Schraubtechnik | Automation | Druckluftmotoren | Druckluftwerkzeuge

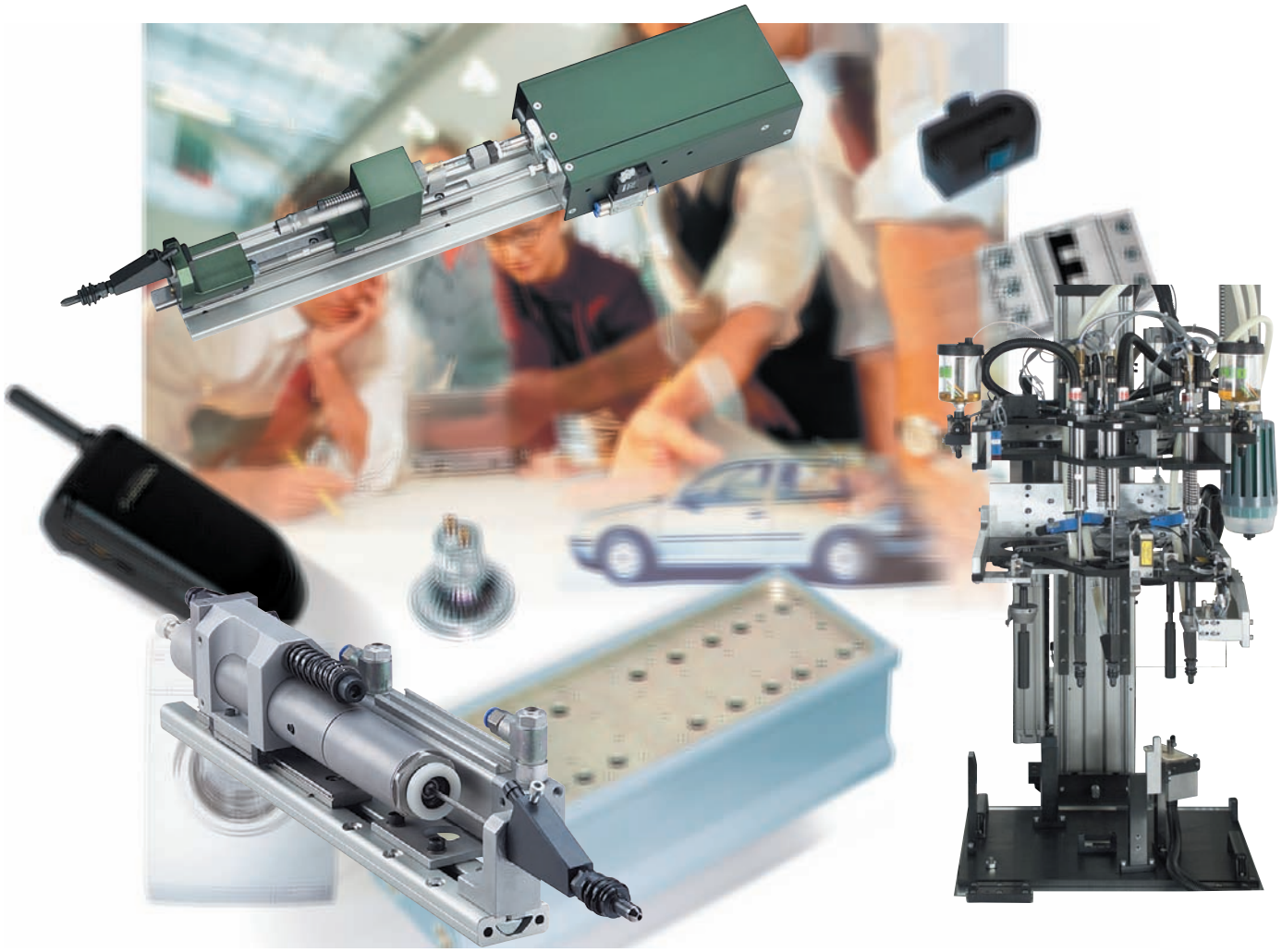
DEPRAG

Screwdriving Function Module

SFM
for automated screwdriving assemblies

- **easy integration**
- **short lead times**
- **compact construction**
- **compatible with all screwdriver sizes**
- **large variety of optionally available functions**
- **complete process documentation**

This SFM Screwdriving Function Module is the basis for all automated screwdriving processes. Its modular set-up reduces all projecting time considerably. We can thus provide you with a thoroughly tested, complete assembly solution perfectly fitting your applications. Take the chance and benefit from our long-time experience in the design and manufacture of screwdriving technology. Our experts will be happy to support you in all your demands.



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DEPRAG
Screwdriving Function Module (SFM)

The SFM Screwdriving Function Module is available as a standard module for self-construction of complete screwdriving systems. It may be completed by adding a large variety of optionally available extra functions. Thus we can offer you a custom-made solution to meet your specific demands within relatively short time.

We would supply you with the SFM as a function module ready for integration, well-tested on the basis of your sample parts.

Due to its modular design it can be integrated into any type of system which considerably reduces the engineering and manufacturing work involved. Thus we can produce as per a "simultaneous engineering"-system with rather short lead times.

Advantages:

- solid build and use of many standardized parts
- easy trouble-shooting of relevant components
- simple interface for easier integration into your assembly systems
- documentation option of the screwdriving parameters
- systematic manufacturing process "assemble to demand" and short lead times

SFM group:
The DEPRAG Screwdriving Module group is divided into 4 different designs which may be completed by the use of function modules. Each design is set up to perfectly fit the respective cases of demand and we can offer solutions for the following applications:

- with screw-feeding
  including feed stroke
  without feed stroke

- without screw-feeding

Designs

XS = EXTRA SMALL
especially for our DCAM-XS
or for use with particularly small robots

N = Standard
good value, large range of accessories available also in short and under-floor version

L = Light
designed specially for connection to a robot, light and compact

S = Heavy execution
for handling of more than one screwdriver spindle at high press-down forces, very solid and perfectly sized

Control Functions:

For the function controls as required by you, such as:
- torque
- angle
- screwdriving depth (min/max)
  (alternatively available: "relative" – in relation to work piece surface – or "absolute")
- cylinder end positions
- screw presence control
- screwdriver start/stop control

A large variety of measuring and control systems are available – depending on the respective screwdriving applications. For the registration of measuring values and documentation we can offer:

DEPRAG measuring and control screwdrivers:
switch-off at pre-set torque
– registration of angle
– registration of torque values
Torque and angle values can be evaluated and prepared for further use in conjunction with DEPRAG ME-X measuring electronics.

DEPRAG EC screwdrivers or EC-Servo screwdrivers
switch-off at pre-set torque
– angle monitoring
switch-off at pre-set angle
– torque control
shut-off at yield point

In this case for example, with the use of the DEPRAG AST-10 or AST-30 screwdriver control, screw-driving parameters respectively programs can be registered or read for each screw individually via the standard PROFI-BUS connector.

DEPRAG screwdriving technology – comprehensive system

DEPRAG ist able to provide you with a complete turn-key system comprising all sorts of necessary components designed by us to represent a comprehensive machine for automated assembly operations.

Such a system would consist of:

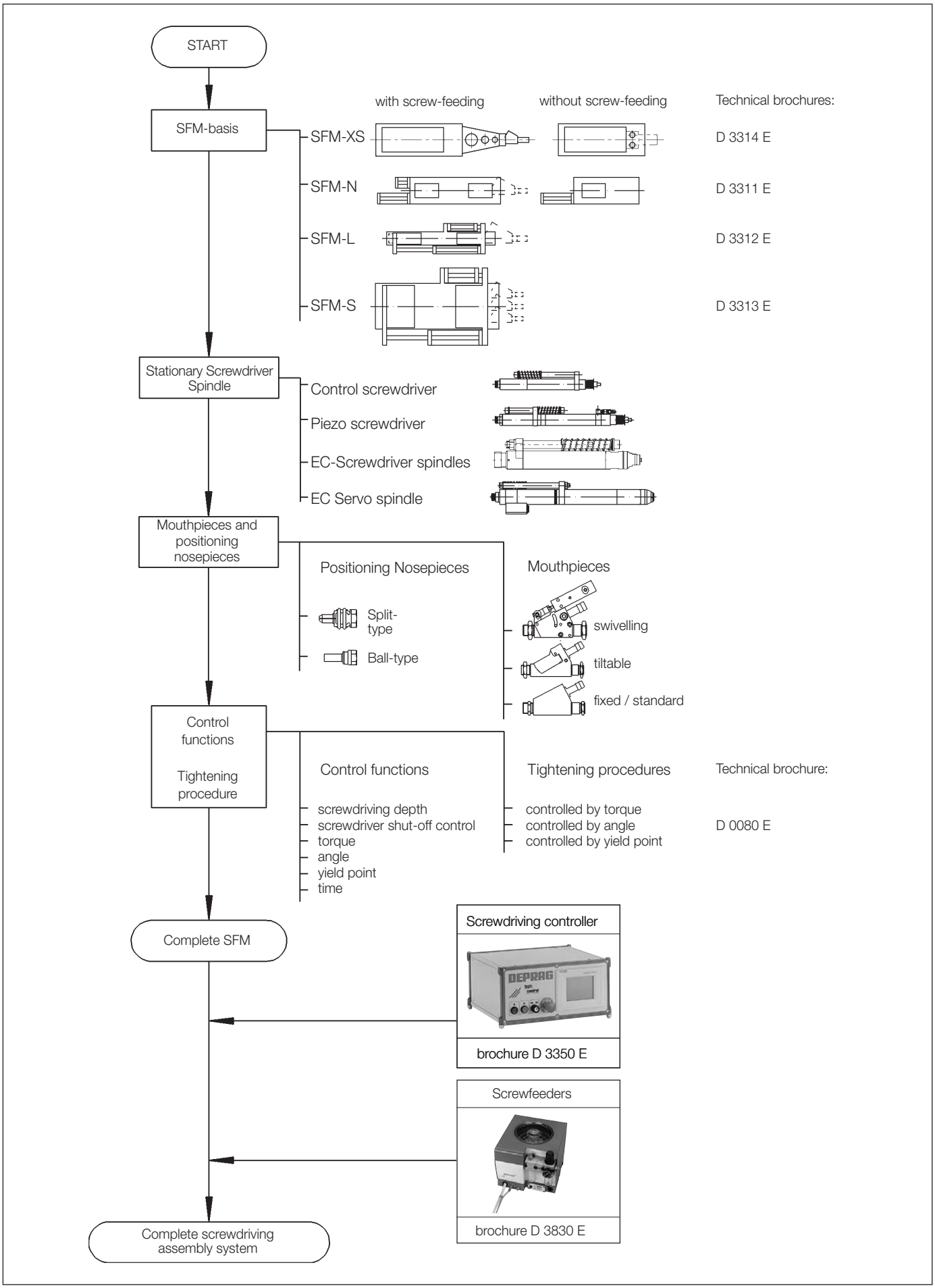
- Stationary screwdriver spindle (pneumatic or electric)

- Screwfeeding machine
  We can offer the best possible solutions for your feeding applications ranging from feeders with vibratory drive to feeders with linear conveyors and sword feeders.

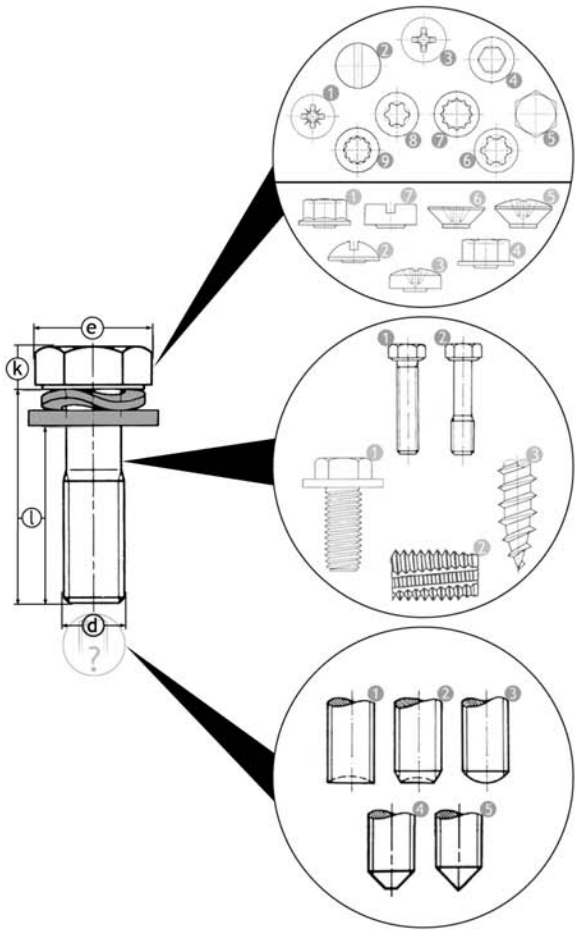
- PLC controller
  For the complete control of assembly operations and their sequence. PLC with touch panel or PLC with integrated controller for freely programmable screw positions.

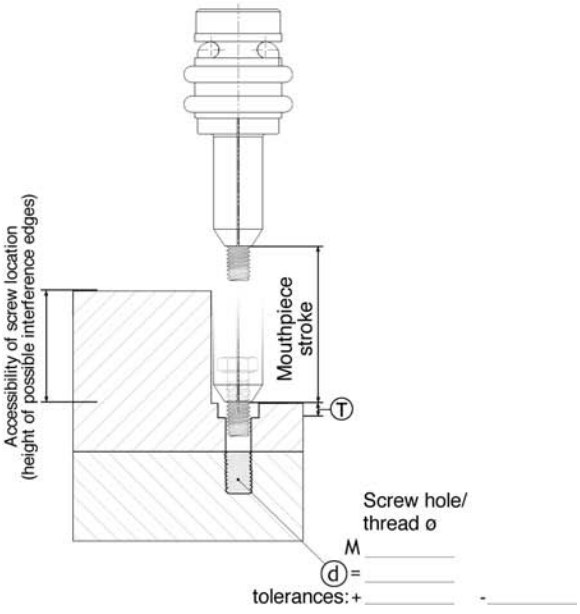
Our long-term experience in the area of screwdriving assembly technology allows us to support you with our competent advice in selecting the most appropriate combinations for your applications.
The questionnaire (page 4) will help us to provide you with the most effective projectation of your demand:
For a more detailed consultation please contact our Sales Department, export@deprag.de

Basic structure of a DEPRAG screwdriving assembly system on the basis of Screwdriving Function Modules (SFM)



Questionnaire for SFM and Screwdriving-Assembly-Unit projects





SCREWDRIVING-ASSEMBLY-UNIT PROJECTS

SCREW HEAD DIMENSIONS

e= _____ tolerances: + _____ - _____ k= _____

SCREW HEAD DRIVE

1. ☐ Pozidriv
2. ☐ Slot
3. ☐ Phillips
4. ☐ Female hex
5. ☐ Male hex
6. ☐ Male TORX
7. ☐ Triple Square
8. ☐ Female TORX
9. ☐ Female Triple Square

SHAPE OF SCREW HEAD

1. ☐ Hexagon head with flange
2. ☐ Round-head
3. ☐ Pan-head
4. ☐ Hexagon head with collar
5. ☐ Countersunk with pan-head
6. ☐ Countersunk head
7. ☐ Cylinder head

SCREW SHAFT DIMENSIONS

d= _____ tolerances: + _____ - _____ l = _____

SHAPE OF SCREW SHAFT

1. ☐ Completely threaded shaft
2. ☐ Reduced shaft bolt

TYPE OF SCREW THREAD

1. ☐ Self-forming
2. ☐ Self-tapping
3. ☐ Sheet-metal / wood screw

☐ Metric standard thread

TYPES OF SCREW POINTS

1. ☐ Without any chamfer
2. ☐ Blunt start
3. ☐ Oval point
4. ☐ Flat cone point
5. ☐ Cone point

SCREW LOCATION

MATERIAL _____

SCREW HOLE

☐ Through hole ☐ Blind hole

DEPTH OF SCREW HOLE CHAMFER _____

CYCLE TIME _____

SCREWDRIVER DATA REQUIREMENT

Speed _____

Torque _____

Screw-in-depth _____

Mouthpiece stroke _____

Accessibility of screw location _____
(height of possible interference edges)

TYPE OF ASSEMBLY

- ☐ To depth
- ☐ To pre-set torque
- ☐ To pre-set angle
- ☐ To yield point

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QUALITY UNITES

CERTIFIED AS PER DIN EN ISO 9001