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Maschinen- und Systemtechnik

Gearing and manufacturing technology



Gearing and manufacturing technology

MEC 10 Spur/bevel gearing training system



MEC 10 Spur/bevel gearing training system

This gearing training system is suited to supporting training for mechanics careers in trade and industry. It covers training areas for industrial metalworking professions and teaches the following key topics:

- Assembly and disassembly of component modules
- Learning how gearing systems work
- Handling components
- Distinguishing designs and utilising bearings
- Familiarisation with positive (interlocking) and non-positive connection systems
- Dealing with various types of seal
- Assembly and disassembly without use of specialised insertion and extraction tools
- All assembly work is undertaken in compliance with current safety regulations
- Checking of training content
- Flange-mounting of a three-phase motor and use in conveyor belt module

Basic equipment set, consisting of:

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Pos.	Product name	Bestell-Nr.	Anz.
1	Spur/bevel gearing	SE2905-4A	1



The spur/bevel gearing module is suitable for applying the training objectives and contents from the basic and advanced technical vocational education training areas for industrial mechanics to real industrial products.

Consisting of:

- 1x Housing with cover
- 1x Short bevel gear shaft
- 1x Bevel gear shaft
- 1x Coupling shaft
- 1x Output shaft
- 2x Helical spur gear module = 2
- 1x Bevel gear module = 2
- 1x Safety coupling
- 2x Spherical roller bearings
- 5x Ball bearings
- 2x Radial shaft seals
- 1x Hand wheel
- Various standard parts

The gearing module is designed for assembly with a flange-mounted motor or a three-phase motor. It is possible to assemble the module on the base plate of the conveyor belt module.

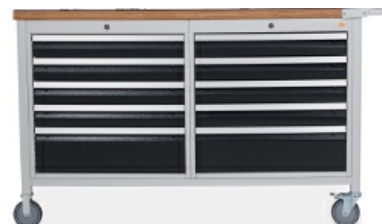
2 **SybaWork mobile work trolley, 1500x750x879, 10 drawers, table top 40mm**

ST8070-6N

1

SybaWork mobile work trolley with 10 drawers

- 40-mm thick multiplex table top, multi-layered beech veneer
- Circular steel tubing sliding handle
- Stable, welded steel-plate design comprising rectangular-section steel tubing 40 x 40 x 2 mm
- Includes 10 drawers with central locking
- Loading capacity (evenly distributed loading): 500 kg
- Additional stability thanks to high and low horizontal struts
- 4 Casters, 125 mm diam., 2 with brakes
- Environmentally friendly powder coating, heat-treated
- Frame colour RAL 7035 light grey, front panel colour RAL7016 anthracite



Drawers and under-table cabinet

- Height of drawers 8x100 mm + 2x200 mm
- Drawers flush with cabinet
- Ball bearings, secured against falling out
- Central locking
- Function strip, optionally equipped with electrical or compressed air connection
- Drawers pull out 100% of the way, carrying capacity 100 kg
- With high-quality recessed handle, replaceable labelling strips with clear covers
- Internal dimensions of drawers: 600x600 mm (WxD)

- Dimensions: 1500x750x879 mm (WxDxH)
- Weight: 136 kg

3 **SybaWork mobile work trolley, 879x736x719 mm, 5 drawers, table-top 40 mm**

ST8070-6M

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SybaWork mobile work trolley with 5 drawers

- Multiplex table-top, 40 mm thick, multi-layered beech plywood
- Cylindrical steel tubing, pushing handle
- Housing, doors and drawers made of 1.00-mm fine sheet steel
- Quality St 1203, DIN 1623
- Environmentally friendly powder coating, iron phosphate coating, kiln-hardened
- 4 x 125-mm diam. casters fixed to continuous steel plate, 2 casters with brakes
- Housing: Light grey RAL 7035
- Drawers: Anthracite RAL 7016



Drawers:

- Drawers on all sides separated by 25 mm and slotted to accommodate container rails and dividers
- Drawers with ball bearings movement, steel guides and stop to prevent the drawer being pulled out all the way
- 100% full opening, 100 kg load capacity
- Internal dimensions of drawers: 600x600 mm
- Height of drawers 4x100 + 1x200 mm
- Drawers are flush with the housing
- Cylinder locks with central locking
- With high-quality recessed grip-rail, interchangeable labelling strips with transparent covers
- Dimensions: 705x736x879mm (WxDxH)
- Weight: 136 kg

4 **Parallel vice with rigid tubing jaws, width 120 mm**

ST8080-2A

1

Forged entirely from steel and unbreakable

- Forged jaws
- Large clamping depth
- Simple central guide adjustable without special tools
- Large finished surfaces on all sides ensure precision and durability
- Quick-acting and strong thanks to two-way trapezoidal thread
- Powder coated



Technical data

- Jaw width: 120 mm
- Span length: 150 mm
- Depth: 65 mm
- Depth for pipes: 16 - 55 mm approx.
- Weight: 9.0 kg

Fold-away and height adjustment equipment optionally available.

5 **Automotive tool set 6, 1/4" socket insert set (71 parts), inlay size 300x600 mm** ST8090-3L 1



Automotive technology tool set 6 for drawers – 1/4" socket insert set, consisting of 71 parts in two-colour (black/grey) foam inlay of size 300x600 mm

- Knurled, chromed, polished with ball grooves/ball catches, manual
- Material: Chrome-vanadium 31 CrV 3, W. no. 1.2208, bits made of chrome-vanadium 59 CrV 4, W no. 1.8159
- 1/2" square driver conforming to DIN 3120/ ISO 1174, manual, dimensions as per DIN 3124/ ISO 2725, DIN 7422

Set consisting of:

- 13 Socket spanner inserts, external hex screws
Nominal sizes: 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, 11, 12, 13 and 14
- 1 Reversible ratchet spanner, wrought wheel (20 teeth), 2-component handle
- 1 Angled handle with slider
- 1 Handle, 2-component handle
- 2 extensions, lengths: 50mm and 150mm
- 1 Cardan joint
- 2 Connector/adapters:
External square screws, 3/8" – socket square screws, 1/4", external square screws, 3/4" - socket square screws 3/8"
- 7 TXE socket spanner inserts (for external Torx screws)
Nominal size: 4, 5, 6, 7, 8, 9, 10 and 11
- 4 PH screwdriver inserts (cross-head)
Nominal size: PH1, PH2, PH3 and PH4
- 2 PH screwdriver inserts (cross-head and Supa-Pozidrive screws)
Nominal size: PZ1 and PZ2
- 3 IS screwdriver inserts (slotted)
Nominal size: 4, 5.5 and 8
- 8 IN screwdriver inserts (hex)
Nominal size: 2.5, 3, 4, 5, 5.5, 6, 7 and 8
- 8 TX screwdriver inserts (TORX®)
Nominal size: 8, 10, 15, 20, 25, 27, 30 and 40
- 8 TXKU round-head TORX® angled screwdrivers
Nominal size: 9, 10, 15, 20, 25, 27, 30 and 40
- 9 IN round-head angled screwdrivers (Allen)
Nominal size: 1.5, 2, 2.5, 3, 4, 5, 6, 8 and 10
- 1 Torque spanner, with micrometer scale: 10 to 60Nm, 3/8"
Main unit Nm with vernier scale, secondary unit ft. lbs.
Secure setting of torque value, clockwise tightening
Reversible ratchet and rugged ratchet mechanism
Tangible and audible "click"
2-component plastic handle
Calibrated, tolerance +/- 3% (exceeds standard specification of +/- 4%)
Classified according to DIN EN ISO 6789:2003 as type II class A, with factory certificate

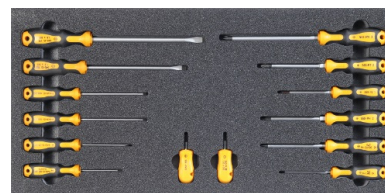
6 **Automotive tool set 7, screwdriver set (14 parts), inlay size 300x600 mm**

ST8090-3N

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Automotive technology tool set 7 for drawers – screwdriver set, consisting of 14 parts in two-colour (black/grey) foam inlay of size 300x600 mm

- Chromed blade with 2-component plastic handle
- Material: 59CrV 4, W no. 1.2242
- Standardised to DIN 5265, form C, blade conforming to DIN 5264, form B / ISO 2380



Set consisting of:

- 7 IS screwdrivers (slotted) in the following sizes:
 IS25 (25=length of blade in mm) 1.0x5.5mm (handle)
 IS60 0.4x2.5
 IS75 0.5x3.0
 IS100 0.6x3.5
 IS108 0.8x4.0
 IS150 1.2x6.5
 IS175 1.6x8.0
- 4 PH screwdrivers (cross-head) in the following sizes:
 PH2 (handle), 25/80 (length of blade/overall length)
 PH1, 80/170
 PH2, 100/200
 PH3, 150/260
- 3 PH/PZ screwdrivers with wrought hex bits in the following sizes:
 PZ1 (blade), 80/170mm length of blade/overall length, 7mm (hex/SW)
 PZ2, 100/200, 7
 PH2, 100/200, 10

7 **Automotive tool set 9, VDE pliers set (10 parts), inlay size 300x600 mm** ST8090-3S 1

Automotive technology tool set 9 for drawers – VDE pliers set, consisting of 10 parts in two-colour (black/grey) foam inlay of size 300x600 mm



- Chromed and polished, blades inductively hardened
- 2-component plastic handles
- VDE insulation, standardised to DIN 5238, forms AH/ISO 5746

Set consisting of:

- 1 Pair of manual side cutters, 1 universal side cutter
Suitable for cutting hardened steel wire, piano wire, tensile strength 2300 N/mm²
Material: Chrome-vanadium 80 CrV 2, W no. 1.2235
- 1 Round-nosed pliers
Straight design with side cutting function
Material: hardened/tempered steel, C45, W no. 1.0503
- 2 Sets of pliers for external sealing rings
For 10-25mm² diam. rings, 90° angle
For 19-60mm² diam. rings, straight
 - Standardised to DIN 471, DIN 983 and DIN 5256
 - Material: Chrome-vanadium 31 CrV 3, W no. 1.2208
- 2 Sets of pliers for internal sealing rings
For 19-60mm² diam. rings (holes), 90° angle
For 19-60mm² diam. rings (holes), straight
 - Standardised to DIN 472, DIN 984 and DIN 5256
 - Material: Chrome-vanadium 31 CrV 3, W no. 1.2208
- 1 Set of strippers, for wire diameters 0.2 to 6.0mm²,
With length adjustment from 5 - 12 mm
Including side cutters for up to 2mm² diam.
Blades made of hardened special steel, plastic handles
- 1 Folding cable knife, folding blade in wooden hilt, reinforced rivet joint
- 1 Rolled tape measure, 3m, with view window
Automatic tape rewind including catch, dual scale and non-slip end hooks
Curved tape measure, particularly resistant to kinks, with belt clip

8 **Metalworking tool set 3, punch tools (22 tools), inlay size 300x600 mm** ST8090-5E 1

Tool inlays for drawers: Metalworking 3 – punch tools, set comprising 22 tools in two-tone (black/grey) foam inlay of dimensions 300x600 mm

8 Drift punches:

- Fully hardened and annealed
- Inductively annealed head
- Ground and oiled working surface
- Chromium-molybdenum-vanadium 45CrMoV7/1.2328
- Manufactured in compliance with DIN 6458

11 Pin punches:

- Fully hardened and annealed
- Inductively annealed head
- Ground and oiled working surface
- Chromium-vanadium 59CrV4/1.2242
- Manufactured in compliance with DIN 6450

3 Hammers:

Plastic ball hammer

- Head held in place with cast zinc
- Interchangeable heads made of impact-resistant cellulose acetate
- Real ash handle, DIN 53505, Shore D 65

Recoilless nylon soft-face hammer

- Particularly suitable for hammering into positions
- For non-rebounding dead blows without any loss of hammer force but non-harmful to impacted materials
- Tough steel centre bar with stud and collar for attachment of heads
- Weight precisely determined by means of steel shot inside (inertial principle)
- Nylon heads, interchangeable
- Hickory handle, DIN 53505, Shore D 73

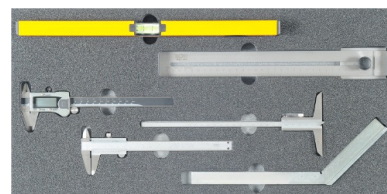
Rubber hammer

- With 2 flat striking faces
- Real ash handle, interchangeable heads
- DIN 5128-90, Shore A 90

9 **Metalworking tool set 7, measuring tools I (6 tools), inlay size 300x600 mm** ST8090-5N 1

Metalworking tool set 7 (6 tools) - measuring tools I

- 3 Measuring callipers
- Steel rule
- Spirit level
- Mitre square



10 **Metalworking tool set 8, measuring tools II (14 tools), inlay size 300x600 mm** ST8090-5Q 1

Metalworking tool set 8 (14 tools) - measuring tools II

- 3 Straight edges
- 3 Angles
- Pocket slide calliper
- Tape measure, steel tape measure, aluminium ruler
- Thickness gauge
- Spring divider
- Protractor and dial gauge



11 **Metalworking tool set 9, measuring tools III (21 tools), inlay size 300x600 mm** ST8090-5S 1

Metalworking tool set 9 (21 tools) - measuring tools III

- Precision micrometer set (15 pieces)
- Measuring tools II
- 3 Inside micrometers
- Measuring stand with magnetic base
- Centring square



Media:

Pos.	Product name	Bestell-Nr.	Anz.
12	Interactive Lab Assistant: Gearing systems	SO2801-7A	1

The experiment instructions take the form of an Interactive Lab Assistant course. This multimedia course guides students step by step through the topics of gearing systems. The basics are communicated by means of easily understood illustrations. Along with its test question component, Interactive Lab Assistant forms an extensive experiment platform.

Features:

- Interactive experiment set-ups
- Measurements and graphics can be copied directly into the experiment instruction pages by means of drag and drop
- Questions with feedback and assessment logic for determining progress of students
- Printable document for easy printing of experiment instructions complete with solutions
- CD-ROM with Labsoft browser and course software

Training contents:

- Fundamentals aspects for carrying out experiments
- Detailed experiment descriptions
- Tests of knowledge
- Generation of test result reports