

TECHNICAL SPECIFICATIONS

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|---|---|
| Capacity | 2,4 mill. matches / hour (theoretical cap. at 180 r.p.m.) |
| Dry time | 38 minutes (at 180 r.p.m.) |
| Speed | 90 - 200 r.p.m. |
| Attendants | 1 |
| Power required | 25 kW |
| Air pressure | 6 kg / cm ² above atm. |
| Steam pressure, paraffining etc. | 6 -10 kg / cm ² above atm. |
| Net weight | 24,000 kg |
| Gross weight | 29,000 kg |
| Shipping volume | 61 m ³ |

Arenco–KL4 Match Dipping Machine

DESCRIPTION OF FEATURES

The KL 4 Match Dipping machine has reliability in service, productivity and durability of which is unique. The machine may be delivered in several variations, covering all conceivable conditions and demands. The purpose of the Match Dipping machine is to transform already prepared splints into matches. The machine is in principle built as a endless chain — the so-called plate mat (fig. 1) — consisting of splint bars or match plates, which serve as carriers of the splints, connected with links and rollers, which travel through the machine passing a series of stations where the necessary working processes take place.

These processes are: insertion of the splints into the perforated bars, heated of the splints, paraffining, dipping, drying, lubrication of the match heads and ejection of the finished matches.

Splint vibrator

The splints slide from the splint magazine down into the splint vibrator which has an oscillating motion. These oscillations make the splints to move down into the insertion mechanism in levelled condition. The drive device for the vibrator cradle is located in a separate stand, and the front part of the Match Dipping Machine is thus totally insulated from the forces arising due to the oscillations (fig. 2).

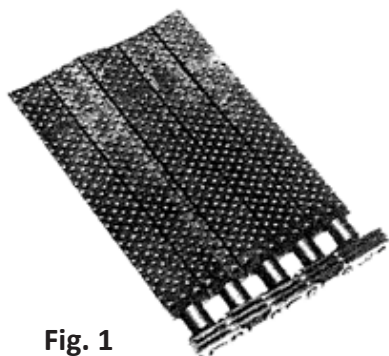


Fig. 1

The length of stroke of the vibrator cradle can be steplessly varied between 0 and 14 mm by means of an adjustable eccentric. Furthermore the number of revolutions of the drive shaft is steplessly variable between 300-900 r.p.m. Owing to this the length of stroke as well as the number of revolutions can be adapted to the current quality of the splints and the splint dimension.

Insertion of splints

The insertion is carried out by a system of combs and grooved plates, fitted to an insertion beam. At the insertion beam, which has a to and fro going motion in the longitudinal direction of the machine, the grooved plates with grooves for the splints are positioned. Every second groove is deeper and, consequently, splints can be inserted in a whole zigzag row of holes by one stroke of the insertion beam.

The insertion of the splints can, when the machine is running, be thrown out of gear by means of a lever. After the insertion of the splints the plate mat passes a hammer which knocks at the back of the splint bars with the result that too thin splints drop out of the splint bars.

Preheating

After the insertion the plate mat passes a preheater which is heated by means of high pressure steam of 8-10 kg/cm².

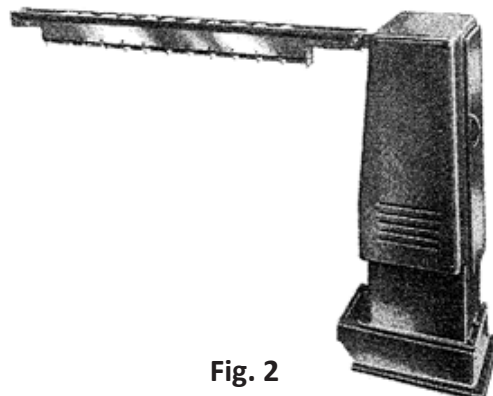


Fig. 2



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Paraffining

During the paraffining process the plate mat is drawn at a uniform speed between guides, and the ends of the splints are dragged through the melted paraffin (fig. 3). The dipping time in the paraffin bath may vary between 1 and 7 sec. and the dipping depth between 0 and 5 mm. At stand stills the paraffin tank descends automatically by means of an air cylinder so that the splints hang free: when starting it ascends again.

The paraffin tank is heated by high pressure steam (8-10 kg/cm²) as well as electric heaters. Both are provided with temperature control. The entering paraffin flow is measured by means of a volume meter and the paraffin is kept circulating in the paraffin device by a gear pump. An electric level control guarantees a uniform dipping depth.

The paraffin tank is pulled out for service. The daily cleaning, however, can be done without pulling out the paraffin tank.

Dipping

The machine is equipped with a linear band composition table (fig. 4).

In principle, the band dipping table consists of two rollers and a rubber band. Besides, there is at one end of the table a composition applicator and at the other end an overflow container. The composition is pumped via a heat exchanger from the overflow container to the composition applicator. The motion direction of the band is across the Match Dipping Machine.

The band motor stops when the pressure beam goes down to dip the sticks and starts again when the pressure beam rises and then new composition is applied on the band for the next dipping. Those sticks which may fall down on the band are collected by a strainer which is to be emptied in connection with the daily cleaning,

Drying

The drying track, consisting of heavy cast iron columns on a stable foundation and of steel angles supporting the plate mat, is five storeys in height. The main shaft drives the plate mat at both the second and the last pairs of columns in the drying part of the machine. In the large turning wheels between the first and second columns, fans with separate drive for variable speed are built-in. All shafts inclusive of the side shaft are journalled in ball bearings. With consideration to climatically conditions the Match Dipping machine can also be delivered with partly built-in drying track combined with an air heater which blows air between the storeys.

Match head lubrication

The lubrication device is placed on a bridge in front of the front part of the machine and consists of a rotating brush soaked with lubricant which strokes the match heads. The lubricant is pumped from a tank to the container in which the brush rotates. A special device retracts the brush from the plate mat and encloses it into a shelter in case of fire.



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Ejection

The ejection of the matches from the plate mat is combined with a device for taking out the matches in trays. The ejection is made by a needle bar, pushing out the matches into a magazine, where feed plungers compress the matches and thereby press the bottom plates slowly downwards. Hereby well packed and effectively levelled trays are obtained. The magazine is placed in a carriage, which, when this is filled, will be drawn out by hand and the matches be emptied into trays.

Fire extinguishing device

Fire extinguishing arrangements are mounted at the front part and at the paraffining, dipping and drying stations. In case of fire, steam will escape through perforated pipings and a brush on the top of the front part will fall down against the plate mat and limit the fire.

Operating desk

Well situated close to the operator, convenient in height, easy overlooking facilitates running the machine. Duo-graphic chart with step priority fault superintending. Stop cause recording simplifies production statistics.

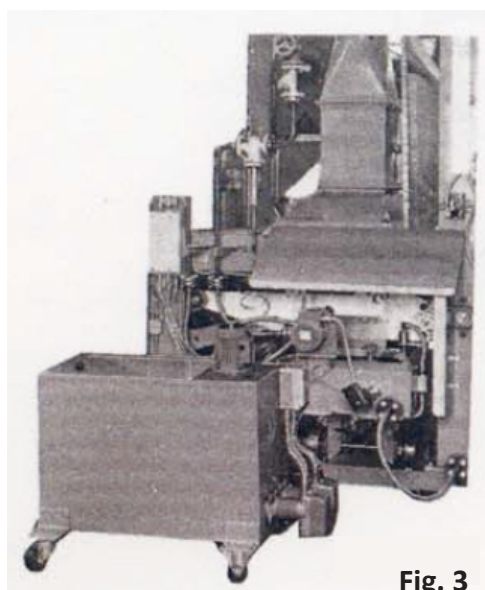


Fig. 3

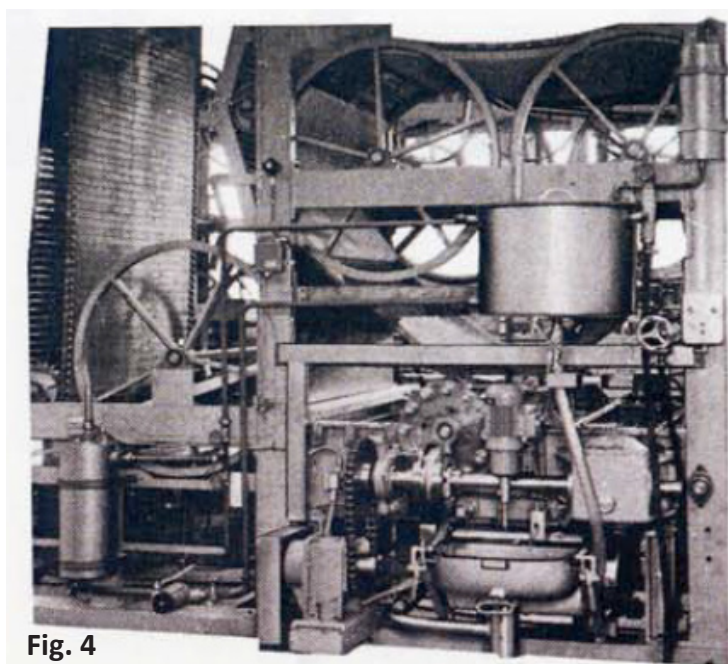


Fig. 4

Design and specifications may be modified without notice.

Spare part orders and service, new machine inquiries, mechanical repairs and preventive maintenance, contact us at info@arenco.com or call +46 480 945 00

