



*Atlas Copco*

# ***Mechatronic System - MWR***

More than a click.

# The mechatronic system



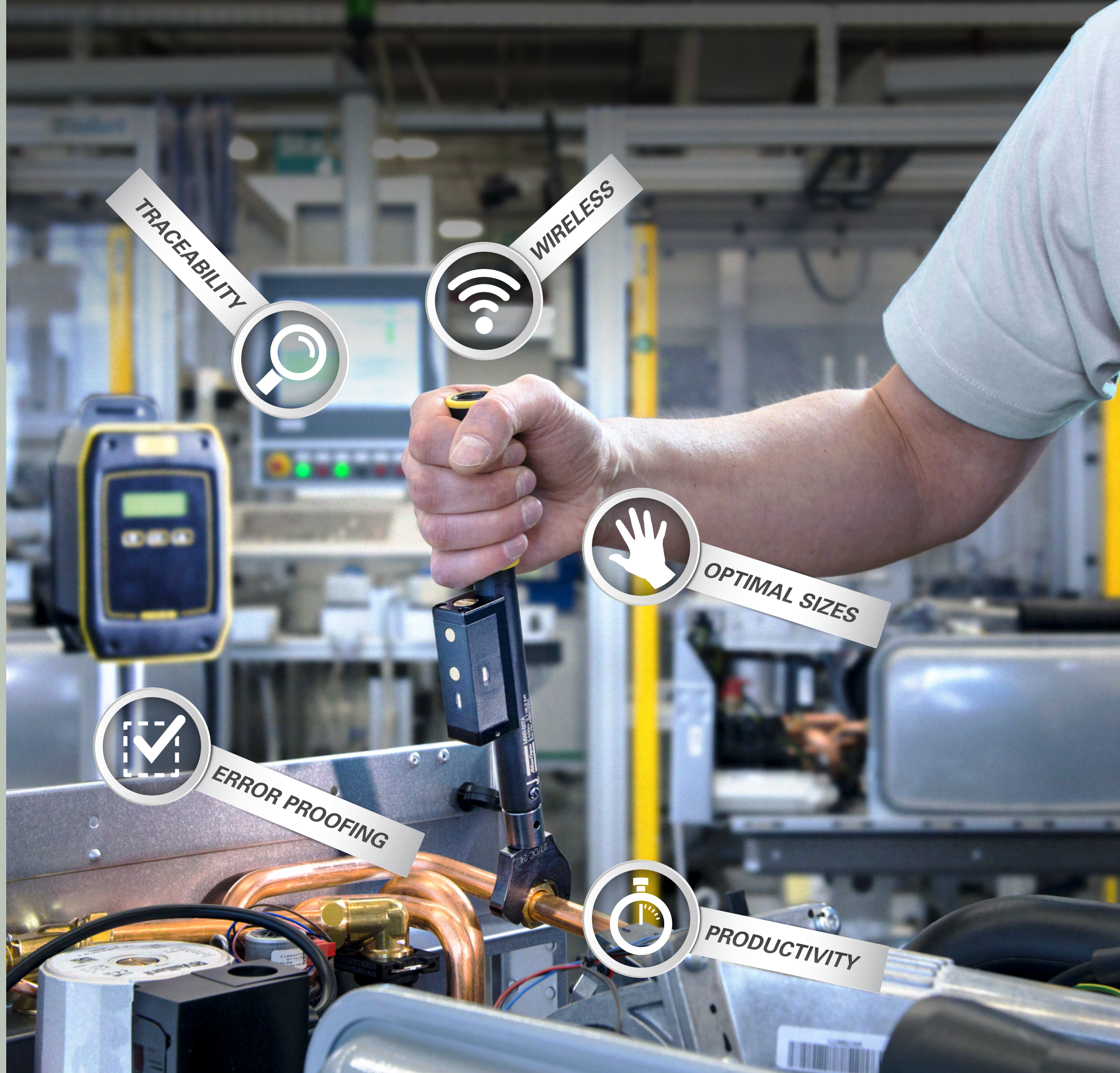
- A** Thanks to a standard drive (9x12 and 14x18) , the operator can always find the perfect end fitting for his application.
- B** Operator can always know if a wrench is ready to work, and if the tightening is correct, by looking at the onboard **LEDs**.
- C** Thanks to the **wireless connection** 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

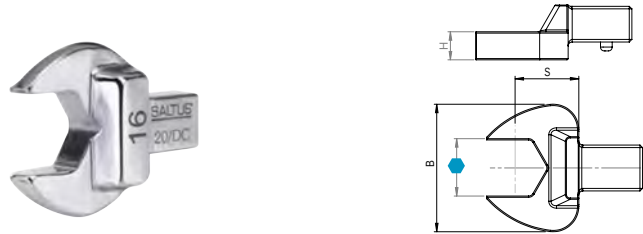
The standard software for programming the mechatronic system – TTBLM – enables the planning engineer to set up all the joint, batch and job settings for Focus 60 and 61. You can get a list of all the available Focus 60/61 controllers via LAN/Ethernet and get connected to anyone of them to administrate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

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 |



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

Flared end

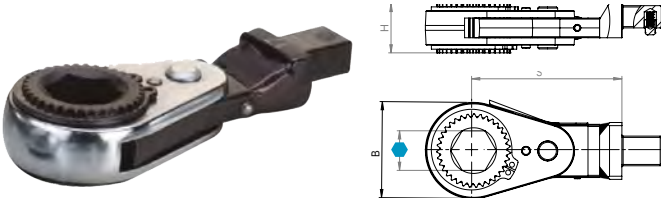
| Flared End 9x12 |      |      |      |      |     |        |              |
|-----------------|------|------|------|------|-----|--------|--------------|
| mm              | B mm | H mm | S mm | W mm | g   | max Nm | Ordering No. |
| 10              | 21.5 | 11   | 17.5 | 7.1  | 57  | 20     | 4027 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                                          |         |         | •        |
| Doubclick 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 |            | Drive | Weight kg | Length mm |              |
|-----------|--------------|------------|-------|-----------|-----------|--------------|
|           | Nm           | ft lb      |       |           |           |              |
| 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-25T   | 5-25         | 3.7-18.4   | 9x12  | 0.446     | 177       | 8439 0044 10 |
| MWR-50T   | 10-50        | 7.4-36.9   | 9x12  | 0.565     | 234       | 8439 0044 11 |
| MWR-85T   | 17-85        | 12.5-62.7  | 9x12  | 0.630     | 307       | 8439 0044 12 |
| MWR-200T  | 40-200       | 29.5-147.5 | 14x18 | 0.851     | 419       | 8439 0044 13 |
| MWR-300T  | 60-300       | 44.2-221.2 | 14x18 | 2.5       | 898       | 8439 0044 14 |
| MWR-25TA  | 5-25         | 3.7-18.4   | 9x12  | 0.446     | 177       | 8439 0044 20 |
| MWR-50TA  | 10-50        | 7.4-36.9   | 9x12  | 0.565     | 234       | 8439 0044 21 |
| MWR-85TA  | 17-85        | 12.5-62.7  | 9x12  | 0.630     | 307       | 8439 0044 22 |
| MWR-200TA | 40-200       | 29.5-147.5 | 14x18 | 0.851     | 419       | 8439 0044 23 |
| MWR-300TA | 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 |

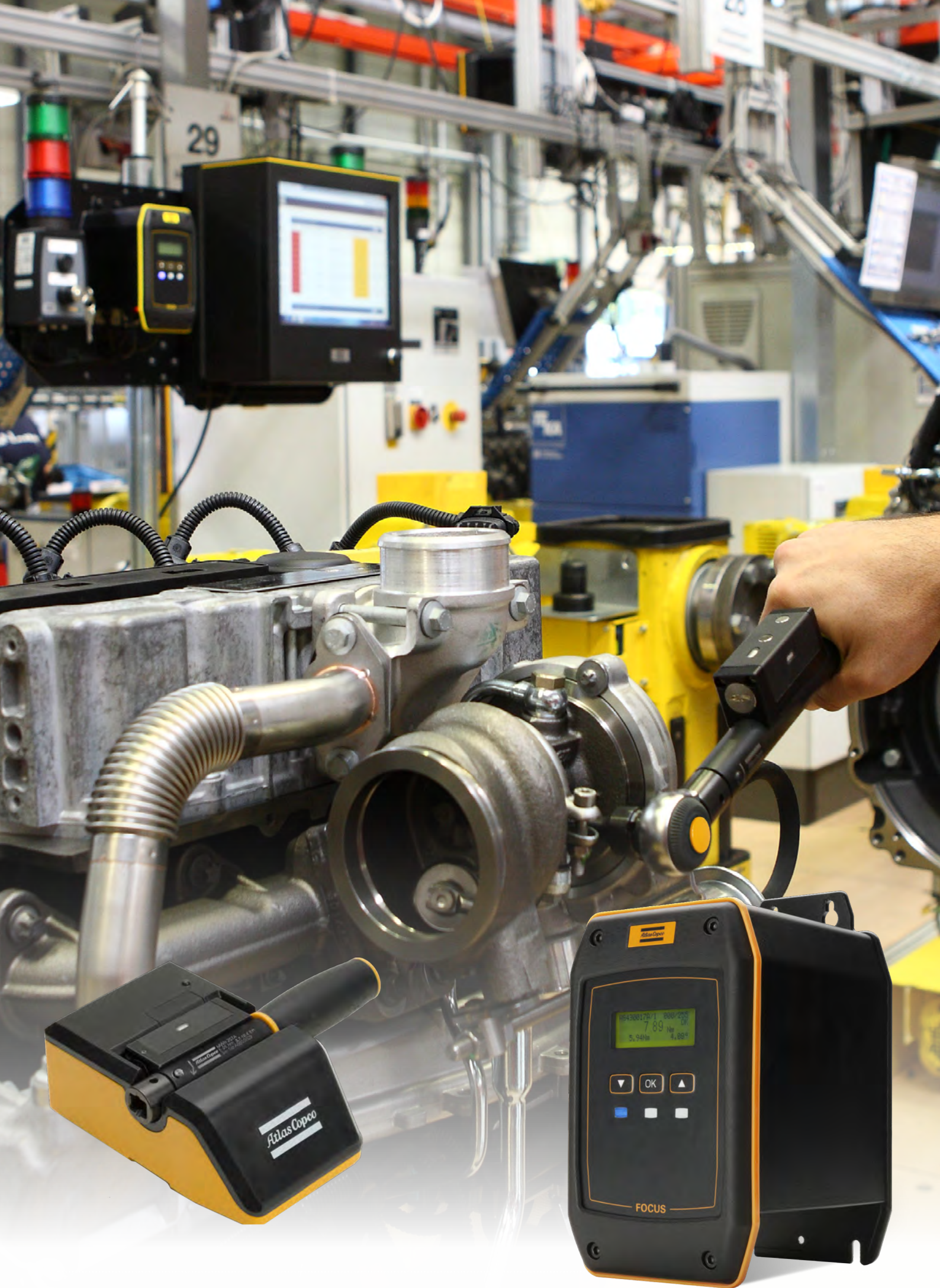
| Cables               |       |              |
|----------------------|-------|--------------|
| I/O bus cable        | 0.5 m | 4222 0917 00 |
| I/O bus cable        | 1 m   | 4222 0917 01 |
| I/O bus cable        | 3 m   | 4222 0917 03 |
| I/O bus cable        | 5 m   | 4222 0917 05 |
| I/O bus cable        | 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. |
|-----------------|--------------|
| <b>TTBLM</b>    |              |
| 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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