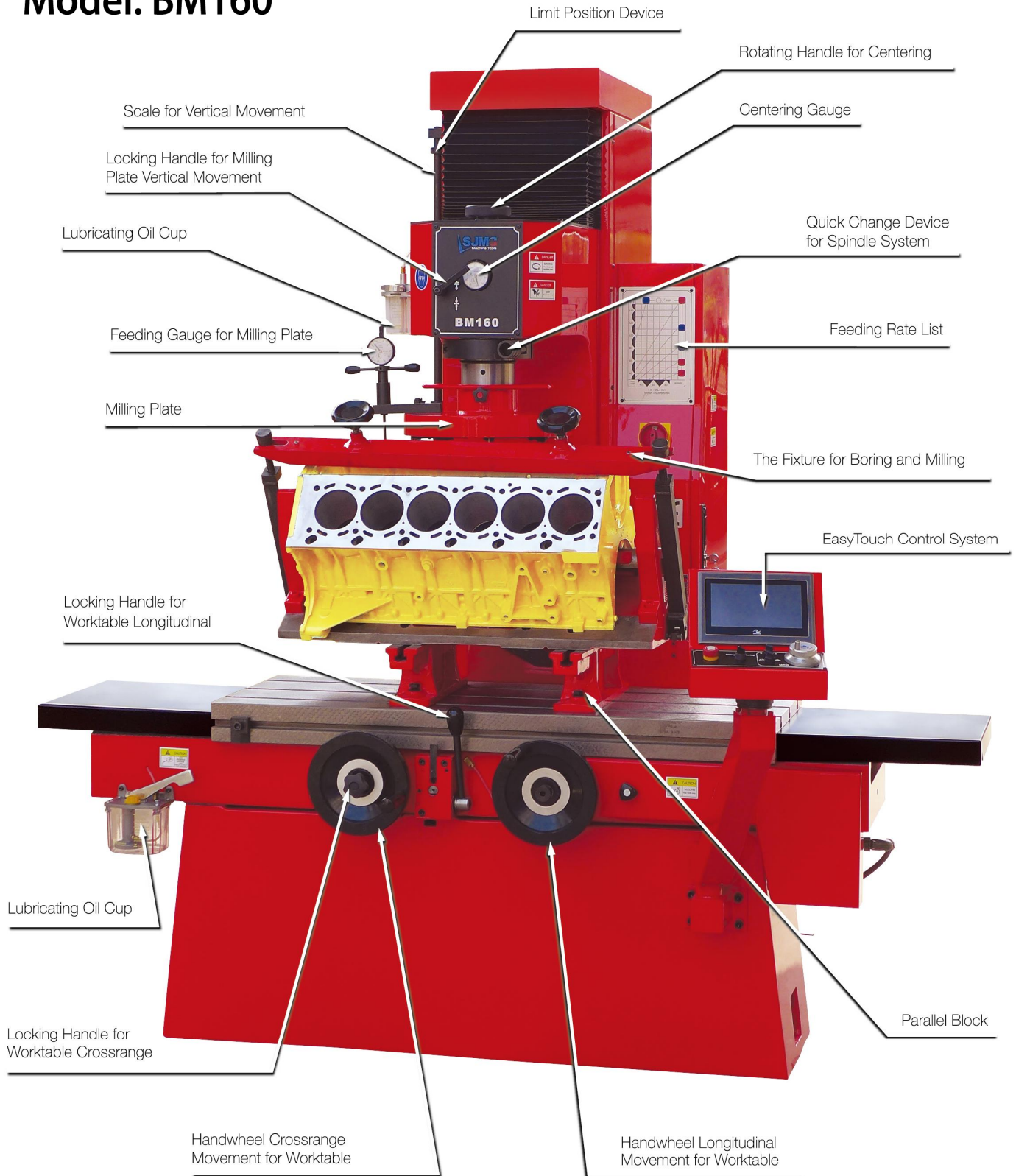


Vertical Fine Boring - Milling Machine

Model: BM160



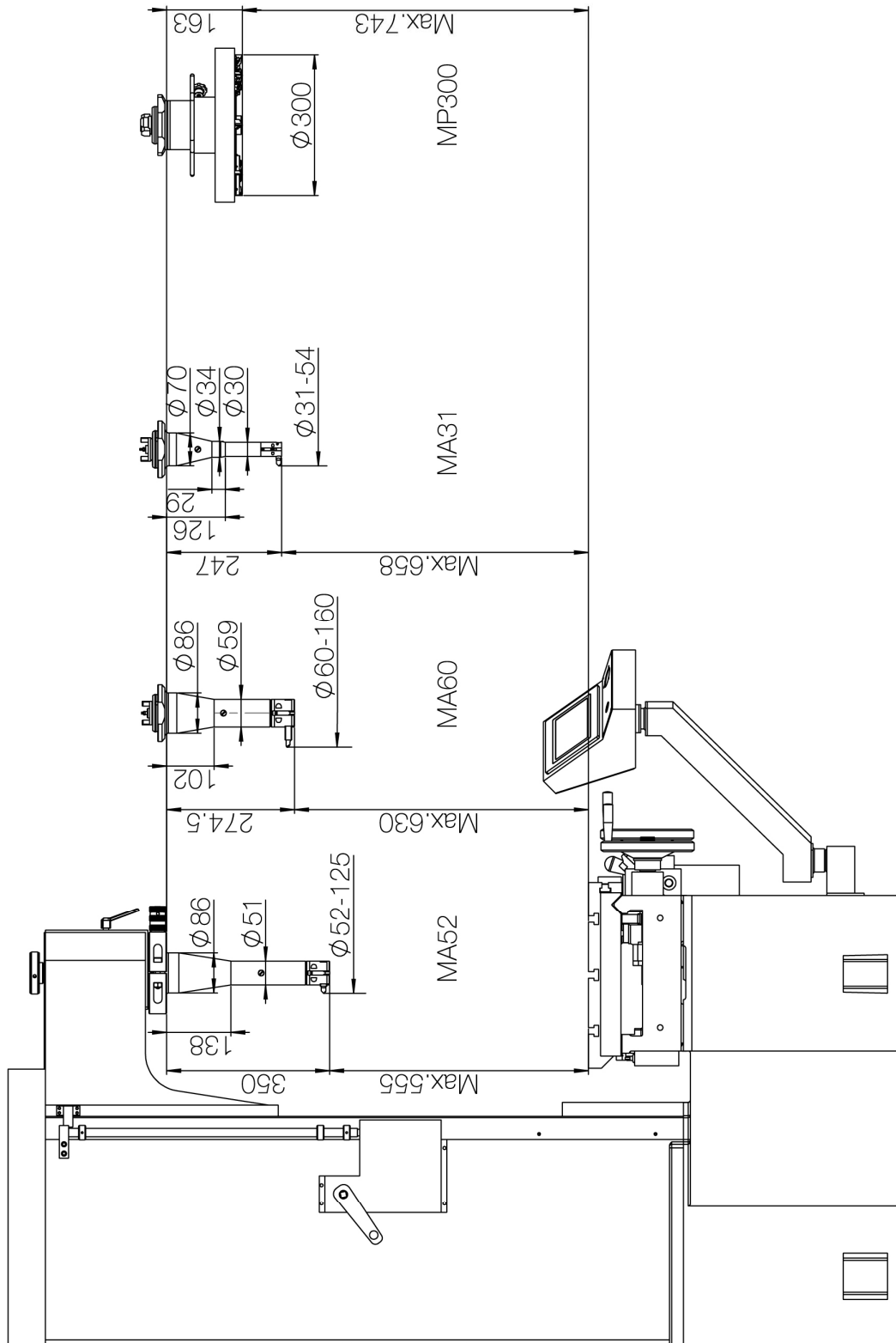
The Vertical Fine Boring - Milling Machine BM160 has combined all functions and simple performance of the traditional Cylinder Boring Machine with the easy-to-operate SPMC EasyTouch control system. Through the joint operation of the standard mechanical handwheel and the electronic handwheel, the boring of the cylinder body and the machining of the milling plane can be easily accomplished. With the excellent EasyTouch system, even a new hand can easily learn to operate the machine.

Main Specification

Model	BM160	B160
Control System	EasyTouch 3 Axis	Without
Boring Capacity	160 mm	
Max. Boring Depth	350 mm	
Max. Milling Area (LxW)	300x800 mm	Without Milling
Spindle Speed	50 ~ 780 rpm stepless	
Spindle Feeding	10 ~ 900 mm / min (0.01 ~ 0.2 mm / r)	
Rated Torque of Boring at 50-500 rpm	120 N.M	
Rated Torque of Boring at 500-780 rpm	100 N.M.	
Spindle Traverse	550 mm	
Distance Between Spindle End Face and Work Table	0 ~ 700 mm	
Distance between Spindle Axis and Carriage Vertical Plane	335 mm	
Longitudinal Feeding of Work Table by Electric	30 ~ 1200 mm / min	Hand Movement
Longitudinal Quick Travel of Work Table by Electric	1200 mm / min	Hand Movement
Longitudinal Traverse of Work Table	830 mm	
Cross Traverse of Work Table	70 mm	
Work Table Size (LxW)	400x1100 mm	
Boring Accuracy	H7	
Working Accuracy of Roundness for Boring	0.005 mm	
Working Accuracy of Cylindricity for Boring	0.015 mm / 300 mm	
Working Accuracy of Flatness for Milling	0.0127 mm / 305 mm	Without Milling
Surface Roughness of Boring	Ra 0.8	
Surface Roughness of Milling	Ra 0.8	Without Milling
Power of Spindle Motor	4 kW	
Motor Power of Work Table Movement	0.4 kW	Hand Movement
Motor Power of Spindle Vertical Movement	0.4 kW	
Overall dimensions (LxWxH)	2670x1170x1920 mm	
Package Size	2200x1200x2200 mm	
N.W.	1600 Kg	
G.W.	1900 Kg	
Note: Model B160 is just Boring Machine without Milling Function		

* All technical data and photos are subject to change due to designing without notice.

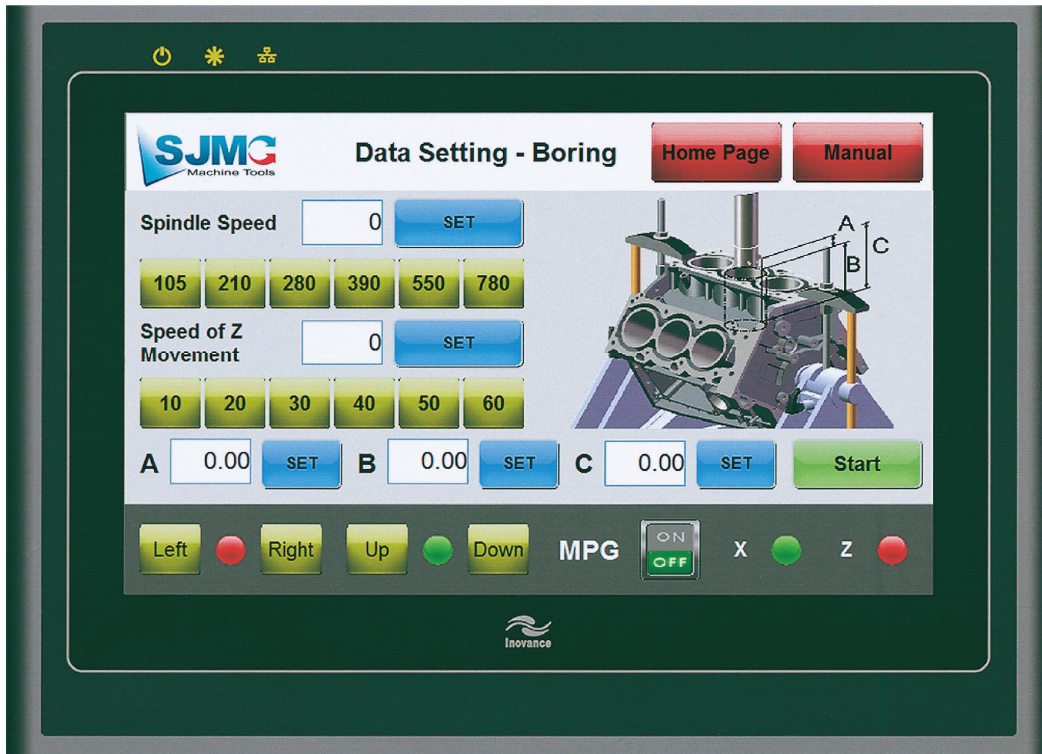
Spindle System Diagram



Features

1. EasyTouch control system

The left and right movement of the table, the up and down of the spindle, as well as the rotation of the spindle, are all driven by servo motors, which by combing with the specific SPMC EasyTouch system, achieves the accurate numerical control of three-axis movement on the whole machine.



2. Small size to output high torque

BM160 is in compact design, with its working area of 1.5 m² less than those of the similar machines. However, with maximum operating torque of 120N.M, its small size shows powerful processing capability. Due to BM160 spindle driven by 4kW servo motor and equipped with heavy load belt transmission system, the spindle is capable of a constant powerful torque output 120N.M at 200 to 500 RPM, and it can even maintain a constant output 100N.M at the higher speed of 500 to 780 RPM. The high torque output at high speed ensures the high efficiency of BM160.

3. Precise and powerful spindle system

The deliberately designed spindle system with 3 spindles from small to large, you can hold one of which by one hand easily, plus the more artful quick change structure, contributes to the change of different spindle within 5 min by a person. Although the spindles are all exquisite, their cutting load capacities are strong. The penetration of a cutting tool at one side of MA52 and MA60 spindle can reach 1.5mm, with boring precision 0.005 mm.

4. BM160 milling cutter is equipped with 8 cutters, and the milling feed at one time for facing is 1mm, so that no matter cast iron or aluminum part, the ideal surface roughness can be achieved. With flatness exceeding 0.013mm/300mm, its machining precision achieves the grinding effect and thus it can take the place of grinding with milling.

5. the Machine body is Resin sand casting, tensile strength ≥ 250N/mm. Hardness is HB190~240.

6. Manual scraping Guide

- a.straightness accuracy: 0.015mm/1000mm
- b.parallelism: 0.020mm/1000mm
- c.surface roughness: Ra. 0.63μm

7. Manual scraping work table

- a.straightness accuracy
- b.flatness
- c.surface roughness

8. Transmission parts: Taiwan YYC gear rack Din. 7 grade precision, full surface by grinding, high-frequency quenching. Germany NEUGART gear box.



9. Spindle bearing : NSK INA , KOYO

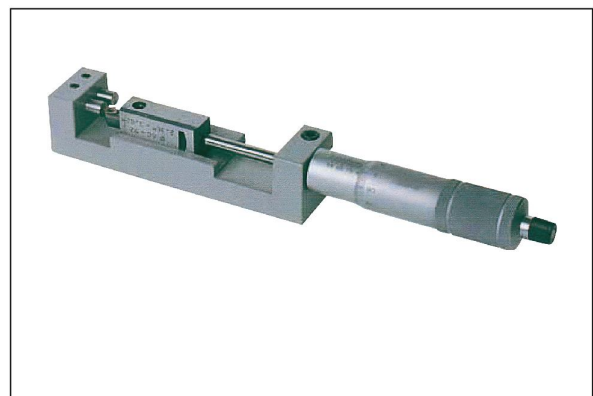


Accessories and Equipment:

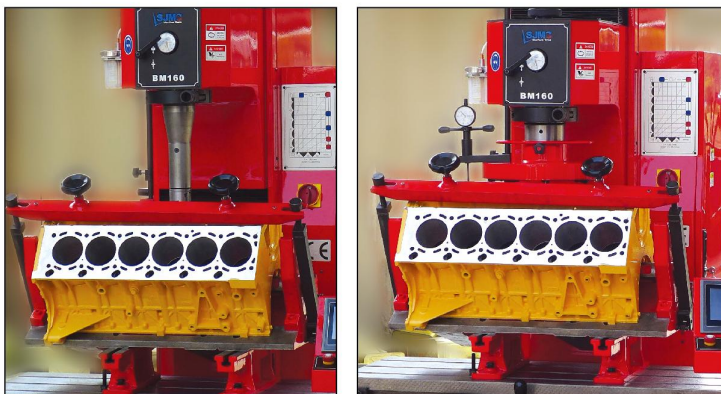
1 Tools Setting Guage on Spindle M30



2 MA52 Measuring Device for Setting Tool



3 30° and 45° V-fixture for Boring and Milling



4 Parallel Block



5 30° and 45° V-fixture for Boring



6 Universal Cylinder Head Fixture A



7 Quick Acting Fixture



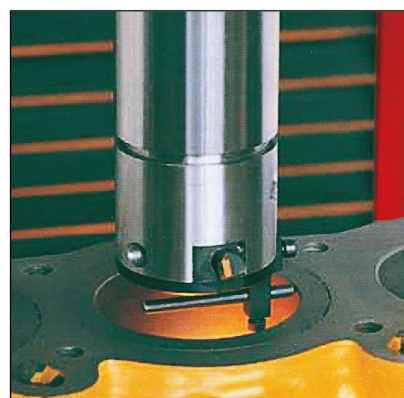
8 Universal Cylinder Head Fixture B



9 Motorcycle Cylinder Fixture



10 Centering Device of Spindle



11 Boring Spindle MA52
(ϕ 52mm - ϕ 125mm)



12 Boring Spindle MA60
(ϕ 60mm - ϕ 160mm)



13 Boring Spindle MA30
(ϕ 31mm - ϕ 54mm)



14 Milling Head MP300
(ϕ 300mm)



15 Universal Adaptor for
Milling Cutter and Bush



16 Bush with No. 3 Morse Taper



17 Adapter of Spindle System Quick Change Device



18 Tools holder and Boring Cutter



19 Dial Gauge



20 Bore Gauge



21 This handle is only to be used in the condition of no power



22 EasyTouch Control System for BM160



23 Tools Grinder TG-III



Table of Standard Acc. & Equipment, Optional Acc. & Equipment

Model	Standard	Optional
BM160	2, 4, 10, 11, 12, 14, 15, 16, 17, 18, 19, 21, 22	1, 3, 5, 6, 7, 8, 9, 13, 20, 23
B160	2, 4, 10, 11, 12, 17, 18, 19, 21	1, 3, 5, 7, 8, 9, 13, 20, 23

Required Space

