Model M6

CONCRETE RECLAIMER

Installation, Operation & Maintenance Manual **MM617.06**

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Your Serial No.: Mxxxx-yyyy

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SAFETY FIRST !

High voltage and rotating parts can cause serious or fatal injury. Safe installation, operation and maintenance **MUST** be performed by **qualified personnel only**. Familiarization with and adherence to NEMA MG2, the National Electric Code and local codes is recommended.

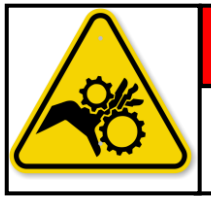
It is important to observe ALL safety precautions to protect personnel from possible injury.

EVERY DAY, prior to use, make sure ALL Safety Guards are in place and properly secured to the equipment.

EVERY DAY, prior to use, inspect ALL Safety Stickers and CLEAN or REPLACE if covered or damaged.

WARNING!

FAILURE TO OBSERVE SAFETY PRECAUTIONS COULD CAUSE EQUIPMENT DAMAGE, PERSONAL INJURY OR EVEN DEATH.

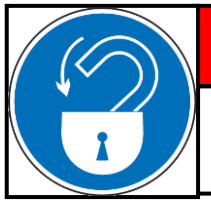


DANGER!

DO NOT OPERATE WITHOUT PROPER GUARDS IN PLACE. ROTATING PARTS MAY CAUSE SERIOUS OR FATAL INJURY.

DANGER!

HIGH VOLTAGE MAY CAUSE SERIOUS OR FATAL INJURY.



WARNING!

DISCONNECT ALL POWER WHILE ADJUSTING UNITS. USE APPROPRIATE LOCK-OUT EQUIPMENT TO PREVENT ACCIDENTAL EQUIPMENT START-UP.

SAFETY FIRST !

The following safety precautions are basic requirements for attending to, operating, installing, maintaining, or cleaning equipment, and should **ALWAYS** be followed. ***NO EXCEPTIONS!***

- **ANY AND ALL PERSONNEL WHO WILL BE INSTALLING, OPERATING OR MAINTAINING THIS EQUIPMENT SHOULD READ THRU THE ENTIRE MANUAL BEFORE WORKING ON OR NEAR THE EQUIPMENT.**
- **ONLY QUALIFIED, TRAINED PERSONNEL** SHOULD INSTALL, OPERATE AND MAINTAIN THE EQUIPMENT.
- **FAILURE TO READ AND UNDERSTAND ALL SAFETY PRECAUTIONS MAY CAUSE INJURY OR DEATH!**
- THIS PREFACE IS INTENDED TO ALERT ALL INSTALLERS, OPERATORS, USERS AND PERSONNEL OF THE POTENTIAL SAFETY HAZARDS. **OTHER SAFETY WARNINGS AND DANGERS ARE LISTED FURTHER THROUGHOUT THIS MANUAL. READ THE ENTIRE MANUAL!**
- **ALL ELECTRICAL INSTALLATION, MAINTENANCE AND REPAIR SHOULD BE PERFORMED ONLY BY A QUALIFIED, CERTIFIED ELECTRICIAN.**
- **REMEMBER, NO MANUAL CAN PREVENT SLOPPY OR IRRESPONSIBLE BEHAVIOR WHEN INSTALLING, OPERATING OR MAINTAINING THIS EQUIPMENT. SAFETY IS UP TO YOU!**
- **ALWAYS ALWAYS ALWAYS DISCONNECT AND LOCK-OUT ELECTRICAL POWER** from the service to the control panel before performing any maintenance, repair or service functions OF ANY KIND. Always!
- **NEVER NEVER NEVER OPERATE EQUIPMENT WITHOUT ALL GUARDS IN PLACE.** They were installed for a reason.
- **Observe good safety habits at all times.** Use care to avoid personal injury or damage to equipment.
- **Keep clothing and hands away from rotating or moving parts even when equipment is NOT running, in the event of an unexpected or automatic start-up.**
- Always use safety glasses to protect your eyes.
- Always use hearing protection. Avoid extended exposure to equipment with high noise levels.

SAFETY FIRST !

- Use proper electrical installation wiring and controls consistent with local and national electric codes, using a qualified electrician.
- Refer to motor name plates and control panel documents for proper power supply requirements. Be sure connections are tight and adequately secured to prevent shorts and to assure maximum protection against moisture and corrosion.
- Be sure equipment is electrically grounded in accordance with code requirements.
- Avoid contact with energized circuits or rotating parts.
- Act with care in accordance with prescribed procedures in handling and lifting the equipment.
- Be sure mounting and assembly bolts are secure.
- Be sure equipment is properly enclosed or guarded to prevent access by children or other unauthorized personnel, to prevent possible accidents.
- Be sure shaft keys on gearmotors are fully captive before unit is energized.
- Provide proper safeguards for personnel against rotating parts.
- Be familiar with the equipment and read all instructions thoroughly before installing, operating or working on it.

THE EQUIPMENT SHOULD NOT BE ENTERED BY PERSONNEL.

Concrete Reclaimer Systems:

A Concrete Reclaimer System includes the Concrete Reclaimer AND the Slurry Collection System, i.e. Settling Ponds. Both need to be properly maintained for proper function of the SYSTEM. If the concrete reclaimer SYSTEM is properly maintained, build-up inside the machine housing should be minimal, and not cause equipment problems. **If substantial build-up occurs, the SYSTEM is not being properly maintained.**

FIRST LOCK-OUT/TAG-OUT THE EQUIPMENT, THEN DISCONNECT AND REMOVE THE SUB-ASSEMBLIES (i.e. Rotary Screen and Sand Auger) FROM THE MACHINE HOUSING FOR CLEANING.

MORE FREQUENT POND CLEAN-OUTS SHOULD BE SCHEDULED, AND PROPER HOUSE-KEEPING SHOULD BE COMPLETED, TO MINIMIZE INTERNAL CEMENTITIOUS BUILD-UP.

SAFETY FIRST !

Systems that use compressed air:

- **HIGH PRESSURE AIR SHOULD BE PROPERLY BLED FROM SYSTEM PRIOR TO MAINTENANCE OR ADJUSTMENT**.
- Always wear safety glasses and other personal protection devices when installing, operating, adjusting or maintaining this equipment.

WARNING!

COMPRESSED AIR. LOCK OUT source and BLEED OFF pressure before servicing equipment.

Systems that use Flocculants:

First-aid measures for handling and using Flocculant(s)

Inhalation	If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop. If not breathing, give artificial respiration or give oxygen by trained personnel. To avoid inhalation problems, it is recommended that a respirator be worn by all personnel involved in using or handling flocculant(s).
Skin contact	Immediately flush skin with running water for at least 20 minutes. Get medical attention if irritation develops or persists. It is recommended that all personnel involved in using or handling flocculant(s) wear protection covering exposed skin, including long sleeve shirts, long pants, gloves, etc.
Eye contact	Immediately flush eyes with plenty of water for at least 20 minutes. Get medical attention if irritation develops or persists. It is recommended that all personnel involved in using or handling flocculant(s) wear protective eye-wear and face shield.
Ingestion	Have victim rinse mouth thoroughly with water. If ingestion of a large amount does occur, seek medical attention.

Consult Flocculant Manufacturers current Safety Data Sheet for further information.

SECTION 1.0 MECHANICAL INSTALLATION

1.01 EQUIPMENT DESCRIPTION

Thank you for choosing the Model M6 Reclaimer. By reading and understanding these written instructions, and following all operational, safety and maintenance procedures, the M6 will give you many years of service with minimal maintenance.

The M6 Concrete Reclaimer is designed for easy operation and low maintenance. The simplicity of the central shafted rotor design provides high efficiency with minimum wear and low energy usage. High quality standard parts provide long life and availability.

Wet concrete is fed into the M6 for washing and screening with an infeed screw. The infeed screw discharges directly into the rock screen/wash area for a consistent flow of wet concrete from the infeed hopper, preventing over feeding of material.

The material is spray washed and separated as the concrete passes over the rock screen and the sand and cement pass through. The rock screen is wrapped around a 12" diameter x 36" long cylinder on a central shaft. An 8" dewatering screw removes the sand from the reclaimer.

Fines and cement slurry separated from the returned concrete collect at the bottom of the reclaimer and gravity flow out of a bottom drainpipe.

IMPORTANT NOTE:

ALL dimensions, weights and technical specifications are subject to change, at BFK's discretion, from previously published information. In some applications, NON-standard or custom pieces may be supplied, which may or may not be covered in this manual.

The manual attempts to show common, typical installations. YOUR ACTUAL INSTALLATION MAY VARY.

This manual is intended as a guideline only, and may or may not represent the actual equipment supplied. Some pictures and/or drawings may show earlier or different revisions of the same machine or similar design, and may not totally represent the revision or design of the machine you have.

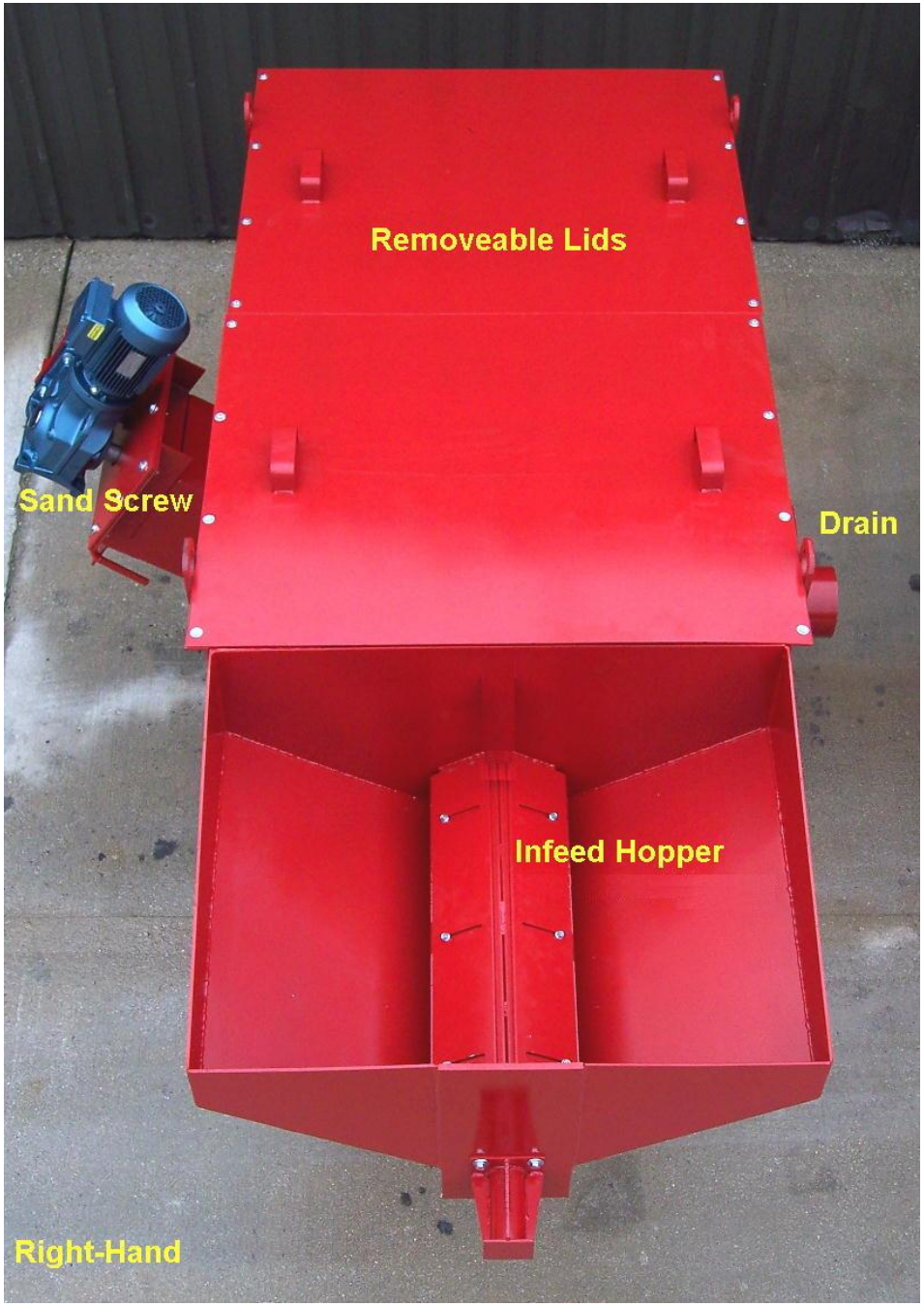
IN ALL CASES, IT IS THE REPONSIBILTY OF THE CUSTOMER TO ENSURE PROPER SIZES AND DESIGNS OF ALL CONNECTIONS, FITTINGS, HARDWARE, WIRING, ETC. ARE PROVIDED BEFORE INSTALLING AND OPERATING EQUIPMENT, AND

IT IS THE CUSTOMER'S RESPONSIBILITY TO INSTALL AND OPERATE IN A MANNER CONSISTENT WITH ALL FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS IN THEIR LOCATION, INCLUDING BUT NOT LIMITED TO ELECTRICAL, SEISMIC, AND CLEAN WATER CODES AND REGULATIONS.

BFK SHALL BE HELD HARMLESS FROM PROBLEMS OCCURRING FROM IMPROPER INSTALLATION AND OPERATION OF THE SYSTEM.

Please consult factory if any discrepancies arise BEFORE the system is installed and operated.

Metric equivalents are provided for reference only.



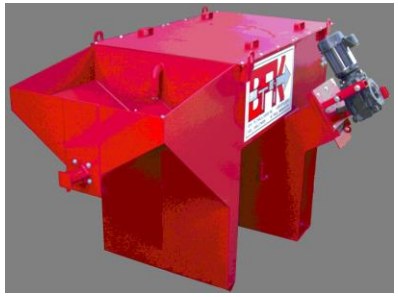
The picture to the left shows a RIGHT-hand standard M6. The “hand” is defined as the side of the machine that the Sand Screw discharges from.

Notice the drain location, on the opposite side of the Sand Screw location.

Rock discharges out the back end of the machine, opposite from the Infeed Hopper.

Removable lids cover the rotary screen.

A Left-hand machine is obviously a mirror image of this, as shown below.



Standard
Left-Hand
Model M6

1.02 PREPARATION

Prior to beginning installation of the M6, the following should be completed and available:

All concrete foundation work must be completed. Before your reclaimer arrives, the lay-out of this installation should have been predetermined.

Allow one day for installation, barring unnecessary delays.

1. Labor
- 1 General laborer
- 1 Mechanic
- 1 Electrician
- 1 Forklift Operator

2. Equipment
- (1) 5000# Fork lift
  M6 Assembled weight approx. 1000#
- 1 Set of standard mechanics tools.

3. Optional Equipment, such as a Star Prefeeder/Hopper Assembly varies depending on size and style ordered. **Consult Factory for off-loading and erection/assembly requirements.**

4. Hardware and miscellaneous which *may* be needed (for *each* M6 to be installed).
NOTE: Individual installations vary, so confirm required items before purchasing and installing. **When in doubt, CONSULT FACTORY**. This list is intended as a guide only, and may or may not be all-inclusive.

☑Gearmotors:
Are shipped WITH oil. Before operating system, ensure oil is at proper level.

☑Drain:
(1) 8" diameter Schedule 40 PVC pipe **AS NEEDED.** **NOTE**: Length may vary depending on pit lay-out.
(1) 8" diameter rubber coupling (Fernco-type Coupling) for slurry drain.

☑Sand Dewatering Screw Upper Back-wash water connection:
(2) Hose clamps
(1) 3/8"ID Hose

☑Sand Dewatering Screw Lower Bushing water connection:
(2) Hose clamps
(1) 3/8"ID Hose

☑Front Rotor Bushing assembly connection:
(2) Hose clamps
(1) 3/8”ID Hose

☑Connecting Pump to Reclaimer:
(1) 2” Water Hose **AS NEEDED.** **NOTE**: Length may vary depending on pit lay-out.
(2) 2” Hose Nipple (MNPT x Hose)
(2) 2” T-Bolt Hose clamps

☑Connecting Rotor Nozzles:
(2) 3/4”ID Water Hose
(4) 3/4” T-Bolt Hose clamps
(2) ¾” Ball Valves (recommended)

☑Electrical connections and mounting should be performed by qualified electrician, following all local and national codes. Electrician to determine use of junction boxes, water-tight fittings, etc. to meet codes. Some items which *may* be required include:
(1) 6” x 6” junction box for pump connection, where needed.
Conduit and/or cable for connecting reclaimer rotor and sand screw.

☑Optional Loop detector: 16 AWG THHN stranded Copper wire, Silicone Caulk or Epoxy for sealing detector loop on ramp. Length as needed, depending on Loop size and shape.

5. Hardware and miscellaneous for connecting Star Prefeeder/Hopper Assembly to M6 (WHERE PURCHASED):
☑Connecting M6 to Star Prefeeder:
(1) 2” Ball Valve
(Set) Fittings to reduce from 2”MNPT Connection on M6 down to 3/8” Sch. 40 Pipe Nipple
(1) ¾” ID Hose
(2) Hose clamps

(2) ¾” ID Hose
(4) Hose clamps

(1) ¾” ID Hose
(2) Hose clamps

☑Connecting M6 to Spray Nozzles in Infeed Hopper (WHERE USED):
(Set) Fittings to reduce from 2”MNPT Connection on M6 down to 3/8” Sch. 40 Pipe Nipple
¾” ID Hose
Hose clamps as needed

1.03 OFF-LOADING

Depending on the options ordered with your equipment, you should receive some or all of the following items with each system:

- One (1) M6 Shroud/Rotor assembly
- One (1) Sand Dewatering Screw with upper housing
- One (1) Electrical Control Panel.
- One (1) Submersible Pump
- One or more boxes containing installation and assembly hardware, if needed for optional equipment.
- If purchased, an Infeed Hopper and/or Star Prefeed Assembly.

CAUTION! ALWAYS USE PROPER EQUIPMENT TO OFF-LOAD OR INSTALL EQUIPMENT.

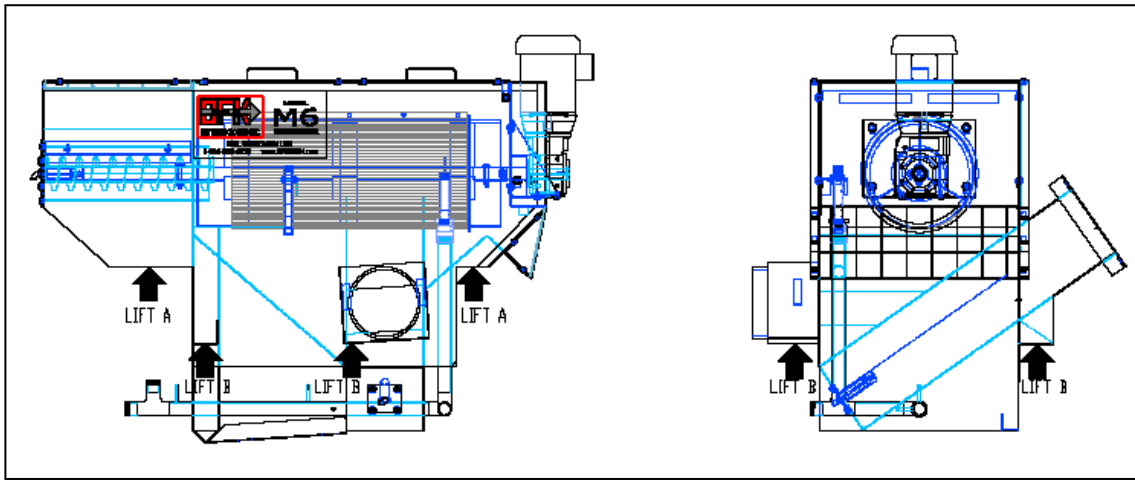
Standard rigging practices and procedures should be utilized to avoid damage or injury. Damage caused by improper off-loading is easily detectable and NOT covered under warranty.

ALWAYS LIFT EQUIPMENT FROM LIFT LOCATIONS ONLY! Lifting from other locations is dangerous and may lead to equipment damage and/or injury or death to personnel!

All other items may be off-loaded with a fork truck, or other means.

TOTAL SHIPPING WEIGHT OF THE SYSTEM IS APPROX. 1300#, broken down as follows:

Snubnose Shroud/Rotor/Sand Screw **Standard** assembly:	1000#
Electrical Control Panel:	200#
plus additional depending on miscellaneous/optional items.	100#



The M6 is designed to be lifted by a forklift at both Lift point A and Lift point B (shown in drawing).

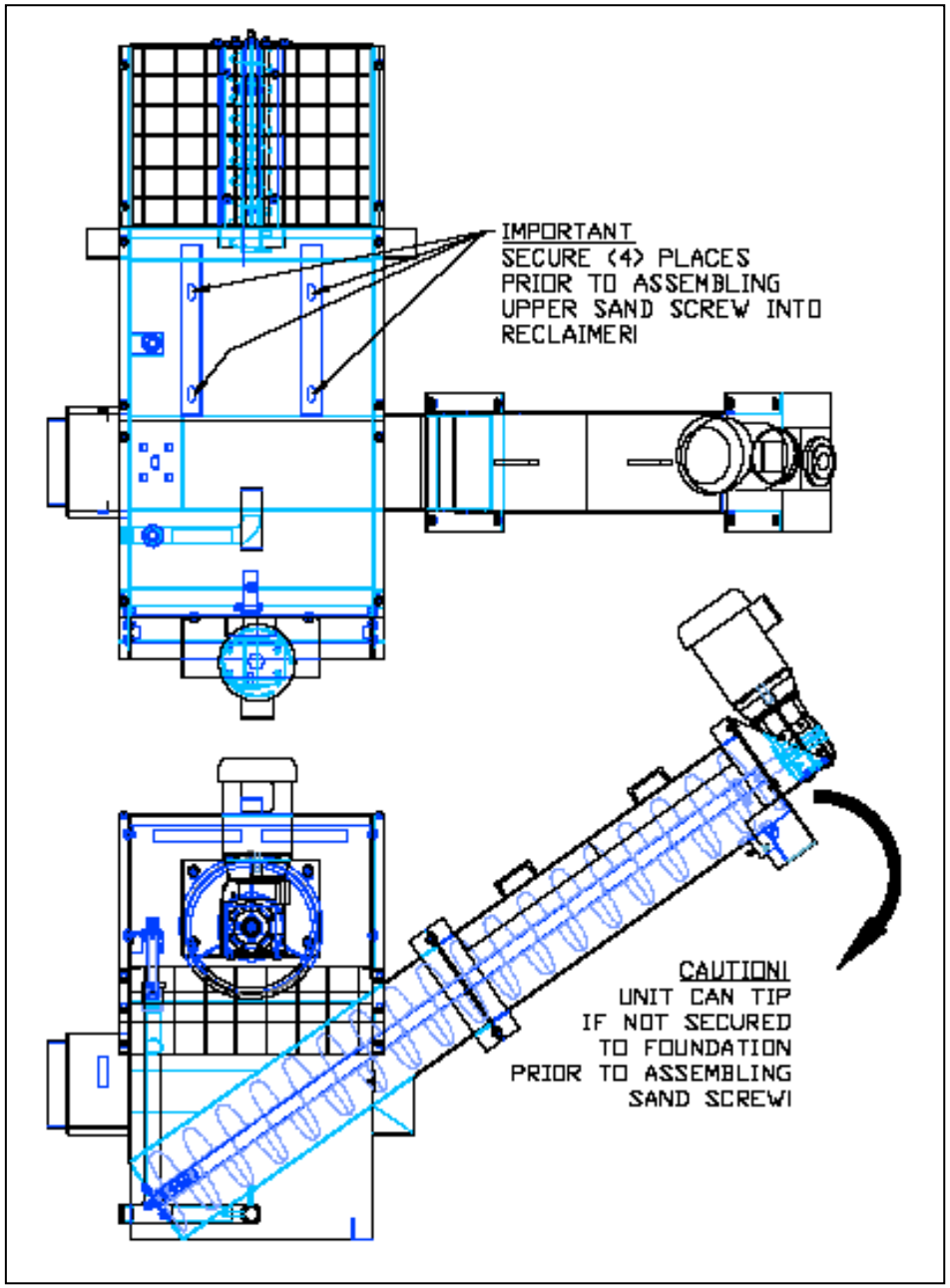
The unit can be lifted from any side of the machine.

NOTE: NEVER lift machine with sand screw installed in main shroud assembly.

Assemble Sand Screw into main shroud AFTER unit is set and secured in proper location.

CAUTION! Set M6 into position and SECURE TO FOUNDATION prior to installing upper sand screw!

Unit may present tipping hazard if not secured to foundation!



1.04 SHROUD/ROTOR/SAND SCREW INSTALLATION

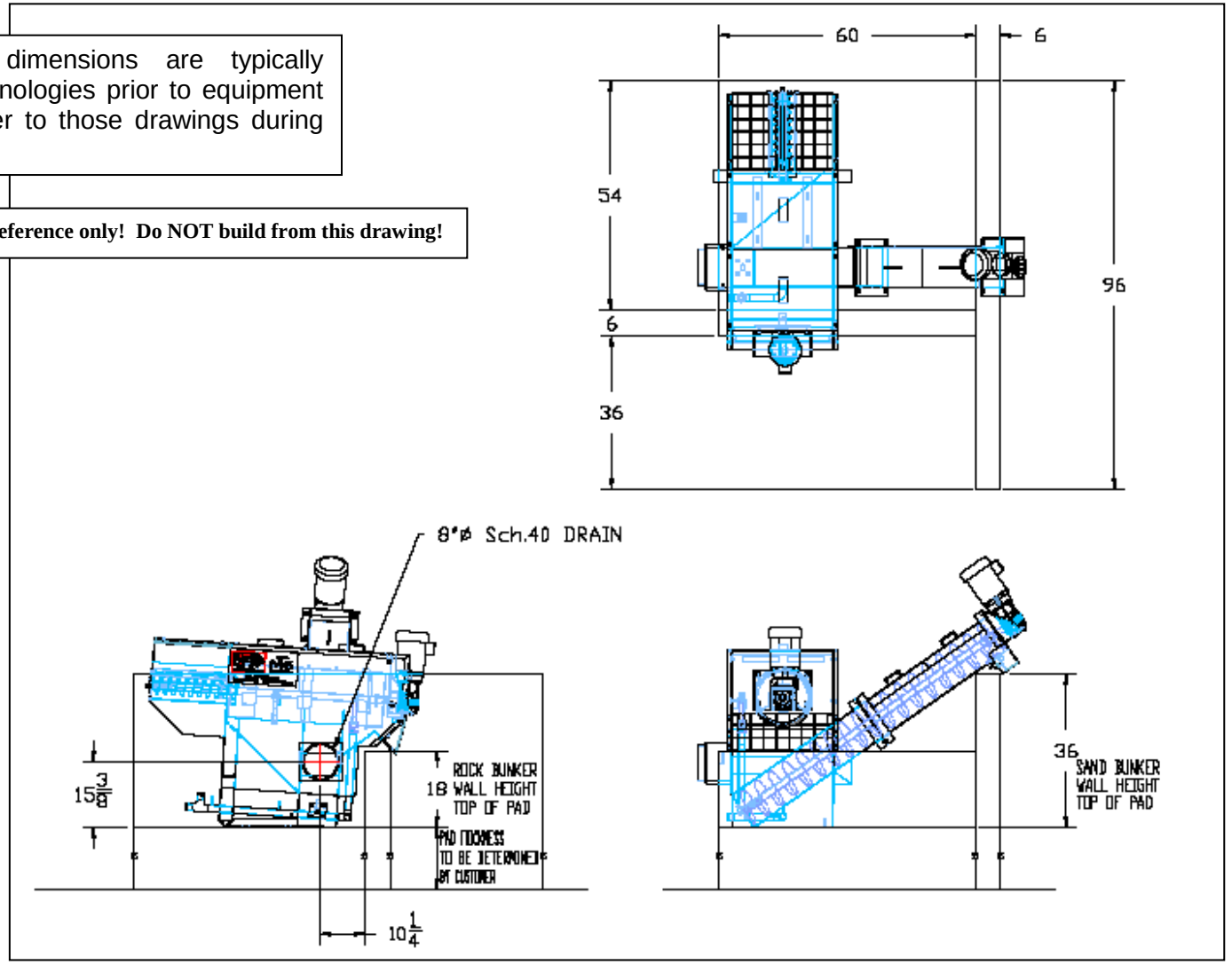
The following lay-out drawing shows a typical installation. This lay-out may vary for each application.

Actual pad lay-out and pit dimensions are typically provided by BFK Technologies prior to equipment shipment. Please refer to those drawings during installation, OR CONSULT FACTORY PRIOR TO BEGINNING.

Begin by setting the shroud/rotor assembly in place on the pad, allowing the rock discharge plate to extend over the rock bunker wall. SECURE TO FOUNDATION PRIOR TO INSTALLING SAND SCREW. Install the sand screw upper assembly, ensuring the sand discharge extends over the sand bunker wall.

Actual pad lay-out dimensions are typically provided by BFK Technologies prior to equipment shipment. Please refer to those drawings during installation.

NOTE: Dimensions are for reference only! Do NOT build from this drawing!



1.05 PUMP INSTALLATION IN A SETTLING POND

The system may be supplied with one Submersible pump. Suspend the pump near the surface of the water, off of the pit wall in the settling pond farthest from the reclaimer**. When installed, it is important to keep the submersible pump above the bottom of the pit to prevent the fine solids from being sucked up and run through the water system**. The pump has 2 lift eyes integral to the pump for suspending the pump properly. It is up to the purchaser to develop the best way to install the pump for their installation. Lay-out and pit dimensions may have already been provided by BFK Technologies prior to equipment shipment. Please refer to those drawings during installation.

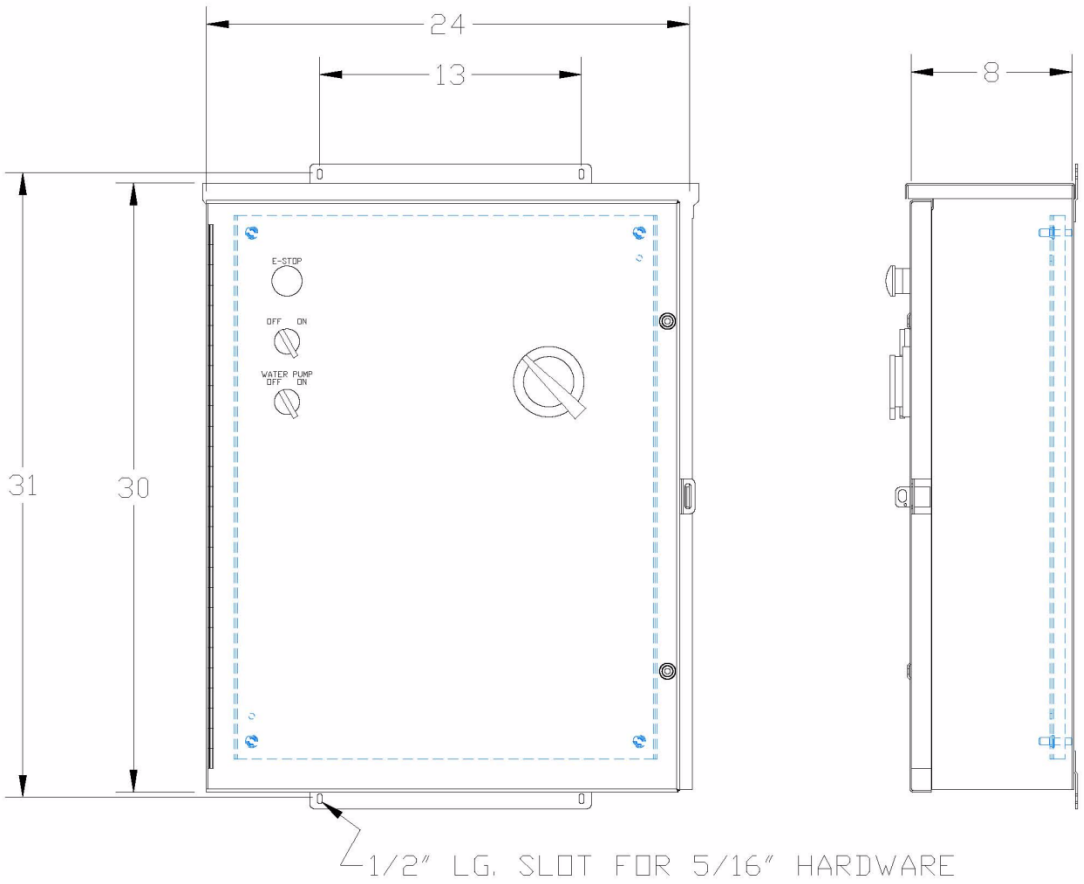
1.06 CONTROL PANEL INSTALLATION

The Control Panel needs to be mounted in accordance with local and national codes.

Typical Control Panel dimensions shown on drawing.

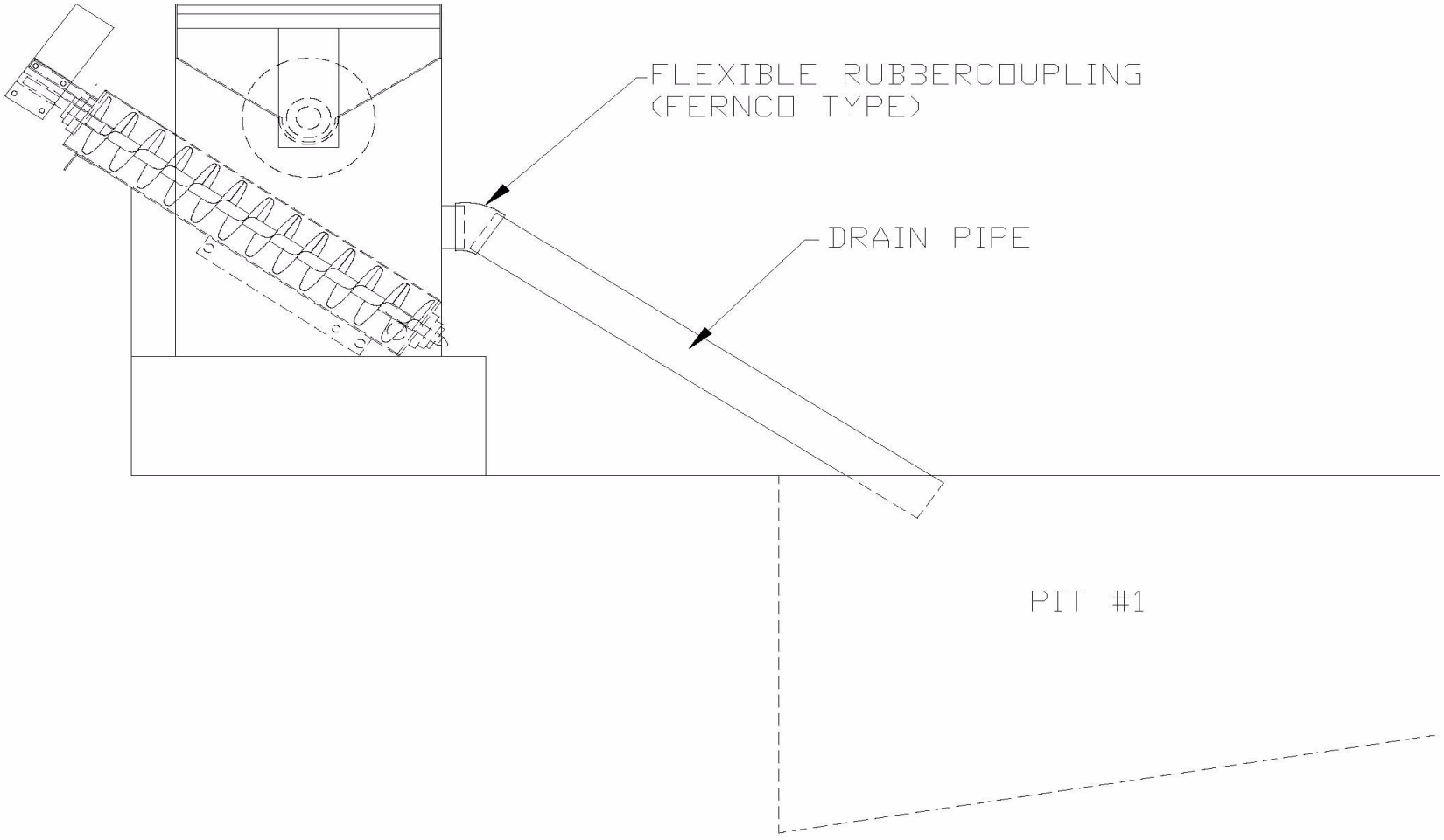
Actual dimensions may vary, depending on options purchased.

CONFIRM DIMENSIONS PRIOR TO INSTALLATION.



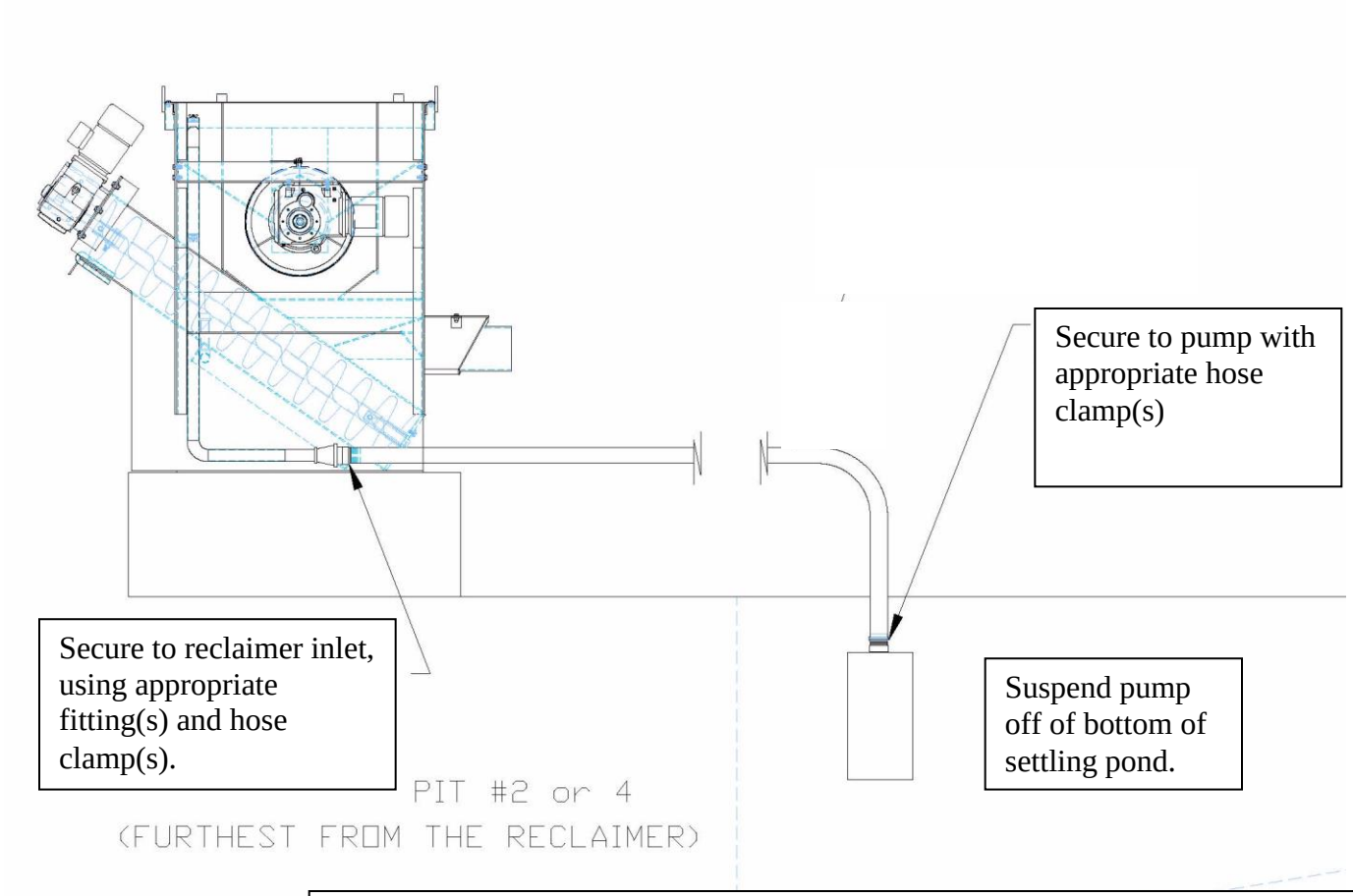
1.07 DRAIN INSTALLATION

The drain pipes must be installed so that they have a negative slope. It typically consists of (1) 8"∅ PVC Pipe with a rubber coupling (Fernco type). They may also need 90° or 45° elbows to drain properly into the first pit (closest to the reclaimer). The drain lay-out should already have been identified on the pit system installation drawings. Please refer to those drawings during installation.
Drains should be kept to a minimum length – the longer the drain, the better the chance of fines settling out and plugging.



1.08 WATER CONNECTIONS

PUMP TO RECLAIMER:
Connect pump to reclaimer. BFK provides a 2" Male Pipe Thread connection at rear of reclaimer. MOST (NOT ALL) PUMPS supplied have a 2" pipe thread discharge. CONFIRM pump discharge size before purchasing and installing connection and fittings. If you connect a pump with a different size discharge then the inlet size of the reclaimer, **ALWAYS place reducer fitting (when used) AT RECLAIMER INLET, NEVER AT PUMP DISCARGE!**

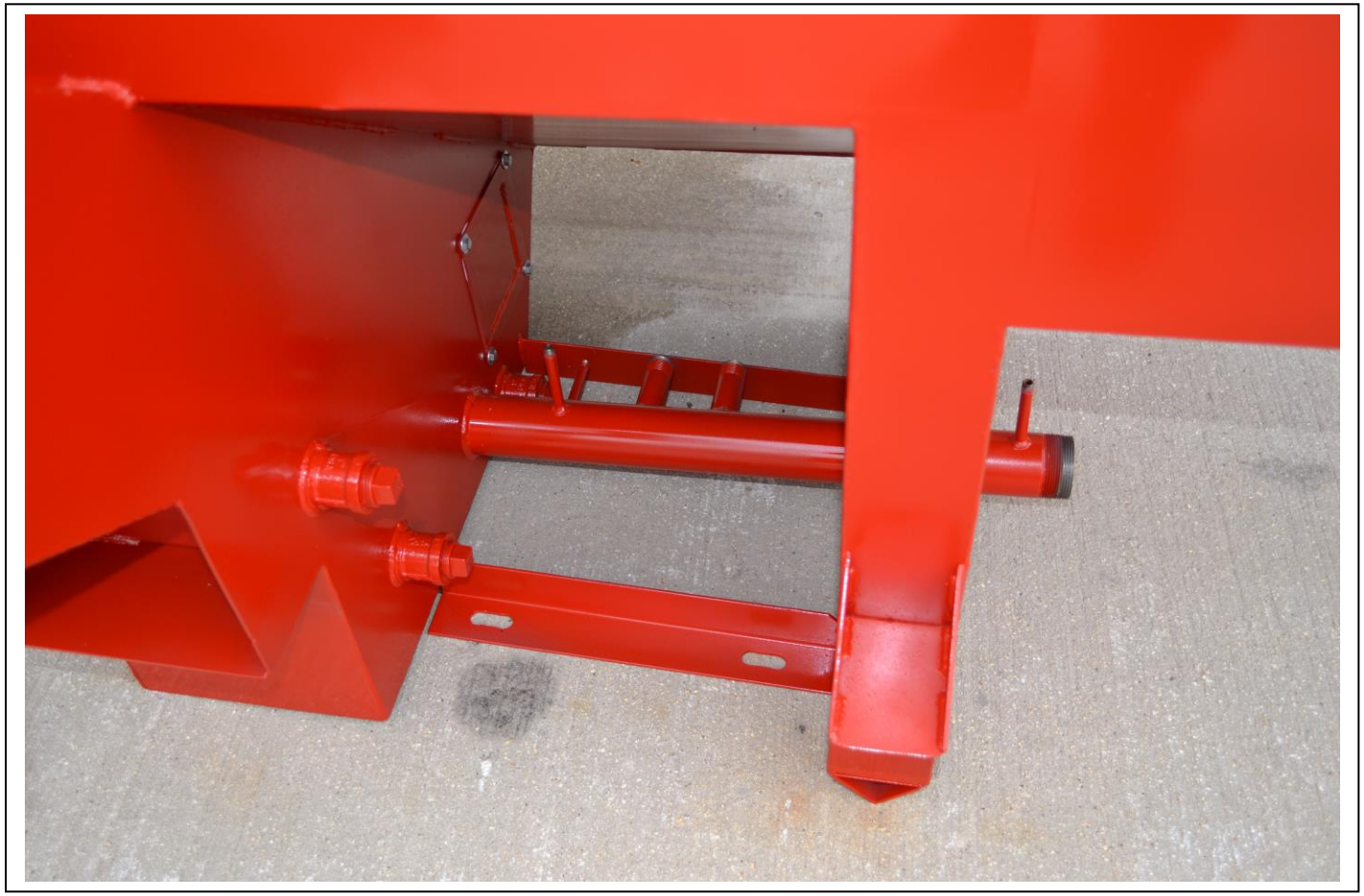


Connecting Pump to Reclaimer:
Water supply line: It is up to the Customer to determine the proper size and type of line to minimize friction losses to the reclaimer. In most (NOT ALL) installations, the pump has a 2" discharge. In most (not all) installations, water hose will work.

The supply line that is least restrictive in terms of friction loss is PVC pipe. If PVC pipe is used, customer should minimize the use of elbows and tees, wherever possible, as they add to friction loss. **IF IN DOUBT, CONSULT FACTORY PRIOR TO PURCHASING AND INSTALLING THE WATER SUPPLY LINE.**

CONNECT TO INFEED HOPPER/STAR PREFEEDER (where used):

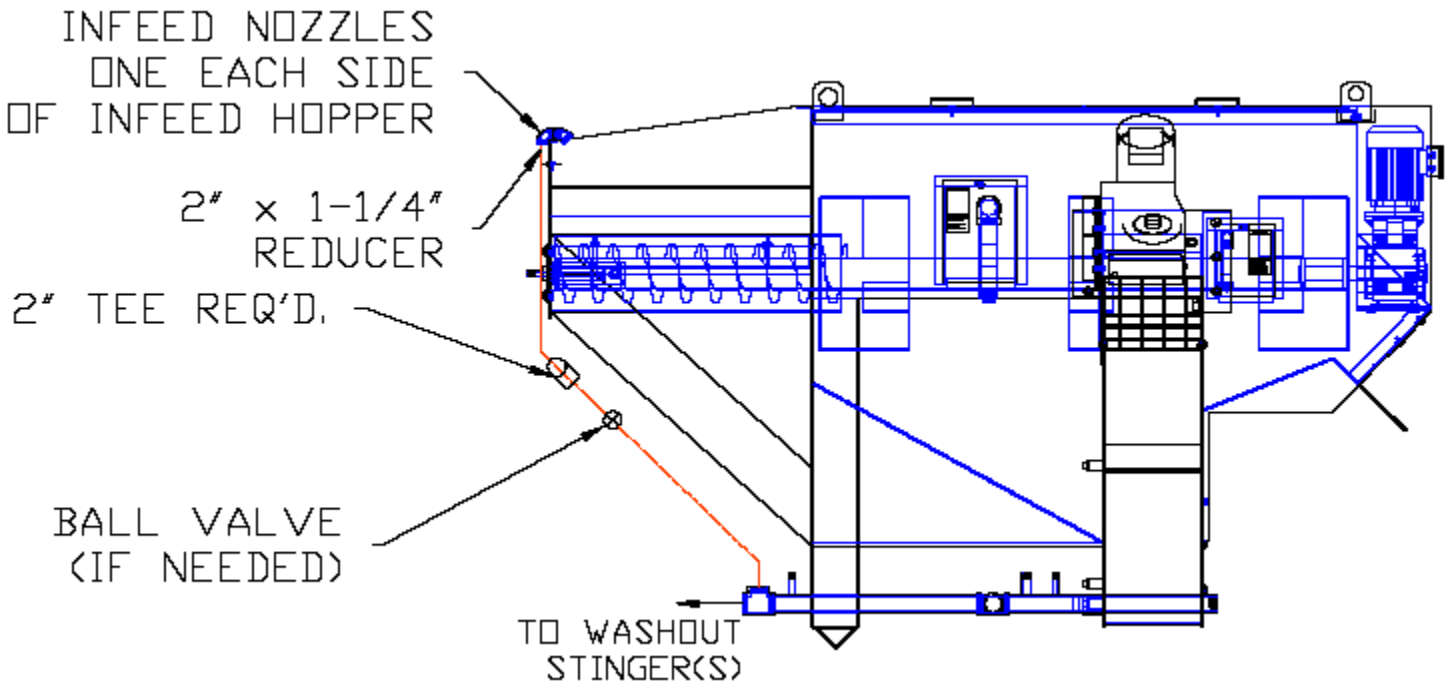
Please consult manual on Infeed Hopper/Star Prefeeder for proper connections.



NOTE: Install Cap on any connections not used!

INFEED SPRAY BAR (If used):
In installations where no Star Hopper/Prefeeder is used, user may wish to install an infeed spray bar to help keep the infeed area clean during use. It is recommended that the spray bar be made of 3/8" Sch.40 Pipe maximum. Install required fittings on pipe connection on reclaimer, under infeed hopper. BFK provides a 2" male pipe thread discharge. Install fittings to reduce down to 3/8" pipe diameter. Use ¾" hose and required fittings to connect from reclaimer to spray bar.

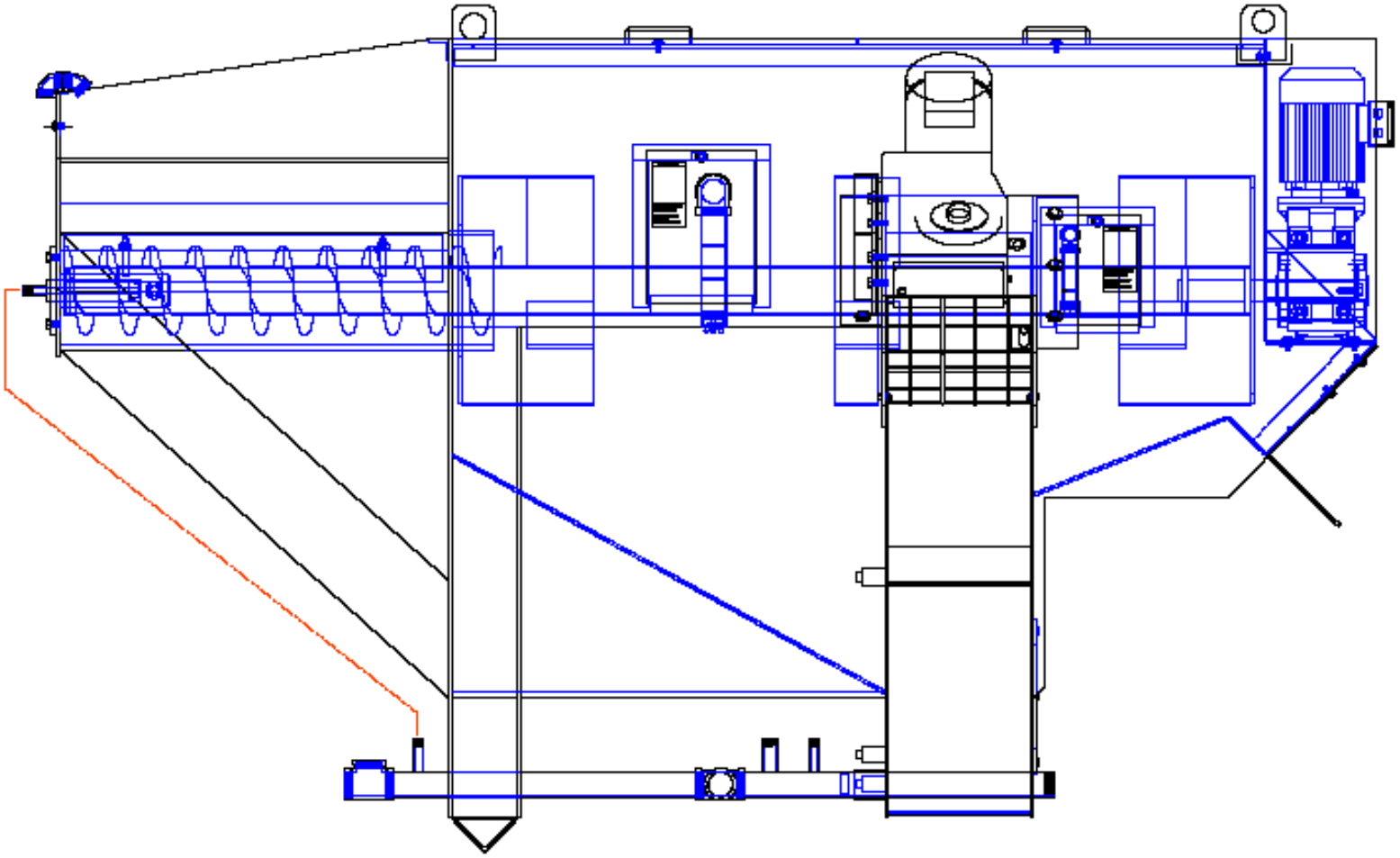
User may wish to install ball valve in hose to adjust water flow into infeed area.



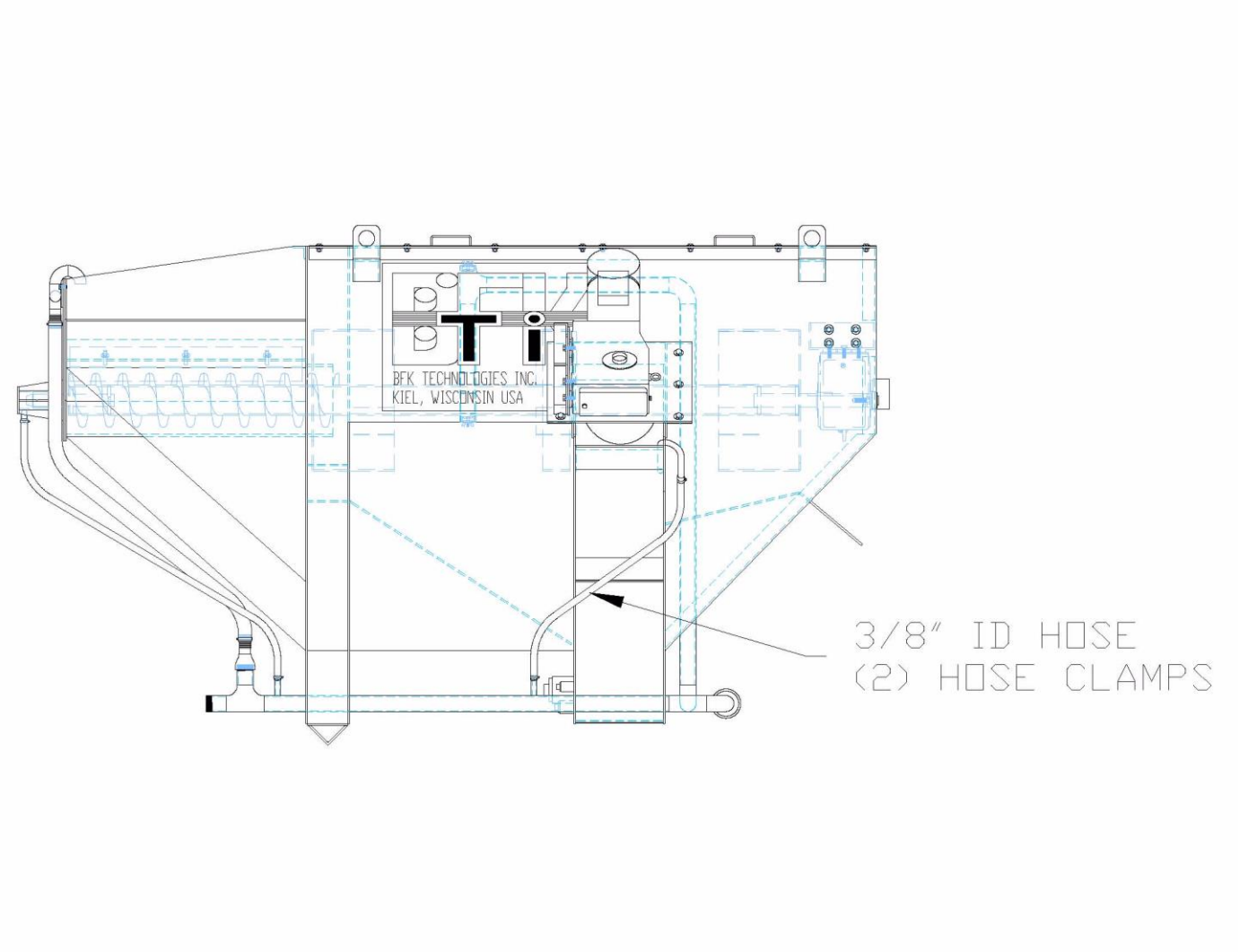
NOTE: Washout Stingers typically not used nor supplied with M6 Reclaimer.
Tee shown may be supplied by customer if extra connection fittings are needed.

FRONT ROTOR BUSHING:

Connect front rotor bushing nozzle using 3/8” water hose, (2) hose clamps and hose nipples, if needed. Take care so that the water will drain out of the hose after shutdown, so as not to freeze in cold weather.

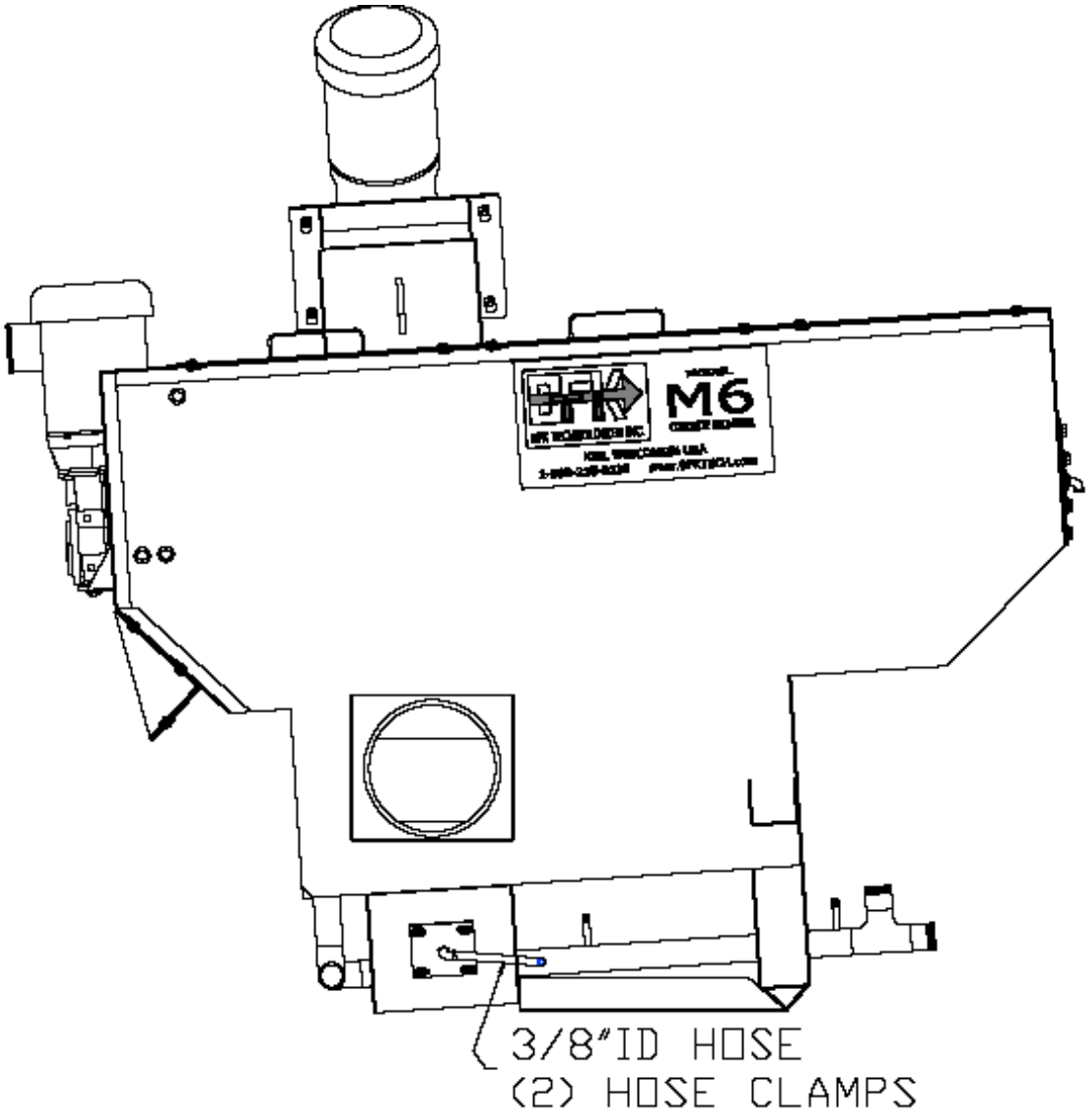


SAND DEWATERING SCREW NOZZLE:
Connect sand dewatering screw nozzle using 3/8” water hose, (2) hose clamps, and hose nipples, if needed. Take care so that the water will drain out of the hose after shutdown, so as not to freeze in cold weather.



LOWER SAND SCREW BUSHING:

Connect lower sand screw bushing nozzle using 3/8” ID water hose, (2) hose clamps and hose nipples, if needed. Take care so that the water will drain out of the hose after shutdown, so as not to freeze in cold weather.



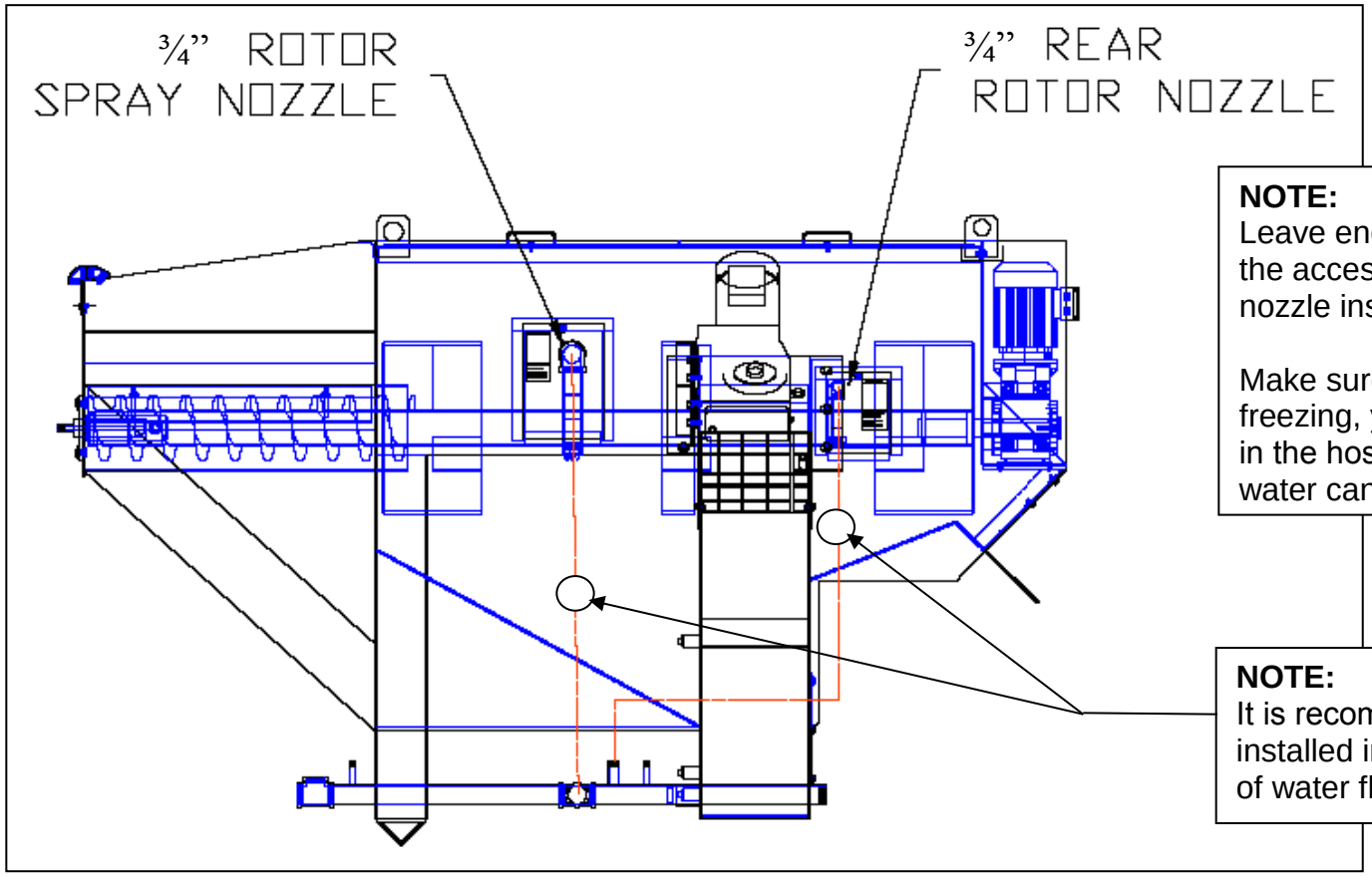
ROTOR SPRAY NOZZLE AND REAR ROTOR NOZZLE:

These nozzles are mounted on access panels on the side of the reclaimer. Both nozzles are 3/4" pipe.

BFK provides a pipe stub on main water pipe for connection to rotor spray nozzle. Customer should connect to rotor spray nozzle using required fittings, hose, and hose clamps.

BFK provides a pipe stub on main water pipe for connection to rear rotor nozzle. Customer should connect to rear rotor nozzle using required fittings, hose, and hose clamps.

Take care so that the water will drain out of the hoses after shutdown, so as not to freeze in cold weather.



NOTE:
Leave enough slack in the hose so that the access panels may be removed for nozzle inspection and cleaning.

Make sure, however, in areas prone to freezing, you do not leave too much slack in the hose to create a "dead spot", where water can collect after shutdown.

NOTE:
It is recommended that ¾" ball valves be installed in each hose to allow adjustment of water flow at each nozzle.

1.09 OPTIONAL EQUIPMENT

1.09.1 SAND DEWATERING SCREW HEATER

If optional heater was *not* purchased, you may skip this page.

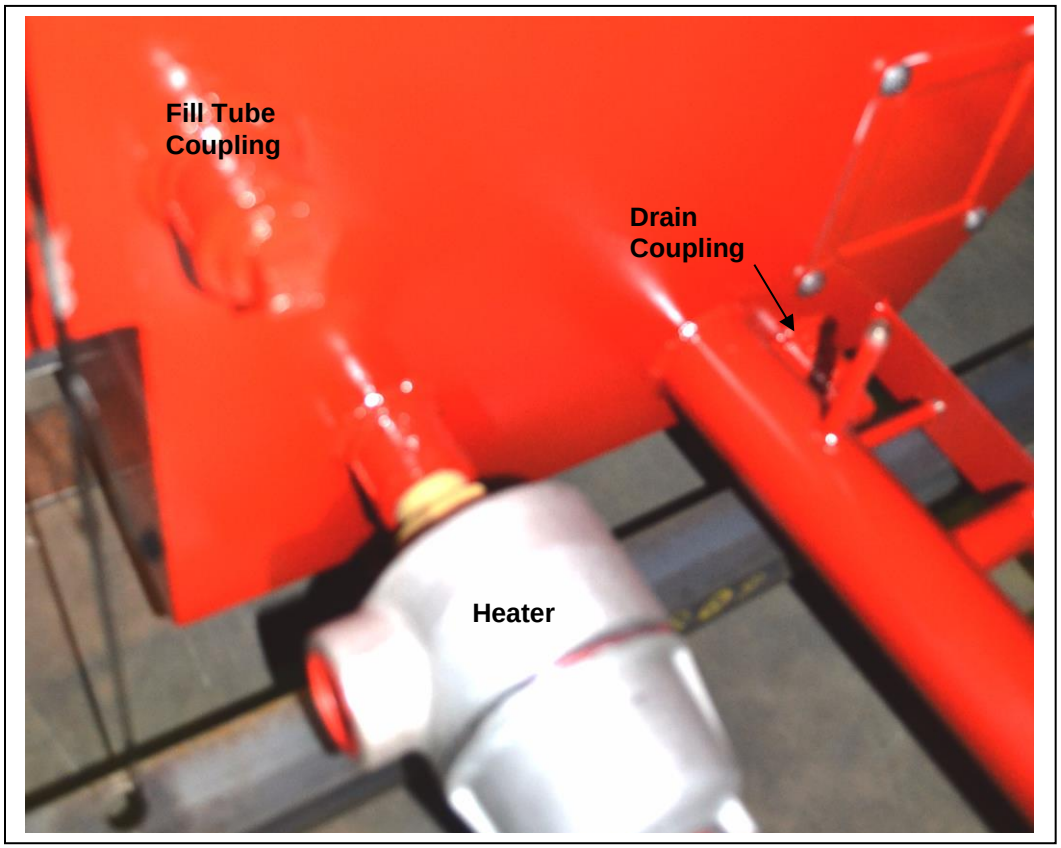
The screw box heater is designed to minimize the possibility of freezing the water in the bottom (lower end) of the sand dewatering screw during extended shut-down periods.

Remove 1”∅ square head pipe plug shipped on unit. Locate electric heater (shipped in accessory box), and screw into coupling, being careful not to damage the heating elements. Tighten to eliminate leakage. Install 1”∅ street elbow and 8” long pipe nipple into highest coupling. Fill heat box with approximately 4.4 U.S. gallons of anti-freeze.

Install 1”∅ pipe cap on 8” nipple when filled, to complete installation.

Locations of Heat Box Fill, Heater Mounting, Heat Box Drain, and Sand Screw Drain shown.

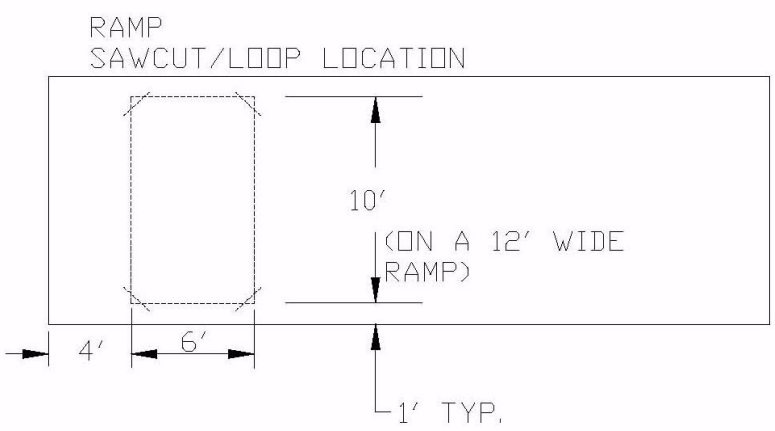
If optional Sand Screw Heater was purchased, installation of a 1” Street elbow, 1” nipple and 1” cap to create a Heat Box Fill Tube (as shown in picture) will aid in proper filling of anti-freeze.



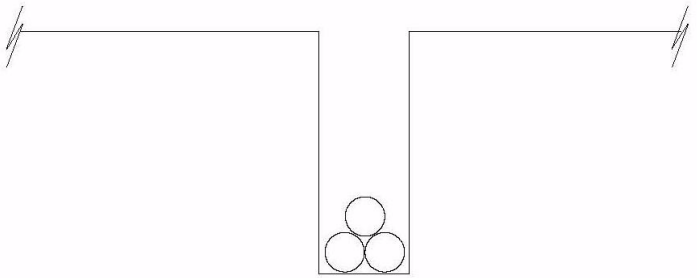
1.09.2 LOOP DETECTOR

If optional loop detector was *not* purchased, you may skip this page.

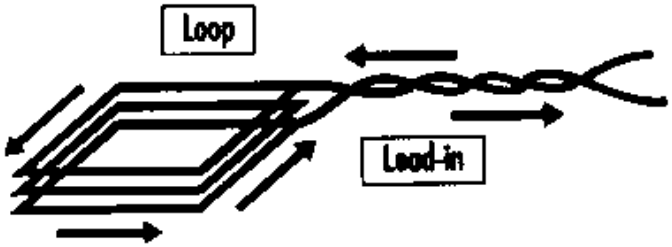
The loop detector is designed to automatically sense the presence (or absence) of trucks at the reclaimer. It is tied into the "start" relay in the control panel. When a truck, or other large metallic object, such as a front-end loader) is sensed, the system will automatically turn on. Also, when the loop detector senses the absence of a truck, it will initiate the shut down cycle.



LOOP DETECTOR INSTALLATION INSTRUCTIONS:
1. SAW RECTANGLE 3/8" WIDE x 1" DEEP, 6'W. x 23'L.
2. INCLUDE CORNER CHAMFER CUTS, APPROX 12" CHAMFER.
3. LAY WIRE IN CUT (USE CHAMFER CUTS, NOT SQUARE CORNERS)
   A TOTAL OF THREE (3) TURNS - DO NOT TWIST!
4. TWIST WIRE FIVE (5) TIMES PER FOOT BETWEEN RECTANGLE AND CONTROL PANEL.
5. USE #14 STRANDED THHN WIRE.
6. FILL CUT WITH SEALANT.



NOTE: Customer to supply actual loop wire.
Use #14 Stranded THHN Wire.
BFK provides the Loop Detector Sensor only, mounted and pre-wired inside Control Panel enclosure.



LOOP INSTALLATION TIPS

The loop consists of stranded wire suitable for direct burial with low AC and DC resistance. The loop should be not less than 6' wide, the length being 2' less than the overall width of your ramp (allowing 1' off of each edge of the ramp). The depth of the saw cut is typically 1" deep by ¼" to 3/8" wide. Cut the corners of the loop to 45° angles to avoid pulling loop wires around a 90° and risk damaging the wires. Do not push the loop wires into the saw cut with any sharp object. Always stay a minimum of 2" above any rebar or wire mesh. The loop wire is wound to form a coil. Ideally there should be no splices in the loop i.e. take your loop wire and go out to your saw cut, go around your saw cut 3 times, and come back to your detector. Twist the lead-in portion 5 times per foot. The loop is one continuous wire.
Twist only the lead-in, the part from the edge of the loop back to the detector. **Do not twist the loop.**

1.10 GEARMOTOR OIL

Gearmotors mounted on both the rotor and the sand screw are shipped with the proper type and amount of oil.
Oil level should be checked prior to operation of the equipment, to confirm.

DAMAGE CAUSED BY RUNNING THE EQUIPMENT WITHOUT OIL IS EASILY DETECTABLE AND NOT COVERED UNDER WARRANTY!

When the need arises to refill the units, refer to the Gearmotor Specification Sheets shipped with the equipment for proper oil types and amounts. If uncertain, CONSULT FACTORY.

At a minimum, Gearmotor oil should be drained and replaced ANNUALLY.

SECTION 2.0 ELECTRICAL CONTROL PANEL

2.01 SCHEMATICS/FIELD WIRING & POWER REQUIREMENTS

Schematic drawings are sent in the inside door pocket of the electrical control panel enclosure. It is up to the qualified electrician on-site to run the appropriate conduit and cable for proper connection of all equipment supplied with your system.

2.02 OPERATIONS

The M6 Control Panel will be assembled for your specific application and optional equipment purchased. The basic system is the "heart" of all applications. Discussions of optional equipment will follow.

Basic System – MANUAL OPERATIONS
The basic package consists of a NEMA 12 enclosure, complete with all required fuses, heaters, motor starters, relays and terminal strips, on/off and e-stop switches, and alarm horn.

In addition, there are (3) internal relays with the following functions:

TR1 Start Delay Relay — When system is turned on, relay energizes alarm horn for 10 sec. prior to energizing equipment. Time delay (amount of time from when on/off switch is turned on, until reclaimer begins to operate, also amount of time alarm horn sounds) is adjustable on the face of the relay, but is factory preset for 10 seconds.

TR2 Stop Delay Relay — When system is turned off, relay goes into shut-down cycle. The relay allows the reclaimer to continue to run for a time after the on/off switch is turned off, to allow the reclaimer to clean-out prior to shut-down. The time delay is adjustable on the face of the relay, up to 90 minutes.

TR3 Latch Up Timer — This timer is energized by the manual start switch (or loop detector). As long as the On/Off switch remains in the ON position (or there is a vehicle sensed by the loop detector) for 2 seconds, the relay energizes to latch up the motor starters.

On the front door, the switches consist of:

- Main Disconnect
- On/Off Switch
- E-Stop Switch
- Water Pump Off/On

To operate the machine, the Main Disconnect must be in the ON position (door closed), with the E-Stop pulled out. Simply turn the On/Off Switch to the ON position.

At this point, the alarm horn will sound for approx. 10 seconds (thru TR1), and then the equipment will be begin to operate.

After you are done using the reclaimer, simply turn the On/Off switch to the OFF position. The reclaimer will continue to run for up to an additional 90 minutes prior to shutting down (thru TR2).

Water Pump Off/Auto Switch: This switch allows the user to run the reclaimer without turning on the water pump.

Internal VFD's (variable frequency drives) may be supplied for the Sand Screw and/or the Star Prefeeder gearmotor(s), if supplied. These units are factory preset to appropriate speeds based on the capacity of the system. The Sand Screw should be set to run at 60Hz (standard speed of gearmotor). In some cases, if the sand is coming out too wet, the speed may be adjusted to help this cause. Slowing down the sand screw may allow more time for the water to leave the sand prior to discharge. Do not slow down too much, or the screw will not be able to take away the sand fast enough, causing it to back up inside the reclaimer.

The Star Prefeeder should be started at 20Hz (1/3 of the gearmotor speed). This will generally ensure that the reclaimer is not overfed. While running concrete mix thru the equipment, you may adjust the speed upwards to deliver the wet concrete from the Star Prefeeder into the reclaimer faster. If concrete begins to back up in the reclaimer infeed area, turn the Star Prefeeder speed back down until the reclaimer can take away the concrete without backing up.

If in doubt as to the cause and effect of changing the rotational speed of either unit, please consult factory prior to making adjustments. In any case, **make a note of the current setting(s) prior to making adjustments**, so that you can get back to the starting point if the adjustments do not provide your desired results.

OPTIONAL EQUIPMENT:

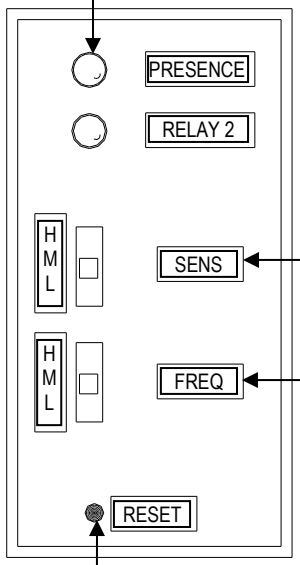
INFEED HOPPER VIBRATOR:

Some systems are equipped with a Star Hopper/Prefeeder. Larger hoppers, typically 1 cubic yard capacity or greater, may be equipped with an electric vibrator to ensure the wet concrete flows out. If your system is so equipped, the control panel may be outfitted with a step-down transformer, to supply the required voltage to the vibrator.

LOOP DETECTOR/PRESENCE SENSOR (if purchased):

The Loop Detector option provides the user the ability for fully automatic operation of their reclaimer. It eliminates the need to rely on the truck drivers to turn the reclaimer on and off.

When a truck drives over the loop (installation covered on page 19), the presence sensor senses its presence and initiates the START operation of the reclaimer. The alarm horn sounds for 10 seconds, and the machine turns on. After the truck leaves, the presence sensor senses its absence, and initiates the shut-down cycle (6 minutes). Should another truck arrive before the shut-down cycle is complete, the presence sensor resets and keeps the system running until this truck leaves, and then initiates the 6 minute shut-down cycle once again.



PRESENCE LED WILL FLASH FOR 2 SECONDS THEN GO OUT UPON POWER-UP.

SENSITIVITY:
HIGH, MEDIUM & LOW
ADJUST AS NECESSARY

SET FREQUENCY TO
LOW OR MEDIUM

TO RESET DETECTOR, PRESS AND HOLD FOR 3 SECONDS OR UNTIL PRESENCE LED BLINKS.

QUICK SET-UP

1. VERIFY POWER TO THE DETECTOR.

   Presence LED should come ON and flash for 2 seconds, then go out.

2. SET SENSITIVITY TO MEDIUM.

3. ADJUST FREQUENCY TO LOW.

4. DEPRESS RESET BUTTON FOR 3 SECONDS, UNTIL PRESENCE LED FLASHES, RELEASE BUTTON, YOU ARE NOW READY TO OPERATE.

NOTES:

- The optional loop detector that is supplied (if purchased) is simply the loop detector relay module.
- Wire for the loop by others (see Sec. 1.09.01).
- The loop detector relay module is shipped inside the Control Panel, typically in a small cardboard box secured within (to avoid damage during shipment).
- User must plug loop detector relay module into socket that is mounted and pre-wired in the panel enclosure, and connect loop wire.

SECTION 3.0 INITIAL EQUIPMENT START-UP

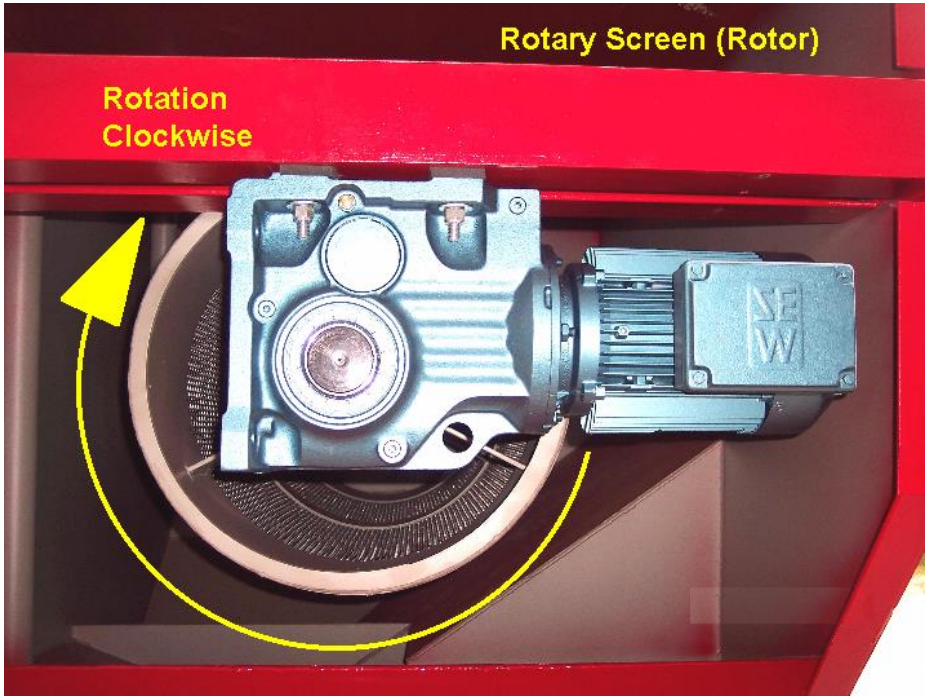
At this point, all items should be mechanically mounted, electrical connections are complete, and all hoses have been connected. It is time to start up the M6 for the first time. **NOTE: It is also assumed, at this point, the cement/water handling system is operational, i.e. the pit system is full of water.**

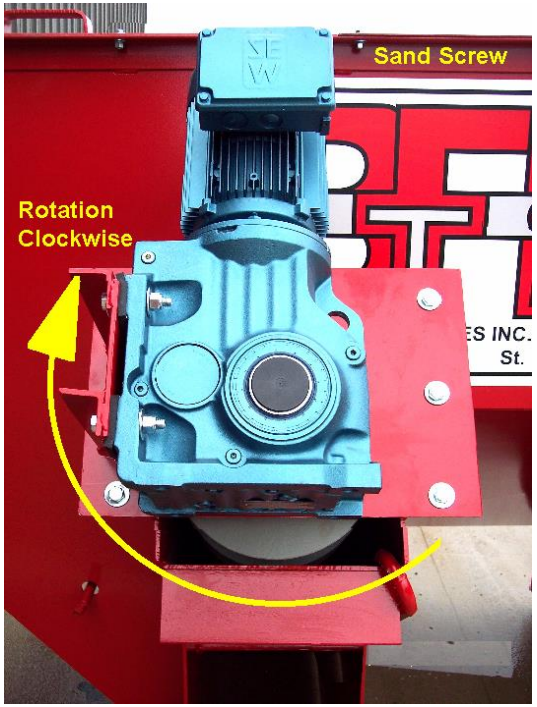
The goal here is to determine the following:

- Rotor is spinning in the proper direction.
- Sand Screw is spinning in the proper direction.
- Water Pump is spinning in the proper direction.

CAUTION! MAKE SURE ALL SAFETY GUARDS ARE PROPERLY INSTALLED AND MOUNTED BEFORE PROCEEDING!

With the Control Panel operating manually, turn the On/Off switch to the ON position. After the alarm horn sounds, the equipment should begin to operate. Check rotation of the rotor and sand screw as shown in the following pictures (NOTE: BOTH should rotate CLOCKwise.)





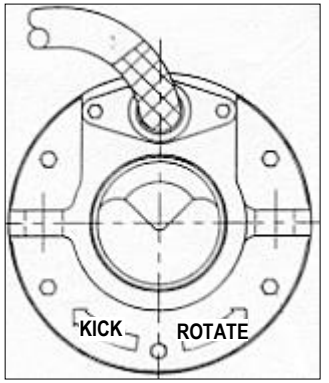
NOTE: Guards removed in pictures for clarity. NEVER OPERATE WITH GUARDS REMOVED!

If either the rotor or the sand screw is turning the wrong direction, turn the reclaimer off, Lock-out/Tag-out, and have electrician reverse the leads for proper operation. Confirm rotation again.

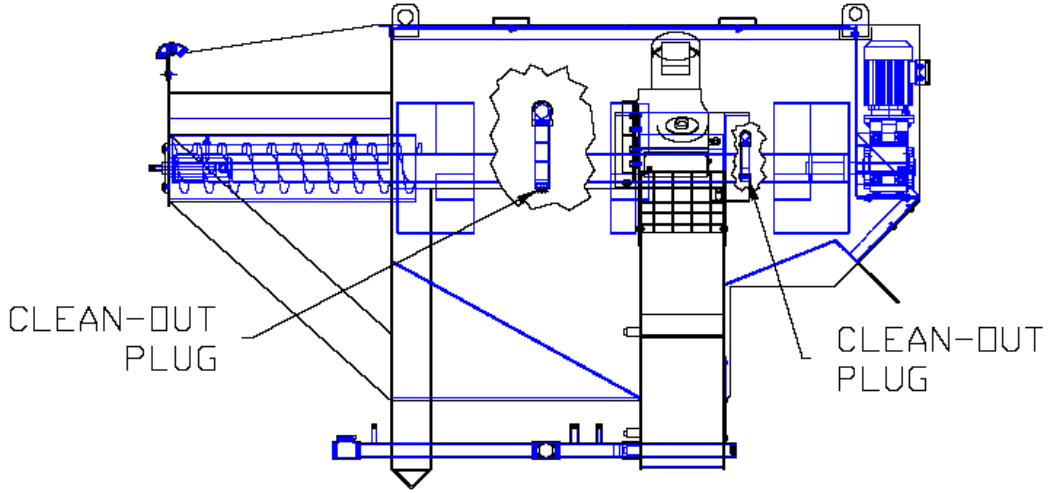
To confirm proper pump rotation, "bump" the pump while out of the pit. "Bump" the On/Off switch to the ON position, then quickly turning to OFF. While looking down at the top of the pump, notice the directional arrow on the top of the pump. "Bump" the pump on and off 3 or 4 times to confirm that the pump is turning in the direction of the proper arrow.

IMPORTANT: Do NOT just check for water flow into the reclaimer, as **the pump is able to pump water in *either* direction**.

However, if it is running in the wrong direction, the amount of water to the reclaimer will not be sufficient. If pump is turning the wrong direction, turn the reclaimer off, Lock-out/Tag-out, and have electrician reverse the leads for proper operation. Confirm by "bumping" prior to replacing the pump into the pit.



Once all 3 rotational items are turning in the proper direction, turn On/Off switch to the ON position, and allow reclaimer to run for 10-20 minutes. This period allows the equipment to become wet, ensuring everything seats properly, etc. While it is running, review all nozzles for water output. Check the infeed hopper nozzles, the rotor spray nozzle, the rear rotor nozzle, and sand screw backwash nozzle. **Make sure clean-out plugs are in place.**



After the 10-20 minute break-in time, shut the reclaimer OFF.
Inside of the infeed hopper, you will notice a set of adjustable infeed restrictor plates. These restrictor plates provide 2 functions. First, it is a safety precaution, covering the infeed auger to keep operators safe. Secondly, it also helps to restrict the speed that the wet concrete can flow into the reclaimer. The restrictor plates may need to be adjusted for your operations.

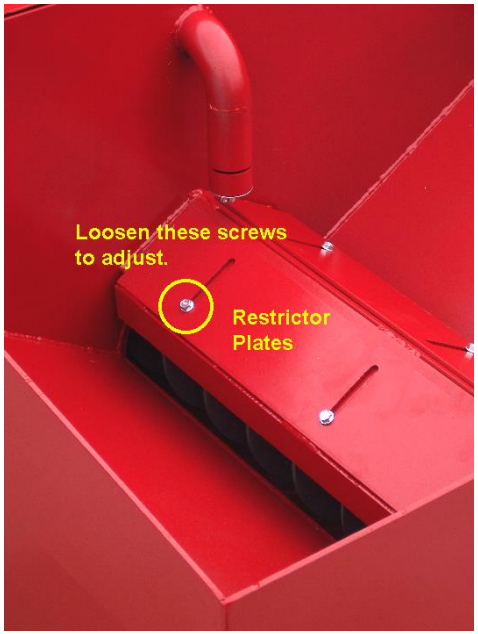
CAUTION: DE-ENERGIZE AND LOCK-OUT/TAG-OUT SYSTEM AT CONTROL PANEL PRIOR TO REMOVING INFEED HOPPER GUARD AND ADJUSTING SLIDE PLATES!

ADJUST RESTRICTOR PLATES. Loosen (4) 1/4" screws and slide plates up toward the center of the machine. When gap between slider plates and the bottom of the infeed hopper is at the proper setting, tighten all (4) bolts.

If material enters the rotor too quickly, close the gap (material being fed too quickly will often times result in improper cleaning of the sand and rock).

MAKE SURE GAP IS WIDE ENOUGH TO PREVENT JAMMING OR CLOGGING OF ROCKS.

A GOOD "RULE OF THUMB" IS TO MAINTAIN A GAP APPROX 2.5 TIMES THE SIZE OF THE LARGEST AGGREGATE IN YOUR MIX.



Re-install infeed hopper guard before re-energizing equipment.

Assuming all nozzles are pumping water, everything is rotating properly, and after your 10-20 minute run in time, you are now ready to reclaim your first load of concrete!

SECTION 4.0 PROCEDURES FOR RECLAIMING CONCRETE

The M6 is designed to reclaim *wet* concrete only.

1. Move to infeed hopper where you can discharge concrete into hopper.

2. If automatic operation is in use (i.e. loop detector), the alarm horn will sound upon detection of the vehicle, followed by the reclaimer starting. If manual operation is in use (i.e. NO loop detector), driver or operator should turn On/Off Switch to the ON position), the alarm horn will sound, followed by the reclaimer starting.

3. Add water as needed to slump up concrete, typically 6” to 10” slump is recommended.

4. Discharge concrete and wash water into the infeed hopper.

5. Add water to infeed hopper, if needed.

6. If system is in AUTO Mode - Drive away when discharge is completed. System automatically shuts off after shut-down cycle.

7. If system is in MANUAL Mode – When discharge is complete, turn On/Off switch to OFF position. System automatically shuts off after shut-down cycle.

DO NOT USE THE EMERGENCY STOP FOR NORMAL OPERATION!

Note: The design capacity of the reclaimer is *approximately* 2 to 3 cubic yards per hour maximum.
This is a design capacity only, not a guaranteed rate. Reclamation rate and quality of reclaimed aggregates can and will be affected by:

- Fine gradation of material
- Coarse gradation of material
- High or Low slump,
- Poor pit system design.
- Cleanliness of water pumped back thru the reclaimer (water system must be cleaned as needed, to eliminate spent cement being recirculated back to the reclaimer.)

Keep in mind that it may take a quarter-yard or more of concrete passing thru the reclaimer before any sand will be discharged out of the sand screw. The sand must build up a layer inside the screw box, which gives the water a path back to the reclaimer drain, as well as minimizing wear on the screw box.

APPLICATION NOTES:

Cold weather operation with system located in unheated location: Water in the system plumbing drains back to the settling pond after shutdown (assuming hose connections were properly installed). However, the low end of the sand screw will always hold a few gallons of water. **IMPORTANT: In freezing weather,** at the end of each day, loosen the lower shaft weldment in the lower bottom section of the sand screw housing to drain out the water and prevent freezing of any water remaining in the sand screw.

Also, remove the water pump from the ponds.

CAUTION!

DO NOT ATTEMPT TO RUN THE RECLAIMER IF WATER AND SAND ARE FROZEN IN THE BOTTOM OF THE SAND SCREW BOX. Attempting to do so may cause SEVERE damage to the equipment!

SECTION 5.0 EQUIPMENT MAINTENANCE

CAUTION: DE-ENERGIZE AND LOCK-OUT/TAG-OUT SYSTEM AT CONTROL PANEL PRIOR TO PERFORMING ANY MAINTENANCE OR REPAIRS ON THE EQUIPMENT!

Maintenance on a BFK Reclaimer is generally defined as “keeping things clean”. There are no bearings to grease, and no shaft seals that require adjusting, etc. Simple housekeeping will help ensure long life and happy equipment.

Obvious build-ups of waste hardened concrete, cement, fibers, etc. should be removed as needed.

Plugged plumbing and nozzles can and will affect the performance of the reclaimer, as you will in essence starve the reclaimer of water, required not only for cleaning/separating, but also for proper bushing lubrication.

SPRAY NOZZLES. Inspect DAILY for plugging.
Check the spray nozzles **DAILY** for plugging or obstructions. **It is important the spray nozzles are working properly to keep the screen clean.** Dirty nozzles reduce the efficiency of the system. Remove clean-out plug and remove any cement build-up, fiber, etc.

SCREEN
Check the screen DAILY for wear, blinding, obstructions and fiber. Screen life is related to how well the water handling system is designed and maintained. Poor design and/or maintenance of the water handling system will reduce screen life.

1. Clean screen of cement build up.
2. Clean screen of cement build up.

PUMP SUCTION SCREEN. Inspect DAILY for obstruction.
Notes: *Remove* the pump(s) from the water when cleaning the pit to avoid damage by the loader.

A small winch lift can be installed above each pump for easy removal of the pump(s).

Plugged pump screens will lower pump output and reduce the efficiency of reclaimer material washing system, and if ignored, will eventually lead to the death of the pump.

TAIL SHAFTS AND BUSHINGS
One (1) located at the front of the reclaimer on the front of the infeed hopper, and one (1) located at the lower end of the Sand Screw.

The shafts and bushings will, over time, wear. Most users claim they can hear a loud dragging or grinding noise when these items need replacement. You have probably waited too long by that time. In any event, regular and routine inspection should occur, the time frame being dependent upon reclaimer use. A good rule of thumb is to visually inspect every 1 to 6 months, depending on usage.

GEARBOXES Annually
Drain and refill with new oil. Consult factory for types and amounts if not known.

SECTION 6.0 SLURRY/WATER HANDLING SYSTEM MAINTENACE & OPERATION

Remember: The Slurry/Water Handling System is as much a part of the reclamation system as the Reclaimer itself.
It does not matter how good the design of the reclaimer is, if the slurry/water handling system is not properly maintained, the entire system begins to suffer.

POOR MAINTENANCE OF THE SLURRY/WATER HANDLINGSYSTEM WILL LEAD TO DIRTY RECLAIMED MATERIALS, PLUGGED PLUMBING, AND PREMATURE EQUIPMENT FAILURE!

Slurry/Water Handling systems may consist of some or all of the following:

- Settling Ponds
- Washout Pits
- Flocculant Systems
- Filter Presses
- Or other equipment designs.

For systems using equipment, such as flocculant feeders and filter presses, consult the manufacturer of that equipment for proper up-keep and maintenance.

In most installations, a Settling Pond system is used. Where used, the following is a good starting point to maintain them, to ensure a continuous supply of relatively clean water back at the reclaimer:

1. Check the water level in the pits daily and add water if necessary. The water level should be maintained at the level of the weirs.
2. Pit #1, or the pit that is *closest* to the Reclaimer, where the reclaimer drains into: Remove the spent cement from the bottom of pit #1 every one (1) to three (3) days, or as needed, with a front end loader or other equipment. The frequency of clean-outs will vary with reclaimer use. This time frame allows the spent cement to settle at the bottom of the pit.
3. Pit #2 (where used): Remove the spent cement from the bottom of pit #2 each week, or more or less frequently as needed.
4. Pit #3 (where used): Remove the spent cement from the bottom of pit #3 each month, or more or less frequently as needed.
5. Pit #4, or the pit that is *farthest* from the Reclaimer, where the pump is located: Remove the spent cement from the bottom of pit #4 each month with a loader, or as needed.

NOTE: *Always* remove submersible pump during cleaning.

It is up to the user to check for cement build-up in the settling ponds, and clean as needed.

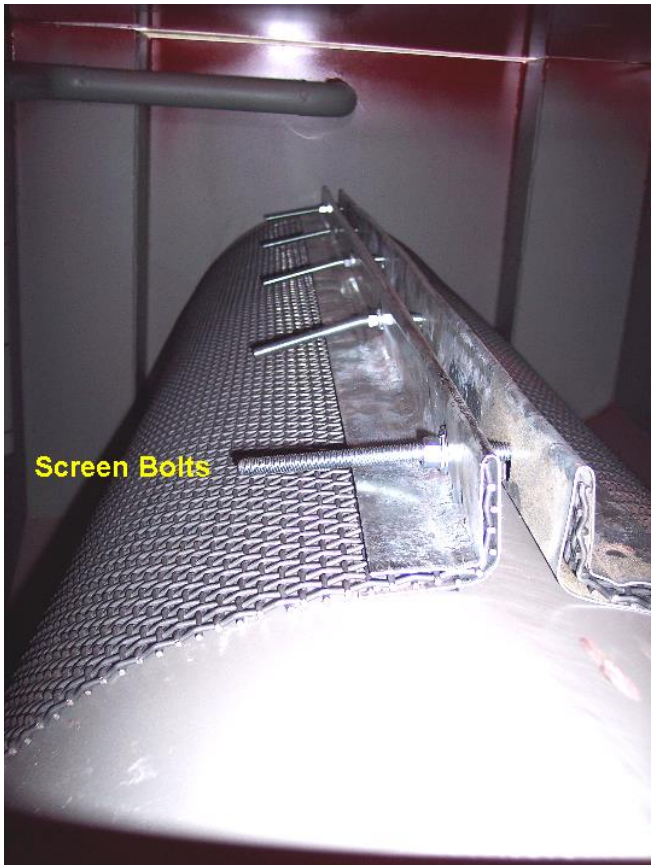
SECTION 7.0 SERVICE

SCREEN

- There is one (1) screen wrapped around the rotor. The standard 3/16” size screen opening holds back coarse aggregates (rock) allowing the fine aggregates (sand) and cement to pass through.
- The screen is held together at the screen edges with 5 screen hold down bolts that pass through tabs welded to the rotor.
- The screen should be inspected weekly.

SCREEN REMOVAL & INSTALLATION (To access rotor and screen, remove 2 lids)

Warning: To avoid injury, disconnect and lock out power before attempting screen removal.



The screen is wrapped around the rotor and **under some SPRING TENSION to lay flat**. **Care should be taken** when removing the screen hold down bolts to avoid injury.

Remove the screen hold down bolts from the screen and remove the screen from the reclaimer housing.

Reverse the above procedure for installing the screen.

INSTALLATION of NEW SCREENS

Screen: lay the screen flat on a clean flat surface with the metal bound edges towards the reclaimer. When installed, the bound edges will come together forming a cylinder and be bolted to the rotor tabs. Install the screen by wrapping it around the inner rotor by feeding the leading edge of the screen under the rotor. Bring the two opposing metal bound edges together, on either side of the screen hold down tabs and line up the holes. Secure the two edges of the screen with the screen hold down bolts going through the screen hold down tab. Tighten the bolts to draw the two edges together and close the gap in the screen.

BUSHINGS and TAIL SHAFTS

Warning: **To avoid injury, disconnect and lock out power before attempting Bushing and shaft inspection and/or removal.**

The M6 Reclaimer comes equipped with UHMW Bushings, rather than greaseable bearings, to support the non-drive ends of both rotating assemblies, the Rotary Screen (Rotor) and the Sand Screw. These bushings are wear items, and must be occasionally replaced. They should be visually inspected *at a minimum of every year, however, every 1-6 months is recommended, depending on usage.*

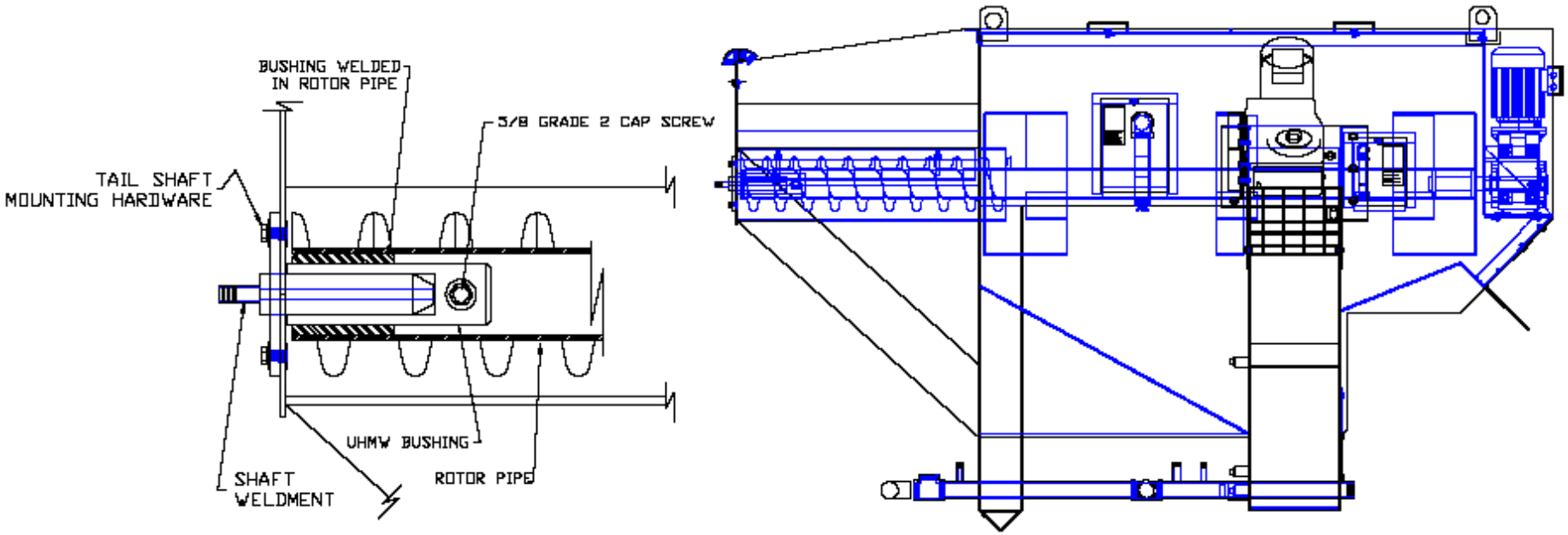
It is impossible for us to tell you how often these will need replacement, as there are many factors that affect the life of the bushing. Variations in size and hardness of aggregates (esp. sand), daily or weekly reclaimer usage, and pit maintenance *(how much spent cement and grit is being pumped back to the reclaimer, because the pits haven't been cleaned lately?)* are some of the many factors which will affect operating life.

Both the front rotor bushing and tail shaft weldment, and the Sand Screw bushing and tail shaft weldment are identical.

The front rotor tail shaft and bushing are bolted onto the front of the infeed hopper. The sand screw tail shaft and bushing are located at the lower end of the sand screw, beneath the reclaimer drain. They are both readily accessible, and therefore, relatively easy to check.

After de-energizing and locking out the control panel, remove the 4 bolts and slide the tail shaft weldment out to view the bushing, which is pinned to the rotating part (rotor or sand screw). Excessive wear is easily noted on both items. If required, replace bushing and/or tail shaft weldment now, before it is forgotten.

Removal of the sand screw or rotor from the reclaimer may be necessary to replace the UHMW bushing.



Warning: To avoid injury, disconnect and lock out power before attempting shaft/bushing removal.

To replace bushing and/or tail shaft:

1. Remove Shaft Mounting Hardware.
2. Remove shaft weldment from reclaimer.
3. Remove Grade 2 cap screw.
4. Slide UHMW bushing out of rotor pipe.

5. Replace with new UHMW bushing and cap screw (NOTE: cap screw should be GRADE 2!)
6. Replace existing shaft, if still useable, or new shaft weldment and mounting hardware.

Tail Shaft Bushing, Sand Screw

Warning: To avoid injury, disconnect and lock out power before attempting shaft/bushing removal.

The sand screw tail bushing is located at the lower (bottom) end of the sand screw, just below the reclaimer drain. While it is in a location that is not readily visible, with proper site clean-up (i.e. keep the location around the reclaimer free of spilled concrete, etc.) it is fairly accessible, and therefore, relatively easy to change out when needed.

An access panel is located at the rear of the reclaimer.

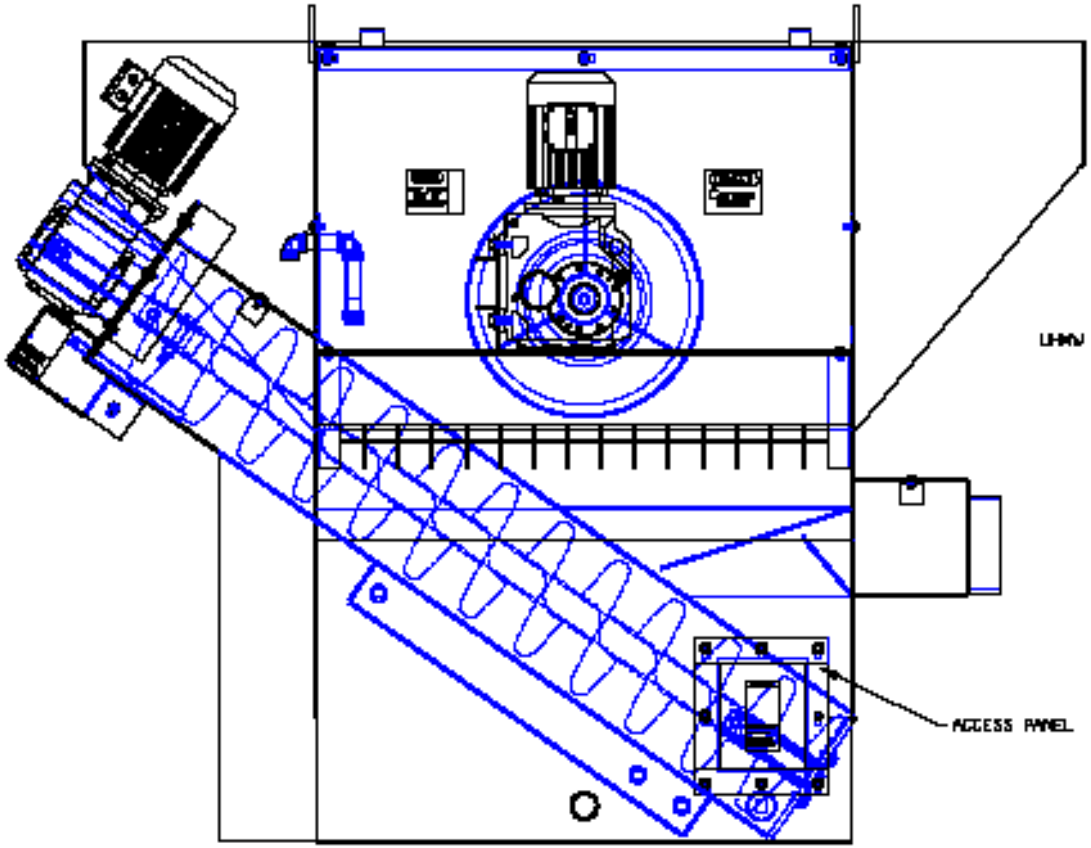
Before removing the access panel, MAKE SURE SYSTEM IS DE-ENERGIZED AND LOCKED OUT, then DRAIN the sand screw, as the lower end of the sand screw housing is full of water.

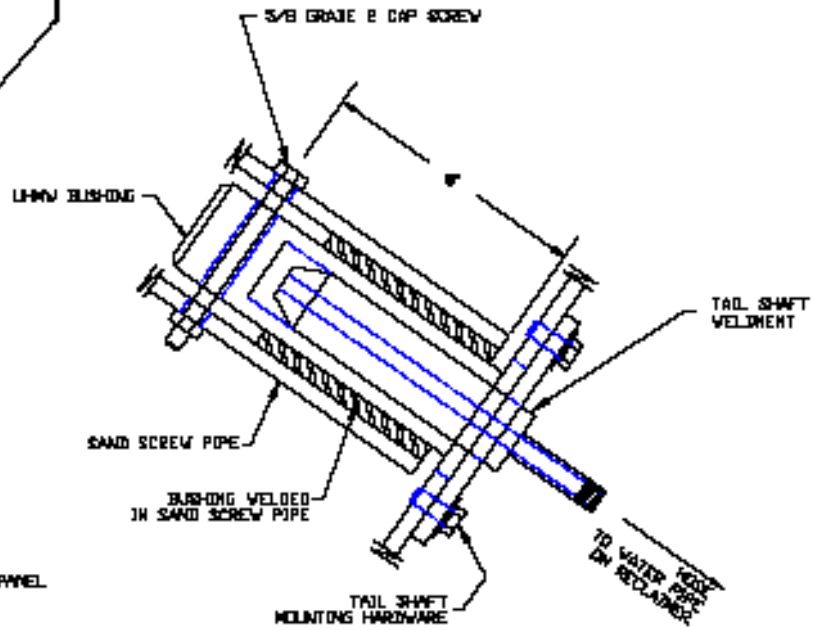
See Section 1.10.1 for drain plug location.

Remove the (4) bolts securing the access panel. This allows access to the lower bushing and shaft.

After inspection/replacement of the bushing and/or shaft, replace drain plug and access panel.

It is recommended that silicone caulk is applied to the access panel flange before replacing. If no caulk is used, the panel will leak.





Warning: To avoid injury, disconnect and lock out power before attempting bushing/shaft removal.

To replace bushing and/or tail shaft, after access panel has been removed:

1. Remove Tail Shaft Mounting Hardware.
2. Remove tail shaft weldment from reclaimer.
3. Remove Grade 2 cap screw.
4. Slide UHMW bushing out of sand screw pipe.
5. Replace with new UHMW bushing and cap screw (NOTE: cap screw should be GRADE 2!)
6. Replace existing tail shaft, if still useable, or new tail shaft weldment and mounting hardware.
7. Replace access panel. NOTE: Silicone caulk should be applied to access panel before replacing.

SECTION 8.0 INSPECTION CHECKLIST

CAUTION: DE-ENERGIZE AND LOCK-OUT/TAG-OUT SYSTEM AT CONTROL PANEL PRIOR TO PERFORMING ANY INSPECTIONS, MAINTENANCE OR REPAIRS ON THE EQUIPMENT!

DAILY:

1. EVERY DAY, prior to use, make sure all Safety Guards are in place and properly secured to the equipment.
2. EVERY DAY, prior to use, inspect ALL Safety Stickers and CLEAN or REPLACE if covered or damaged.
3. Submersible pump intake screen. Clean.
4. Nozzles. Check. Clean if needed
5. Rotor Screen. Inspect. Clean as necessary for proper operation.
6. Infeed Hopper. Check for undue concrete build-up. Clean as necessary.

EVERY THREE TO FOUR DAYS, or WEEKLY: (depending on usage and design)

1. Clean water handling system (settling ponds or other).
2. Remove clean-out plugs from nozzles so-equipped. Clean cement build-up, fibre, etc. so water flows freely.

EVERY 3 TO 6 MONTHS:

1. Remove Tail Shaft weldments at both rotor front end and sand screw lower end. Inspect both bushing and shaft for excessive wear. Replace as needed.

ANNUALLY:

1. Drain both Rotor and Sand Screw Gear Motors. Refill with proper oil.

SECTION 9.0 TROUBLESHOOTING

The Troubleshooting Guide will "point you in the right direction" when trying to solve problems with your reclamation system. It does not, and cannot, cover *all* of the situations you may experience in the field. However, it will give you (and a BFK Technician) a good idea of where the trouble may be.

CAUTION: DE-ENERGIZE AND LOCK-OUT/TAG-OUT SYSTEM AT CONTROL PANEL PRIOR TO PERFORMING ANY INSPECTIONS, MAINTENANCE OR REPAIRS ON THE EQUIPMENT!

PROBLEM: *Rotor, Sand Screw or pump will not run.*

POSSIBLE CAUSES:
Main disconnect is shut off
Emergency Stop (E-stop) is engaged
Loss of electrical power
Blown Fuses
Motor Starter Relay Heaters are tripped

SOLUTION: Have qualified electrician check electrical control panel. Replace any blown fuses, if necessary.

PROBLEM: *Too much Sand is draining into pit system.*

POSSIBLE CAUSES:
Restrictor plates in infeed hopper open too far
Too much water is being used for washing.

SOLUTION:
See page 26 for proper adjustment of restrictor plates
NOTE: You will never reclaim 100% of your sand. A certain amount will always end up in the pit system, especially fines.
Turn down water flow at spray bars – install valves if necessary.

PROBLEM: *Discharged Sand is very wet.*

POSSIBLE CAUSES: Dewatering Screw Nozzle is restricted or clogged

SOLUTION: Inspect and clean Dewatering Screw Nozzle

PROBLEM: *Concrete will not feed into infeed auger.*

POSSIBLE CAUSES: Concrete too “stiff”
Restrictor Plates in infeed hopper closed too far

SOLUTION: Add water to mix, to 6” to 10” slump
See page 26 for proper adjustment of restrictor plates

PROBLEM: *Discharged Rock or Sand is Dirty.*

POSSIBLE CAUSES: Restrictor plates in infeed hopper open too far
Pump intake is clogged
Water nozzles clogged
Pump running backwards
Pit system needs cleaning

SOLUTION: See page 26 for proper adjustment of restrictor plates
Check all nozzles and pump intake for clogged material
Replace Clean out plugs
Clean pit system

PROBLEM: *Rock getting into Sand*

POSSIBLE CAUSES: Discharged Rock piled up, and allowed to spill back into rear of reclaimer
Hole, or separation, in screen
Screen opening too large for rock gradation

SOLUTION: Remove clean Discharged Rock from rear of machine
Inspect screen, replace if needed

PROBLEM:	*Sand and/or Cement getting into Rock*
POSSIBLE CAUSES:	Screen blinded with fines and/or fiber Pump or Nozzles are restricted or clogged
SOLUTION:	Inspect screen, clean or replace if needed Check all nozzles and pump intake for clogged material

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SECTION 10.0 RECOMMENDED SPARE PARTS LIST

Reclaimer Assembly

		BFK Part No.
1. One (1) Screen	3/16” Opening:	00006.909
2. Two (2) Front Rotor/Sand Screw Bushing		00006.901
3. Two (2) Tail Shaft Weldment		00006.306

Star Hopper/Prefeeder Assembly (where used)

4. Star Feeder Bushing, 2 per feeder	10000.900
5. Star Prefeeder Paddles, 4 per feeder	10000.716

SECTION 11.0 WINTERIZING

CAUTION: DE-ENERGIZE AND LOCK-OUT/TAG-OUT SYSTEM AT CONTROL PANEL PRIOR TO WINTERIZING THE EQUIPMENT!

Upon completion of the reclaiming season, especially in colder climates, have qualified electrician lock-out/tag-out control panel.

Remove pump from pit systems. Store Indoors. Pump to be inspected and cleaned accordingly, prior to future use.

Drain entire reclaimer system by removing the tail shaft weldment at the bottom of the sand screw.

Disconnect and drain all hoses.

Prior to start-up in spring, reconnect all hoses, re-install and connect pump, etc., as defined in preceding sections. During re-connection, visually inspect all hoses, connections and nozzles for leaks, clogging, etc. Correct as necessary. Also, inspect and replace screen cloth, if required. Clean as needed.

Also, perform all routine maintenance procedures, such as draining and re-filling gearmotors, etc. Start-up reclaimer system as defined in Section 3.0 INITIAL EQUIPMENT START-UP.

SECTION 12.0 M6 SPECIFICATIONS *FOR REFERENCE ONLY*
SUBJECT TO CHANGE WITHOUT NOTICE

1. **Feed Hopper,** 18” long x 24” wide.
2. **Rotor / Hopper Feed Auger,** 4” diameter, half pitch. Provides controlled volume feed from the hopper to the rotor screen. Minimizes under and over feeding.
3. **Rotor,** 12” dia. x 36” long, covered with 3/16” opening, stainless steel rock screen. Rock is carried to the end of the screen to stockpile.
4. **Rotor Motor,** 3/4 HP direct drive gear motor.
5. **Dewatering Sand Screw,** left or right hand discharge, 8” Diameter x 6 ft. long, half pitch, sectional flighting. 3/4 HP direct drive gear motor.
6. **Spray Nozzle,** water spray outside rotor to clean screen exterior and wash rock & sand.
7. **Bolt on lids,** for access to rotor.
8. **Electrical / Controls,** Electrical disconnect 3 phase, 240 or 480 VAC. Controls for electric motors and submersible pump (where purchased). Weatherproof enclosure.
9. **Plate steel modular construction**.
10. **Design Capacity,** up to 2 to 3 Cubic yard per hour.
11. **Dimensions,** Assembled : 68” L x 77” W x 45” H
12. **Weight,** 1000 lb. Approx.
13. **Pump,** 3 phase 240 or 480 VAC, 2” discharge - 100 gpm submersible centrifugal pump

Options

1. **Loop detector** for automatic start/stop.
2. **Heater** for lower sand screw.

LIMITED WARRANTY

BFK Technologies, Inc. (BFK) warrants to the original purchaser the BFK equipment that is not manufactured by others, to be free from defects in material and workmanship under normal use and service, and when properly maintained by the purchaser. Use or service with corrosive or abrasive chemicals or materials or in a corrosive or abrasive atmosphere shall not be deemed normal. BFK's obligation under this warranty is limited to repairing at BFK's factory or a factory authorized service center or furnishing a replacement for any part, or correcting any workmanship, which shall be demonstrated to BFK's satisfaction to have been defective at the time of delivery and with respect to which a written claim specifying the particular defect or defects shall have been delivered to BFK or a factory authorized service center within one (1) year from the date of start up of the equipment, not to exceed eighteen (18) months from the date of the delivery of the equipment to purchaser. If the equipment is delivered piecemeal, the warranty period for each portion shall commence at its date of delivery.

The removal by purchaser of parts returned to BFK or a factory authorized service center for repair or replacement and the installation by the purchaser of replacement or repaired parts shall be at purchaser's expense. No work will be done by BFK or factory authorized service center at the site of the installation unless in BFK's opinion it is impractical for purchaser to remove the defective part and return it to BFK's factory or a factory authorized service center. Defective parts shall be returned, after pre-authorization by BFK, to BFK's factory or to a factory authorized service center. Repairs, replacements, or adjustments for which BFK is responsible will be made as promptly as possible within the standard working hours of any day. All costs for freight, duties or any other related costs for sending or receiving parts are the responsibility of the purchaser. Overtime, if required by purchaser, will be paid for by purchaser. BFK does not warrant equipment manufactured by others, but will submit the manufacturer's warranty to the purchaser upon request.

EXCEPT AS EXPRESSLY STATED HEREIN, THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE OF THE EQUIPMENT OR SERVICES FURNISHED BY BFK OR A FACTORY AUTHORIZED SERVICE CENTER. BFK SPECIFICALLY DISCLAIMS AND EXCLUDES ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ARISING FROM A COURSE OF DEALING OR USAGE OF TRADE. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. BFK SHALL NOT BE LIABLE FOR, NOR DOES BFK AUTHORIZE ANY PERSON TO ASSUME **FOR BFK, ANY OTHER LIABILITY IN CONNECTION WITH THE EQUIPMENT OR SERVICES FURNISHED BY BFK, INCLUDING WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, LIABILITY FOR LOSS OF PRODUCTION, PRODUCT, EQUIPMENT OR PROFITS OR LIABILITY FOR DIRECT, INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES TO PERSONS OR PROPERTY. BFK will make no allowances for repairs, alterations or other work done unless specifically agreed to in writing. Purchaser agrees that purchaser's sole remedy for liability of any kind, including negligence with respect to the equipment and services furnished by BFK shall be limited to the remedies provided herein.**

ALL dimensions, weights and technical specifications are subject to change, at BFK's discretion, from previously published information. In some applications, NON-standard or custom pieces may be supplied.

All installation, operation and maintenance instructions, including those shown in the Manual supplied with the equipment, attempt to show common, typical installations. YOUR actual Installation may vary.

The information is intended as a guideline only, and may or may not represent the actual equipment supplied. Some pictures and/or drawings may show earlier revisions of the same machine, and may not totally represent the revision of the machine you have.

IN ALL CASES, IT IS THE REPONSIBILTY OF THE CUSTOMER TO ENSURE PROPER SIZES AND DESIGNS OF ALL CONNECTIONS, FITTINGS, WIRING, ETC. ARE PROVIDED BEFORE INSTALLING AND OPERATING EQUIPMENT, and BFK shall be held harmless from problems occurring from improper installation and operation of the system.

Please consult factory if any discrepancies arise before the system is installed and operated.
Metric equivalents are provided for reference only.

In most cases, your reclaimer was supplied with one or more submersible pumps. The pump has been sized to operate with most installations. However, as BFK has no control over the installation of the equipment, including but not limited to, the distance from the pump to the reclaimer, the connection method used (Hose vs. different types of pipe, for instance), fittings used, etc., it remains the end-users responsibility to ensure proper water flow and pressure is delivered to the reclaimer.

If the pump shipped with the reclaimer does not provide enough flow and/or pressure, the end-user is responsible for purchasing and installing a pump of the proper size, or adding an additional pump(s), as needed to ensure proper operation of the reclaimer.

Failure to provide adequate water flow and pressure resulting in damaged, plugged or otherwise compromised equipment is not covered under warranty, and all costs associated will be the end-users responsibility.

Installation Date:				Serial No.:			
Purchased from:							
MAINTENANCE RECORDS							
ACTION PERFORMED	**INITIAL/DATE**	**INITIAL/DATE**	**INITIAL/DATE**	**INITIAL/DATE**	**INITIAL/DATE**	**INITIAL/DATE**	**INITIAL/DATE**
Replace UHMW Bushing							
Replace Tail Shaft							
Replace Screen							
Drain/Refill Gearmotor							
NOTES:							