

VIBRO-MAC[®]

Dry Casting Machine

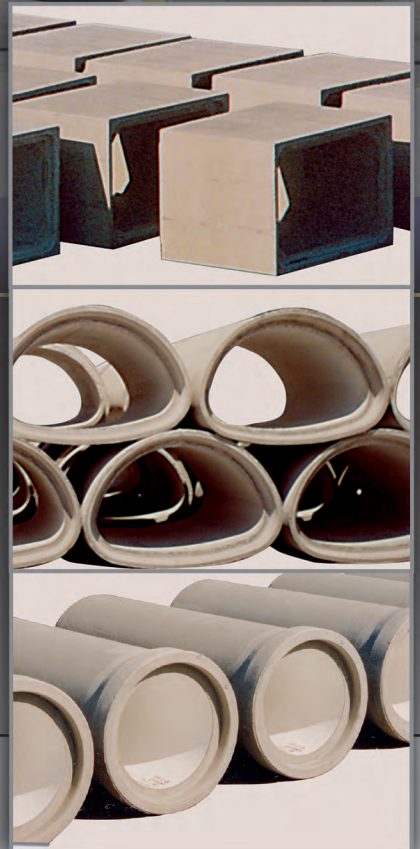


This 120" x 8', Two-Station Vibro-Mac, incorporates a flat dual conveyor assembly with computerized tracking. A 36" round form is being produced in the pit (left), and an 18" arch form will be produced in the pit on the right.

Ultimate Production Flexibility

The redesigned Vibro-Mac[®] is the perfect machine for producers requiring high production of a wide variety of dry cast products. The enhanced capabilities of the Vibro-Mac simplify production of shapes such as round, elliptical, arch, pre-bed, jacking and PVC protective-lined pipe, box culverts, manhole products along with steel end ring, tongue and groove, profile gasket, confined O-Ring, bevel and big bell R-4 pipe on one or more of the machine's stations.

The Vibro-Mac is available in three models: 8' (2.5 m), 12' (3.5 m) and 16' (5 m) to suit your needs. Machines can be configured for multi-station operation; different shapes or sizes can be made alternately. Attachments may be either core strip or form strip, with either electric or hydraulic vibration. The machines can be installed at floor level or in a pit. The isolation base frame and conveyor support column are designed to be part of the machine foundation for increased rigidity and stability.



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EXCEPTIONAL DRY CAST VERSATILITY

Holding Hopper

The holding hopper has a rear clean-out gate and two pneumatic vibrators. The hopper has a round top that facilitates batching from any direction. A hopper auger is provided to prevent material bridging.

Dual Conveyor Feeder with Computerized Shapes Tracking

This system, using hydraulic indexing and rotation, tracks arch, elliptical and box shapes by controlling the radial position and indexing of the rotary feeder conveyor that rotates underneath the main conveyor.

Conveyor Assemblies

The flat main conveyor has a lagged head pulley, self-cleaning tail pulley, adjustable skirts and a hydraulic drive. A UHMW impact bed is mounted underneath the machine hopper. The rotary feed conveyor features hydraulic index and rotation along with a short feed chute and flexible rubber funnel at the end of the conveyor.

The main and feeder conveyors have heavy-duty vulcanized (endless) conveyor belts. Rotary encoders indicate the position of the feeder conveyor index and pivot.

A heavy-duty steel pedestal, with a mount for Rotek bearing, supports the main conveyor and hopper. A hydraulic drive pivots the main conveyor between stations. Proportional hydraulic control valves are supplied for the main conveyor drive and pivot and for the feeder conveyor drive, pivot and index. Directional valves are supplied for all other machine functions.

Proportional Hydraulic Control Valves

These valves are supplied for main conveyor pivot and feed conveyor pivot and index. Directional valves are supplied for all other machine functions.

Material Distribution Chute

The stainless steel material distribution chute, which rotates in either direction, ensures a free flow of material directly into the form set. Spillage is reduced, as is cleaning and maintenance time. The tracking roller on the end of the chute follows any contour or shape of product for exact placement of concrete.

Cap Positioner Assemblies

Cap positioner assemblies hydraulically press the top header ring into the concrete for maximum compaction of the spigot, eliminating the need for a special presshead assembly in each size. Assemblies are mounted on the form for core strip, or in the core for form strip.

Centering and Isolation Mechanisms

Vibro-Mac forms are suspended off of the floor by centering and isolation mechanisms. Vibration is isolated and all the energy is retained in the form set. Forms are self centering in the isolators, and each isolator has a quick-change feature.

Form Sets

Accuracy of end product is assured using precisely engineered forms. Forms are constructed of heavy-duty materials for long service lives. Vibration is isolated and all the energy is retained in the form set. Forms are self-centering in the isolators, and each isolator has a quick-change feature.

Computerized Tracking System

Shape patterns are pre-selected per station by the operator via the HMI. The machine operator can enter new profiles or recall profiles from the PLC's memory. Up to 200 shape recipes can be stored. The system can be pre-programmed with the producer's desired shapes and sizes. An ethernet modem is provided for remote support via the internet (eWON).

The computerized tracking system is optional for Vibro-Macs with inclined feed conveyor.

Core Lift Cylinders

Hydraulic core strip lift cylinders on each station assist the bridge crane when removing the core and pipe from the form by helping overcome the friction bond between the product and the form. This reduces bridge crane size requirements.

Retractable Feet

Pneumatically-actuated retractable feet on the core lock underneath the pallet to carry the pallet and reinforcing cage to the machine. The feet also support the finished pipe and joint ring set as they are transported to the curing area.

Jib Cranes

One floor-mounted pedestal-type jib crane is supplied per station for placing headers into forms.



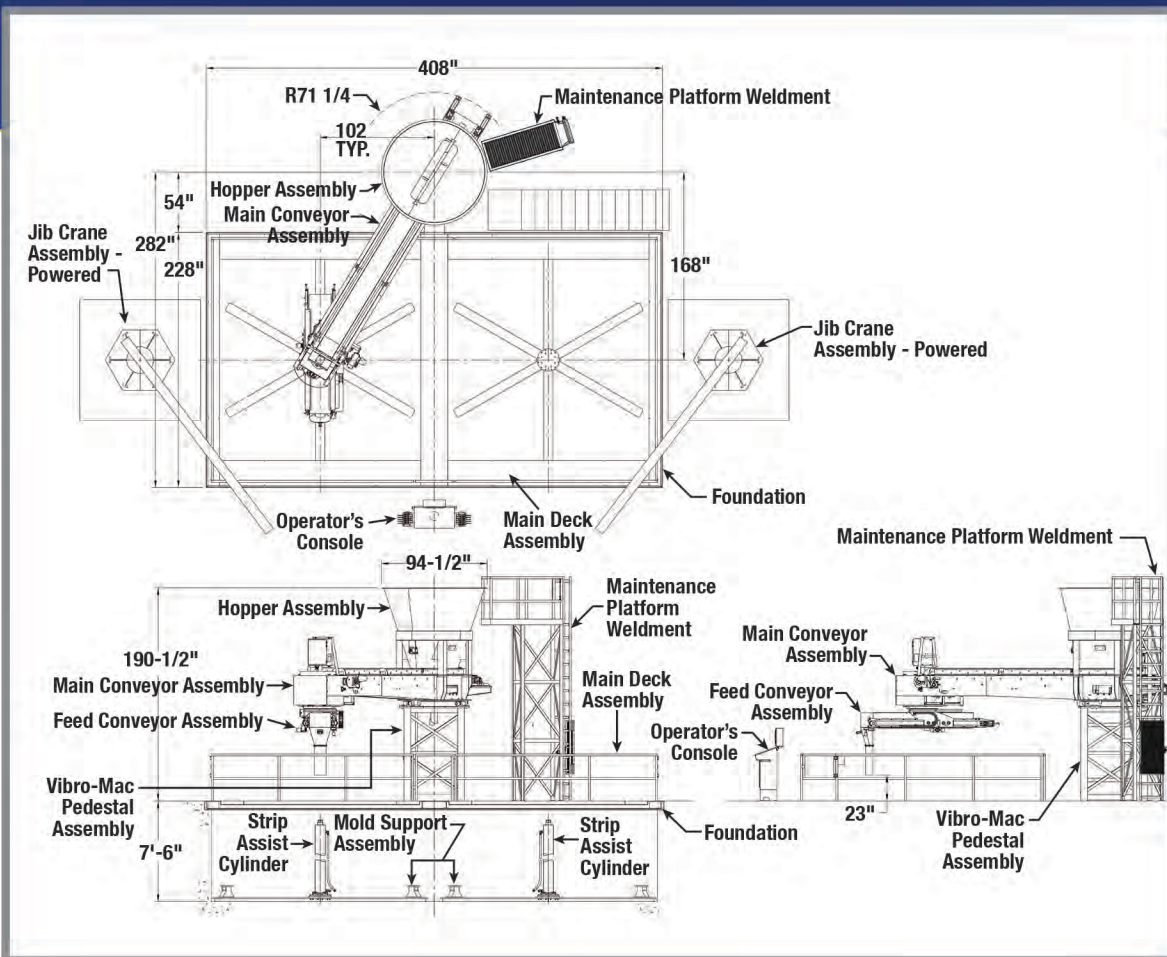
*Vibro-Mac form
outfitted with
electric vibrators
and hydraulic
cap positioner
assemblies.*

Machine Controls

Many of the machine's operating functions, including vibrator speeds, can be easily adjusted by accessing the touchscreen operator interface (HMI) and video monitor. A high definition (HD) camera at the end of the feed conveyor is used to view production from the console.

Vibration System

Energy-efficient rotary electric vibrators incorporate roller bearings that offer exceptional performance, low maintenance, and long life by extending the lube intervals. Adjustable eccentric weights allow force adjustment for precise vibrational control.



SPECIFICATIONS

MACHINE CAPACITY		
MODEL	Round Pipe Sizes	Box Culvert Sizes
8' (2.5 m)	18" - 120" x 8' length 450 mm - 3000 mm x 2.5 m	4' x 3' to 12' x 8' x 8' length 1200 mm x 900 mm to 3600 mm x 2400 mm x 2.5 m
12' (3.5 m)	48" - 156" x 8' length 1200 mm x 4000 mm x 2.5 m	4' x 3' to 12' x 12' x 8' length 1200 mm x 900 mm to 3600 mm x 3600 mm x 2.5 m
	48" - 120" x 12' length 1200 mm - 3000 mm x 3.5 m	4' x 3' to 8' x 12' x 8' length 1200 mm x 900 mm to 2400 mm x 3600 mm x 2.5 m
16' (5 m)	48" - 156" x 8' length 1200 mm - 4000 mm x 2.5 m	4' x 3' to 12' x 12' x 8' length 1200 mm x 900 mm to 3600 mm x 3600 mm x 2.5 m
	48" - 156" x 12' length 1200 mm - 4000 mm x 3.5 m	4' x 3' to 12' x 12' x 12' length 1200 mm x 900 mm to 3600 mm x 3600 mm x 3.5 m
	48" - 120" x 16' length 1200 mm - 3000 mm x 5 m	4' x 3' to 8' x 12' x 16' length 1200 mm x 900 mm to 2400 mm x 3600 mm x 5 m

Electrical Requirements

Unit	Size	Full Load Amps		
		230/60/3	380/50/3	460/60/3
Hydraulic Unit	75 hp (56 kW)	192	111	96
Jib Hoist #1	5 ton (4.5 tons metric)	10.0	6.1	5
Jib Hoist #2	5 ton (4.5 tons metric)	10.0	6.1	5
Jib Hoist #1	3 ton (2.7 tons metric)	Consult Besser		
Jib Hoist #2	3 ton (2.7 tons metric)	Consult Besser		

Main Machine Controls and Electric Vibrator Panels

The Vibro-Mac uses 24 VDC controls for safety. The power panel includes vibrator controls with VFDs, overload protection, and current monitoring.

	Full Load Amps		
	230/60/3	380/50/3	460/60/3
VM 156 - 8' (2.5 m)	160	97	80
VM 156 - 12' (3.5 m)	236	142	118
VM 156 - 16' (5.0 m)	278	168	139

Vibration

- MC36-4910 electric vibrators must be ordered separately. Ask your Besser Sales Representative for additional information.
- Impact Settings:
0 - 4910 pounds
(0- 21,841 N)
- Electrical Characteristics:
460 V., 60 Hertz, 3 phase
(other voltages are available)

These specifications and dimension apply to the 156" (4000 mm) external electric Vibro-Mac. Sizes represent the typical machine capacity for this model. Smaller sizes may also be produced. Additional information regarding the production rates and capabilities of this machine and other Vibro-Mac models can be supplied by your Besser Sales Representative.

Note: Optional station support stands may be required to produce some of the above lay length products.

OPTIONAL ENHANCEMENTS

Station Support Stand

Special support stands can be added to allow different length products to be produced alternately on the manufacturing stations.

Additional Manufacturing Station

The additional station option includes all necessary components to set up and operate an additional Vibro-Mac manufacturing station.

Computerized Tracking System for Vibro-Macs with Inclined Feed Conveyor

Computerized tracking system provides automatic distribution chute and conveyor tracking for feeding various non-round pipe and box culvert profiles. The system includes drive motors and controls for rotating the inclined conveyor in conjunction with rotation of the distribution chute to track and feed a predetermined profile. Shape patterns/profiles are pre-selected per station by the operator using an operator interface display monitor connected to a programmable logic controller (PLC). New profiles can be entered as needed or recalled from memory in the PLC.



156" (4000 mm) Vibro-Mac with the computerized tracking option producing box culvert sections. This particular model features a flat shuttle-style system and provides computerized tracking for feeding various round and non-round pipe and box culvert profiles.



The 156" (4000 mm) model Vibro-Mac machine (pit installation) producing 144" x 8' (3600 mm x 2.5 m) pipe on the right station and 102" x 8' (2600 mm x 2.5 m) pipe on the left station.



A kiln containing 144" x 8' (3600 mm x 2.5 m) Vibro-Mac produced product. Each piece has a 13" (330 mm) wall thickness and weighs 54,000 pounds (24,494 kg).



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