



**SCREENING SOLUTIONS**

# **Super Screen (Large)**

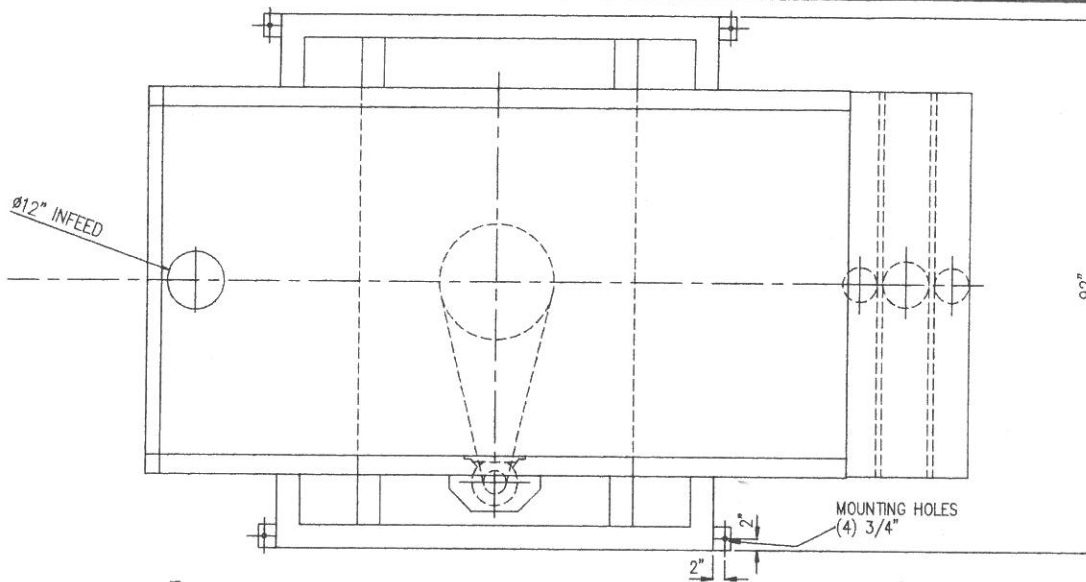
## **INSTALLATION & MAINTENANCE MANUAL**

BM&M Screening Solutions  
5465 Production Blvd.  
Surrey, BC  
Canada V3S 8P6

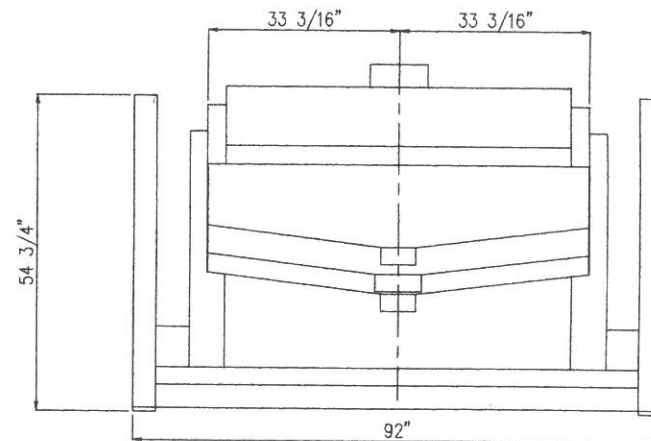
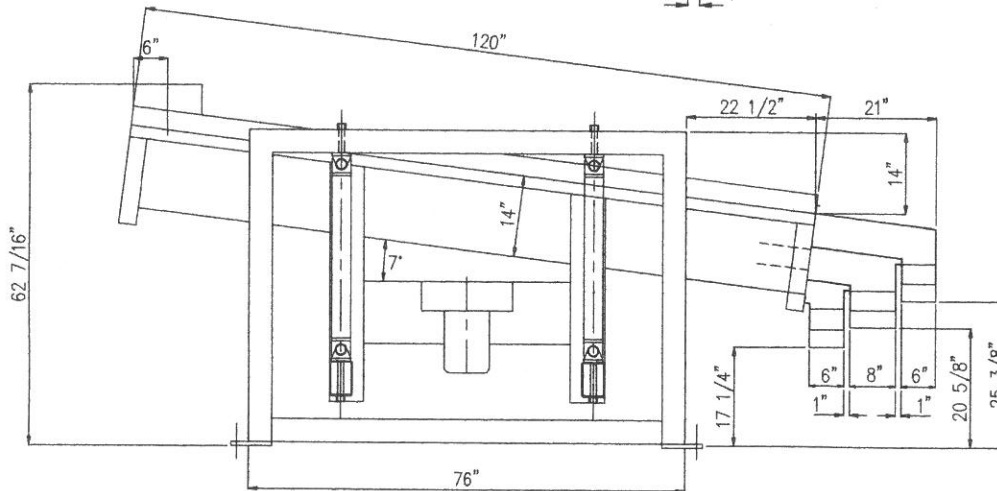
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Customer:	Presidium Equipment Ltd.
Location:	London, ON
PO#:	n/a
Screen Size:	5' x 10' 2-Deck Super Screen
Job #:	7351
Date:	July 2015
Your Rep. is:	Ninon Richard, Gaston Richard Inc.
Parts & Service:	Tel. 450-649-1516



DRIVE MOTOR:  
☐ INCLUDED  
☐ NOT INCLUDED  
 HP: 5 RPM: 1800  
 VOLTAGE: 575V  
 FRAME: 184T  
 X-PROOF



# DESIGN CRITERIA OF SUPPORT STRUCTURES FOR BM&M SCREENS

1. VERTICAL DESIGN LOADING DUE TO SCREEN: = 2 X [SCREEN WEIGHT + MAXIMUM PRODUCT LOAD.]
2. HORIZONTAL LOADING DUE TO SCREEN: = 3.0% OF VERTICAL DESIGN LOADING, APPLIED IN ANY HORIZONTAL DIRECTION.
3. DEFLECTION OF BEAMS NOT TO EXCEED REQUIREMENTS OF NATIONAL BUILDING CODE.
4. THE RESONANT FREQUENCY OF THE LOADED STRUCTURE OR ITS PARTS SHALL BE GREATER THAN 600 CYCLES PER MINUTE OR LESS THAN 150 CYCLES PER MINUTE.
5. PROVIDE 6" HORIZONTAL CLEARANCE FROM STATIONARY OBJECTS.
6. PROVIDE FLEXIBLE LEAD TO MOTOR.
7. DISCHARGE CHUTES MAY BE LEFT OR RIGHT HANDED OR CENTRAL FOR OVERS, FINES & ACCEPTS.

## SPECIFICATIONS:

TOP SCREEN: 5 MESH

BOTTOM SCREEN: 12 MESH

TOTAL MACHINE WEIGHT: 3400 LBS.

PAINT:

OPTIONS: EXP. PROOF, HI-EFF. MOTOR

SPARE 8 MESH SCREEN

REV	DESCRIPTION	DATE	APPD	CUSTOMER:	BATEMAN/FLORADALE FEED	BM&M		
A	PRELIMINARY	JAN 9/95		PURCHASE ORDER:	2184	BM&M PARTNERSHIP		
B	CHUTES REVISED	JAN 16/95		DRAWING STATUS:	FOR CONSTRUCTION	9377 193rd St., SURREY, B.C.		
C	FOR CONSTRUCTION	JAN 27/95				V4N 4E7		
						5 X 10 2-DECK SUPER SCREEN QC		
						SETTING PLAN		
						JOB NO.	DWG NO.	REV.
						7351	B12-664	C

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## Section 1    **INSTALLATION**

To ensure the BM&M Screen is installed properly the following steps must be followed.

### READ ALL INSTRUCTIONS BEFORE PROCEEDING

BM&M Screens are supplied with a tubular support stand. It is essential that the supports be properly engineered. See the certified setting plan drawing for the design criteria.

#### **SUPPORT STAND ASSEMBLY** (if the screen has been shipped “broken down”)

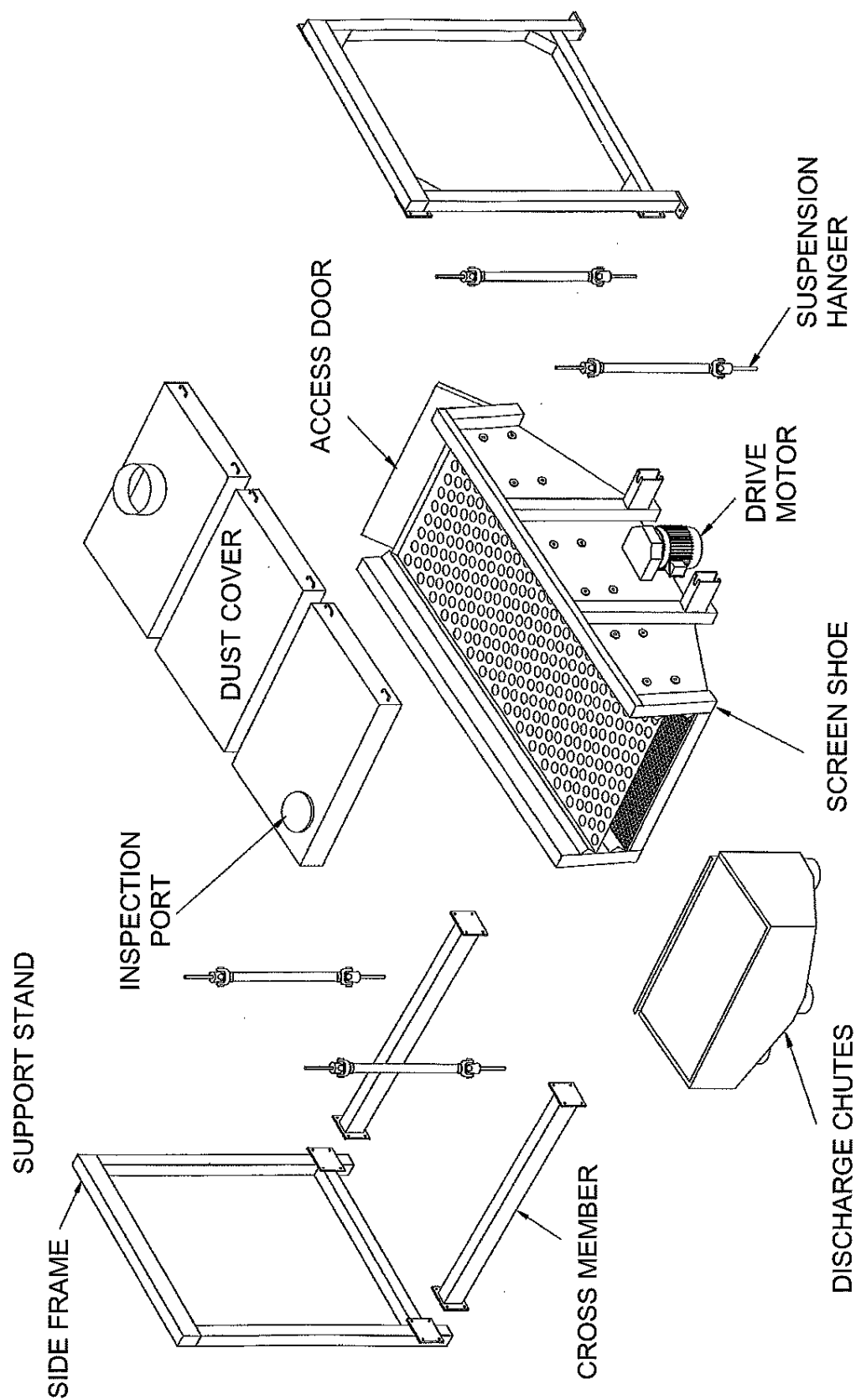
1. The stand consists of 2 cross members and 2 side frames. See the exploded drawing on page 4.
2. Place the 2 lower cross members in position and place the screen body on top of them.
3. Bring the side frames into position and bolt them to the cross members.
4. The stand must now be leveled and firmly bolted down.
5. Bolt all four hangers into position and secure their upper ends as shown on the drawing on page 5.
6. Bolt on the hanger brackets if required.
7. Raise the screen into position and attach the lower ends of the hangers to the hanger brackets on the screen body as shown on the drawing on page 6. Ensure the safety bolts are secured.
8. All brackets and stand connection bolts must be tightened to the following lubricated torques.

5/8" NC: 110 ft-lbs

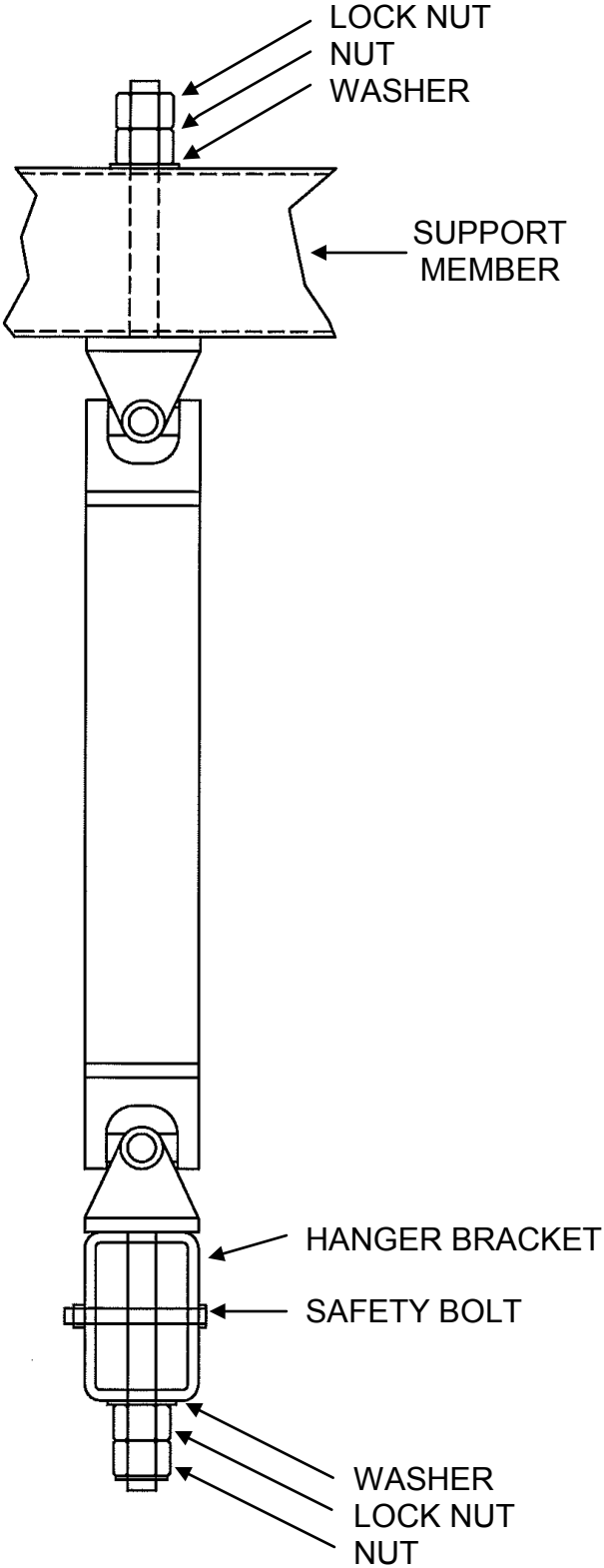
3/4" NC: 200 ft-lbs

At this time torque the Top Yoke bolts on the hangers to 480 ft-lbs., lubricated. Torque the Bottom Yoke bolts to 250 ft-lbs. After the equal hanger loading procedure is completed (page 8) the Bottom Yoke bolts should be torqued to 480 ft-lbs., lubricated.

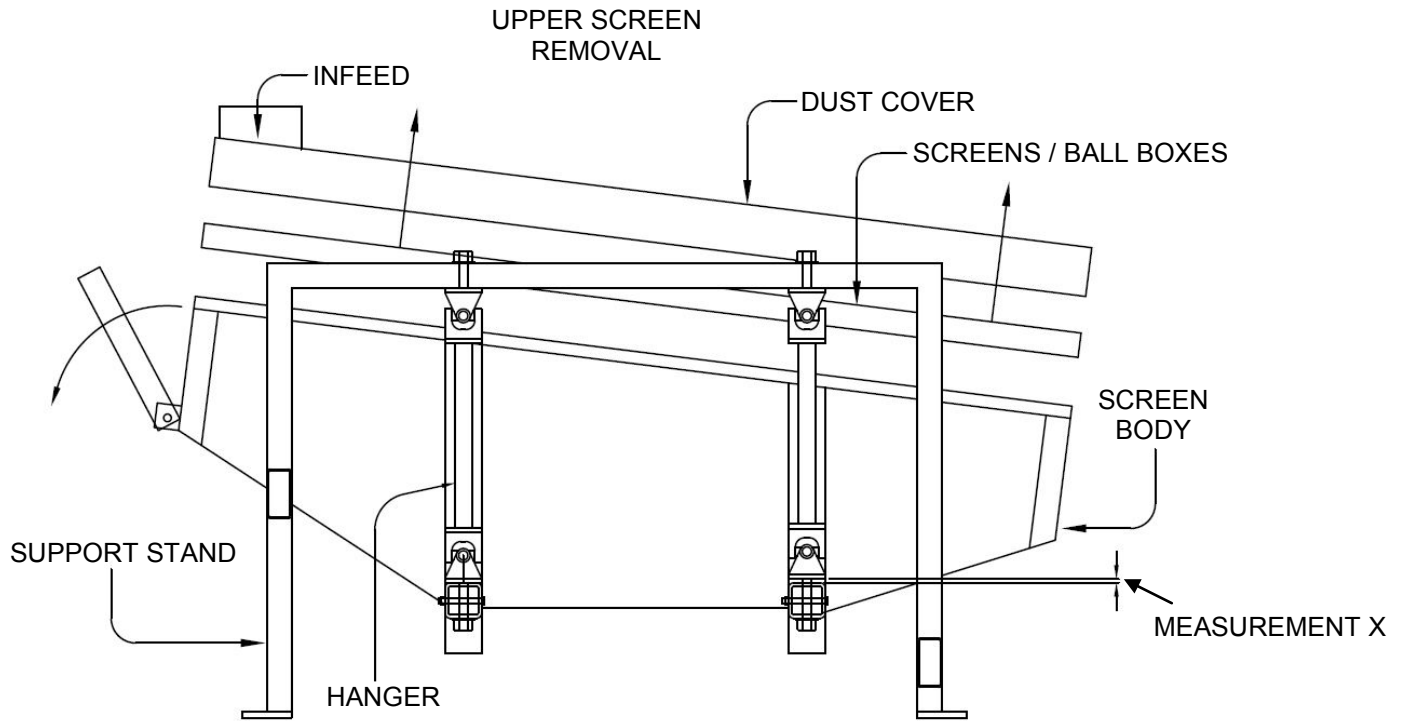
# SUPER SCREEN EXPLODED VIEW



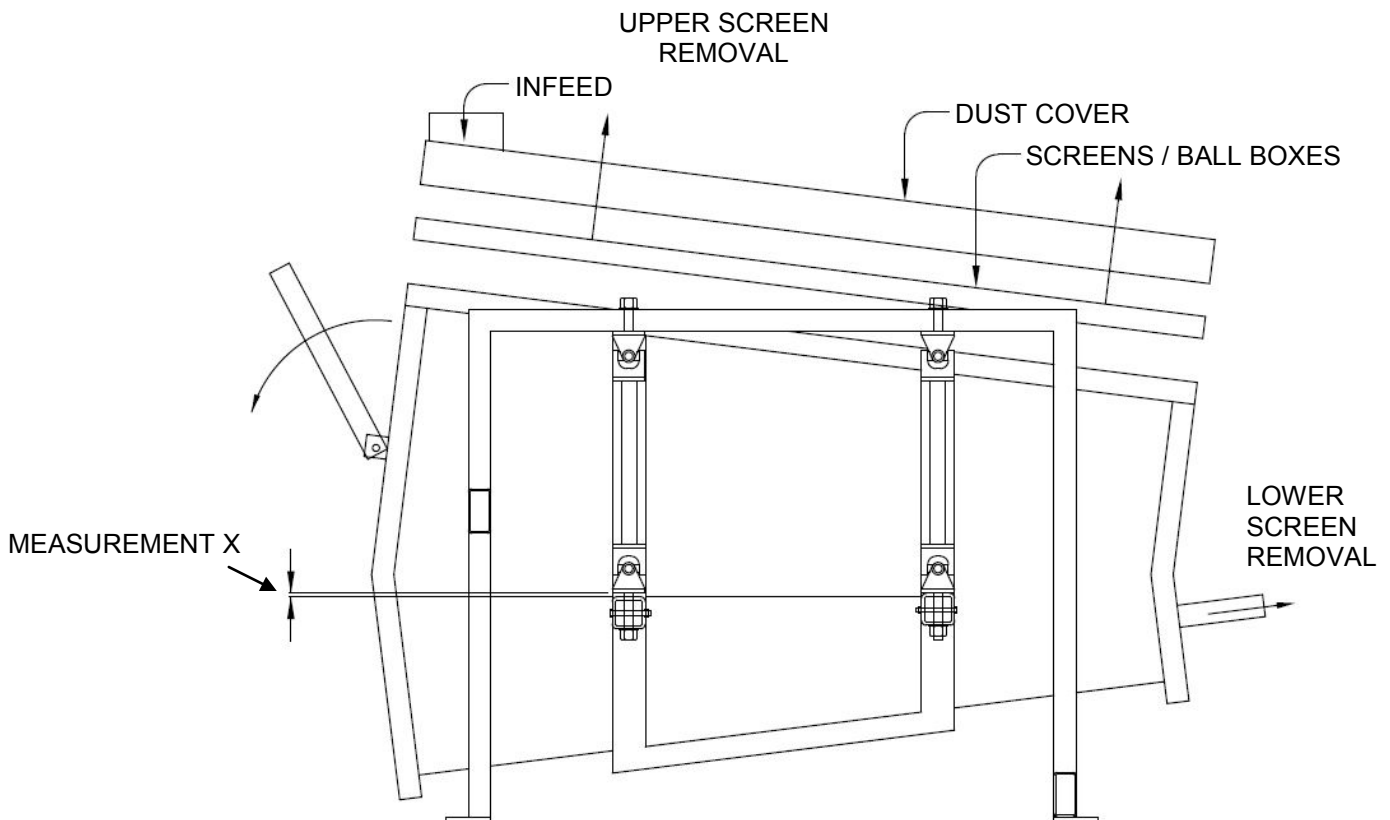
# BM&M HANGER



## PARALLEL FLOW SCREEN DECK CONFIGURATION



## COUNTERFLOW SCREEN DECK CONFIGURATION



Bolt on any discharge chutes that may have been shipped loose. Bolt on the motor, motor base, drive belt and drive guard if these items have been shipped loose. When installing the belt on the drive pulley ensure that it does not come off the driven pulley. Ensure the belt is properly aligned and that the axis of the motor remains vertical.

## **BELT TENSION**

Proper belt tension is vital. V-belt drives must be taut at start-up and must be checked again after the first hour of operation. Use standard tensioning procedures for V-belts.

After the belt has been properly tensioned, it is imperative that all the motor bolts be torqued to the maximum. This includes the pivot bolts and tension rods. **Failure to do proper torquing may result in serious damage.**

Ensure that the entire drive guard assembly is bolted firmly in place.

Run a flexible rubber-sheathed power cable to the motor that allows for the motion of the screen. A draped loop about 2 feet in length is adequate. Since the motor shakes with the screen, ensure that all connections in the conduit box are solid and secure to prevent movement. Motor direction is not critical although material “drift” can be altered by changing rotation.

A time-delay device must be incorporated in the start/stop circuitry. A delay of approximately 2 minutes in duration will allow the machine to come to a complete rest before restarting. **It is imperative that the screen be started only if it is completely motionless.**

## **CLEARANCE**

The screen requires room to freely swing in its orbit. Although the size of this orbit is only 1 1/4” in diameter this motion is exaggerated at start-up and shut-down. It is therefore essential that 4” of horizontal clearance be provided all around the screen from all points on the screen. In its stationary position nothing should be closer than 4” in a horizontal direction. **Failure to provide proper clearance will result in damage to the screen.**



## EQUAL HANGER LOADING

Equal hanger loading is critical for smooth running, long machine life and minimal vibration of the support structure. Improperly loaded hangers can throw the machine out of balance and may cause severe damage to the hangers or supporting structure.

The following procedure will ensure equal loading:

1. Ensure the machine is bolted down.
2. Completely loosen the nut at the lower end of one hanger until that hanger does not support any weight of the screen.
3. Draw a plan view of the screen and mark down measurement "X" between the end of the hanger and the hanger support bracket as shown on the illustration on page 6. **Use the provided shim stock to measure this gap.** Tighten the hanger bolt to 250 ft-lbs.
4. Do the same for the other three hangers one at a time, marking down each gap measurement "X" on your drawing. Note that the measurements across the diagonals should be very similar.
5. Subtract the smallest measurement from the largest measurement. If this difference is **less than 0.025"** the machine is balanced. If not, the machine must be shimmed.

### **Shimming:**

To find the correct shim size to use, take the difference obtained in Step 5 and divide it by 2. Place this size of shim (nearest sized shim or combination of shims to get the nearest size) in the gap of the hanger with the largest measurement and tighten the hanger nut back up. Run the machine for 3 to 4 minutes and then shut the machine off, allowing it to come to rest.

Repeat Steps 1 to 4 using a new plan view diagram. However, when recording the gap measurement for the shimmed hanger, leave the shim in the gap and record the distance between the end of the hanger and the top of the shim. Always use shim stock to measure the gaps.

**Note: Only one corner should require shimming.**

If the gap above the shim has become larger than the previously un-shimmed gap, remove shim and repeat all steps.

If the machine is still not balanced, contact BM&M for assistance.

Note: After the equal hanger loading procedure is completed satisfactorily, the Bottom Yoke bolts must be torqued to 480 ft-lbs., lubricated.

## **START-UP**

Grease U-joints before start-up. Before starting the machine be sure that nothing is fouling the screen and that all guards are in place. A new machine will have high initial internal friction and high current draws during initial start-up. This can also happen in cold weather. The high current state will rapidly drop as the moving parts loosen up.

## **SHUT DOWN      IMPORTANT**

Once the power is shut off, it is absolutely essential that the machine be allowed to come to a complete stop before restarting. To prevent accidental restarting, it is advisable that a time-delay of 2 minutes be implemented in the starter circuitry to prevent this from happening. Under no circumstances should the machine be jogged on and off and it should never be reversed.

**NOTE: The speed of the screen is set by the factory. The speed should never be altered without explicit approval of BM&M.**

## **SAFETY STRAPS**

The BM&M Screen is suspended by four hanger assemblies. Should one of these hanger assemblies wear out or fail due to lack of lubrication, the screen will not fall since the remaining three hangers will continue to support the screen.

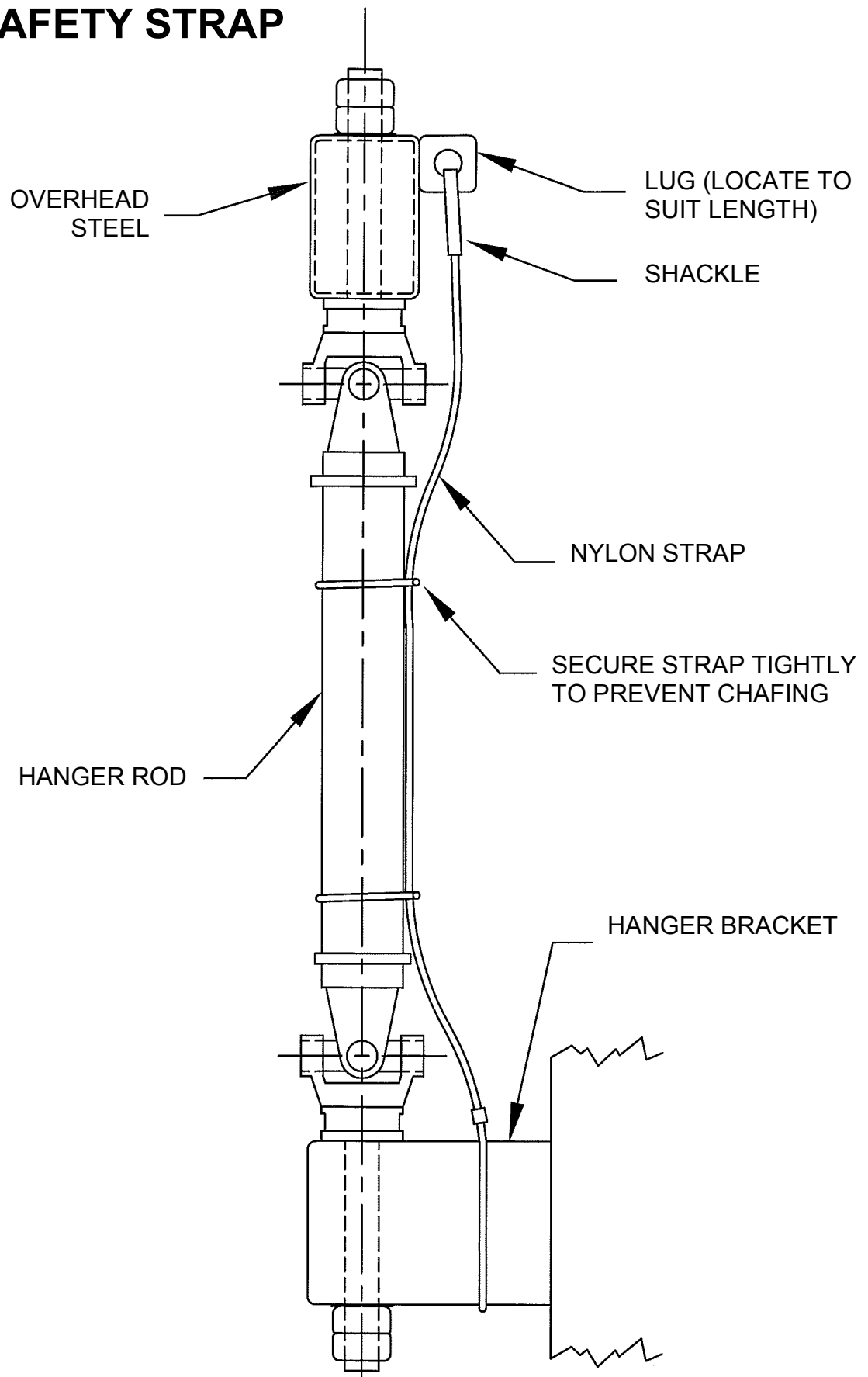
**Failed hangers should be repaired or replaced immediately.**

If this is not done and the screen continues to operate on three hangers then there is an increased risk that one of the remaining three hangers will fail, which will allow the screen to fall from its operating position. This would result in damage to both the screen and the surrounding structure and any personnel located beneath the screen would be at great risk. Hanger failures of this type are extremely rare and proper maintenance procedures will virtually eliminate the possibility.

To eliminate the risk of human injury and machinery damage, safety straps should be installed on all four corners of the screen, especially in areas where personnel work beneath the screen or where a single hanger failure would not be detected.

These straps should be adequately sized and should be installed so as to not allow the screen to drop more than 2 inches. Connections should be tight to prevent chafing, and should be made to the four hanger brackets on the screen. See the drawing on page 10.

# SAFETY STRAP



## **BM&M START-UP CHECK LIST**

1. Is there 4" of horizontal clearance all around the screen?
2. Have the hangers been checked for equal loading?
3. Have the U-joints been greased?
4. Are the hanger safety bolts secured?
5. Is the motor voltage correct?
6. Is the motor speed correct?
7. Does the power supply cable have enough freedom of movement?
8. Is the belt alignment okay and tension correct?
9. Is the drive guard in place?
10. Have all bolts been torqued correctly?
11. Are all protecting handrails in place?
12. Have all tools, scaffolding and lifting tackle been removed?
13. Is the time-delay restart circuitry in place or is the operator aware of the restarting procedure?

## Section 2     **MAINTENANCE**

The BM&M screen requires very little maintenance due to a minimum of moving parts and robust construction.

### **DRIVE UNIT**

The drive unit is a heavy duty double-row tapered roller unit encased in a solid steel housing. It utilizes spring-loaded radial lip seals and comes prepacked with grease. It requires no additional field lubrication or servicing.

### **DRIVE BELT**

The drive belt consists of a single-reduction drive belt; a multi-section “B” size V-belt. V-belts should be periodically checked for tension and alignment.

### **HANGERS**

The needle-bearing universal joints will give trouble-free service providing they receive periodic greasing with good quality wheel-bearing type grease every 400 hours of operation or every two weeks.

### **GENERAL MAINTENANCE**

Periodically check all bolts for proper tightness. Check all bolts after initial 30 minutes of running and then once every three months of service thereafter. Refer to the appropriate section for the torque settings.

**It is essential that all bolts that secure the drive unit assembly are held to the correct torque settings.**

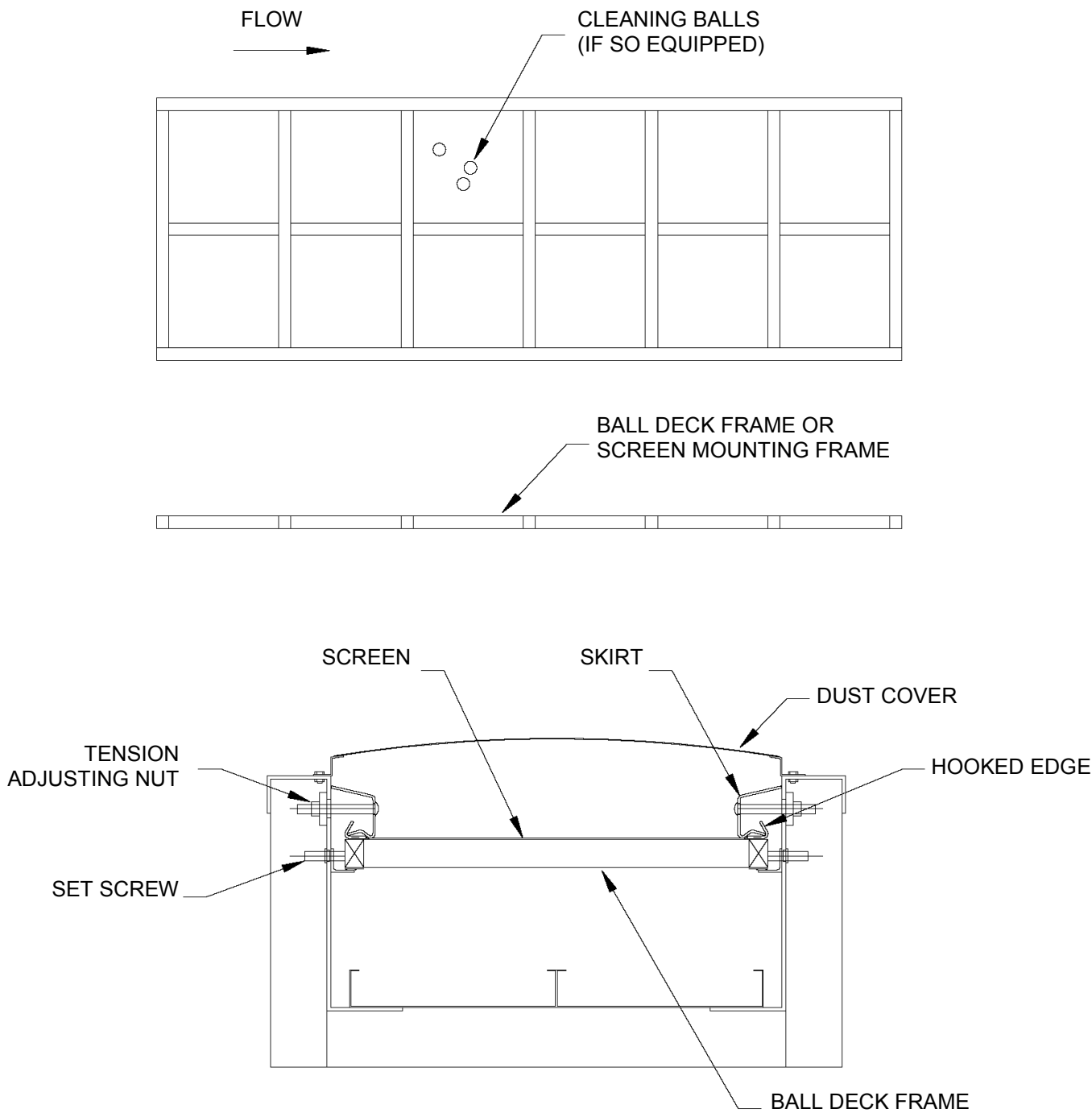
### **SCREENS**

BM&M Super Screens are typically equipped with ball decks which utilize captive, synthetic-rubber balls to help keep the screens clean. The screen mesh (or perforated plate) rests on the top surface of the ball box frame. These frames are made of steel but may also be made of aluminum or hardwood, depending on the application.

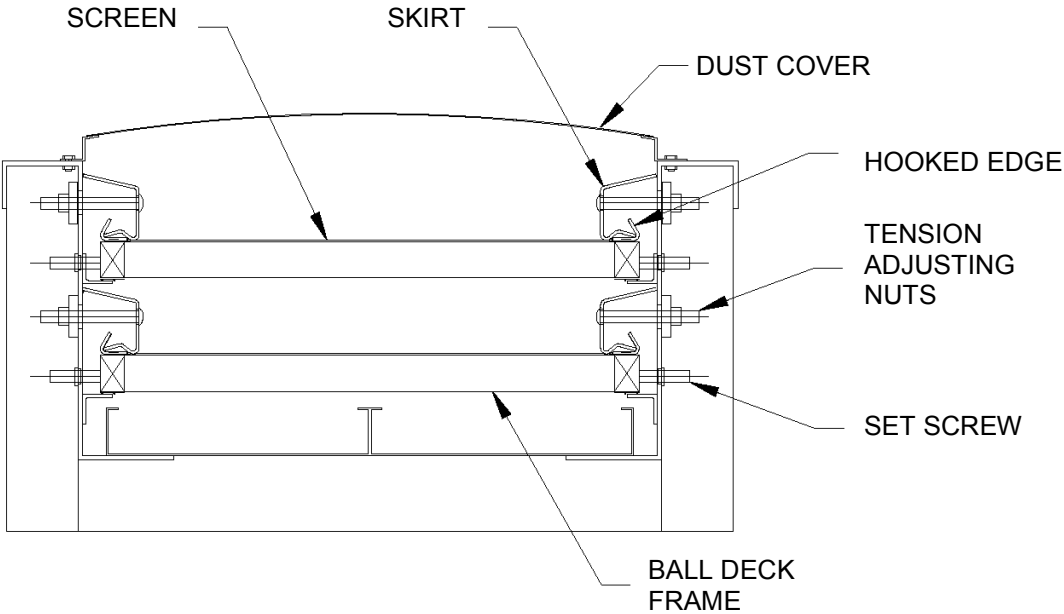
The screen mesh may be fastened to the ball box frame depending on the specific installation conditions. Screens have reinforced hooks on the two longitudinal edges and are utilized to tension the screens. Full-length skirts engage into the reinforced hooks and generate the tension via a series of threaded rods and hex nuts through the side wall of the screen body.

See pages 14 and 15.

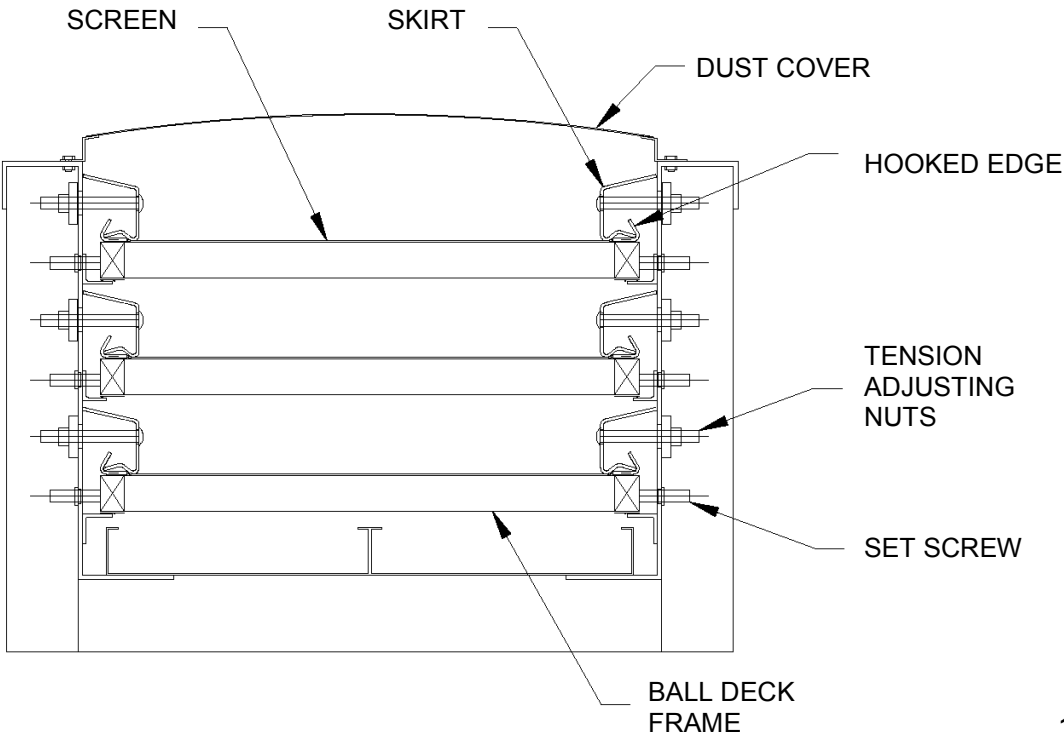
# ONE DECK ASSEMBLY



# TWO DECK ASSEMBLY



# THREE DECK ASSEMBLY





## **SCREEN REMOVAL**

In most cases the screens and ball decks can be removed in one of three ways, as shown on page 19.

1. Through the access door; located at the infeed end of the machine.
2. Through the discharge end, as the discharge chute assembly is bolted on but is equipped with hinges that allow it to be swung open. Connection sleeves may need to be removed.
3. Through the top. This entails removal of the dust cover, any inlet connection sleeves and any dust evacuation sleeves.

The best removal method for a particular installation will depend on a number of factors such as:

1. Access space around the machine.
2. The number of sections that make up each screen and ball deck.
3. The type of screen element.

### One-Piece Screens

If there is ample room to remove a one-piece screen at the infeed end or discharge end of the machine, then it is best to remove the screen through whichever end is more convenient. To do this:

1. Loosen the door clamps and swing open the access door, or open the discharge chute.
2. Loosen the tension skirts, raise them and lock them in the 'up' position using the supplied screen removal tool (P/N SR-2), as shown on page 21.
3. If the ball decks are to be removed then loosen the set screws located on both sides and ends of the machine.
4. Pull out only the screen element or pull out the screen element and ball deck at the same time. The ball deck can be left in place if desired.

### Screens in Sections

If the screens are in sections, due to the size of the machine or due to limited room at one or both ends of the machine, the best way to remove the screens is to:

1. Loosen the door clamps and swing open the door, or open the discharge chute.

2. Loosen the tension skirts, raise the skirts and lock them in the “up” position.
3. Loosen the set screws located at both sides and ends of the machine.
4. Pull out the screen elements and ball deck together. The ball deck sections are bolted together as shown on page 20. If there is insufficient clearance behind the machine, they will have to be unbolted as each section is pulled clear of the machine. Note that finer mesh screens will have overlapping seal plates at the joints between each section and they will have to be removed first before each screen element is removed.

### Screens removed out of the Top of the Machine

If there is insufficient room to remove the screens at either end of the machine, then the screens and ball decks must be removed through the top. To do this:

1. Remove any inlet connection sleeves.
2. Remove the dust cover.
3. Loosen and remove all the screen tension skirts.
4. Remove the screen element.
5. Loosen the set screws at both sides and ends of the machine and remove the ball deck.
6. Repeat the above for any additional screen decks below.

For very fine, delicate screen elements it is recommended that the ball decks be removed as well as the screen elements, so that the screens can be placed on top of the ball decks for reinsertion into the machine. This will minimize the potential for damaging the screen element.

## **SCREEN REPLACEMENT**

### One-Piece Screens

If one-piece screens have been removed from either end of the machine then the screens can simply be slid back into position. Make sure that the tension skirts are in the ‘up’ position using the supplied tool.

Make sure that the leading edge of the screen is not damaged as it is pushed into position. This can easily be avoided if a pair of screen-length plastic pipes about 1” (25mm) in diameter are first laid down on top of the ball deck. The

screen element is then placed on top of the pipes and pushed into position. Once the screen is in position the pipes can be removed.

Lower the tension skirts in position and snug them up so that the screen remains centered on the ball decks. Once all of the slack has been taken up, the tension skirts should be tightened in sequence to ensure a uniform, taut screen. The tension skirts should not be over-tightened or the screen will be damaged.

If the ball decks have been removed simply push them back into the machine before installing the screen. Use the set screws to loosely center the ball decks. Once all the set screws are snug, give them one extra turn and lock them in position with the lock nuts. Excessive tightening of the set screws can damage the ball decks.

### Screens in Sections

If the screen is in sections it is best to lay each screen section loosely on top of its appropriate ball deck and push both together into the machine. Make sure that the tension skirts are locked in the 'up' position using the supplied tool.

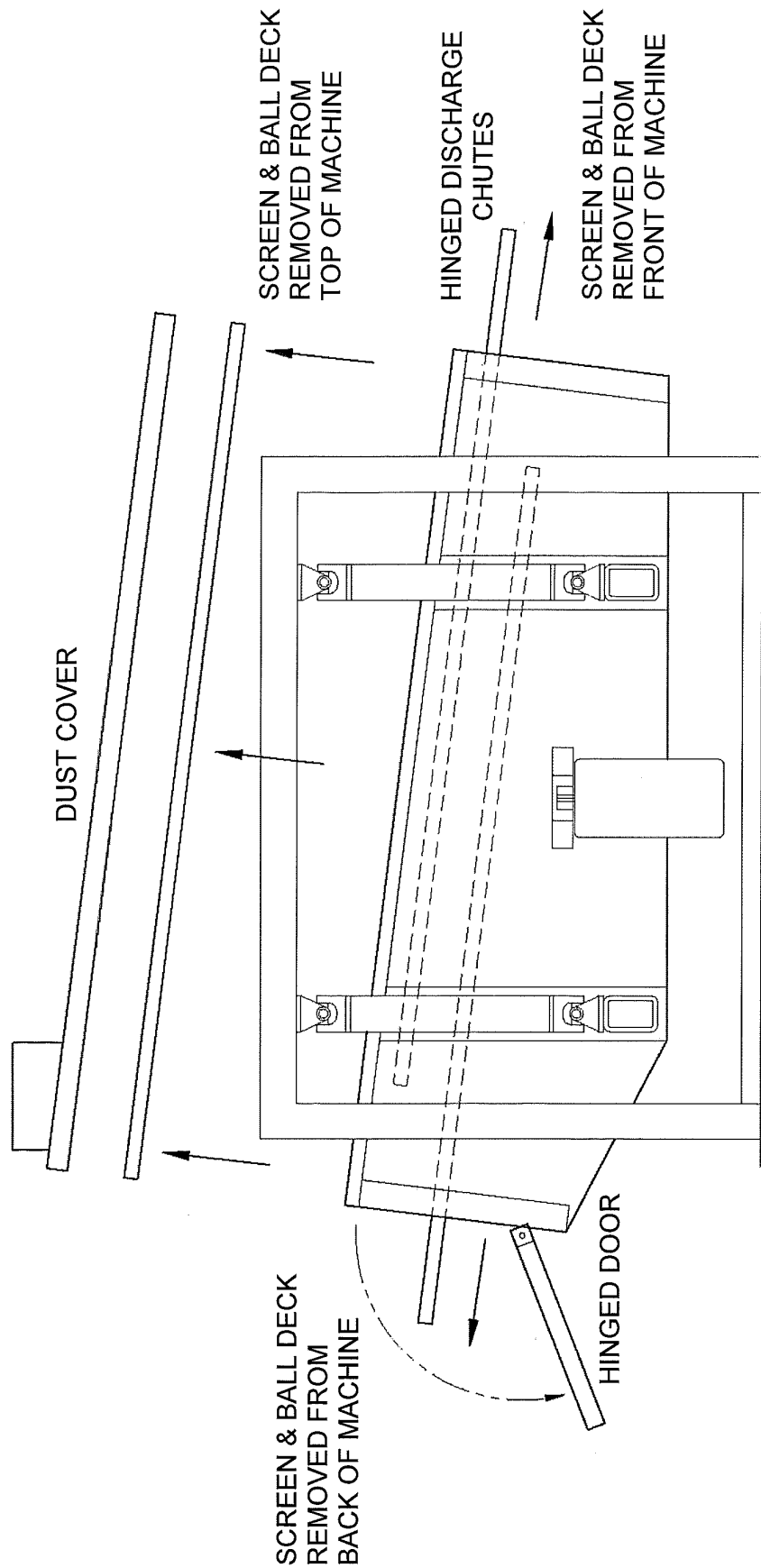
Each ball deck should be bolted to the next adjacent ball deck and any overlapping seal plates attached at the same time. When all of the screens and ball decks are in position use the set screws that secure the ball decks to loosely center the ball decks across the width. When all of the set screws are snug, give them one extra turn and lock them in position and snug them up so that the screen remains centered on the ball decks.

When all of the slack has been taken up, the tension skirts should be tightened in sequence to ensure a uniform, taut screen. The tension skirts should not be over-tightened or the screen will be damaged.

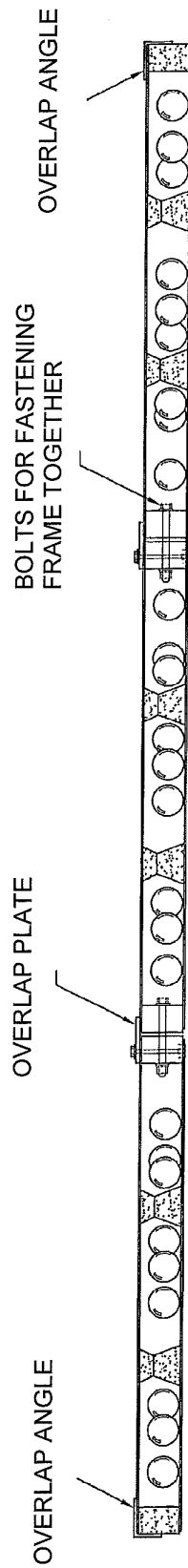
### Screens removed out of the Top of the Machine

If the screens have been removed out of the top then reassembly is the reverse of the removal procedure. Follow the above procedures for installing the ball decks and tensioning the screens.

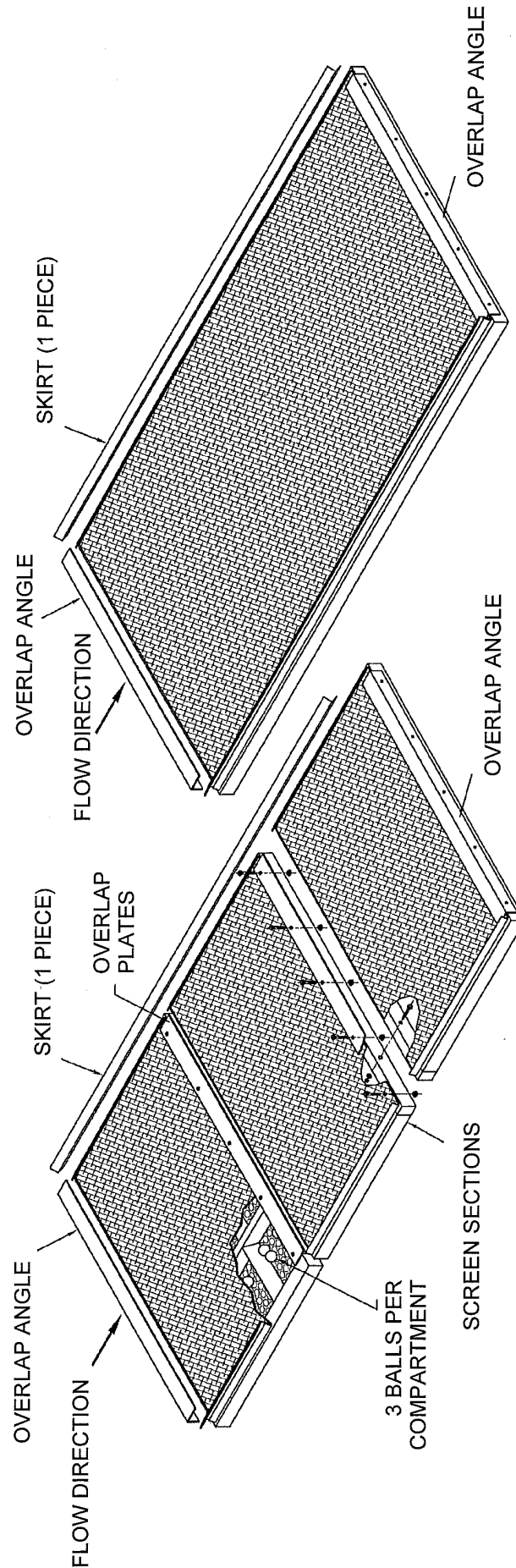
# **SCREEN AND BALL DECK REMOVAL OPTIONS**



# BALL DECK DETAIL



SIDE VIEW CROSS-SECTION OF MULTI-PIECE DECK



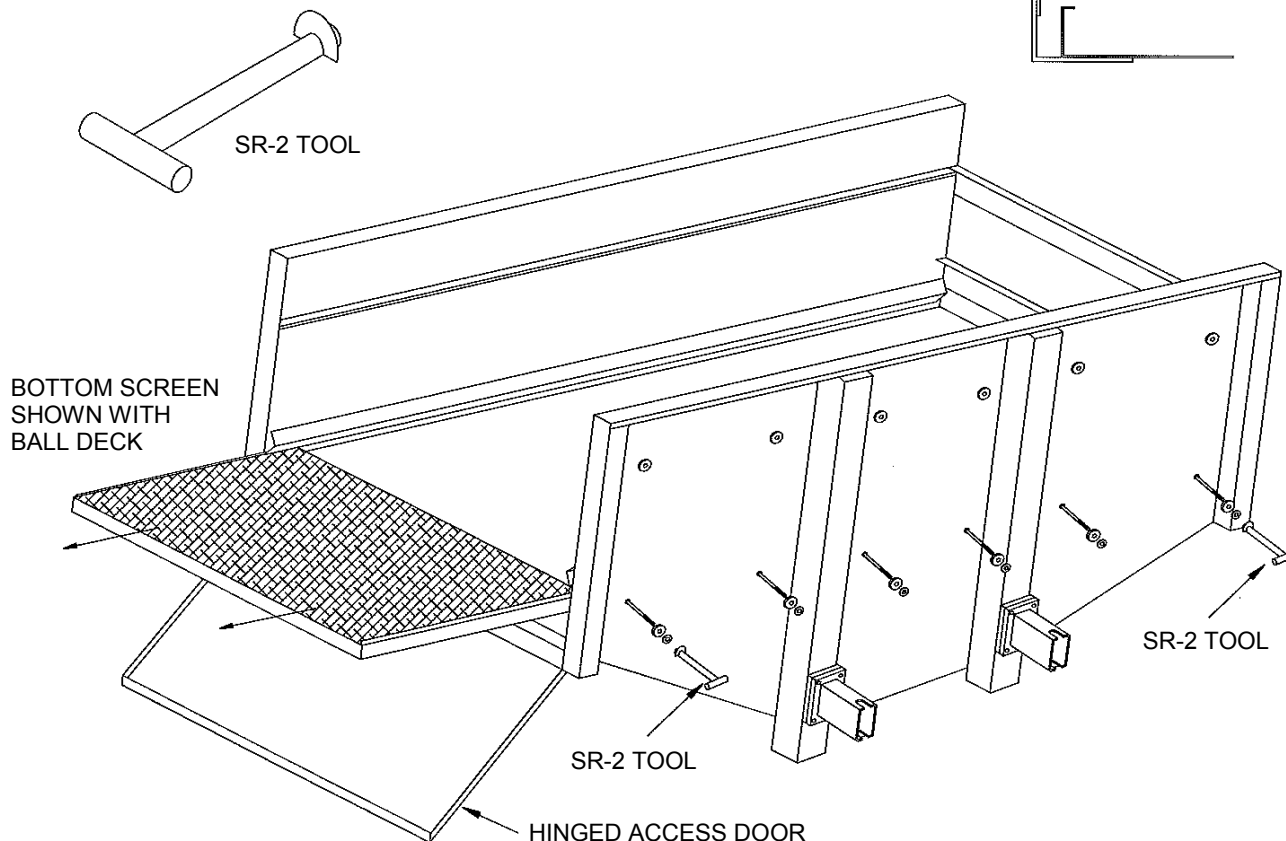
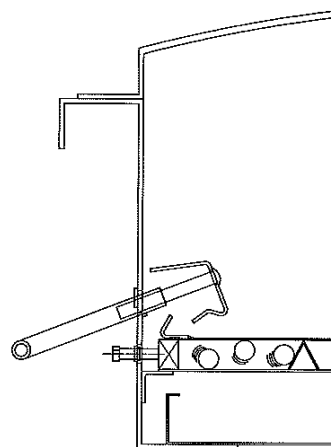
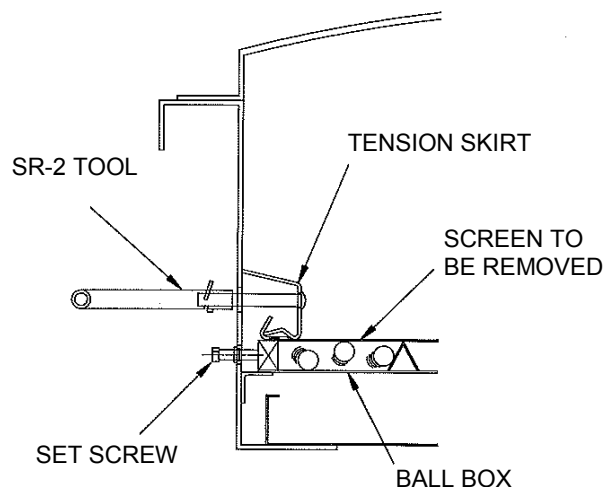
ONE-PIECE TYPE

MULTI-PIECE TYPE

## BM&M SUPER SCREEN SCREEN REMOVAL PROCEDURE

The BM&M Screen is supplied with Screen Removal Tools.  
BM&M part number SR-2

1. To remove the screens open the infeed door or discharge chute (whichever is more convenient).
2. Remove all nuts, timber washers and rubber washers, located on the outside of the machine along either side.
3. Screw the SR-2 tool onto the tension skirt redi-rods at the infeed and discharge ends, leaving the stamped word "Top" to the top (these do not have to be tight).
4. Push the SR-2 tool in and down until the notch hooks into the machine's side plates. This will hold the tension skirts up and out of the way for easy screen removal.
5. Remove the screen by sliding it out.
6. If the screen mesh to be replaced is very fine, place two screen guides down the length of the machine (we recommend 1" dia. PVC pipe). This will help the new screen to glide in without binding up on any protrusions. After the new screen is located in the machine and is ready for the skirt tensioning, remove the screen guides.
7. Release the SR-2 tool to bring the tension skirts back into position.
8. Replace the rubber washers, timber washers and nuts onto all tension skirt redi-rods. Before tightening, make sure the tension skirt is positioned in the screen hook.
9. Screen tensioning should not be excessive as screen damage may occur. A slightly compressed rubber washer is usually acceptable. The screen cloth should be taut and even across the whole deck. Hand-tighten the nuts for finer screen meshes.



## Section 3 **SERVICE**

These serviceable items on BM&M screens may need periodic replacement.

Drive Unit  
Hanger Bearings  
Belt Drive  
Motor

### **DRIVE UNIT**

The BM&M screen drive unit is located in the central drive box. See drawings on pages 24 and 25.

Procedure for removal and replacement:

1. Disconnect the power supply and tag-out for safety.
2. Remove the top screen directly above the drive box.
3. Remove the top cover:
  - a) remove the 3/4" bolts around the perimeter.
  - b) remove the three 1" bolts in the top end cap.
  - c) remove the 1" plug bolt in center of the top end cap.
4. Insert the longer 1" bolt in its place and use it to break the grip of the taper fit on the top of the shaft assembly.
5. Slacken the belt drive and remove the belt.
6. Remove the four 5/8" bolts holding the drive pulley to the bearing housing and remove the pulley.
7. Remove the four 7/8" bolts holding the rotor (counterweight) to bearing housing and remove the rotor.
8. Remove the split ring.
9. Since the bearing is pressed onto the shaft and into the housing, the shaft, bearing and housing must be removed as a one unit. This is known as the Drive Unit. Remove the three 1" bolts and central 1" plug bolt on the underside of the drive box. Insert a longer 1" bolt and use it to break the grip of the taper fit on the bottom end of the shaft. Remove the entire drive unit.
10. Reassembly is the reverse of the above procedure. Install a new drive unit with the tapered end of the shaft pointing down.

Attaining proper bolt torques is essential for all fasteners that are used in the main drive assembly – especially the six 1” NC bolts that secure the drive unit. These are the correct bolt torques for all Grade 5 NC bolts used in the drive assembly.

Lubricated bolt torques

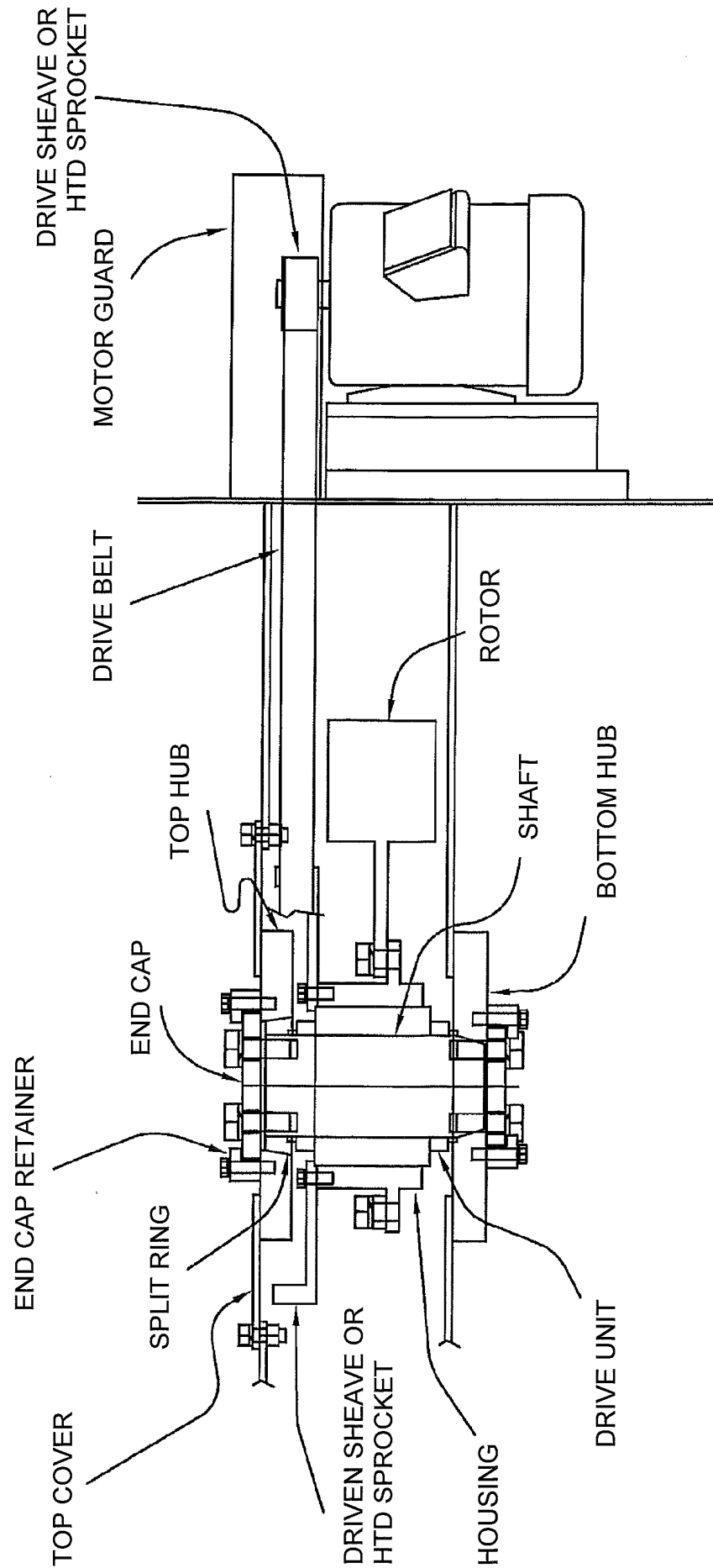
1” NC	480 ft-lbs
7/8” NC	320 ft-lbs
3/4” NC	200 ft-lbs
5/8” NC	110 ft-lbs
1/2” NC	55 ft-lbs

The shaft must be bolted into the bottom first and the three 1” bolts fully torqued to ensure the shaft is properly seated into the taper. It is essential that the three 1” bolts be torques to 480 ft-lbs as many times as necessary since the first bolt will be loosened as the third one in torqued. **Failure to follow this procedure for both top and bottom 1” bolts will result in serious damage.**

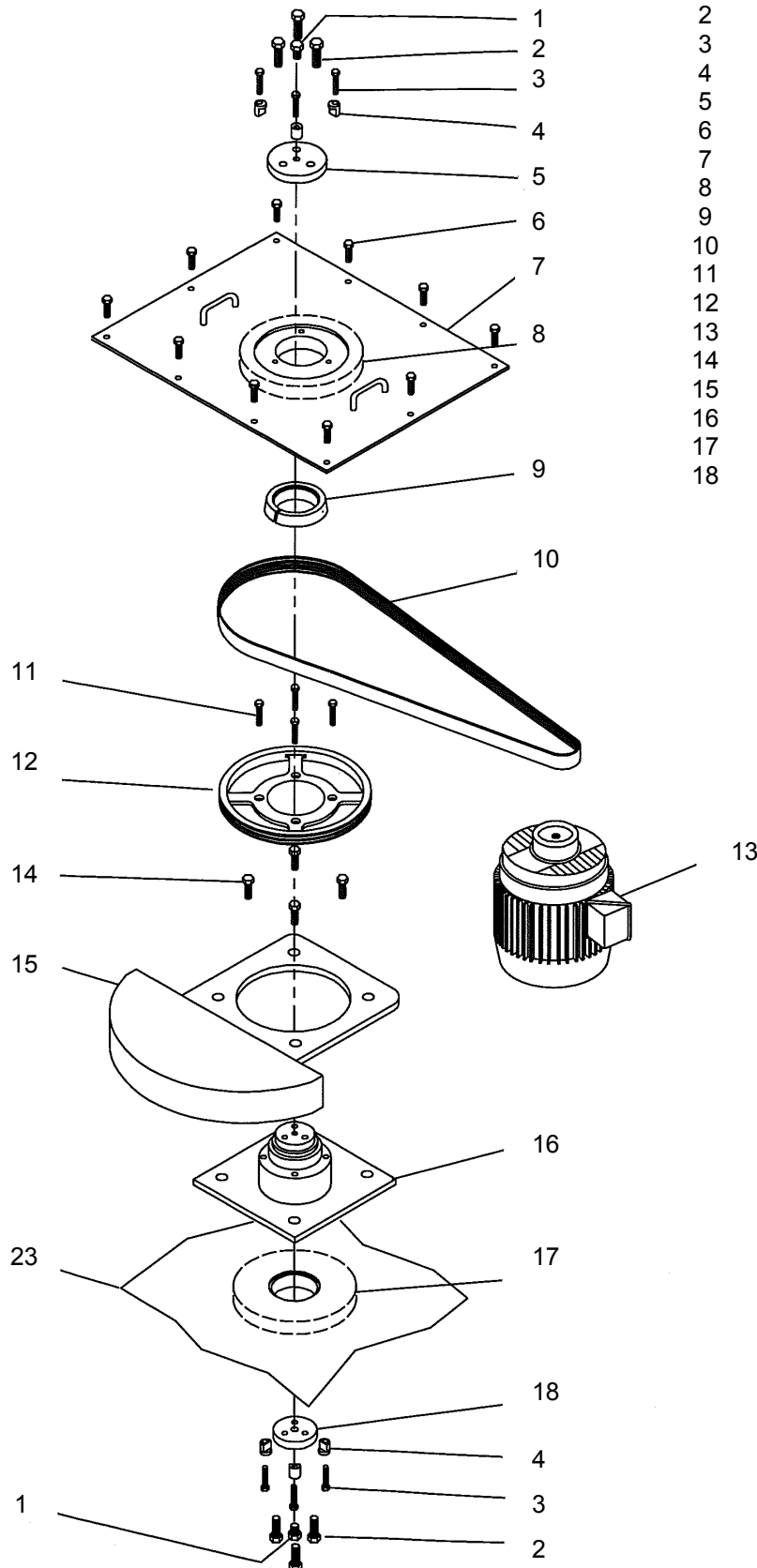
Cleanliness is of the utmost importance, especially in areas around the grease seal rings and their surfaces. To prevent entry of moisture into the main bearing under adverse conditions, install the gasket under the top end cap along with a general purpose sealing compound.



## BM&M DRIVE ASSEMBLY



# MAIN DRIVE ASSEMBLY



ITEM	DESCRIPTION	QTY
1	Plug Bolt	2
2	End Cap Bolts	6
3	End Cap Retainer Bolt	6
4	End Cap Retainer Clamp	6
5	Top End Cap	1
6	Cover Bolts	10
7	Drive Box Cover	1
8	Top Hub (welded in)	1
9	Split Ring	1
10	Belt	1
11	Sheave Bolts	4
12	Driven Sheave	1
13	Motor	1
14	Counterweight Bolts	4
15	Counterweight	1
16	Drive Unit	1
17	Bottom Hub (welded in)	1
18	Bottom End Cap	1

## HANGER BEARINGS

The hanger bearings may be replaced by removing the entire hanger assembly from the screen. The screen can be supported on the remaining three hangers while the fourth is being serviced. The U-joints are replaced by using a replacement kit consisting of the cross, four bearings and a set of snap rings.

**NOTE: The screen should not be operated while hanging on only three hangers.**

Whenever a hanger is changed out, the loading on all four hangers should be checked again to ensure equal loading. See installation instructions on page 7.

## DRIVE BELT

The drive belt adjustment is made outside the screen, at the motor.

1. Loosen the nuts on the adjusting rods and pivots.
2. Adjust the nuts to increase tension.
3. Tighten all nuts securely.

Belt replacement – see the exploded drawing and instructions on page 27.

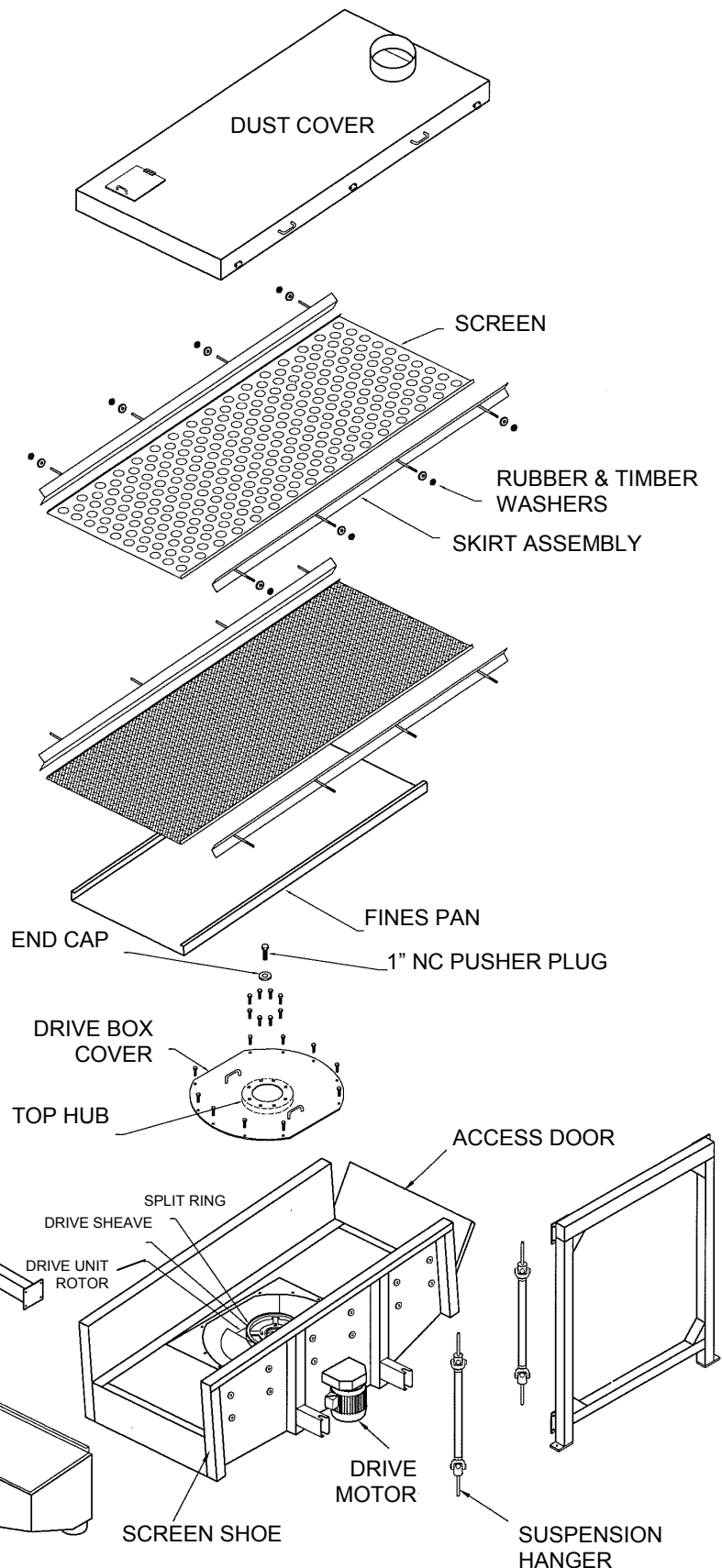
**Note: When the top cover is removed it is essential that the three 1" bolts be torqued as follows:**

The three 1" bolts must be fully torqued to ensure the shaft is properly seated into the taper. It is essential that the three 1" bolts be torqued to 480 ft-lbs as many times as necessary since the first bolt will be loosened as the third one is torqued. **Failure to follow this procedure will result in serious damage.**

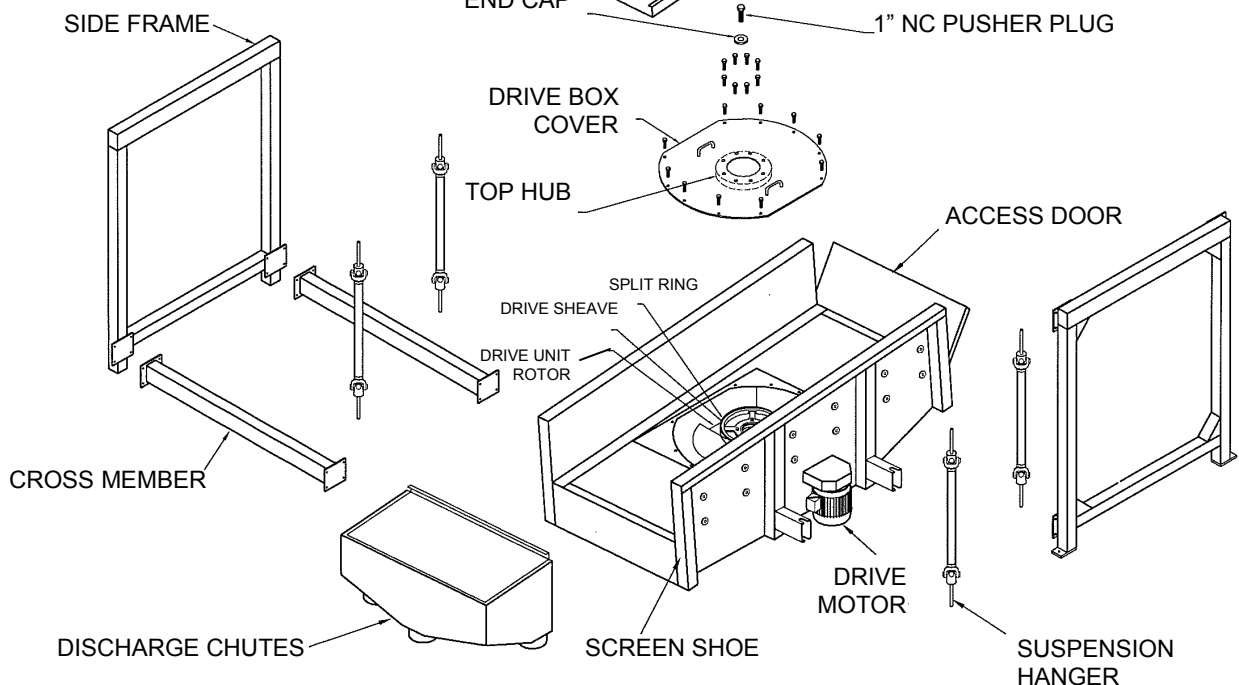
# SUPER SCREEN EXPLODED VIEW

## DRIVE BELT REPLACEMENT

1. Turn the power OFF.
2. Remove the skirt angles as required.
3. Remove the top screen(s).
4. Remove the fines pan section.
5. Remove the perimeter drive box cover bolts (mark the position of the cover before removal).
6. Remove the three 1" NC bolts and the one 1" NC plug bolt (pusher plug).
7. Insert a longer 1" NC bolt in the center hole of the end cap and wrench down until the cover is free (a wedge may be required at one edge of the drive box cover).
8. Remove the old drive belt and any other debris from inside the drive box.
9. Loosen the motor mounting plate to replace the drive belt. When the drive belt is properly tensioned and aligned, ensure that the rotor and the drive belt rotate freely.
10. Replace the drive box cover and ensure all surfaces are clean and that there are no scored or marred surfaces on the machined parts. If there are, contact BM&M.
11. Replace the perimeter drive box bolts (loose).
12. Insert three new 1" NC Grade 5 bolts in the end cap and torque to a minimum of 480 ft-lbs. Alternate the bolts by walking them down until they will not go down any further at the minimum torque value.
13. Replace all other items and ensure all bolts are tight.



## SUPPORT STAND



## Section 4 **SPARE PARTS**

The quantities listed on the Parts List on the next page are the total number of replacement parts for the complete machine. While it is not necessary that a user have all the quantities on hand, it is recommended that the following parts and quantities be carried in stock at all times.

(1) Drive Belt

(1) Complete Hanger Assembly

BM&M has spare parts located in warehouse facilities in Ontario and Alabama, as well as at our manufacturing plant in Surrey, British Columbia.

For parts and service contact your sales representative or BM&M directly.

Toll-free: 1-800-663-0323

Tel: 604-539-1029

Fax: 604-539-1022

## PARTS LIST

Part Description	Part No.	Qty
3B120 V-Belt	3B120	1
Drive Sheave 3B38	3B38SH	1
490-9 Yoke c/w Stud	490-9	8
Hanger Assembly 490-9-36-7	490-9367	4
490-UJ Universal Joint	490-UJ	8
Driven Sheave 3B24	A9-571	1
A9-630 Drive Unit	A9-630	1
A9-634 Split Ring	A9-634	1
Rubber Skirtwasher - quantities as required	PSKIRT001	0
5/8" H.D.G. Timberwasher - quantities as required	TIMBER002	0

## **TOOLS REQUIRED FOR INSTALLATION AND MAINTENANCE**

1/2" sq. drive socket set including the following socket sizes:

3/8"	Regular
7/16"	Regular
1/2"	Regular
9/16"	Regular
3/4"	Regular
15/16"	Regular
5/16"	Allen Head
15/16"	Deep Socket

3/4" sq. drive socket set including the following sockets:

1 1/8"	Regular
1 5/16"	Regular
1 1/2"	Regular
1 1/2"	Deep Socket
1 7/8"	Regular
1 7/8"	Deep Socket
3/4"	Allen Head

3/4" sq. drive torque wrench – 600 ft. lbs capacity.

Combination open end and closed end wrenches:

3/8"  
7/16"  
1/2"  
9/16"  
3/4"  
15/16"  
1 1/8"  
1 1/2"  
1 7/8"

## Section 5 TROUBLESHOOTING

### MECHANICAL

#### SYMPTOM

#### CAUSE

- |   |  |
|---|--|
| 1. Erratic motion or exaggerated stroke | <ul style="list-style-type: none"><li>- Slipping V-belt</li><li>- Motor improperly wired</li><li>- Motor voltage incorrect</li><li>- Motor RPM incorrect</li><li>- Drive pulley incorrect</li><li>- Insufficient clearance</li><li>- Hanger loading unequal</li></ul>                              |
| 2. Excess vibration of support          | <ul style="list-style-type: none"><li>- Support not properly braced</li><li>- Support points not strong enough</li><li>- Hangers not loaded equally</li><li>- Insufficient clearance</li></ul>   |
| 3. Excessive current draw               | <ul style="list-style-type: none"><li>- Belt is too tight</li><li>- Motor is faulty</li><li>- Screen is heavily loaded and/or is plugging up inside</li><li>- Infeed or discharge points are choked and are restricting the motion of the screen</li><li>- Drive unit bearing is failing</li></ul> |
| 4. Short belt life                      | <ul style="list-style-type: none"><li>- Belt is not aligned</li><li>- Motor axis is not vertical</li><li>- Pulley grooves are worn</li><li>- Poor quality belts</li><li>- Improper belt tension</li><li>- Dusty environment</li></ul>  |
| 5. Short hanger life                    | <ul style="list-style-type: none"><li>- Insufficient lubrication</li><li>- Hanger loading not equal</li><li>- Poor quality U-joints</li></ul>  |



## Section 5 TROUBLESHOOTING

### **PERFORMANCE**

#### **SYMPTOM**

1. Spilling

2. Poor fines removal

#### **CAUSE**

- Non-centered feed
- Excessive surge
- Excessive drift

- High fines content
- Screens are blinding
- Fines screen is too small
- Overloading
- Fines screen open area is too small

## Section 6 **WARRANTY**

### Duration

BM&M's Warranty is valid for 12 months from start-up or 18 months from the date of shipment which ever occurs first. The exception to this is the Main Drive Bearing Unit which is covered for 3 years.

### Items Covered Under Warranty

Defect in design, material or workmanship that leads to failure of bearings or bolted assemblies, broken welds or metal fatigue.

### Items Not Covered Under Warranty

- Wear of the screening media
- Wear of product contact areas
- Failures due to:
  - Incorrect installation procedures
  - Improper or insufficient maintenance or service procedures
  - Abuse or misapplication
  - Unauthorized modifications made to any part of the machine
- Motors, which are covered by their manufacturer's warranty

### Voiding the Warranty

BM&M screens are designed, engineered and manufactured to strict tolerances so that the final product is fully balanced. Stress-relieving ensures that residual welding stresses are eliminated. As a result of these procedures, any unauthorized modifications, welding, or additions made to these screens will void the warranty. In addition, the use of parts not supplied by BM&M will also void the warranty.

## Section 6 **WARRANTY**

### Warranty Claims Procedure

#### Submit a Warranty Claim

1. Contact your BM&M sales representative and advise them of your situation.
2. If you need parts urgently you must issue a purchase order to your sales representative. Please indicate on your purchase order that the parts ordered are for warranty submission.
3. With your representative's approval send the part(s) and any documentation relative to the failure back to the BM&M factory, freight prepaid.
4. Upon receipt BM&M will inspect the parts and review any documentation accompanying the claim.
5. If BM&M determines that the warranty claim is valid the customer will be reimbursed in one of two ways:
  - a) If parts have been purchased by the customer specifically to replace the defective ones then BM&M will issue a full refund for those parts.
  - b) If parts were taken out of the customer's stores inventory to replace the defective parts then BM&M will replace those parts with identical new parts at no cost to the customer, with freight prepaid to the mill-site.