Used Machine

Modernized Froriep boring & milling machine

Model OFB 160

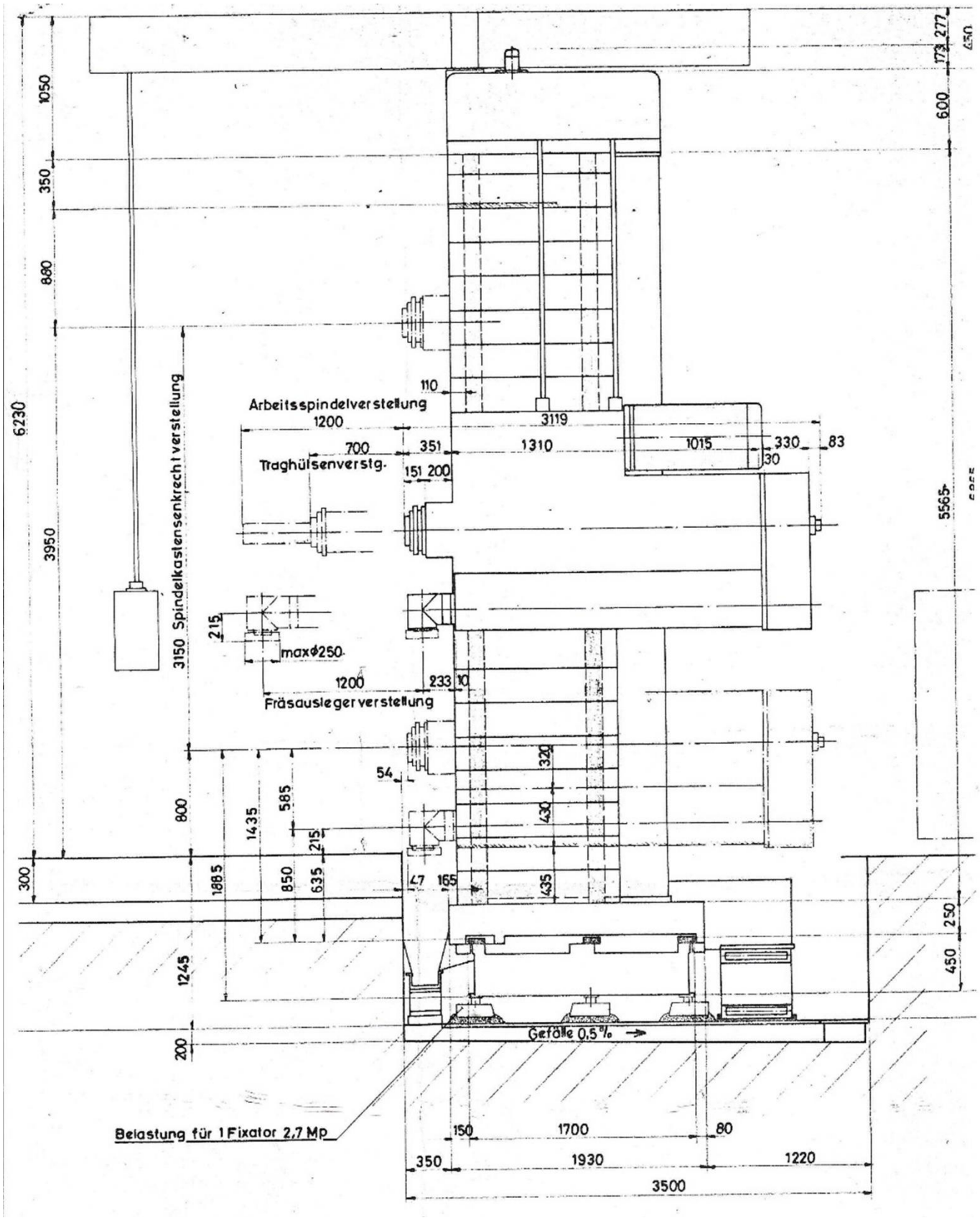
Equipped With

- A right-angled milling head permanently fitted to the underslung ram.
- A universal milling head to be loaded onto the main ram with a manual attachment changing system.
- A new 2-axis rotary table fully integrated as a 6th and 7th axe.
- New Fanuc 31i CNC system capable of controlling 7 axes, which two axes control the rotational and linear axes of the 2-axis rotary table.
- A set of telescopic covers on the main bed on both sides of the column.
- A flood coolant system with new pump and tank.
- The original operator platform.
- A set of 8 off T-slotted floor plates measuring 10.8 x 5.4 meter in total.
- A full-length chip conveyor (new in 2009).

Specifications - Froriep

Description	
Longtravel (X-axis)	10000 mm
Vertical travel (Y-axis)	3150 mm
Ram stroke (Z-axis)	700 mm
Boring spindle stroke (W-axis)	1200 mm
Underslung ram stroke (W2-axis)	1200 mm
Boring spindle diameter	160 mm
Spindle taper of milling head	ISO 50
Main motor power	50 kW
Spindle speed range	1.6 – 1000 rpm
Axis feed rate	0 – 3 m/min
Axis rapid rates	4 m/min
Total machine weight	55 tons
Floor plate area (8 separate floor plates)	10.8 x 5.4 meter
Year of original manufacture	1973
Year of CNC retrofit	2019

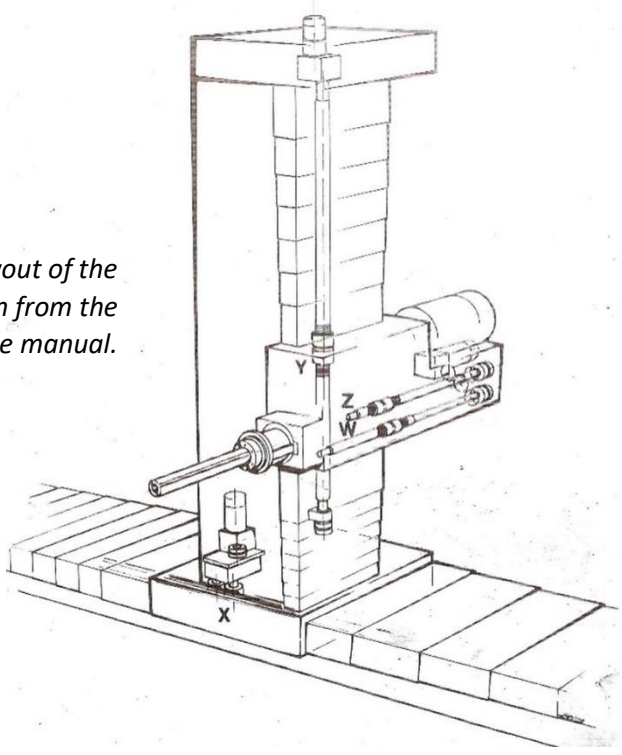
Froriep Layout



The machine axes are defined as follows

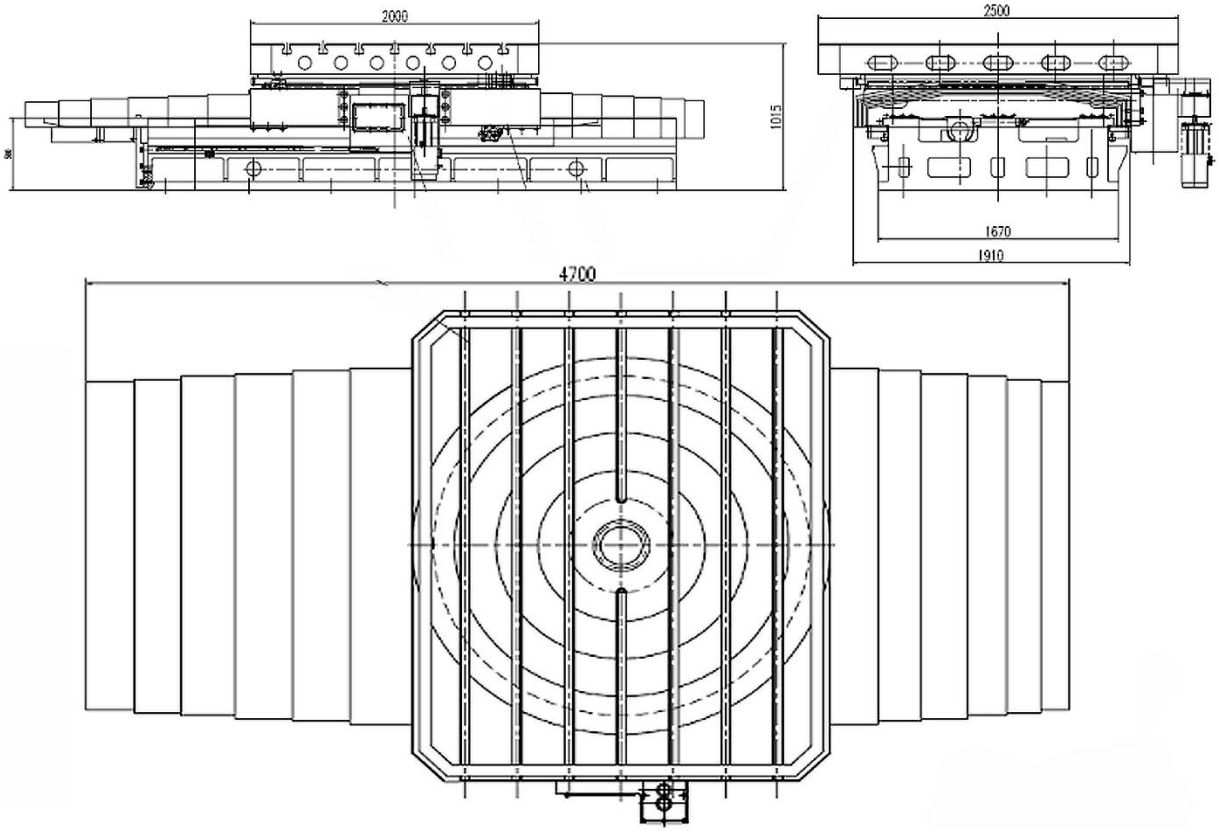
Axis layout of basic machine		
Description of axis	**Type of axis**	**Method of measurement feedback**
1. Long travel of column (X-axis)	Full CNC axis, with digital servo motor driving double pinion on rack through low-backlash drive train.	Motor encoder feedback
2. Vertical travel of headstock (Y-axis)	Full CNC axis, with digital servo motor driving precision-ground ball screw through low-backlash drive train	Motor encoder feedback
3. Axial stroke of ram (Z-axis)	Full CNC axis, with digital servomotor driving ballscrew thru low-backlash gearbox.	Motor encoder feedback
4. Axial stroke of boring spindle (W-axis)	Full CNC axis, with digital servomotor driving ballscrew thru low-backlash gearbox	Motor encoder feedback
5. Axial stroke of underslung ram (W2-axis)	Full CNC axis, with digital servomotor driving ballscrew thru low-backlash gearbox.	Motor encoder feedback
6. Main spindle	Spindle motor driving boring spindle through headstock drive train	Rotary encoder feedback, with accurate spindle orientation for rigid tapping and feed/rev.
7. Underslung ram milling head	Spindle motor driving milling head through ram drive train	Motor feedback only

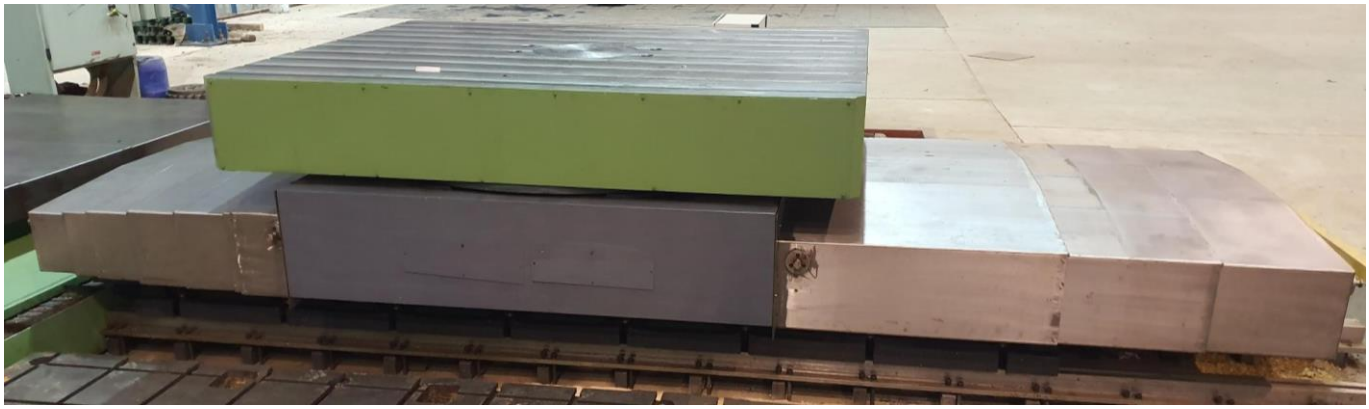
Basic axis layout of the machine, as taken from the original machine manual.



Specifications - 2-axis Rotary Table

Description	
Load capacity	20 tons
V-axis stroke	1200mm
Table surface	2500 x 2000mm
Rotational speed	0.001 – 0.05 rpm
Linear feed rate	2.5 – 150 mm/min
Rapid rate of V	2 m/min





Pictures