DESCRIPTION OF THE MACHINE AND TECHNICAL SPECIFICATIONS	I

RUBBER INJECTORS

RUBBER INJECTION UNITS:

are used to convert compression presses to injection presses or a single-colour injection process to a two-colour operation. These injection units operate with a separate screw and piston system. In this process, the preplastification and injection operations are performed separately. This greatly improves dosage precision, control and thermal consistency as well as cycle reproducibility. Plastification is performed by means of a special profile screw that ensures the homogeneity of the plasticized. Loading back pressure values and screw turns can be adjusted. It is possible to inject 20-100.000 cc. of moulding compound at an injection pressure ranging from 1000 to 2000 bar.

1 Description and operation principle

The elastomeric material to be processed comes in max 50mm wide strips with a thickness of 5 mm. The strip is inserted by the operator into the extruder lead-in placed on the upper side. Through the Archimedean screw rotation the material is pushed into the injection chamber until it reaches the loading volume corresponding to the volume of pieces to be pressed plus the scraps. During the loading step the material is pre-heated and plasticized.
In the injection chamber the material is kept at a safety temperature of approx. 60°-80°C so as to avoid vulcanization. From the Injection chamber the material is pushed through the injection channels obtained in the mould, or through a thermo-regulated block with several injection nozzles directly into the cavities of the closed mould.

2 INJECTOR TECHNICAL FEATURES

Theoretical injection capacity	1500cc
Punch diameter	68mm
Diameter of the plasticizing screw	50mm
Pressure on the material	1400 Kg/cm2
Plasticizing screw speed	g/1' 0/100
Power for thermo-conditioners	10.5 Kw
Number of thermo-conditioner areas	3
Pump delivery	l 1' 52.33+220
Working pressure	200 Kg/cm2
Pump engine power (20 HP)	18.5 Kw
Total power installed	Kw 28
- Engine revs	g/1' 1470
- Injector weight	1000 Kg
- - Total weight	2470 kg
- Room temperature limits	0-40 °C
- Thermo-regulation fluid	water
- Heat exchanger capacity, 50°C oil gearbox with 15°C cooling water	Kcal 10.000-13.000
Consumption with 15 °C water	l/1 1
Minimum pressure	2 bars
- Capacity of the heat exchanger thermo-conditioners with 60 °C fluid with 15°C cooling water	Kcal 7.000 x3 areas
Consumption with 15 °C water	l/1min 16.6x³ areas
Exchangers total consumption	l/1min 6¸
Oil gearbox and thermo-conditioners	
Voltage	V 380

INJECTORS USE ADVANTAGES:

- REDUCE THE TIME FOR PREPARATION OF raw material to be inserted into the mould cavities or into the transfer pot.
- REDUCE THE OPEN MACHINE CYCLE TIME for loading of raw material, in that cavity loading is directly carried out by the injector.
- REDUCE THE VULCANIZATION TIME by four times approximately, in that material arrives into the mould cavities after being preliminarily heated into the extruder, the injection pot and during the passage into the injection runners.
- REDUCE THE TIME FOR MOULDED ITEM QUALITY CONTROL thanks to the high control of moulding parameters, consistent production is guaranteed.
- FLASHES AND RUBBER WASTE ARE REDUCED thanks to the film formed between the mould cavities. Furthermore, making use of platens with could runner system a higher reduction in flashes, due to the mould feeding runners, can be achieved.
- REDUCE SCRAPPING FROM THE OPERATOR, thanks to increase accuracy in moulding parameters.
- REDUCE MANUAL LABOUR COSTS in the moulding stage since several machines can be controlled by a single operator. In case of totally automated cycles, one operator can control an entire line of machines.
- REDUCE THE ENERGY COST REQUIRED for preparation of raws and finishingof moulded items.
- REDUCE THE NUMBER OF MOULDS AND EQUIPMENTS required for production of a same quantity of items produced in the time unit.
- REDUCE THE INVESTMENT COST with respect to the investment required for a press or a line of new injection presses.
- REDUCE THE TIME FOR RETURN OF INVESTMENT.