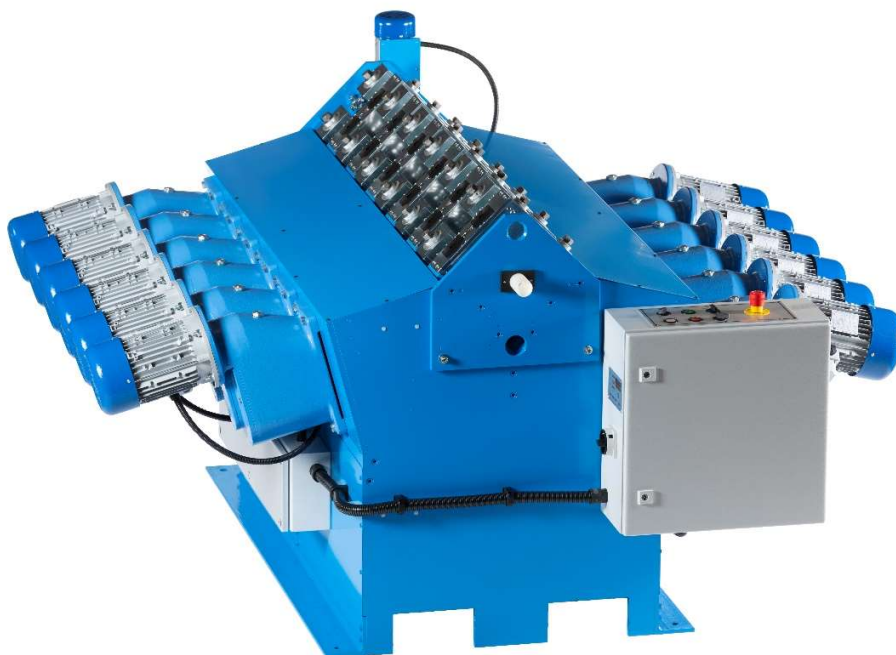


Technical leaflet

KOR-12 – Reduction rolling machine for tubular heating elements



Technical description

Granlund Reducing Rolling Mills type KOR are specially designed to reduce round, metal sheathed tubular elements. They contain a number of individually driven pairs of rolls, mounted in a V-shaped bearing box assembly. Each pair of rolls is connected through two universal joints to a gearbox and a constant torque asynchronous motor. The single-unit bearing box assembly can easily be removed from the driving system by releasing the universal joints and four screws. With a second bearing box assembly, changing from one tube diameter to another is much simplified. Changeover time is approximately 15 minutes as opposed to six hours or more for changing a complete set of rolls.

Long life rolls

Roll pass design is principally "oval to oval" with the same degree of reduction in each pair of rolls, and circular grooves in the last two pairs give the tubes a round shape after reduction. Rolls are manufactured of hardened alloyed steel or of steel with sintered carbide rings. Sintered carbide rolls offer up to 3-5 times longer service than steel rolls. Consequently, it is advisable to order sintered carbide rolls for frequently occurring tube sizes. Latest development in roll profile design available. After the last pair of rolls, the tubes pass a roll-straightener ("Turk's head"). A system of motor driven rubber rolls, placed outside the mill, draws the tubes from the mill.

The same bearing box assembly can be used for older KOR-12 Machines as well

Construction

The machines consist of:

1. Machine stand with motors and gear boxes
2. Transmission shafts
3. Bearing box assembly with rolls (ground steel or tungsten carbide)
4. Simple type of straightening device (other straighteners available on request)
5. Operator panel
6. Electrical Cabinet

The gearbox shafts are connected by transmission shafts. The bearing box assembly is prepared for a specific diameter to diameter reduction. Changing bearing box assembly, in order to change to a new dimension, is made in less than 15 minutes. The rolls are made by either ground steel or sintered tungsten carbide. All rolls are running at the same speed. The guide bushings are made of plastic. Brass bushings may give discoloration of the tube and stainless bushings may lead to "welding".

The diameter ovality tolerance on the reduced elements on a new machine (new rolls) can be estimated to max $\pm 0,04$ mm, but is normally better.

The capacity (elements per hour) can be estimated to: rolling speed / (element length + safety distance)

Technical data

Height:	1 076 mm
Width:	2 030 mm
Length:	1 650 mm
Weight:	1 725 kg
Floor load:	12 600 N/m ²
Number of rolls:	12 pairs
Min tube diameter:	5 mm
Max tube diameter:	
steel rolls	16 mm ,
sintered carbide rolls	13 mm
Min tube length:	125 mm
Max diameter reduction:	20%
Rolling speed:	20 m/min
Electrical connection:	3 • 230 V or 3 • 400 V, 50 Hz
Power:	8 kW

For KOR-12, a 50 A fuse is recommended for 3 • 230 V and 35 A fuse for 3 • 400 V.

Required information before ordering

1. Initial and final tube diameter (wall thickness)
2. Grade of tube material
3. Electrical supply
4. Supplementary bearing box assembly required?
5. Sintered carbide or steel rolls?

To be supplied by customer before delivery: about 20 unreduced elements for final adjustments.

Optional equipment

- KOP – Marking device
- KOM – Lay-off table
- KOI – Automatic feeding equipment
- KRO – Advanced straightening device
- Frequency controlled speed
- Extra bearing box assembly

Please ask your representative for an additional offer for optional equipment