

Farmer Norton



*Manufactured under
exclusive licence
from
Sutton Engineering Co.,
Pittsburgh, U.S.A.*

Multi-Roll Bar & Tube Straightening Machines

5-ROLL

STRAIGHTENERS

You are invited to discuss any straightening problem you may have with a Farmer Norton application engineer. If we cannot furnish the machine you need from our varied line of proven designs, we will design and build an all-new machine to your order! However able we are to furnish the most advanced equipment, we know from long experience that a succession of new designs must be made, to meet your constantly changing requirements and particularised needs.

FOR HEAVY DUTY STRAIGHTENING

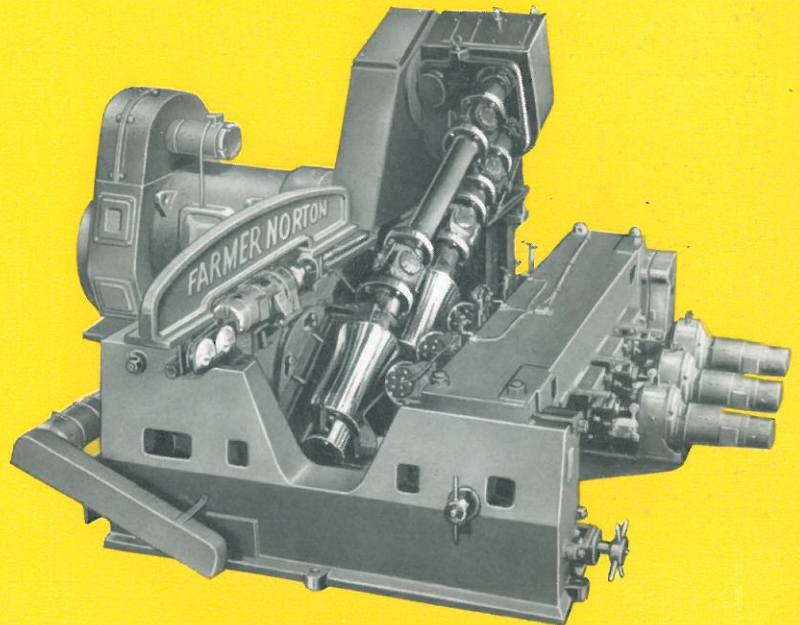
STEEL OR NON-FERROUS TUBES OR ROUND BARS

Designed particularly for heavy-duty straightening of hot-rolled round bars and heavy walled tubes, this machine is an acknowledged leader in its field.

The 5-roll principle distributes the straightening load over three points which results in accurate end-to-end straightening. Because pressures are reduced, maintenance is minimised.

Roll pressure adjusting screws and the angular adjustment for the driven rolls are power operated. A compact heavy duty gear drive incorporates Farmer Norton Universal Joints for long trouble-free life.

**Model 3BC. Tubes from 1" O.D. to 10" O.D.
Bars from 1" to 6 $\frac{1}{2}$ " dia.**



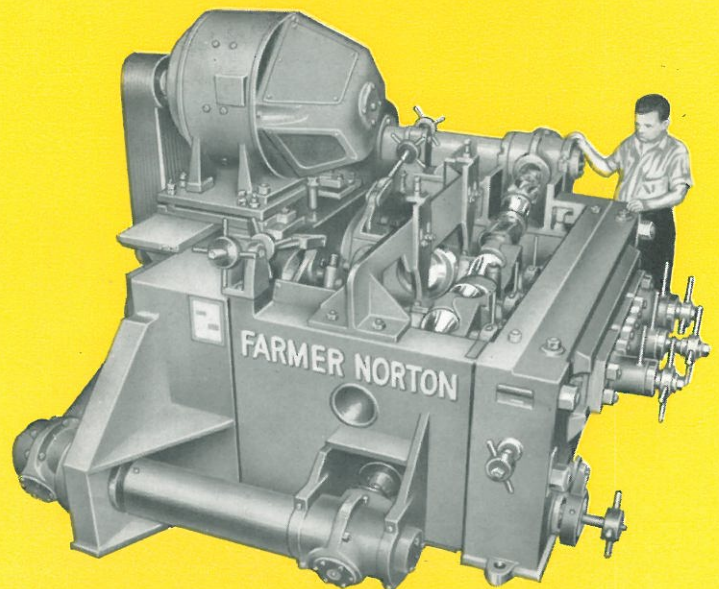
FOR STRAIGHTENING AND POLISHING

COLD DRAWN ROUND BARS AND TUBES

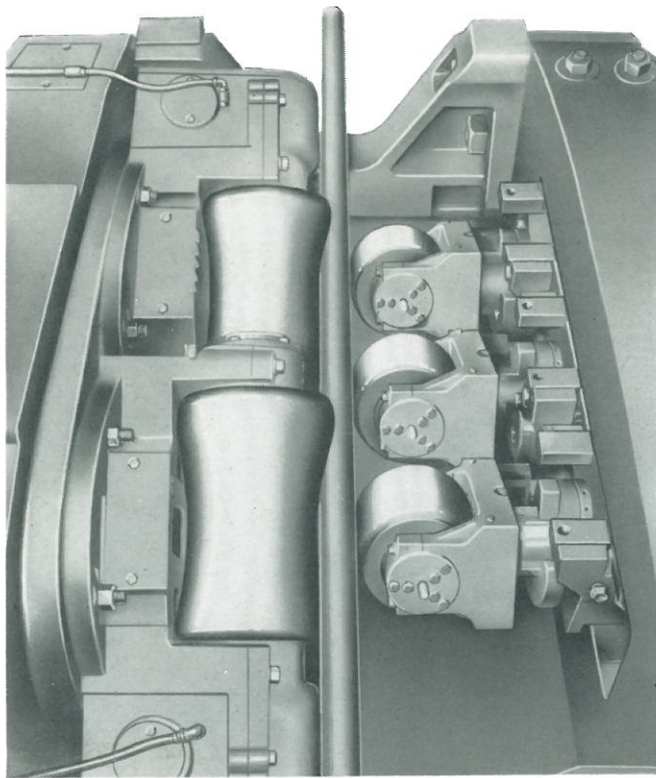
Designed specifically to polish as it straightens cold drawn bars and tubes at high production speeds.

This unit shows the flexibility of the 5-roll principle. While normally only two of the five rolls are driven, this machine has four driven rolls to provide a burnishing action which polishes as the machine straightens.

**Model 1 $\frac{1}{2}$ FX. Tubes from $\frac{5}{16}$ " O.D. to 3" O.D.
Bars from $\frac{5}{16}$ " to 2 $\frac{1}{2}$ " dia.**



Known for Speed . . . Precision . . . Dependability



WORKING HEAD OF 5-ROLL MACHINE SHOWS ENGINEERING PRINCIPLE

A large driven roll with an opposed idler roll is mounted at the entry end of the machine and another similar set of cross rolls is mounted at the delivery end. Between these two sets of cross rolls is an unopposed pressure roll. Thus straightening loads are distributed over three points reducing unit pressures.

5-ROLL DESIGN ASSURES DEPENDABLE PERFORMANCE

Diagram shows position of rolls in Farmer Norton 5-roll straighteners. Possible adjustments shown are angling of all rolls, straightening pressure adjustment and longitudinal centre adjustment of idler rolls.

★ See page 7 for Capacity Chart

For a generation, Sir James Farmer Norton & Co. Ltd., has furnished straightening equipment for ferrous and non-ferrous metal industries.

During the years, many Farmer Norton straightening machines have been built; some with only slight changes and others with radical improvements over former models. All have contributed to the Farmer Norton line of today — the most complete offering of straightening equipment for any requirement.

Presented on these pages are a few representative examples only. Specific applications and particularised problems should be discussed with a Farmer Norton application engineer.

USERS GET OUTSTANDING VALUE

IN PRODUCTION Quality straightening — accurate end-to-end. High customer acceptance because of precise, end-to-end straightening with excellent surface quality. **Steady dependable production at high speeds.** Case records prove superiority. Farmer Norton machines are engineered and built for dependable service at speeds up to 1000 feet per minute.

IN FLEXIBILITY Each machine handles a wide range of sizes. Longitudinal positioning of pressure rolls together with angular adjustment of all five rolls makes accurate straightening possible over a wide range of sizes. **Can be operated without guides if desired.** While guides are recommended for best results in some applications, Farmer Norton 5-roll machines are operated with or without guides.

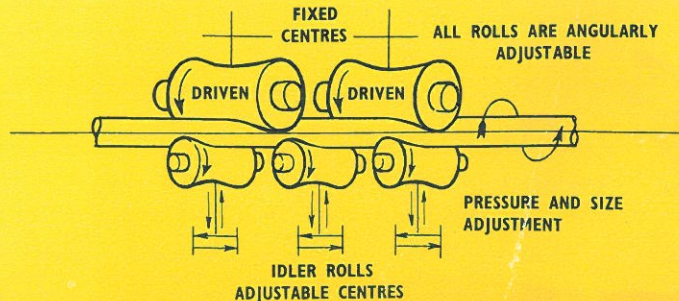
Idler rolls quickly adjusted for size of work. The ease and accessibility of all Farmer Norton adjustments are approved by operators. Roll setting is fast and sure.

Angles of all five rolls are easy to adjust. Angling of rolls is easy and precise in all sizes of Farmer Norton 5-roll machines, whether manually or power operated.

IN ECONOMY Long roll life for low straightening cost. Because only one roll of each pair of cross rolls is driven, roll diameters do not have to be matched, wear is reduced, and roll life lengthened.

Years of performance with minimum down-time. All Farmer Norton 5-roll straighteners are ruggedly built and have anti-friction bearings throughout.

Roll arrangement permits easy scale disposal. Because straightening rolls are placed in a horizontal plane, mill scale falls freely into disposal pit.



NEW

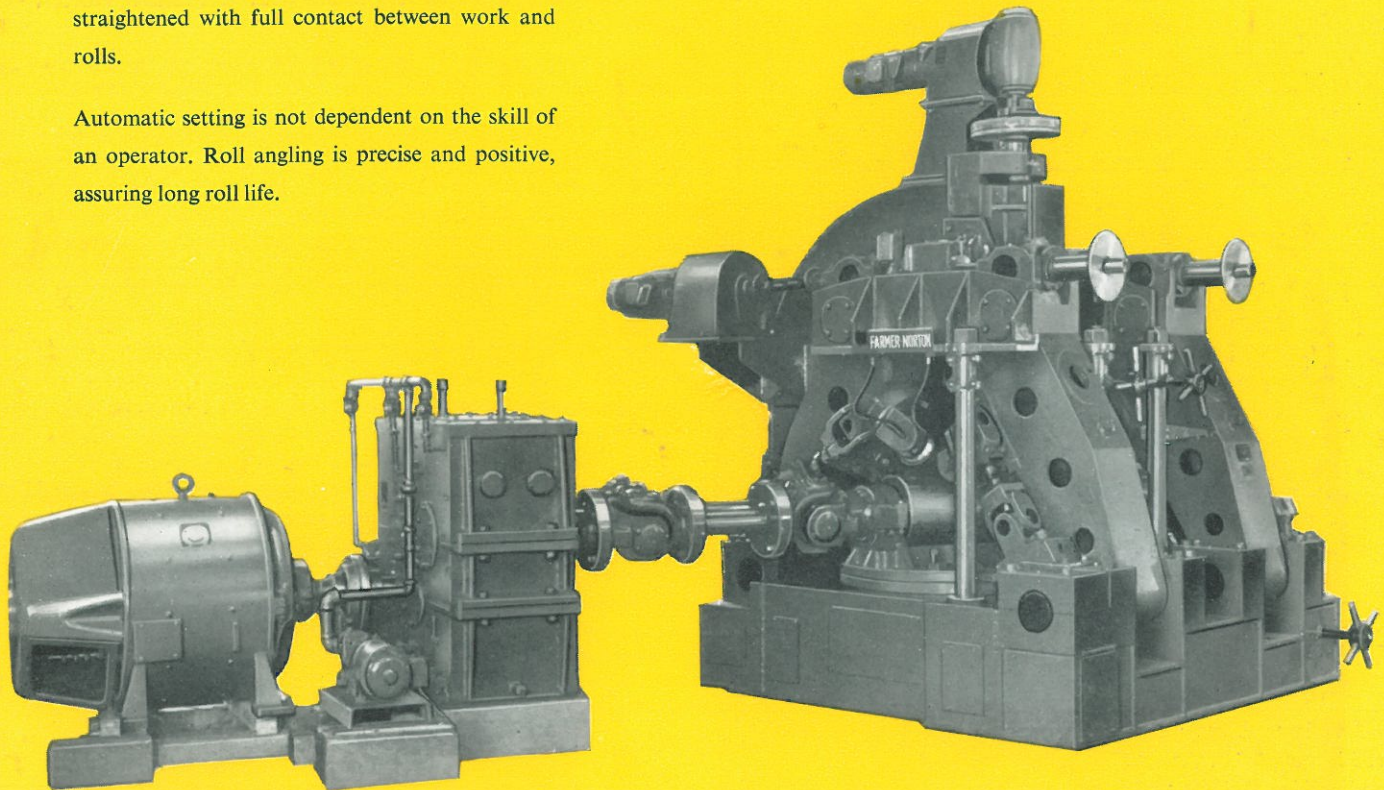
7-ROLL

STRAIGHTENERS . . .

A revolutionary new cluster roll arrangement with Automatic Angling of rolls.

Roll angles are automatically adjusted to the proper setting for the size of material being straightened with full contact between work and rolls.

Automatic setting is not dependent on the skill of an operator. Roll angling is precise and positive, assuring long roll life.



During the past several years, the introduction of the new patented 7-roll principle of straightening has made history. All initial installations have been brilliantly successful. Performance is a matter of record. While revolutionary in design of roll arrangement, there has been no change in Farmer Norton's long established policy of precise machining and rugged construction. In 7-roll machines, users get all of the advantages of truly guideless straightening plus dependable Farmer Norton engineering which results in quality products, long machine life and economy of operation and maintenance.

Model 4KTC (*pictured*)
Tubes from 3 $\frac{3}{8}$ " O.D. to 12" O.D.

AVAILABLE IN ALL SIZES

For $\frac{5}{16}$ " to 20" O.D. Tubes
For $\frac{5}{16}$ " to 12" Dia. Bars

★ See page 7 for Capacity Chart

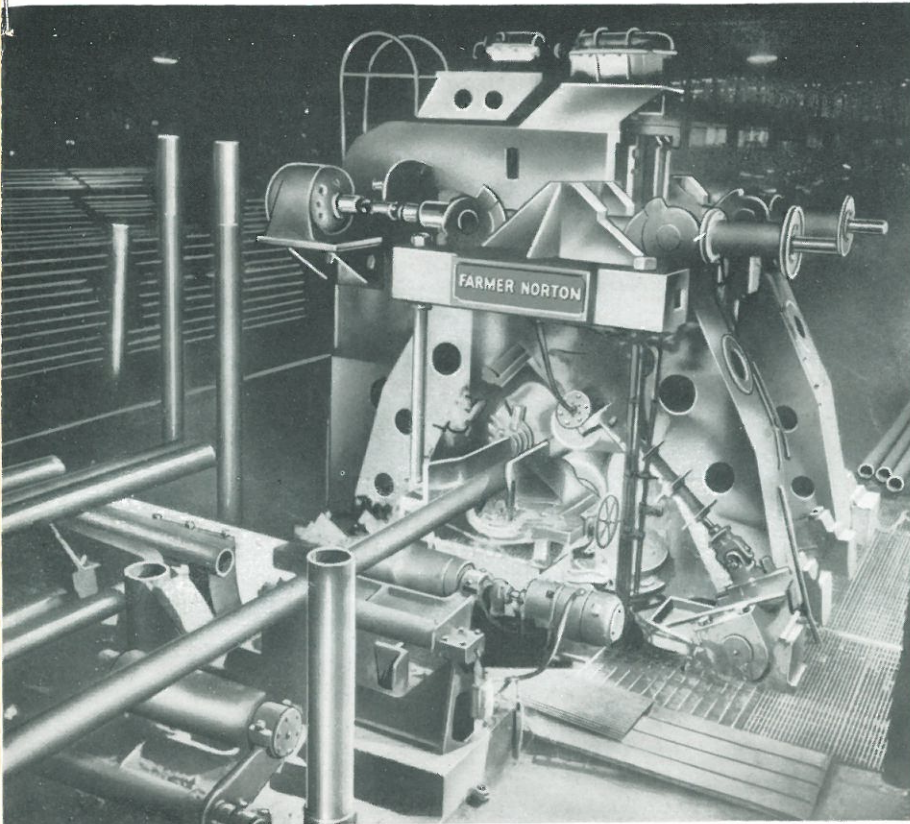
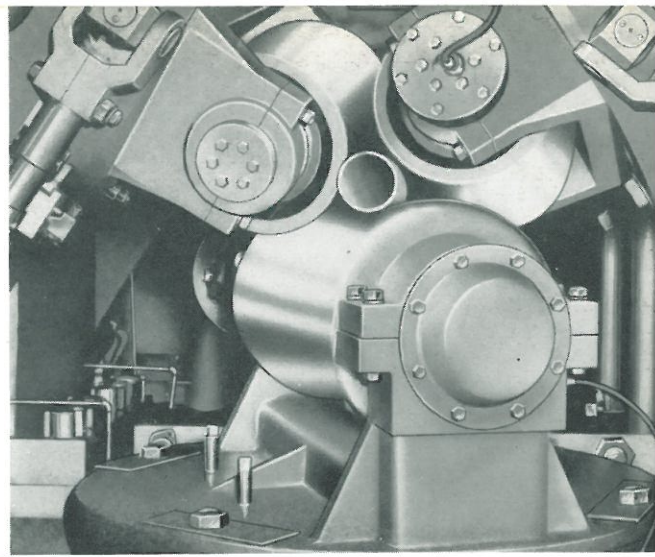
STANDARD OR SPECIAL DESIGNS OF ENTRY AND

FOR HIGH PRODUCTION, HIGH QUALITY STRAIGHTENING

... for **TUBES**

Typical installation of a 7-roll straightener. At a speed of 50 to 200 f.p.m. this machine straightens 5½" O.D. to 18½" O.D. tubes and round bars up to 12" Dia.

Working head of 7-roll machine shows engineering principle of cluster roll arrangement.



EXCLUSIVE 7-ROLL PRINCIPLE PROVIDES POSITIVE CONFINEMENT

A large driven roll with two opposed idler rolls is located at the entry end of the machine and another identical cluster is at the delivery end. In these clusters, rolls are positioned at approximately 120° to each other. Between these two three-roll clusters is an unopposed pressure roll. This advanced roll arrangement positively confines the work to the pass line and assures accurate end-to-end straightening.

USER ADVANTAGES

PRODUCTION STRAIGHTENING OF UPSET-END TUBES

Exclusive roll arrangement permits high-speed straightening of oil country tubing having upset-ends.

QUALITY PRODUCTION AT HIGH SPEEDS WITH MINIMUM OF STRESS

Straightening pressures are evenly distributed; tubular products straightened precisely with little cold working of the metal.

WORK IS POSITIVELY CONFINED TO PASS LINE WITHOUT GUIDES

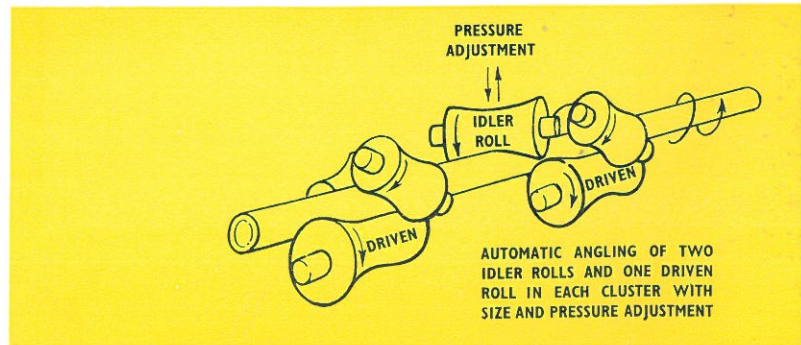
This is a truly guideless straightener. The roll clusters positively confine the work to the pass line from entry to delivery.

POSITIVE FEEDING AND UNIFORM END-TO-END STRAIGHTENING

The roll clusters assure positive feeding and delivery of material. Tubes and bars are subjected to uniform pressures resulting in accurate end-to-end straightness.

RAPID CHANGEOVER FOR SIZES CUTS DOWN TIME

Power operated screw-downs and automatic co-ordinated angling of rolls cuts change-over time drastically.



DELIVERY TABLES AVAILABLE FOR ALL MACHINES

OF STEEL OR NON-FERROUS TUBES OR ROUND BARS

5-ROLL

SYNCHRO-DRIVE STRAIGHTENERS

SPECIAL FEATURES

- Precision straightening at high speeds
- Entirely guideless straightening
- All rolls driven — positive feeding
- Co-ordinated roll speeds, no roll marking
- Less re-dressing for maximum roll life
- Increased size range for each machine
- Quick set-up and change-over
- Power operated screw-downs for larger machines
- Simplified roll angle adjustment with positive lock
- Open-frame construction for fast roll change
- Vertical rolls pneumatically counter-balanced
- Excellent operator visibility in all models

Patented Farmer Norton Syncro-Drive provides the finest quality, guideless straightening of tubes from $\frac{1}{8}$ " to 6" O.D. and bars from $\frac{1}{8}$ " to 4" Dia. in all metals. Precision straightening is achieved at high speeds.

With Syncro-Drive, users can straighten materials previously found difficult, or even impossible to straighten, such as thin-walled tubes and bars of stainless steel, brass, zirconium, titanium and other modern metals.

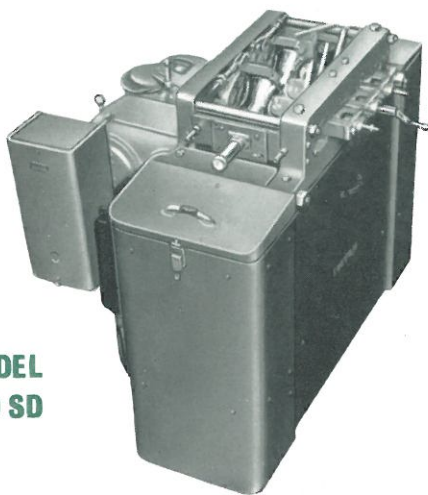
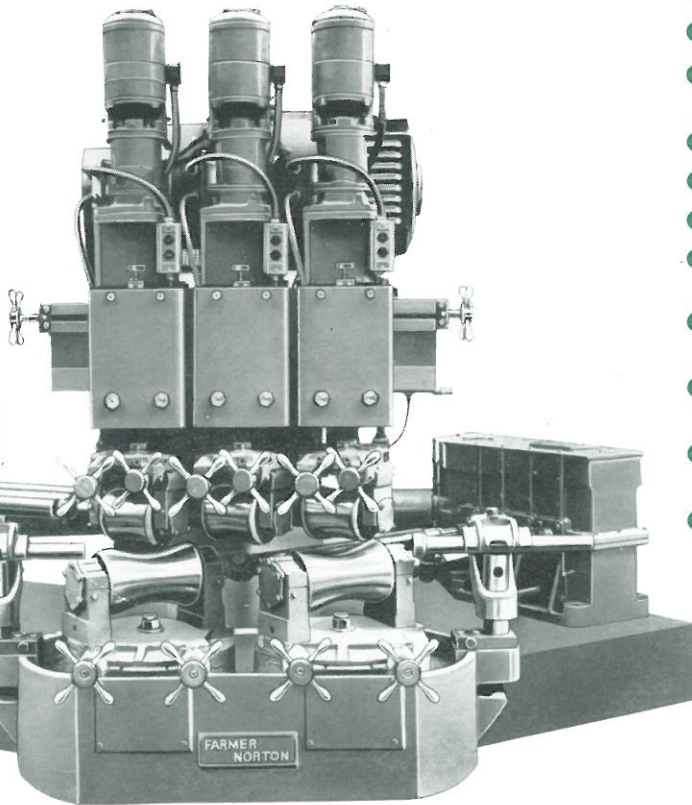
A complete range of sizes and capacities of Farmer Norton Syncro-Drive straighteners is listed opposite.

In the 5-roll design, 3 small pressure rolls are opposed by 2 large straightening rolls. All 5 rolls are driven by a single motor with the Syncro-Drive mounted between the drives for the two banks of opposed rolls. Surface speeds of each bank of rolls are co-ordinated automatically, compensating for roll wear and differences of angular roll setting.

Farmer Norton 5-roll Straighteners have for years been specified as the most rugged and dependable straighteners available for heavy-duty service at high production speeds. Equipped with Syncro-Drive, they now set new standards of quality for high-speed, precision, end-to-end straightening.

*** See opposite for Capacity Chart**

MODEL
15 SD



MODEL
000 SD



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LIMITED

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