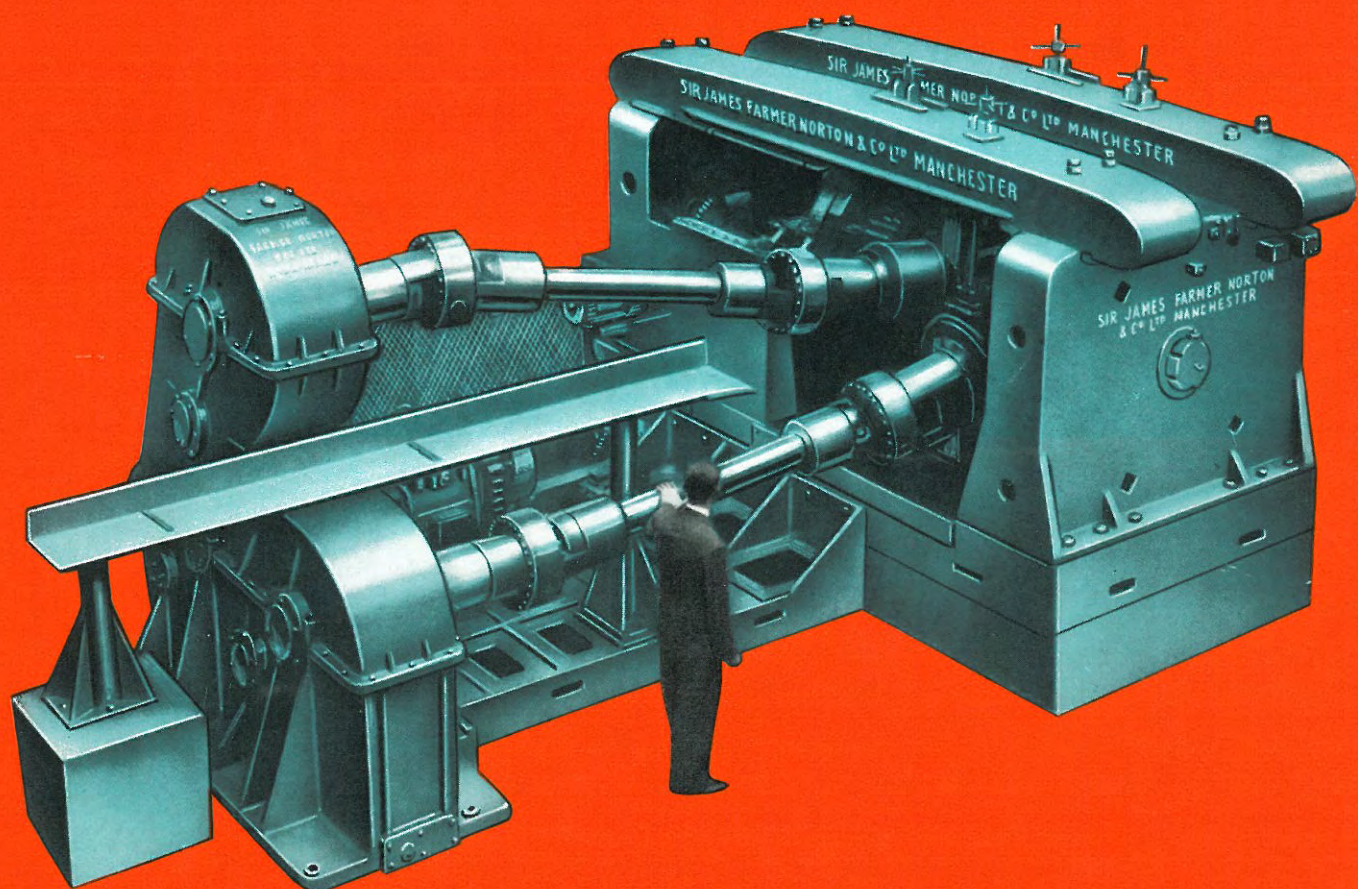


bar straightening machines



F a r m e r N o r t o n

FARMER NORTON

As manufacturers of bar straightening and reeling machines for the past 50 years, we have pleasure in presenting the latest leaflet of standard machines which will handle bars from $\frac{1}{8}$ " (3.2 mm.) up to 7" (180 mm.) diameter in mild steel and from $\frac{1}{8}$ " (3.2 mm.) up to 5" (127 mm.) diameter 70 ton tensile steel. These machines are suitable for precision straightening and reeling of both black and bright bars ranging from low tensile non-ferrous materials up to 100 tons per square inch heat treated alloy steels including stainless steels, nimonic titanium, uranium, etc.

They are essential for initial straightening of black rolled or extruded bars prior to subsequent operations such as centreless grinding, centreless turning and machining in automatics and for final straightening and reeling after drawing, centreless grinding and centreless turning, etc.

The Adjustable Angle 2—Roll Machine is the only known type of machine which will effectively produce perfect end to end straightening by removing "end kinks" as well as "middle bends" at one pass through the machine. We have concentrated on this design and our extensive experience enables us to offer correct profiles of rolls, to suit the various materials to be straightened.

In addition we manufacture rolling mill and auxiliary equipment, piercing machines, drawbenches (bar and tube), bar shears, centreless bar turning machines and wire drawing machinery. We are in a position to prepare plant layouts with completely automatic handling equipment for both bar and tube manufacture employing a minimum of labour.

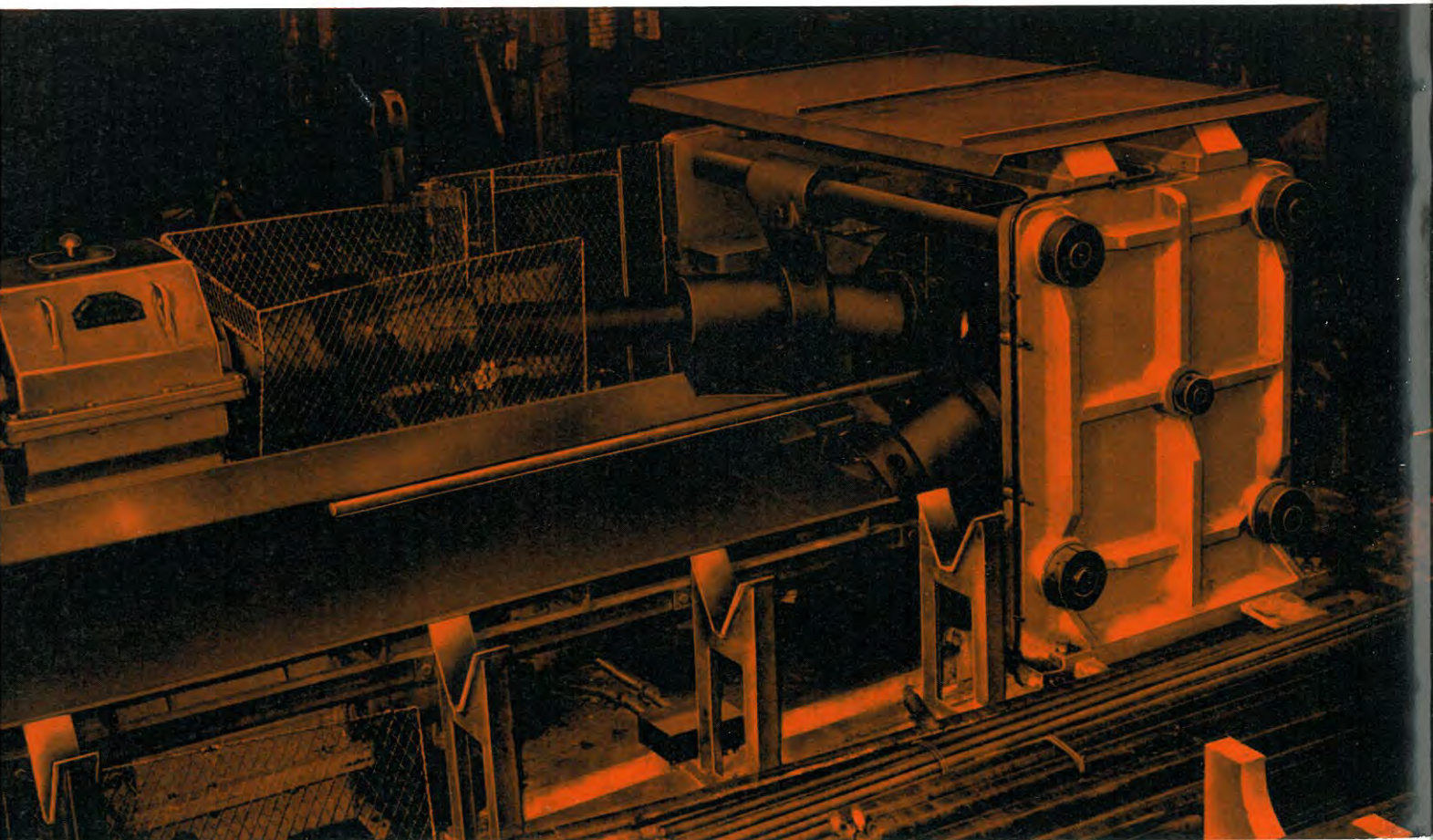
Front Cover

No. 5 Bar Straightening and Reeling Machine.
Capacity $2\frac{1}{4}$ " to $7\frac{1}{2}$ " diameter maximum.

Machine à dresser les barres No. 5.
Capacité 57 mm. à 191 mm. diamètre maximum.

Stangenricht- und Glättmaschine Nr. 5.
Kapazität 57 mm. bis 191 mm. Maximaldurchmesser.

No. 4B Bar Straightening and Reeling Machine
straightening ENCON continuous cast bronzes and gunmetals
(By kind permission of Enfield Rolling Mills Ltd.)



BAR STRAIGHTENING MACHINES

SPECIFICATION

MAIN FRAME

The robustly designed fabricated steel or box section cast iron main frame is accurately machined where necessary and fitted with large diameter steel tie bars or box section steel braces designed to withstand the outward thrust when straightening the largest bars within its capacity. The box section base is of cast iron and is arranged to return coolant to the tank when bright reeling and to collect scale, etc., when black straightening. The centre portion is accurately machined for mounting the bottom support guide housing.

ROLL HOUSINGS

The rigid cast steel roll housings are designed for heavy duty and are accurately machined where necessary. Both roll housings are provided with angular adjustment to suit the bars being straightened. Lateral adjustment to the "parallel" roll covers the full range of bar diameters and is obtained by screws geared to a large diameter hand-wheel situated at the front of the machine. The No. 5 size machine is fitted with both power and hand operated adjustment.

ROLLS

Standard rolls are of special alloy steel but certain applications require chilled iron rolls and these are supplied as and when necessary. Special roll profiles have been developed to suit all materials. Both rolls are accurately ground after hardening to the correct profile to suit the range of materials for which the machine is intended. The rolls are mounted on roller bearings and fitted with anti-friction thrust bearings designed to withstand the heavy duty required of them. The housings are capped to facilitate erection and maintenance so ensuring quick roll change when necessary.

GUIDES

The machines are provided with bottom support guides, the guide blades being of material suitable for the bars to be reeled or straightened. A complete set of blades is supplied to suit the capacity of the machine. They fit into

a specially designed holder and are arranged for side and vertical adjustment to suit the bar diameters. All machines can be fitted with top guide blades if so required.

ROLL LUBRICATION

Machines are fitted with self contained motor driven pump and tank units for supplying lubricant to the roll faces. The surplus lubricant is collected in the main base and returned to the tank.

UNIVERSAL COUPLINGS

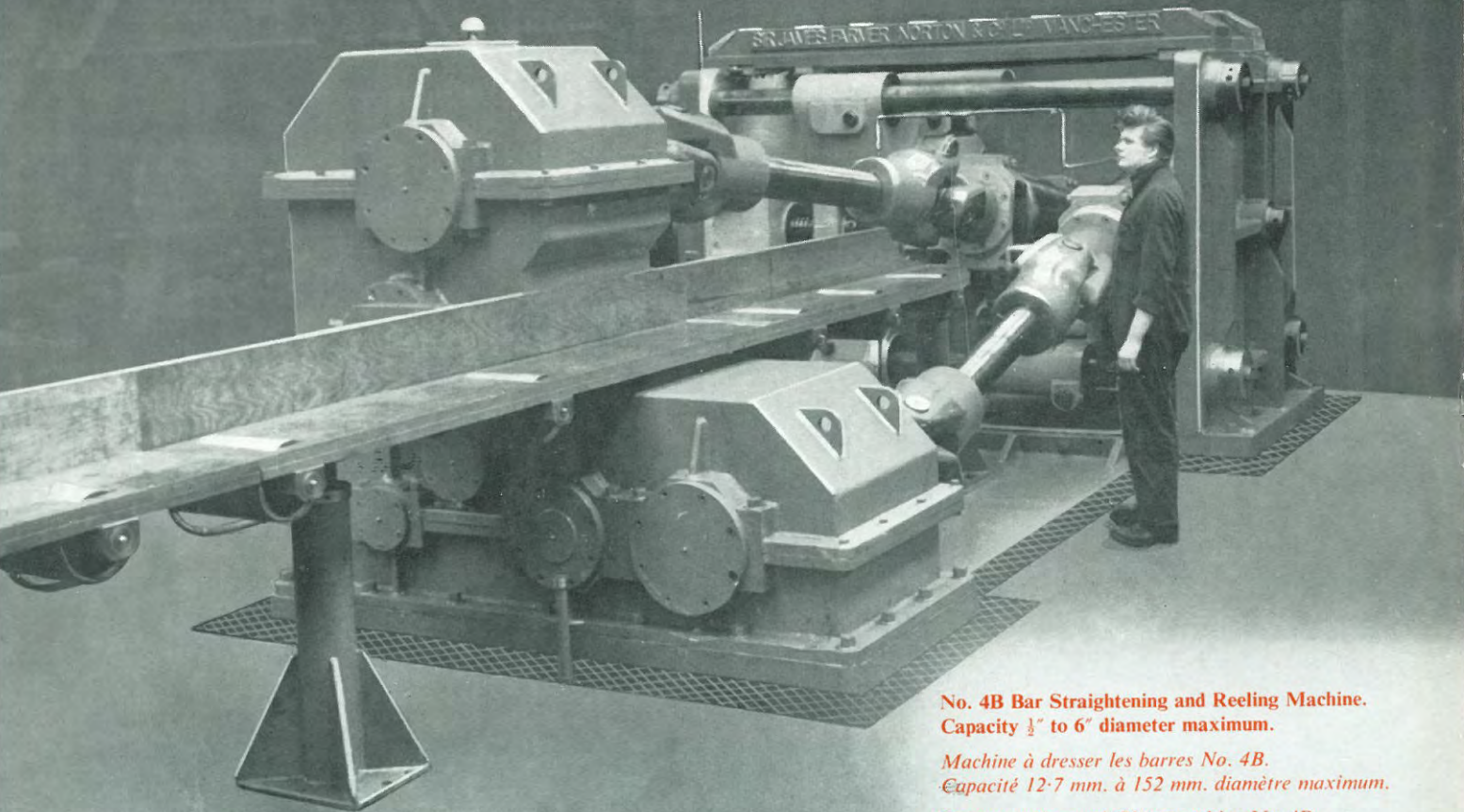
The rolls are driven from the main gear box by means of universal couplings and wobbler shafts. The couplings are robustly constructed from forged steel, the large diameter driving pins being fitted with anti-friction bearings on the high speed machines and block type on other machines. The high tensile steel wobbler shafts are rigidly keyed at one end and accurately splined at the other to allow for the necessary "float" in operation.

GEAR BOX

The main gear box is a robust box section of cast iron or fabricated steel suitably ribbed to give added rigidity. The gears are precision cut from forged high tensile steel blanks, suitably heat treated and they are carried on large diameter high-tensile steel shafts which are mounted in heavy duty roller bearings. The base of the gear box forms an oil sump from which all gears and bearings are lubricated. With the exception of the No. 1 size machine all other machines have open side discharge for the finished bars, so obviating the necessity for the bars to pass through the gear box before clearing the machine and thus saving considerable floor space.

DRIVE

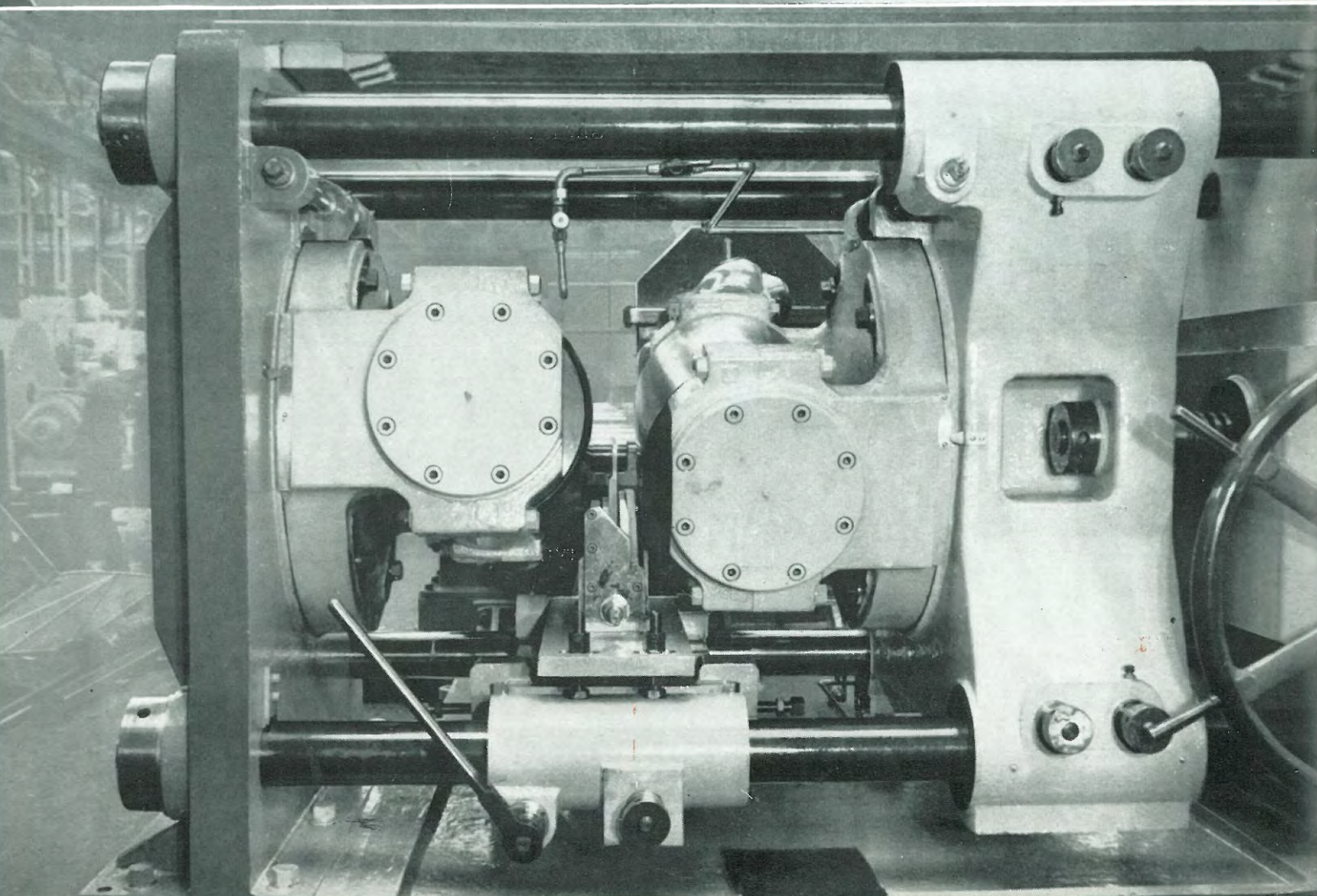
The input shaft is directly driven by means of a special resilient coupling from the main driving motor. If constant speed is required the motor is usually of the slip ring type. If variable speed is required then the machines can be fitted with a change speed gear box using a constant speed motor or with a variable speed motor giving infinite variable speed between the minimum and maximum.



No. 4B Bar Straightening and Reeling Machine.
Capacity $\frac{1}{2}$ " to 6" diameter maximum.

*Machine à dresser les barres No. 4B.
Capacité 12,7 mm. à 152 mm. diamètre maximum.*

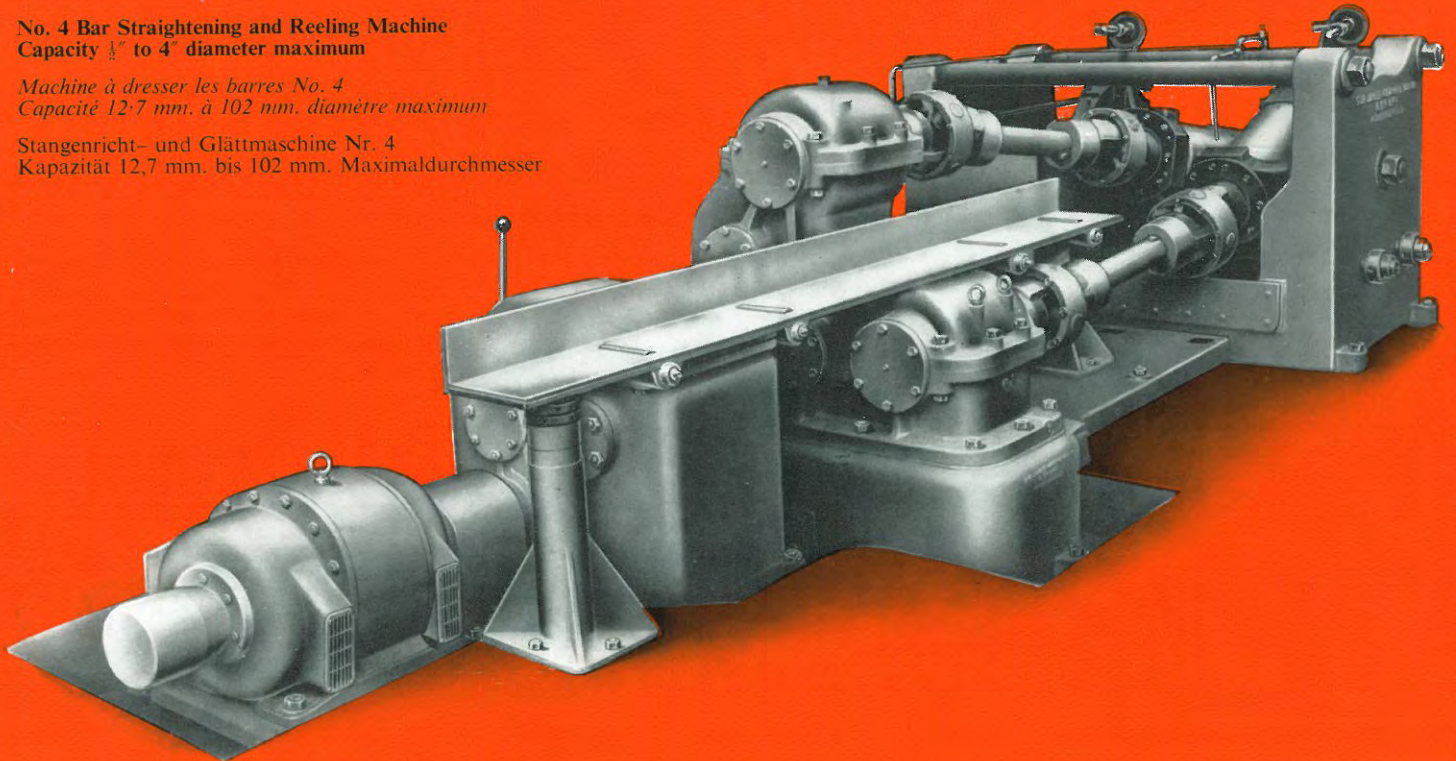
Stangenricht- und Glättmaschine Nr. 4B
Kapazität 12,7 mm. bis 152 mm. Maximaldurchmesser



No. 4 Bar Straightening and Reeling Machine
Capacity $\frac{1}{8}$ " to 4" diameter maximum

Machine à dresser les barres No. 4
Capacité 12,7 mm. à 102 mm. diamètre maximum

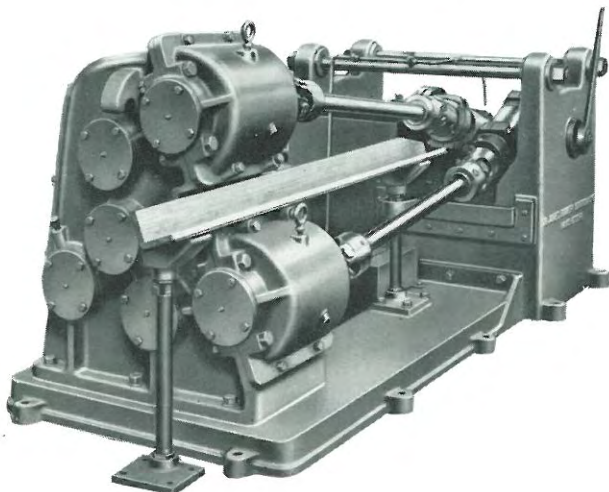
Stangenricht- und Glättmaschine Nr. 4
Kapazität 12,7 mm. bis 102 mm. Maximaldurchmesser



No. 3 and No. 2A Bar Straightening and Reeling Machine
Capacities: No. 3— $\frac{3}{8}$ " to 3" diameter maximum
No. 2A— $\frac{3}{16}$ " to 2" diameter maximum

Machines à dresser les barres No. 3 et No. 2A
Capacités: No. 3—9,5 mm. à 76 mm. diamètre maximum
No. 2A—4,8 mm. à 50,8 mm. diamètre maximum

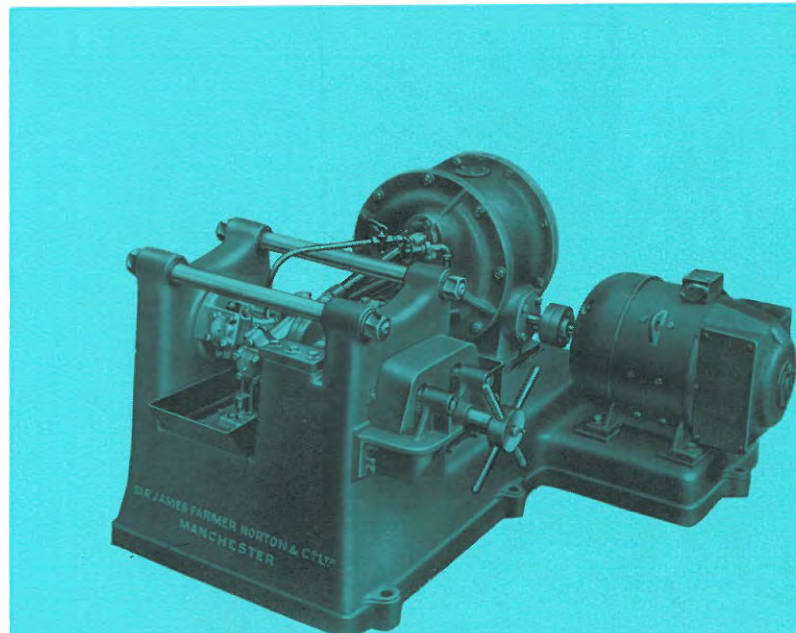
Stangenricht- und Glättmaschinen Nr. 3 und Nr. 2A
Kapazitäten: Nr. 3—9,5 mm. bis 76 mm. Maximaldurchmesser
Nr. 2A—4,8 mm. bis 50,8 mm. Maximaldurchmesser



No. 1 Bar Straightening and Reeling Machine
Capacity $\frac{1}{8}$ " to $\frac{3}{8}$ " diameter maximum

Machine à dresser les barres No. 1
Capacité 3 mm. à 16 mm. diamètre maximum

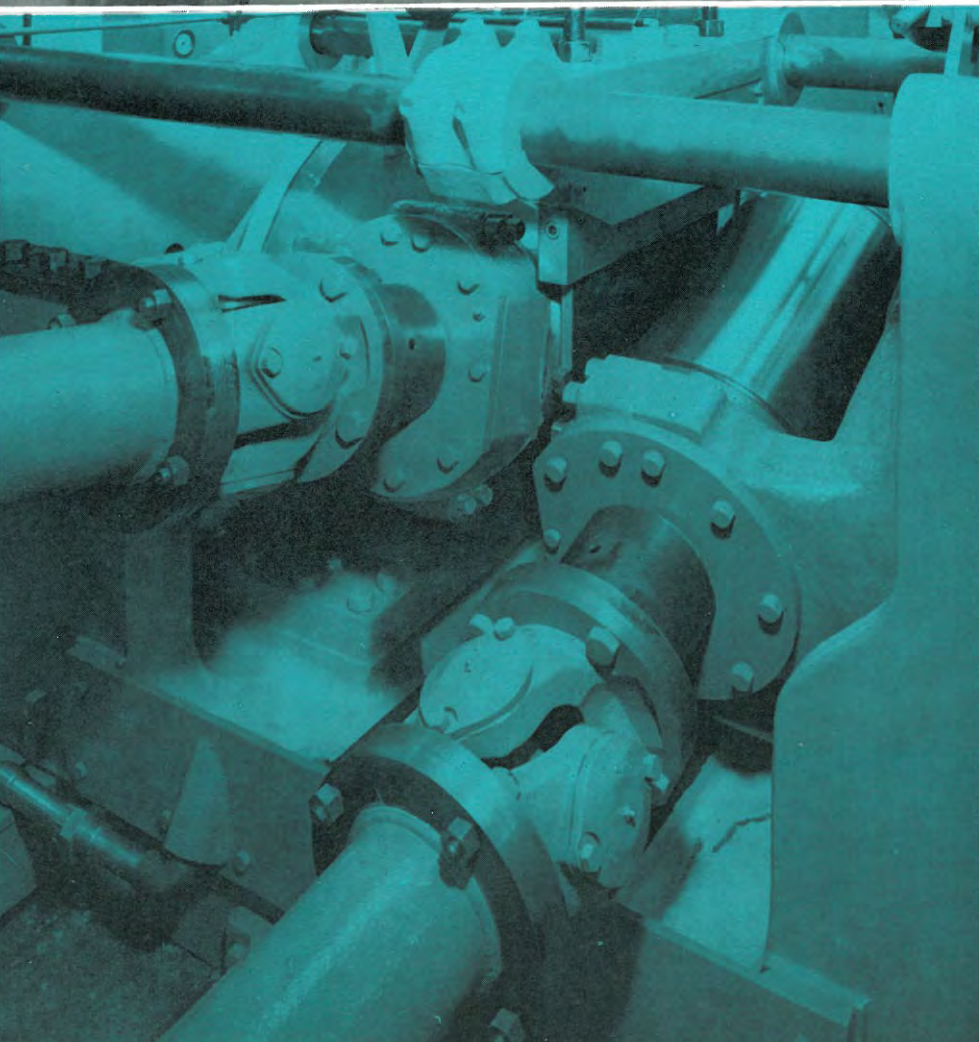
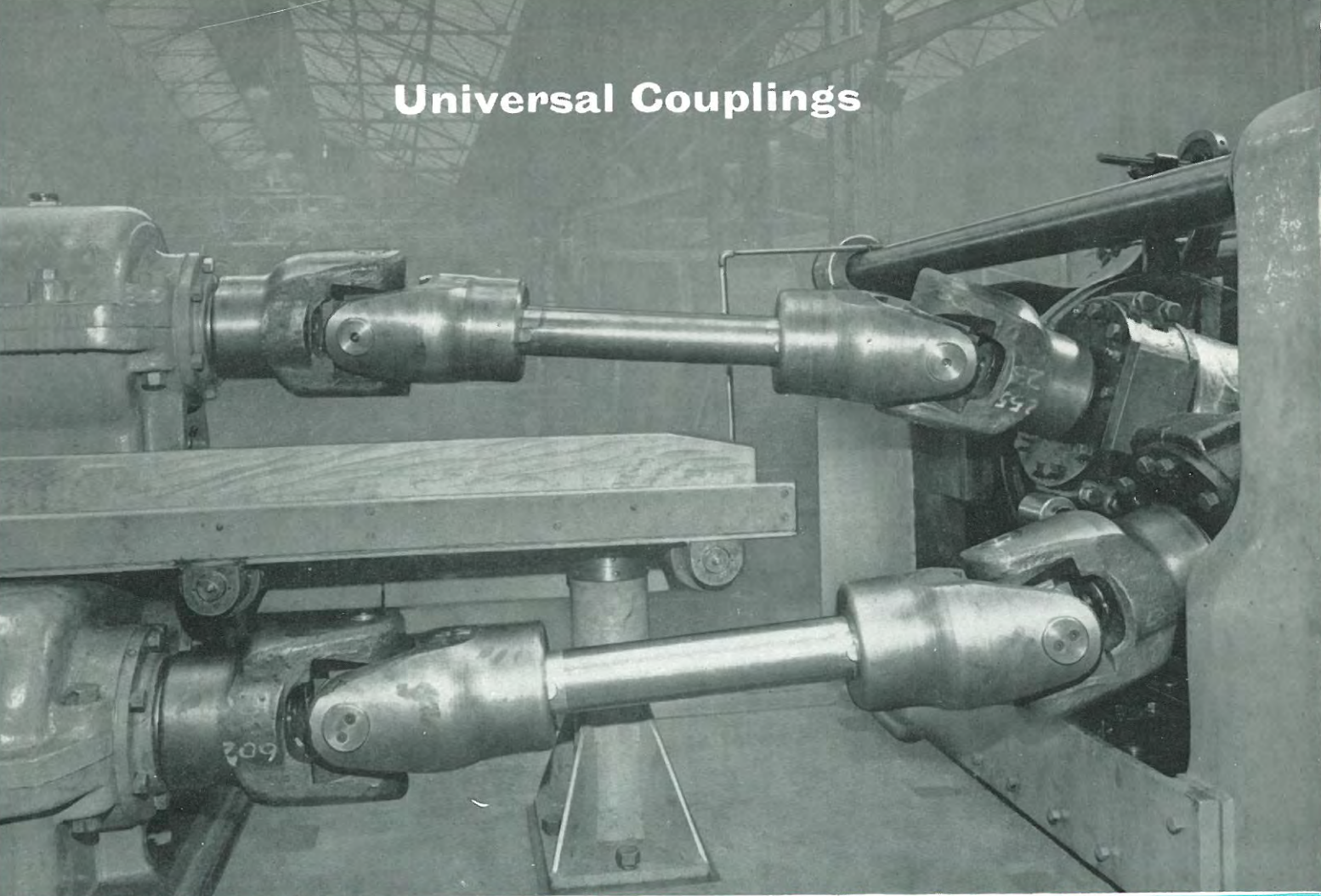
Stangenricht- und Glättmaschine Nr. 1
Kapazität 3 mm. bis 16 mm. Maximaldurchmesser



No. 4B Machine Roll and Guide Blade Adjustment
Machine No. 4B Réglage de galet et de lame-guide
Maschine Nr. 4B Walzen- und Führungseinstellung



Universal Couplings



BLOCK TYPE ▲

As fitted to machines up to 100 feet per minute

Type à bloc monté sur les machines de vitesses jusqu' à 30 mètres/min.

Blocktyp für Maschinen mit Geschwindigkeiten bis auf 30 M/Min.

▲ PATENTED TAPER ROLLER BEARING TYPE

As fitted to machines up to 600 feet per minute

Type breveté aux roulements à rouleaux coniques montés sur les machines de vitesses jusqu' à 180 mètres/min.

Patentierter Typ mit konischen Wälzlagern für Maschinen mit Geschwindigkeiten bis auf 180 M/Min.

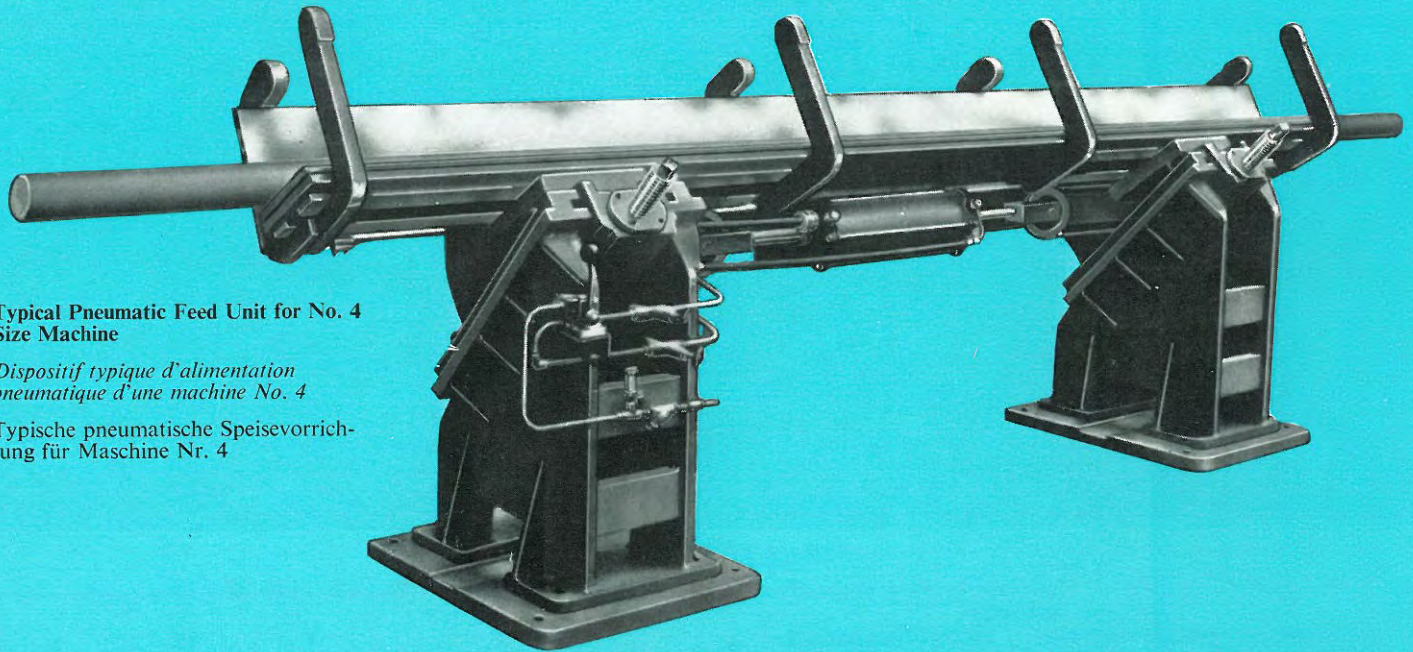
Feed to No. 5 Bar Straightening Machine (operating in client's steel-works)

Dispositif d'alimentation de la dresseuse No. 5 (En fonctionnement dans l'aciérie de notre client) ►

Zuführvorrichtung für Richtmaschine Nr. 5 (Im Betrieb im Stahlwerk eines Kunden)

Bar Handling Equipment

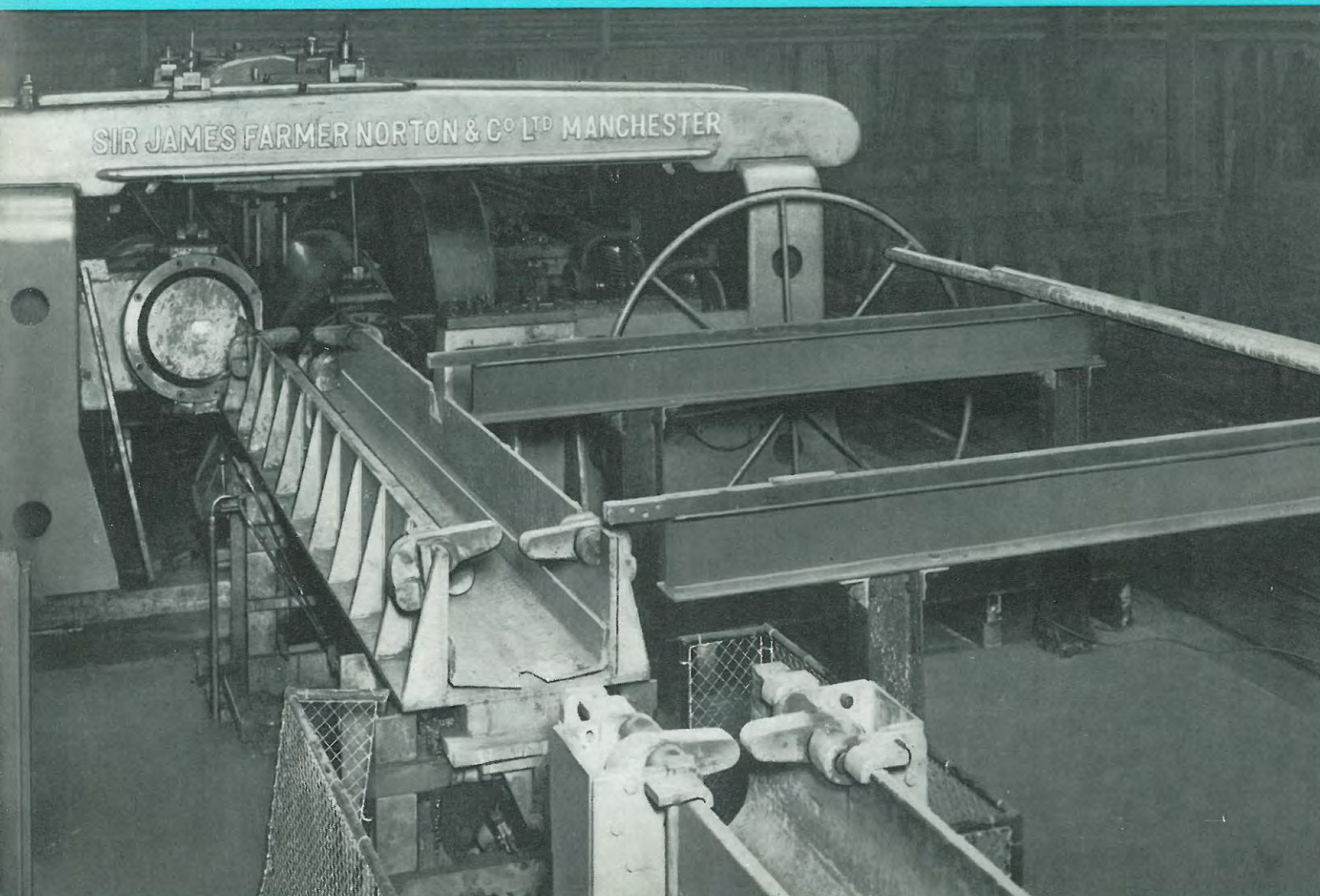
All machines can be fitted with bar feed and discharge mechanisms in accordance with the recommendations of the Sub-Committee of the Accident Prevention Committee of the British Iron and Steel Federation, enabling the machines to be operated by semi-skilled labour with the optimum of safety.

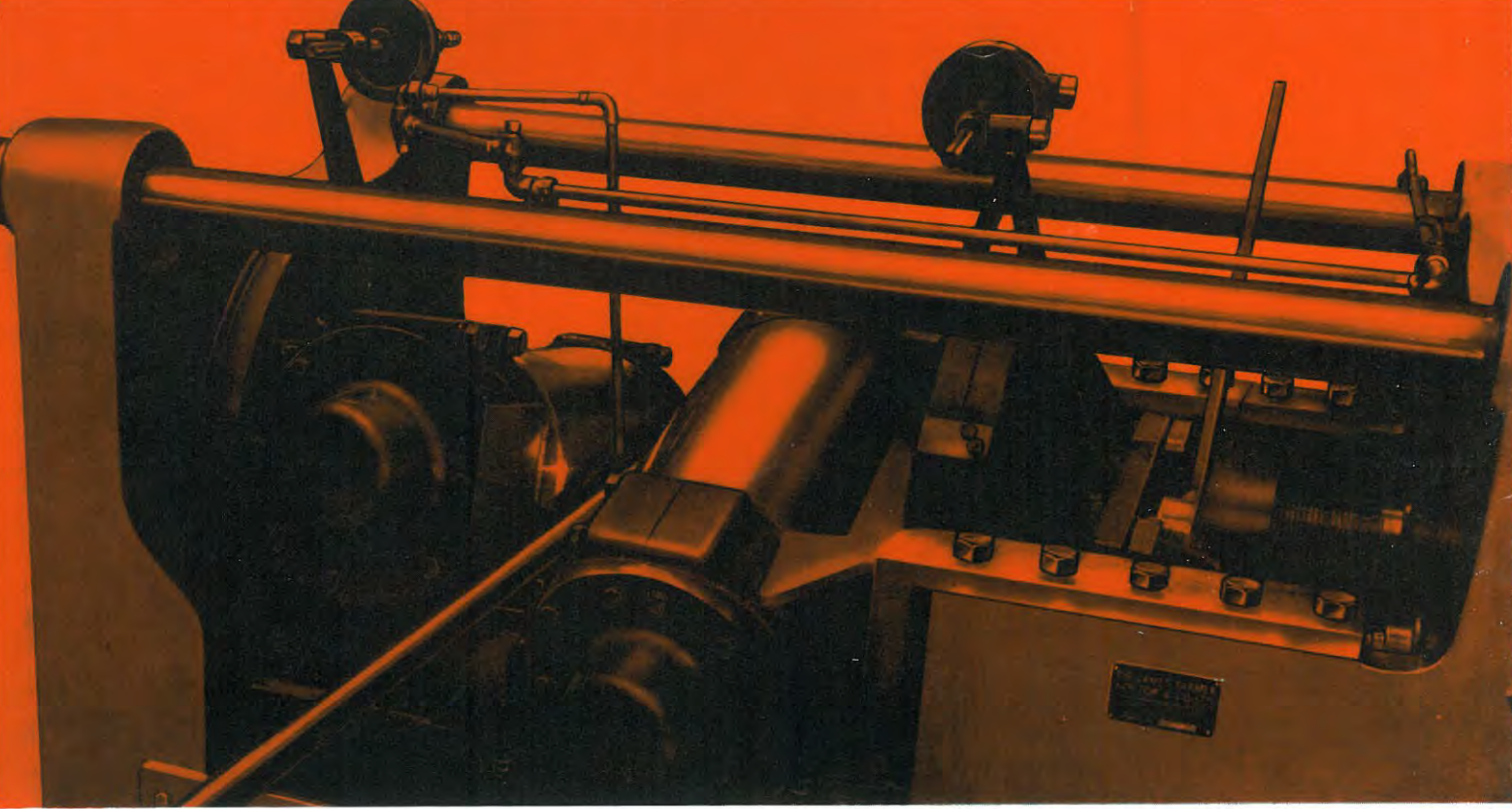


Typical Pneumatic Feed Unit for No. 4 Size Machine

Dispositif typique d'alimentation pneumatique d'une machine No. 4

Typische pneumatische Speisevorrichtung für Maschine Nr. 4





MACHINE DATA

| SIZE OF MACHINE GRANDEUR DE LA MACHINE MASCHINENGRÖSSE | | | 1 | 2A | 3 | 4 | 4B | 5 |
|--|--------------------------|------------------------------|------------------------------|-------------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|
| CAPACITY CAPACITÉ KAPAZITÄT | Mild Steel | Inch | $\frac{1}{8} - \frac{3}{8}$ | $\frac{3}{16} - 1\frac{1}{4}$ | $\frac{3}{8} - 2$ | $\frac{1}{2} - 3\frac{1}{2}$ | $\frac{1}{2} - 5$ | $2\frac{1}{4} - 7$ |
| | Acier doux | mm. | 3 - 9.5 | 4.8 - 31.8 | 9.5 - 50.8 | 12.7 - 89 | 12.7 - 127 | 57 - 178 |
| | Fluss-Stahl | | | | | | | |
| | High Carbon Steel | Inch | $\frac{1}{8} - \frac{5}{16}$ | $\frac{3}{16} - \frac{7}{8}$ | $\frac{3}{8} - 1\frac{1}{2}$ | $\frac{1}{2} - 3$ | $\frac{1}{2} - 3\frac{3}{4}$ | $2\frac{1}{4} - 5\frac{1}{2}$ |
| | Acier au Carbone | mm. | 3 - 8 | 4.8 - 22 | 9.5 - 38 | 12.7 - 76 | 12.7 - 95 | 57 - 140 |
| | Kohlenstoffstahl | | | | | | | |
| 70 Ton Tensile Steel | Inch | $\frac{1}{8} - \frac{5}{16}$ | $\frac{3}{16} - \frac{3}{4}$ | $\frac{3}{8} - 1\frac{1}{4}$ | $\frac{1}{2} - 2\frac{1}{2}$ | $\frac{1}{2} - 3\frac{1}{2}$ | $2\frac{1}{2} - 5$ | |
| | mm. | 3 - 8 | 4.8 - 19 | 9.5 - 31.8 | 12.7 - 64 | 12.7 - 89 | 57 - 127 | |
| Acier de 110 Kg. mm. ² Stahl von 110 Kg. mm. ² | Inch | $\frac{1}{8} - \frac{5}{16}$ | $\frac{3}{16} - \frac{3}{4}$ | $\frac{3}{8} - 1\frac{1}{4}$ | $\frac{1}{2} - 2\frac{1}{2}$ | $\frac{1}{2} - 3\frac{1}{2}$ | $2\frac{1}{2} - 5$ | |
| | mm. | 3 - 8 | 4.8 - 19 | 9.5 - 31.8 | 12.7 - 64 | 12.7 - 89 | 57 - 127 | |
| Non-ferrous | Inch | $\frac{1}{8} - \frac{5}{8}$ | $\frac{3}{16} - 2$ | $\frac{3}{8} - 3$ | $\frac{1}{2} - 4$ | $\frac{1}{2} - 6$ | $2\frac{1}{4} - 7\frac{1}{2}$ | |
| | mm. | 3 - 16 | 4.8 - 50.8 | 9.5 - 76 | 12.7 - 102 | 12.7 - 152 | 57 - 191 | |
| ROLLS GALETS WALZEN | Diameter | Inch | $3\frac{1}{16}$ | $7\frac{1}{2}$ | $10\frac{5}{8}$ | 15 | 18 | 24 |
| | Diamètre | mm. | 94 | 191 | 270 | 381 | 457 | 610 |
| | Durchmesser | | | | | | | |
| Length | Inch | 4 | 8 | 12 | 22 | 27 | 36 | |
| | mm. | 102 | 203 | 305 | 559 | 686 | 914 | |
| MOTOR MOTEUR MOTOR | H.P., CH., PS. | ... | $7\frac{1}{2}$ | 25 | 40 | 60/70 | 100 | 125 |
| | Speed r.p.m. | ... | 720 | 720 | 720 | 720 | 960 | 960 |
| NOMINAL THROUGHPUT SPEED VITESSE NOMINALE DE PASSE NOMINALE DURCHLAUFS- GESCHWINDIGKEIT | Feet/min. | | 25 | 67 | 48 | 30, 60 | 25 & 50 | 25 |
| | Metre/min. | | 7.62 | 20.4 | 14.6 | 9, 18 | 7.62 & 15.3 | 7.62 |
| NETT WEIGHT POIDS NET NETTOGEWICHT | Cwts. | | 56 | 125 | 170 | 340 | 750 | 850 |
| | Kilos | | 2,850 | 6,360 | 8,650 | 17,300 | 38,100 | 43,200 |

The above information is for general guidance only.

Les données précédentes sont à titre d'information générale seulement.

Obige Auskünfte dienen lediglich zur allgemeinen Orientierung.
te in the development of special modifications

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MANCHESTER

Telex No. 66492

Printed in England