

FMB



Minimag 20 & Turbo 2-20

The FMB Minimag 20 and Turbo 2-20 are Automatic Magazine style Bar Feeders for processing bars in the diameter range of 2-20 mm in lengths from 12' to 14' on CNC lathes. Equipped with a Swiss type headstock synchronization device, peck drilling and threading on small diameter bars is simple and done with close tolerances. To increase the productivity on your Swiss type lathe, the Minimag 20 and Turbo 2-20 are two smart choices.

Minimag 20 & Turbo 2-20

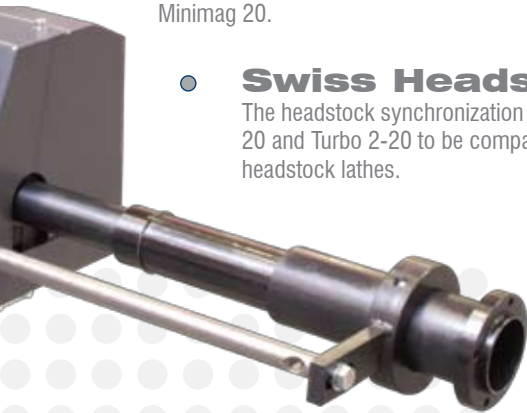
FMB
M a c h i n e r y

The FMB Minimag 20 and Turbo 2-20 are automatic bar loading magazines for processing bars in the diameter range of 2-20 mm and in lengths up to 12' or 14' on machine tools.



- The FMB Minimag 20 & Turbo 2-20 are designed to automatically feed round, square or hexagonal bars into CNC lathes.
- Oil filled polyurethane guide channels provide the ideal guiding system while reducing noise and vibration to a minimum. The guide channel size can be changed to allow the processing of the smallest bar diameters and it is securely closed with a very efficient, air operated, toggle lever system. Channel changeovers can be performed in as little as 10 minutes.
- The space needed to load the magazine is minimized since the bars are placed on the storage table (7 inches wide) at the side of the guide channel.
- Bars within a larger diameter range can be accommodated within one guide channel size.
- The bar remnant is withdrawn to the back end of the magazine. A gripper extracts it from the bar stock collet. No manual adjustments are necessary.
- The Turbo 2-20 utilizes a dual bar pusher design to shorten the overall length of the bar feeder by 28", compared to the overall length of the Minimag 20.

- **Swiss Headstock Sync.**
The headstock synchronization device allows the Minimag 20 and Turbo 2-20 to be compatible with fast moving, sliding headstock lathes.



● Control Panel

Easy options guarantee the interaction between the bar feeder and the CNC lathe. Parameters are clearly shown on the text display. Positioning of the limit switch is no longer necessary.



● In-Feed control

The new bar is automatically positioned in the lathe ready for facing before the first component is produced.

● Profiled Material

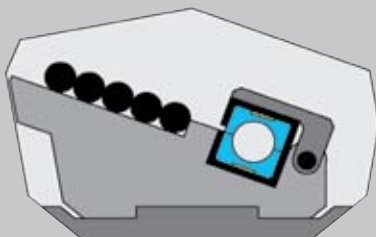
The feed mechanism is automatically pulsed to ensure the profiled material is successfully located in the lathe collet/chuck.

● Quick Change Guide Channels

Polyurethane guide channels offer quick changeover to different bar stock. Within minutes, the bar feeder is converted to the new channel set. The Minimag 20 and Turbo 2-20 guide channels run 2-20mm bar stock.

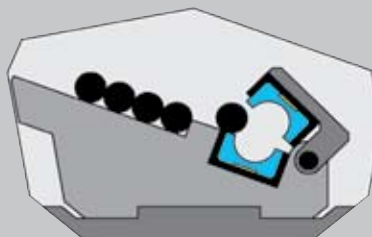


The mode of function of FMB loading magazines



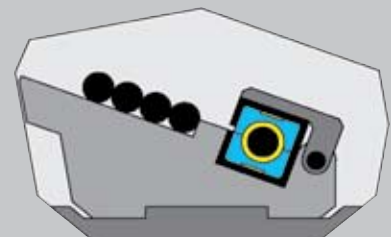
Loading

The storage capacity is 7 inches.



Bar Separation

The material is loaded from the bar storage table into the guide channel.



Processing

Support of the bar within the oil-filled guide channel.

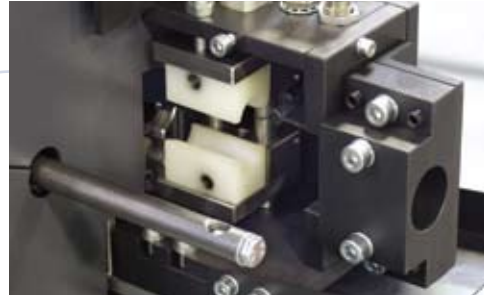
- **Bar Pusher**

A swing out design bar pusher system reduces the total length of the loading magazine. (Turbo 2-20 only)



- **Block Steady Rest**

This device guides the round and profiled bar material between the guide channel and the lathe. Steady blocks should be changed every .25" of bar diameter variance.



- **Control**

Omron SPS control with position sensor. Flexible control of length and rate of feed guarantee the optimum and economic use of the magazine.



- **Gripper**

A mechanical gripping device is used to both insert the new bar into the bar stock collet and to extract the remnant. It is not necessary to chamfer the bar if it is cleanly cut. No adjustment for bar size is necessary. "Self-Centering".



- **Bar Stock Alignment Guides**

The design of the material guides on the storage table efficiently keeps the bars separate and yet are simple and easy to adjust for different material sizes. This helps to reduce bar diameter changeover time.



- **Length Monitoring**

By inserting maximum and minimum length dimensions into the control, it serves as a safety device, shutting down the magazine if a mis-feed should occur.

FMB Guide Channel

The channel is filled with hydraulic oil from the storage tank. The rotation of the bar creates turbulence which keeps it in the center of the channel. The higher the rotation speed the better centralization effect, therefore the magazine will help the lathe to achieve optimum cutting conditions.

If the diameter of the bar stock is close to that of the channel, very little turbulence can be created by rotation and thus the hydrodynamic bearing effect supports the center of the channel.



Minimag 20 & Turbo 2-20



Technical Data

- **Power consumption**
1.5 kW
- **Feed force**
adjustable, max. 300 N
- **In feed rate**
adjustable from 0-300 mm/sec
- **Forward feed rate**
adjustable max. 300 mm/sec
- **Return feed rate**
600 mm/sec
- **Loading time**
Turbo 2-20: 26 sec (for 12 foot bars)
Minimag 20: 17 sec (for 12 foot bars)
- **Oil capacity**
50 liters (13.2 gallons)
- **Oil viscosity**
150 cST at 40°C
- **Operating voltage**
230 V/60 Hz (standard)
- **Compressed air supply**
6 bar (90psi)
- **Compressed air consumption**
approx. 3 liters per loading action
- **Weight without oil**
12' - 1650 lbs (approx.)
14' - 1750 lbs (approx.)
- **Remnant length**
420 mm max. (16.5")

Options Available

- **Maximum Bar Length**
Minimag 20 and Turbo 2-20:
3800 mm (12'5") and 4200 mm (13'8")
- **Bar Diameter Range**
Minimag 20 and Turbo 2-20:
2-20 mm

Loading Configurations

Type A/D - Standard



Type B/C - Optional



Standard Guide Channel Sizes

Channel Size	Maximum Bar Size Capacity (mm)		
	Round Diameter	Hex A/F	Square A/F
5	3(5)	2(4)	2(3)
7	5(7)	4(6)	3(5)
10	8(10)	7(8)	5(7)
12	10(12)	8(10)	7(8)
13	11(13)	9(11)	7(9)
15	13(15)	11(13)	9(10)
16	14(16)	12(13)	10(11)
18	16(18)	13	11
20	18(20)	15	13
22	19(22)	16	14
23	20(23)	17	15

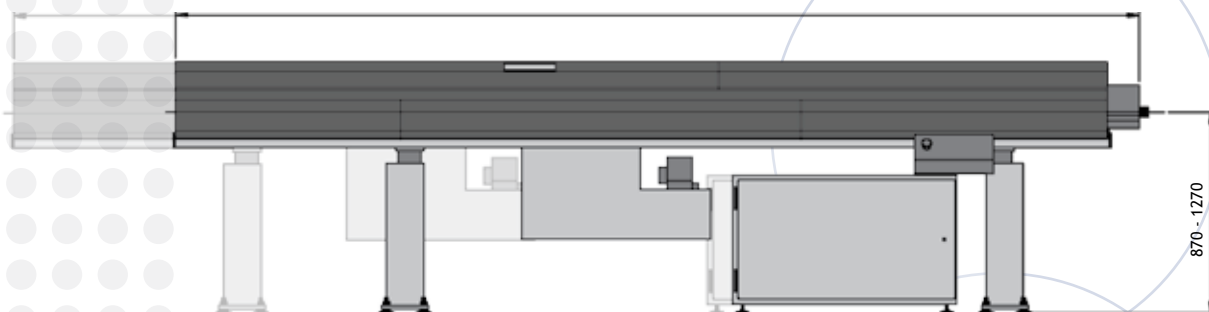
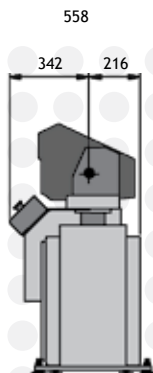
(*) Diameters in brackets can be achieved if bar ends are turned down or if forward ejection of the bar remnant is possible.

Minimag 20

5610 (Bar length 3800 - 12'5")
6010 (Bar length 4200 - 13'8")

Turbo 2-20

4796 (Bar length 3800 - 12'5")
5196 (Bar length 4200 - 13'8")



Technical data subject to change without notice

EDGE TECHNOLOGIES ○ A DIVISION OF HYDROMAT INC.

11600 ADIE ROAD MARYLAND HEIGHTS, MO 63043

314.692.8388 f 314.692.5152 ○ www.edgetechnologies.com