

MODEL B

SNUBNOSE

CONCRETE RECLAIMER

INSTALLATION, OPERATION & MAINTENANCE MANUAL

MSB18.12

Your Serial No.

Sxxxx-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.

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- 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.

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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.

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SECTION 1.0 MECHANICAL INSTALLATION

1.01 EQUIPMENT DESCRIPTION

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

The SNUBNOSE Concrete Reclaimer is designed for trouble-free operation and minimal 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.

A wide infeed hopper allows 2 mixer trucks to unload wet concrete simultaneously.

Wet concrete is fed into the SNUBNOSE for washing and screening with a 14" [356mm] diameter infeed screw. The infeed screw discharges directly into the rotary rock screen/wash area for a consistent flow of wet concrete from the infeed hopper, minimizing 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 30" [762mm] diameter x 78" [1981mm] long cylinder on a central shaft. A 24" [610mm] 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 side-mounted 8" diameter [203mm] 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 RESPONSIBILITY OF THE CUSTOMER TO ENSURE PROPER SIZES AND DESIGN 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, CODES 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 shows a LEFT-Hand machine, which 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 RIGHT-hand machine is obviously a mirror image of this.

1.02 PREPARATION

Prior to beginning installation of the SNUBNOSE, the following must be completed and available:

All concrete foundation work should be completed, including reclaimer pad, truck ramp, rock and sand bunker walls, and settling ponds or other slurry handling system. Before your reclaimer arrives, the lay-out of this installation should have been predetermined.

Allow one day for installation, barring unnecessary delays.

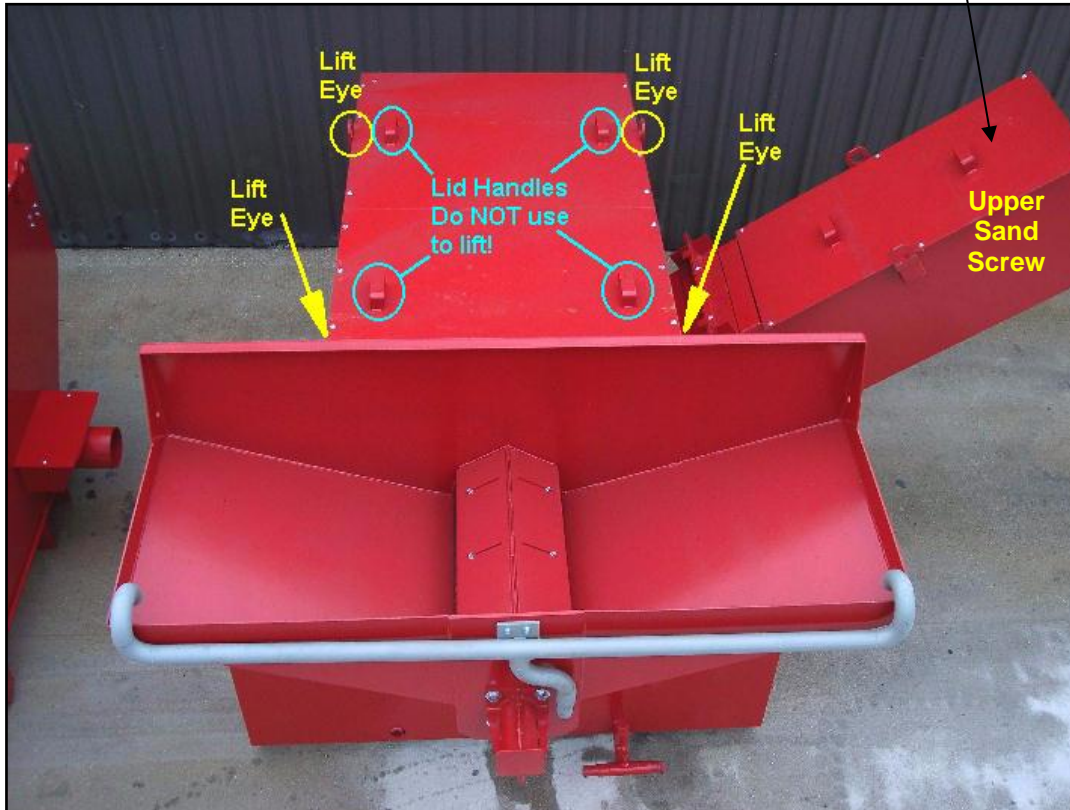
1. Labor

- ◆ 1 General laborer
- ◆ 1 Mechanic
- ◆ 1 Electrician
- ◆ 1 Crane Operator



WARNING:

NEVER lift reclaimer with upper sand screw installed!!!!



2. Equipment

- ◆ 1 Crane or Boom truck. Capacity of lifting 10,000Lbs. minimum.
- ◆ 1 Hammer drill (for anchor bolts on washout stingers).
- ◆ 1 Set of standard mechanics tools.
- ◆ OPTIONAL: 1 Concrete saw to cut groove in ramp when optional loop detector is to be installed.

NOTE: THE USE OF A FRONT-END LOADER FOR RECLAIMER OFF-LOADING, ASSEMBLY AND INSTALLATION IS **DANGEROUS, SLOW AND ALWAYS RESULTS IN DAMAGED EQUIPMENT.**

THE USE OF A LOADER IS **NOT** RECOMMENDED.

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

3. Hardware and miscellaneous which may be required for *each* SNUBNOSE to be installed. Individual installations vary, so confirm required items before purchasing and installing. **When in doubt, CONSULT FACTORY.**

☑Drain Ref. Section 1.08

(1) 8" diameter [200mm] Schedule 40 PVC pipe, length as needed.

(1) 8" diameter [200mm] rubber coupling (Fernco-type Coupling) for slurry drain.

☑Connecting Pump to Reclaimer Ref. Section 1.09.01

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 3" [75mm] 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. **REDUCER FITTINGS SHOULD NOT BE USED!**
IF IN DOUBT, CONSULT FACTORY PRIOR TO PURCHASING AND INSTALLING THE WATER SUPPLY LINE.

☑Sand Screw Nozzle Ref. Section 1.09.02

$\frac{3}{4}$ " [19mm] Hose and Hose Clamps

☑Sand Screw Tail Shaft Bushing Ref. Section 1.09.02

$\frac{3}{4}$ " [19mm] Hose and Hose Clamps

☑Front Rotor Bushing Ref. Section 1.09.03

$\frac{3}{4}$ " [19mm] Hose and Hose Clamps

☑Infeed Spray Nozzles Ref. Section 1.09.04

(1) 2" Tee

Hose Nipples (Male Pipe Thread x Hose) and Hose Clamps as needed, or other connectors as desired.

2" [50mm] Water Hose

Ball valve (may need to be installed to limit flow to the infeed hopper to maintain flow up to the wash-out stinger(s))

Wash-out Stingers Ref. Section 1.09.05

- (8) ½" [12mm] anchor bolts
- (2) 2" Hose Nipple (Male Pipe Thread x Hose)
- Hose clamps
- (2) 3" x 2" threaded Bell Reducer
- 2" [50mm] Hose
- (1) 3" threaded Tee

R01

Main Rotor Nozzle Ref. Section 1.09.06

- 2" [50mm] Hose and Hose Clamps
- 2" [50mm] Ball Valve (recommended)

R01

Rear Rotor Nozzle Ref. Section 1.09.06

- 2" [50mm] Hose and Hose Clamps
- 2" [50mm] Ball Valve (if needed)

Gearmotors

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

Electrical Connections

Electrical connections and mounting should be performed only by a qualified electrician, following all local and national codes. Electrician to determine use of junction boxes, water-tight fittings, etc. to meet codes.

OPTIONAL EQUIPMENT:

Sand Screw Heater Ref. Section 1.10.1

- (16) Gallons [60L] Anti-Freeze
- 1" Street Elbow
- 1" x 8" Nipple
- 1" Cap

Loop Detector Ref. Section 1.10.2

- 16 AWG THHN stranded Copper wire
- Silicone Caulk or Epoxy for sealing detector loop on ramp

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) Snubnose Shroud/Rotor Main assembly (this is the main body of the reclaimer system).
- One (1) Sand Dewatering Screw assembly (may come in multiple pieces).
- One (1) Electrical Control Panel.
- One (1) Submersible Pump.
- Two (2) Lower Wash-out Stinger Weldments.
- Two (2) Upper Wash-out Stinger Weldments.
- One or more boxes containing installation and assembly hardware, stinger shut-off valves, and, if purchased, the optional dewatering sand screw heat element.
- Other pieces needed to complete assembly.

The shroud/rotor assembly and the dewatering sand screw assembly come equipped with lift eyes for off-loading and installation. These 2 assemblies **MUST** be off-loaded using a crane or “cherry-picker”. **USE OF A FRONT-END LOADER IS NOT RECOMMENDED!** Severe equipment damage and/or personal injury or death may result from improper off-loading of equipment.



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. 8500# [3855kg], broken down as follows:

Snubnose Shroud/Rotor assembly:	5600#	2540 kg
Sand Dewatering Screw assembly:	2000#	907 kg
Electrical Control Panel:	200#	91 kg
Pump:	100#	45 kg
<u>Each</u> Wash-out Stinger Weldment:	75#	34 kg
Plus packing, pallets, etc.		

1.04 RECLAIMER INSTALLATION AND FIELD ASSEMBLY

The SNUBNOSE is shipped assembled as far as it can be at the factory. Depending on how your reclaimer was shipped will typically determine the field assembly requirements.

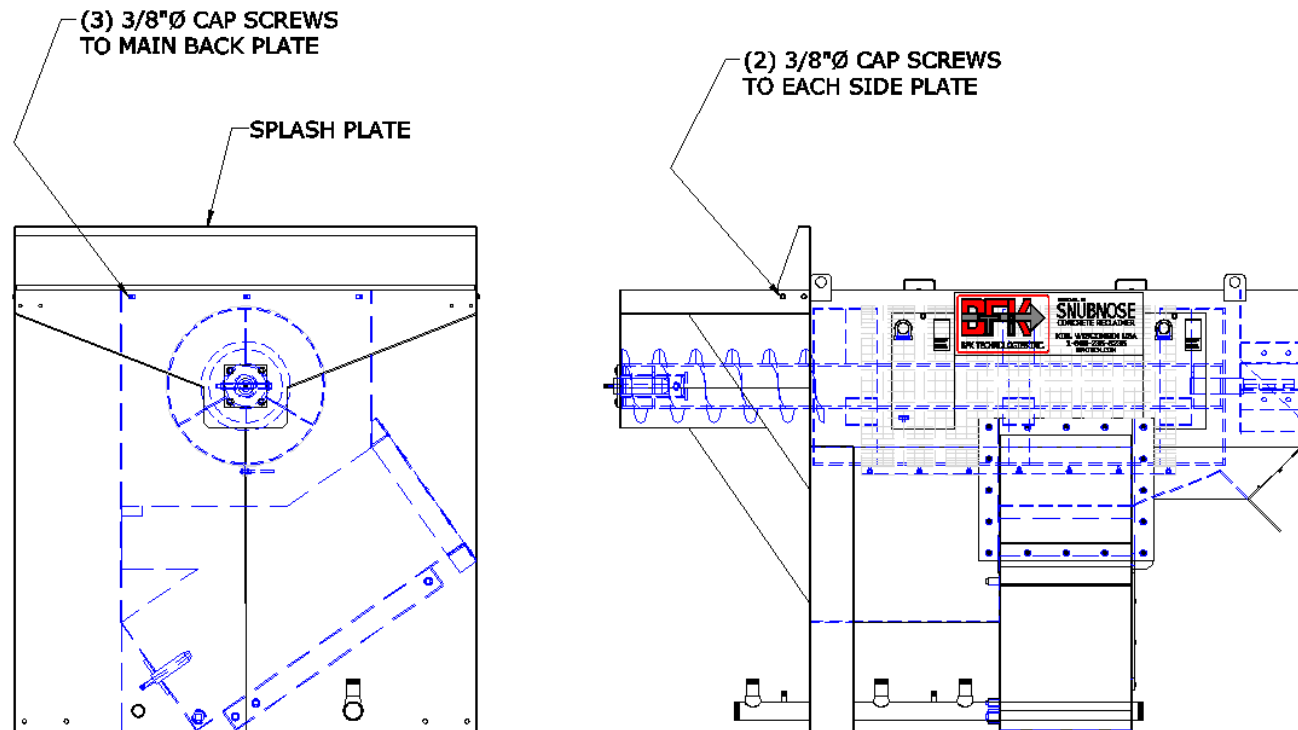
In most cases, the Main shroud/rotor Assembly is already complete. This is typical for North-American customers, where the reclaimer ships on a flatbed truck.

If your reclaimer shipped in a container (typical for international ocean or air transport), the main assembly usually needs to be completed in the field.

If the following items are already completed, you may skip sections 1.04.01 thru 1.04.03, AND 1.04.05.

1.04.01 Installation of Infeed Hopper Splash Plate

Locate the Splash Plate Weldment, and (7) 3/8" Cap Screws and associated.
Set the Splash Plate in place and secure.



1.04.02 Installation of Rotor Gearmotor

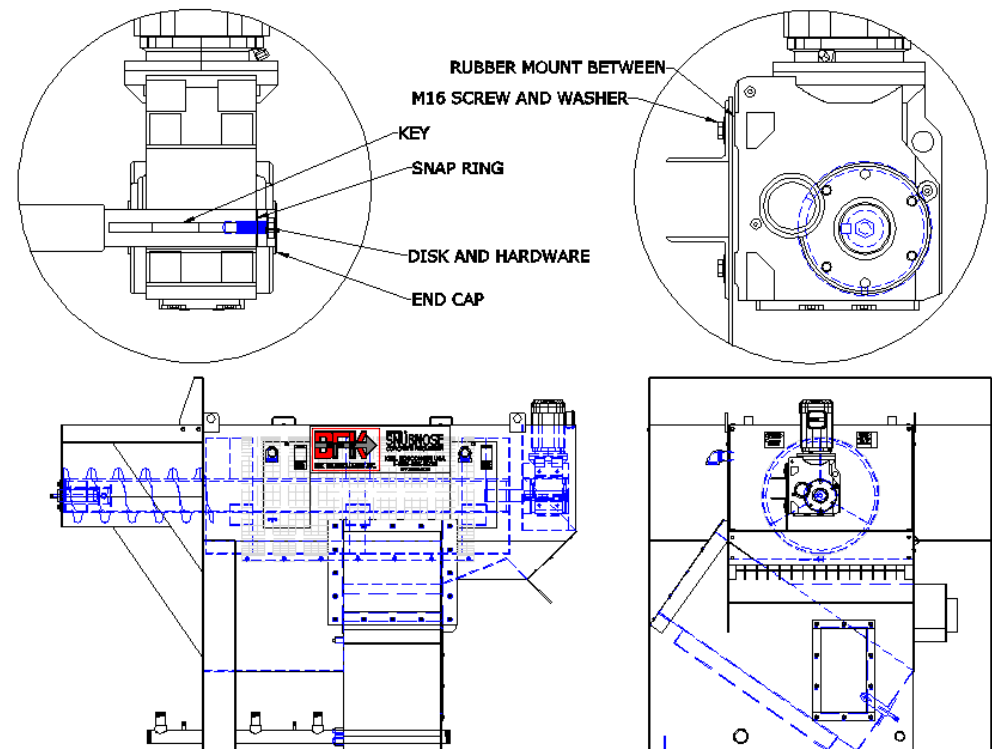
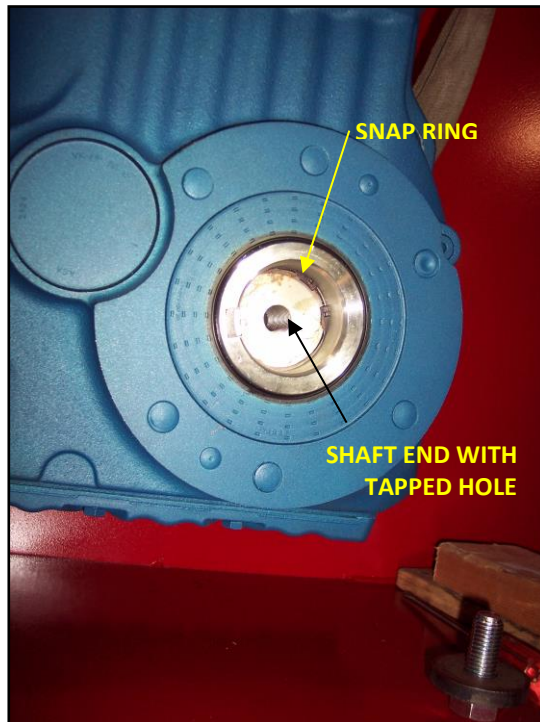
Install Rotor Gearmotor on drive shaft located at the rock discharge end of the reclaimer. Gearmotor is usually removed for [international] container shipment, and ships packed in a separate box, along with required mounting hardware.

Remove shroud lids and sling rotor to support in current position. Remove shipping weldment installed on rotor drive shaft.

Lift gearmotor into position. **NOTE:** Gearmotor assembly weighs approximately 300# [136kg]. Remove end cap from gearmotor hollow-bore and see internal snap ring installed in hollow-bore. Apply supplied grease to shaft. Align gearmotor with shaft end, and slide onto drive shaft. Before sliding gearmotor into final position, insert supplied key into shaft keyway. Finish by sliding gearmotor all the way on to the drive shaft; the gearmotor stops when the shaft end hits the internal snap ring.

Make sure key is fully engaged in hollow-bore. If possible, dent keyway so that the key cannot slide back out of the hollow-bore.

Install (4) M16 Bolts, lock washers, flat washers and rubber mount washers thru mounting plate, and secure into tapped holes on gearmotor base. Finish by installing supplied disk and $\frac{3}{4}$ " hardware into hollow-bore, securing bolt into tapped hole in shaft end. Replace end cap. Remove sling and replace shroud lid.



1.04.03 Installation of Feet

The main Reclaimer assembly sets at approximately a 4 degree angle downhill (from infeed hopper back to rock discharge) when installed. On container shipments, the Reclaimer comes with (2) Foot Weldments which must be installed in order to maintain the proper discharge angle. [Typically, on North American/Truck shipments, the reclaimer comes with two feet already welded into position, creating the 4 degree decline]



CAUTION!

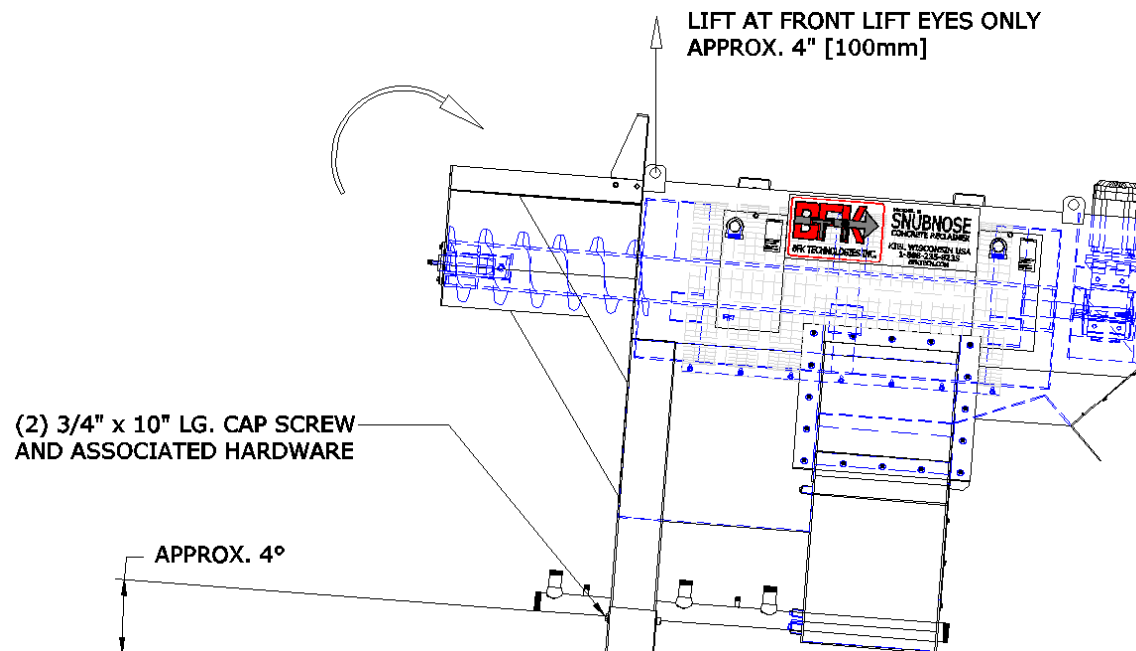
Lift reclaimer at front lift eyes only, allowing reclaimer to pivot about the rear of the machine.

Reclaimer must be lifted a minimum of 4" [100mm] to install feet.

DO NOT LIFT ANY HIGHER THAN NEEDED.

USE PROPER LIFTING TECHNIQUES AND SAFETY PRECAUTIONS TO AVOID EQUIPMENT DAMAGE AND ENSURE PERSONNEL SAFETY!

Slide feet on from side until bolt holes align. Secure with supplied $\frac{3}{4}$ " x 10" long cap screws and associated hardware.



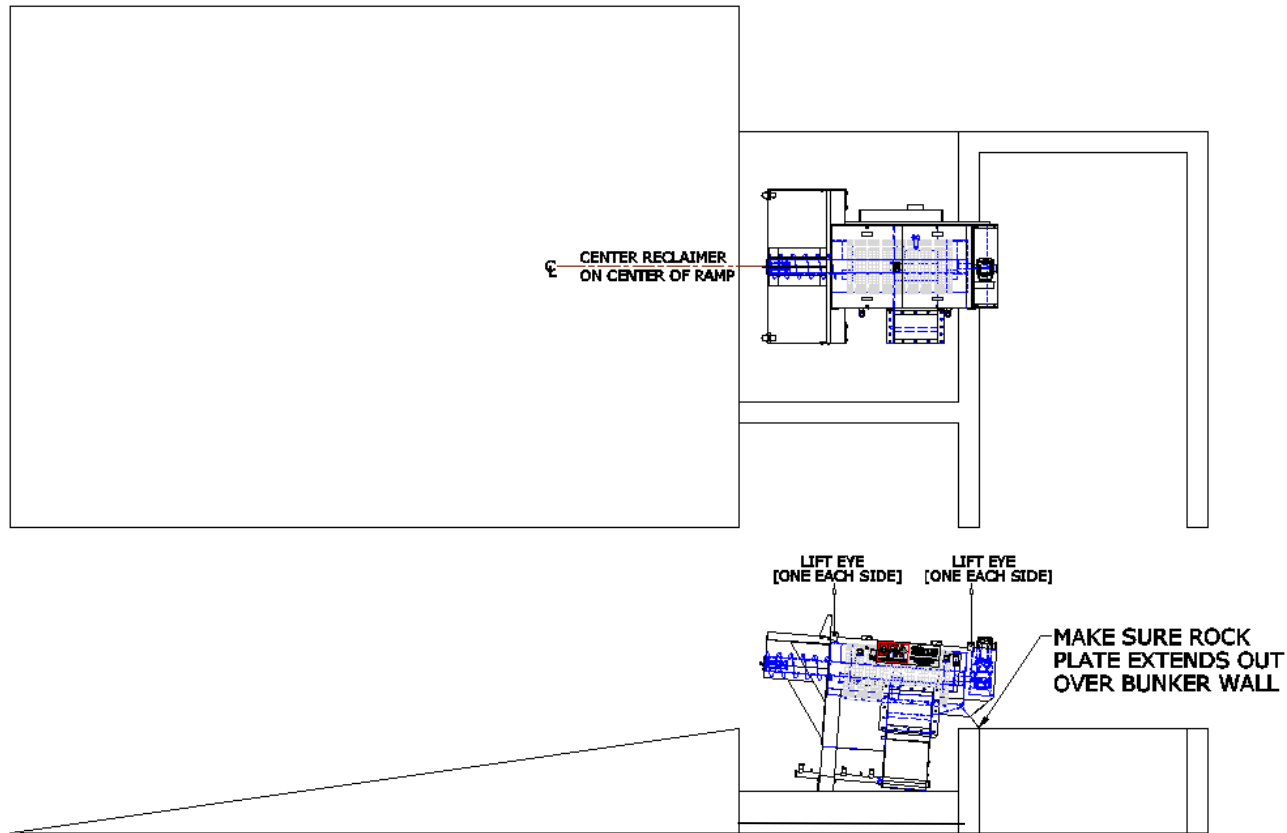
1.04.04 Setting the Reclaimer into Position

Set the main body (shroud/rotor assembly) in place between the rear of the ramp, and the rock bunker wall, ensuring that the infeed hopper does not extend too far over the ramp, while allowing the rock discharge plate to extend over the rock bunker wall. (Some users find that installation of rubber skirting, or other similar material, aids in the transition of the rock over the bunker wall).



CAUTION: USE THE INTEGRAL LIFT EYES ONLY. DO NOT LIFT ELSEWHERE.

Center the shroud/rotor to the center of the ramp.



The reclaimer is **NOT equipped with mounting flanges to secure it to the foundation.** It is the recommendation of BFK that the reclaimer sits on the foundation but is NOT anchored to it. That way, if a truck gets too close, and hits the reclaimer, the reclaimer can slide out of the way. If the reclaimer is secured to the foundation, and a truck hits it, it must bend to get out of the way, causing much more damage to the reclaimer. **Your local codes may require anchoring – check with local codes.**

1.04.05 Assembling the Sand Screw

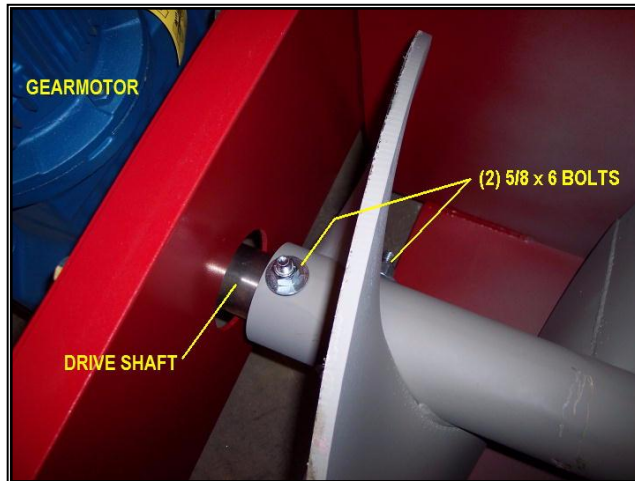
Your Sand Screw may come in one of two possible assemblies:

1. Single Sand Screw, pre-assembled into Upper Sand Screw Housing, complete with Gearmotor.

Or

2. Split Sand Screw, where the upper half of the auger is pre-assembled into Upper Sand Screw Housing, complete with Gearmotor, and the lower half of the Sand Screw is shipped separately, typically in the main shroud assembly.

If your Sand Screw comes as described in 1 above, you may skip this step.



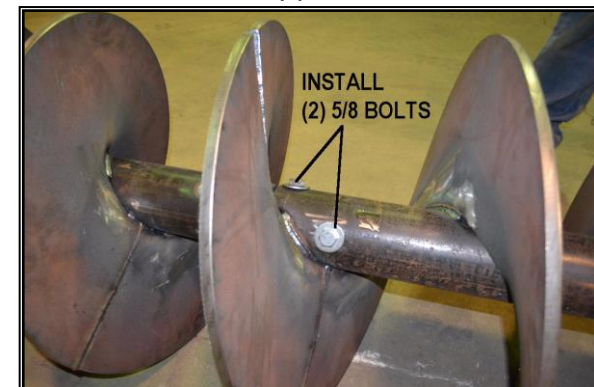
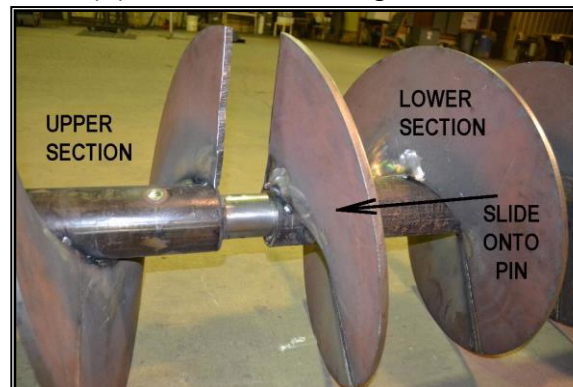
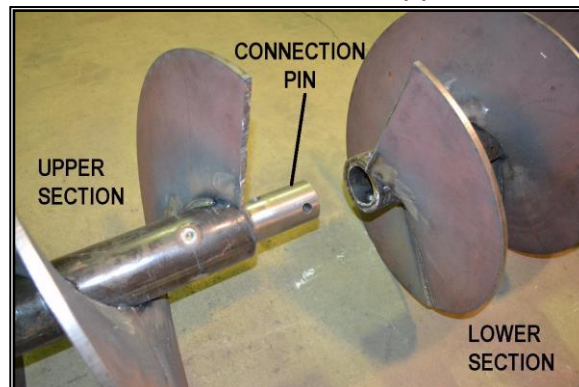
If your reclaimer was shipped as defined in #2 above (typically container shipments), remove the lower half section from the main shroud assembly.

Remove the upper half section from the upper sand screw assembly. This is accomplished by first removing the lids from the top of the assembly.

Next, remove the two (2) 5/8" dia. x 6" long bolts and associated hardware that secure the upper screw section to the gearmotor drive shaft.

After removing the bolts, the screw section will slide off the drive shaft (the drive shaft stays secured in the gearmotor).

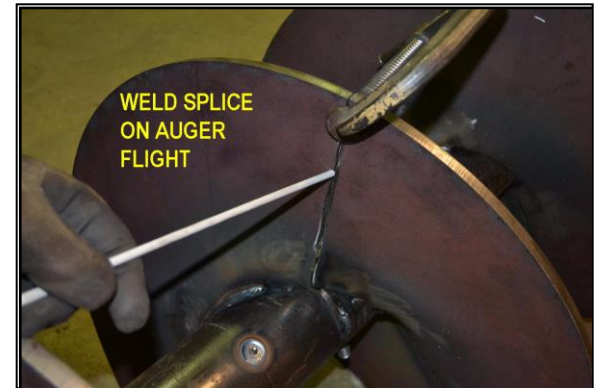
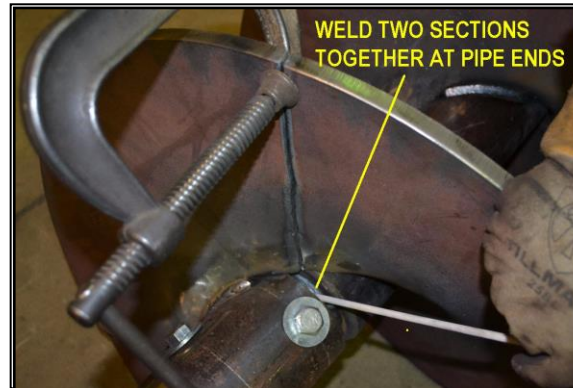
Place both the lower and upper screw sections on a flat surface. Sand (remove) the paint from the pipes and flight approx. 1/2 to 1" from splice [12-25mm] to ensure a good weld (do not weld thru the paint). Slide the lower section onto the connection pin that is welded into the end of the upper section. Install (2) 5/8" dia. X 6" long bolts and associated hardware supplied.



IMPORTANT! MAKE SURE THE TWO SECTIONS ARE PROPERLY ALIGNED, AS YOU WILL BE WELDING THE 2 SECTIONS TOGETHER. Ensure there is no mis-alignment prior to completing the weld, as this may cause interference (rubbing, wear, etc.) inside the screw box when the equipment is running. The screw must be straight over its entire length.

The sand screw has a nominal ½" [12mm] gap all the way around it, once it is installed in the screw box. If you are unsure of proper alignment, we suggest that you first tack weld the two sections together, install the sand screw in the screw box and check for alignment before finishing the weld.

Once your sand screw sections are properly aligned, finish the weld. Weld all around the 2 pipe sections, and also the splice on the auger flight.



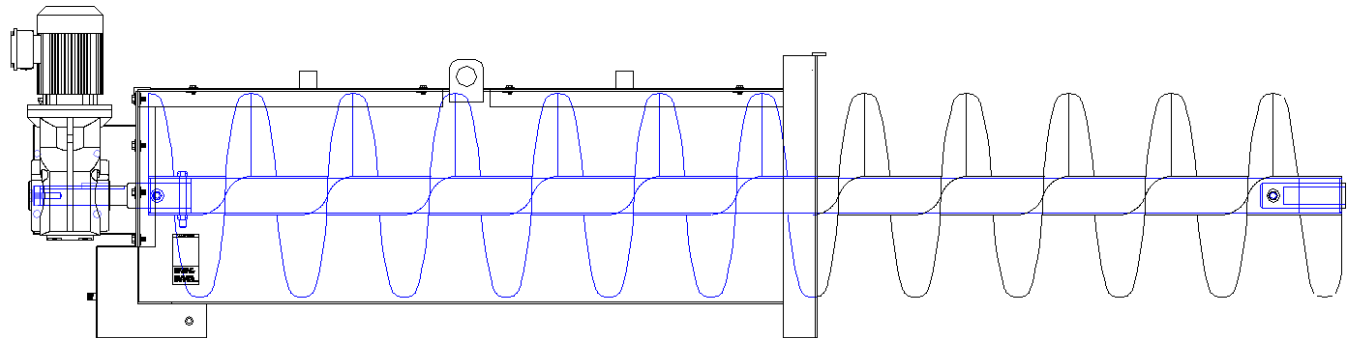
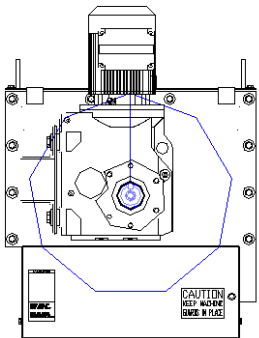
You may wish to re-prime and paint the newly welded area to minimize corrosion.

Finish by sliding the welded screw back into the upper sand screw assembly housing, over the gearmotor drive shaft. Reinstall and secure the (2) 5/8 x 6" bolts and associated hardware. Reinstall the 2 lids.

Your sand screw assembly is now ready to be installed into the main shroud assembly.

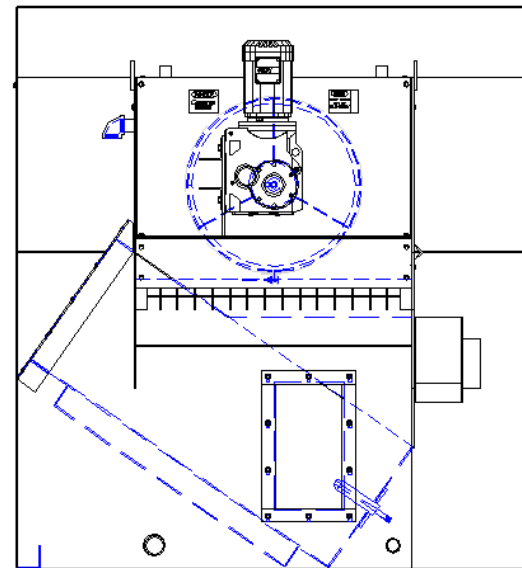
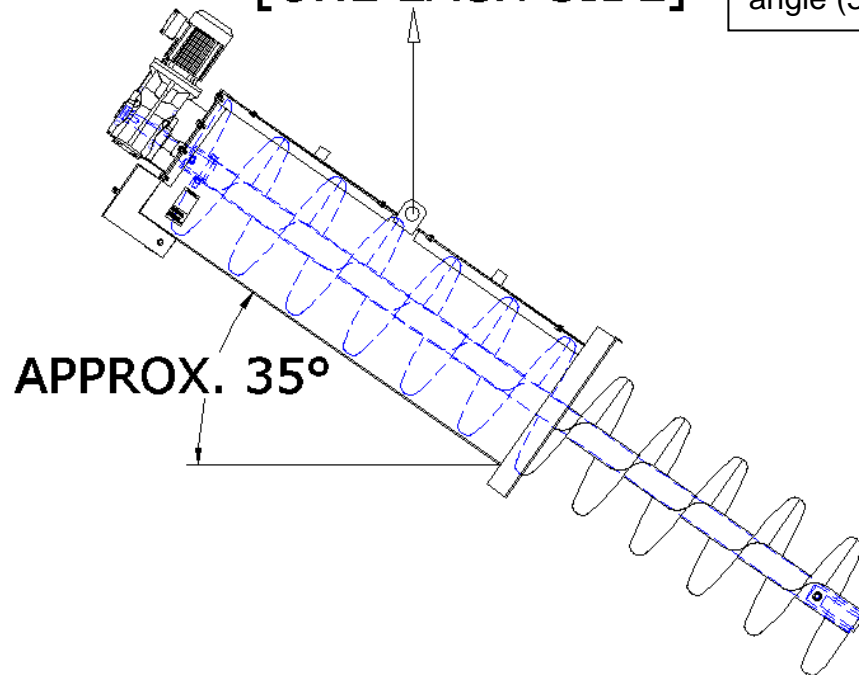
1.04.06 Installing the Assembled Sand Screw Assembly into the Reclaimer

NOTE: Sand Screw Assembly is approx. 2000# [907kg].

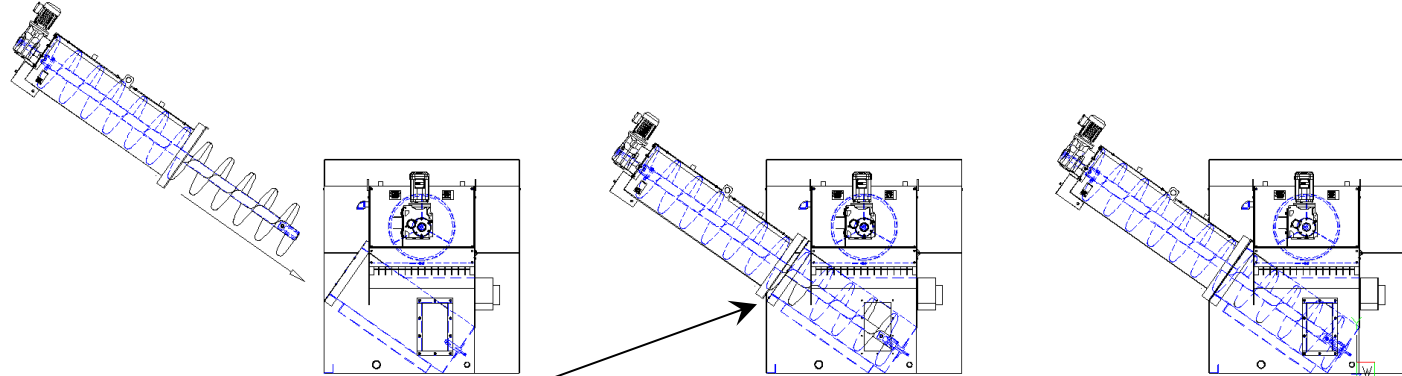
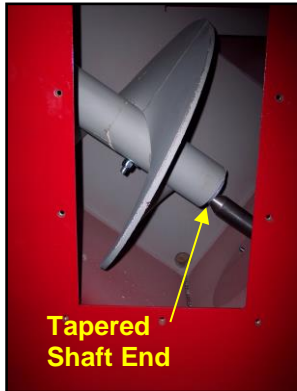


**LIFT EYE
[ONE EACH SIDE]**

Lift the sand dewatering screw **by the integral lift eyes**. When the unit is lifted, it will hang at the approximate angle (35 degrees) required for installation.



Insert the exposed end of the sand screw auger into the screw box of the shroud/rotor and begin to lower. The lower shaft is tapered so that the auger will slide over the lower shaft assembly and allow the flanges to mate together. Install the 1/2"Ø hardware supplied to the mounting flanges. Tighten securely.



KEEP HANDS AND FINGERS CLEAR
when setting upper screw box into Reclaimer.



CAUTION! ALWAYS USE PROPER EQUIPMENT TO LIFT OR INSTALL EQUIPMENT.

Standard rigging practices and procedures should be utilized to avoid damage or severe injury.



***NOTE:
Make sure Catch Tabs rest ON TOP OF THE FLANGE on the Reclaimer shroud.

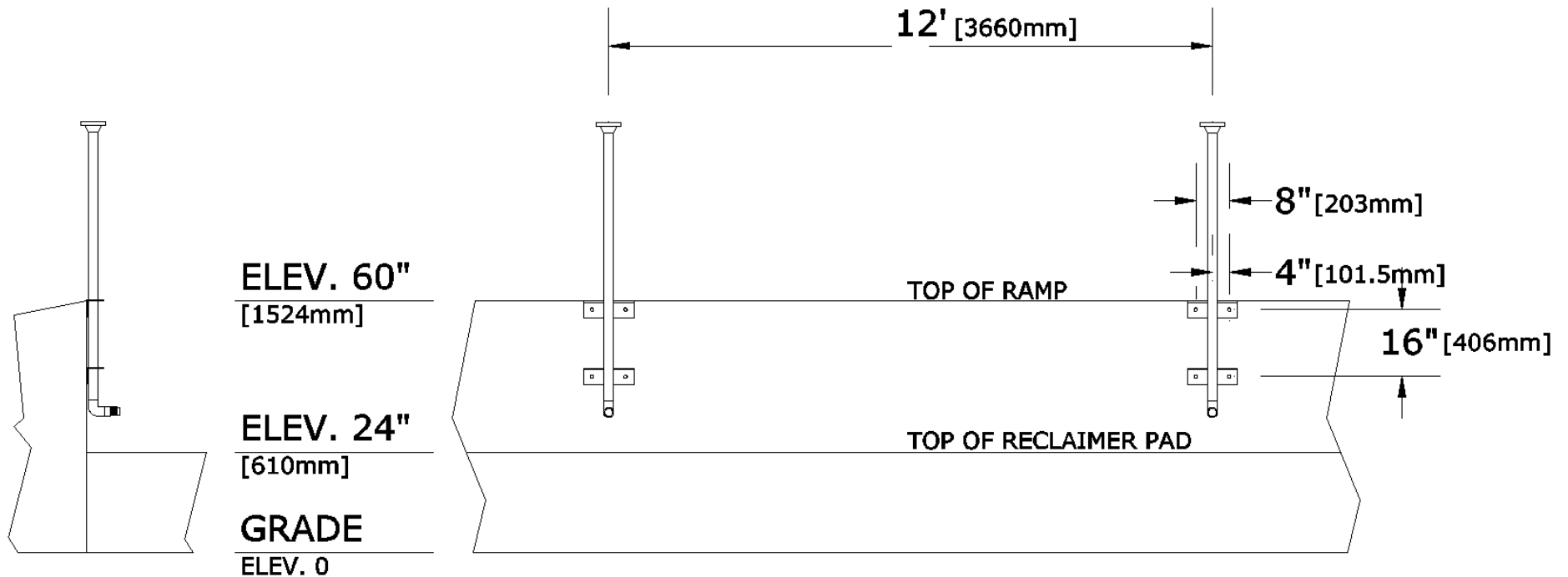


Finish by installing and securely tightening (16) 1/2" x 1-1/4" Lg. Hex Head cap screws and associated hardware.

1.05 WASH-OUT STINGER INSTALLATION

The typical SNUBNOSE system may come equipped with (2) sets of truck wash-out stingers. The 12' [3660mm] spacing allows the ability to have 2 trucks up to the reclaimer simultaneously.

Begin by locating the centerlines of the lower stinger weldments on the back of the ramp. Mark the location of the (4) holes required to bolt each to the ramp. The stingers should be centered about the reclaimer/ramp. Drill (using hammer drill) for ½" [12mm] anchor bolts.



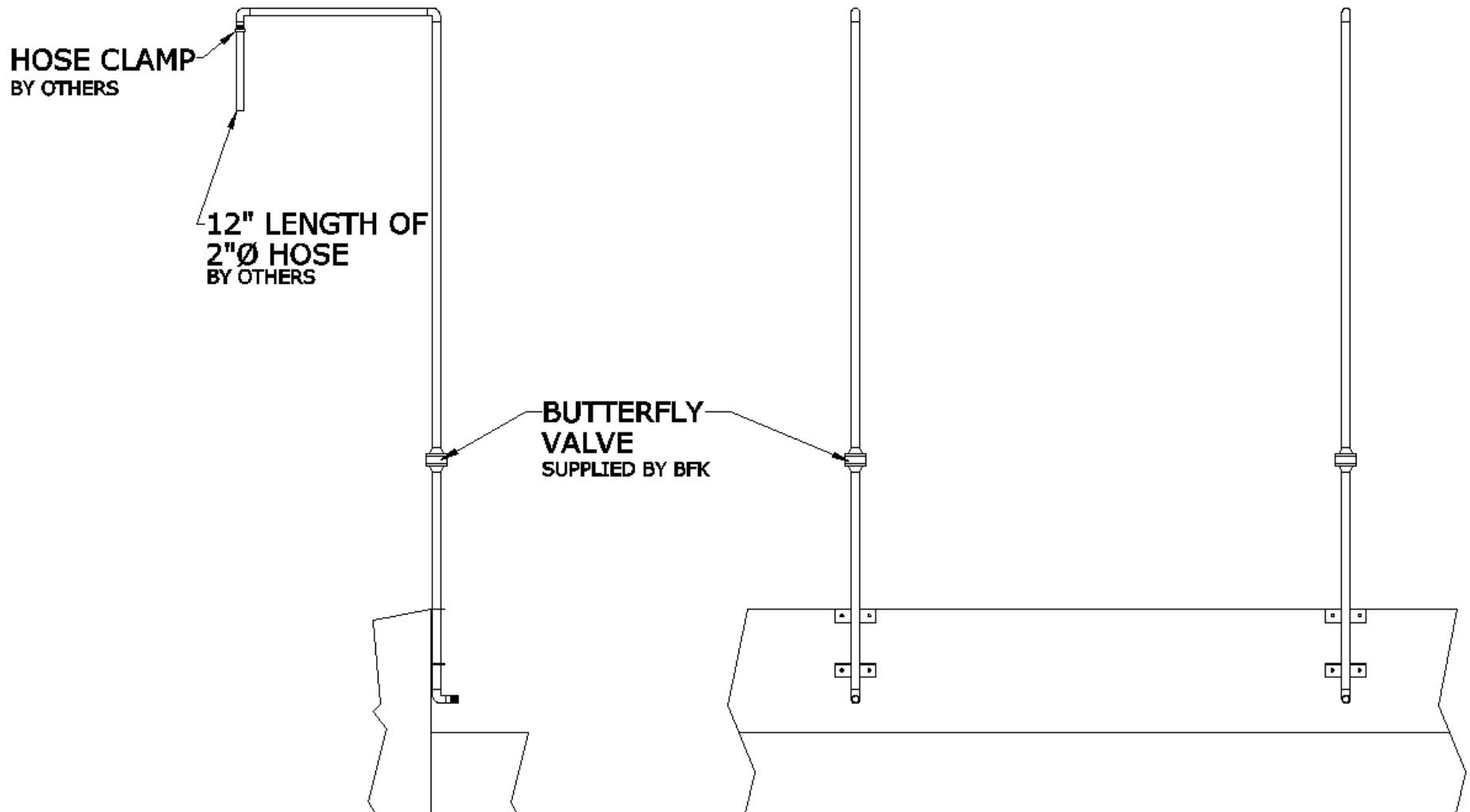
NOTE: If you are not using a ramp, or your dimensions vary from BFK standards, you may need to modify the lower weldments accordingly to mount them.

Locate the butterfly shut-off valve(s) and ½" Cap Screw(s) & associated hardware supplied.

Before bolting the lower stingers to the ramp, assemble the entire stinger assembly as follows:

Lay a lower stinger in line with an upper stinger. Position the valve body in-line with the flanges on the upper and lower stingers, install and tighten all hardware. Some customers install a 24" [610mm] length of 2" [50mm] dia. water hose on upper stinger hose nipple, securing with a hose clamp, but this is not necessary. Complete for both stinger assemblies.

Lift stinger assemblies into position and secure to ramp with ½" [50mm] anchor bolts.

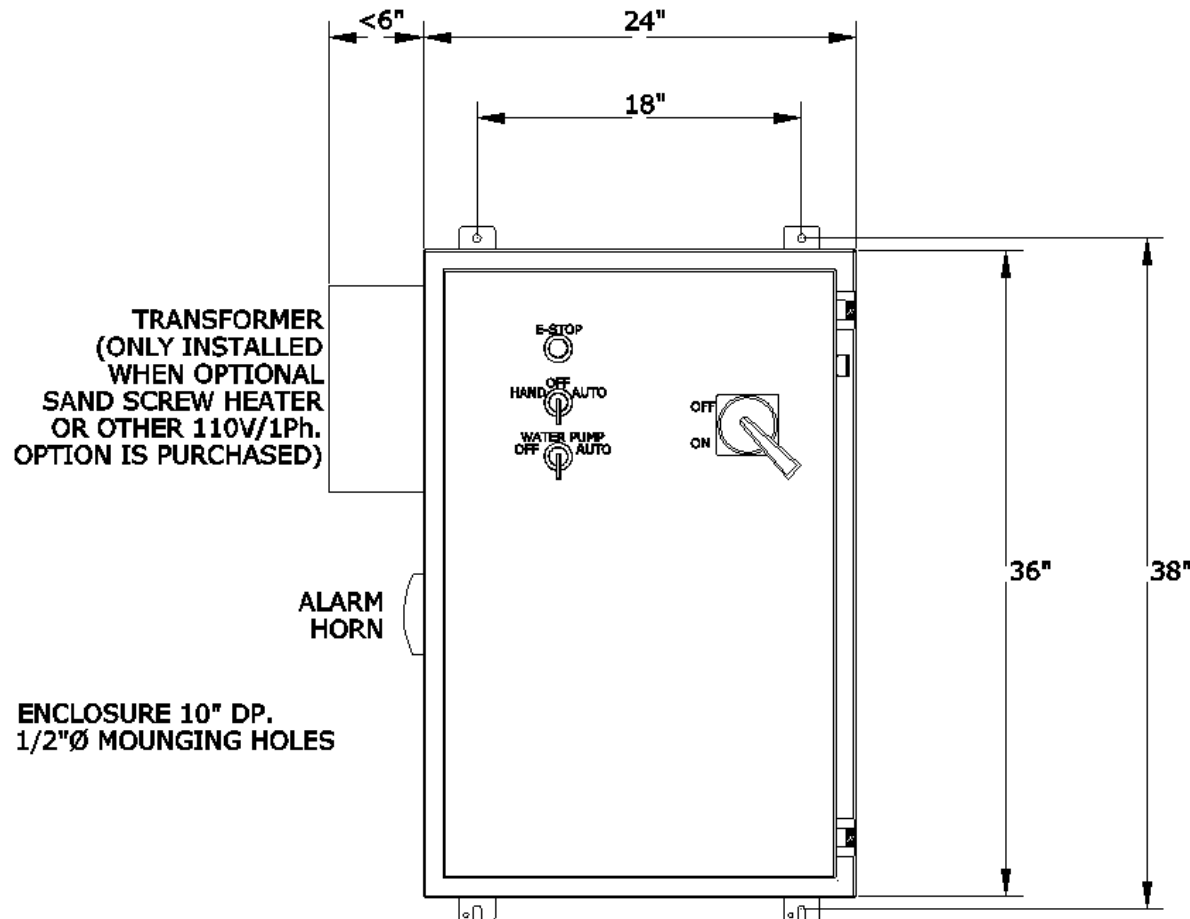


1.06 PUMP INSTALLATION

The system *may* be supplied with one Submersible pump. Suspend the pump near the surface of the water, off 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 pump from being buried in solids or sucking up too many solids.** 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

1.07 CONTROL PANEL INSTALLATION

The Control Panel needs to be mounted in accordance with local and national codes. Enclosure drawing follows:



NOTES:

Panel should be mounted where it's convenient for drivers or operators to **access the E-STOP in an emergency.**

Drawing shows typical Control Panel dimensions.

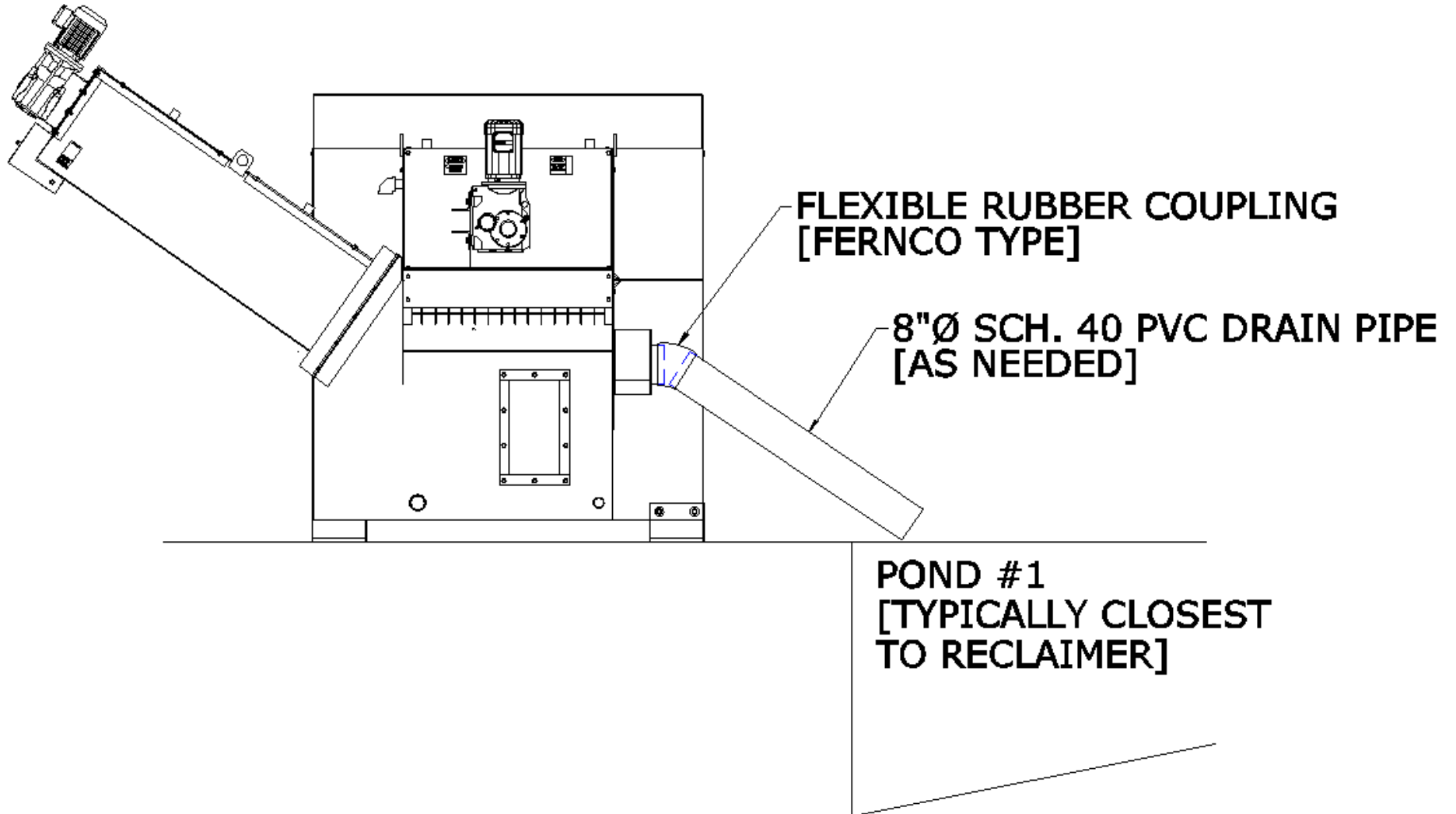
Actual dimensions may vary, depending on options purchased.

CONFIRM DIMENSIONS PRIOR TO INSTALLATION.

1.08 DRAIN INSTALLATION

The drain pipe must be installed so that it has a negative slope. It typically consists of 8"Ø [200mm] PVC Pipe, and a rubber coupling (Fernco type) supplied by the user. It may also need 90° or 45° elbows to drain properly into the first pit (usually closest to the reclaimer). The drain lay-out should already have been identified on the pit system installation drawings, if supplied. Please refer to those drawings during installation.

On especially long runs, support stands are recommended.

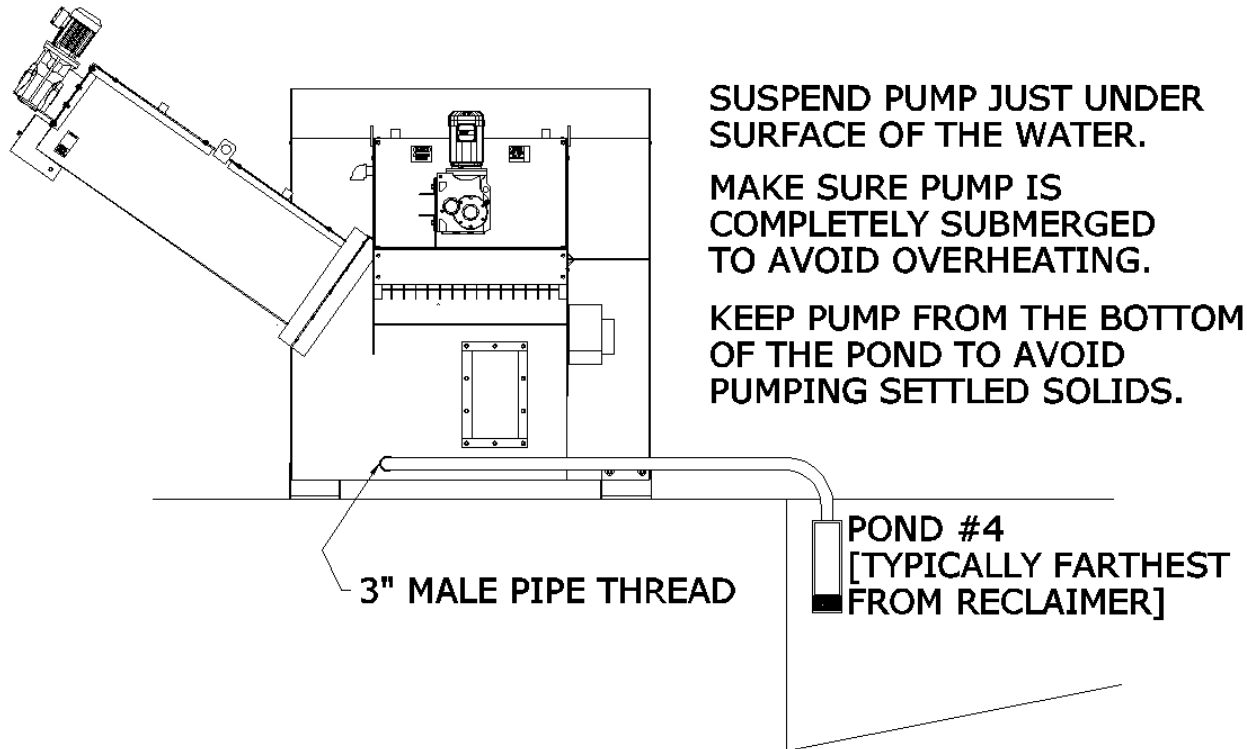


1.09 WATER CONNECTIONS

NOTE: Any pipe connections NOT used should be capped or plugged with appropriate fitting.

1.09.01 CONNECTING PUMP TO RECLAIMER

Connect pump to reclaimer. BFK provides a 3" Male Pipe Thread connection at rear of reclaimer. **MOST (NOT ALL) PUMPS** supplied have a 3" pipe thread discharge. **CONFIRM** pump discharge size before purchasing and installing connection and fittings. **Reducer fittings are not recommended**, but if one is used, it should **ALWAYS be placed AT THE RECLAIMER INLET, NEVER AT THE PUMP DISCHARGE!**



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 3" 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.

****IMPORTANT NOTE REGARDING SUBMERSIBLE PUMP(S):** In most cases, your reclaimer was supplied with a submersible pump. This 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-user's responsibility to ensure proper water flow and pressure is delivered to the reclaimer.

If the pump shipped with the reclaimer does not provide adequate 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-user's responsibility.

1.09.02 SAND DEWATERING SCREW

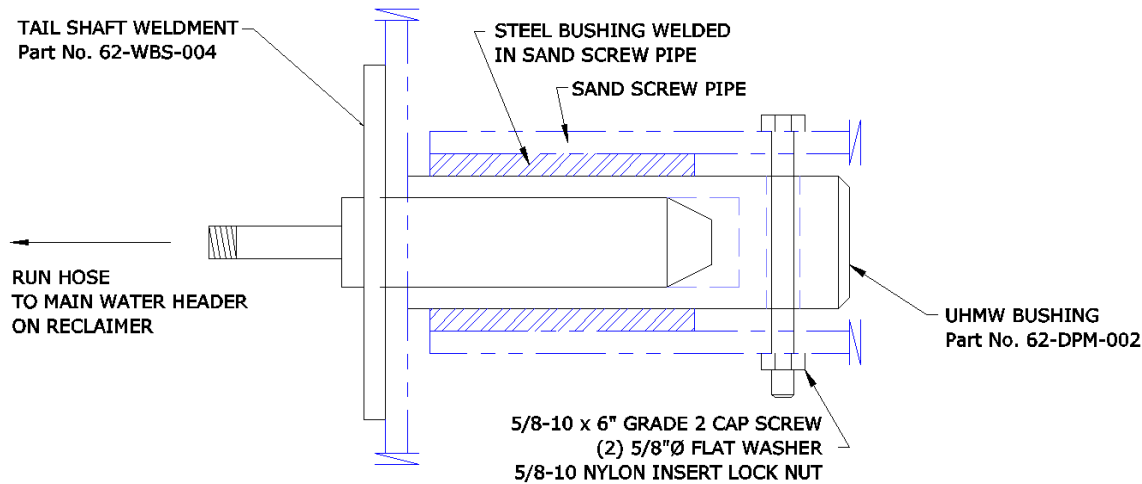
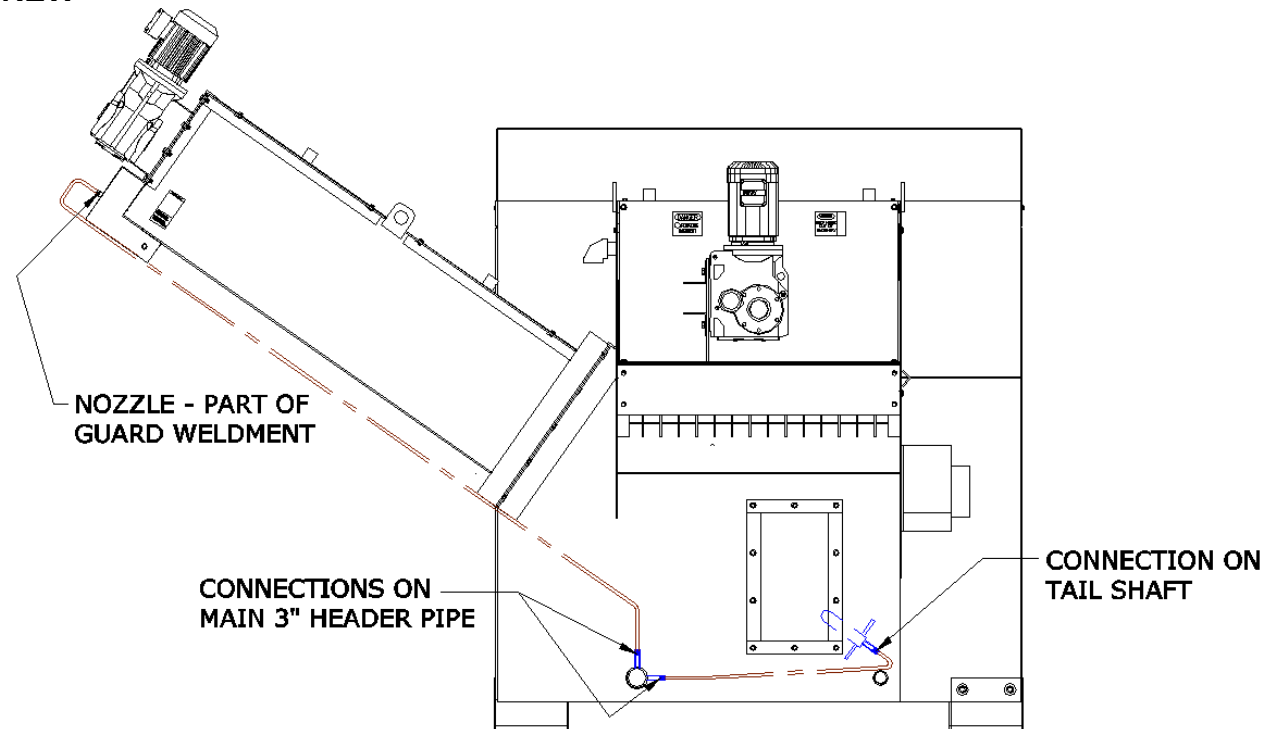
BFK provides (2) ½” male pipe stubs on main header pipe.

First, connect sand dewatering screw nozzle using ¾” [19mm] water hose, as shown.

Second, connect tail shaft with ¾” [19mm] water hose, as shown.

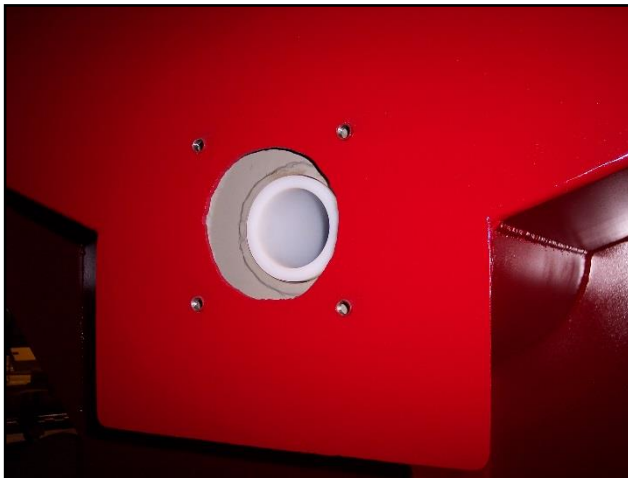
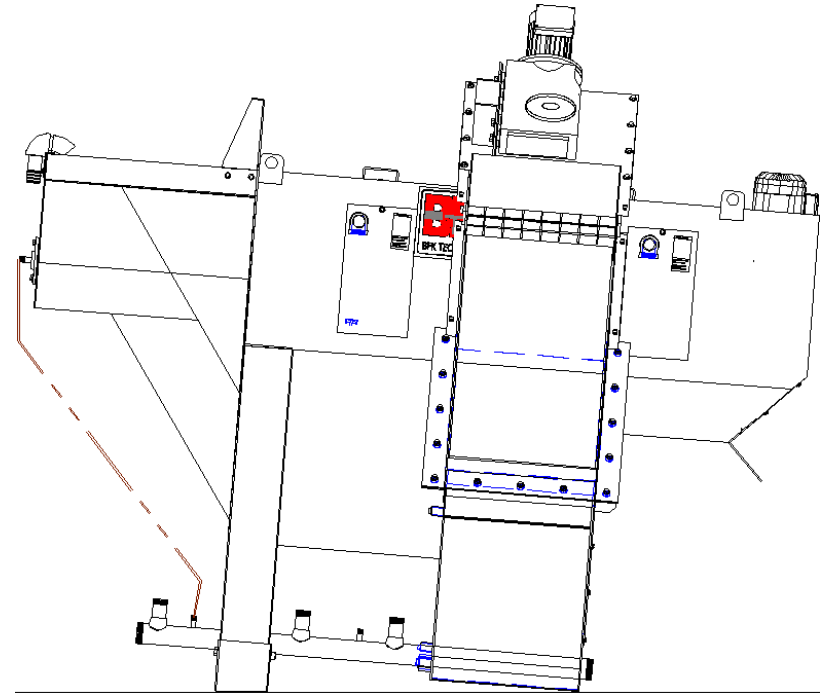
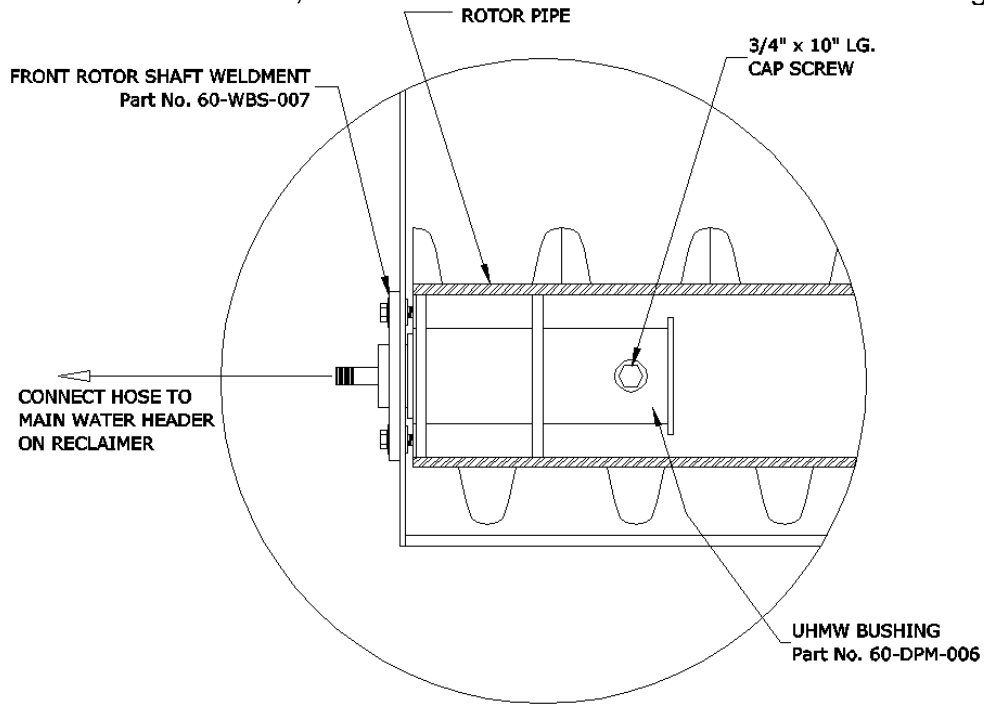
Use of fittings (elbows, etc.) is acceptable, but should be kept to a minimum.

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



1.09.03 FRONT ROTOR BUSHING

Connect Front Rotor Bushing Assembly using 3/4" [19mm] water hose, as shown, taking care so that the water will drain out of the hose after shutdown, so as not to freeze in cold weather. Use of fittings (elbows, etc.) is acceptable, but should be kept to a minimum.



1.09.04 INFEED HOPPER NOZZLES

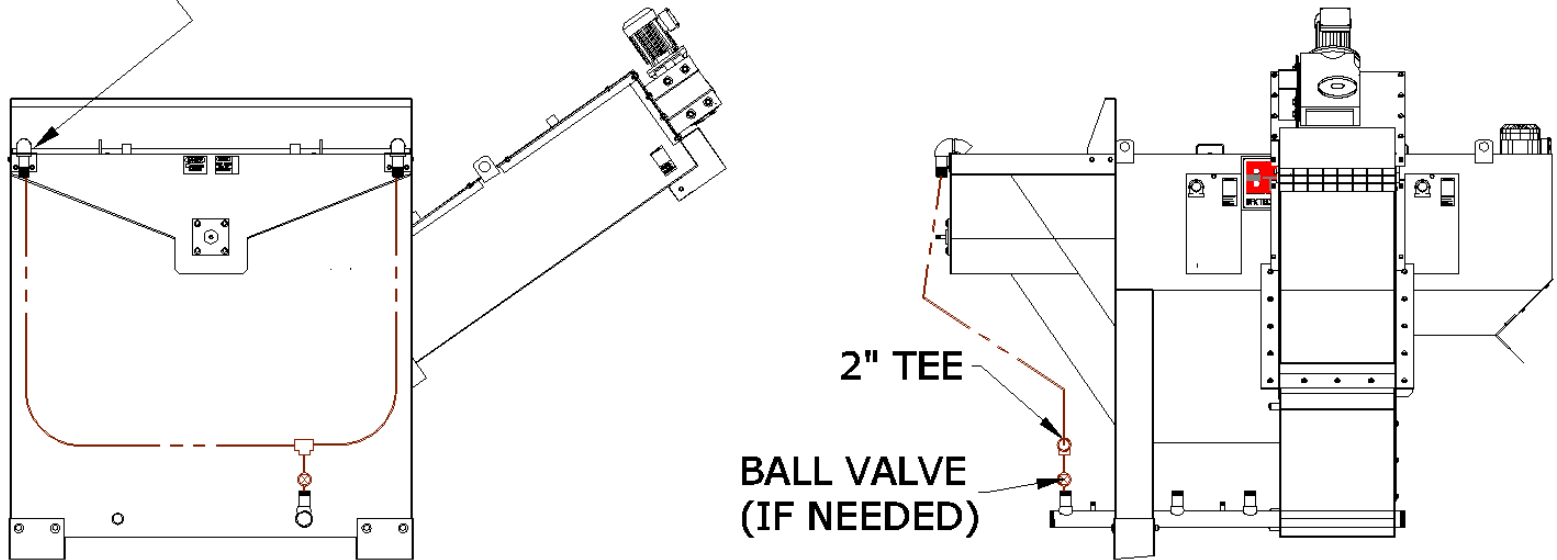
Mount (2) Infeed Hopper Nozzles to front of reclaimer infeed hopper using 3/8" cap screws supplied.

Connect Infeed Hopper Nozzles with (1) 2" Tee and 2" [50mm] water hose, as shown.

In some installations, it may be necessary to install a 2" ball valve in the hose to control the amount of water delivered to the infeed hopper. After initial start-up, with the Reclaimer system running, open wash-out stingers and make sure water is available at both stingers.

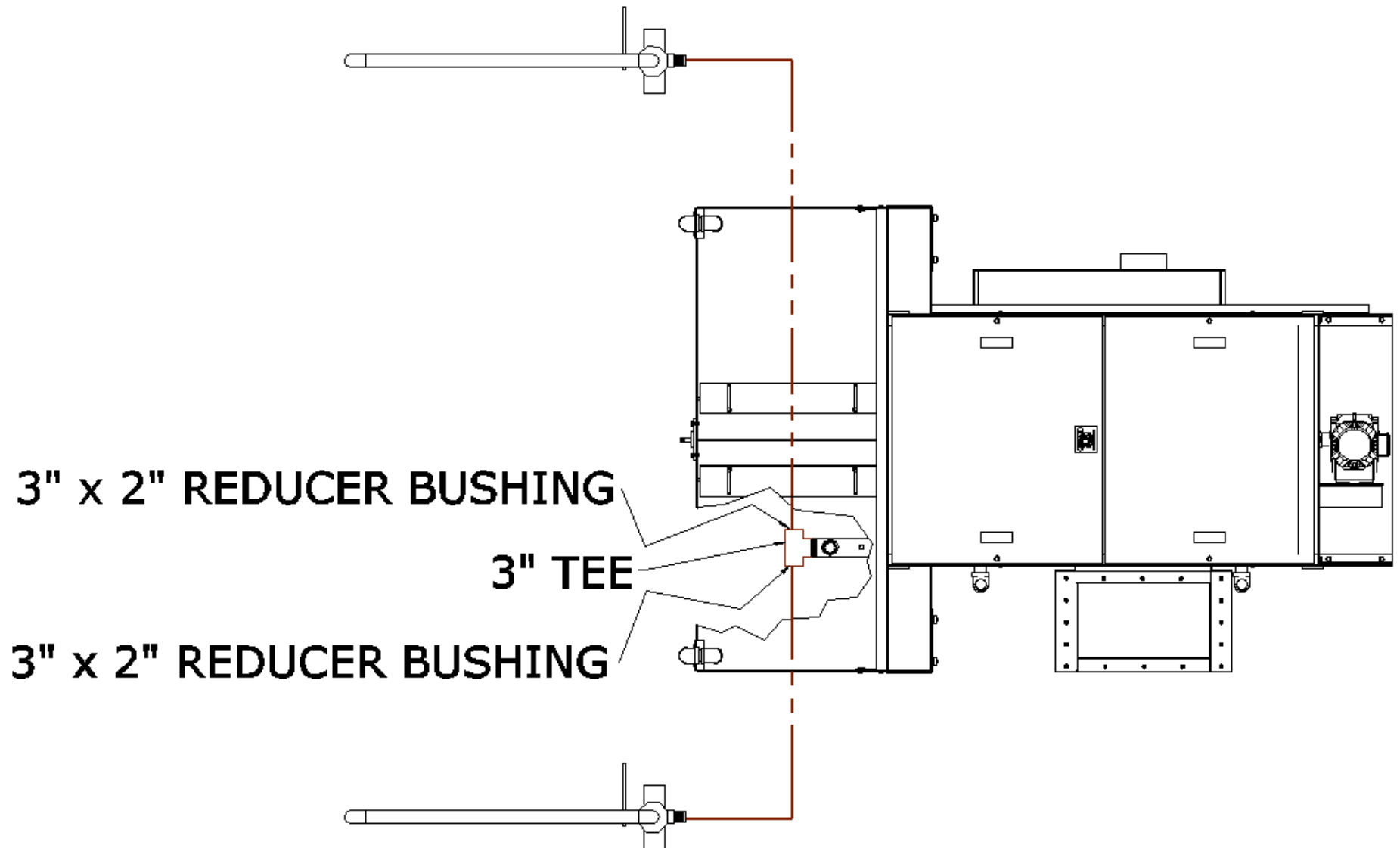
IF NOT, install a ball valve in the water hose feeding the infeed hopper wash-out nozzles. Close the valve down until water flows from the stingers. This is usually only necessary when the distance between the pump and the reclaimers is rather lengthy.

**MOUNT NOZZLES WITH
(2) 3/8" CAP SCREWS**



1.09.05 WASH-OUT STINGERS

BFK provides a 3" male pipe thread outlet under the infeed hopper. First, install a 3" Tee on outlet, tightening so that the 2 outlets point horizontally left/right (not vertically up/down). Install a 3" x 2" reducer bushing on the (2) tee outlets. Then connect 2" [50mm] hose from each reducer bushing to each stinger using required fittings and clamps. Take care to keep hoses taut, to allow for drainage.



1.09.06 Rotor Spray Nozzles

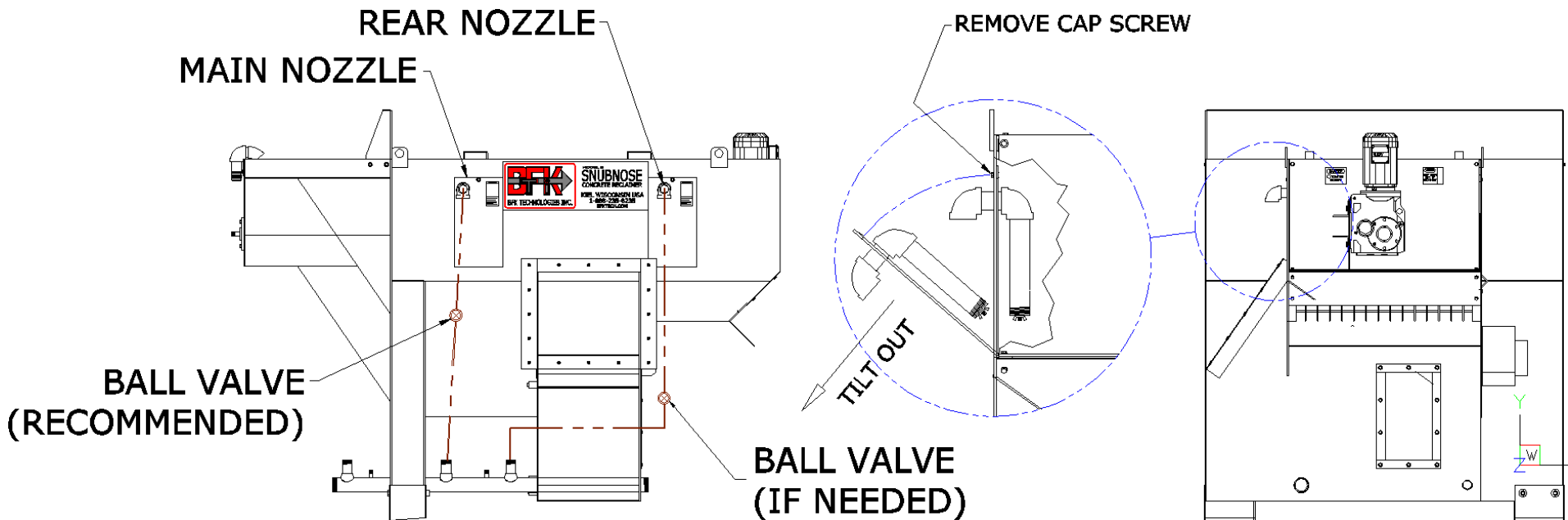
The SNUBNOSE Reclaimer is equipped with (2) 2" Spray Nozzles that spray into the rotary screen. They are located on the Left Side of the machine. The one nearest the infeed hopper is the Main Nozzle (does most of the washing), and the one nearest the rock discharge end is the Rear Nozzle.

There are (2) 2" pipe stubs on the main water header. Connect one to each of the nozzles using 2" [50mm] water hose and desired fittings, taking care to allow the hose to drain when the reclaimer is not in operation. Leave enough slack in the hose to allow the nozzle access panels to be removed without disconnecting the hose. This will allow for quick and convenient inspection and cleaning of the nozzles, by simply removing the one screw holding each panel in place.

R01

It is **RECOMMENDED** that a ball valve be installed in the hose feeding the MAIN NOZZLE. In some applications, a ball valve may also be desired in the hose feeding the Rear Nozzle, but this can always be added later. The purpose of the valve(s) is to control the amount of water being sprayed into the rotary screen. Less water in means less water out, therefore, less turbulence in the drain (turbulence increases fine sand flow out of the drain).

It is recommended that the user turn down the flow to the main nozzle to minimum flow that still ensures the rock is being effectively cleaned. This will probably involve some trial and error on the user's part.



1.10 OPTIONAL EQUIPMENT

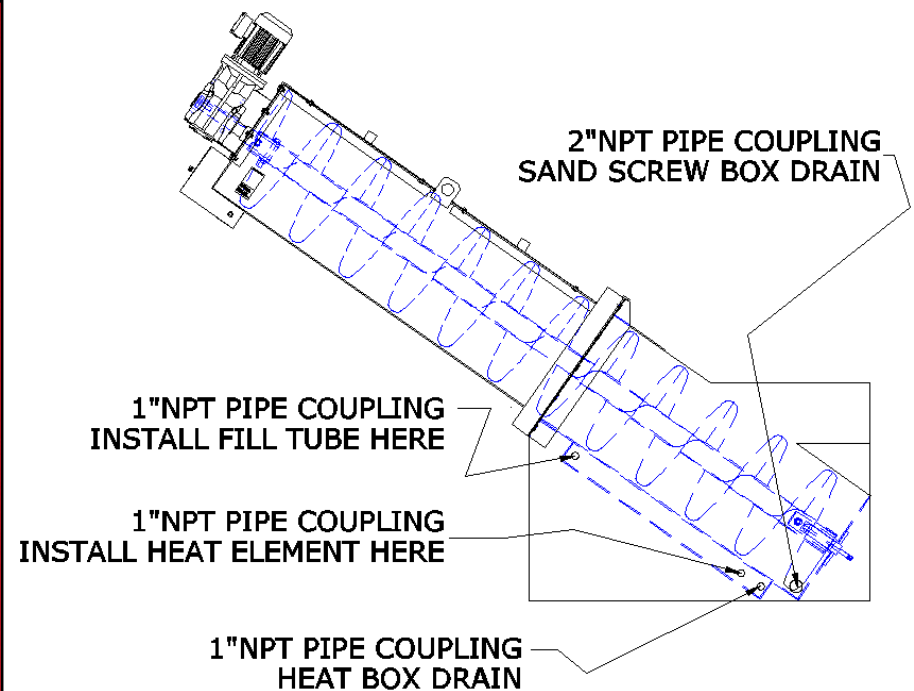
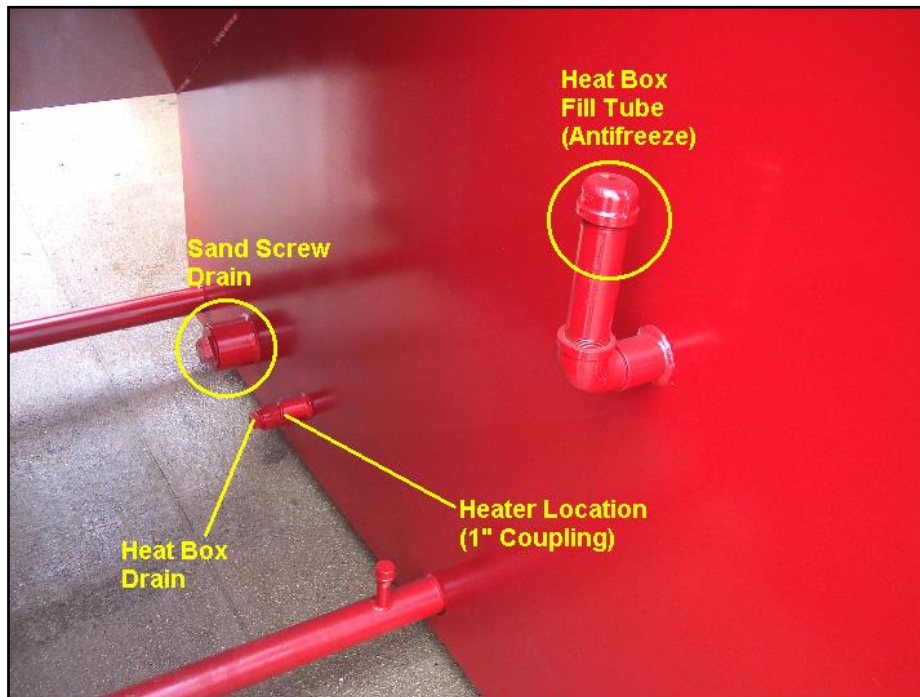
1.10.1 SAND DEWATERING SCREW HEATER

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

The screw box heater is designed to minimize freezing of the water in the sand dewatering screw during extended shut-down periods. The heater is thermostatically controlled (Note: thermostat located in heating element – remove cover to access). Recommended winter setting: 140° to 160°F.

Remove 1"Ø square head pipe plug shipped on unit. Locate electric heater (usually shipped in accessory box), and screw into coupling shown (middle 1" coupling), being careful not to damage the heating elements. Tighten to eliminate leakage. Remove 1"Ø plug on upper most coupling and install (1) 1" street elbow and (1) 1" x 8" pipe nipple as shown to create the Heat Box Fill Tube. Fill heat box with approximately 16 U.S.gallons [60L] of anti-freeze. When finished, install 1" cap on fill tube.

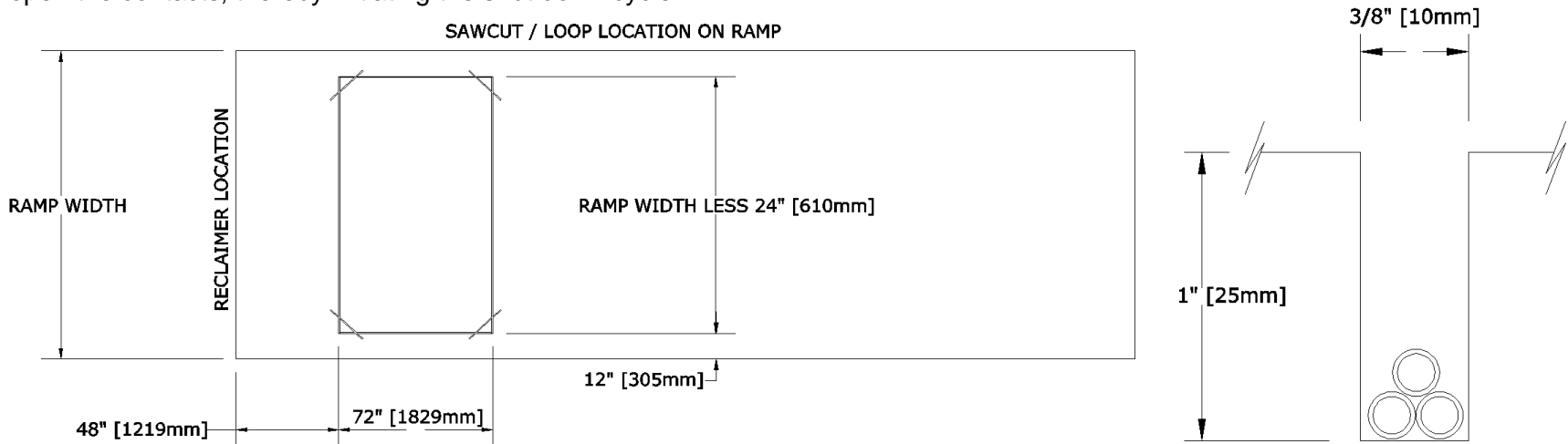
Lowest 1" coupling is the Heat Box Drain. Remaining coupling is the Sand Screw drain.



1.10.2 LOOP DETECTOR

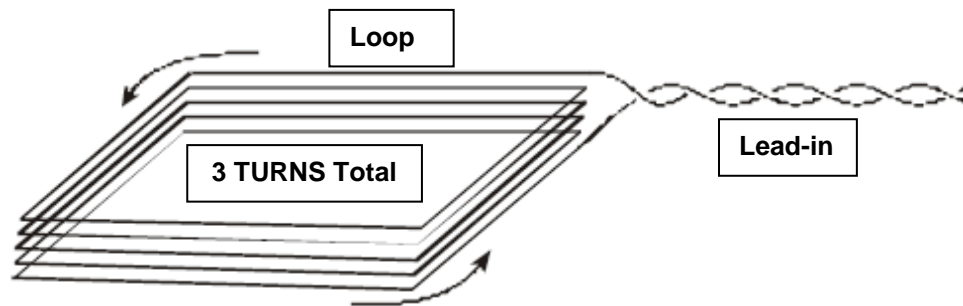
If optional loop detector was not purchased, you may skip this page.

The loop detector is designed to automatically sense the presence (or absence) of trucks at the reclaimer. It works by setting up an electromagnetic field that, when disturbed by a metal mass such as a mixer truck or front-end loader, it will close a contact across the "start" relay in the control panel, thereby energizing the reclaimer. When the metal mass leaves the electromagnetic field created by the loop detector, it will open the contacts, thereby initiating the shut down cycle.



INSTALLATION INSTRUCTIONS:

1. Saw rectangle 3/8" wide by 1" deep at locations shown above.
2. Include corner chamfer cuts, approx. 12" chamfer, to keep wire sheath from kinking/breaking.
3. Lay wire in cut (use chamfer cuts, not square cuts) a total of three (3) turns – **DO NOT TWIST!**
4. Twist wire five (5) times per foot between cut-out and control panel (Lead-In section).
5. Fill cut-out 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' [1828mm] wide, the length being 2' [610mm] less than the overall width of your ramp (allowing 1' [305mm] off of each edge of the ramp).
- The depth of the saw cut is typically 1" [25mm] deep by 1/4" to 3/8" [6-10mm] 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" [50mm] 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.**

1.11 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 confirmed prior to operation of the equipment.

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. Please provide serial number of reclaimer and gearmotor.

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 conduiting and cable for proper connection of all equipment supplied with your system.

Main power requirements are as follows:

230VAC	50 Amp minimum	100 Amp recommended
460VAC	30 Amp minimum	50 Amp recommended

At other voltages, consult factory. Note that there is both a minimum and a recommended amperage shown for each voltage. The minimum amperage listed will be enough to run the complete reclaimer operation. However, BFK recommends that larger service be provided initially, for additions such as lighting, pumps, etc. that you may not want or need now, but may wish to add later. The additional expense to size for the larger service is much less expensive now rather than later, and initial cost is not much more than sizing for the minimum.

2.02 OPERATIONS

The SNUBNOSE 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, this 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) is adjustable on the face of the relay, but is factory preset for 10 seconds. **The alarm horn will sound during this time, signaling to all personnel that the equipment is about to start up.**
- TR2 Stop Delay Relay When system is turned off, this relay initiates the 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, ensuring most of the cement has left the machine. The time delay is adjustable on the face of the relay, and is factory preset for 6 minutes (shown as 36 x 10 sec., or 360 sec.).

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 truck 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 (if optional Loop Detector was not purchased)
- Hand/Off/Auto Switch (if optional Loop Detector was purchased)
- E-Stop Switch
- Water Pump Off/Auto

To operate the machine manually: The Main Disconnect must be in the ON position (door closed), with the E-Stop pulled out. No Loop detector: Simply turn the On/Off Switch to the ON position.

Loop Detector: Simply turn the Hand/Off/Auto (HOA) Switch to the HAND position. (See LOOP DETECTOR/PRESENCE SENSOR description that follows for a description of Automatic operation).

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

After you are done using the reclaimer, simply turn the switch to the OFF position. The reclaimer will continue to run for the duration of the time setting on TR2 (typically an additional 6 minutes) prior to shutting down.

Water Pump Off/Auto Switch: This switch allows the user to run the reclaimer without turning on the water pump. This is beneficial while troubleshooting the equipment. Simply turn the switch to OFF to turn off the pump. Make sure to put the switch back into the AUTO position prior to using the reclaimer. In AUTO, the pump goes on and off with the reclaimer.

OPTIONAL EQUIPMENT:

SAND DEWATERING SCREW HEATER:

In certain locations, it is desirable to provide a heat source to the sand screw in order to prevent it from freezing. The heater provided on the Snubnose reclaimer is thermostatically controlled (up to 180°F) and is powered by a 110VAC circuit thru a step-down transformer. This transformer is typically mounted to the side of the enclosure.

The heater element is installed in a 1"NPT coupling underneath the sand screw (see Section 1.10.1). The heating element is immersed in anti-freeze. When the ambient temperature drops below the preset temperature, the heater turns on, heating the anti-freeze, which in turn, keeps the water in the sand screw from freezing. The temperature setting is adjustable. Simply remove the cover plate from the heater and adjust to desired temperature. Replace cover plate before using.

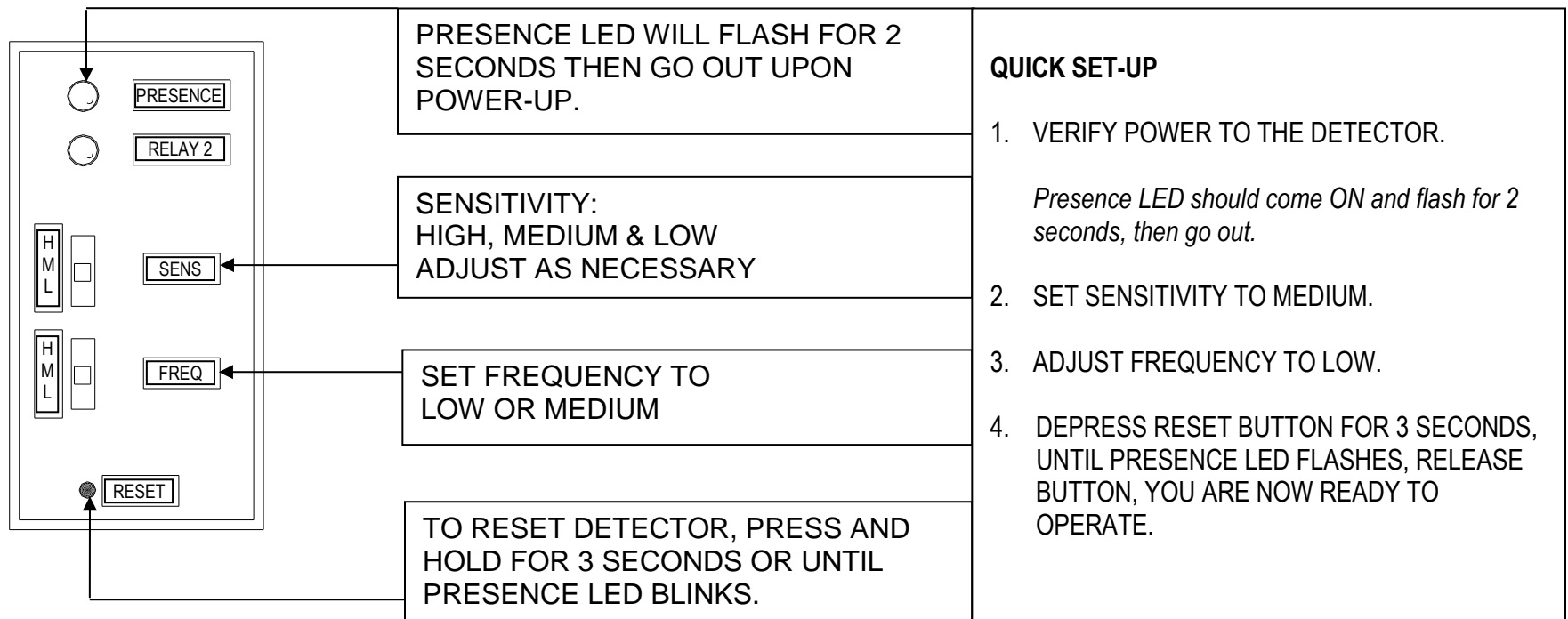
Recommended winter setting: 140° to 160°F.

LOOP DETECTOR/PRESENCE SENSOR:

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

To operate the machine automatically: The Main Disconnect must be in the ON position (door closed), with the E-Stop pulled out. Place the HOA switch in the AUTO position.

When a truck (or other metal object) drives over the loop (installation covered in Section 1.10.2), the presence sensor senses its presence and initiates the START operation of the reclaimer. The alarm horn sounds for 10 seconds, then the reclaimer turns on. After the truck leaves, the presence sensor senses its absence, and initiates the shut-down cycle (preset to 6 minutes). **Should another truck arrive before the shut-down cycle is complete, the presence sensor resets and keeps the system running until the last truck leaves, and then initiates the shut-down cycle once again.**



CURRENT OPERATING PROCEDURE AS OF THE WRITING OF THIS MANUAL, SUBJECT TO CHANGE WITHOUT NOTICE, AT THE MANUFACTURERS DISCRETION. PLEASE READ THE MANUAL SUPPLIED WITH YOUR RECLAIMER SYSTEM (TYPICALLY SHIPS IN THE DOOR POCKET OF THE CONTROL PANEL) TO GET SPECIFIC OPERATING PROCEDURES AND SET-UP FOR YOUR PARTICULAR PRESENCE SENSOR MODULE. CONSULT FACTORY IF IN DOUBT, PRIOR TO OPERATING.

SECTION 3.0 INITIAL EQUIPMENT START-UP

Inside of the infeed hopper, you will notice adjustable infeed restrictor plates (See SECTION 4 below). These restrictor plates provide 2 functions. They are a safety precaution, covering the infeed auger to keep operators safe. They also help to restrict the flow rate of wet concrete that can be fed into the reclaimer. **The restrictor plates need to be opened prior to running the reclaimer for the first time, THEY ARE TYPICALLY SHIPPED CLOSED TO AVOID DAMAGE!** To begin, open the restrictor plates to allow approx. a 2" [50mm] gap. These can be adjusted later, if 2" is not the best gap for your operations (see below).



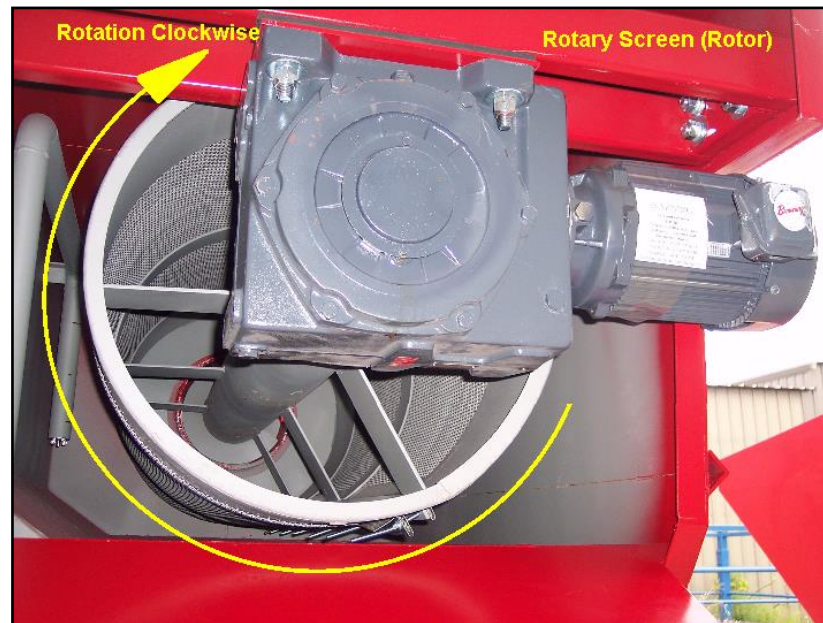
DANGER! ALWAYS USE PROPER LOCK-OUT/TAG-OUT PROCEDURES BEFORE MAKING ANY ADJUSTMENTS TO RECLAIMER. FAILURE TO DO SO MAY CAUSE SEVERE PERSONAL INJURY OR DEATH!

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 SNUBNOSE for the first time. **NOTE: It is also assumed, at this point, the water handling system (pit system or gray water system) is ready to use.**

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.

With the Control Panel operating manually, turn the On/Off switch to the ON position, or HOA switch to HAND, if so equipped. After the alarm horn sounds, the equipment should begin to operate. Stay near the E-STOP in case a quick shut-down is needed. Check rotation of the rotor and sand screw as shown on the following: (BOTH turn Clockwise)

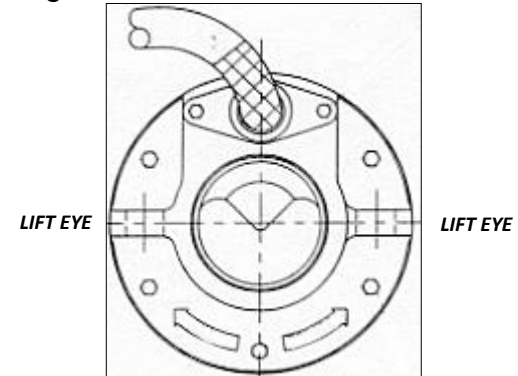


If either the rotor or the sand screw is turning the wrong direction, turn the reclaimer off, LOCK-OUT the equipment per OSHA safety standards and procedures, and have electrician reverse the leads for proper operation. Confirm rotation again.

To confirm proper pump rotation, pull the pump out of the pit and hold the pump by the 2 integral lift eyes. HOLD ON TIGHT as the rotational force of the pump will try to “kick” the pump out of your hands. Have your certified electrician “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 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, have electrician reverse the leads for proper operation. Confirm by “bumping” prior to replacing the pump into the pits.

MANY PUMPS HAVE BEEN DAMAGED DUE TO BEING IMPROPERLY WIRED, RUNNING BACKWARDS. THIS DAMAGE IS NOT COVERED UNDER WARRANTY, SO CHECK AND THEN RE-CHECK PRIOR TO PLACING INTO SERVICE.



Once all 3 rotational items are turning in the proper direction, turn On/Off switch to the ON position, or HOA to Hand. The alarm horn should sound, and the reclaimer should turn on (after the 10 second start-up delay). Allow the reclaimer to run for 10-20 minutes to lubricate the bushings, and to ensure everything is turning properly. While it is running, review all nozzles for water output. Check the infeed hopper nozzles, the main and rear rotor nozzles, sand screw backwash nozzle. Make sure Clean-out Plug (located in bottom of the Rotor Main and Rear Nozzles) are still in place (they sometimes fall out in shipment).

Also, open the valves on the wash-out stingers, one at a time, and check for water flow.

After the break-in period, turn the reclaimer to OFF. Make sure the reclaimer goes into the shut-down cycle (typically 6 minutes) and shuts off properly. If you did not purchase the Loop Detector, your reclaimer is ready to operate.

If operating with a Loop Detector, next test automatic mode by setting the HOA switch into Auto. Drive a mixer truck or front-end loader over the loop, which should turn on the reclaimer (after the 10 second start-up delay). This is also an appropriate time for the electrician to adjust the sensitivity of the Presence Sensor module, if needed. Make sure sensitivity is adjusted to sense a mixer truck in front of the reclaimer and does NOT sense a mixer truck driving past the reclaimer and ramp, or small items like a shovel. After start-up, back off the loop, and make sure the reclaimer goes into the shut-down cycle (typically 6 minutes) and shuts off appropriately.

If the equipment turns on and off properly, all nozzles pump water, everything is rotating in the proper direction, and you have let the machine run 10-20 minutes, you are now ready to reclaim your first load of concrete!

SECTION 4.0 PROCEDURES FOR RECLAIMING CONCRETE

NOTE: This section outlines the procedures for reclaiming concrete.

PLEASE READ THE ENTIRE SECTION BEFORE DISCHARGING YOUR FIRST LOAD INTO THE RECLAIMER!

As you feed the first amount of material thru the reclaimer, watch at the infeed auger to see how the material flows thru. If adjustments are needed, follow these steps:

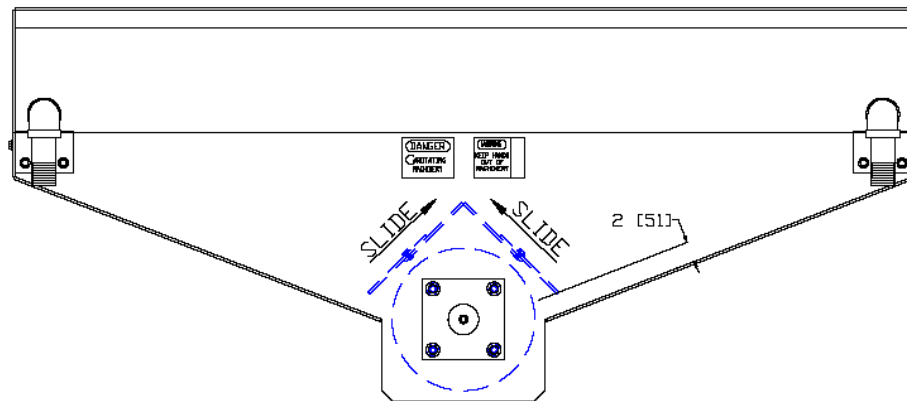
ADJUST RESTRICTOR PLATES.



DANGER! ALWAYS USE PROPER LOCK-OUT/TAG-OUT PROCEDURES BEFORE MAKING ANY ADJUSTMENTS TO RECLAIMER. FAILURE TO DO SO MAY CAUSE SEVERE PERSONAL INJURY OR DEATH!

Loosen (4) 3/8" screws (2 per plate) and slide plates to desired position. When gap between slider plates and the bottom of the infeed hopper is at the proper setting, tighten all (4) bolts.

A good starting gap is around 2" [50mm], depending upon the size and type of aggregates being used. 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). The maximum gap setting is approx. 6". **MAKE SURE GAP IS WIDE ENOUGH TO PREVENT JAMMING OR CLOGGING OF ROCKS!** If you need further adjustments, remember "a little goes a long way". Adjust open or closed 1/4" at a time until proper feed rate is accomplished.



The SNUBNOSE is designed to reclaim **wet concrete**.

Note: The capacity and quality of reclaimed aggregates can and will be affected by:

- Fine gradation of material.
- Coarse gradation of material.
- Coarse shape - natural (river rock) vs. manufactured (crushed), for instance.
- High or Low slump.
- Poor pit system design.
- Maintenance and cleaning.

Keep in mind that **it will take several yards 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.

The large infeed hopper allows two trucks at a time to unload wet concrete into the SNUBNOSE.

- (1) Drive mixer truck up to infeed hopper so chute can discharge concrete into hopper and washout stinger pipe is over truck mixer charge hopper.
- (2) If automatic operation is in use (loop detector), the alarm horn will sound upon detection of the truck, followed by the reclaimer starting (assuming HOA is in the Auto position).

If manual operation is in use (**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.

You should train your drivers in proper operation prior to routinely using the reclaimer.

Conditions drivers should look for:

If the Reclaimer starts up, but the driver notices that there is **NO water flowing** in the infeed hopper, driver should contact plant/maintenance personnel prior to discharging the waste concrete into the Reclaimer. Possible causes of lack of water are plugged or inoperable pump, and/or plugged plumbing.

If Reclaimer **does not start up** at all, drivers should obviously NOT discharge material into the Reclaimer (yes, it happens). Contact plant/maintenance personnel and inform them of this condition. If concrete is discharged without the Reclaimer in operation, the concrete will simply flow down into the belly of the Reclaimer and obviously harden. It will require a lot of downtime, and at least one jack-hammer, to get the Reclaimer operable again.

(3) Prior to discharging the concrete, add water as needed, *using the wash-out stingers*, to slump up concrete, to **6” to 10” slump**.

It is *not* recommended to use on-board water from the mixer truck, as over time, this could cause the water in the pit system to “grow”, eventually leading to overflowing of the pits.

(4) With the mixer truck at idle speed, discharge concrete and wash water into the dump hopper.

(5) Watch the material as it is fed into hopper, and judge how quickly it is taken away by the infeed auger.

Drivers should discharge the waste concrete at about the same speed as the auger takes it away. This will allow for the most efficient feeding of the waste concrete.

Drivers should *not* attempt to fill the hopper full, and then stop the feed from their trucks to let the material feed thru the Reclaimer.

When the hopper is filled full, the concrete tends to segregate, with the large aggregates all trying to feed into the auger at once, and the small aggregates and cement “waiting their turn” until the path is clear. When this happens, the larger aggregates tend to clog up at the opening to the infeed auger, possibly limiting the amount that can go through, and actually slowing down thru-put rate.

The primary purpose of the infeed hopper is to handle “surges” and contain spill-over.

(6) After discharging the waste concrete, drivers should wash-out the infeed hopper while rinsing off their chutes, and make sure there is no concrete build-up, esp. in the corners of the hopper.

(7) If system is in AUTO Mode: Drive away when washout is complete. System automatically shuts off after shut-down cycle.

If system is in MANUAL Mode: When truck is empty and rinsed out, turn On/Off switch to OFF position. System automatically shuts off after shut-down cycle.

IMPORTANT: DO NOT USE THE EMERGENCY STOP FOR NORMAL OPERATION!

When waste concrete mix consists of small or fine aggregates only, such as pea gravel or flow-able fill mixes, discharge should be slowed down as much as possible. This is up to the drivers to accomplish. Optional Stainless Steel Brush Flights are available to help slow down fine aggregate mixes – consult factory for further information.

With no coarse aggregates in the concrete, the small aggregates tend to flush thru the system very quickly. This usually results in “dirty” stockpiles, as the aggregates are not allowed to stay in the reclaimer long enough to wash the cement off.

APPLICATION NOTES:

- a. *Cold weather operation **without a sand screw heater***: If installed and operated properly, the SNUBNOSE Reclaimer completes separation of each load of concrete before shutting off. Water in the system drains back to the settling pond (assuming hoses were properly installed, i.e. no “dead spots” where water can collect).

IMPORTANT: At the end of each day, remove the water drain plug 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 pumps from the ponds.

- b. *Cold weather operation **with sand screw heater***: If installed and operated properly, the SNUBNOSE Reclaimer completes separation of each load of concrete before shutting off. Water in the system drains back to the settling pond (assuming hoses were properly installed, i.e. no “dead spots” where water can collect).

The lower bottom section of the sand screw housing is jacketed with anti-freeze and includes an electric heating element to prevent freezing of water remaining in the sand screw. Remove the water pumps from the ponds at the end of the day. **IN THE EVENT OF A POWER FAILURE OR HEATER FAILURE, THE SAND SCREW MUST BE DRAINED TO PREVENT FREEZING!** Always check for proper heater operations – simply “trusting” that it is working may cause freeze up of the sand screw.

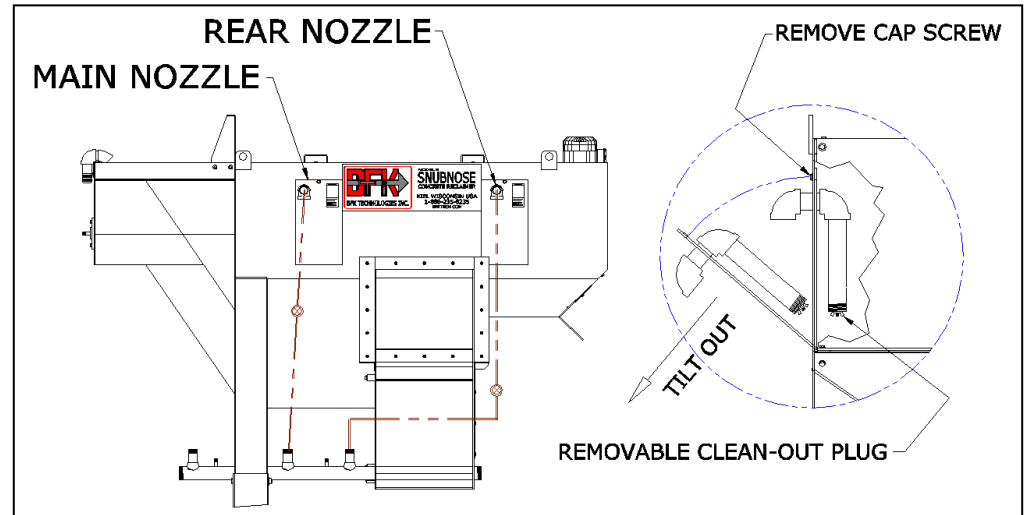
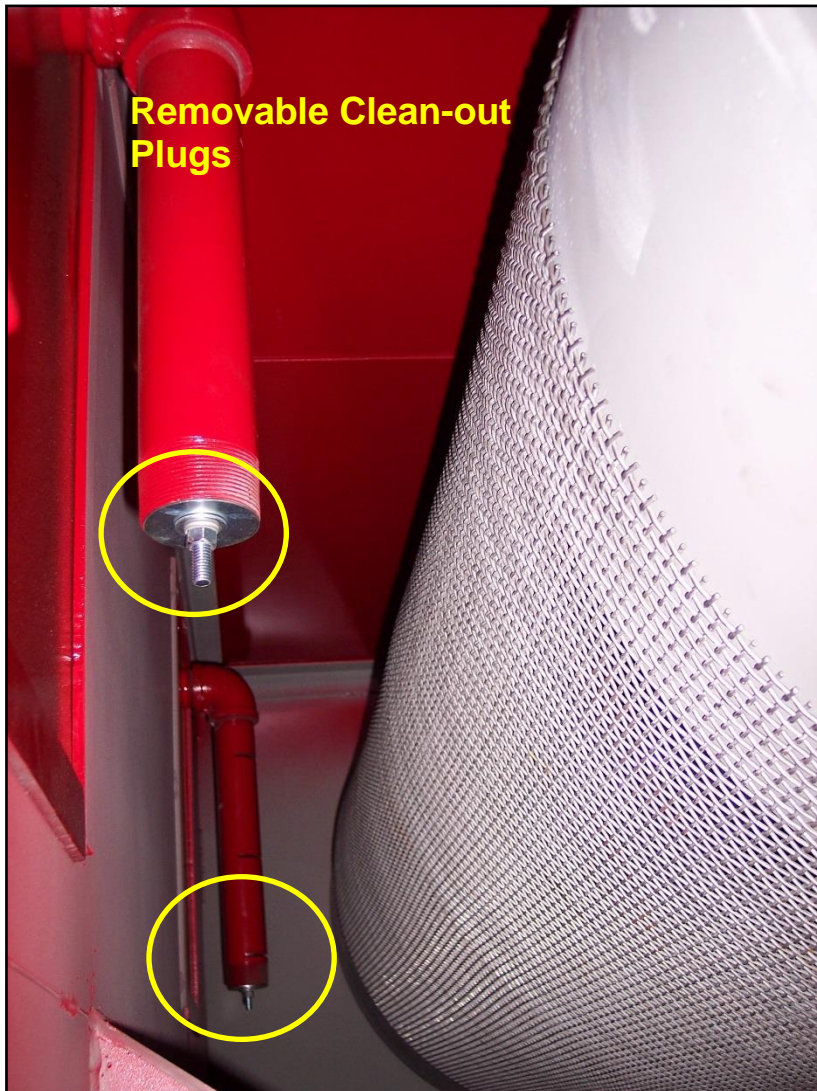
CAUTION!

NEVER 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

5.01 ROTOR NOZZLES

Check both the main and rear rotor spray nozzles **DAILY** for plugging or obstructions. **It is important that the spray nozzles are working properly to separate the concrete mix, and to keep the screen clean.** A dirty screen reduces the efficiency of the system. If needed, remove Clean-out plugs and flush thru by tilting out the nozzle panels and removing the clean-out plugs.



5.02 SCREEN

Check the screen **WEEKLY** for wear, tears, blinding, obstructions and fiber.

1. Clean screen of cement build up with a liberal amount of cement cleaning solution. Allow the solution to completely clean – then rinse with water. Screen life is related to how well the water handling system is designed and maintained.

Poor design and/or maintenance of the pit system will reduce screen life.

2. If fiber accumulates: Fibers can be removed from the screen using a pressure washer from the outside in or treating with cement cleaning solution and then melting the fibers after they have dried using a propane burner.

Note: Screen misuse is not covered under warranty.

5.03 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).

Fibermesh concrete reclaiming may require the installation of a screen in Weir #1 between Pits #1 & #2 and a screen around the pump intake. This will minimize the amount of fiber in the pumps and spray nozzles. The screens should be checked daily and fiber build up removed. Plugged pump screens will lower pump output and reduce the efficiency of reclaimer material washing system. **Plugged pump screens will also eventually burn up the pump motor, if sufficient water flow is not maintained.**

SECTION 6.0 PIT SYSTEM MAINTENANCE & OPERATION (Where used)

1. Check the water level in the pits **DAILY** and add water if necessary. The water level should be maintained at the top 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. This clean-out time 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 weekly or monthly with a loader, or as needed.
4. Pit #3 (where used): Remove the spent cement from the bottom of pit #3 weekly or monthly with a loader, or 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 weekly or monthly with a loader, or as needed. **NOTE:** *Always* remove submersible pump during cleaning.

SECTION 7.0 SERVICE

7.01 SCREEN

- There is one (1) screen wrapped around the rotor. The standard 1/4" size screen opening holds back rock allowing the sand and cement to pass through.
- The screen is held together at the screen edges with 7 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)



DANGER! ALWAYS USE PROPER LOCK-OUT/TAG-OUT PROCEDURES BEFORE MAKING ANY ADJUSTMENTS TO RECLAIMER. FAILURE TO DO SO MAY CAUSE SEVERE PERSONAL INJURY OR DEATH!

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. If in doubt, see "installation of new screens" below.

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.

7.02 BUSHINGS

The Snubnose 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, more often is recommended, depending on use. Heavy use may dictate more frequent inspections.*

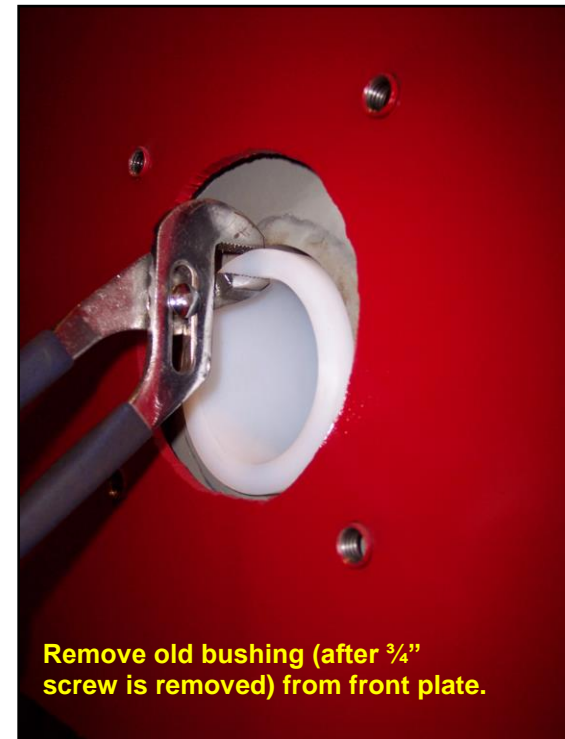
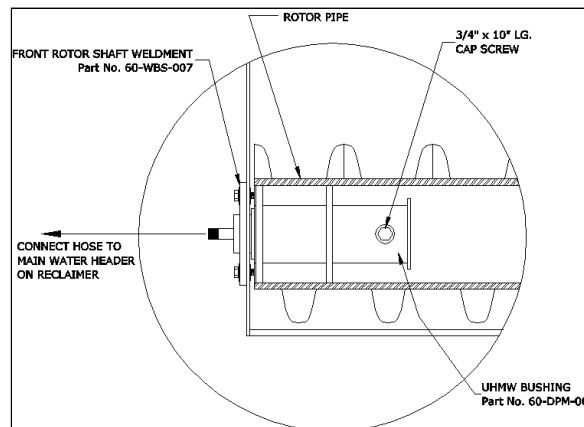
It is impossible to know how often these will need replacement, as there are many factors that affect the life of the bushing. Variations in size and hardness of aggregates (esp. sand), daily or weekly Reclaimer usage, and pit maintenance are some of the many factors which will affect operating life.

7.02.01 Front Rotor Shaft and Bushing

The front rotor shaft and bushing are located on the front of the infeed hopper. They are very accessible, and therefore, relatively easy to check. Simply remove the 4 bolts and slide the shaft weldment off to view the bushing, which is pinned to the rotor with a $\frac{3}{4}$ " cap screw. Excessive wear is easily noted. If required, replace bushing now.



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7.02.02 Tail Shaft Bushing, Sand Screw

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 (**keep the location around the Reclaimer free from spilled concrete**) it is accessible, and therefore relatively easy to change out when needed.

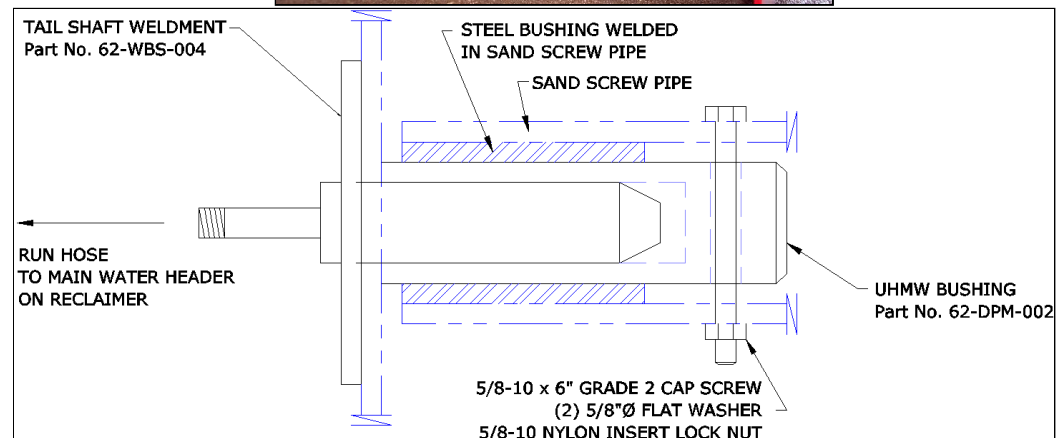
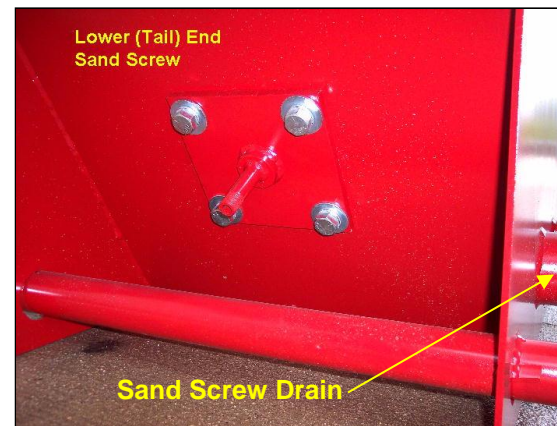
Users report the most effective way to know when the bushing needs replacing is **by listening** to the sand screw. When the bushing and/or tail shaft has worn away, the lower end of the sand screw will no longer be supported, allowing the screw flighting to ride (i.e. drag) on the inside of the screw box. This will cause an undue amount of “dragging” noise when the Reclaimer is running, and most users report that they are able to tell by this sound that it is time to replace the lower assembly.

Removal of the sand screw access panel from the Reclaimer aids in replacing the UHMW bushing.
DRAIN the sand screw before removing access panel.

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SECTION 8.0 INSPECTION CHECKLIST



DANGER! ALWAYS USE PROPER LOCK-OUT/TAG-OUT PROCEDURES BEFORE WORKING ON OR NEAR THE RECLAIMER. FAILURE TO DO SO MAY CAUSE SEVERE PERSONAL INJURY OR DEATH!

Recommended inspections, at a minimum:

Keep a log in the Maintenance Records section on the back inside cover of this manual and make these inspections part of your Preventative Maintenance program.

DAILY

1. Intake screen on the Submersible pump. Remove any cementitious and/or fiber build-up.
A plugged intake screen leads to burned-out pump motor.
2. Nozzles. Check. Clean if needed
Plugged spray nozzles lead to dirty piles of reclaimed aggregate, and a dirty screen, leading to premature failure of screen and plugged plumbing.
3. Rotor Screen. Inspect. Clean as necessary for proper operation.
A plugged rock screen leads to dirty aggregates due to inefficient washing.
4. Infeed Hopper. Check for undue concrete build-up. Clean as necessary.
If concrete is left to set-up and harden in the infeed hopper, it will eventually require a jack-hammer to clean.

EVERY ONE TO THREE DAYS, or WEEKLY: (depending on usage)

1. Clean pit(s) with loader.
Dirty settling ponds will eventually lead to cement particles making it over to the pump intake, leading to dirty reclaimed aggregates, plugged plumbing, plugged pump, plugged screen, etc. THE SETTLING POND/PIT SYSTEM IS AS IMPORTANT TO PROPER RECLAMATION AS THE RECLAIMER DESIGN ITSELF.
2. Remove clean-out plugs on rotor backwash nozzle. Clean cement build-up, fibre, etc. so water flows freely.
Already discussed above but re-mentioned here in order to make the point!

EVERY 1 TO 3 MONTHS:

1. Remove shaft weldment on both Rotor front shaft and Sand Screw tail shaft assemblies (see section 7.02 above). Check for wear on both the shaft and UHMW bushing. Replace as needed. **NOTE:** Inspect more frequently with heavy use.
It is our recommendation that when the reclaimer is initially placed into service, that you check both locations within the first month. Continue to check both monthly, and over some period of time you will get a good idea as to how often you need to check and replace.

ANNUALLY:

1. Drain both Rotor and Sand Screw Gearmotors. Refill with proper oil, as defined in Section 1.11.

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* the problems you may experience in the field. However, it will give you (and BFK personnel) a good idea of where the trouble may be.



DANGER! ALWAYS USE PROPER LOCK-OUT/TAG-OUT PROCEDURES BEFORE WORKING ON OR NEAR THE RECLAIMER. FAILURE TO DO SO MAY CAUSE SEVERE PERSONAL INJURY OR DEATH!

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: Consult a qualified electrician. Check electrical control panel. Replace any blown fuses, if necessary.

PROBLEM: *Heat Tank on Sand Screw will not heat.*

POSSIBLE CAUSES: No or Low Level of Anti-freeze
Power is off
Blown Fuse
Thermostat is turned off, or too low

SOLUTION: Check electrical control panel for fuse, replace if necessary.
Check thermostat setting on heater.
Fill tank with anti-freeze.

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

POSSIBLE CAUSES: Restrictor plates in infeed hopper open too far

SOLUTION: See Section 4 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.

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 truck, to 6” to 10” slump
See Section 4 for proper adjustment of restrictor plates

PROBLEM: *Discharged Rock or Sand is Dirty.*

POSSIBLE CAUSES: Restrictor plates in infeed hopper open too far (material going thru too fast)
Screen is dirty/plugged with cement and/or fiber (water spray not reaching aggregates)
Pump intake is clogged (reduced water flow and pressure)
Water nozzles clogged (reduced water flow and pressure)
Pump running backwards (reduced water flow and pressure)
Pit system needs cleaning (spraying dirty water, tough to wash concrete)
Clean-out plugs have fallen out of rotor backwash nozzle (no spray on material)

SOLUTION: See Section 4 for proper adjustment of restrictor plates
Check all nozzles and pump intake for clogged material
Clean pit system
Clean screen
Replace Clean-out plug

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
Make sure pump is pumping water to all nozzles.

PROBLEM: *No water available at Wash-out Stingers*

POSSIBLE CAUSES: Pump located too far from reclaimer. Install valve in Infeed Hopper Hose (see Section 1.09.04).
Hoses are restricted or clogged.
Valves closed or plugged

SOLUTION: Install valve in Infeed Hopper Hose (see Section 1.09.04).
Check hoses for clogged material.
Open valve(s), check for plugging.

SECTION 10.0 SPARE PARTS LIST

		<u>BFK Part No.</u>
1.	Screen ¼" Opening:	60-DPM-001
2.	Front Rotor Bushing	60-DPM-006
3.	Front Rotor Shaft Weldment	60-WBS-007
3.	Sand Screw Tail Bushing	62-DBM-002
4.	Sand Screw Tail Shaft Weldment	62-WBS-004
5.	Submersible Pump, 5HP, 3Ph.	WPM-5.0-xxx where xxx = Voltage typically 230 or 460
6.	Gearmotor, R otor (Rotary Screen), 5HP, 230/460V 3Ph.	MTR-xyG-5.0H- R
7.	Gearmotor, S and Screw, 230/460V 5HP, 3Ph.	MTR-xyG-5.0H- S

where x = Manufacturer Code
 y = BFK Revision
 5.0 = Horsepower

Consult Factory for proper part numbers for your machine.

SECTION 11.0 WINTERIZING



DANGER! ALWAYS USE PROPER LOCK-OUT/TAG-OUT PROCEDURES BEFORE WORKING ON OR NEAR THE RECLAIMER. FAILURE TO DO SO MAY CAUSE SEVERE PERSONAL INJURY OR DEATH!

Upon completion of the reclaiming season:

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

Drain entire Reclaimer system by opening drain located at bottom of sand dewatering screw.

Disconnect and drain all hoses.

Prior to start-up in spring, reconnect all hoses, and reinstall 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 refilling gearmotors, etc. Start-up Reclaimer system as defined in Section 3.0 INITIAL EQUIPMENT START-UP.

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 REPOSIBILTY 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.

