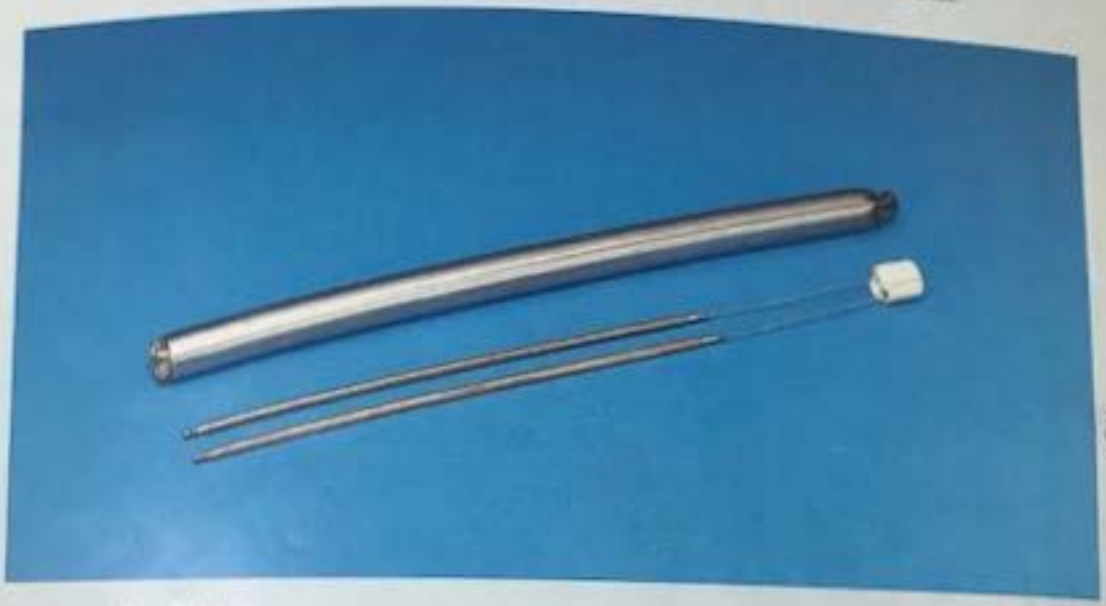
OPTION

Filling attachments for cartridge heaters

Metal sheathed tubular elements with both terminals at the same end have the problem with returning coil in the bottom. This involves a lot of labour. KANTHAL filling attachment for cartridge heaters saves labour by using element tubes which are sealed in the bottom before the filling operation.

The principle of the filling operation is a bit different compared to filling with terminals at both ends.



Function of the machine

The machine is equipped with a specially designed filling nozzle to give maximum filling of the MgO-powder. The coil is welded to the terminal pins in the normal way and threaded through a tube which should be situated in the bottom end of the machine it turns back.

The big difference comes to loading the machine. The coil is hooked on to the central rods when the filling tubes are in their upper position and after this the filling tubes are lowered to the bottom. In this way the coil is stretched and the desired position is reached.

The bottom sealed elements are pushed onto the filling tube and when left, it rests against a bottom plate. When all tubes are in the machine, they are clamped with a wedge is placed in front of the wedge operates pneumatically. A similar wedge is placed on the back side of the elements, and when the air is switched on, a sharp marking is made on both sides of the tube. These markings will prevent the steatite piece from following the filling tubes when now the actual filling operation takes place. The filling of the powder is the same as on the normal filling machines.

The tube is sealed and the steatite piece in the bottom is crushed when the element is compressed in the KANTHAL Reducing Rolling Mill. The tube will then have to enter the mill with the bottom end first.

Theoretically, this operation could be performed with all lengths of tubes but a maximum length of 500 mm is more practical.

TECHNICAL DATA

Capacity	KOF-4S	KOF-6S	KOF-12S	KOF-18S
Min. tube o.d., mm	6	6	6	6
Max. tube o.d., mm	30	20	18	12
Min. tube length, mm	150	150	150	150
Max. tube length, mm	2000	2000	2000	2000

An existing machine can be equipped with the necessary accessories to be converted into end sealed tube filling.

KANTHAL
MACHINERY

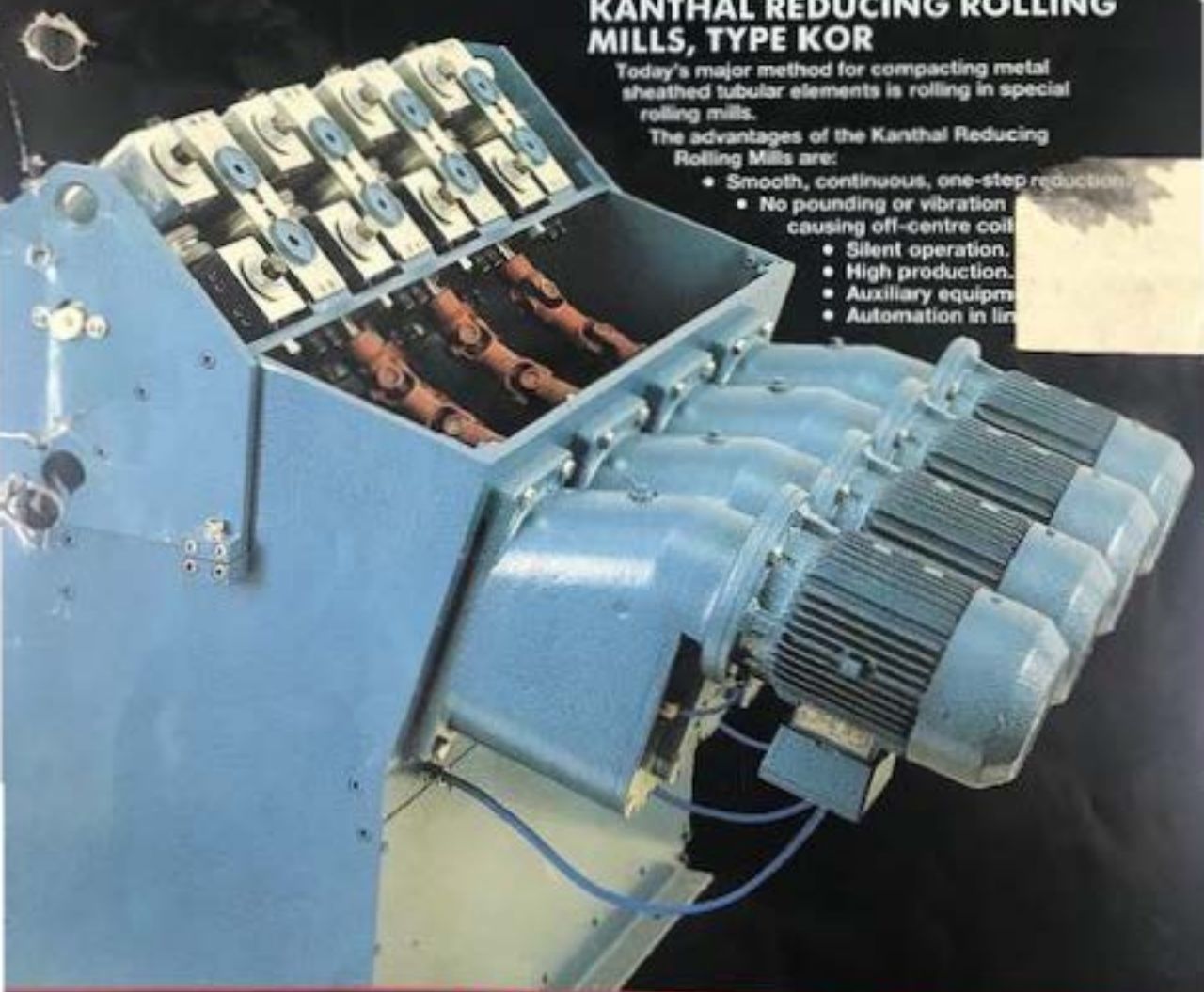
COMPACTING WITH ROLLING THE HIGH PRODUCTION WAY

KANTHAL REDUCING ROLLING MILLS, TYPE KOR

Today's major method for compacting metal sheathed tubular elements is rolling in special rolling mills.

The advantages of the Kanthal Reducing Rolling Mills are:

- Smooth, continuous, one-step reduction
- No pounding or vibration causing off-centre coil
- Silent operation.
- High production.
- Auxiliary equipm
- Automation in lin



KANTHAL
HEATING TECHNOLOGY

SPECIALLY DESIGNED

Metal sheathed tubular elements filled with high insulating powder by Kanthal filling machines must be subjected to a compacting operation in order to increase the density of the powder.

Heat transfer from the resistance coil to the sheath depends on the heat conductivity of the powder which is improved with increased density. Hence, in order to avoid coil overheating in high-loaded elements, insulating powder density must be as high as possible. Compacting of the powder is normally performed by rolling.

EXCHANGEABLE BEARING BOX

Kanthal 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 change from one tube diameter to another is simplified.

Changeover time [illegible] reduced [illegible] set of rolls.

LONG LIFE ROLLS

Roll pass design [illegible] with the same degree of reduction in each pair [illegible]

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, draw the tubes from the mill.

Kanthal's reducing rolling mill can be equipped with type KOI automatic feeding equipment, a type KOP or KSP marking device and a type KOM lay-off table.

TECHNICAL DATA KOR-8

KOR-8, with six pairs of reducing rolls and two pairs of calibrating rolls, is the standard unit for reducing tubular elements with diameter of 6 to 12 mm. Recommended diameter reduction is 18 per cent with production at a rolling speed of 15 m/min. (approx. 560 m per hour).

KOR-12

KOR-12 has 12 pairs of reducing rolls. This increase in rolls capacity gives the following advantages:

Lower reduction requirement in each pair of rolls reduces wear, improving rolls' life by 75 to 100 per cent.

Rolling speed is increased to 20 m/min., a 33 per cent improvement. Mill capacity is approx. [illegible] m elements per hour.

Diameter reduction can be increased to 21 per cent without risk of longitudinal fins on the tubes.

In normal diameter reductions (approx. 18 per cent) it is easier to obtain correct setting of individual pairs of rolls compared with corresponding KOR-8 settings.

Tube straightness is improved.

Maximum tube diameter with steel rolls is 19 mm.

KOR-10HD

KOR-10HD is a more solid mill to cope with increased roll pressure caused by increasing tube diameter, with wider rolls necessary for the larger grooves.

It has eight pairs of reducing rolls and two pairs of calibrating rolls providing a production capacity of approx. 560 m per hour at a rolling speed of 15 m per min.

TECHNICAL DATA

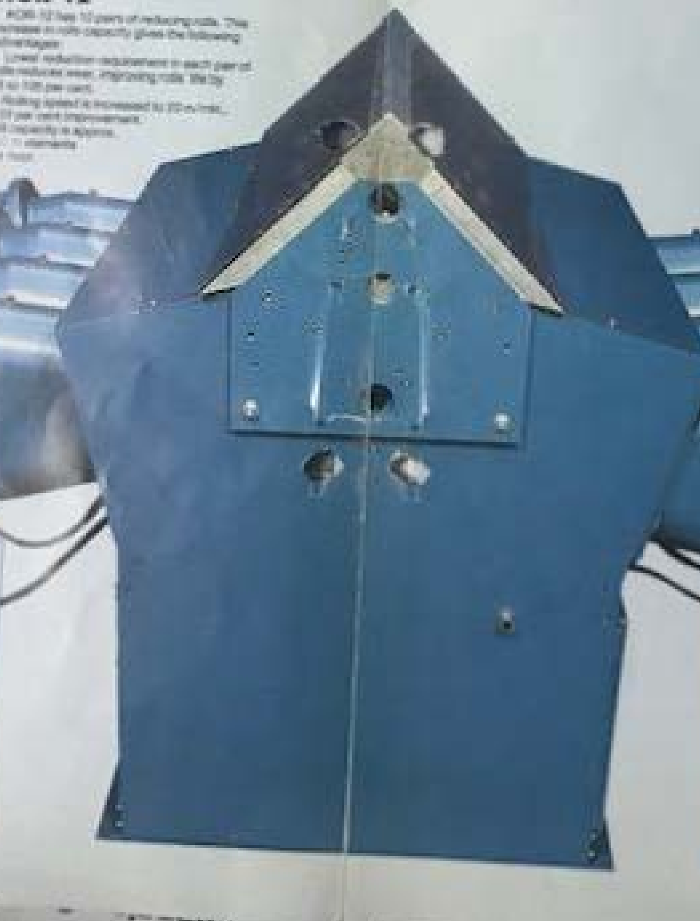
	KOR-8	KOR-12	KOR-10HD
Length, mm	1,100	1,600	1,550
Width, mm	2,000	2,200	2,400
Weight, kg	1,100	1,700	2,000
Floor load, N/m²	10,100	12,800	21,800
Min. tube Ø, mm	6	5	5
Max. tube Ø (steel rolls), mm	16	19	30
Max. tube Ø (carbide rolls), mm	13	15	30
Min. tube length, mm	115	110	110
Max. recommended diameter reduction, %	18	21	18
Connected power, kW	3	8	15
Rolling speed, m/min	15	20	15

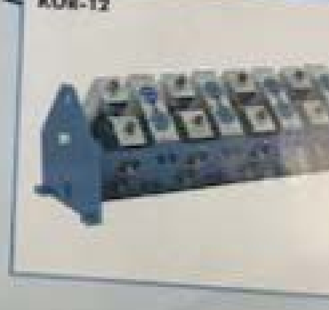
Electrical Connection

3×220 V or 3×380 V, 50 Hz

Specification Required When Ordering

Initial and final diameters of the tubular elements.
Tube quality.
Mains supply available.
Supplementary bearing box assembly required.
Sintered carbide rolls or steel rolls.
Special designs available on request.





KOR-12

M.R POWER