EMCO FB-2
Coordinate Milling and Drilling Machine



emco

The New Dimension in Milling and Drilling

Constructed for technically perfect, economically optimum solutions – also for highest demands; not larger than necessary – and as priceworthy as possible.

Wherever complicated forms, spare parts, models or small series must be produced, the FB-2 is a reliable partner. Equally attractive for precision mechanics, repair workshops and model builders; for electromechanical workshops and car repair shops, technical and scientific laboratories; schools and training centers; as well as for the demanding do-it-yourselfer.

The automatic feed unit with the comprehensive accessory range enable a professional execution of milling, drilling and boring operations on workpieces of any kind.

As with all other EMCO products the mechanical and electrical equipment comply not only with international safety standards, but also meet the ever-increasing safety demands in workshops, schools and training centers.
Put the EMCO FB-2 to the test in your dealer's shop and you will be convinced of its first-class performance!



Table model with feed unit



with feed unit and chiptray

Technical Features

- precise, reliable and easy-to-service construction of all functional parts; manufactured with highest precision
- the closed construction of all drive and power transmitting parts prevents the ingress of swarf and dirt and guarantees trouble-free working
- milling table and cross slide run without backlash in large-dimensioned, adjustable dovetail guideways. Like the machine base, they are made of high grade cast iron
- the slipping clutch between feed unit and spindle protects tool and machine and allows milling to a dead length (two adjustable stops for setting of stroke) with high duplicating accuracy
- the milling head can be swivelled and turned up to 360° and allows milling and drilling operations at any angle.

The maximum distance of 370 mm between milling table and spindle nose makes it possible to machine also large-sized workpieces.

The steel gears run in an oil bath (oil circulation system additionally) and feature shaved surfaces to guarantee long life and quiet running.

- The automatic feed unit (accessory) provides 3 feeds (33/65/170 mm/min or 1,3/2,5/6,7 inch/min) so that finest milling, drilling and

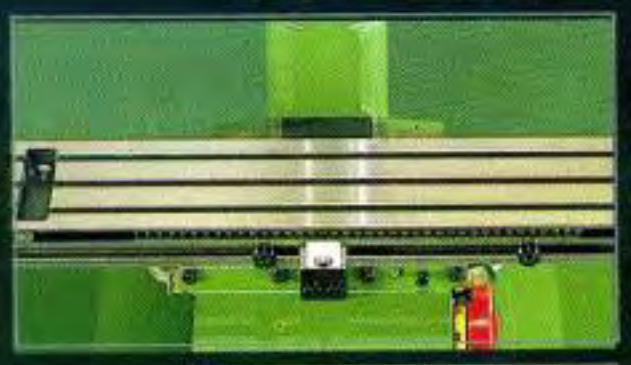
















boring operations can also be done by the inexperienced user without any difficulty.

Simple mounting of the feed unit with 2 screws, also at a later time, as the electrical connections of the drive motor are already foreseen in the basic machine. The connection follows simply by connecting strips.



Operation

- large-sized, easily accessible main switch
- directly adjustable, accurate and easy-to-handle depth stop
- convertible lever for clamping spindle sleeve and milling head slide
- positioning of all operating elements in accordance with ergonomical demands

Precision

- milling spindle radially and axially play-free
- large-sized handwheels with scales enable quick and sensitive positioning
- milling table equipped with additional millimeter or inch scale in longitudinal and cross direction
- exact angle positioning through graduated scale with vernier on milling head
- feed spindle nuts can be re-adjusted to be play-free
- 3 ideally-stepped milling feeds guarantee high-quality surface
- all guideways can be re-adjusted to be play-free

Machine with accessoires

Examples o

Boring and facing
accessories: boring and facing head, machine vice, swivel base for machine vice
1

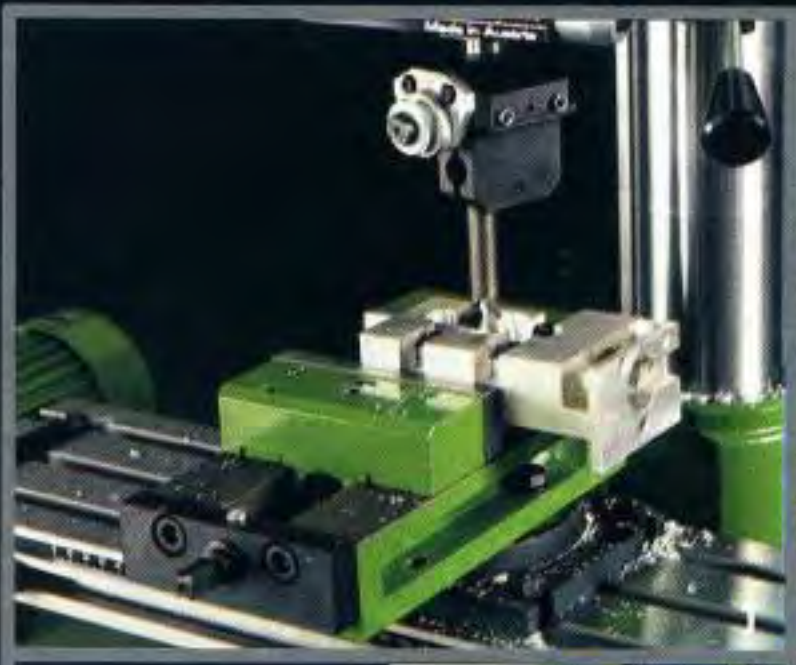
Gear milling
accessories: angle plate, adaptor plate, dividing head, chuck, shell end mill arbor, gear miller
2

End and side milling
accessories: support backplate, chuck, shell and mill arbor, heavy-duty shell end mill
3

Coordinate drilling
accessories: stepped clamping shoes, drill chuck, drill
4

Milling with heavy-duty shell end mill
accessories: machine vice, swivel base, shell end mill arbor, heavy-duty shell end mill
5

Milling with staggered toothed side mill
accessories: stepped clamping shoes, shell end mill arbor, staggered tooth side mill
6

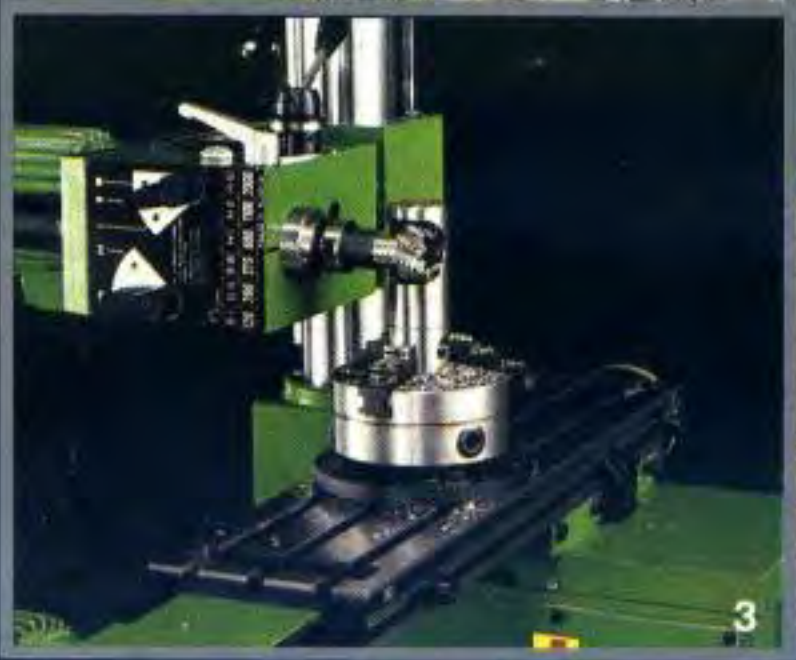


2


4



5


3


6



Basic Machine consists of:

Milling and drilling head, column, coordinate table with longitudinal stops, motor, service tools, grease gun, instruction manual, service parts list.

Electrical equipment optional as:

1. Standard outfit: ON- and OFF-switch, dust- and splashproof according to IP 54, cable

Metric version:
Order No. 760 1.A* with 1-phase motor
Order No. 760 3.A* with 3-phase motor
Inch version:
Order No. 760 1.B* with 1-phase motor
Order No. 760 3.B* with 3-phase motor

2. Safety outfit according to VDE 0113 consisting of: lockable safety switch with Main- and Emergency-OFF function as well as low-voltage release;

* Please state voltage and frequency when ordering



f Application


7


10


8


11


9



12

Milling of a clutch
accessories: dividing head, adaptor plate, chuck, heavy-duty taper shank end mill
7

Milling of T-slots
accessories: stepped clamping shoes, collet chuck, T-slot cutter
8

Drilling with swivelled head
accessories: stepped clamping shoes, drill chuck, drill
9

Slotting
accessories: support backplate, chuck, shell end mill arbor, circular saw blade
10

Facing
accessories: angle plate, machine vice, shell end mill arbor, heavy-duty shell end mill
11

Key-way cutting
accessories: swivel base, machine vice, collet chuck, two-flute slot drill
12

Technical Data:

Working area:
Maximum height between milling table and spindle nose 370 mm
Throat 163 mm
Table size 630x150 mm
Longitudinal travel 380 mm
Cross travel 140 mm

Milling head:
6 spindle speeds
120–200–370–680–1100–2000 (50 cycles)
145–240–445–815–1320–2400 (60 cycles)
Spindle taper MT2
Quill stroke 40 mm
Milling head can be turned and swivelled up to 360°

Nominal power:
3-phase motor: 0,25 kW (0,35 HP)
1-phase motor: 0,18 kW (0,25 HP)

Electro-mechanical feed unit:
3 milling feeds: 33/65/170 mm/min
1.3/2.5/6.7 inch/min
Motor power:
0,05 kW (1-phase and 3-phase)
IEC-standard motor, dust- and splash-proof according to IP 54.

Space required:
910 mm x 680 mm

Color
RAL 6011 (green)

Net weight of basic machine:
110 kg

Data subject to change without notice



Accessories

Standard machine lamp,
without bulb
Ord. No. 533 100

Fluorescent strip lamp
(non-heat emitting light)
voltage 100–130 volts
(with two neon tubes)
Ord. No. 533 300
ditto, but voltage 200 – 240 volts
Ord. No. 533 500

Electro-mechanical feed unit,
separate drive motor, overload clutch, 3 milling feeds, with single-phase motor
Ord. No. 761 1 . . *
ditto, but with three-phase motor
Ord. no. 761 3 . . *

Machine stand,
with lockable tool cabinet, chip tray and coolant pump connection
Ord. No. 760 220

* Please state voltage and frequency when ordering. ATTENTION! for single-phase machines order only single-phase accessories; for three-phase machines order only three-phase accessories.



Drilling and milling guard
Ord. No. 525 320

Chip tray,
with coolant pump connection (for bench model)
Ord. No. 760 030

Coolant equipment,
with single-phase a/c equipment
Ord. No. 532 1.A *
ditto, but with three-phase a/c equipment
Ord. No. 532 3.A *

Coolant Pipe
for Coolant Attachment
Ord. No. 760 040

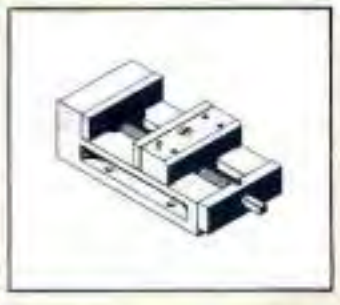
Clamping Bases Clamping Devices



Angle plate
Ord. No. 760 020



Swivel base
for machine vice
Ord. No. 761 320



Machine vice,
width of jaws 110 mm, max. opening 110 mm
Ord. No. 761 310



Dividing head
with circular table for direct and indirect dividing, circular table 150 mm dia.
Ord. No. 745 000



Adaptor plate
for mounting the lathe chuck to the dividing head
Ord. No. 545 100



Universal lathe chuck
125 mm dia., mounting according to DIN 6350, with 2x3 jaws
Ord. No. V1D 106

ditto, with 2x4 jaws
Ord. No. V1D 108



Support backplate
for mounting lathe chuck to milling table or angle plate
Ord. No. 346 500



Universal lathe chuck
identical with above



Stepped clamping shoe,
complete with clamping bolt, gripping capacity to 60 mm
Ord. No. 465 100

Clamping Devices and the relative tools



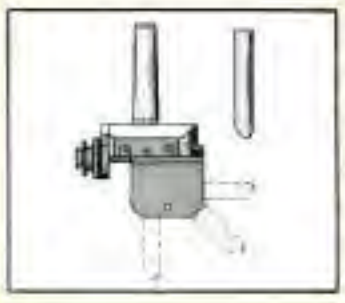
3 jaw drill chuck,
1 – 13 mm capacity
Ord. No. 250 000



Morse taper arbor,
MT2, for drill chuck
Ord. No. 251 000



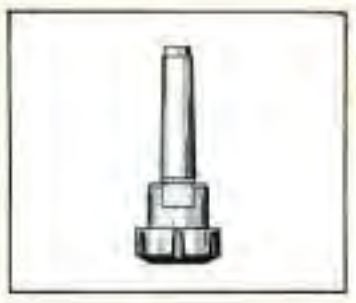
25 twist drills
in box, DIN 338,
1–13 mm, in steps of
0,5 mm HSS
Ord. No. 764 000



Boring and facing head (fly cutter)
with toolholder, fly cutter 6 x 6 x 40 mm and service tools. Taper MT2, max. cutting diameter 180 mm, 3 bores in slide for mounting
Ord. No. 525 330



Heavy-duty taper shank end mill,
for roughing cut, shank MT2, draw-in screw thread M10, dia. of cutter 15 mm HSS
Ord. No. 764 100



Collet chuck,
MT2, for collets ESX-25
Ord. No. 520 020



Set of 14 collets ESX-25 in wooden box, capacity 1.5–14 mm
Order No. 225 000

Individual collets ESX-25:

Nom. Ø mm	Capacity mm	Shaft dia. inch	Ord. No.
2,0	1,5–2,0	1/16, 5/64	225 020
2,5	2,0–2,5	3/32	225 025
3,0	2,5–3,0	7/64	225 030
4,0	3,0–4,0	1/8, 9/64, 5/32	225 040
5,0	4,0–5,0	11/64, 3/16	225 050
6,0	5,0–6,0	13/64, 7/32, 15/64	225 060
7,0	6,0–7,0	1/4, 17/64	225 070
8,0	7,0– 8,0	9/32, 19/64, 5/16	225 080
9,0	8,0– 9,0	21/64, 11/32	225 090
10,0	9,0–10,0	23/64, 3/8, 25/64	225 100
11,0	10,0–11,0	13/32, 27/64	225 110
12,0	11,0–12,0	7/16, 29/64, 15/32	225 120
13,0	12,0–13,0	31/64, 1/2	225 130
14,0	13,0–14,0	33/64, 17/32, 35/64	225 140



Heavy-duty straight shank end mill,
for roughing cut, cylindrical shank, dia. of cutter 8 mm, HSS
Ord. No. 764 200



Two flute slot drill,
with spiral flute, cylindrical shank, dia. of cutter 3 mm, HSS, **Ord. No. 764 301**
ditto, 4 mm dia.
Ord. No. 764 302
ditto, 5 mm dia.
Ord. No. 764 303
ditto, 6 mm dia.
Ord. No. 764 304



Dovetail mill,
with cylindrical shank 12 mm dia., 60 x 16 mm dia., HSS
Ord. No. 764 400



T-slot cutter,
with cylindrical shank, dia. 10 mm, for slots 12,5 x 6 mm, HSS
Ord. No. 764 510
ditto, for slots 16 x 8 mm
Ord. No. 764 520



Shell end mill arbor
with MT2, to suit 16 mm cutter bore dia.
Ord. No. 763 000



Spanner
for shell end mill arbor
Ord. No. 763 900



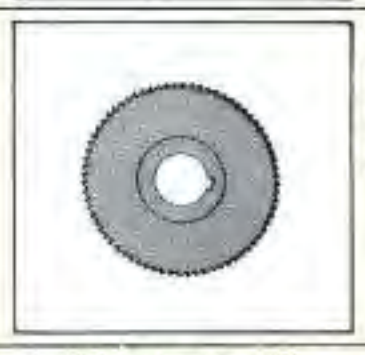
Set of 4 spacing collars,
hardened and ground, for shell end mill arbor, 4 mm, 6 mm, 8 mm and 12 mm
Ord. No. 763 100



Heavy duty shell end mill,
with spiral for roughing/ finishing, bore 16 mm, width 20 mm, dia. of cutter 40 mm, HSS (DIN 841, 7 teeth)
Ord. No. 764 410



Staggered tooth side mill,
bore 16 mm, width 5 mm, dia. of cutter 35 mm, HSS
Ord. No. 764 900
ditto, width 6 mm, dia. of cutter 50 mm, HSS
Ord. No. 764 910



Circular saw blade,
fine tooth, bore 16 mm, width 0,8 mm, dia. 60 mm
Ord. No. 123 100



8 gear mills,
relieved, for 20° pressure angle, bore 16 mm, dia. of cutter 40 mm, HSS, module 0,5 mill no. 1–8
Ord. No. 764 600

8 gear mills,
relieved, for 20° pressure angle, bore 16 mm, dia. of cutter 50 mm, HSS module 1, mill no. 1–8
Ord. No. 764 700

8 gear mills,
relieved, for 20° pressure angle, bore 16 mm, dia. of cutter 50 mm, HSS, module 1,25, mill no. 1–8
Ord. No. 764 800

Individual gear mill,
M 0,5
Ord. No. 764 60 .

Individual gear mill,
M 1
Ord. No. 764 70 .

Individual gear mill,
M 1,25
Ord. No. 764 80 .

Teeth:	12–13	14–16	17–20	21–25	26–34	35–54	55–134	135–∞
Order No.:	01	02	03	04	05	06	07	08

Ordering Example: . . 764 601, 764 602,

Additional accessories

Cover
for table and vertical part
Ord. No. 760 120

Special oil,
approx. 0,25 liter, for gearbox (2 bottles necessary)
Ord. No. 751 000

Special grease for feed unit,
1 tube ca. 0,10 kg (2 tubes necessary)
Ord. No. 602 005

EMCO: Fabrik für Spezialmaschinen



For more than three decades, EMCO, Maier & Co. has been among Austria's export-oriented manufacturers. Besides the home office and factory in Hallein/Salzburg, two branches are located in Wolfsegg/Oberösterreich and Kuchl-Georgenberg/Salzburg. The production program includes:

- Metalworking and woodworking machines, which allow several working operations without re-setting
- Single-purpos machines for wood-and metalworking
- CNC lathes
- Precision lathe chucks
- EMCOTEST hardness-testing instruments and automatic testing systems.

Today EMCO has 700 employees and produces more than 45,000 machine units per year; 90% of the total yearly production is exported to more than 100 countries on all continents.

Metalworking Machines  EMCO UNIMAT 3	 EMCO COMPACT 5	 EMCO COMPACT 5 CNC	 EMCO COMPACT 8	 EMCO FB-2	 EMCO COMPACT 10
 MAXIMAT SUPER 11	 MAXIMAT V 13	 EMCOTURN	**Woodworking Machines**  EMCO TS-5	 EMCO BS-2	 EMCOSTAR 2000
 EMCO-REX 2000	 EMCO DB-6	**Chucks**  ULTRA-SUPER-FORTE	**Portable Hardness Testers**  EMCOTEST	**Bench Mounted Hardness Testers and Automatics**  EMCOTEST	Ask your dealer for detailed information. New products in preparation. Illustrations do not correspond with actual proportions.

EMCO MAIER & CO., A-5400 HALLEIN/AUSTRIA **81-5 Order No. EN2 447 ENGLISCH**