

MINIMAT-EC-Servo Screwdriver Spindles

Maximum Flexibility and Process Control

Straight Spindle Form - Torque range from 0.2 Nm - 500 Nm

Angle Head Design - Torque range from 5 Nm - 70 Nm

- **powerful**
- **flexible**
- **high precision**
- **full documentation capability**

MINIMAT-EC-Servo screwdriver spindles in connection with the sequence controller AST40 allow free programming of the screw tightening process and offer maximum flexibility, accuracy and process control. Torque, speed, angle, drive direction and sequence delay times can be customized to the individual screwdriving task within the power range of the selected screwdriver spindle. The integrated torque and angle sensor module employs non contact signal transmission techniques and enables precise control of the screwdriving process as well as the documentation of the screwdriving results and process parameters and also guarantees the highest shut-off accuracy.

The EC-Servo screwdriver is suitable for applications with the most demanding quality requirements – where direct measurement and control methods are required.



ADVANTAGES

- High power density
- High shut-off accuracy
- Flexible
- Noise immunity
- Comprehensive documentation options
- System diagnostics
- Extensive integration and control options

The application of a brushless servomotor with high power density is essential to the maintenance free operation of the EC drive. It also delivers excellent dynamics and high peak torque in a compact form – ideally suited to the screw tightening process. The DEPRAG screwdrivers based on EC technology enable a torque accuracy of < 1% standard deviation, which can be relied upon after millions of cycles. Thus, a Cmk value of ≥ 1.67 with a tolerance requirement of $\pm 5\%$ in reference to 6 Sigma is reached. A Cmk value of 1.67 means that the error rate is less than 0.6 per one million screw assemblies.

The screwdriving system consists of the **EC screwdriver spindle**, **AST40 screwdriver sequence controller** and a single **connection cable** that has been tested for extreme loading conditions. The single connection cable services the power and signal transmission functions between the screwdriver and controller using digital technology as most suitable for longer cable lengths.

DEPRAG SCREWDRIVING CONTROLLER AST40/ASTi40

- Torque range: 0.2 - 500 Nm
- For MINIMAT-EC-SERVO screwdriver spindles
- Number of multi-level screw sequences: 120
- Documentation options: internal storage, output via RS232 or Ethernet (Datalogger), printer interface
- PLC interface: input/output, Profibus, Profinet, EtherCAT, EthernetIP



AST40 with 7" touch display



ASTi40 for installation into a switch cabinet

The sequence controller AST40/ASTi40 is a controller with integrated power supply. Within the performance range of each spindle torque, speed, waiting period and rotational direction can be individually customized to the screw assembly task.

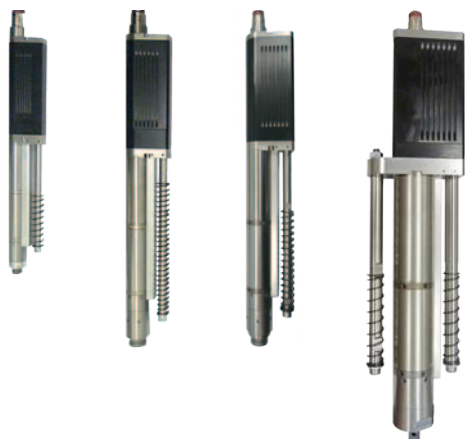
Extensive programming, control and documentation interfaces offer maximum flexibility for integration into existing process environments. Several communication options include input/output, various field bus interface options and an integrated web server for online screwdriver program configuration, data backup and screwdriver graph analysis via Ethernet.

All common screw assembly sequence programs are embedded in the AST40 screwdriver controller in the form of commands with parameters. Commissioning of an application can be completed in just a few steps. All required programming and setup functions are made available through the web interface so that no additional software is required, only a PC with a browser.

When choosing the option ASTi40 for integration into the switch cabinet, the software panel DAST is required for operation and visualisation of the controller. In that case the system controller additionally provides the range of functions available on the AST40 display.

EC-SERVO SCREWDRIVER SPINDLE

4 available sizes
in straight spindle design



311E27-xx 311E36-xx 311E42-xx 311E63-xx

NEW

size 36
now available
in angle head design



For assembly in confined spaces.

SYSTEM COMPONENTS

MINIMAT-EC-Servo, straight spindle form

| | | size 27 with quick change chuck | | | |
|---|------------------|---------------------------------|-------------------------|-------------------------|-------------------------|
| Screwdriver | Type Part no. | 311E27-0010 413400A | 311E27-0020 413400B | 311E27-0050 413400C | 311E27-0120 413400E |
| Screwdriver with redundant measuring system for torque and angle | Type Part no. | 311ER27-0010 101624A | 311ER27-0020 101624B | 311ER27-0050 101624C | 311ER27-0120 101624E |
| Torque min. | Nm/in.lbs | 0.2 / 1.77 | 0.4 / 3.54 | 1 / 8.85 | 2.4 / 21.24 |
| Torque max. | Nm/in.lbs | 1 / 8.85 | 2 / 17.7 | 5 / 44.25 | 12 / 106.2 |
| Speed min. | rpm | 100 | 60 | 40 | 20 |
| Speed max. | rpm | 1600 | 1500 | 800 | 400 |
| Diameter | mm/in. | 27 / 1.05 | 27 / 1.05 | 27 / 1.05 | 27 / 1.05 |
| Length 311E / 311ER | mm/in. | 360/14.05 / 433/16.9 | 360/14.05 / 433/16.9 | 360/14.05 / 433/16.9 | 360/14.05 / 433/16.9 |
| Weight 311E / 311ER | kg/lbs | 1.2/2.64 / 1.4/3.1 | 1.2/2.64 / 1.4/3.1 | 1.2/2.64 / 1.4/3.1 | 1.2/2.64 / 1.4/3.1 |
| Noise level | dB(A) | 68 | 68 | 68 | 68 |
| Internal hex. drive DIN ISO 1173 | | F6.3 | F6.3 | F6.3 | F6.3 |
| Suitable tool inserts and connecting components with a drive as per DIN ISO 1173 | | E6.3 | E6.3 | E6.3 | E6.3 |

| | | size 36 with quick change chuck | | |
|---|------------------|---------------------------------|-------------------------|-------------------------|
| Screwdriver | Type Part no. | 311E36-0150 205000A | 311E36-0300 205000C | 311E36-0500 205000D |
| Screwdriver with redundant measuring system for torque and angle | Type Part no. | 311ER36-0150 108717A | 311ER36-0300 108717C | 311ER36-0500 108717D |
| Screwdriver with integrated off-set gearing (to minimize the center distance) | Type Part no. | 311E36-0160-SV1 **) | - | - |
| | | 104472A | - | - |
| Torque min. 311E / 311ER | Nm/in.lbs | 3 / 26.55 | 6 / 53.1 | 10 / 88.5 |
| 311E36-0160-SV1 | | 3.2 / 28.32 | | |
| Torque max. 311E / 311ER | Nm/in.lbs | 15 / 132.75 *) | 30 / 265.5 *) | 50 / 442.5 *) |
| 311E36-0160-SV1 | | 16 / 141.6 *) | | |
| Speed min. | rpm | 50 | 30 | 20 |
| Speed max. | rpm | 1000 | 600 | 380 |
| Diameter | mm/in. | 36 / 1.4 | 36 / 1.4 | 36 / 1.4 |
| Length 311E / 311ER | mm/in. | 473/18.45 / 575/22.42 | 476/18.56 / 578/22.54 | 476/18.56 / 578/22.54 |
| 311E36-0160-SV1 | | 487/ 19 | | |
| Weight 311E / 311ER | kg/lbs | 2.8/6.2 / 3.2/7.04 | 2.8/6.2 / 3.2/7.04 | 2.8/6.2 / 3.2/7.04 |
| 311E36-0160-SV1 | | 3.6/7.92 | | |
| Noise level | dB(A) | 62 | 62 | 62 |
| Internal hex. drive DIN ISO 1173 | | F6.3 | F11.2 | F11.2 |
| Suitable tool inserts and connecting components with a drive as per DIN ISO 1173 | | E6.3 | E11.2 | E11.2 |

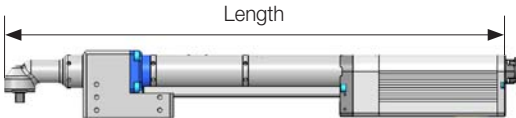
*) With a voltage below 180V the maximum torque will be reduced to 80% of the specified value.

**) For assembly in confined spaces.

| | | size 42 with quick change chuck | | size 63 | | |
|---|------------------|---------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Screwdriver | Type Part no. | 311E42-0300 206000B | 311E42-0800 206000D | 311E63-1800 416400D | 311E63-3500 416400F | 311E63-5000 416400H |
| Screwdriver with redundant measuring system for torque and angle | Type Part no. | 311ER42-0300 101625B | 311ER42-0800 101625D | 311ER63-1800 107200D | 311ER63-3500 107200F | 311ER63-5000 107200H |
| Torque min. | Nm/in.lbs | 6 / 53.1 | 16 / 141.6 | 36 / 318.6 | 70 / 619.5 | 100 / 885 |
| Torque max. | Nm/in.lbs | 30 / 265.5 | 80 / 708 | 180 / 1593 | 350 / 3097.5 | 500 / 4425 |
| Speed min. | rpm | 50 | 20 | 15 | 10 | 10 |
| Speed max. | rpm | 890 | 330 | 300 | 155 | 90 |
| Diameter | mm/in. | 42 / 1.64 | 42 / 1.64 | 63 / 2.46 | 63 / 2.46 | 63 / 2.46 |
| Length 311E / 311ER | mm/in. | 478/18.64/81/22.66 | 478/18.64/81/22.66 | 617/24.06/745/29.1 | 617/24.06/745/29.1 | 617/24.06/745/29.1 |
| Weight 311E / 311ER | kg/lbs | 4.2/9.24 / 5/11 | 4.2/9.24 / 5/11 | 12.9/28.38 / 15/33 | 12.9/28.38 / 15/33 | 12.9/28.38 / 15/33 |
| Noise level | dB(A) | 66 | 66 | 73 | 73 | 73 |
| Internal hex. drive DIN ISO 1173 | | F11.2 | F11.2 | - | - | - |
| External square drive DIN 3121 | | - | - | F20 (3/4") | F20 (3/4") | F20 (3/4") |
| Suitable tool inserts and connecting components with a drive as per DIN ISO 1173 | | E11.2 | E11.2 | - | - | - |
| with a drive as per DIN 3121 | | - | - | H20 (3/4") | H20 (3/4") | H20 (3/4") |

MINIMAT-EC-Servo, angle head design

| | | size 36 | | |
|--|------------------|-----------------------------|-----------------------------|-------------------------------|
| Screwdriver | Type Part no. | 311EW36-0220-F10 108121A | 311EW36-0420-F10 108121B | 311EW36-0700-F12.5 108121C |
| Torque min. | Nm/in.lbs | 5 / 44.25 | 9 / 79.65 | 14 / 123.9 |
| Torque max. | Nm/in.lbs | 22 / 194.7 | 42 / 371.7 | 70 / 619.5 |
| Speed min. | rpm | 35 | 20 | 10 |
| Speed max. | rpm | 650 | 350 | 200 |
| Diameter | mm/in. | 36 / 1.4 | 36 / 1.4 | 36 / 1.4 |
| Length | mm/in. | 554 / 21.6 | 554 / 21.6 | 557.5 / 21.74 |
| Weight | kg/lbs | 4.8 / 10.56 | 4.8 / 10.56 | 5.1 / 11.22 |
| Noise level | dB(A) | 68 | 62 | 62 |
| External square drive | DIN 3121 | F10 | F10 | F12.5 |
| Suitable tool inserts and connecting components with a drive as per DIN 3121 | | G10 | G10 | G12.5 |



Optional Accessories

| | | | |
|--|----------|--------|--|
| Machine Capability Study Torque *) | Part no. | 000717 | - Evaluation of 50 measured values - Idle speed, Average - Standard deviation, Cm-Value, Cmk-Value |
| Machine Capability Study Torque angle *) | Part no. | 000718 | |

*) Additional services, e.g. calibration of screwdrivers, can be found in our catalog D3330E.

Motor Cable

| Length | Part no. |
|------------------------|----------|
| 5 m/16.4 ft (standard) | 8337252 |
| 8 m/26.2 ft | 8337253 |
| 12 m/39.4 ft | 8337254 |

The screwdriver spindles size 27 and type 311E36-0150 (size 36) can also be delivered with an automatic screw feed system. Please contact us for more information!

| Sequence Controller | | AST40 | | ASTi40 | |
|---|-------------|-----------------------------------|----------------------|-----------------------------------|-----------------------|
| for screwdriver | | 311E(R)27/36/42 311EW36 | 311E(R)63 | 311E(R)27/36/42 311EW36 | 311E(R)63 |
| Sequence controller | Type | AST40-1 | AST40-2 | ASTi40-1 | ASTi40-2 |
| Basic version with input/output interface | Part no. | 385588A | 387022A | 428006A | 387044A |
| Sequence controller | Type | AST40-1 PB | AST40-2 PB | ASTi40-1 PB | ASTi40-2 PB |
| with fieldbus module Profibus port | Part no. | 385588B | 387022B | 428006B | 387044B |
| Sequence controller | Type | AST40-1 PN | AST40-2 PN | ASTi40-1 PN | ASTi40-2 PN |
| with fieldbus module Profinet port | Part no. | 385588C | 387022C | 428006C | 387044C |
| Sequence controller | Type | AST40-1 EC | AST40-2 EC | ASTi40-1 EC | ASTi40-2 EC |
| with fieldbus module EtherCAT port | Part no. | 385588D | 387022D | 428006D | 387044D |
| Sequence controller | Type | AST40-1 E/IP | AST40-2 E/IP | ASTi40-1 E/IP | ASTi40-2 E/IP |
| with fieldbus module EtherNet/IP port | Part no. | 385588E | 387022E | 428006E | 387044E |
| Sequence controller | Type | AST40-1 RS232 | AST40-2 RS232 | ASTi40-1 RS232 | ASTi40-2 RS232 |
| with interface AST40 RS232 for data output, format programmable via web page | Part no. | 385588F | 387022F | 428006F | 387044F |
| Technical data: | | | | | |
| Power unit (AC) | V / Hz | 100 - 240 / 50/60 | | 100 - 240 / 50/60 | |
| Insulation | | IP54 | | IP54 | |
| TFT-display (touch) | | 7", 800x480 | | — | |
| 24V input/output interface | | 27 inputs / 30 outputs | | 27 inputs / 30 outputs | |
| Dimensions (W x H x D) | mm / in. | 232 x 315 x 205 / 9.05 x 12.3 x 8 | | 232 x 315 x 205 / 9.05 x 12.3 x 8 | |
| Weight | kg / lbs | approx. 13 / 28.6 | | approx. 13 / 28.6 | |
| Number of screwdriving programs (start via I/O interface or fieldbus) | | 120 | | 120 | |
| Number of screwdriving programs created via http | | unlimited | | unlimited | |
| Included in delivery | | | | | |
| ASTi40 reset plug | Part no. | — | | 425080A | |
| Patch cable (connection cable ASTi40-PC) | Part no. | — | | 831902 | |

Required Accessories for ASTi40

| Control and Operating Unit | Type | DPU100 | DPU200 |
|----------------------------|--|--|---|
| DEPRAG Processing Unit | Part no. | 8099722 | 8134992 |
| Display | | touch panel 6.5", colour | 15" TFT display with touch screen, colour |
| Resolution | | VGA (640 x 480 pixels) | VGA (1024 x 768 pixels) |
| Voltage | | 24V DC | 24V DC |
| Current consumption | A | 0.75 | approx. 4.5 |
| Power input | W | 18 | 80 / 110 with USV |
| Additional functions | - Membrane keys - Emergency stop button | 12 membrane keys with green and red LED yes | 12 membrane keys with green and red LED yes |
| CPU | | Intel Atom, 1.6 GHz | Intel Celeron 2000E 2.2 GHz |
| Port | | 1xEthernet, 1xEtherCat, 2xUSB 2.0 | 1xEthernet, 1xEtherCat, 2xUSB 2.0 Front, 1xUSB 2.0 in rear plate |
| Working storage | | 1 GB DDR2 RAM | 2GB DDR3L-RAM |
| Mass storage | | 1GB Compact Flash | Hard disk, 2.5 Zoll 320 GB |
| Operating system | | Windows CE | Windows 7 Ultimate |
| Operating temperature | °C | 0 to 55 | 0 to 45 |
| Housing - protection class | | IP65 (splash proof) | IP65 (splash proof) |
| Dimensions (WxHxD) | mm/in. | 290x225x50 / 11.3x8.8x1.9 | 426x395x95 / 16.6x15.4x3.7 |
| Weight | kg/lbs | approx. 4.5/9.9 | approx. 13/28.6 |
| Remote maintenance | | optional (Ethernet, modem) | optional (Ethernet, modem) |
| Programming | | IEC61131-3 (AWL, KOP, FUP, ST, AS und CFC) | IEC61131-3 (AWL, KOP, FUP, ST, AS und CFC) |
| Suitable software packages | Type Part no. | DAST100 815641 | DAST200 815642 |

Description

DPU100

This high performance controller can guide axis systems with up to three axes. Complex manual work stations with operator guidance, sequence and screw position visualisation as well as fully automatic machines with several part stations such as rotary indexing machines with up to 4 user stations can be realised. This controller adds the option of connecting a database such as a BDE or ERP system. The DPU100 can be used in combination with all standard DSEC control cabinets.

DPU200

The DPU200 is the most efficient controller of the DPU series. The controller has a 15" display with XGA resolution (1024 x 768 pixels) for improved image visualisation. It can control complex fully automatic machines such as axis systems with more than three axes. It offers unproblematic connection to databases such as BDE or ERP systems. There are various interfaces and protocols available e.g. OPC, OPC-UA or TCP/IP. The DPU200 can also be used in conjunction with all DSEC control cabinets.

DAST100/200

The software-panel for EC and EC Servo Systems. DAST is used to supervise the operation and visualisation of the screwdriver sequence controller (AST series) through the system control. The functionality matches the performance capability of the relevant system control.

Required Accessories

| | | |
|--|----------|---------|
| Power supply cable Length 1.8 m/5.9 ft (EU) | Part no. | 385443A |
| Power supply cable Length 1.8 m/5.9 ft (USA) | Part no. | 385443B |
| Power supply cable Length 1.8 m/5.9 ft (Brazil) | Part no. | 385443D |
| Power supply cable Length 2.5 m/8.2 ft (China) | Part no. | 385443C |

Optional Accessories

| Suitable for controller | Type | AST40 | ASTi40 |
|--|----------|---------|--------|
| Table stand | Part no. | 300085A | – |
| Patch cable 2 m | Part no. | 831902 | – |
| Touch pen | Part no. | 832190 | – |
| Bus cable Length 2 m/6.56 ft, IP68 RJ45 - open wires (no connector) Cat.6 | Part no. | 138689 | 138689 |
| Bus cable Length 5 m/16.4 ft, IP68 RJ45 - open wires (no connector) Cat.6 | Part no. | 138690 | 138690 |
| Bus cable Length 2 m/6.56 ft, IP68 RJ45 - RJ45 Cat.6 | Part no. | 138685 | 138685 |
| Bus cable Length 5 m/16.4 ft, IP68 RJ45 - RJ45 Cat.6 | Part no. | 138686 | 138686 |
| Bus cable Length 2 m/6.56 ft, IP68 RJ45 - IP68 RJ45 Cat.6 | Part no. | 138687 | 138687 |
| Bus cable Length 5 m/16.4 ft, IP68 RJ45 - IP68 RJ45 Cat.6 | Part no. | 138688 | 138688 |

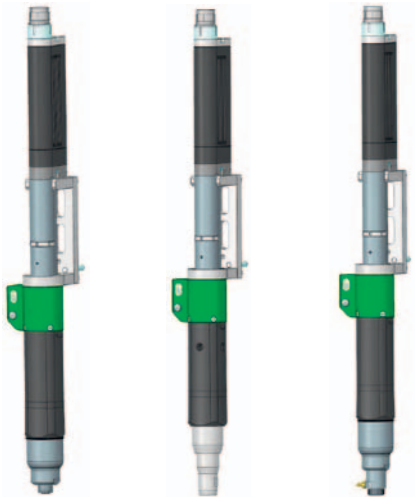
Optional Additional Software

| | | |
|--|----------|---------|
| Interface Graph Loader (hardware and software) | Part no. | 385834A |
| Connection cable (AST40 - Graph Loader) | Part no. | 385835D |
| Software ASTxx Serial Remote (activation key) for the simple storage of screwdriving curves and result-data to a PC | Part no. | 206565 |
| Software Datalogger (activation key) | Part no. | 202699 |
| Software Friction value screwdriving (activation key) | Part no. | 201820 |
| Software DEPRAG Clamp Force Control - DEPRAG CFC (activation key) | Part no. | 109108 |
| Software Statistics (activation key) | Part no. | 206081 |
| Software Graph Viewer for sequence controller AST (activation key) | Part no. | 128901 |
| Software Deprag Data eXchange for sequence controller AST (activation key) | Part no. | 132680 |
| Software TIA Link (activation key) | Part no. | 135839 |
| Software TwinCAT Link (activation key) | Part no. | 140996 |

For more details to the software products, please see brochure D3900E.



Our software solutions undergo continuous improvements. We recommend that you regularly update your software. In this way you will always receive the most up-to-date security updates, upgraded features and drivers. With the most current version of the software you can be sure that your device is optimally prepared for Industry 4.0.


 with quick
change chuck

 with integrated
mouthpiece
guide

 with
vacuum
connection

Handle with quick change chuck

| For EC-Servo screwdriver spindles | | 311E27-xxxx | 311E36-0150 | 311E36-0300 311E36-0500 |
|-----------------------------------|----------|-------------|-------------|----------------------------|
| Handle | Part no. | 425800A | 425900A | 425900B |
| Internal hex. drive DIN ISO 1173 | | F6.3 | F6.3 | F11.2 |

Handle with vacuum connection

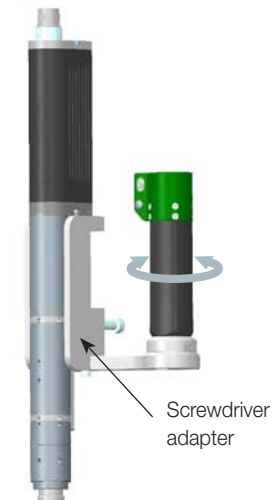
| For EC-Servo screwdriver spindles | | 311E27-xxxx | 311E36-0150 | 311E36-0300 311E36-0500 |
|-----------------------------------|----------|-------------|-------------|----------------------------|
| Handle | Part no. | 425800E | 425900F | 425900G |
| Internal hex. drive DIN ISO 1173 | | F6.3 | F6.3 | F11.2 |

Handle with integrated mouthpiece guide for the use in connection with an automatic feeder

| For EC-Servo screwdriver spindles | | 311E27-xxxx | 311E36-0150 |
|-----------------------------------|----------|-------------|-------------|
| Handle, Length of stroke 80 mm | Part no. | 4258001B | 425900C |
| Handle, Length of stroke 100 mm | Part no. | 4258001C | 425900D |
| Handle, Length of stroke 120 mm | Part no. | 4258001D | 425900E |

Handle at side of spindle

| For EC-Servo screwdriver spindles | | 311E42-xxxx |
|-----------------------------------|----------|-------------|
| Handle | Part no. | 1029831A |


 Handle parallel to the spindle,
turnable

All the handles have an LED status display (OK/NOT OK), an ergonomic start lever and an additional button for reversal or to start a screwdriving program.

Operating elements can be adapted to a specific application by selecting the operating mode. In this way for example the tool can be pre-programmed so that a second screwdriving program can be started directly by pressing the switch (e.g. a loosening program).

Alternatively the mode can be selected so that the button is used for the pre-selection of the screwdriving program started via lever.

Required Accessories for the use as handheld screwdrivers

| For EC-Servo screwdriver spindles | | 311E27-xxxx | 311E36-xxxx | 311E42-xxxx |
|--|-----------|-----------------|-----------------|-----------------|
| Weight of the screwdriver spindle | 311E | 1.2 kg/2.64 lbs | 2.8 kg/6.16 lbs | 4.2 kg/9.24 lbs |
| Linear stand | | | | |
| for torque reaction up to | Part no. | 408010A | 408010B | 408010C |
| Weight of the horizontal arm | Nm/in.lbs | 20/177 | 50/443 | 150/1328 |
| | kg/lbs | 2/4.4 | 6.7/14.74 | 13.7/30.14 |
| Screwdriver adapter for the attachment to a linear stand (suitable for all handle variants) | | Part. no. | 4008333C | 4008333B |
| | | | | 102982A |
| Connection cable to AST40 | | Part. no. | 385584A | 385584A |
| | | | | 385584A |
| Connection cable to PLC | | Part. no. | 385584B | 385584B |
| | | | | 385584B |

The suitable linear stands and balancers can be found in our brochure D3345E. In order to select the appropriate balancer please consider the weight of the horizontal arm, the weight of the screwdriver and additionally a mass of 1 kg for the screwdriver adapter and the handle. To split the weight we highly recommend to use 2 balancers.



Screwdriver adapter
102982A



Turn fixture
917333A



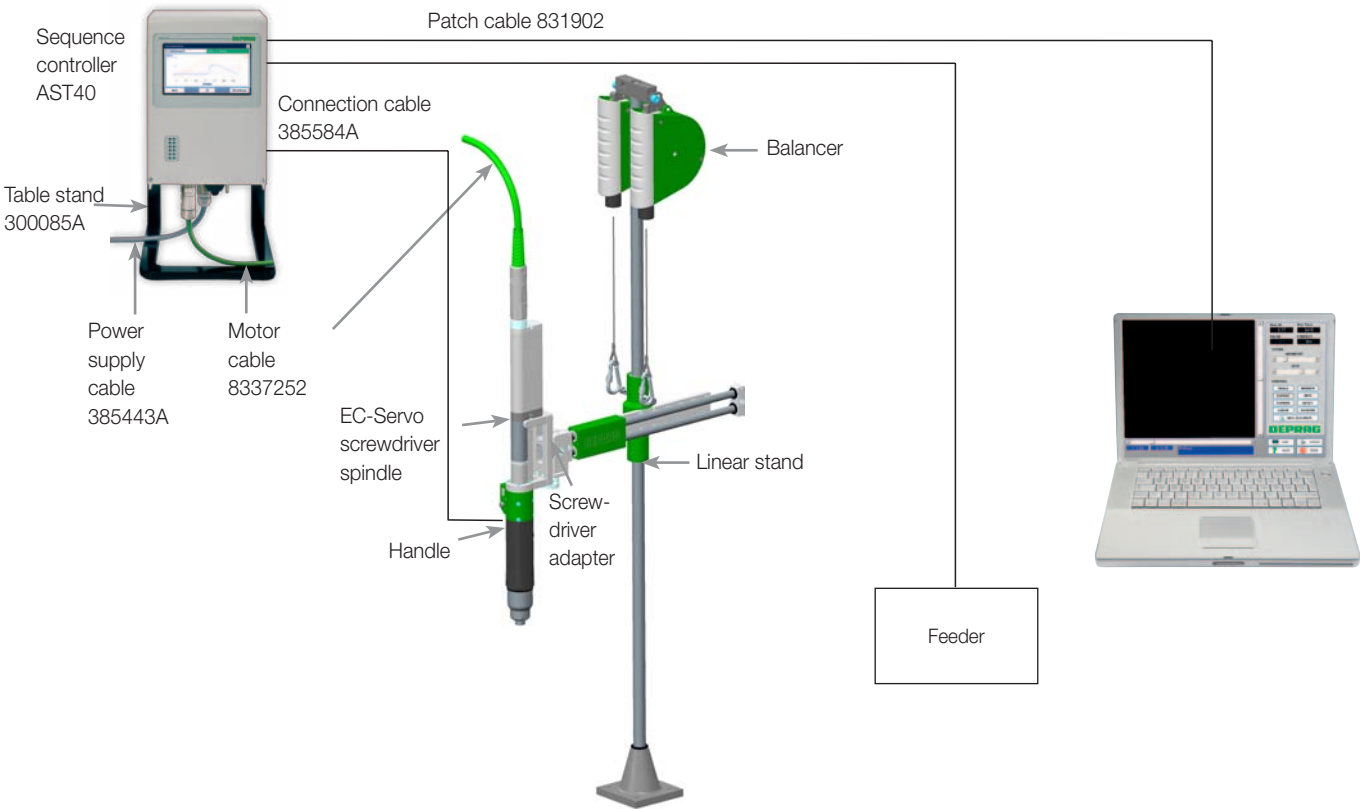
Support ring 398704A

Optional Accessories

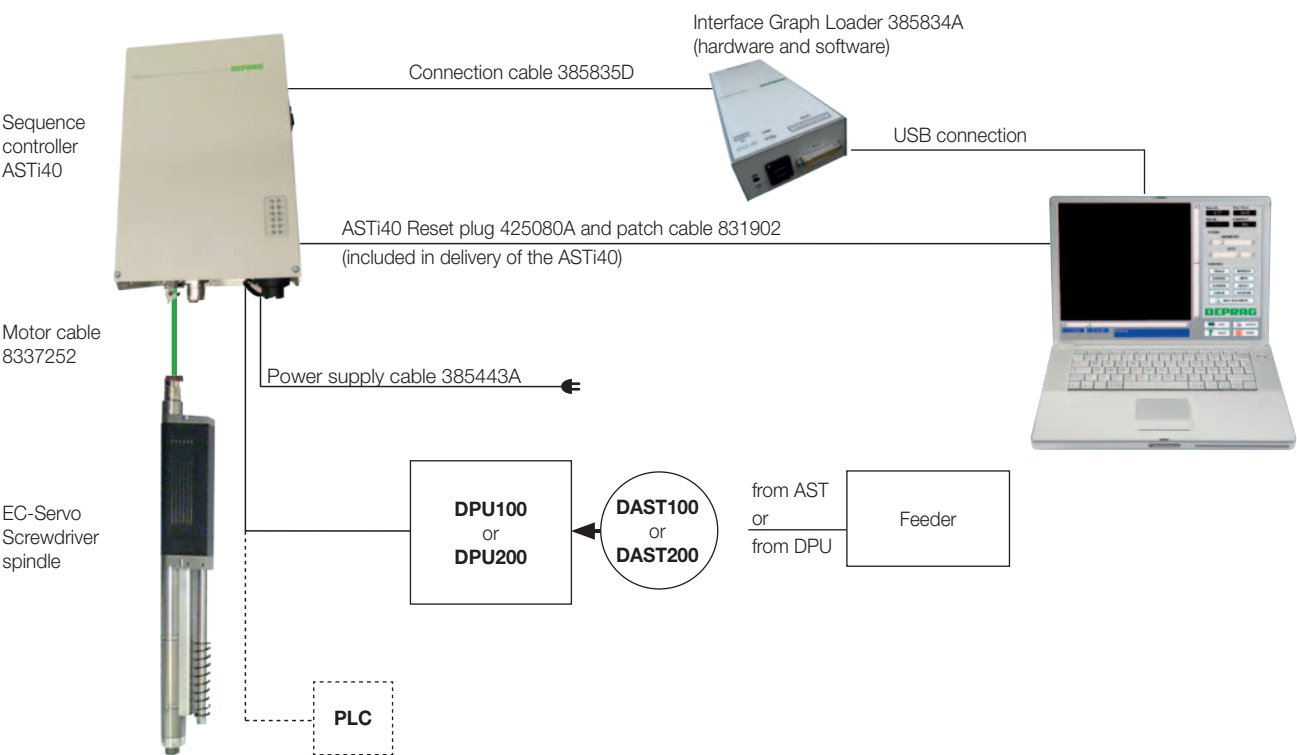
| For EC-Servo screwdriver spindles | | 311E27-xxxx | 311E36-xxxx |
|---|----------|-------------|-------------|
| Turn fixture | Part no. | 917333A | on request |
| The rotary unit is integrated between the screwdriver adaptor and handle and enables rotation of the handle. Ergonomic handling is therefore guaranteed even on larger work surfaces. | | | |
| Please note: When using the rotary unit with the version of the handle with quick change chuck or vacuum connection the holder on the handle must be replaced by the holder part number 917695 which must be ordered separately. | | | |
| Support ring | Part no. | 398704A | 398704A |
| The support ring can not be used in connection with handle with integrated mouthpiece guide. | | | |
| Support ring | Part no. | 398704C | 398704C |
| suitable for handle with integrated mouthpiece guide | | | |

Please note: when used as a handheld screwdriver only 3 screwdriving programs are available

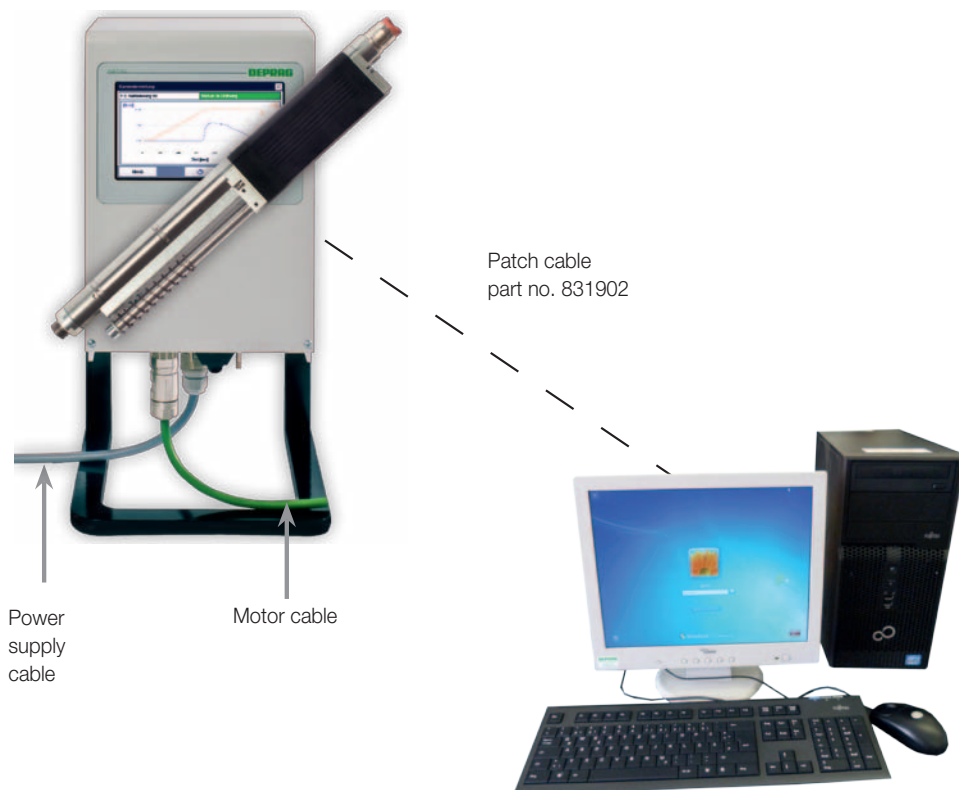
SYSTEM OVERVIEW when used in manual work stations



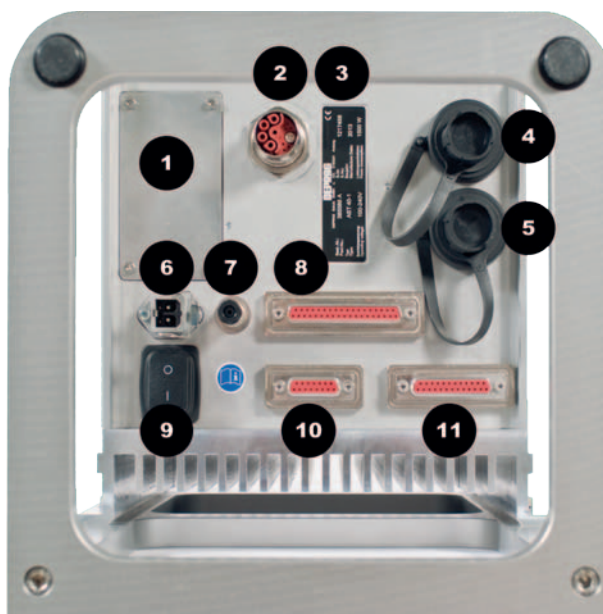
SYSTEM OVERVIEW in connection with ASTi40



Sequence controller AST40
connected to the screwdriver
via motor cable



OVERVIEW INTERFACES of the AST40 sequence controller



- 1 = fieldbus or printer interface (optional)
- 2 = motor cable connection
- 3 = type plate
- 4 = USB interface for system image generation
- 5 = Ethernet connection
- 6 = power supply
- 7 = 2-channel emergency stop
- 8 = I / O interface PLC 1
- 9 = on / off switch
- 10 = I / O interface PLC 3 (reload signal)
- 11 = I / O interface PLC 2

Bottom of the control

DEPRAG

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CERTIFIED AS PER DIN EN ISO 9001
