041	0046	0050
DRS 83	51.12308-						0036	0041	0046	0050
DRS 140	51.12310-								0046	0050



DRS-KSE
Power wrench socket for hexagon bolts

Sockets KSE – A/F 55 mm - 90 mm

ITH type		A/F 55	A/F 60	A/F 65	A/F 70	A/F 75	A/F 80	A/F 85	A/F 90
	D [mm]	87	93	100	106	112	118	125	131
	T [mm]	36	39	42	45	48	52	56	60
	KSE ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.	ITH order no.
DRS 12	51.12301-								
DRS 22	51.12304-								
DRS 50	51.12306-	0055	0060	0065	0070				
DRS 83	51.12308-	0055	0060	0065	0070	0075	0080		
DRS 140	51.12310-	0055	0060	0065	0070	0075	0080	0085	0090



DRS-KSE
Power wrench socket for hexagon bolts

Type DKS Hydraulic torque wrench

ITH Bolting Technology



Hydraulic torque wrench

Type DKS

Advantages

- ✓ Single-hose system, compatible with all ITH Torque Wrench High-Pressure Units
- ✓ Perfect for radial limited spaces
- ✓ Constant support conditions
- ✓ Expandable application possibilities with various plug-in inserts type KSE, VE, SE
- ✓ Easy-to-maintain assembly design
- ✓ Single-acting hydraulic cylinder with automatic piston return

Application








Types



DKS 12 DKS 20 DKS 45 DKS 75

Type DKS Features

Flexible holding fixture
for various socket inserts and direct tightening of hexagon bolts

Component design
system of hydraulic cylinder, ratchet system and lug enables simple and quick repair work



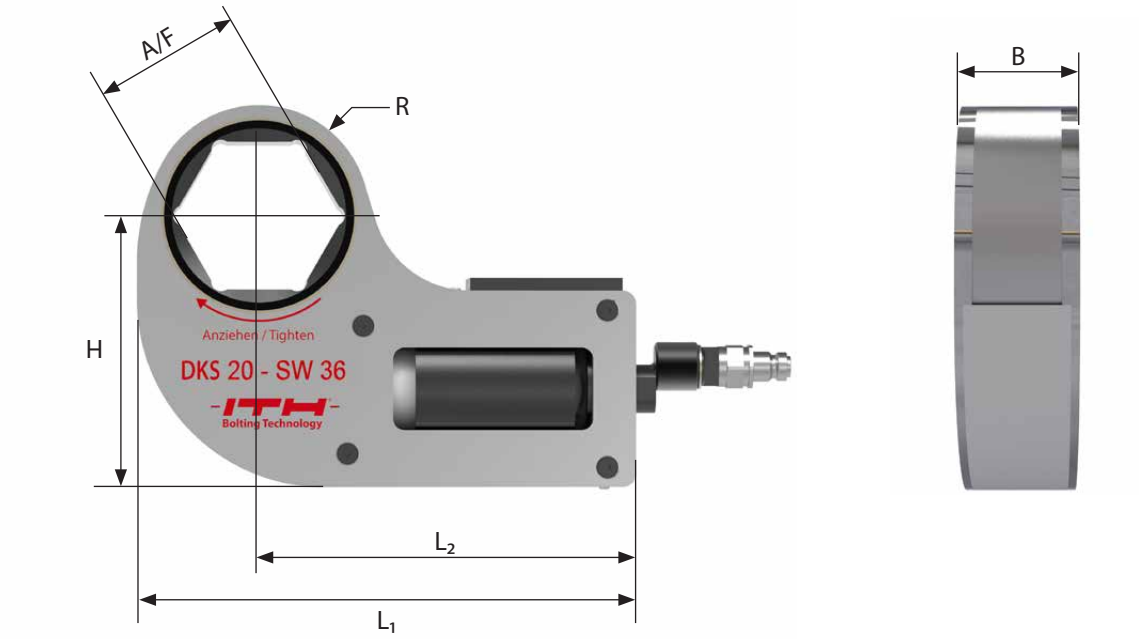
Chromed steel housing

Hardened support plate
direct support for constant support conditions. Additional bending moment in the tool is avoided

Swivel connection
rotatable in two dimensions for optimal positioning of the hydraulic hose

Single hose hydraulic connection
space saving

Type DKS Technical data



Technical data

ITH type	Max. Torque		L1		L2		B		R		H		A/F		Weight		ITH order no.
	[Nm]	[ft-lb]	[mm]	["]	[mm]	["]	[mm]	["]	[mm]	["]	[mm]	["]	[mm]	["]	[kg]	[lb]	
DKS 12	1,250	922	142	5.59	110	4.33	31,5	1.24	24	0.94	61.5	2.42	30	1.18	1.3	2.87	52.10001-5000
			142	5.79					28	1.10	61.5	2.42	36	1.42	1.4	3.09	52.10002-5000
DKS 20	2,000	1,475	183	7.20	145	5.71	34	1.34	28	1.10	73	2.87	36	1.42	1.5	3.31	52.10003-5000
			188	7.40					35	1.38	76	2.99	46	1.81	1.8	3.97	52.10004-5000
DKS 45	4,500	3,319	204	8.03	143	5.63	44	1.73	38	1.50	99	3.90	46	1.81	3.4	7.50	52.10008-5000
			206	8.11	160	6.30			42	1.65	99	3.90	55	2.17	3.6	7.94	52.10010-5000
			262	10.31	214	8.43			48	1.89	137	5.39	65	2.56	3.8	8.38	52.10011-5000
			270	10.63	214	8.43			56	2.20	137	5.39	75	2.95	4.1	9.04	52.10012-5000
			280	11.02	210	8.27			70	2.76	137	5.39	95	3.74	4.3	9.48	52.10014-5000
DKS 75	7,500	5,532	243	9.57	185	7.28	46	1.81	48	1.89	124	4.88	65	2.56	5.2	11.46	52.10020-5000
			260	10.24	195	7.68			56	2.20	124	4.88	75	2.95	5.5	12.13	52.10021-5000
			267	10.51	195	7.68			62	2.44	124	4.88	85	3.35	5.9	13.01	52.10022-5000

Type DKS Adapter A & AN

Adapter A – A/F 22 mm - 90 mm

ITH type	ITH order no. DKS	A/F DKS [mm]	ITH order no. Adapter A	Adapter A/F [mm]														Type
				22	27	32	36	41	46	50	55	60	65	70	75	80	85	90	
DKS 12	52.10001	30	52.12501-	0022	0027														
	52.10002	36	52.12502-	0022	0027	0032													
DKS 20	52.10003	36	52.12503-	0022	0027	0032													
	52.10004	46	52.12504-	0022	0027	0032	0036	0041											
DKS 45	52.10008	46	52.12508-	0022	0027	0032	0036	0041											
	52.10010	55	52.12510-	0022	0027	0032	0036	0041	0046	0050									
	52.10011	65	52.12511-	0022	0027	0032	0036	0041	0046	0050	0055	0060							
	52.10012	75	52.12512-	0022	0027	0032	0036	0041	0046	0050	0055	0060	0065	0070					
	52.10014	95	52.12514-	0022	0027	0032	0036	0041	0046	0050	0055	0060	0065	0070	0075	0080	0085	0090	
DKS 75	52.10020	65	52.12520-	0022	0027	0032	0036	0041	0046	0050	0055	0060							
	52.10021	75	52.12521-	0022	0027	0032	0036	0041	0046	0050	0055	0060	0065	0070					
	52.10022	85	52.12522-	0022	0027	0032	0036	0041	0046	0050	0055	0060	0065	0070	0075	0080			



DKS-A
Hexagon adapter for hexagon bolts

Adapter AN – A/F 22 mm - 75 mm

ITH type	ITH order no. DKS	A/F DKS [mm]	ITH order no. Adapter A	Adapter A/F [mm]												Type
				22	27	32	36	41	46	50	55	60	65	70	75	
DKS 12	52.10001	30	52.12701-	0022	0027	0032	0036	0041								
	52.10002	36	52.12702-	0022	0027	0032	0036	0041								
DKS 20	52.10003	36	52.12703-	0022	0027	0032	0036	0041	0046							
	52.10004	46	52.12704-	0022	0027	0032	0036	0041	0046							
DKS 45	52.10008	46	52.12708-	0022	0027	0032	0036	0041	0046	0050	0055					
	52.10010	55	52.12710-	0022	0027	0032	0036	0041	0046	0050	0055					
	52.10011	65	52.12711-	0022	0027	0032	0036	0041	0046	0050	0055	0060				
	52.10012	75	52.12712-	0022	0027	0032	0036	0041	0046	0050	0055	0060	0065			
	52.10014	95	52.12714-	0022	0027	0032	0036	0041	0046	0050	0055	0060	0065	0070	0075	
DKS 75	52.10020	65	52.12720-	0022	0027	0032	0036	0041	0046	0050	0055	0060	0065	0070	0075	
	52.10021	75	52.12721-	0022	0027	0032	0036	0041	0046	0050	0055	0060	0065	0070	0075	
	52.10022	85	52.12722-	0022	0027	0032	0036	0041	0046	0050	0055	0060	0065	0070	0075	



DKS-AN
Inner hexagon adapter for hexagon bolts

Type DKS Adapter AS

Adapter AS – A/F 22 mm - 55 mm

ITH type	ITH order no. DKS	A/F DKS [mm]	ITH order no. Adapter A	Adapter A/F [mm]								Type
				22	27	32	36	41	46	50	55	
DKS 12	52.10001	30	52.12801-	0014	0017	0019	0022					 **DKS-AS** Outer hexagon adapter for inner hexagon bolts
	52.10002	36	52.12802-	0014	0017	0019	0022					
DKS 20	52.10003	36	52.12803-	0014	0017	0019	0022	0027	0032			
	52.10004	46	52.12804-	0014	0017	0019	0022	0027	0032			
DKS 45	52.10008	46	52.12808-	0014	0017	0019	0022	0027	0032	0036		
	52.10010	55	52.12810-	0014	0017	0019	0022	0027	0032	0036		
	52.10011	65	52.12811-	0014	0017	0019	0022	0027	0032	0036		
	52.10012	75	52.12812-	0014	0017	0019	0022	0027	0032	0036		
	52.10014	95	52.12814-	0014	0017	0019	0022	0027	0032	0036		
DKS 75	52.10020	65	52.12820-		0017	0019	0022	0027	0032	0036	0041	
	52.10021	75	52.12821-		0017	0019	0022	0027	0032	0036	0041	
	52.10022	85	52.12822-			0019	0022	0027	0032	0036	0041	

Hydro-DAX V-Series Hydraulic unit



SCAN ME

Pictured: Hydro-DAX V series with optional equipment

Hydraulic unit

Hydro-DAX V-Series

Advantages

- ✓ The V series gets its name from its vertical design, which results in an excellent power-to-weight ratio (kg/l) in this market segment
- ✓ For operating hydraulic torque wrenches with 1-hose and 2-hose systems up to 850 bar – regardless of the manufacturer
- ✓ One-person control of the unit for safe working by operating outside the danger zone
- ✓ Multifunction remote control (optional) for ALPHA or ITH Auto-Torque systems. Further information from page 4



For the following ITH Hydraulic Torque Wrenches



CX



D-FLEX



DRS



DKS

Hydro-DAX V-Series Features

ITH Bolting Technology

Carrying device and cable carrier
practical storage of the supply cable and the remote

High pressure gauge
analog, with rubberized protective cap, multicolor scale, and separate pressure scale from 0-1000 bar as standard. Digital pressure gauge (as shown) optional

Dual-hose hydraulic connection
with high-flow nipple and coupling for high delivery volumes. Compatible with single-hose and dual-hose systems



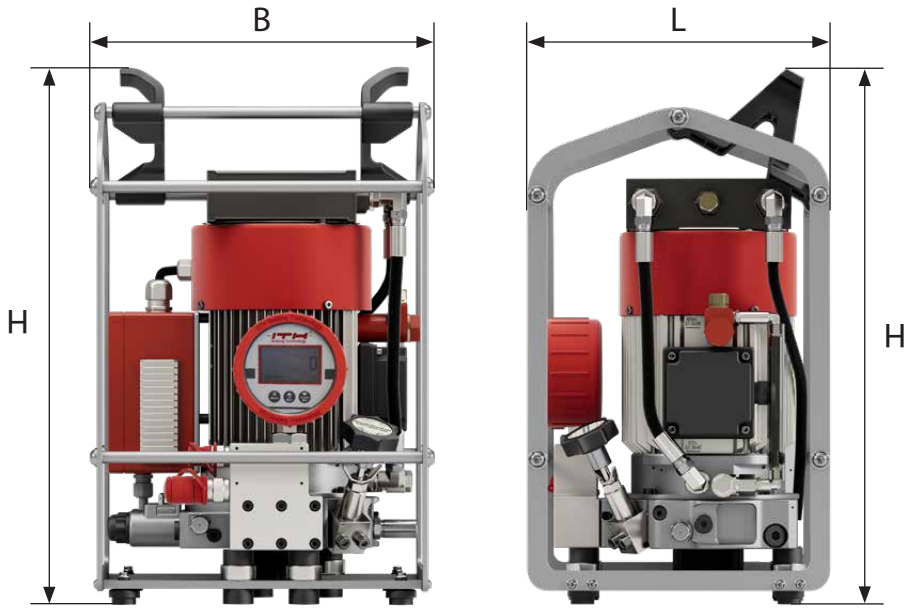
Oil cooler
for optimal cooling performance

Vertical multi-rib tank
with fan. Efficient temperature exchange through robust and weight-optimised aluminium multi-rib tank (passive) and constantly running fan (active)

Oil level sight glass

Pictured: Hydro-DAX V12-2 with optional accessories

Hydro-DAX V-Series Technical Data



Pictured: Hydro-DAX V12-2 with optional accessories

Technical data

ITH Hydro-DAX type	ITH order no.	Max. operating pressure	Drive power	Oil volume (usable)	Noise emission at 100 bar	Voltage 1-phase ± 10% 3-phase ± 5%	Phases	Frequency	Dimensions (L x B x H)		Weight*	
		[bar]	[kW]	[l]	[dB]	[V]	[n]	[Hz]	[mm]	["]	[kg]	[lbs]
V12-2	50.01212-x	850	0.55	1.4 (1.0)	< 80	120 230 400	1 1 3	50 + 60	300 x 320 x 520	11.8 x 12.6 x 20.5	22.5	49.6
V18-2	50.01218-x		0.7	1.8 (1.4)	< 80	120 230 400	1 1 3		300 x 320 x 580	11.8 x 12.6 x 22.8	26.5	58.4
V21-2	50.01221-x		1.35	2.2 (1.6)	< 80	120 230 400	1 1 3		310 x 337 x 625	12.2 x 13.3 x 24.6	35	77.2

120 V: x = 1117x (1-phase)
230 V: x = 2317x (1-phase)
400 V: x = 4037x (3-phase)

* Including oil, 400 V version: weight reduction of 0.5 kg (1.1 lbs).

Hydro-DAX V18 Battery

Hydraulic unit

Hydro-DAX V18 Battery

Advantages

- ✓ Mobile, fast pressure build-up and independent of power or compressed air supply - ideal for service applications
- ✓ For hydraulic torque wrenches up to 850 bar – regardless of the brand
- ✓ One battery charge tightens 104 bolts M30 (1 1/8") with 1,650 Nm (1.217 ft · lbs)*
- ✓ Choice of batteries (LiHD) to suit your requirements:
  5.5 Ah or 8.0 Ah. The Hydro-DAX V18 Battery is officially part of the Cordless Alliance System CAS

*Test setup: ITH Hydro-DAX V18 Battery, double high-pressure hose line 3 m, ITH Hydraulic Torque Wrench type D-Flex 5, torque 1,650 Nm, M30 bolt connections 10.9, clamping length l_K = 108 mm.



For the following ITH Hydraulic Torque Wrenches



CX



D-FLEX

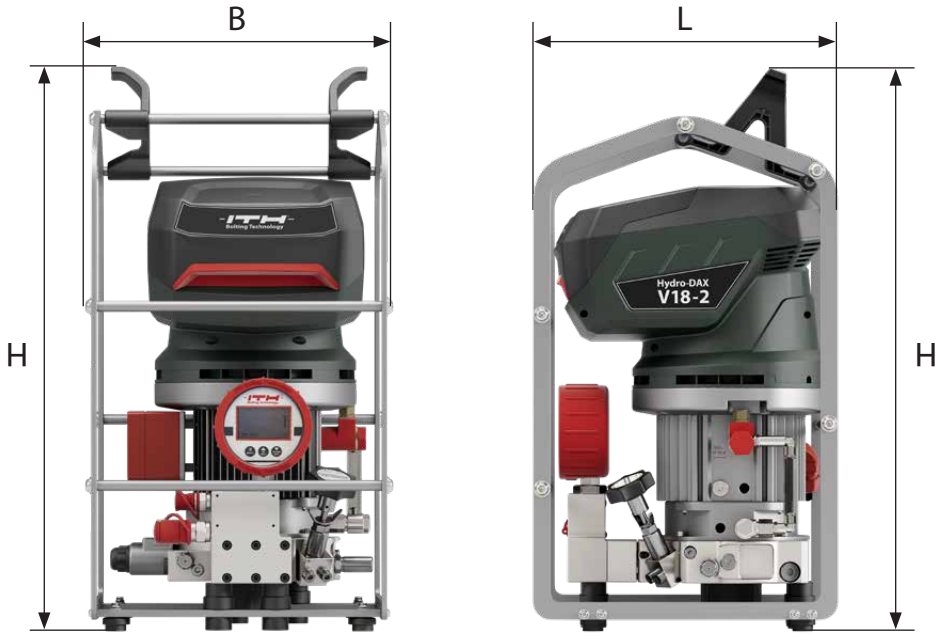


DRS



DKS

Hydro-DAX V18 Battery Technical Data



Scope of delivery

The scope of delivery can be customized.

Standard:
- ITH Hydro-DAX V18 Battery
- Operating instructions

More options:
- LiHD battery
- Calibration certificate
- High-performance quick charging station
- Additional accessories (page 50)
- …

Pictured: Hydro-DAX V18 Battery with optional accessories.

Technical data

ITH Hydro-DAX type	ITH order no.	Max. operating pressure	Drive power	Oil volume (usable)	Noise emission at 100 bar	Voltage	Amperage	Dimensions (L x B x H)		Weight*	
		[bar]	[kW]	[l]	[dB]	[V]	[Ah]	[mm]	["]	[kg]	[lbs]
V18 Battery	50.A1218-x	850	1.5	1.1 (0.8)	< 80	2 x 18 V	5,5 8	350 x 330 x 640	13.8 x 13.0 x 25.2	25	55.1

*Including oil, without battery.

Hydro-DAX V18 Battery CAS

ITH Bolting Technology

ITH extends CAS

1 battery for more than 500 tools

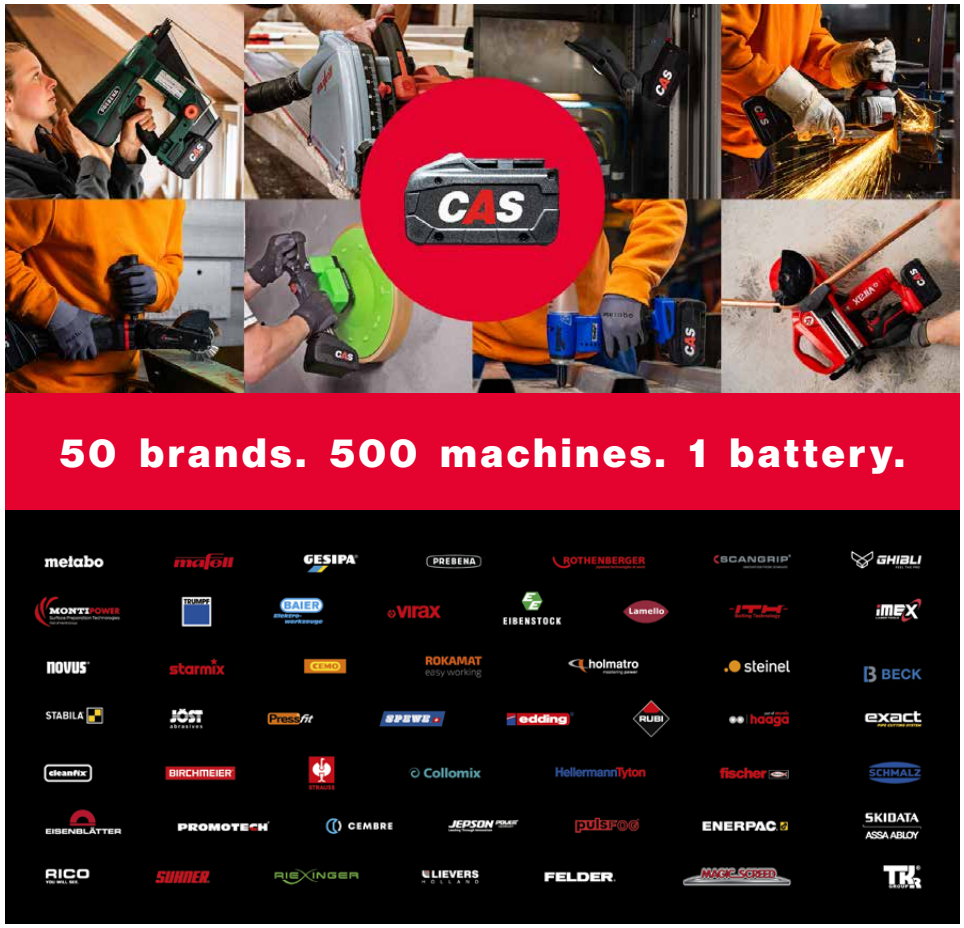
- ✓ More than 50 brands and over 500 machines but only 1 battery system: The Cordless Alliance System (CAS) is a cross-manufacturer battery pack system with 100 % compatibility for tools with 18 volt class batteries
- ✓ Latest LiHD battery high-performance technology from Metabo

Available battery packs for ITH Hydro-DAX V18 Battery:

1. 18 V, **5,5 Ah**, LiHD
2. 18 V, **8,0 Ah**, LiHD

Every standard delivery contains 2 batteries.

100 % Compatibility



Aero-DAX 19 & DA 16 Hydraulic unit



Pneumatic unit

- ✓ Operation by air pressure - no electrical power supply required
- ✓ Operating pressure: 850 bar
- ✓ One-man operation with pneumatic remote

Image shows optional accessories.



Manual pump

- ✓ Manual operation for service applications or applications without power supply, compact and mobile
- ✓ High pressure gauge with multicolored scale
- ✓ Pressure relief valve for setting the torque

Technical data

ITH type	ITH order no.	Compatibility	Max. operating pressure	Oil volume (usable)	Required compressed air supply	Compressed air volume	Pneumatic connection (internal Ø)	Dimensions (L x B x H)		Weight*	
			[bar]	[l]	[bar]	[l/min]	[mm]	[mm]	["]	[kg]	[lbs]
Aero-DAX 19	50.01019	All ITH Hydraulic Torque Wrenches, optimized with 2-hose system	850	1.0	min. 6	2,000 - 2,500	min. 10	600 x 300 x 440	23.6 x 11.8 x 17.3	35	77.2
DA 16	50.01016	All ITH Hydraulic Torque Wrenches with 1-hose system	950	2.0 1.2	-	-	-	880 x 180 x 280	34.6 x 7.1 x 11.0	11.8	26.0

*Including oil.

Accessories



Digital gauge

Displays pressure and torque during operation as standard for all ITH Torque Wrenches. Individual operating modes for all brands.



System ALPHA & ITH Auto-Torque

Torque-controlled fastening with System ALPHA, automatic fastening with ITH Auto-Torque, or a digital documentation system are available as additional options.

Further information can be found from page 4.



Dual-hose system

- ✓ Dual high-pressure hose, compatible with torque wrenches with dual-hose system and high-pressure units of the DAX series
- ✓ High-flow nipple and coupling , designed for high flow rates
- ✓ Optionally with protective cover

Length:	ITH order no.:
3 m (118.1")	34.00230-0030
4 m (157.5")	34.00230-0040
5 m (196.9")	34.00230-0050
6 m (236.2")	34.00230-0060



Single-hose system

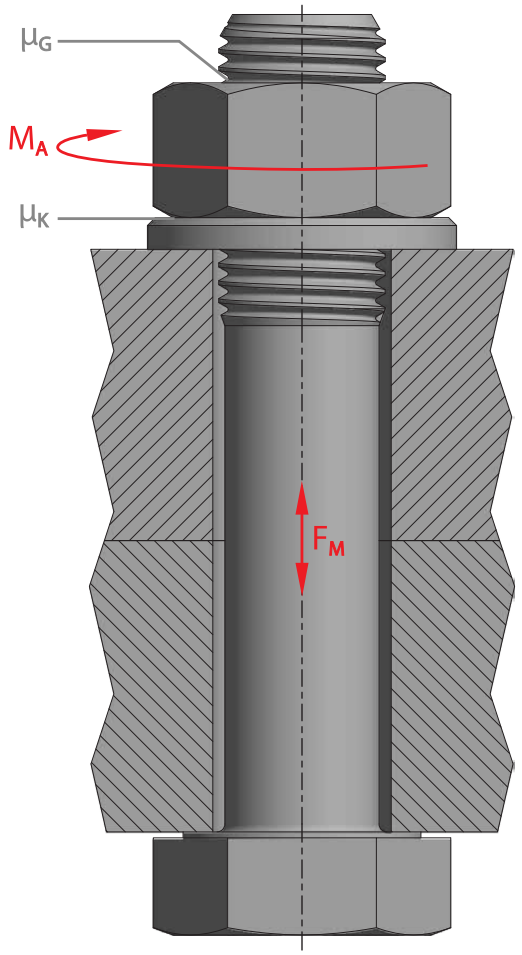
- ✓ High-pressure hose, compatible to ITH Torque Wrenches type DRS and DKS
- ✓ Optionally with protective cover

Length:	ITH order no.:
3 m (118.1")	34.10030-0030
4 m (157.5")	34.10030-0040
5 m (196.9")	34.10030-0050
6 m (236.2")	34.10030-0060

Technical Information

Assembly preload F_M and tightening torque M_A

Bolt size			Strength grade DIN 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 M68, 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.

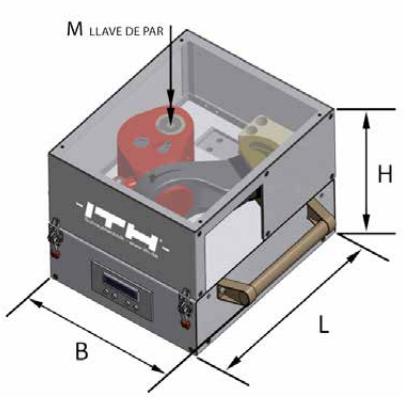
All values and data are calculated and checked prudently. However, we accept no responsibility for the correctness, completeness and topicality. Technical modifications reserved.

Measurement

ITH Static Torque Tester

- ✓ Testing and calibration of hydraulic torque wrenches – all brands
- ✓ Safe to work and mobile for use on construction sites with protective enclosure and window
- ✓ Easy, automatic generation of test protocols or PDF or CSV format (optional)
- ✓ Certified precision: the test stand is calibrated according to the strict regulations of the German Accreditation Body (DAkkS)

ITH type	[Nm]	L	B	H	Weight	ITH order no.
		[mm]	[mm]	[mm]	[kg]	
STT 5	500 - 5,000	365	313	310	38	20.00210
STT 13	1,300 - 13,000	591	517	374	85	20.00212
STT 28	2,800 - 28,000	541	506	440	140	20.00214
STT 45	4,500 - 45,000	686	699	454	198	20.00216





Versions

Standard

- ✓ Measuring and testing of all hydraulic torque wrenches
- ✓ Easily adjustable support unit, flexibly fixable depending on torque wrench type
- ✓ Safety features: reinforced cover, lockable by means of locking tensioner
- ✓ Mobile usage for on-site: two robust carrying handles, four ring eyelets for transport with cranes
- ✓ Digital display

Option 1: Measuring station

- ✓ Including mobile drawer cabinet and extensive storage options

Option 2: Digital

- ✓ Including pressure transducer for hydraulic unit and ITH control software for digital documentation of the measured values
- ✓ All relevant data is clearly recorded and can be saved. The results can be automatically generated in a test protocol as a PDF or optionally as a CSV file
- ✓ Easy-to-use software

Option 3: Ultimate

- ✓ Including industrial touch panel PC and ITH control software for digital documentation
- ✓ Including ITH Hydraulic Unit of your choice

All options can be combined individually.

General information







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.

DAkkS Deutsche Akkreditierungsstelle

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.

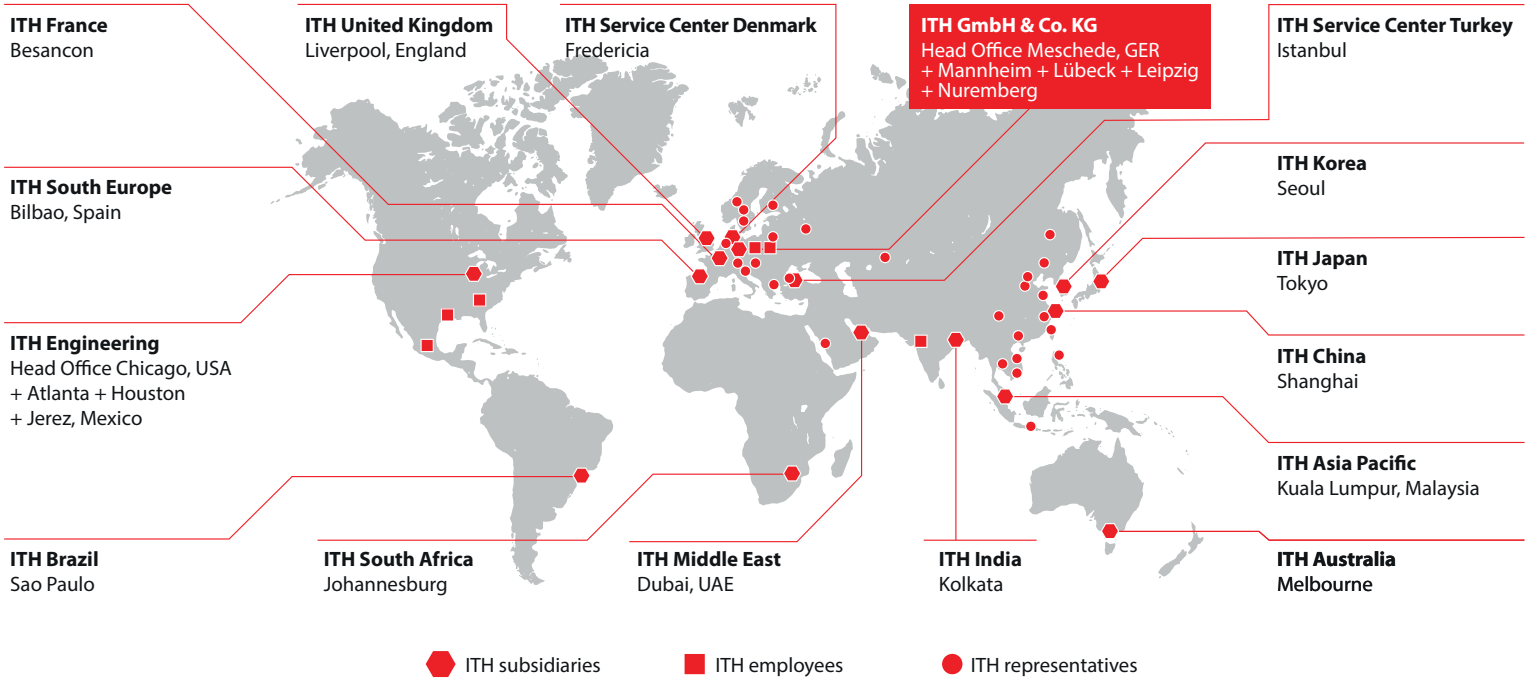
We provide bolting expertise in terms of safety, technical physical fundamentals, maintenance, service and bolting tool operation. After the theory courses, learned contents will be applied practically to guarantee most efficient learning success. Participants receive a certification after passing a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

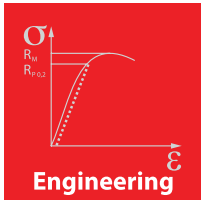
- ✓ Global technical sales & service network
- ✓ Synergy effects being a whole system supplier
- ✓ Qualified, flexible service and fast spare parts availability
- ✓ Individual industry- or branch specific customer solutions
- ✓ Competent advice in all bolting cases
- ✓ Lean Production & certified quality,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

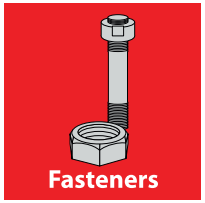
ITH offers synergy

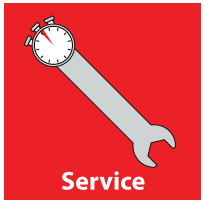
The technical and economic efficiency of a bolted connection is decisively determined by the design, the fasteners, the bolting tools and the assembly.

As a whole system supplier, ITH combines the expertise of these four 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 technical sales & service 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.

ITH GmbH & Co. KG
Steinwiese 8
59872 Meschede
+49 291 99620
sales@ith.com
www.ITH.com

Follow ITH on Social Media

Watch our corporate movie series "ITH Connects"
Scan the QR code and watch the movies on your smartphone or visit www.ITH.com.

SCAN ME

Bolting Technology

Engineered & Made in Germany

ITH GmbH & Co. KG | Steinwiese 8 | 59872 Meschede | sales@ith.com | www.ith.com

© ITH GmbH & Co. KG | 2610