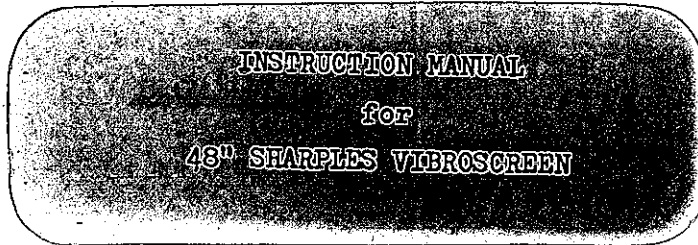




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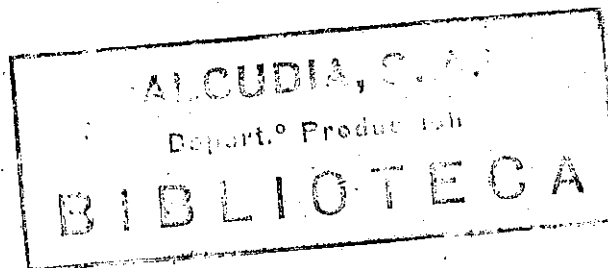


Technical Information Manual

R-00814/1

INSTRUCTION MANUAL
for
48" SHARPLES VIBROSCREEN

Customer :
Process :
Serial Number(s) :
Machine Order Ref :



PENNWALT LIMITED
DOMAN ROAD
CAMBERLEY
SURREY, ENGLAND

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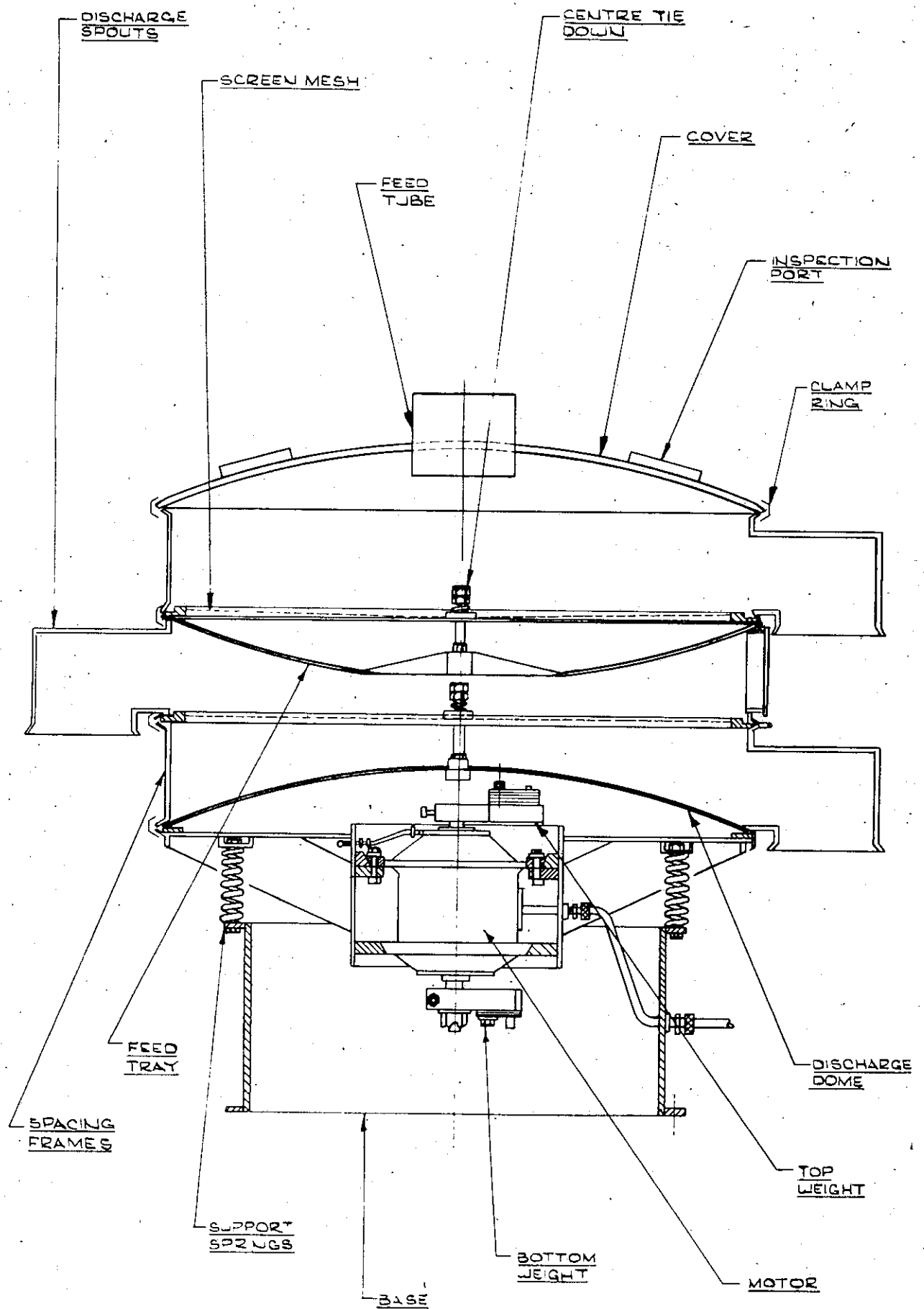
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NOTE : This Manual has been prepared to help you understand the operation of the Pennwalt Vibroscreen and so obtain maximum efficiency with a minimum of maintenance. Should you require additional information, or assistance, please contact the Pennwalt Company Limited. Please quote Serial Number of machine and motor where possible so that your particular machine can be identified and correct spares and replacements sent when required.

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48" VIBROSCREEN

INSTALLATION OF THE SHARPLES VIBROSCREEN

Foundation requirements -

The machine should be level and, although no vibration is transmitted to the floor, at least two $\frac{3}{4}$ " diameter bolts should be used to hold the machine in position.

The weight of the machine depends on the number of screens used in its assembly, but is generally from 500 to 1,000 lb. (227 to 454 Kg.) (See Installation Drawing at rear of Instruction Book).

Locating Vibroscreen

- (a) The Sharples Vibroscreen is equipped with a hinged inspection door in the base to enable bottom weight adjustments to be effected quickly and easily. Locate the Vibroscreen on the foundation so that this door is in the most accessible position.
- (b) Remove the three shipping brackets which secure the table and deck assembly to the base. The Vibroscreen should be levelled by fitting shims between the base and foundation.

**CAUTION : DO NOT REMOVE THE THREE SHIPPING BRACKETS UNTIL
VIBROSCREEN IS FINALLY LOCATED ON FOUNDATION.**

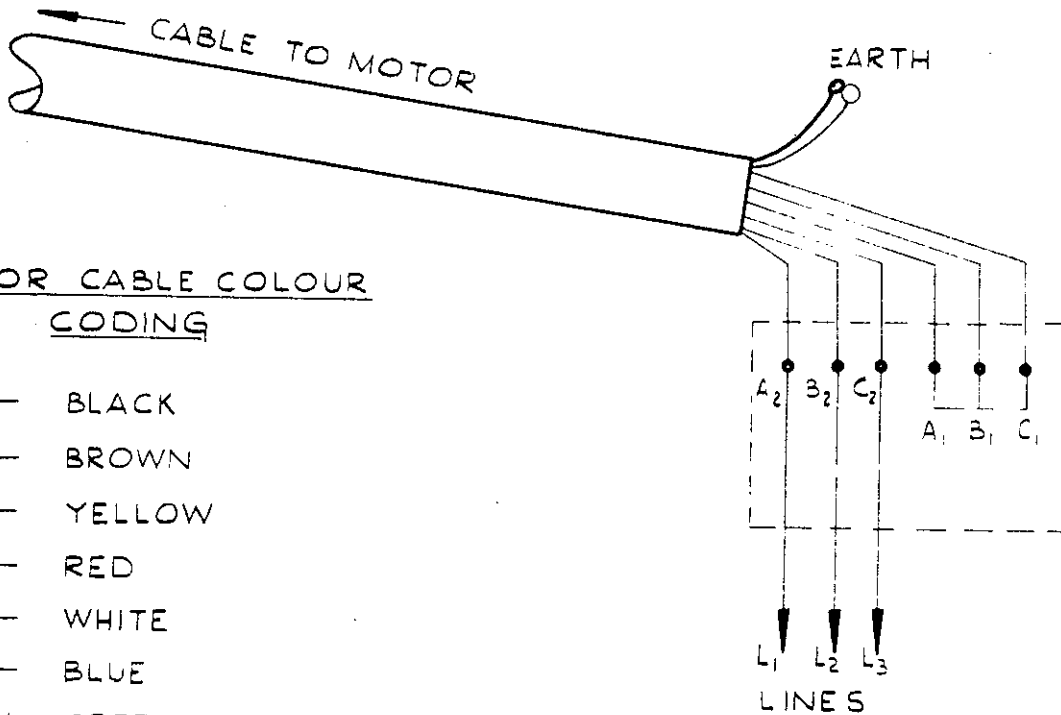
Motor Connection

- (a) The standard motors supplied are totally enclosed $\frac{3}{4}$ h.p. or $1\frac{1}{2}$ h.p. dual voltage 220/250 and 380/440 volts, 3 phase, 50 cycles. Other voltages can be supplied on request and reference should be made to the motor nameplate and nameplate on the machine to check that the correct voltage is supplied. Connect motor in 'Star' for 380 - 440 volt supply and 'Delta' for 200 - 220 volt supply.
- (b) Connect motor lead to power supply line. (See motor data on Page 2).
- (c) Earth Vibroscreen base to suitable connection on foundation to reduce risk of electric shock through the machine, should a fault occur.
- (d) Make sure the three shipping brackets have been removed. These are labelled and painted red for easy identification.

**IMPORTANT : ON NO ACCOUNT SHOULD MOTOR BE ROTATED UNDER POWER WITH
SHIPPING BRACKETS IN PLACE.**

- (e) Check motor for correct rotation, counter-clockwise when viewed from above. See arrow on nameplate.

MOTOR CONNECTIONS



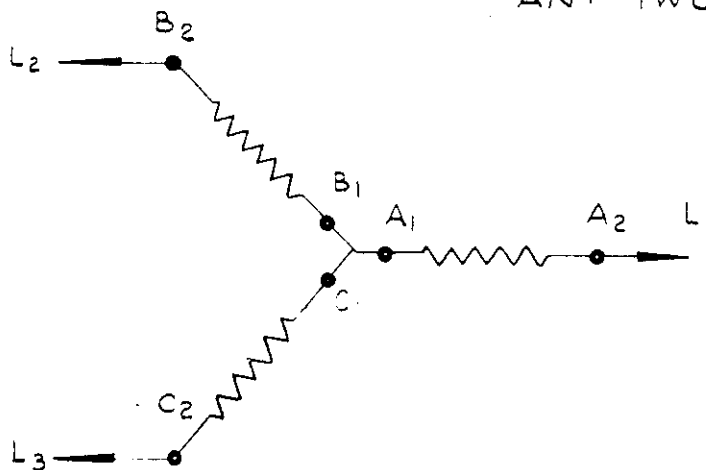
MOTOR CABLE COLOUR
CODING

- A₁ — BLACK
- B₁ — BROWN
- C₁ — YELLOW
- A₂ — RED
- B₂ — WHITE
- C₂ — BLUE

EARTH — GREEN
EARTH — ORANGE

TERMINAL BLOCK or CONNECTIONS
INSIDE STARTER

TO REVERSE ROTATION INTERCHANGE
ANY TWO LINES



CONNECTING DATA FOR STANDARD MOTOR OPERATING ON
380 - 440 VOLT 3 PHASE 50 CYCLE IE. MOTOR WIRED
IN STAR

- (f) A Direct-on-Line starter is required for the machine. (This is not normally supplied by Pennwalt), and the overloads should be set to suit the motor supplied.

NOTE : On no account must the machine be run if any of the components (especially the clamp rings) are loose or not fitted properly, otherwise the vibration of the machine will cause it to fall apart and serious damage may result to its components.

The machines are test run at the factory to ensure that all components are correctly assembled and that the machine is functioning correctly.

- (g) If rotation is incorrect, reverse main power line connections to motor.

Spout Connections

- (a) Position spacing frame outlet spouts by removing clamp rings and rotating the spacing frame so that the spouts are in the desired position - this is best done by turning the bottom or lower frame until its discharge spout is in the correct position. The lower clamp ring is then assembled and fully tightened by the two bolts and also by tapping the clamp ring home with a mallet or hide hammer to ensure a good clamping action. The second frame is then rotated until its spout is in the correct location and its clamp ring assembled as above and so on for the remaining frames.
- (b) All connections between inlet and outlet spouts and material conveyors should be flexible so as not to impair vibrating actions of the deck assembly. These can be either rubber material or cloth, such as nylon or stout cloth, depending on the material being screened.

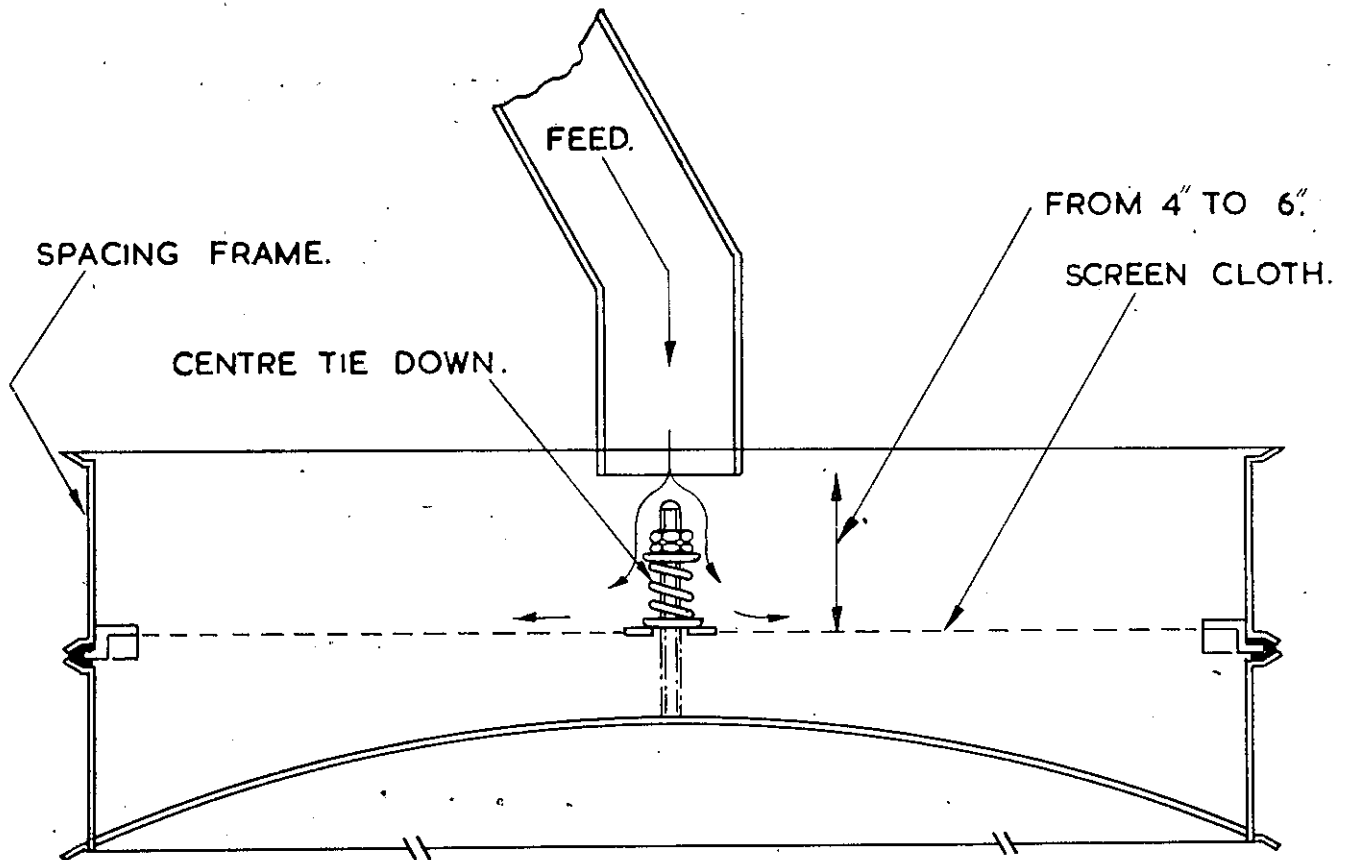


FIG. 1.

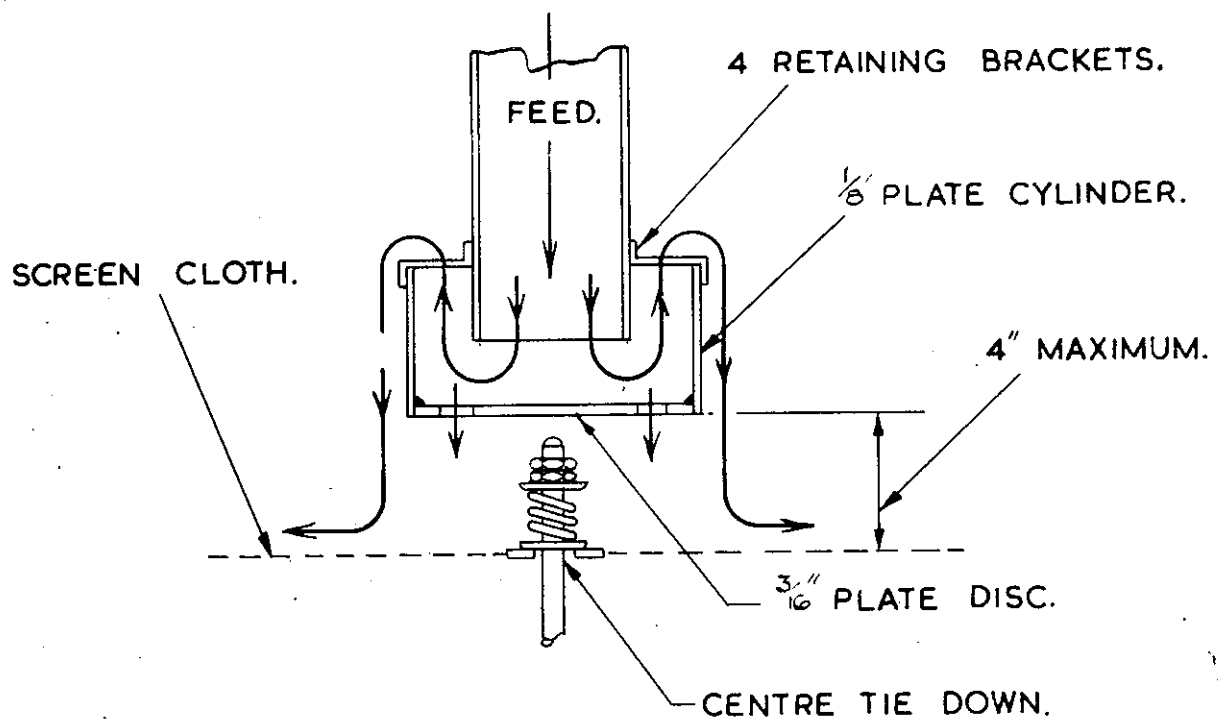


FIG. 2.

ADJUSTING THE SHARPLES VIBROSCREEN

Feed

- (a) All materials should be fed to the Vibroscreen at a constant rate and with minimum initial velocity. Material should not be 'dumped' onto the screen in large amounts or from great heights, or the screen cloth may become damaged.
- (b) The feed should be directed vertically to the centre of the screen. In this way the material is distributed evenly over the entire surface and maximum screening efficiency will result. (This is most important if maximum operating efficiency of the machine is required).
- (c) On dry screening applications the initial velocity can usually be reduced sufficiently by installing a baffle near the outlet of the feed pipe. A bend in the feed pipe, as illustrated in Fig.1, page 4, is usually all that is required for most applications.
- (d) With wet screening, the velocity can be effectively reduced by employing a catch bucket of a type illustrated in Fig.2, page 4. This type of velocity reducer had proven successful for most wet screening installations, although minor changes may be required to meet specific problems. For high volume (in excess of 150 IGPM (681 litres)) de-watering service we can recommend designs for your fabrication.

Material Pattern on Screen

- (a) The pattern which the material sets up as it travels horizontally across the screen cloth can be varied. The pattern is governed by the position of the bottom motor eccentric weight in relation to the top eccentric weight. (See Figs. 3 and 4, page 6, and Fig.6, page 8).
- (b) The degree of bottom motor weight lead required to produce the most effective results will depend upon capacity and efficiency desired, particle size distribution, specific gravity, moisture content, etc.
- (c) If the material being screened is particularly sticky or viscous and does not travel readily across the screen surface, additional plates may have to be added to the top motor eccentric weight. (See Fig.3, page 6).
- (d) The following illustrations (Fig.6, page 8) are examples of horizontal material travel patterns and their approximate corresponding degree of lead angle settings.

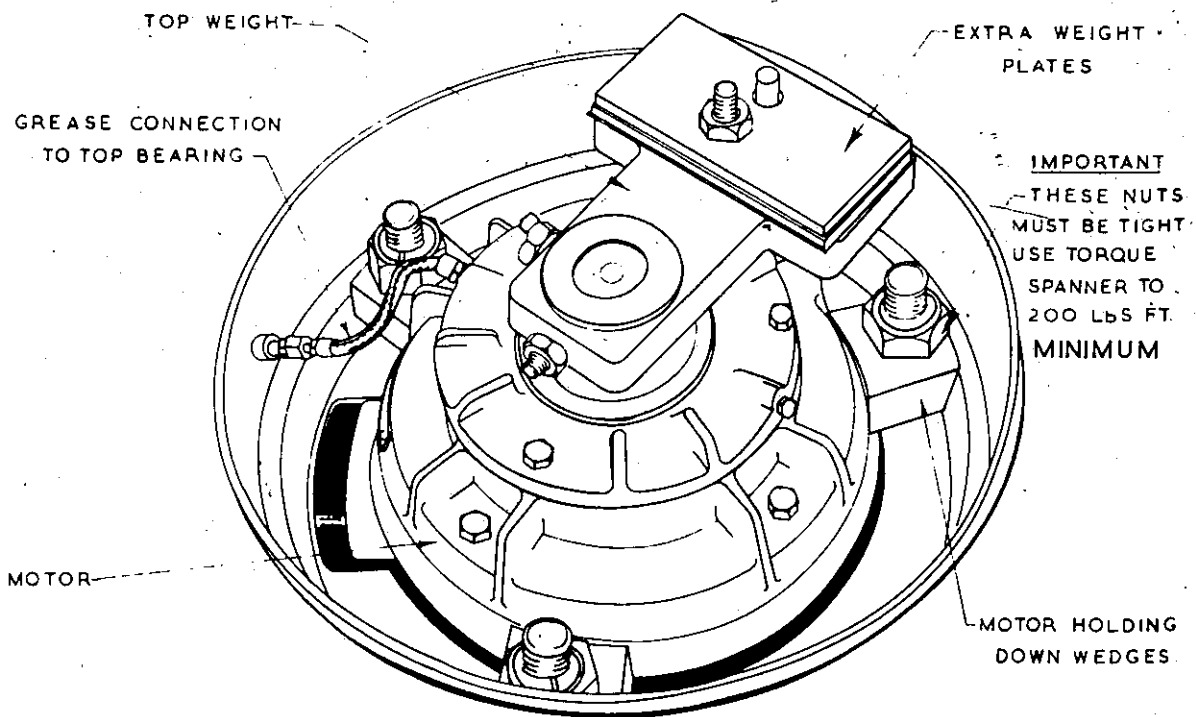


FIG. 3 VIEW SHOWING TOP MOTOR WEIGHT
(WITH SPACING FRAMES AND DISCHARGE DOME REMOVED)

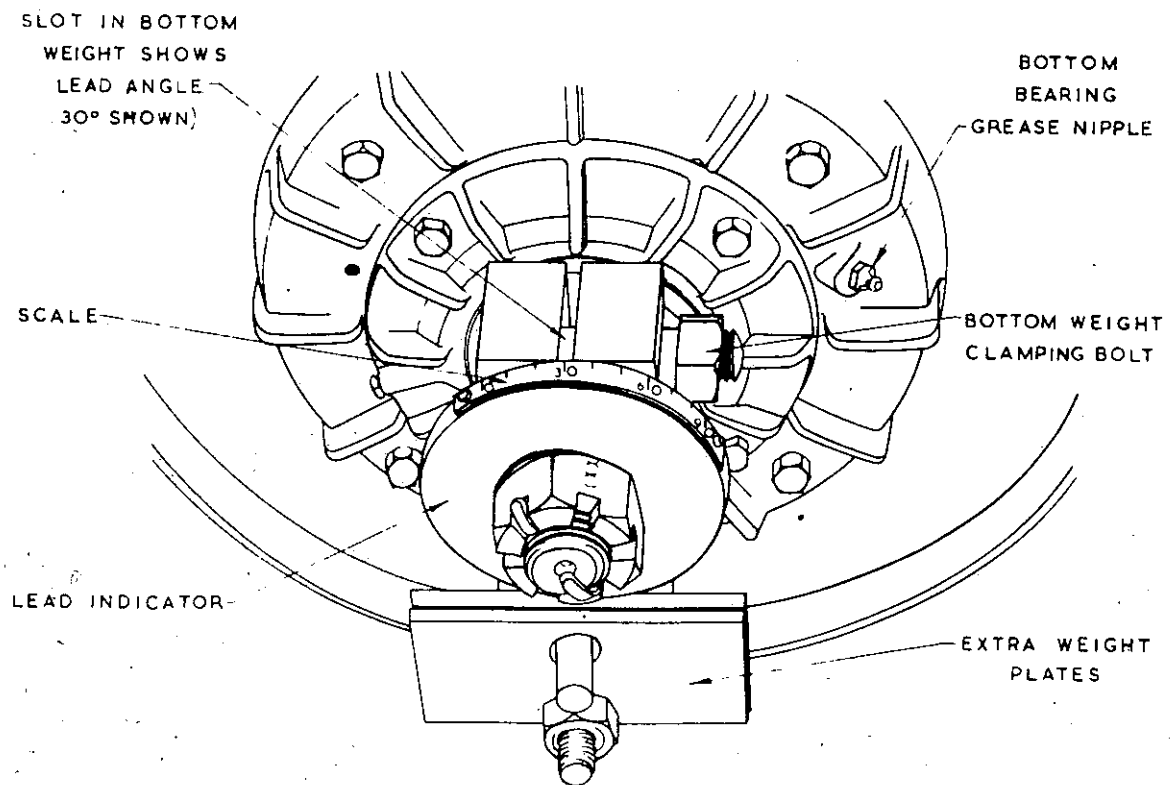


FIG. 4 VIEW SHOWING BOTTOM MOTOR WEIGHT
(AS SEEN THROUGH INSPECTION DOOR IN BASE OF VIBROSCREEN)

(e) The amount of bottom eccentric weight lead can be varied from 0° to 90° and is indicated on the degree scale just below the bottom motor eccentric weight (see Fig.4, page 6). (In certain circumstances the lead angle may have to be adjusted above or below these positions but no undue strain on the machine will result from this). If, after starting the Vibroscreen and feeding the material onto the screen at the full rate of feed, the desired efficiency is not obtained, the lead setting should be adjusted until the machine gives the correct results. If there is too much material on the screen surface, the operating efficiency of the screen will be poor and the lead angle should be reduced to about 30° to 45° so that the material is discharged more readily.

If, on the other hand, the material is moving across the screen surface too quickly and a large amount of fine product is being discharged with the oversize material, then the lead angle should be increased to prevent the material from being discharged so readily. To obtain the best results, the layer of material on the screen should be from $\frac{1}{4}$ " to 1" (6 mm. to 25 mm.) thick depending on the particle size of the material being handled.

As a rule, if the mesh is finer than 20 mesh, a maximum layer of $\frac{1}{4}$ " (6 mm.) should be aimed for and for 4 mesh to 20 mesh a 1" to $\frac{1}{4}$ " (25 mm. to 6 mm.) layer will give the best results. The angle should be adjusted by the following method -

1. Shut off motor and lock the starter in the 'OFF' position
2. When vibration stops, open access door in base
3. Release bottom weight clamp bolt nut so that motor shaft is free to turn independantly of the weight
4. Rotate motor shaft by turning lead indicator washer until the desired degree of lead, as indicated on the scale of the washer, is in line with the clamp slot of the bottom weight
5. Tighten the bottom weight clamp nut fully
6. Close access door and start Vibroscreen
7. If desired results are not obtained, repeat above procedure with gradual change in lead until satisfactory efficiency is obtained.

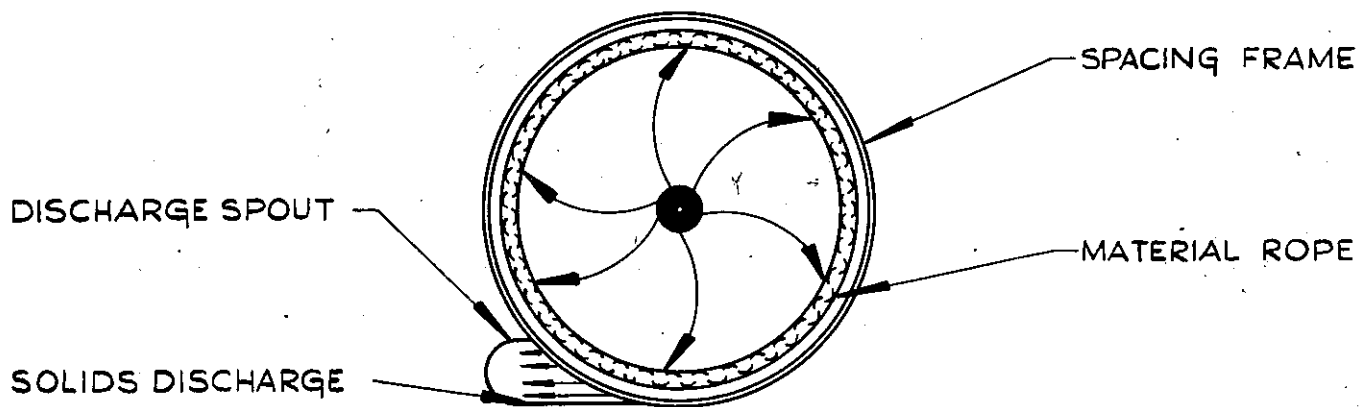
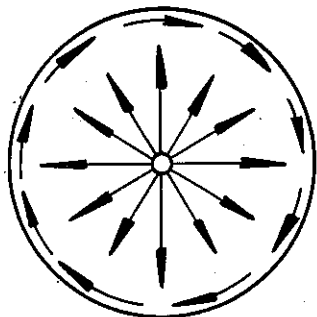
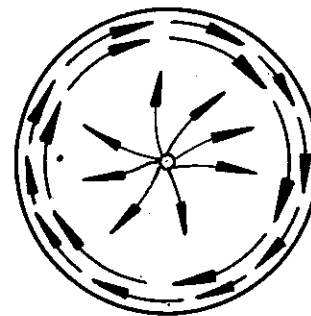


FIG. 5

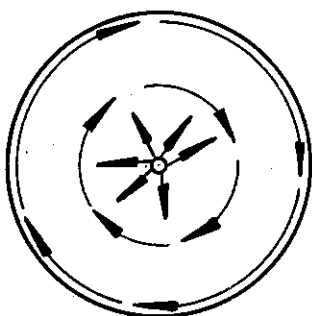
THE FOLLOWING ILLUSTRATIONS FIG. 6 ARE EXAMPLES OF HORIZONTAL MATERIAL TRAVEL PATTERNS AND THEIR APPROXIMATE CORRESPONDING DEGREE OF LEAD SETTINGS



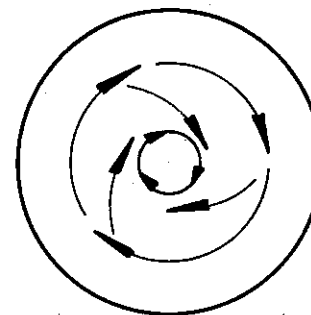
0° LEAD AVERAGE MATERIAL SHOULD BE THROWN STRAIGHT AND MAY GIVE INSUFFICIENT SEPARATION



30° LEAD SHOULD PROVIDE MAXIMUM EFFICIENT SCREENING PATTERN FOR AVERAGE DRY MATERIALS



60° LEAD SHOULD PROVIDE MAXIMUM EFFICIENT SCREENING PATTERN FOR AVERAGE WET MATERIALS



90° LEAD SHOULD PREVENT OVER-SIZE MATERIAL FROM BEING DISCHARGED AND PROVIDE MAXIMUM SCREENING OF FINE MATERIAL WHICH TEND TO 'BALL'

FIG. 6

Increasing the Vibration

If, after making these adjustments to the screen, the material tends to be retained on the screen mesh and moves sluggishly across the surface without being turned over and agitated sufficiently for good separation, the vibration of the machine should be increased by adding additional weight plates to both the top and bottom eccentric masses.

Six plates are supplied as spares for each weight (top and bottom) but normally it will be sufficient to add only four plates to the top and four plates to the bottom, even for the largest Vibroscreen (i.e., 4 and 5 screens) to get satisfactory vibration. As a guide it is normally sufficient to add 1 top plate and 1 bottom plate for each screen assembly fitted to the machine, especially if the finest mesh in the machine is finer than 30 mesh and Vibroscreens from the factory are normally supplied with plates fitted in this way. It is advisable to run the machine with the least vibration necessary to give good separation of the product and this will also ensure that the bearings of the motor will have the maximum life possible. If the maximum vibration is required, it is also advisable to adhere to the greasing instructions of the motor (see page 17) and this will ensure that the designed life (B_{10}) of 20,000 hours for the bearings is exceeded.

Additional Bottom Weight

If the vertical action is not sufficient to lift the material off the screen surface, make the necessary adjustments to the bottom weight by adding additional weight plates by the following method -

1. Shut off power and lock the starter in the 'OFF' position
2. Remove $\frac{5}{8}$ " nut and shake-proof washer from stud welded to bottom eccentric weight and add one or two bottom weight plates
3. Replace shake-proof washer and $\frac{5}{8}$ " nut and tighten fully
4. Close access door and start Vibroscreen
5. Repeat the procedure until optimum lift is obtained. If the vertical movement is too violent, then plates should be removed to decrease the vibration

NOTE : The Vibroscreen should be operated with the minimum number of additional weight plates that will give the desired results. This will ensure longer screen life, especially if the mesh is fine (i.e., less than 30 mesh).

Additional Top Weight

- (a) If, after making the previously described bottom weight adjustments, the screened material is not being discharged properly, additional throw can be provided to improve the condition by adding extra plates to the top motor weight.
- (b) In order to make adjustments to the top weight, the following procedure should be followed -
1. Shut off power and lock the starter in the 'OFF' position
 2. After vibration has stopped, disconnect feed and outlet connection to spouts
 3. Remove top clamp ring and spacing frame taking care not to damage screen cloth in process
 4. Remove screen cloth centre tie down assembly, screen cloth and tension ring assembly, channel gasket and feed tray (if any).
 5. Dismantle all spacing frames in the above sequence until the discharge dome is visible
 6. Remove the discharge dome, taking care not to damage the channel gasket. The motor top weight is then visible
 7. Add or remove additional top weight plates by removing the $\frac{1}{2}$ " nut and shake-proof washer
 8. Make sure the $\frac{1}{2}$ " nut is fully tightened after replacement. Re-assemble Vibroscreen in reverse order.

OPERATING THE SHARPLES VIBROSCREEN

When the Sharples Vibroscreen has been installed and adjusted in accordance with the foregoing, its operation entails nothing more than periodic inspection of the following items -

1. Feed and products are flowing freely and are not obstructed in any way.
2. Screen cloth centre tie-down check nuts are tight and screen tension is correct. Improper tensioning will result in wire breakage due to flexing, note instructions on page 18 and follow carefully.
3. Screen cloths are not blinded, i.e. small particles lodged in the openings of the mesh so reducing the effective screening area
4. Clamp rings are carefully tightened so that the tension ring, feed trays and spacing frames are securely clamped. Tighten clamp rings evenly on both sides and always check to ensure that it is properly "seated".
5. After approximately 50 to 100 hours running, it is advisable to check that the six motor holding nuts are fully tightened. (Some early machines were fitted with three wedges). Since the loading of these components is high due to the machine's vibration, these nuts and wedges tend to become bedded in after this period and, if allowed to become slack, the vibration will cause severe damage to the motor. The tightening of these nuts is best done by a torque wrench to between 200 and 240 pounds feet (27.6 and 33.1 kgf.m) using a suitable socket spanner and extension piece. The use of a hammer and brass or copper drift is also advisable to tap wedges into position to ensure that they are seated properly on their tapers. The loosening of these six motor wedges will cause an increase in the noise level and, since the machine normally runs very quietly, any increase in the noise level should be investigated at once.
6. The motor should be periodically greased in accordance with the motor greasing instructions (see page 17).

NOTE : If the machine has been dismantled, on re-assembly of the clamp ring it is advisable to tap the ring home with a mallet or hide hammer to ensure that it is seated properly. This will prevent the spacing frames from turning due to the rotary vibration of the machine.

Replacement of Parts

(a) Removal and Replacement of Motor

1. Shut off power and lock the starter in the 'OFF' position.

2. After all vibration has stopped, disconnect all spout connections to discharge and feed spouts.
3. On single deck machines, remove bottom clamp rings which secure the bottom spacing frame to the motor table assembly and remove screen cloth centre tie-down assembly.
4. Carefully remove spacing frames with screen cloth assembly, taking care that the centre tie-down stud, which is welded to the discharge dome, does not damage the screen cloth.

NOTE : On multi deck Vibroscreens it is advisable to dismantle each spacing frame and screen cloth separately, starting with the top frame.

5. The table discharge dome can now be removed complete with channel gasket, taking care not to damage the gasket in the process.
6. The top of the motor is now visible, located inside the motor housing cylinder. Disconnect the swivel end of the top bearing grease extension tube and then remove completely to prevent possible damage to the "end fittings".
7. Remove 1" nuts, shake-proof lock washers and motor retaining wedges. To loosen wedge, tap both sides of the wedge with a hammer until the wedge "springs" off the taper.
8. Disconnect motor lead connections and loosen two motor lead glands, one located on base and the other on the motor support assembly cylinder.
9. Insert lifting "eye" into threaded hole at top end of motor shaft and proceed to withdraw motor taking care not to damage motor lead in the process.
10. Replace motor in the reverse sequence.

NOTE : A lifting "eye" is supplied with each machine in the tools and accessories pack.

11. Cable tension - On re-assembling the motor it is important that sufficient slack is allowed in the electric cable between the base of the machine and the motor housing to allow the machine to vibrate without causing unnecessary strain on the cable. This is best done by pulling the cable taut and then feeding back the cable a distance of 2" to 3" (50 mm. to 75 mm.) to form sufficient slack for normal operation. Too much slack should be avoided because the cable may chaffe against the side of the machine and eventually wear through. Fully tighten both cable clamps before re-starting the machine.

NOTE : (a) If top or bottom motor eccentric weights have been disturbed make sure they have been carefully secured to the motor shaft before starting motor.

- (b) After the motor has been re-assembled and installed in the motor support assembly, check locking wedge retaining nuts for tightness. As mentioned previously, it is advisable to use a hammer and a copper or brass drift to ensure that the motor wedges are fully seated on their tapers and so reduce the possibility of them becoming slack during operation, and to tighten with a torque spanner to 200 - 240 pounds feet (27.6 - 33.1 kgf.m.).
- (c) Although the positioning of the motor in the wedges is not too important it is advisable to tighten the nuts on the wedges in sequence to ensure that the six wedges are evenly located on their tapers (i.e. at the same level on the tapers), the top of the wedges normally sit flush with the top surface of the wedge ring attached to the machine table. If one wedge is lower than the others, it should be adjusted until all six are level, this is sufficiently accurate when done by 'eye'.

Motor Maintenance

(a) Inspection

Motors should be inspected at regular intervals to guard against excessive (i) dirt, (ii) moisture and (iii) friction, which account for the majority of motor failures. The intervals of inspection may vary according to your own Company procedures and conditions involving the application of the motor. However, it is recommended that the motor be inspected at least once a year.

(b) Servicing

When possible, the motor should be returned to the factory, if not, the instructions in (c) and (d) must be followed.

(c) Instructions for Dismantling

1. Take out 4 set screws holding upper and lower bearing end caps and remove flingers and end caps.
2. Take out 4 set screws holding upper end bracket to Stator Frame and remove end bracket and shaft assembly as a unit. Care must be taken that inner race and lower bearing is protected from damage, as this race will pull up through the shaft bore of the bracket, free of its rollers.
3. Remove circlip from shaft just above upper bearing.
4. Press Shaft assembly out of upper end bracket.
5. Take out 4 set screws holding lower end bracket to frame and remove bracket.
6. The upper bearing may now be removed from its bracket by pressing or pulling on the inner race with an Arbor Press or Bearing Puller.

The outer race and rollers of the bottom bearing may also be removed with a Bearing Puller.

7. The upper and lower grease seals should now be removed and discarded.
8. All parts should be cleaned and dried. A hot mixture (not over 150°F (66°C)) of equal parts of paraffin and denatured alcohol will help dissolve caked residue. Carbon Tetrachloride liquid cleaner is also satisfactory but only if used in a well ventilated room; other liquid cleaners that have a benzine base and contain petroleum solvents harmless to steel are also satisfactory. Any cleaning liquid should itself be washed from the bearing with a light oil before applying new grease.

(d) Instructions for Assembly

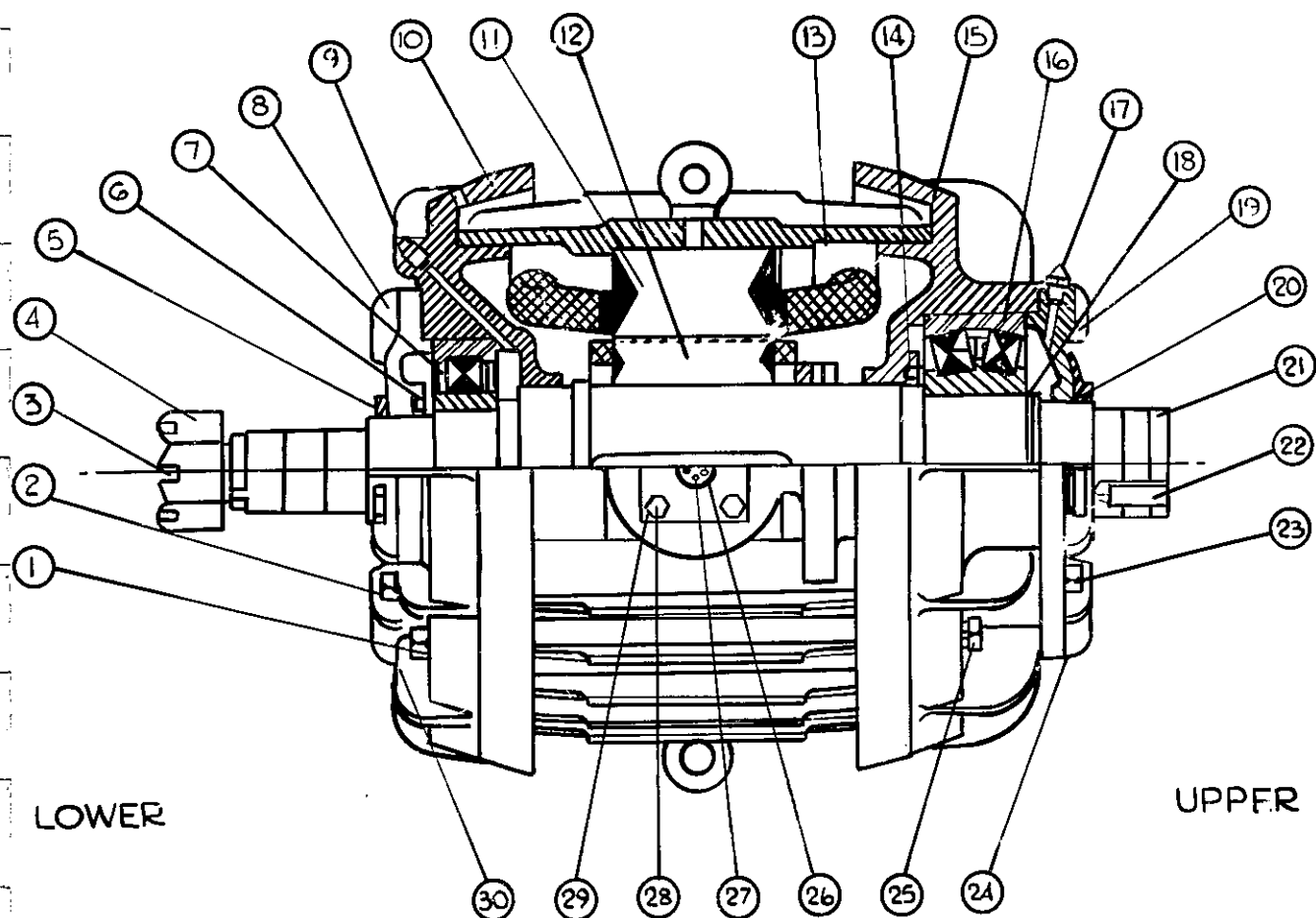
1. Check end brackets for wear and replace if necessary.
2. Press new grease seals into their respective seatings.
3. Re-pack upper bearing with Shell Alvania 3 grease (filling cavities $\frac{1}{2}$ to $\frac{2}{3}$ full) and press into upper bracket.
4. Pack bearing cavity of lower bracket $\frac{1}{2}$ to $\frac{2}{3}$ full with Shell Alvania 3 grease - press bearing into lower bracket.
5. When necessary to replace bearings it is very important that the proper replacement be secured. Their correct designation is - Upper S.K.F. - 22313M/C3 or 22314M/C3 (depending on motor type - see pages 15 and 16).

Lower S.K.F. - NU 311M/C3

Reference to the serial number of the motor (see motor nameplate) and the illustrated diagrams (pages 15 and 16) will give the correct bearing designation for your particular motor.

6. Press shaft into upper bearing in bracket. Use care not to damage grease seal.
7. Install circlip to position upper bearings on shaft.
8. Install upper end brackets and shaft assembly into Stator frame.
9. Install lower end bracket on Stator frame.
10. Pack upper bearing end cap cavity only $\frac{1}{2}$ to $\frac{2}{3}$ full of Shell Alvania 3 grease and replace upper and lower end caps on brackets, taking care not to damage grease seal in lower end cap.
11. Replace flingers on shaft - use new flingers if old ones are loose on shaft.

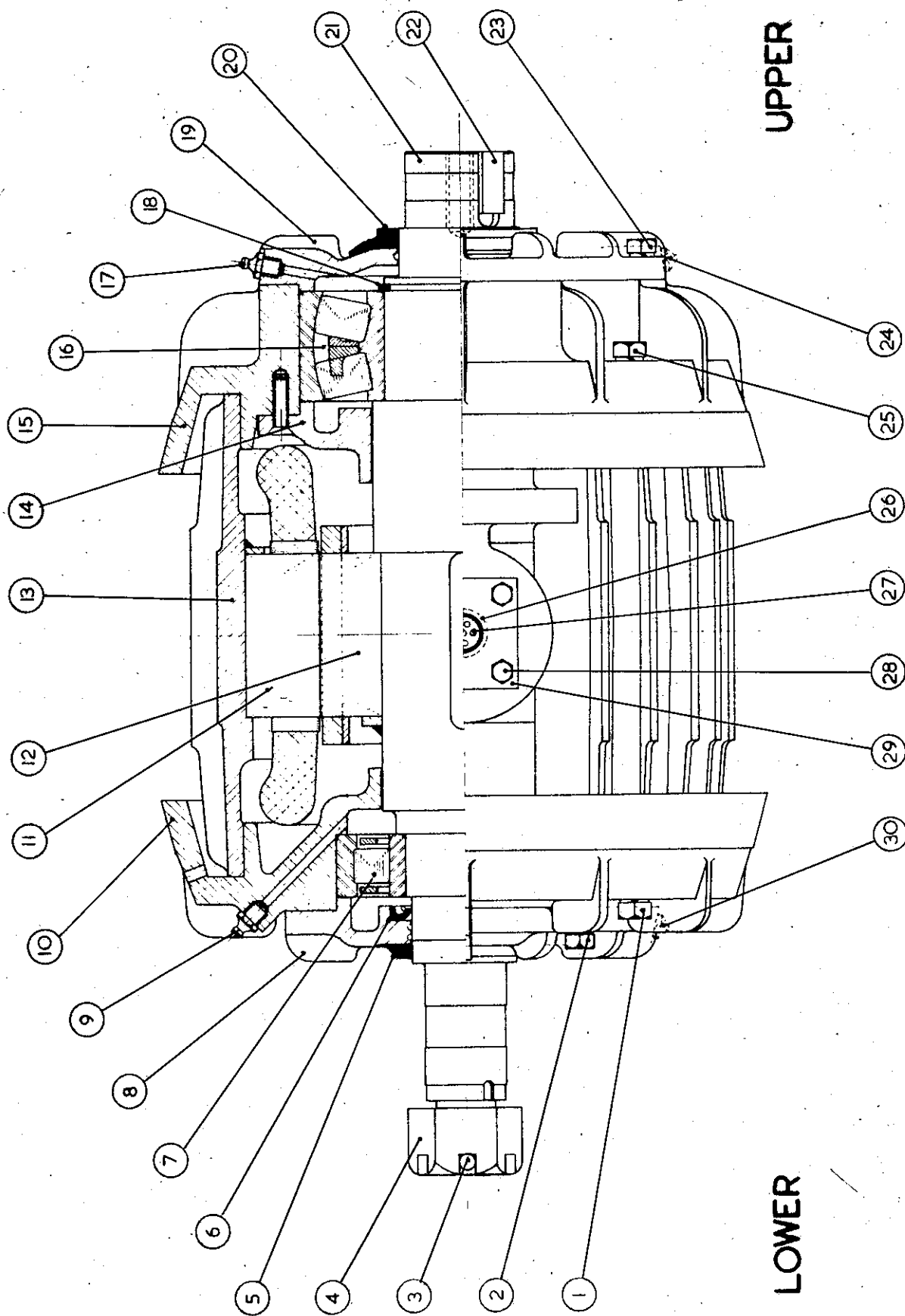
WRIGHT ELECTRIC MOTORS (HALIFAX) LTD.
CENTURY WORKS PELLON LANE,
HALIFAX, ENGLAND.



MOTOR SERIAL NOS. A68386 - A69075 (SEE PAGE 16 FOR OTHER SERIAL NOS. A69076 UPWARDS)

ITEM	PART	ITEM	PART
1	end-bracket set screws	16	upper bearing 22313/M/C3 shown
2	bearing endcap set screws	17	1/8 B.S.P. grease nipple
3	taper pin	18	circlip
4	1/4.7 N.C. hex. slotted nut	19	upper bearing endcap
5	lower flinger	20	upper flinger
6	lower grease seal	21	shaft
7	lower bearing	22	extension key
8	lower bearing endcap	23	bearing endcap set screws
9	1/8 B.S.P. grease nipple	24	grease relief valve
10	lower end-bracket	25	end-bracket set screws
11	stator core and winding	26	neoprene bush
12	rotor core and cage	27	7 core P.V.C. cable
13	stator frame	28	cable clamp set screws
14	upper grease seal	29	cable clamp plate
15	upper end-bracket	30	grease relief valve

PLEASE QUOTE MOTOR SERIAL No. WHEN ORDERING SPARES
SEE MOTOR NAME PLATE.



(e) Lubrication

1. After 10,000 working hours, or two years, whichever comes first, bearings should be cleaned and re-packed with fresh Shell Alvania 3 grease.
2. The greasing of bearings between intervals should be as follows -
Top Bearing - two shots (approx. 1/10 oz. (2.8 g)) of grease from a hand gun every 350 operating hours.
Lower Bearing - one shot (approx. 1/20 oz. (5.6 g)) of grease from a hand gun every 350 operating hours.
3. The motor bearings are pre-packed before they leave the factory with Shell Alvania 3. It is most important that no other grease is used especially inferior products which may greatly reduce the life of the motor bearings.

Replacement of Table Support Springs

The removal and replacement of table support springs is quickly and easily accomplished on the Sharples Vibroscreen, as no mechanical means are used to retain the springs other than the weight of the deck assembly and the special cone mounts.

1. With a light jack located on the top flange of the base, lift table and spacing frame assembly approximately 2" (50 mm.).
2. Remove the springs by means of a screw-driver or pinch bar to lever the springs from the cones. If the springs are partly seized due to dirt or paint, etc., a sharp blow from a hammer and blunt drift directed on the spring in an upward direction as near to the bottom cone as possible may be required. When the spring is free, repeat the procedure at the top cone.
3. To replace the new spring - locate the spring on the bottom cone first.
4. Position the top of the spring in line with the top cone and lower the jack carefully until the weight of the table and deck assembly is taken by the spring.
5. Ensure that the springs are "seated" properly, i.e., that the last coil of the springs are resting on the supporting flanges. Tap gently into position with a hammer and drift, if required.

Do not damage spring by excessive hammering.

To Remove the Screen Assembly

1. Remove centre tie-down lock nuts, springs, dished washers, plate and neoprene washer.

2. Remove clamp ring and lift spacing frame clear. If the screen cloth tension ring is adhering to the spacing frame by means of the channel gasket, tap tension ring downward until it falls free.
CAUTION : TAKE CARE THAT THE SCREEN CLOTH IS NOT DAMAGED BY COMING INTO CONTACT WITH THE CENTRE TIE-DOWN STUD.
3. Remove channel gasket and stand screen cloth in safe place. (See page 23 for suggested storage rack for Screens).
4. To replace screen cloth in tension ring see Section "Screen Cloth Remounting Procedure".

To Replace Screen Assembly

1. Fit channel gasket to outside rim of tension ring, position ring on spacing frame and over centre tie-down stud, making sure the screw heads in the tension ring are uppermost (unless specifically required otherwise).
2. Position spacing frame over ring so that the lip of the frame is in contact with the channel gasket all the way around. Replace clamp ring and clamp securely.
3. Replace neoprene washer, plate, spring, dished washers and lock nuts to centre tie-down stud, screw lower nut down to compress spring until correct tension is applied to the screen cloth. For stainless steel and mild steel screens, the correct tension can be checked by placing two fingers of one hand on centre plate with one finger each side of the centre spring and exerting normal pressure to it; even with this extra pressure, the tie-down spring should just be in contact with the centre plate and bottom lock nut.
4. When the correct tension has been applied to the cloth, screw the top lock nut down until it is in contact with the lower nut. Lock the two nuts together using two wrenches.

SHARPLES VIBROSCREEN REMOUNTABLE TENSION RINGS
(SCREWED VERSION)

INSTRUCTIONS FOR REMOUNTING SCREEN CLOTH

Tension Rings

The Sharples Vibroscreen Remountable Tension Ring Assembly is actually comprised of 2 rings. The top ring has the heaviest section and provides a rigid frame into which the lower ring is drawn during remounting operations. The lower ring provides the means of clamping the screen cloth after tension has been applied.

Sharples Vibroscreen Tension Rings are manufactured in three diameters, i.e., 48", 24" and 18". They can be supplied in carbon or stainless steel and will accommodate screen cloths ranging in wire diameter from 0.048" (1.22 mm.) (18 S.W.G.) to 0.0012" (0.03 mm.) (49 S.W.G.).

Replacement Screen Cloth

Screen cloths are available in nylon, tinned steel, stainless steel and other special materials on request. They are supplied preformed and drilled and with the centre plates rivetted in place. Pre-forming ensures accurate location and ease of assembly of component parts during the remounting operation. Neoprene gaskets are supplied as standard but other materials can be provided, if desired for special applications.

If a screen assembly is to be fitted with a piece of mesh (minimum 48" square) which has not been pre-formed by Pennwalt, the 48 holes should first be punched in the mesh using the screen frame as a template. The centre plates can be fitted after the mesh has been mounted.

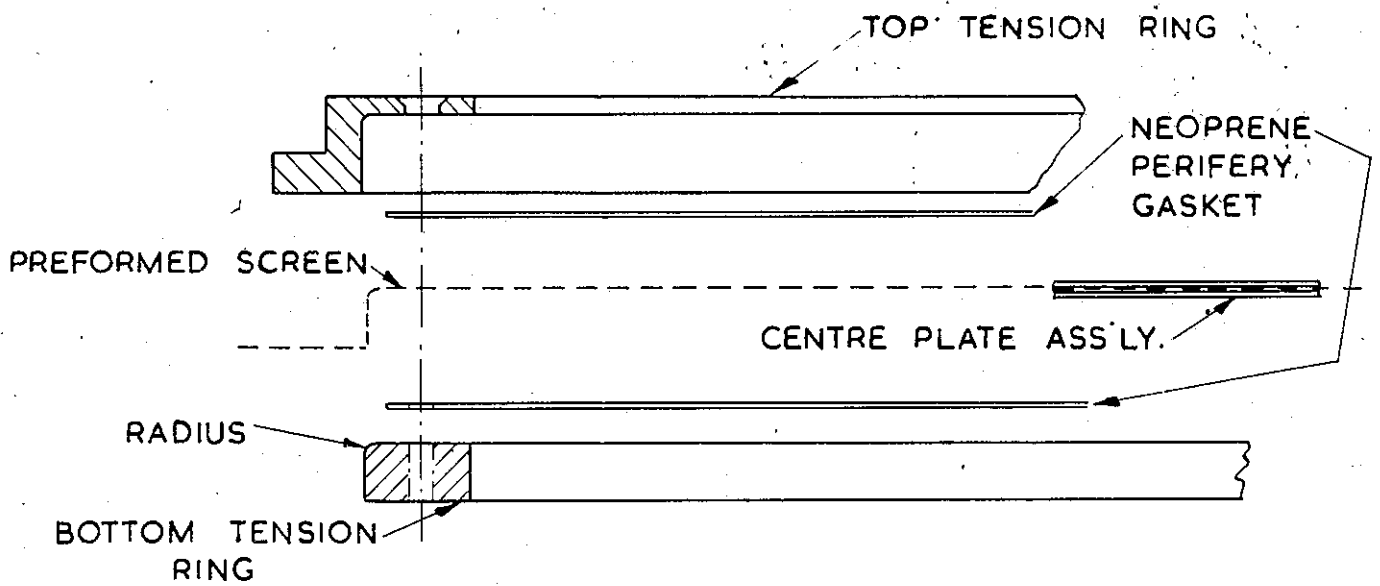
Principle

The Screen Cloth is assembled between the 2 rings with the raised section fitting into the recess of the top ring. The Screen is protected on both sides by 2 neoprene gaskets. A number of 'G' clamps are used to secure the spare screen cloth which protrudes on the outside of the ring assembly to the outer land of the top ring. This prevents any inward movement of the screen cloth while tension is being applied.

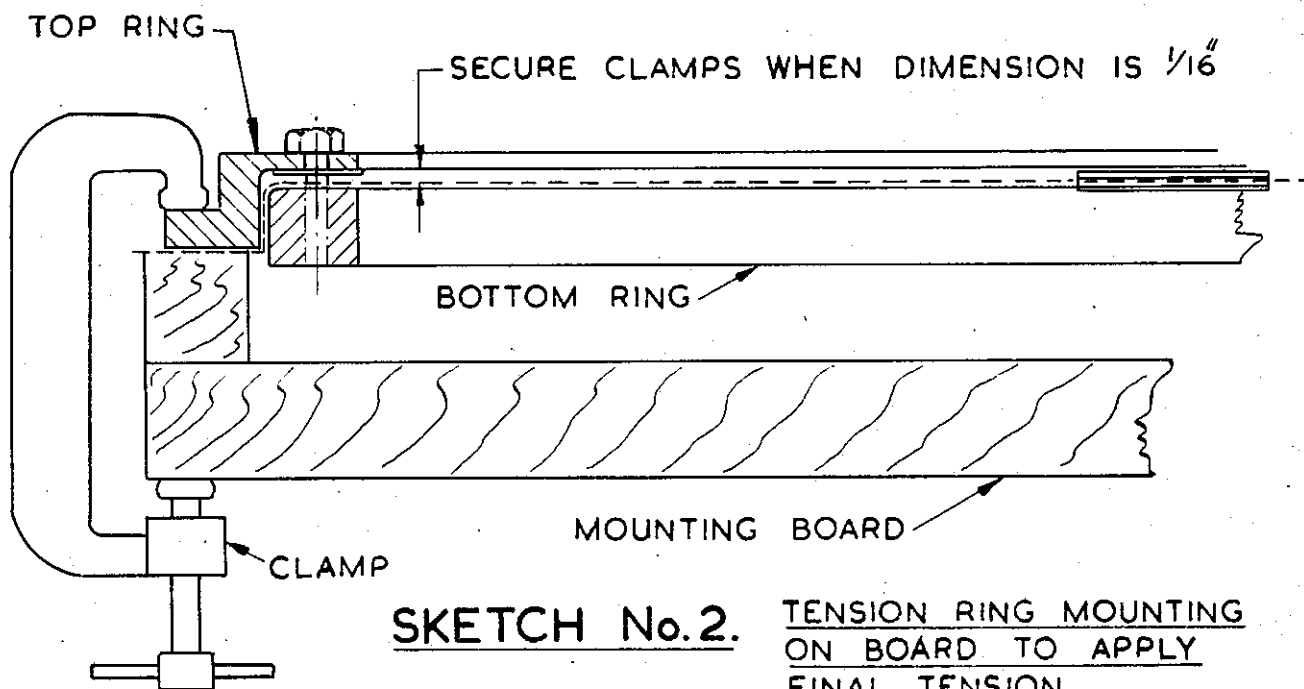
The lower ring is drawn up into the top ring by a number of $\frac{1}{4}$ " diameter ($\frac{1}{4}$ - 20 UNC) screws which pass through the top and into the lower ring; as these screws are tightened, the slackness of the screen is gradually taken up and drawn taut. When the screws are tightened to the limit of travel the screen will be held tightly between the horizontal faces of the top and lower tension rings, permitting removal of the 'G' clamps without loosing any of the tension.

Remounting Procedure

- (a) The top ring is reversed on a table so that the head of the screws are on the bottom. The screws are then inserted. This can best be accomplished by fitting the neoprene periphery gasket on the inside of the recess and over each screw as it is located. The screen cloth and the remaining gasket are then fitted over the screws.
- (b) Position the lower ring so that the screws are in line with its tapped holes. Note that one of the o/d. corners of this ring is radiused. The ring should be assembled so that this corner will be in contact with the screen. While still working from a reverse position, enter 4 of the screws (at 90° apart) into the lower ring in order to secure the components.
- (c) Reverse the assembly on the table and enter the remaining screws into the lower ring. Proceed to pull the lower ring up evenly, by means of the screws, until the limit of the travel provided by the pre-formed screen cloth has been reached. At this stage, the screen should be quite flat but with no real tension and approximately $1/16"$ (1.6 mm.) additional travel remaining between the top face of the top gasket and the underside of the top ring recess (see sketch). It is of the utmost importance that the specified clearance is available around the entire ring before the 'G' clamps are fitted if the necessary tension is to be applied to the cloth.
- (d) Position assembly on mounting board (see sketch for construction details) with the outer flange of the screen cloth between the board and the lower horizontal face of the top tension ring. Clamp the screen cloth to the board with 'G' clamps equally spaced at approximately 9" (229 mm.) apart around the ring. Raise the lower ring by tightening diagonally opposite screws until the gaskets are fully compressed. Check each screw several times to ensure that the maximum pressure has been applied. If the screen is not securely clamped between the 2 rings, the tension applied to the cloth will be lost when the external 'G' clamps are removed.
- (e) Remove the 'G' clamps and tension ring assembly from the mounting board, check the screen for tension and re-check the screws for tightness. If it is desired, the surplus screen cloth and screws can be trimmed. However, it should be noted that, once this has been done, there is no way of remounting the cloth should it be removed from the tension ring. If the screen is left in the untrimmed state the excess cloth should be bent inwards towards the centre so that the channel gasket can be fitted when assembling the tension ring to the machine.



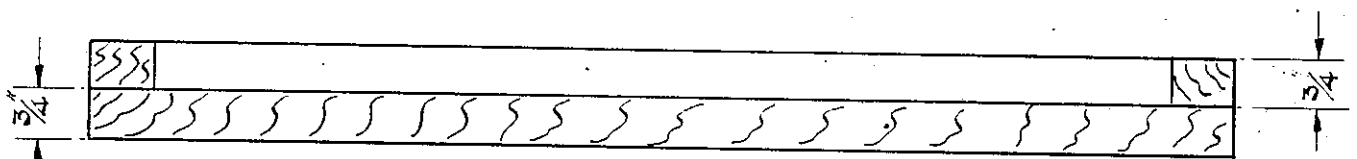
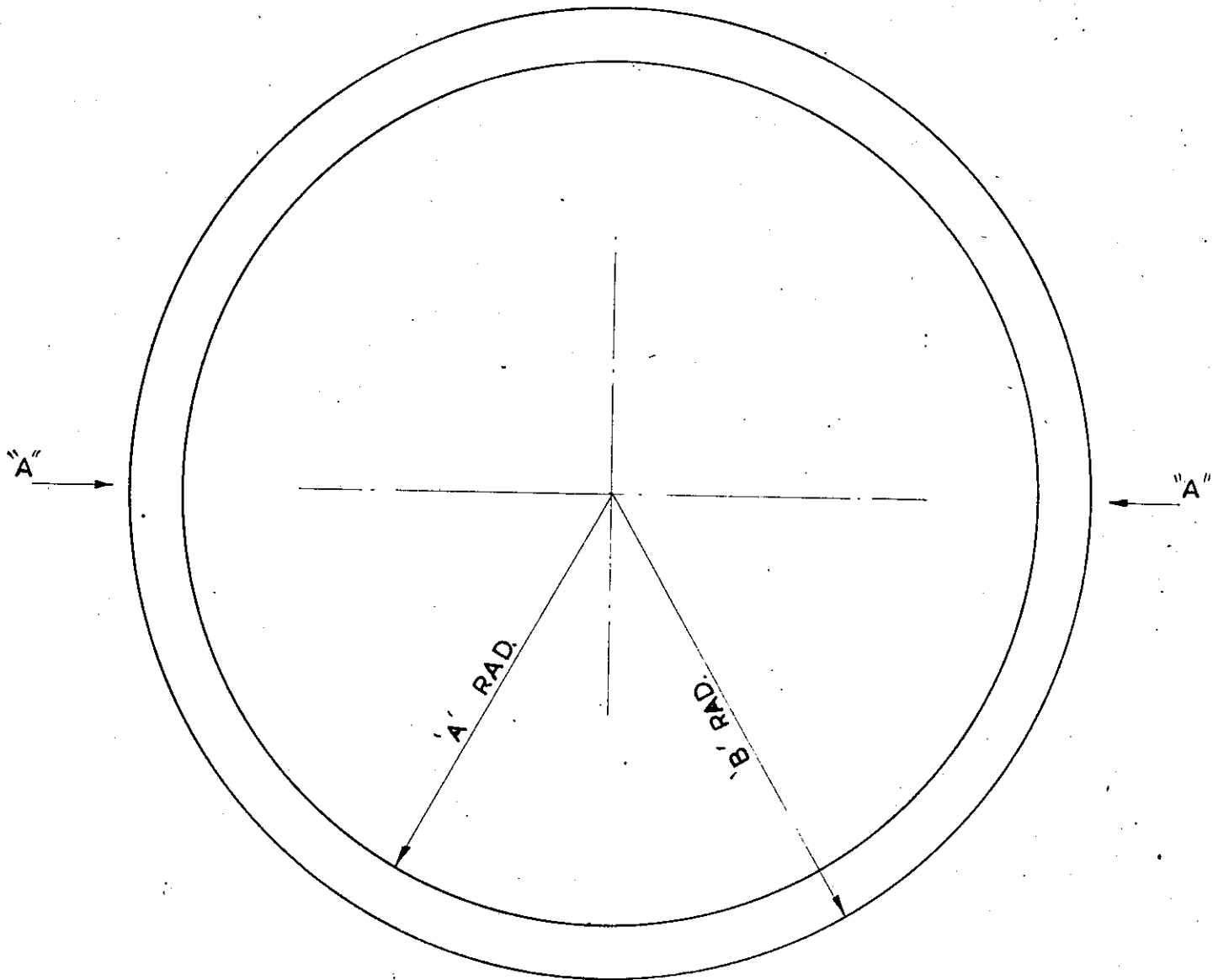
SKETCH No.1. ASSEMBLY OF COMPONENTS.



SKETCH No.2. TENSION RING MOUNTING ON BOARD TO APPLY FINAL TENSION.

SHARPLES — REMOUNTABLE TENSION RING.

-MOUNTING INSTRUCTIONS.



RING SIZE	A	B
18 RING	7 ⁷ / ₈ "	9"
24 RING	11 ¹ / ₈ "	12"
48 RING	22 ⁶ / ₈ "	23 ¹ / ₂ "

NOTE MOUNTING BOARDS SHOULD
BE MANUFACTURED FROM
3/4" TH'K. PLYWOOD.

SHARPLES — REMOUNTABLE TENSION
RING.
-MOUNTING BOARD DIMENSIONS.

WORKING TOLERANCE UNLESS OTHERWISE STATED			
DIMENSION	UP TO 100mm	100 - 250mm	250 - 1000mm
0 mm	± 1mm	± 2.5mm	± 2.5mm
(0.0 ins)	(± 0.05 ins)	(± 0.1 ins)	(± 0.1 ins)
0.0 mm	± 0.4mm	± 0.8mm	± 1.2mm
(0.00 ins)	(± 0.015 ins)	(± 0.030 ins)	(± 0.045 ins)
0.00 mm	± 0.12mm	± 0.25mm	± 0.4mm
(0.000 ins)	(± 0.005 ins)	(± 0.010 ins)	(± 0.015 ins)
FRAC. DIM.	ALL DIMS.	ALL DIMS.	ALL DIMS.
HOLES WITH TAPER	ALL DIMS.	ALL DIMS.	ALL DIMS.
POS. TOL. 0.010 DIA.	ALL DIMS.	ALL DIMS.	ALL DIMS.
REMOVE ALL EDGES UNLESS OTHERWISE STATED			

