ADAPTIVE
The recognition of penetration is independent from tolerances in the fasteners and products. The process parameters will automatically adjust thus resulting in an optimized process.

Advantages:
- Highest process reliability
- Shortest possible cycle time
- Optimized funnel forming
- Avoids thread damages
- Less stress on fastener and product
- Reduces set-up time
- Designed for new materials, fasteners and joining methods
The new adaptive assembly unit ADAPTIVE DFS combines EC-Servo screwdriving technology with EC-Servo stroke technology.

The constant data recorded by the control modules enable the precise- and automatic recognition of all relevant penetration points.

Time-critical- and essential parameter changes are autonomously performed by the fastening system. The system ensures the ideal processing parameter, independently from the tolerances of the product or fastener. It significantly reduces the effort of preliminary analysis and parameterization. Costly and extensive repair procedures that are caused by inaccurately formed holes, jammed screws or ruined threads are kept to a minimum.

The best possible processing-parameter that have been automatically adapted to suit any situation, guarantee that the parts to be connected (fastener and product), are subjected to the least amount of strain. The additionally captured processing-data allow an increased process documentation.

Separate electronic controls for the EC-Servo screwdriver and the EC-Servo stroke technology, in combination with the extensive parameterization possibilities, ensure the highest flexibility during the processing of multiple materials. The implementation of special tightening sequences for new fasteners and materials is possible. Especially for the assembly of future materials such as carbon-fiber and CFRP, the controlled feed stroke allows that exact positioning and trigger-points are clearly defined.
ADAPTIVE DFS Software

HMI main menu
- Intuitive operator guidance
- Extensive functions

Programs
- Unlimited parameterization of assembly sequences, fasteners and materials
- Archiving of assembly sequences
- Unlimited data storage

Results and data management
- Graph overlaying for trend analysis
- Archiving of parameters and results

Customized results display
- Generate your very own results data screen
Service
- Test of function modules
- Test of system status
- I/O test

Info
- System data
- Manuals

Settings
- User administration
- 13 languages
- System settings

Maintenance
- Preset preventive maintenance operations
- Generate your own preventive maintenance operations
ADAPTIVE DFS Features

### Adaptive fastening
- Automated adjustment of parameters
- Highest process security
- Shortest possible cycle time

### Thrust applied to the center of the assembly axis
- Direct transfer of thrust into the assembly axis
- No lateral forces on guide mechanism, etc.
- Lightweight design
- Less wear and tear

### „Head first“ feeding principle
- No damage to the screws' tip and threads
- Screw preload function (buffer) optimizes the cycle time

### Interchangeable mouthpiece without tools
- No need to disconnect any cables or hoses
- 1. Push release button
- 2. Pull off mouthpiece
Actively controlled jaws

Cylinder activated jaws
- Perfect alignment of screw
- Less wear and tear

Lock stroke for underneath applications
- Socket automatically moves behind the fastener and keeps it in position

Connection to robot
- From top
- From backside

Feeding technology
- Blow feeding
- On-board magazine
Adaptive DFS Features

Support tools to assist during commissioning
- Tripod, adjustable: support manual alignment procedures, i.e. on curved surfaces
- Mounts to quick-change chuck
- Documentation of assembly space and position possible through camera

Support tools to assist during commissioning
- Laser pointer for fast and precise teach in process, laser mounts to quick-change chuck
- Vision system with cross lines
- Documentation of assembly space and position possible through camera

Technical data
- Speed: max. 8000 rpm
- Torque: max. 15 Nm
- Feed stroke force: max. 3500 N, freely programmable
- Feed stroke freely programmable: Speed, distance and force monitoring and controlling
- Downholder force: max. 1200 N, freely programmable
- Weight: 35 kg
- Assembly directions: any (from above, underneath, at any angle)
Maintenance friendly
- Modular design
- Trending information at the HMI
- Recording, analyzing and displaying of load results and data
- Quick-change connectors for all media
- Quick-change adapters for many robot brands and models
ADAPTIVE DFS Integration

Hand shake with robot
- Communication via bus or I/O
- External access to individual process steps, i.e. the screw feeding process
- Extensive data exchange available

Media management
- Quick-change connectors on the ADAPTIVE DFS
- Customized cable configuration

Feeding technology
- Sword feeder
- Vibration bowl feeder of the new generation eacy feed
  Both options operate independent of power supply (110-240V, 50-60Hz) for international use without adjustment.
- Belt hopper with up to 20l fill capacity
**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 optimized image visualization.

- Industrial PC
  - Operating system: Windows 7 Ultimate

**Control cabinet**

- Operating voltage: 3/(N)/PE 400-480V, 50-60Hz
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Your worldwide partner for screwdriving technology and automation

More information:
www.deprag.com