



## Torque Reaction Arms | Up to 75 Nm

Support arms manoeuvre smoothly as they absorb the torque reactions from the screwdrivers providing ergonomic support for the operator. They reduce RMI (Repetitive Motion Injury) and CTS (Carpal Tunnel Syndrome) while boosting production.

### Folding and Linear Torque Reaction Arm Series

Torque folding arms have been designed to eliminate the reaction generated by screwdrivers when they stop at the pre-set torque. Options include table or wall mount.

Linear arms keep the tool perpendicular and prevent cross threading and side load. Each model extends in horizontal direction and arm length is adjustable. The fluid movement increases precision and production for a variety of torque applications.

### Telescopic Carbon Arm Series

CAR series torque reaction arms eliminate the reaction that screwdrivers generate when they stop at the pre-set torque (up to 50 Nm). Their carbon structure makes them extremely lightweight and incredibly resistant at the same time. This means that they resist degradation in high fatigue applications much better than conventional materials.

### Suspended Torque Arm Series

SAR Suspended Torque Arms are the ideal solution to increase productivity. They can be easily installed on most workplaces to help the operator handle the screwdriver in total safety and stability while keeping the workspace clear. With minimized reaction force you will also improve finished product quality because there is no movement of the tool and all torque is absorbed in the joint.

Three models available, depending on the motion of the axes. SAR arms are supplied without tool holder – to be purchased depending on the screwdriver used (see chart on the next page).

### Support arm models



PA2KOL Folding Arm



PS7KOL Folding Arm



LINAR and LINART Arms



CAR Telescopic Carbon Arm



SAR XYZ Suspended Arm



SAR XZ



SAR Z



Folding and Linear Torque Reaction Arms

| Code   | Model  | Arm Weight kg | Max Payload kg | Min Reach mm | Max Reach mm | Max Torque Nm |
|--------|--------|---------------|----------------|--------------|--------------|---------------|
| 010600 | PA2KOL | 2.5           | 1.5            | 440          | 640          | 20            |
| 010602 | PA7KOL | 4.2           | 10*            | 500          | 950          | 75            |
| 010603 | PS7KOL | 5.3           | 10*            | 300          | 1000         | 75            |
| 010681 | LINAR1 | 1.5           | 1.5            | 184          | 665          | 25            |
| 010682 | LINAR2 | 1.5           | 1.5            | 184          | 665          | 50            |
| 010683 | LINART | 1.6           | 1.4            | 114          | 740          | 25            |

\* Required payload is to be specified with order

Telescopic Torque Reaction Arms

| Code   | Model  | Arm Weight kg | Max Payload kg | Min Reach mm | Max Reach mm | Max Torque Nm |
|--------|--------|---------------|----------------|--------------|--------------|---------------|
| 010661 | CAR101 | 0.20          | 2.7            | 549          | 906          | 10            |
| 010663 | CAR281 | 0.60          | 2.7            | 490          | 950          | 25            |
| 010664 | CAR282 | 0.75          | 2.7            | 730          | 1650         | 25            |
| 010665 | CAR501 | 0.65          | 2.7            | 490          | 950          | 50            |
| 010666 | CAR502 | 0.80          | 2.7            | 730          | 1650         | 50            |

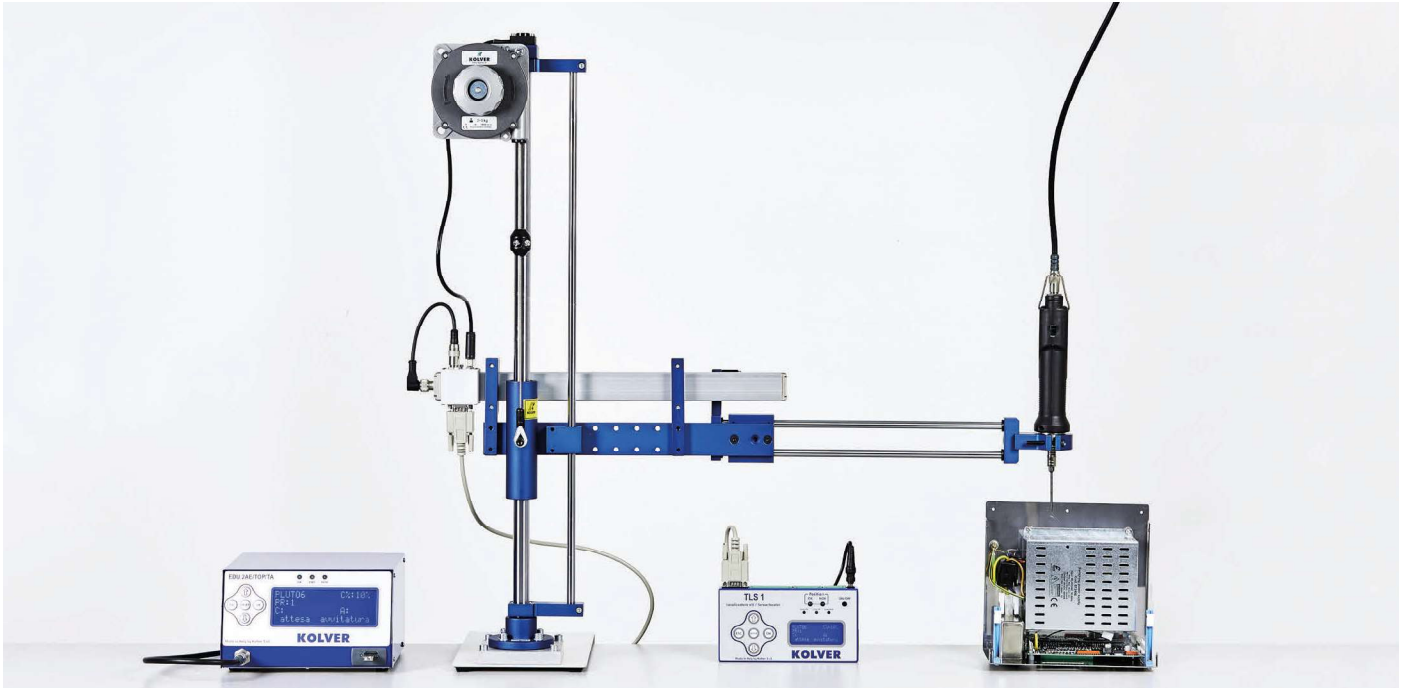
Suspended Torque Arms

| Code           | Model         | Arm Weight kg | Max Payload kg | Vertical Z Stroke mm | Horizontal X Stroke mm | Lateral Y Stroke mm | Max Torque Nm |
|----------------|---------------|---------------|----------------|----------------------|------------------------|---------------------|---------------|
| 010690/Z/5     | SAR15 Z       | 1.2           | 1.8            | 364                  | -                      | -                   | 15            |
| 010690/XZ/85   | SAR15 XZ 85   | 1.2           | 1.8            | 364                  | 692                    | -                   | 15            |
| 010690/XYZ/855 | SAR15 XYZ 855 | 1.7           | 1.3            | 885                  | 692                    | 376                 | 15            |

Tool holders for SAR arms

|            |  |
|------------|--|
| 010695     | Tool holder for PLUTO and RAF series inline screwdrivers       |
| 010698     | Tool holder for FAB, NATO & MITO series inline screwdrivers    |
| 010695/P   | Tool holder for right angle PLUTO screwdrivers (up to 15 Nm)   |
| 010695/UNI | Universal Tool Holder for any screwdriver (max diametre 47 mm) |

**IMPORTANT:** A diameter reduction adapter (code 234545) is required when LINAR and CAR arms are used with PLUTO35 or PLUTO50 screwdrivers (Ø 57 mm).



## Positioning Arms | Up to 50 Nm

TLS1 is an intelligent system that error-proofs your assembly ensuring that every screw is in the correct location at the right torque. Assembly sequences and X-Y coordinates are easily programmed with user interface screens through the keypad from the intuitive menu. Torque programs are automatically selected and enabled from the screwdriver controller based on the TLS1 Arm locations and current sequence step. No PC is required.

### Main features

- 8 available programs and up to 35 screws per program.
- Screw position (length/angle) with accuracy: length  $\pm 1$  mm; angle  $\pm 1^\circ$ .
- Programmable tolerance and manual reset.
- Password protected.
- External keyboard and serial port for easy programming and statistics.

### TLS1 with CAR Arm

The TLS1/CAR Arm consists of a torque reaction arm with an encoder mounted at the pivot point and with a linear metering resistor. The encoder records the angle and the linear resistor records the distance. X-Y accuracy can be set by the operator according to each application.

### TLS1 with Linear Arm

TLS1/LINAR1 and TLS1/LINAR2 positioning arms work just like LINAR1 and LINAR2 with the addition of positioning sensors for a real time feedback on the position of the arm. Max torque and reach are the same as LINAR1 and LINAR2 respectively (see page 41). Adapter code 234545 is required for screwdriver model PLUTO35 and PLUTO50.

### TLS1 with Folding Arm

TLS1/LINART features a folding arm for extreme flexibility and accuracy. Thanks to the positioning sensors you can have a real time feedback on the position of the arm, which is very useful for default calibrations. Max torque and reach are the same as LINART (see page 41).

### TLS1 with Suspended Arm

A SAR XYZ/TLS1 is ideal for assembly stations where space is limited. It can be easily installed on most workplaces to help the operator handle the screwdriver in total safety and stability.

The TLS1 System makes each operation truly error-proof: it tracks the X-Y-Z coordinates to make sure that each screw is tightened only when the screwdriver is in correct position.

Max torque and reach are the same as SAR XYZ (see page 41).

### Positioning arm models



TLS1/CAR Positioning Carbon Arm

TLS1/LINAR1 and TLS1/LINAR2



TLS1/LINART Positioning Folding Arm

TLS1/SAR XYZ Suspended Arm



## Folding and Linear Positioning Arms

| Code        | Model       | Max Torque Nm | Min Reach mm | Max Reach mm | Min distance between screws at max extension |
|-------------|-------------|---------------|--------------|--------------|--|
| 010681/TLS1 | LINAR1/TLS1 | 25            | 184          | 665          | 6 mm   |
| 010682/TLS1 | LINAR2/TLS1 | 50            | 184          | 665          | 6 mm   |
| 010683/TLS1 | LINART/TLS1 | 25            | 114          | 740          | 7 mm   |

Either of the following cables must be specified at time of purchase

|            |   |
|------------|---|
| 260003/1   | Cable to connect TLS system to EDU1FR/SG controller   |
| 260004/1   | Cable to connect TLS system to EDU1BL/SG, EDU2AE, EDU2AE/HPro, EDU2AE/TOP or EDU2AE/TOP/TA controller |
| 260004/KDU | Cable to connect TLS system to KDU controller   |

## Telescopic Positioning Arms

| Code        | Model       | Max Torque Nm | Min Reach mm | Max Reach mm | Min distance between screws at max extension |
|-------------|-------------|---------------|--------------|--------------|--|
| 010663/TLS1 | CAR281/TLS1 | 25            | 490          | 950          | 9 mm   |
| 010664/TLS1 | CAR282/TLS1 | 25            | 730          | 1650         | 15 mm  |
| 010665/TLS1 | CAR501/TLS1 | 50            | 490          | 950          | 9 mm   |
| 010666/TLS1 | CAR502/TLS1 | 50            | 730          | 1650         | 15 mm  |

Either of the following cables must be specified at time of purchase

|            |   |
|------------|---|
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| 260004/1   | Cable to connect TLS system to EDU1BL/SG, EDU2AE, EDU2AE/HPro, EDU2AE/TOP or EDU2AE/TOP/TA controller |
| 260004/KDU | Cable to connect TLS system to KDU controller   |

## Suspended Positioning Arms

| Code            | Model          | Max Torque Nm | Arm Weight kg | Vertical Stroke Z mm | Vertical Stroke X mm | Vertical Stroke Y mm |
|-----------------|----------------|---------------|---------------|----------------------|----------------------|----------------------|
| 010690/XYZ/TLS1 | SAR15 XYZ/TLS1 | 15            | 8             | 885                  | 692                  | 376                  |

Tool holders for SAR arm

|            |  |
|------------|--|
| 010695     | Tool holder for PLUTO and RAF series inline screwdrivers       |
| 010698     | Tool holder for FAB, NATO & MITO series inline screwdrivers    |
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**IMPORTANT: A diameter reduction adapter (code 234545) is required when LINAR and CAR arms are used with PLUTO35 or PLUTO50 screwdrivers (Ø 57 mm).**