

## TECHNICAL SPECIFICATION

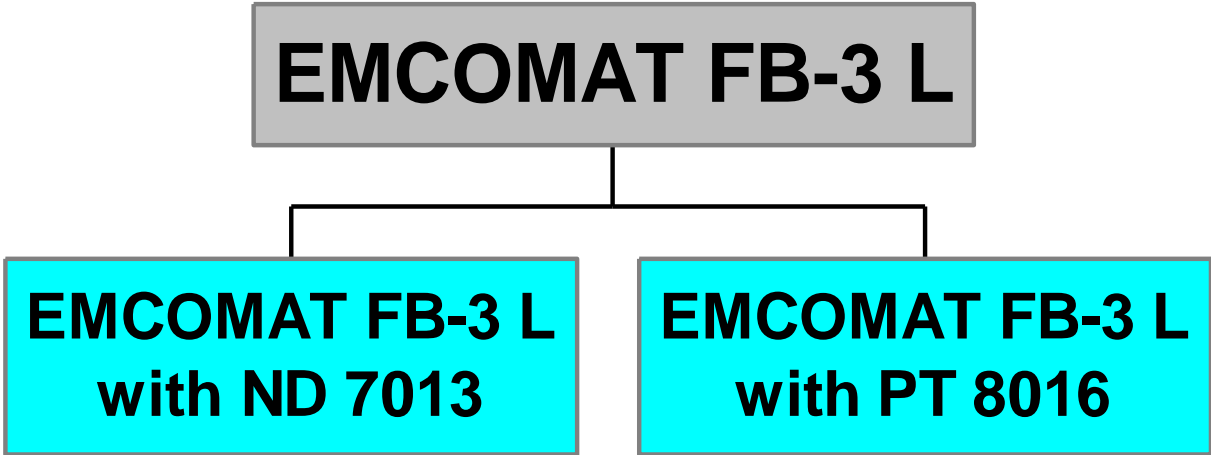
# EMCOMAT FB-3 L

### CONVENTIONAL UNIVERSAL – MILLING MACHINES



CE

**Machines:**



EMCOMAT FB-3 L ..... 3

Clamping device ..... 4

Machine accessories ..... 4

Various accessories ..... 5

Tool mounting ..... 5

Measuring tools ..... 6

Digital read out ..... 7

Lubricants ..... 8

Brochures ..... 8

Manuals ..... 8





Packing ..... 8


TECHNICAL DATA MACHINE EMCOMAT FB-3 L ..... 9

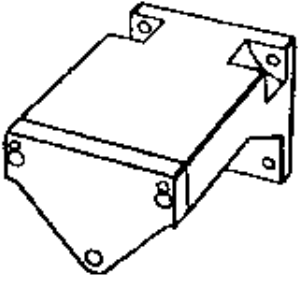
Technical features EMCOMAT FB-3 L ..... 11


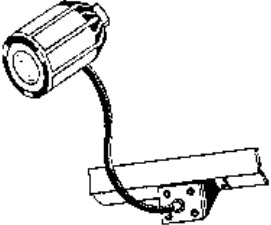
Basic machine EMCOMAT FB-3 L		
	DESCRIPTION	ORDER NO.
<p><b><u>Milling machine EMCOMAT FB-3 L</u></b></p> <div style="text-align: center;">  </div> <p><b><u>Basic machine:</u></b>            Universal Milling- and drilling machine with 8 spindle speeds from 80 - 2200 rpm, stepless automatic feeds in X and Y-axes, toolmaker accuracy similar DIN 8615, working area X/ Y/ Z 300/ 200/ 350 mm, power (100/60%duty cycle) 1,1 / 1,4 kW, manual tool clamping DIN 2080 SK30, el. connection 400/50/3, metric mechanics, machine acc. to the european safty standard (CE),</p> <p><b><u>6AF3M000:</u></b>            Basic machine with mounting set, digital scales and Heidenhain read out <b>ND 7013</b></p> <p><b><u>6AF3S000:</u></b>            Basic machine with mounting set, digital scales and Heidenhain read out <b>Positip PT 8016</b></p>		<p><b>6AF3M000</b></p> <p><b>6AF3S000</b></p>


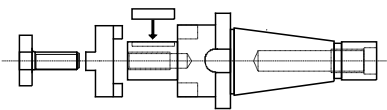
<p><b><u>Basic equipment (standard accessories) EMCOMAT FB-3 L:</u></b></p> <ul style="list-style-type: none"> <li>- Coolant equipment</li> <li>- linear guides in all 3-axis</li> <li>- Rigid angle table 600 x 200 mm</li> <li>- Vertical milling head</li> <li>- Swivel device</li> <li>- Chip tray</li> <li>- Splashboard</li> <li>- Operating tools</li> <li>- Instruction manual and spare parts list</li> </ul>	
--	--

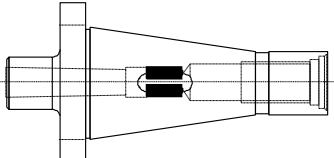

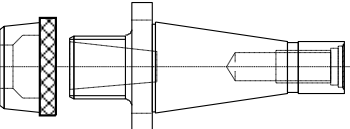


<b>Clamping device</b>		
	DESCRIPTION	ORDER NO.
	<p><b><u>Machine vice mechanical</u></b></p> <p>Clamping width 0-125 mm Jaw width 113 mm</p>	<b>6A781010</b>
	<p><b><u>Machine vice</u></b></p> <p>hydraulic-high-pressure , manual, Röhms RB-K113, clamping width 0-170 mm, jaw width 113 mm, jaw height 31,6 mm, clamping force variable to max. 3000 daN,</p>	<b>6A781081</b>
	<p><b><u>Swivel base</u></b></p> <p>for machine vice 6A781010 and 6A781081</p>	<b>6A781020</b>
	<p><b><u>Set of 1 pcs. Stepped clamping shoe</u></b> incl. screw clamping height 50 - 125 mm</p>	<b>6AF3Z220</b>
	<p><b><u>Set of 1 pcs. Stepped clamping shoe</u></b> incl. screw clamping height 0 - 58 mm</p>	<b>6AF3Z210</b>
	<p><b><u>Set of 1 pcs. Stepped clamping shoe</u></b> incl. screw clamping height 0 - 60 mm</p>	<b>6AC3Z300</b>
	<p><b><u>Lathe chuck 3 jaws, ø125 mm</u></b> with 1 set of internal and 1 set of external stepped jaws (DIN6350)</p>	<b>6AV1D106R</b>
	<p><b><u>Universal table plate for 6AV1D106R</u></b></p> <p>for mounting of the chuck on milling table</p>	<b>6AF3Z230</b>


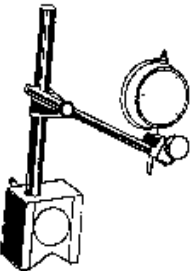
<b>Machine accessories</b>		
	DESCRIPTION	ORDER NO.
	<p><b><u>Electronic monitored Protection</u></b></p> <p>Fitted to an articulated arm, with steel-pipe and polycarbonate hood. Incl. mounting kid</p> <p><b><u>Attention:</u></b> The operating protection must be offered on all machines that are intended for training! The Electronic monitored Protection is a recommendation of the german Berufsgenossenschaft (PG).</p>	<b>6AF3Z380</b>

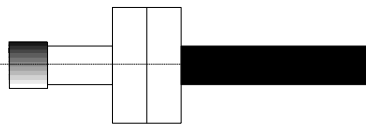

	<p><b><u>Overarm</u></b></p> <p>to use with horizontal milling arbor  Largest tool-diameter: 140 mm  Largest length milling arbor: 200 mm  Diameter sliding bearing: 12 mm  Weight: 12 kg</p>	<p><b>6AF3Z010</b></p>
---	---	------------------------



<b>Various accessories</b>		
	DESCRIPTION	ORDER NO.
	<p><b><u>Levelling element</u></b></p> <p>4 pieces necessary</p>	<p><b>6AF3Z150</b></p>
	<p><b><u>LED Machine lamp 24V, 3W</u></b></p>	<p><b>6AF3Z310</b></p>
	<p><b><u>Special painting</u></b></p>	<p><b>On request only !</b></p> <p><b>Factory fitted only (Class 3) !</b></p>

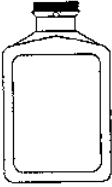
<b>Tool mounting</b>		
	DESCRIPTION	ORDER NO.
	<p><b><u>Horizontal milling arbor DIN2080/SK30</u></b></p> <p>Length 220 mm, take up thread M12  <math>\varnothing</math> 22 mm  <math>\varnothing</math> 32 mm  <math>\varnothing</math> 27 mm</p> <p><b>Overarm 6AF3Z010 necessary</b></p>	<p><b>6A781400</b>  <b>6AF3Z050</b>  <b>6AF3Z250</b></p>
	<p><b><u>Shell end mill arbor DIN2080/(SK30)</u></b></p> <p>take up thread M12  <math>\varnothing</math> 16  <math>\varnothing</math> 22  <math>\varnothing</math> 27</p>	<p><b>6AF3Z100</b>  <b>6AF3Z060</b>  <b>6AF3Z070</b></p>

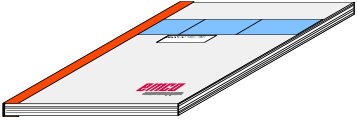
	<p><b><u>Bush socket, short DIN2080 / SK30</u></b></p> <p>SK30/MT2</p>	<p><b>6AF3Z080</b></p>
	<p><b><u>Universal drill chuck 1-13mm DIN2080 / SK30</u></b></p> <p>Incl. wrench</p>	<p><b>6AF3Z120</b></p>
	<p><b><u>Collet holder DIN2080/SK30</u></b></p> <p>for collets ESX-25</p>	<p><b>6AF3Z090</b></p>
	<p><b><u>Set of 16 collets ESX-25</u></b></p> <p>in box</p> <p>Nominal-<math>\varnothing</math> 2 - 16 mm</p>	<p><b>6A225001</b></p>
	<p><b><u>Rapid clamping drill chuck, type 136 supra</u></b></p> <p>1-13 mm chucking, mount B12,</p> <p><b><u>Morse taper arbor MT2-B12</u></b></p> <p>for drill chuck (6A250030)</p>	<p><b>6A250030</b></p> <p><b>6A251010</b></p>

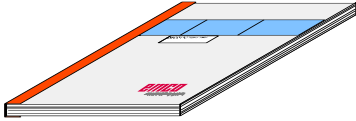
<b>Measuring tools</b>	DESCRIPTION	ORDER NO.
	<p><b><u>Test mandrel DIN2080/SK30</u></b></p> <p>for measuring lengths up to 200 mm</p>	<p><b>6A212510</b></p>
	<p><b><u>Dial gauge with holder</u></b></p> <p>shock protection, fine setting of pointer, scale increments 0,01 mm, measuring range 10 mm, magnetic foot with prism, total height 235mm, weight 1 kg</p>	<p><b>6A565065</b></p>

	<p><b><u>Mechanical edge indicator K1010+4</u></b></p> <p>Double key head <math>\varnothing 4 / \varnothing 10</math> mm Clamping shank <math>\varnothing 10</math> mm</p>	<p><b>6AF1Z090</b></p>
	<p><b><u>KT 130 edge finder</u></b></p> <p>3D-triggering edge finder, shaft 16 h6 mm, only for DRO's ND 7013 and PT 8016</p> <p>for information <a href="http://www.heidenhain.de">www.heidenhain.de</a></p>	<p><b>6A786390D</b></p>

<b>Digital read out</b>		
	DESCRIPTION	
	<p><b><u>3 axis digital readout Heidenhain ND 7013</u></b></p> <p>Display axes X,Y,Z; 7-inch monitor for touch operation; display step 1mm to 0,01 <math>\mu</math>m; User and data management; 100 presets, 100 tools; Reference mark evaluation for distance-coded and single reference marks; Distance-to-go display with nominal position input in absolute or incremental values; Graphic positioning aid; Scaling factor, mirror image, magnifying function; Calculation of positions for hole patterns; Tool radius compensation; Cutting data calculator; Probing functions for ascertain to preset (edge, center line and circle center);</p> <p>for information <a href="http://www.heidenhain.de">www.heidenhain.de</a></p> <p><b>In 6AF3M000 included!</b></p>	
	<p><b><u>Digital readout Heidenhain Positip PT 8016</u></b></p> <p>Display axes X,Y,Z (max. up to 6 axes); 12-inch monitor for touch operation; display step 1mm to 0,01 <math>\mu</math>m; Creation and execution of programs; User and data management; 100 presets, 100 tools; Reference mark evaluation for distance-coded and single reference marks; Distance-to-go display with nominal position input in absolute or incremental values; Graphic positioning aid; Scaling factor, mirror image, magnifying function; Calculation of positions for hole patterns; Tool radius compensation; Cutting data calculator; Probing functions for ascertain to preset (edge, center line and circle center);</p> <p>for information <a href="http://www.heidenhain.de">www.heidenhain.de</a></p> <p><b>In 6AF3S000 included!</b></p>	

<b>Lubricants</b>		
	DESCRIPTION	ORDER NO.
	<b><u>Gear oil (1 bottle = 1 l) Mobil DTE 25</u></b>	<b>6A751000</b>

<b>Brochures</b>		
	DESCRIPTION	ORDER NO.
	<b><u>Brochure milling conventional</u></b> EMCOMAT FB-3, EMCOMAT FB-450 L, EMCOMAT FB-600 L	<b>6ADE7836 6AEN7836 6ATA7836 6AFR7836 6ASP7836</b>

<b>Manuals</b>		
	DESCRIPTION	ORDER NO.
	<b><u>Operation manual and service parts list EMCOMAT FB-3 L</u></b>	<b>6ADE7808 6AEN7808 6AFR7808 6ATA7808 6ASP7808 6ARU7808</b>

<b>Packing</b>		
	DESCRIPTION	ORDER NO.
	<b><u>Climate packing EMCOMAT FB-3 L</u></b> Consisting of: pallet, dehumidifier, aluminium-cover and miscellaneous	<b>6AZVP547715</b>
	<b><u>Wooden box EMCOMAT FB-3 L</u></b> Additional protection for critical transportation. (Attention: additional to standard or climate packing)	<b>6AZVP301801</b>



**TECHNICAL DATA MACHINE EMCOMAT FB-3 L**

<b>WORKING AREA</b>		
Longitudinal travel (X-axis)	[mm]	300
Vertical travel (Z-axis)	[mm]	350
Cross travel (Y-axis)	[mm]	200
<b>MILLING TABLE</b>		
<i>Table size vertical (length x width)</i>	[mm]	600x180
Width of T-slots	[mm]	12x21
Distance between slots	[mm]	90
Number of T-slots	[pcs]	2
Max. workpiece-weight	[kg]	50
<i>Table size horizontal with knee (length x width)</i>	[mm]	600x200
Width of T-slots	[mm]	12x21
Distance between slots	[mm]	45
Number of T-slots	[pcs]	4
Max. workpiece-weight	[kg]	50
<b>HORIZONTAL MILLING SPINDLE</b>		
Tool clamping DIN2080	[SK]	30
Spindle speeds		8
Spindle speed range	[rpm]	80-2200
80-160-245-360-490-720-1100-2200	[rpm]	
Distance between horizontal milling spindle - milling table	[mm]	80-430
<b>SWIVELLING VERTICAL MILLING HEAD</b>		
Tool clamping DIN2080	[SK]	30
Sleeve stroke	[mm]	45
Swivelling vertical milling head	[°]	±90
Spindle speed		8
Spindle speed range	[rpm]	80-2200
80-160-245-360-490-720-1100-2200	[rpm]	
Distance between vertical spindle nose and milling table	[mm]	35-385
<b>MAIN DRIVE</b>		
IEC-standard motor (IP54), 2-steps		
Power 100% / 60% duty cycle	[kW]	1,1/ 1,4
Nominal motor speed	[rpm]	1400/2800
max. torque at main spindle	[Nm]	98
<b>FEED DRIVE</b>		
Feed drive X and Y-axis 100% ED	[N]	1600
Variable feed in X and Y-axis		stepless
Feed range X and Y/ Z axis	[mm/min]	50-550/ manual
Rapid traverse X, Y / Z axis	[mm/min]	1200/ manual
Feed power X,Y (100 mm/min)	[N]	8000

<b>COOLANT SYSTEM</b>		
Coolant pump motor power	[W]	86
Tank capacity	[liter]	30
Max. coolant output	[l/min]	30
<b>GRADUATED COLLAR DIVISION OF HANDWHEELS</b>		
X, Y and Z-axis	[mm]	0,01
Sleeve	[mm]	0,5
<b>ELECTRICAL CONNECTIONS</b>		
Voltage supply 3 ~ /PE	[V]	400
Voltage tolerance	[%]	+6/-10
Frequency	[Hz]	50
Electr. Connection	[kVA]	3,0
Fuse	[A-inert]	16
Temperature (humidity 20-75%)	[degree]	10 – 35
<b>DIMENSIONS</b>		
Length	[mm]	1150
Width	[mm]	1410
Height	[mm]	1550
Weight (with vertical milling head and table)	[kg]	500
<b>PAINTING</b>		
Light-grey	RAL Nr. 7035	
Red	RAL Nr. 3020	
Graphit-grey	RAL Nr. 7024	
<b>SOUND-PRESSURE-GAGE</b>		
Max. sound pressure-value by following conditions: <ul style="list-style-type: none"> <li>• Method of measurement: enveloping surface method acc. DIN 45635</li> <li>• Measuring point: 1 m distance and 1,6 m over the floor</li> <li>• Working condition: highest spindle speed in idle running</li> </ul>	[dB (A)]	82

## Technical features EMCOMAT FB-3 L

### MACHINE CONCEPT

- The thousandfold proved FB-3 universal milling and drilling machine are going directly to the user in the field of production. The new features of the EMCOMAT milling machines FB-450 L and FB-600 L are high cutting ability, robust heavy make, a maximum of precision and universal use by best price-performance ratio.

### OPERATION FRIENDLY

- Swivellable control panel
- Integrated coolant equipment
- Graduated collar division 0,01 mm
- Swivelling chip tray
- Automatic feed switch off in 2 axes with adjustable working area limiting (Option)
- Swivell device for vertical milling head with ball bearings
- Max. sound pressure value dB(A) 80

### DIGITAL POSITION DISPLAY

- Integrated Heidenhain scales LS 388 C in basic machine
- Heidenhain ND 7013
- Heidenhain Positip PT 8016

### SAFETY

- All dangerous possibilities are covered
- Chip guard protection of the working area
- safty-hand-wheels in 2 axes
- Brake motor with LENZE brake
- 24 V halogen lamp
- Control-circuit-voltage 24 V
- 2 emergency-OFF-switch
- Mechanic and electric acc. to the european saftey standard
- Lockable main switch
- CE

### LONG SERVICE LIFE

- Rigid cover for X and Z guiding ways
- Manual lubrication of all bearings cog-wheels and thread spindle - nuts
- All cog-wheels and shafts inside the headstock are hardened and grinded
- Linearguidways in all 3 axis

### ACCESSORIE PROGRAMM

Universal dividing head, circular table, overarm for horizontal milling arbor, boring and facing head, etc.