

M-SERIES

Concrete Pipe Machines

Besser developed the M-Series of pipe machines with producers in mind.

Features:

- Multiple material feed options
- Easy access for service, routine maintenance and rapid attachment changeover
- Less spillage with reduced cleanup time
- Reduced installation time with a steel pit foundation shell

MODEL	DIAMETER	MAXIMUM LENGTH
M-36	8"-36" (200 mm-900 mm)	8' (2.5 m) or 10' (3 m)
M-48	8"-48" (200 mm-1200 mm)	8' (2.5 m) or 12' (3.5 m)
M-60	12"-60" (300 mm-1500 mm)	8' (2.5 m) or 12' (3.5 m)
M-84	18"-84" (450 mm-2100 mm)	8' (2.5 m) or 12' (3.5 m)

The Besser M-Series concrete pipe machine includes features from the A-Series that allow the machine to consistently produce high-quality pipe while being simple to operate and maintain. The M-Series brings the ultimate in efficient production to producers at a lower cost than the A-Series.



MAXIMIZING PRODUCTION

Quality. Highly skilled staff follow stringent quality guidelines during the design, manufacture, assembly and testing of the equipment. All Besser equipment is manufactured with precision machinery, ensuring consistent quality.

Durability. The frame was engineered using finite element analysis (FEA) computer modeling to ensure stability. The welded steel frame is fabricated from heavy-duty rectangular steel tubing with internal bracing. The posts house and protect cylinders and critical hydraulic and electric lines while the open three-post concept permits easy access for routine maintenance and cleanup. The design of the machine has eliminated most of the material collection areas: covers have been added to exclude material and protect components.

Flexibility. M Series machines produce all round pipe joints including straight wall mortar joint, mastic, flat gasket, confined O-ring, D-gasket, roll-in gasket, integrated and single offset profile gasket. Reinforced, non-reinforced and thin wall pipe can be produced along with specials such as bevel pipe and manhole riser sections. The standard varying length feature allows different lay length products to be intermixed during the same production run.

Cover photo: The Model M-48 Pipe Machine uses advanced pipe-making technology to produce a superior quality end product.



Side view of a Besser pipe machine illustrating the unique three-post frame configuration. This design allows material to be fed into the holding hopper from the rear (as shown here) or either side.

STANDARD FEATURES

Rollerhead Drive System

Quick change or flanged BiDi Rollerhead packershafts are standard attachments on M-Series machines. Rollerheads and longbottoms include independent splined drives for quick removal and installation. Two independent drive systems operate the crosshead and power unit. Alternatively, a conventional roller head drive is available upon request.

Holding Hopper and Conveyor

The holding hopper capacity is based on machine size and the hopper features rounded corners to prevent material buildup. Conveyor head and tail pulley bearings are greaseable. Air vibrators on the hopper are provided to aid material flow. The conveyor assembly is hydraulically positioned for optimum material feed onto the Rollerhead. A seamless-type conveyor belt, with molded edging prevents material spillage.



Turntable Assembly

The round, 2-piece turntable features tapered support rollers on the perimeter and a roller assembly for inner support and centering. The table includes four pipe-production stations with accurately located cutouts from drop-in bottom centering rings for quick changeover of attachments. The table turner incorporates a hydraulic drive motor and speed reducer that provides smooth start/stop and accurate indexing. A deck plate covers the area between the turntable and the plant floor to facilitate cleanup.

Self-Cleaning Top Table

The self-cleaning top table is fabricated from heavy-duty steel and includes captive fasteners for quick and accurate attachment of top centering rings and tongue formers. Self-cleaner blades rotate within the top table to prevent material accumulation. The top table stroke can accommodate varying mold lengths down to 1' (0.3 m).

Self-Cleaning Bell Packer

The bell packer assembly utilizes a self-cleaning top vibrating plate with rubber isolators to provide efficient pallet/bell vibration. During attachment changeover, the turning and vibrating standard is placed in notches on the vibrator plate,



The hydraulic bell packer assembly features quick-change turning and vibrating standards for even more quality and efficiency in the pipe plant. Protective bellows on the shafts keep the guide system free from material contamination.



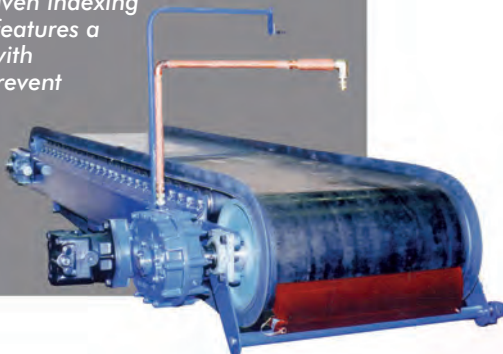
The remote crosshead power unit is mounted on the machine frame at conveyor level and is easily accessible from the work platform for service and routine maintenance. The power unit shroud dampens noise and protects components.

then simply rotated and clamped into position. Besides saving time and labor, this entire process is accomplished from floor level with no need to enter the machine pit. The assembly features manually adjustable stop rods to set the bell packer/pallet height. The bell packer uses a rotary electric vibrator with an efficient collector ring which permits the turning and vibrating standard to oscillate or rotate. A variable frequency drive is used to drive the electric vibrator and provide variable vibration speed. Maintenance and cleanup are facilitated as the bell packer assembly is attached to the walls of the machine pit rather than the floor, leaving the area underneath the assembly open.

Changeover Table

The table is designed to simplify changeover for rollerheads and top centering rings/tongue formers. Centers in the turntable hole allow for automatic alignment. The rotating deck has adjustable handles for all sizes.

The hydraulically driven indexing conveyor assembly features a seamless-type belt with molded edging to prevent material spillage. The belt scraper, conveyor and water spray bar are also shown.



OPTIONAL ENHANCEMENTS



Installation of the optional steel pit foundation shell utilizing a right-hand-turn pit access stairway. Use of the shell reduces custom formwork and installation expense.

Pit Foundation Shell

A steel pit foundation shell is available to reduce custom formwork and installation expense. The shell forms all pit walls up to plant floor level and the fabricated steel panels become an integral part of the foundation after the concrete is poured. Mounting pads for major components including the machine frame and bell packer assembly are included, and various pit access configurations are available. An additional set of panels can be supplied to form the outside pit shell for areas where the soil cannot be used as the external form. All panels are bolted together and break down for shipping.

Oscillating Tongue Former Mechanism

This mechanism operates oscillating tongue former assemblies for production of such joints as mortar joint or profile gasket. The option includes a solenoid valve, cylinder and controls.

Automatic Lube System

The electrically-powered grease pump utilizes multiple grease injector banks to automatically lubricate 20 or more critical areas on the pipe machine at desired intervals.

Note: Various voltages and starter options are available.

Machine Control

The M-Series can be controlled manually, with the Auto-Pack Plus feed conveyor drive control system or the Vision 3 Automation System for completely automated operation.

Vision 3 utilizes a programmable logic controller (PLC) for solid-state electronic control. Versatile pre-programmed logic maintains control of the basic machine cycle and numerous built-in features. These include maintenance schedules, troubleshooting and an extended memory capacity for storage and recall of setup information for up to 200 different pipe sizes and configurations. Machine adjustments are made using a color touch screen interface in the freestanding console. The console also houses a flat panel color monitor that allows the machine supervisor to view manufacturing through three different closed circuit television cameras.

The following specifications and dimensional drawings represent information on the Model M-48 x 8' (2.5 m). For specifications covering other machine models, contact your Besser sales representative.

Machine Capacity

- Pipe Diameters: 12" - 48" (300 mm - 1200 mm)
- Pipe Lengths: 1' - 8' (0.3 m - 2.5 m)

Machine Specifications

- Holding Hopper Capacity: 4.6 cu yd (3.5 cu m)
- Feed Conveyor: Hydraulic Drive (variable speed)
- Bell Packer Turner Speed: 18 RPM (maximum)
- Bell Packer Vibrator: Vertical Impact 3600 RPM (electric)
- Bell Packer Vibrator: Electric or Hydraulic available

BiDi Crosshead

- Main Motor 150 hp (110 kW):
3000 RPM (50 Hertz) or 3600 RPM (60 Hertz)
- Packershaft Speed: 110 - 550 RPM

Hydraulics

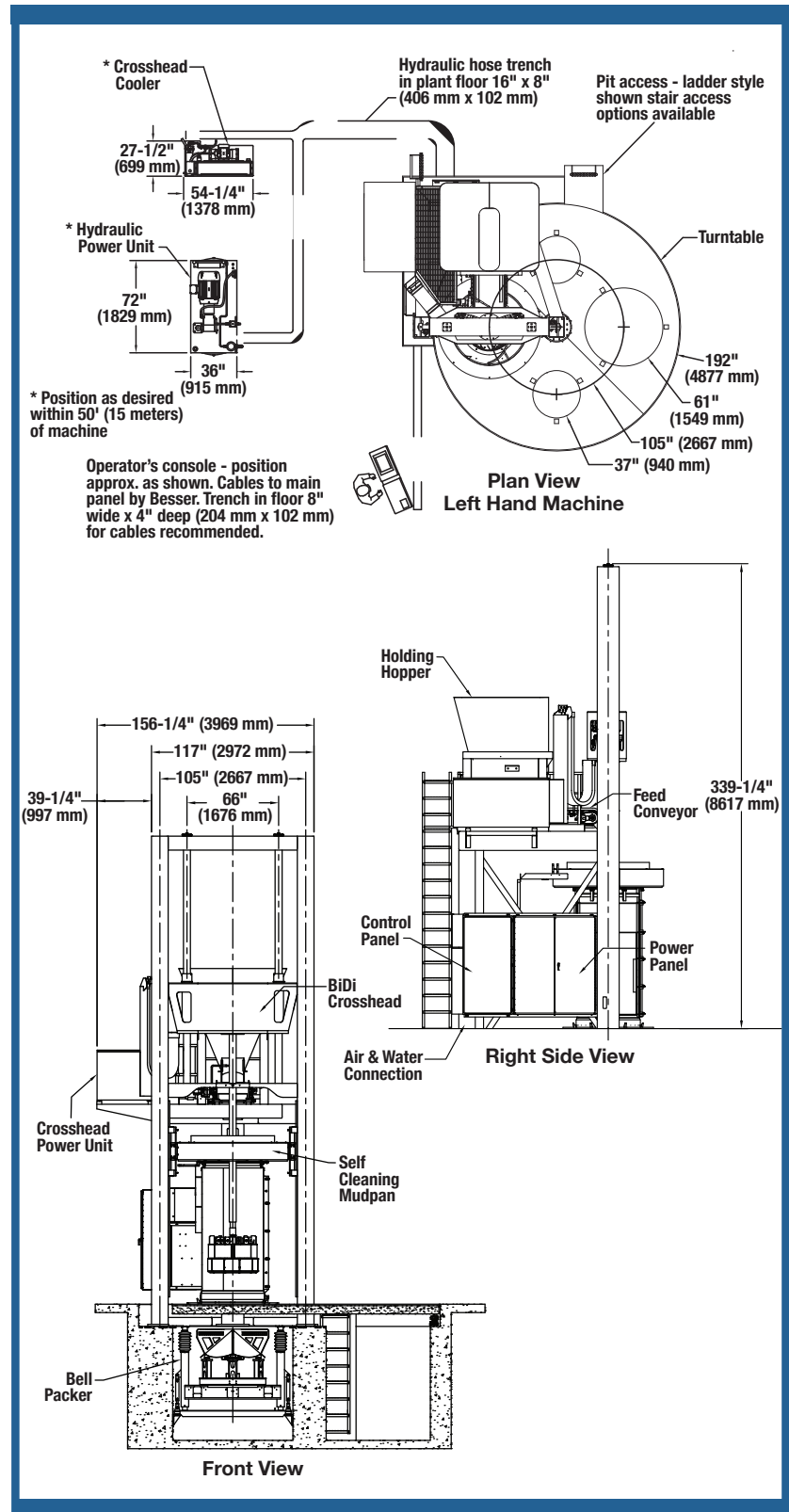
- Hydraulic Power Unit: 50 hp (37 W)
- Hydraulic Tank Capacity: 200 gal (757 l)
- Main Lift Rams: 3.25" diameter (82.5 mm)

Shipping Specifications

- Frame Shipping Dimensions:
10' 7" x 10' 8" x 29' 8" (3.23 m x 3.25 m x 9 m)



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