Mechatronic System - MWR

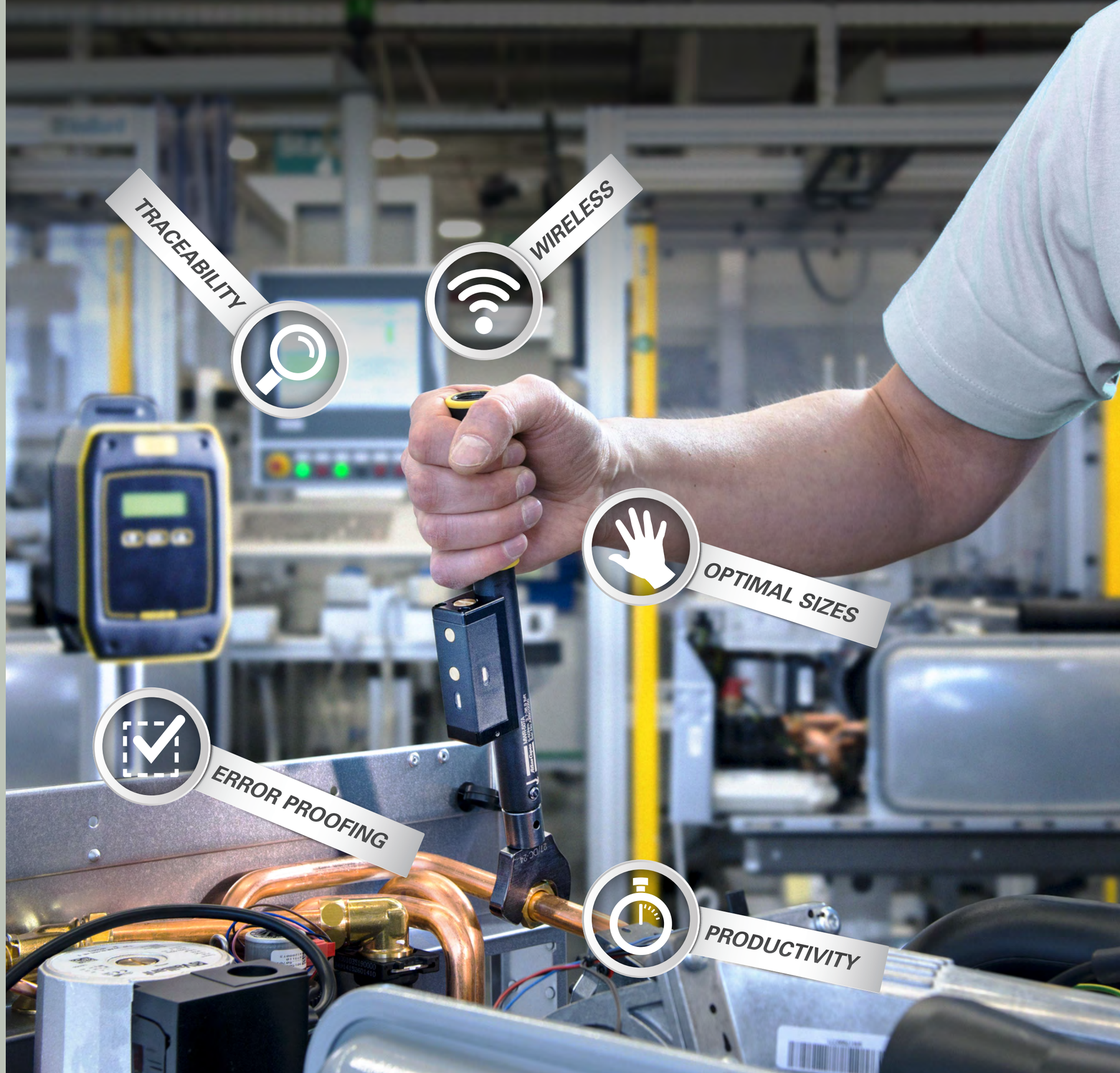
More than a click.

The mechatronic system

- **A** Thanks to a standard drive (9x12 and 14x18) , the operator can always find the perfect end fitting for his application.
- **B** Operator can always know if a wrench is ready to work, and if the tightening was correct, by looking at the onboard **LEDs**.
- **C** Thanks to the **wireless connection** the operator is free to move around and to access bolt location.
- **D** The **charging cradle** is a stable holder and a battery charger, making sure that the tools are always ready to perform their tasks. Shift after shift.
- **E** Detailed tightening information is immediately available on the Focus 60 and 61 **display**.
- **F** Tightening data from MWR wrenches are easily transferred to production data collection systems like ToolsNet. **Communicating** either with the simple protocol or with the Atlas Copco Open Protocol.
- **G** With a **barcode reader** connected to the Focus controller, operator scans an ID number and the right job is selected. All tightening data will automatically include the scanned ID number.
- **H** Intuitive “just a few clicks away” **interface**.
- **I** Production stations can easily implement a real-time feedback in a **Live monitor** using TT BLM software.

More than a click!

Increase the quality of your joints considerably with the error proofing functionalities of the MWR mechatronic system. Combining the productivity of a click wrench with the traceability of an electronic one, this smart manual fastening system for tightening processes is a good investment. Using the smallest version of this high productive wrench you are able to get access to joints inaccessible for a standard tool. The online results provide a complete traceability of the tightening process.



MWR wrench

A blue LED signal on the wrench guides the operator easily through the tightening process.

MWR-50

MWR-85

SCALE 1:1

MWR-25
(1:1 scale)

Productivity

Based on the mechanical “click” wrench, the MWR mechatronic wrench is highly productive. The clear physical feedback of the “click” makes it easy to handle even for untrained workers, giving you a very short training period.

Feedback

Feedback of the tightening process is clear with the distinctive “click” of the MWR mechanism in combination with the colored LEDs. If needed the MWR mechatronic system can be completed with the stack lights connected to the Focus controller.

Size

Size and performance makes the MWR wrenches optimal for limited space applications. With all functionalities in a compact size.

Focus

In combination with the controller Focus 60 or 61 the MWR mechatronic series combines the easy handling of a click wrench with the controlled tightening possibilities of electronic wrenches.

With an optional barcode scanner you can start your job and add additional information. The mechatronic system gives a clear feedback through the LEDs on the wrench or the separate optional stacklight.

You can manage two operators and assign up to 10 MWR wrenches to a single station.

The controller type Focus 60 provides an easy data collection of all necessary tightening information. With our advanced Controller Focus 61, we offer additional functionalities for the assembly process. You can manage your process via Atlas Copco Open Protocol and the results are transferable to TOOLSNET.

Feature	Focus 60	Focus 61
Number of workstations	1	2
Number of wrenches	1	10
Communication	Simple	Open Protocol
Barcode	•	•
ToolsNet	•	•
Atlas Copco I/O Bus	•	•

Smart click

Throughout a tightening, the MWR wrench will monitor three important process parameters,, depending on the choosen model. It measures if the right torque is applied, the correct angle is archieved and if the operator releases the tightening at the correct time.

Torque and angle

The MWR-TA measures torque and angle values, reporting problems immediately. Wrong screws or damaged threads are history! Any re-hit is detected making you 100% sure that all the screws in a sequence are properly tightened.

Torque

The MWR-T is measuring torque during the entire tightening process. Depending on the limits, the peak value gives the OK/NOK status. Giving you the real torque applied on the joint.

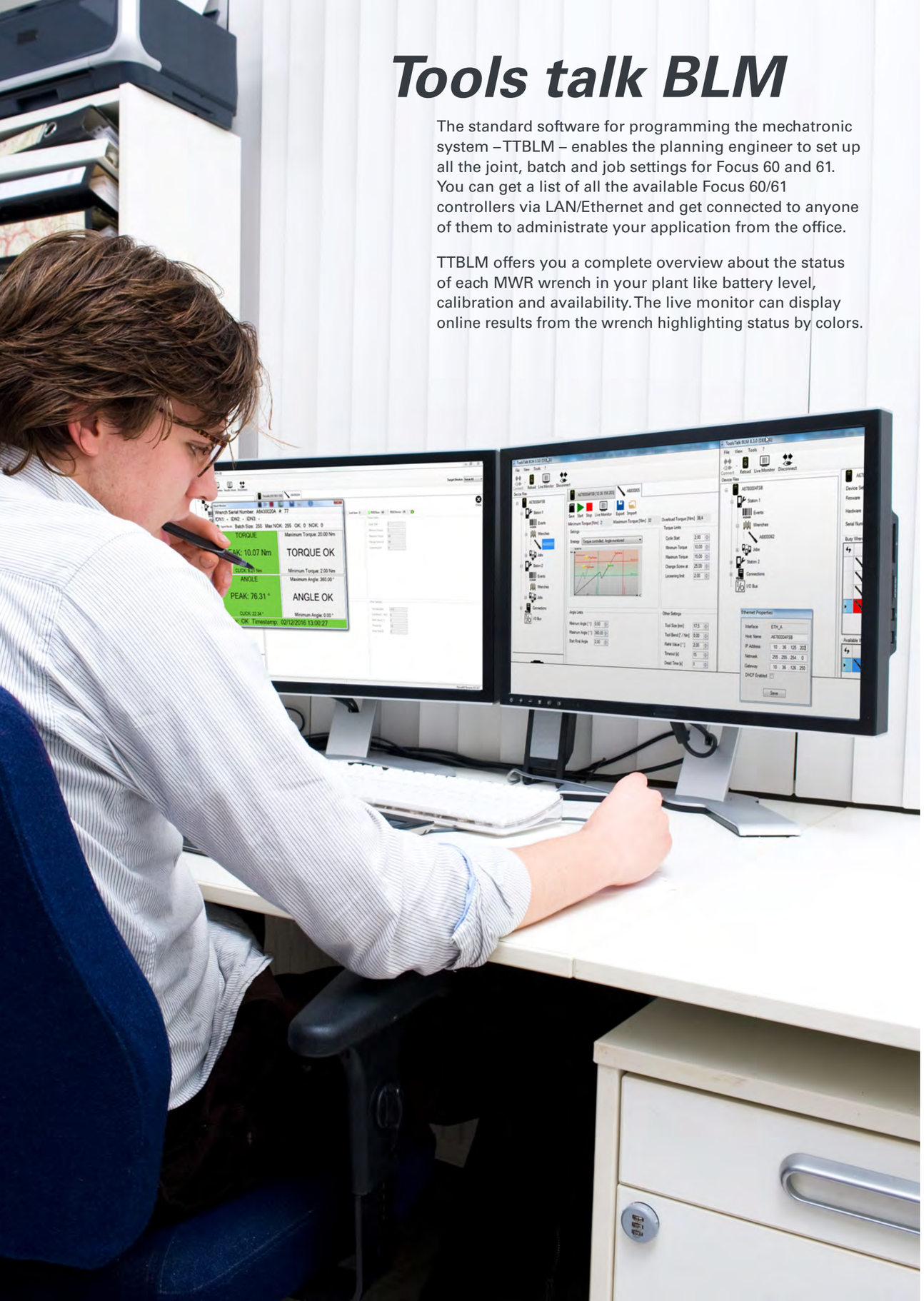
Switch

The MWR-S supports batch counting systems in the production line by transmitting an OK signal. The MWR-S increases ergonomy aspects during tightening processes compared to a Clickwrench with a Microswitch because the signal is transmitted wireless.

Tools talk BLM

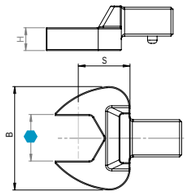
The standard software for programming the mechatronic system –TTBLM – enables the planning engineer to set up all the joint, batch and job settings for Focus 60 and 61. You can get a list of all the available Focus 60/61 controllers via LAN/Ethernet and get connected to anyone of them to administrate your application from the office.

TTBLM offers you a complete overview about the status of each MWR wrench in your plant like battery level, calibration and availability. The live monitor can display online results from the wrench highlighting status by colors.



End fittings

Open end



Open end 9x12						
⬢ mm	B mm	H mm	S mm	g	max Nm	Ordering No.
7	22	5	17.5	40	7	4027 5011 00
8	22	5	17.5	39	10	4027 5011 01
9	26	5.5	17.5	38	14	4027 5011 02
10	26	5.5	17.5	42	20	4027 5011 03
11	26	5.5	17.5	41	25	4027 5011 04
12	30	7	17.5	43	32	4027 5011 05
13	30	7	17.5	48	40	4027 5011 06
14	35	8	17.5	52	50	4027 5011 07
15	35	8	17.5	51	60	4027 5011 08
16	38	8.5	17.5	58	70	4027 5011 09
17	38	8.5	17.5	60	80	4027 5011 10
18	42	9	20	71	100	4027 5011 11
19	42	9	20	74	115	4027 5011 12
20	42	9	20	76	115	4027 5011 13
21	46	11	22	95	115	4027 5011 14
22	46	11	22	95	115	4027 5011 15
24	48	11	25	106	130	4027 5011 16
27	58	13	30	235	150	4027 5011 17
32	64	15	40	267	190	4027 5011 18

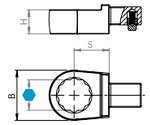
Open end 9x12						
⬢ in	B mm	H mm	S mm	g	max Nm	Ordering No.
1/4	22	5	17.5	37	7	4027 5010 00
5/16	22	5	17.5	36	10	4027 5010 01
3/8	26	5.5	17.5	38	20	4027 5010 02
7/16	26	5.5	17.5	38	25	4027 5010 03
1/2	30	7	17.5	47	32	4027 5010 04
9/16	34	8	17.5	50	50	4027 5010 05
5/8	38	8.5	17.5	56	70	4027 5010 06
11/16	38	8.5	17.5	57	80	4027 5010 07
3/4	42	9	20	71	115	4027 5010 08

Open end 14x18						
⬢ mm	B mm	H mm	S mm	g	max Nm	Ordering No.
13	30	7	25	128	40	4027 5011 21
14	35	8	25	129	50	4027 5011 22
15	35	8	25	132	60	4027 5011 23
16	38	9	25	140	70	4027 5011 24
17	38	9	25	136	80	4027 5011 25
18	42	10	25	147	90	4027 5011 26
19	42	10	25	145	95	4027 5011 27
20	42	10	25	155	100	4027 5011 28
21	50	11	25	171	30	4027 5011 29
22	50	11	25	165	150	4027 5011 30
24	53	12	25	167	180	4027 5011 31
27	60	13	30	219	220	4027 5011 32
28	60	13	30	222	250	4027 5011 33
29	60	13	30	222	270	4027 5011 34
30	66	14	30	245	300	4027 5011 35
32	66	14	32.5	246	300	4027 5011 36
34	66	14	32.5	239	300	4027 5011 37
36	66	14	32.5	275	300	4027 5011 38

Open end 14x18						
⬢ in	B mm	H mm	S mm	g	max Nm	Ordering No.
7/16	30	7	25	127	40	4027 5010 50
1/2	30	7	25	127	40	4027 5010 51
9/16	35	8	25	132	50	4027 5010 52
5/8	38	9	25	141	70	4027 5010 53
11/16	38	9	25	136	80	4027 5010 54
3/4	42	10	25	144	95	4027 5010 55
13/16	50	11	25	160	150	4027 5010 56
7/8	50	11	25	158	150	4027 5010 57
15/16	53	12	25	176	180	4027 5010 58
1	53	12	25	172	180	4027 5010 59
1.1/8	60	13	30	223	220	4027 5010 60

End fittings

Box end



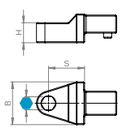
Box end 9x12						
⬢ mm	B mm	H mm	S mm	g	max Nm	Ordering No.
7	13	8	17.5	38	25	4027 5011 50
8	13.5	8	17.5	37	35	4027 5011 51
9	16	8	17.5	35	40	4027 5011 52
10	18	9	17.5	40	55	4027 5011 53
11	18.5	9	17.5	44	70	4027 5011 54
12	20.5	11	17.5	41	85	4027 5011 55
13	21.5	11	17.5	49	100	4027 5011 56
14	25	12	17.5	55	115	4027 5011 57
15	25	12	17.5	52	120	4027 5011 58
16	26	12	17.5	54	120	4027 5011 59
17	27	13	17.5	59	120	4027 5011 60
18	28	13	17.5	56	120	4027 5011 61
19	30.5	13	17.5	65	120	4027 5011 62
21	33	15	17.5	71	120	4027 5011 63
22	34.5	15	17.5	74	120	4027 5011 64

Box end 9x12						
⬢ in	B mm	H mm	S mm	g	max Nm	Ordering No.
1/4	13.5	8	17.5	39	25	4027 5010 13
5/16	13.5	8	17.5	38	35	4027 5010 14
3/8	18	8	17.5	41	55	4027 5010 15
7/16	18	9	17.5	41	70	4027 5010 16
1/2	22	12	17.5	51	100	4027 5010 17
9/16	25	12	17.5	57	115	4027 5010 18
5/8	27	13	17.5	61	120	4027 5010 19
11/16	27	13	17.5	57	120	4027 5010 20
3/4	30	13	17.5	62	120	4027 5010 21
13/16	34	14.5	17.5	75	120	4027 5010 22
7/8	34	15	20	77	120	4027 5010 23

Box End 14x18						
⬢ mm	B mm	H mm	S mm	g	max Nm	Ordering No.
13	22.5	11	25	130	100	4027 5011 67
14	23	11	25	123	110	4027 5011 68
15	24	11	25	128	120	4027 5011 69
16	25.5	12	25	133	140	4027 5011 70
17	27	12	25	135	160	4027 5011 71
18	29	13	25	134	185	4027 5011 72
19	30.5	13	25	138	210	4027 5011 73
20	33	13	25	140	230	4027 5011 74
21	33	15	25	144	260	4027 5011 75
22	34.5	15	25	145	300	4027 5011 76
24	37.5	15	25	153	350	4027 5011 77
27	42.5	17	25	162	450	4027 5011 78
30	46	19	25	182	550	4027 5011 79
32	47.5	19	25	181	650	4027 5011 80
34	52	19	28	210	650	4027 5011 81
36	54	19	28	203	700	4027 5011 82
41	60	20	30	240	750	4027 5011 83

Box End 14x18						
⬢ in	B mm	H mm	S mm	g	max Nm	Ordering No.
1/2	30	11	25	134	100	4027 5010 70
9/16	30	11	25	133	110	4027 5010 71
5/8	30	12	25	135	140	4027 5010 72
11/16	30	12	25	136	160	4027 5010 73
3/4	31	12	25	145	210	4027 5010 74
13/16	34	15	25	159	260	4027 5010 75
7/8	35	15	25	156	300	4027 5010 76

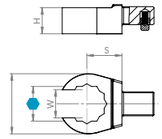
Bit Holder



Bit Holder 9x12					
⬢ in	B mm	H mm	S mm	g	Ordering No.
1/4	14	10	17.5	45	4027 5012 11
5/16	16	12.5	17.5	47	4027 5012 10

Bit Holder 14x18					
⬢ in	B mm	H mm	S mm	g	Ordering No.
5/16	16	12.5	25	112	4027 5012 13

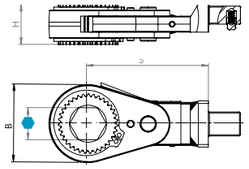
Flared end



Flared End 9x12							
⬢ mm	B mm	H mm	S mm	W mm	g	max Nm	Ordering No.
10	21.5	11	17.5	7.1	57	20	4027 5011 90
11	22.5	11	17.5	8.6	55	25	4027 5011 91
12	24.5	12	17.5	9	59	32	4027 5011 92
13	26	13	17.5	10	55	40	4027 5011 93
14	27	13	17.5	11	60	50	4027 5011 94
15	27	13	17.5	12	60	50	4027 5011 95
16	30.5	13	17.5	13	65	80	4027 5011 96
17	31.5	13	17.5	14	64	82	4027 5011 97
18	33	15	17.5	15	74	100	4027 5011 98
19	34	15	17.5	16	80	115	4027 5011 99
21	38.5	15	20	17	88	120	4027 5012 00
22	39.5	15	20	17	92	120	4027 5012 01
24	40	15	20	18	75	120	4027 5012 02
27	45	17	25	20	120	140	4027 5012 03

Flared end 9x12							
⬢ in	B mm	H mm	S mm	W mm	g	max Nm	Ordering No.
3/8	18	8	17.5	7.1	39	20	4027 5010 30
7/16	21	12	17.5	8.6	50	25	4027 5010 31
1/2	26	13	17.5	10	61	32	4027 5010 32
9/16	27	13	17.5	11	58	50	4027 5010 33
5/8	30	13	17.5	14	62	80	4027 5010 34
11/16	30	13	17.5	14	58	82	4027 5010 35
3/4	34	15	17.5	15.8	71	115	4027 5010 36

Hexagon ratchet



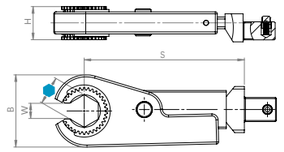
Hexagon Ratchet 9x12							
⬢ mm	B mm	H mm	S mm	g	Teeth	max Nm	Ordering No.
10	28	13.5	51	95	33	25	4027 5012 30
11	28	13.5	51	95	33	25	4027 5012 31
12	28	13.5	51	95	33	25	4027 5012 32
13	28	13.5	51	95	33	25	4027 5012 33
14	32	16	56	140	34	35	4027 5012 34
15	32	16	56	140	34	35	4027 5012 35
16	39	20	61	205	35	70	4027 5012 36
17	39	20	61	205	35	70	4027 5012 37
18	39	20	61	205	35	70	4027 5012 38
19	39	20	61	205	35	70	4027 5012 39
21	45	23	66	290	36	85	4027 5012 40
22	45	23	66	290	36	85	4027 5012 41
24	45	23	66	290	36	85	4027 5012 42

Setting Key

	g	Ordering No.
Setting Key	169	4027 5013 96

End fittings

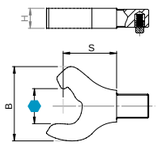
Open hexagon ratchet



Open Hexagon Ratchet 9x12									
⬢ mm	B mm	H mm	S mm	W mm	g	max Nm	AF mm	Teeth	Ordering No.
8	30	16.5	48	5.1	90	15	8	33	4027 5012 50
9	30	16.5	48	6.3	90	15	9	33	4027 5012 51
10	30	16.5	48	6.3	89	15	10	33	4027 5012 52
11	30	16.5	48	6.3	89	15	11	33	4027 5012 53
12	36	16.5	81	7.1	200	18	12	34	4027 5012 54
13	36	16.5	81	7.6	200	18	13	34	4027 5012 55
14	36	16.5	81	8	200	18	14	34	4027 5012 56
15	44	20.5	83	9.1	280	45	15	35	4027 5012 57
16	44	20.5	83	9.6	280	45	16	35	4027 5012 58
17	44	20.5	83	10	280	45	17	35	4027 5012 59
18	44	20.5	83	10.5	280	45	18	35	4027 5012 60
19	44	20.5	83	10.5	280	45	18	35	4027 5012 61

Open Hexagon Ratchet with reinforced bottom 9x12									
⬢ mm	B mm	H mm	S mm	W mm	g	max Nm	AF mm	Teeth	Ordering No.
10	30	16.5	48	6.3	91	15	10	33	4027 5012 63
11	30	16.5	48	6.3	91	15	11	33	4027 5012 64
12	30	16.5	48	7.1	91	15	12	33	4027 5012 65
13	30	20.5	48	7.6	91	15	13	33	4027 5012 66

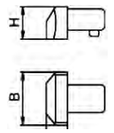
Open end with ratchet function



Open End with Ratchet function 9x12					
⬢ mm	B mm	H mm	S mm	g	Ordering No.
10	22.5	10	17.5	34	4027 5012 80
11	24.5	10	21	39	4027 5012 81
12	26.7	10	21	42	4027 5012 82
13	30	10	23	49	4027 5012 83
14	30.5	10	25.5	55	4027 5012 84
15	32	10	27	60	4027 5012 85
16	35	10	28	65	4027 5012 86
17	37	10	29	68	4027 5012 87
18	38	10	32.5	78	4027 5012 88
19	41	10	33	90	4027 5012 89
21	46.5	10	35	100	4027 5012 90
22	46.5	10	35	97	4027 5012 91
24	50	10	37.5	115	4027 5012 92
27	57	10	47.5	156	4027 5012 93
30	62	10	52.5	182	4027 5012 94
32	67	12	52.5	234	4027 5012 95

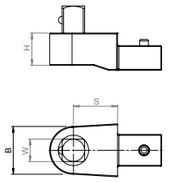
Open End with Ratchet function 14x18					
⬢ mm	B mm	H mm	S mm	g	Ordering No.
17	37	16	28	125	4027 5012 98
18	41	16	32	125	4027 5012 99
19	41	16	32.5	130	4027 5013 00
21	46.5	16	35	150	4027 5013 01
22	46.6	16	40	203	4027 5013 02
24	50	16	41	223	4027 5013 03
27	57	16	47	280	4027 5013 04
30	63	16	52	319	4027 5013 05
32	67	16	53	345	4027 5013 06
36	75	16	54	395	4027 5013 07

Blank end



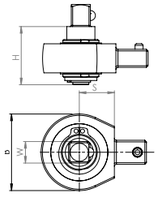
	B mm	H mm	S mm	g	Ordering No.
Blank End 9x12					
	23	14	9	30	4027 5012 20
Assembled	23	14	9	30	4027 5012 21
Blank End 14x18					
	30	21	13	98	4027 5012 23
Assembled	30	21	13	98	4027 5012 24

Fixed square



■ in	B mm	H mm	S mm	g	max Nm	Ordering No.
Fixed Square 9x12						
1/4	20	14	17.5	76	40	4027 5013 20
3/8	20	14	17.5	82	80	4027 5013 21
1/2	20	14	17.5	71	100	4027 5013 22
Fixed Square 14x18						
1/2	27	18	25	203	300	4027 5013 24
3/4	40	25	25	396	650	4027 5013 25

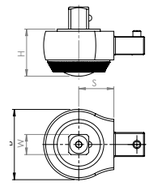
Non-reversible ratchet end



■ in	B mm	H mm	S mm	g	max Nm	Ordering No.
Ratchet End 9x12*						
3/8	38	29.5	17.5	140	80	4027 5013 30
1/2	38	29.5	17.5	180	100	4027 5013 31
Ratchet End 14x18*						
1/2	44	29.5	25	230	300	4027 5013 33

**Teeth for all models: 24*

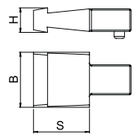
Reversible ratchet end



■ in	B mm	H mm	S mm	g	max Nm	Ordering No.
Reversible Ratchet End 9x12* (with Quickrelease)						
1/4	27	27	17.5	68	50	4027 5013 40
3/8	36.5	25	17.5	140	100	4027 5013 41
1/2	33.5	37	17.5	150	120	4027 5013 42
Reversible Ratchet End 14x18* (with Quickrelease)						
1/2	41	26	25	320	250	4027 5013 44
Reversible Ratchet End 14x18* (without Quickrelease)						
1/2	41	26	25	320	300	4027 5013 50
3/4	62	32	46	865	800	4027 5013 45

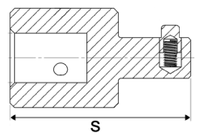
**Teeth for all models: 52, except 4027 5013 45 = 72 teeth*

Connectors for dovetail inserts



Connectors for Dovetail Inserts					
	B mm	H mm	S mm	g	Ordering No.
9x12	22	10	21.5	39	4027 5013 90
14x18	29	10	26.5	92	4027 5013 91

Round-shank adapter



9x12 Drive			
○ Type	S mm	g	Ordering No.
J-Shank	24	68	4027 5016 90
Y-Shank	29	71	4027 5016 91
X-Shank	31	86	4027 5016 92
Z- Shank	56	314	4027 5016 93

14x18 Drive			
○ Type	S mm	g	Ordering No.
J-Shank	24	105	4027 5017 00
Y-Shank	29	104	4027 5017 01
X-Shank	31	121	4027 5017 02
Z- Shank	56	349	4027 5017 03

Mechatronic wrench system

Mechatronic Wrench	MWR - S	MWR - T	MWR - TA
4 colored status LED on 3 sides of the wrench	•	•	•
Tightening time	•	•	•
Torque measuring		•	•
Angle measuring			•
Doubleclick detection (same screw)		•	•
Rehit detection			•
Observing tightening direction		•	•
Displaying online status	•	•	•
End fitting length adjustable		•	•
Standard drive (9x12 / 14x18) for different end fittings	•	•	•
Wireless 868/910 MHz range	•	•	•
Low power management	•	•	•
Battery status signalization	•	•	•

Type	Torque range Nm	Torque range ft lb	Drive	Weight kg	Length mm	
MWR-25 S	5-25	3.7-18.4	9x12	0.446	177	8439 0044 00
MWR-50 S	10-50	7.4-36.9	9x12	0.565	234	8439 0044 01
MWR-85 S	17-85	12.5-62.7	9x12	0.630	307	8439 0044 02
MWR-200 S	40-200	29.5-147.5	14x18	0.851	419	8439 0044 03
MWR-300 S	60-300	44.2-221.2	14x18	2.5	898	8439 0044 04
MWR-25 T	5-25	3.7-18.4	9x12	0.446	177	8439 0044 10
MWR-50 T	10-50	7.4-36.9	9x12	0.565	234	8439 0044 11
MWR-85 T	17-85	12.5-62.7	9x12	0.630	307	8439 0044 12
MWR-200 T	40-200	29.5-147.5	14x18	0.851	419	8439 0044 13
MWR-300 T	60-300	44.2-221.2	14x18	2.5	898	8439 0044 14
MWR-25 TA	5-25	3.7-18.4	9x12	0.446	177	8439 0044 20
MWR-50 TA	10-50	7.4-36.9	9x12	0.565	234	8439 0044 21
MWR-85 TA	17-85	12.5-62.7	9x12	0.630	307	8439 0044 22
MWR-200 TA	40-200	29.5-147.5	14x18	0.851	419	8439 0044 23
MWR-300 TA	60-300	44.2-221.2	14x18	2.5	898	8439 0044 24

Accessories		Ordering No.
Charging Cradle MWR		4027 5022 10
Charging Cradle MWR Clips (HD)		4027 5026 14
MWR Protection Cover		4027 5026 28
Setting key MWR/CWR		4027 5013 96
Recharg. battery NIMH AAA MWR	1.2 V, 1000 mAh	4027 5021 01
Stacklight ESL-04 Standard		8433 0570 13
IO Expander (sealed)		8433 0564 45
Focus 60/61 Dig. Out Connector		4027 5022 04
Antennas		
Antenna	868 MHz	4027 5022 13
Antenna	915 MHz	4027 5022 14
Cable-Antenna, 2,5 m	868/915 MHz	4027 5022 15
Extended Cable-Antenna, 5 m	868/915 MHz	4027 5020 95
Cables		
I/O bus cable	0.5 m	4222 0917 00
I/O bus cable	1 m	4222 0917 01
I/O bus cable	3 m	4222 0917 03
I/O bus cable	5 m	4222 0917 05
I/O bus cable	10 m	4222 0917 10
I/O bus cable	15 m	4222 0917 15
I/O Termination plug		4222 0443 00
Ethernet straight	0.5 m	4222 0754 00
Ethernet straight	1 m	4222 0754 01
Ethernet straight	3 m	4222 0754 03
Ethernet straight	5 m	4222 0754 05
Ethernet straight	10 m	4222 0754 10
Ethernet straight	15 m	4222 0754 15
Ethernet straight	25 m	4222 0754 25
Ethernet straight	50 m	4222 0754 50

Controller	Focus 60	Focus 61
Ordering No.	8439 0044 30	8439 0044 31
Number of workstations	1	2
Number of administrable MWR	1	10
Wireless wrench communication	•	•
Communication Standard	•	•
Communication Open Protocol		•
Toolsnet communication	•	•
TTBLM communication	•	•
Possibility to add protocols		•
LAN/Ethernet communication	•	•
LAN/Ethernet programming	•	•
Job programming		•
Batch programming	•	•
Results storage	25.000	25.000
Languages: English - German	•	•
Multi-unit	•	•
Display	•	•
BNC Antenna	•	•
LAN/Ethernet Interface	1	2
Barcode interface	•	•
Accessory-BUS	•	•
Weight (kg)	2.5	2.5
Dimensions (mm)	147x219x121	147x219x121

Software	Ordering No.
TTBLM	
1 User License	8059 0981 10
5 User License	8059 0981 11
10 User License	8059 0981 12
Plant License	8050 0981 13

Wrench protection caps	Ordering No.
MWR protection cap 5PCS (blue)	4027 5022 20
MWR protection cap 5PCS (green)	4027 5022 21
MWR protection cap 5PCS (red)	4027 5022 22
MWR protection cap 5PCS (Colormix)	4027 5022 23
MWR protection cap 5PCS (gold)	4027 5022 24
MWR protection cap 5PCS (black)	4027 5022 25

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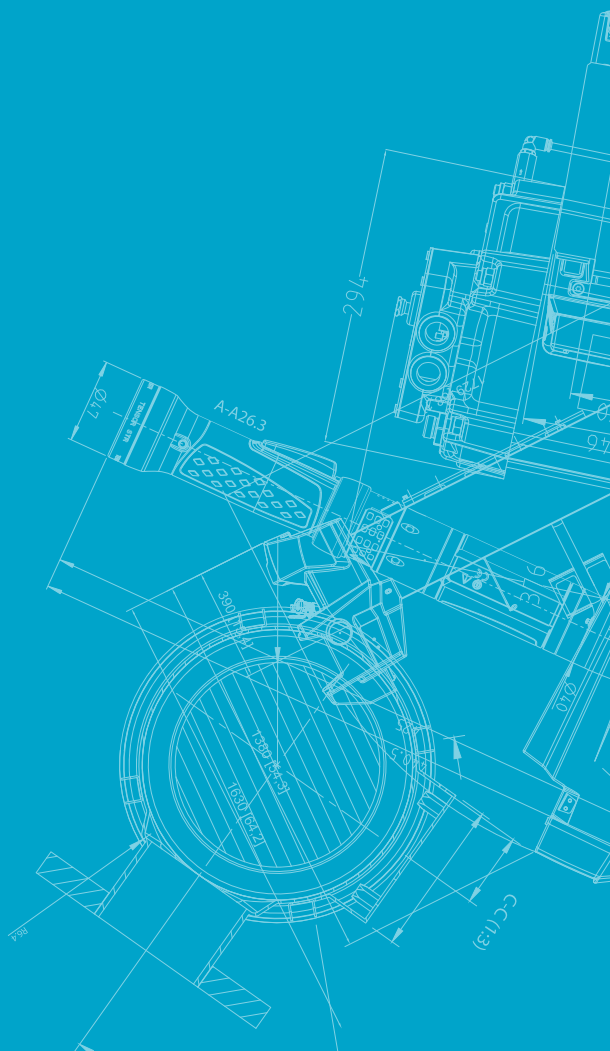

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