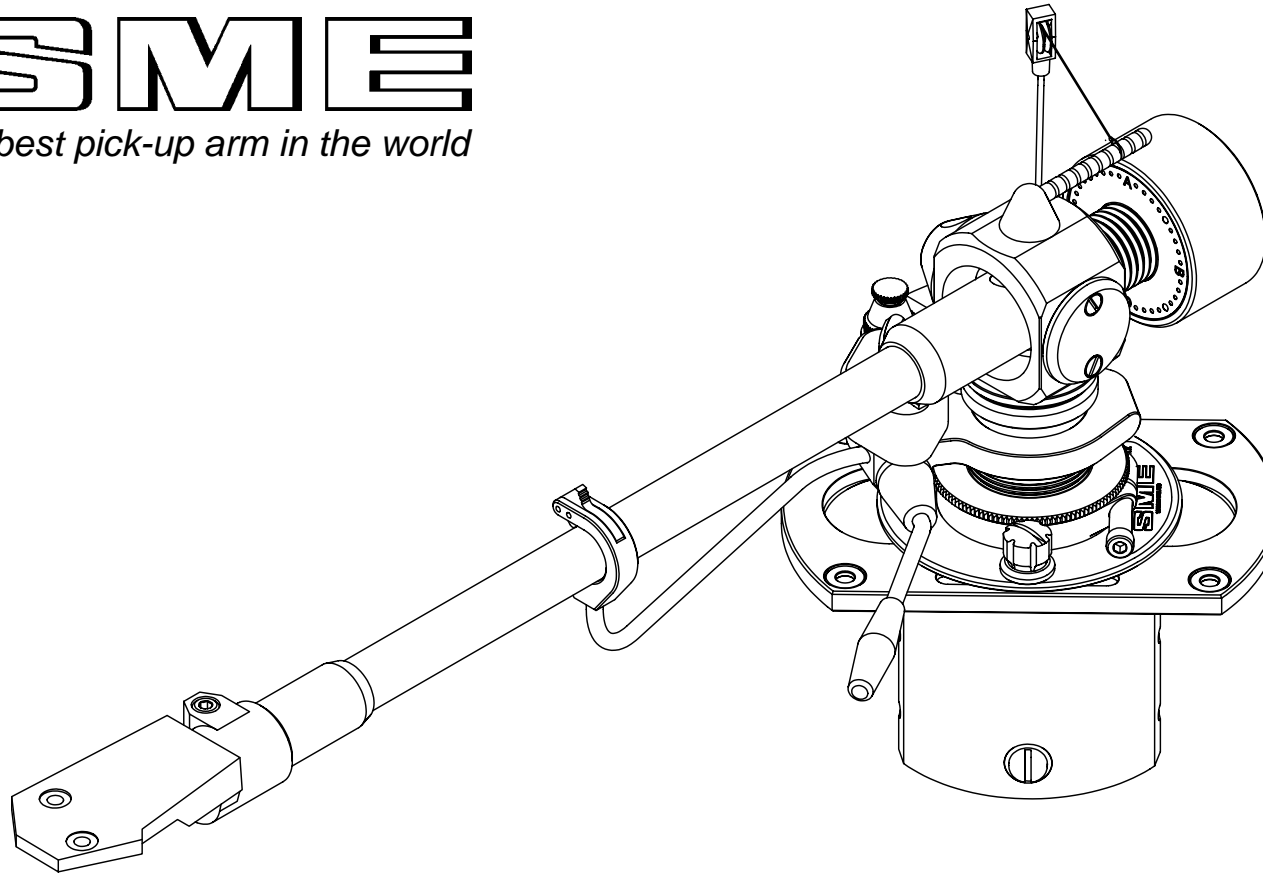


SME

The best pick-up arm in the world



INSTRUCTIONS

SERIES M2 MODELS M2-9-10-12

Introduction

The Series M2 embraces three models the M2-9, M2-10 and M2-12 offering pivot to stylus dimensions covering virtually all turntable requirements.

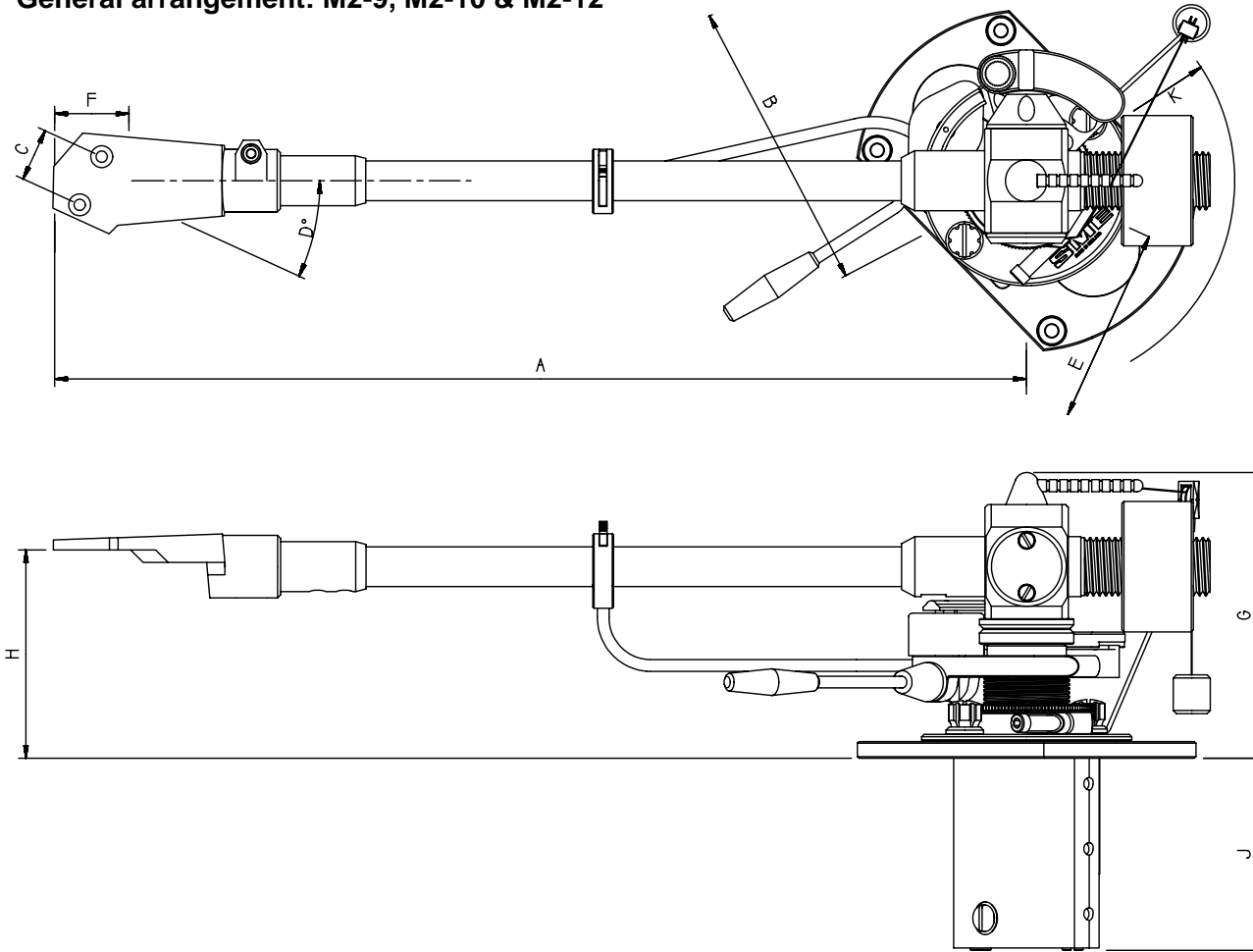
These arms offer at reasonable cost meticulous build quality with all the most important features including lightweight stainless steel tonearm, detachable magnesium headshell with azimuth adjustment, tungsten balance weight, superb quality ball race bearings etc., and a level of stiffness and rigidity to suit all types of cartridge.

All M2 arms are equipped to receive an accessory fluid damper, FD-M2 for use where severe floor vibration is encountered.

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General arrangement: M2-9, M2-10 & M2-12



Dimensions

	M2-9	M2-10	M2-12
A - Pivot to stylus	233.20	239.30	308.81
B - Pivot to turntable centre	215.40	220.00	295.60
C - Cartridge fixing centres	12.70	12.70	12.70
D - Offset Angle	23.63 ⁰	23.23 ⁰	17.62 ⁰
E - Linear offset	93.47	93.47	93.47
F - Overhang	17.80	17.30	13.21
G - Height above mounting surface	87.00 max 63.00 min	87.00 max 63.00 min	87.00 max 63.00 min
H - Mounting surface to underside of headshell	67.40 max 43.40 min	67.40 max 43.40 min	67.40 max 43.40 min
J - Depth below mounting surface	46.00	46.00	46.00
K - Balance weight clearance radius	51.00	51.00	51.00

Specifications

	M2-9	M2-10	M2-12
Effective mass (g)	9.50	9.60	12.00
Cartridge balance range	5-12	5-12	5-12
Vertical tracking force (VTF)	0-2.5	0-2.5	0-2.5
Maximum tracking error (degree/mm)	0.013	0.013	0.010
Null point: Inner (mm radius)	66.04	66.04	66.04
Outer (mm radius)	120.90	120.90	120.90
Weight, net (g)	584.00	605.00	675.00
Audio lead:			
1.2M long balanced hybrid cable with Gold plated phono plug connections to amplifier and independent ground system.			
Internal wiring:			
LCOFC			
Output:			
RCA phono			

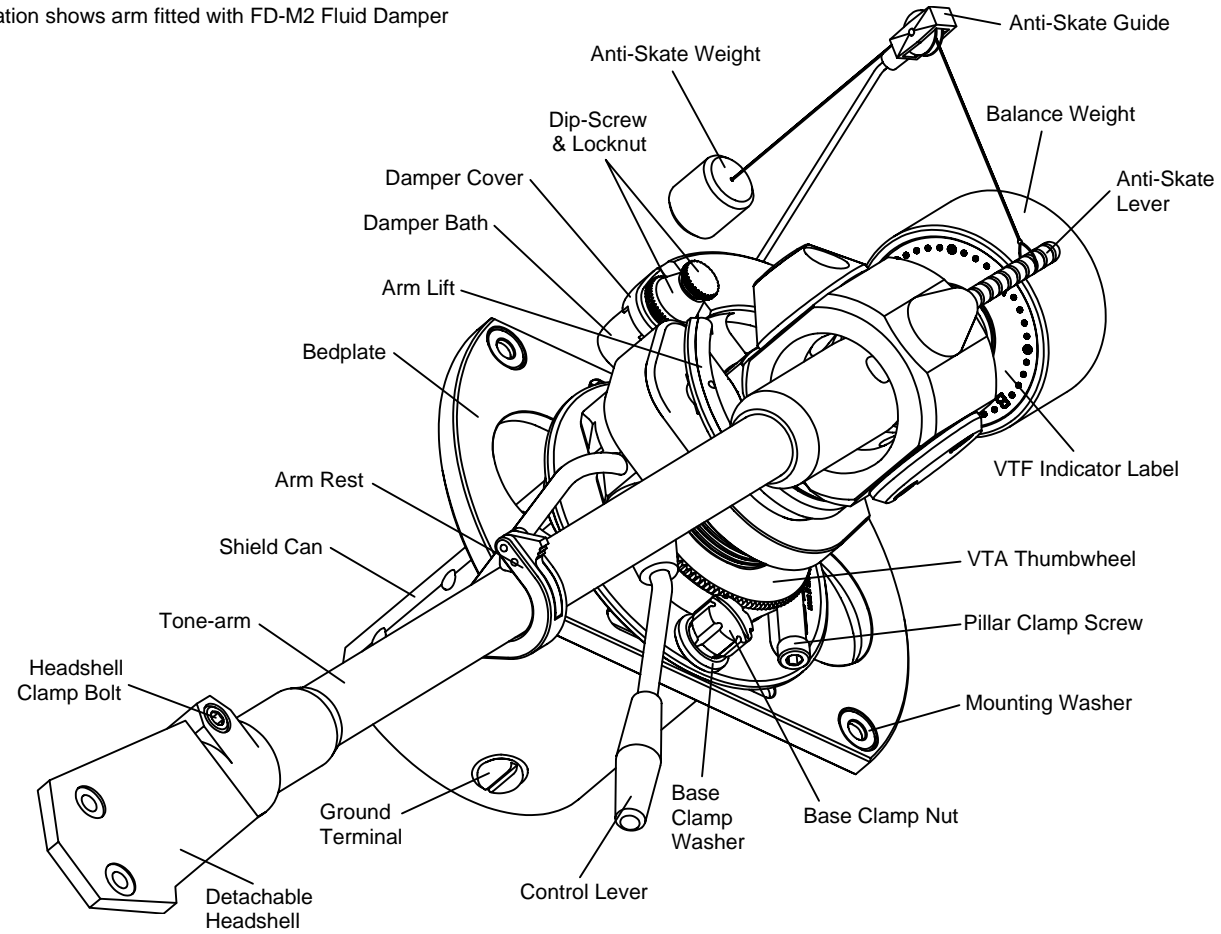
Packing list

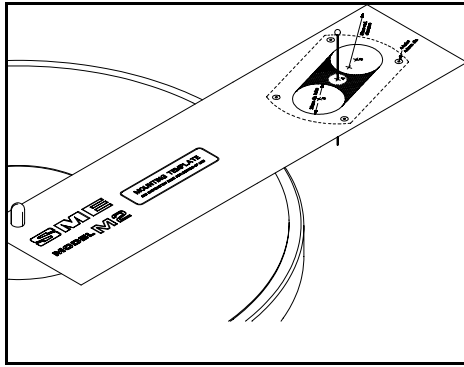
This pack is the only one in which your Series M2 precision pick-up Arm can be safely transported. Please keep it for possible future use. It contains the following:

Series M2 precision pick-up arm.	
Detachable headshell.	
Instruction book.	
Mounting template.	
Alignment protractor.	
Shell hardware.....	Finger lift and two washers. One pair #3-48 UNC x 11mm alloy fixing screws and nuts.
2.0 A/F hexagon wrench.	
Mounting hardware.....	Set of 4 M3 x 20mm button head screws 4 nuts and 4 washers 4 arm mounting washers 2.5 A/F hexagon wrench.
Audio lead.	
Bias weight.	
Bias guide.	
0.89 A/F hexagon wrench.	
Warranty card.	
Sachet of silica gel.	

Parts identification

Illustration shows arm fitted with FD-M2 Fluid Damper

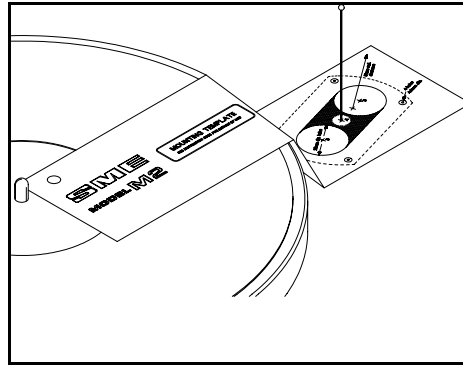




101 Preparing the arm mounting board

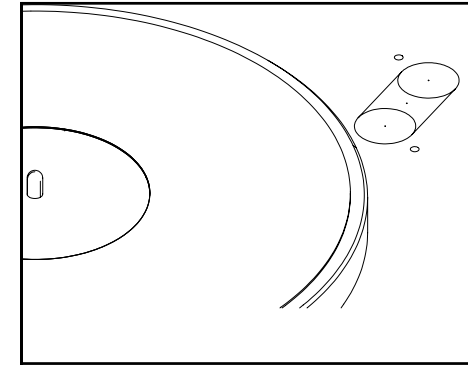
Where the deck is not already cut to accept an SME arm, it will need to be prepared as follows:

Pierce the centre point A of the mounting template to accept a pin or needle about 50mm long. Place the template on the record spindle and keeping it parallel with the surface on which the arm will be mounted pass the pin vertically through the centre point A and spike it into the pick-up mounting board.



102

Disengage the template from the spindle and maintaining the same alignment slide it down the pin and onto the mounting board. This will position the base for maximum effective movement when adjusting the horizontal tracking angle (HTA), see 125. Anti-clockwise rotation from this position up to approximately 40° can be made to meet individual needs but is not critical provided that the requirements of the alignment protractor can be satisfied. Note that the rear overhang requires a 51mm radial clearance from the point shown on the template.

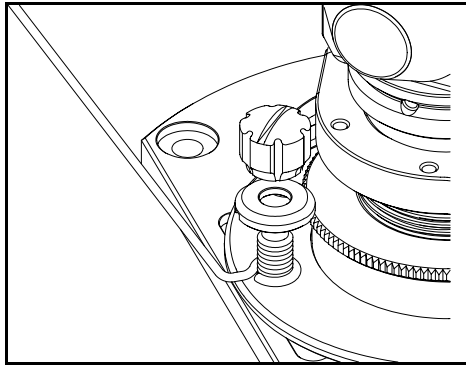


103

Using a scribe or a compass point, spike through the centre points B and centres of the four fixing holes. Remove the template and mark two Ø28mm circles about points B already centred. Join these together tangentially with two parallel lines to complete marking out.

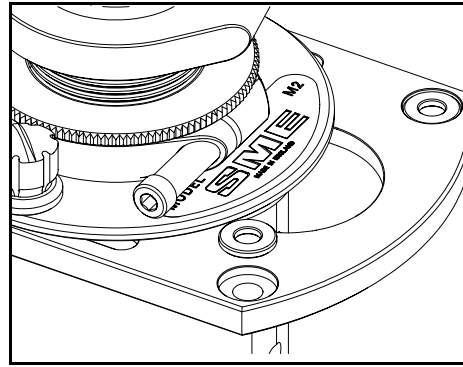
Drill four Ø4mm fixing holes and two Ø28mm holes. Cut away the remaining area to form slot and finish the edges with a file and glasspaper. If a hole saw is not available chain drill a series of small holes around the inside of the line, saw and file out.

With suitable tools and technique the procedure is similar for materials other than wood.



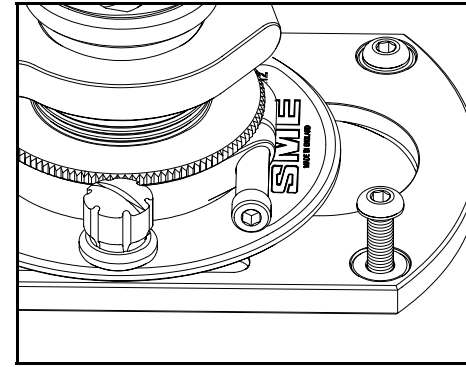
104 Fitting the arm

Remove the inner base clamp nut and base clamp washer. Press the loop at the lower end of the anti-skate guide over the base clamp bolt and fit the base clamp washer. Ensure that the loop on the anti-skate guide is fitted into the counterbore in the underside of the washer and the slot aligned with the anti-skate guide. Replace the base clamp nut and tighten, lightly.



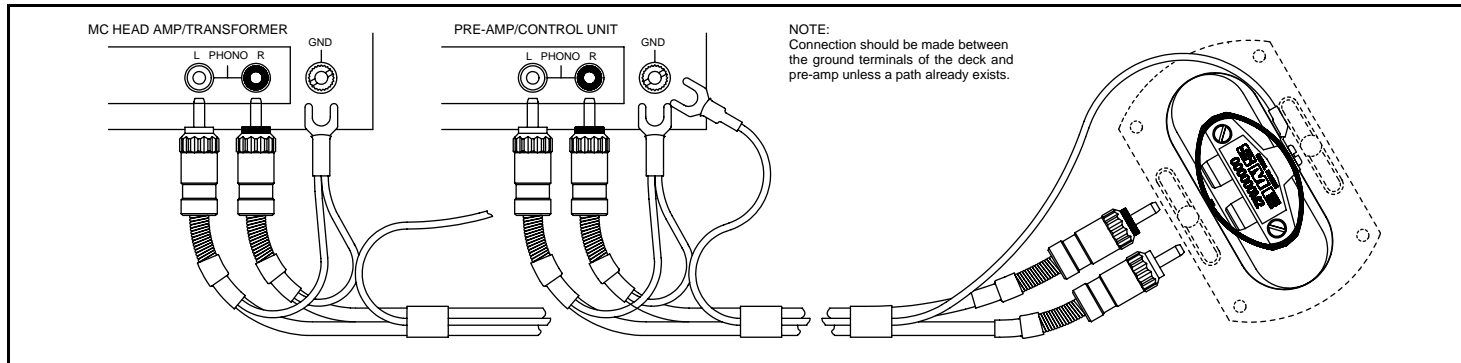
105

Fit a mounting washer to each of the four counterbores in the upper surface of the bedplate.



106

Position the arm on the mounting board and insert the M3 button head screws into the holes. If the holes are not tapped M3 to accept the screws directly, it will be necessary to fit the nuts and washers under the board. Tighten fully using the 2.0 A/F wrench.



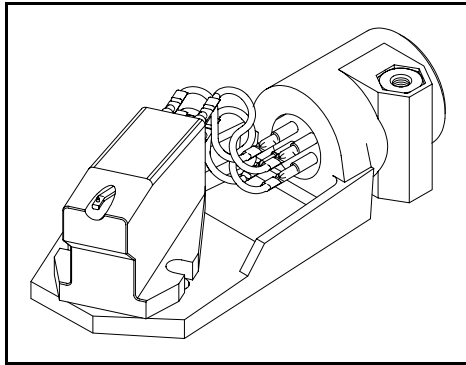
107 Audio Lead

The illustration shows use with and without a head amp/transformer and phono plug connections should be made accordingly.

Connect the ground wire serving the arm to the pre-amp ground, and those from the rear of the phono plugs to the ground terminal on the piece of equipment to which these plugs are connected.

If the turntable has a ground terminal, it too should be connected to the pre-amp ground, provided it is not already grounded by another path.

The system has been designed for a high signal to noise ratio and if this is not achieved multiple ground paths or the over proximity of mains equipment will be likely causes. Some cartridges have an external foil tag connecting the right channel ground terminal to the cartridge body. For use in a metal shell it will be necessary to remove this with a small pair of tweezers or the point of a blade, lifting the tag off over the terminal pin. If this is not done a ground loop may be formed, causing hum on the right channel.



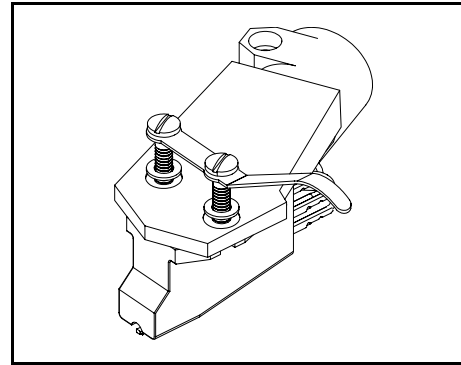
108 Fitting the cartridge

See 113 - Removing the headshell.
 Before fitting the cartridge see that the stylus guard (*not illustrated*) is in position as a precaution against accidental damage.
 The cartridge leads have Ø1.2mm receptacles to suit the cartridge. These may require adjustment with pliers or a screwdriver blade for a snug fit on non-standard terminals.

Connections to the cartridge must never be made by direct soldering.

The coding is as follows:

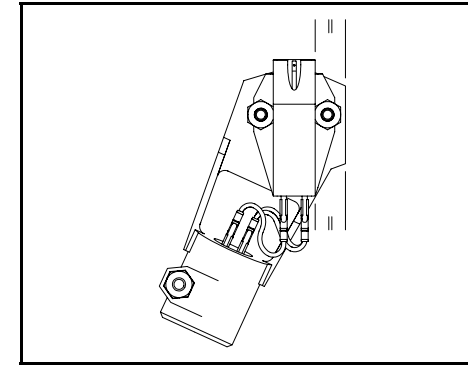
- Red - right channel signal
- Green - right channel ground
- White - left channel signal
- Blue - left channel ground.



109

Most cartridges have their own screws.
 We provide one pair #3-48 UNC x 11mm with nuts and washers, other lengths are available direct.

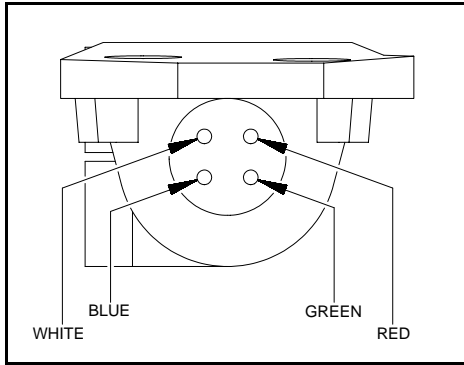
For the purist, use without the finger lift is preferred but it is unlikely that any difference will be audible. When used, the two stainless steel washers should first be fitted to the counterbores in the headshell.



110

Examine the top of the cartridge. It is important that it presents a good flat face to the underside of the headshell. Before final tightening check that the cartridge is lying parallel to the reference edge of the headshell.

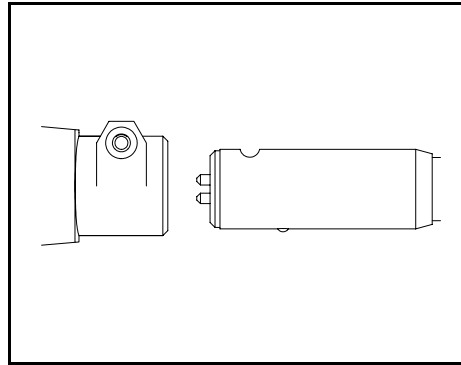
Tighten the fixing screws securely using a screwdriver, which must be a good fit in the screw slots to avoid damage. Hold the nut if necessary to prevent rotation.



111 Cartridge lead replacement

The Cartridge leads Part No. 1806, can be replaced and may be obtained from your dealer or direct.

They should be fitted according to the colour coding looking onto the shell from the front.



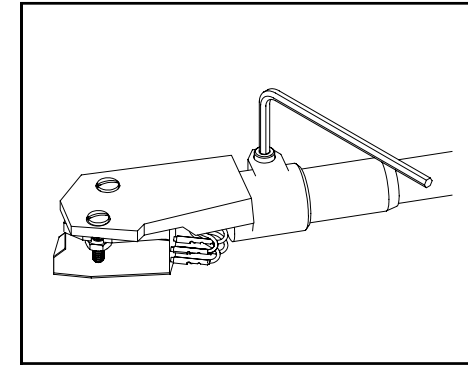
112 Fitting the headshell

Using the 2mm A/F wrench release the headshell clamp bolt and remove it. The nut remains in its housing in the underside of the headshell where it is retained with adhesive.

Offer up the headshell to the tonearm identifying the half-round keyway near the front.

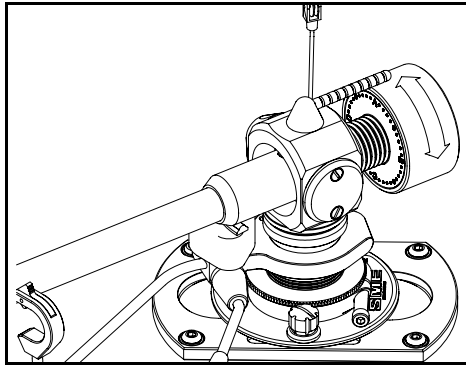
As the headshell is pushed onto the tonearm, resistance will be felt as the spring loaded contact pins in the tonearm plug are compressed.

Align the bolt hole in the headshell with the keyway in the tonearm and insert the clamp bolt until it contacts the nut. Tighten lightly using the 2mm A/F wrench.



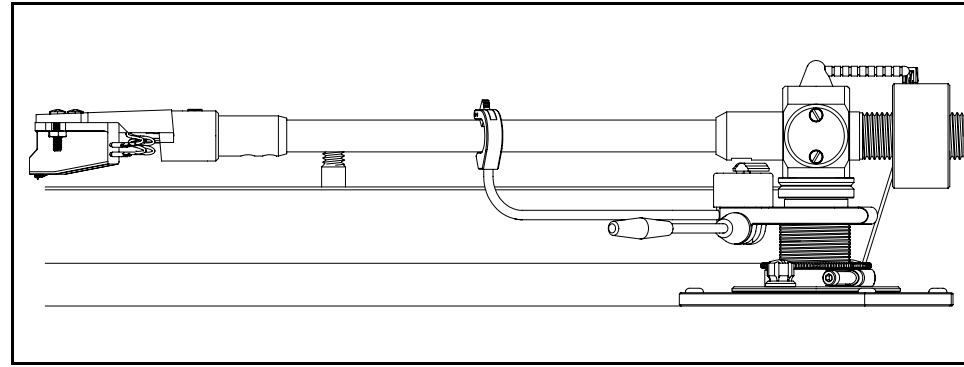
113 Removing the headshell

Using the 2mm A/F wrench release the clamp bolt and unscrew it. To remove the bolt push the headshell onto the tonearm using just enough pressure to overcome the spring-loaded contact pins in the tonearm plug. The clamp bolt should then be loose enough to lift out using the long leg of the wrench whilst applying slight tilt so that it does not slip out of the socket.



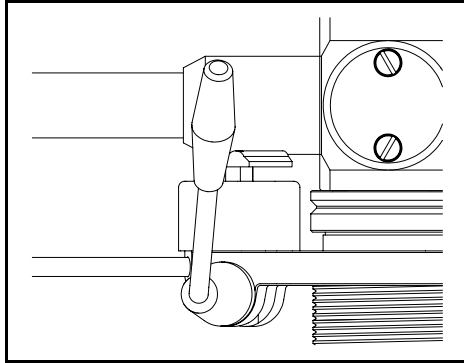
114 Longitudinal Balance

Position the arm so that it is clear of the armrest and the cartridge is clear of the turntable. Move the control lever into the lowered position. Balance the arm by rotating the weight to move it backwards or forwards as required.



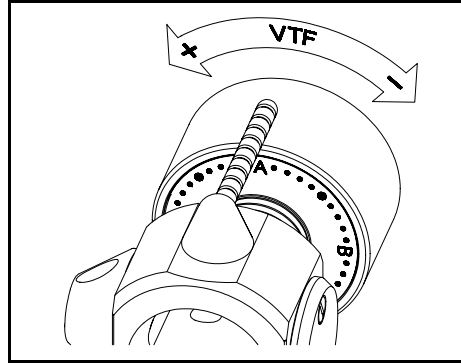
115

Adjust until the arm, with the cartridge fitted, is either level or slightly low at the front end.



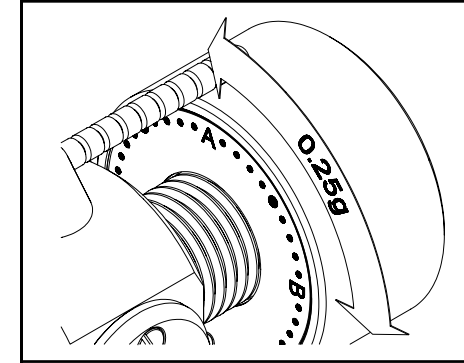
116 Vertical Tracking Force (VTF) Adjustment

For safety the lever of the lowering control should now be moved into the raised position.



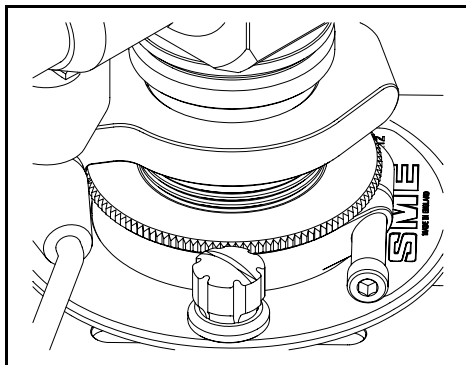
117

VTF is set after longitudinal balancing has been completed, see 114.
It is applied by rotating the weight, anti-clockwise to increase and clockwise to decrease.



118

The indicator on the front face of the weight carries the letters A-B-C-D at quarter turn intervals.
Note the position of one of the letters and rotate the weight anti-clockwise. One full turn for 1.0g and 0,25g for each letter. For example for 1.5g one and half turns will be required.

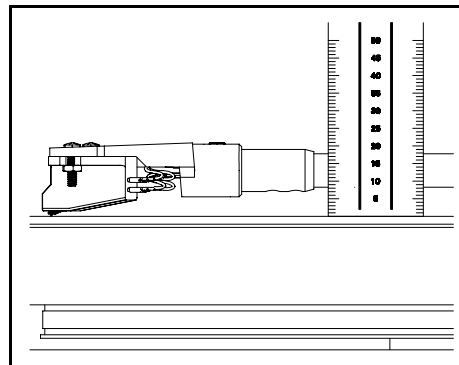


119 Arm Height (VTA) Adjustment

Release the pillar clamp screw using the 2mm A/F wrench, by one turn only.

Rotate the VTA thumbwheel clockwise to increase the height of the tonearm relative to the base.

To lower the tonearm turn the VTA thumbwheel anti-clockwise. Finger pressure may be required to move the arm downwards until it stops on the arm base, at which point further movement in either direction can be made as necessary.

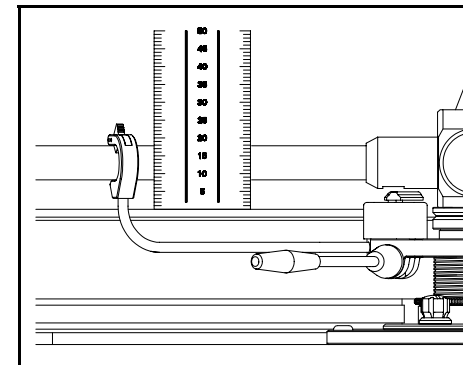


120

Use an old but unwarped record for the following procedures in case of accidental damage.

Place the arm about halfway across the record and move the control lever forward to lower it into the playing position.

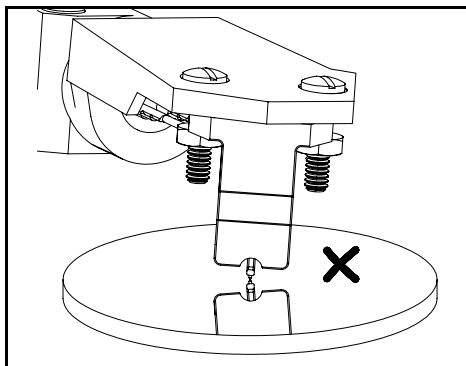
As the top of the cartridge is normally its horizontal datum, correctly fitted it will be parallel with the tonearm. The alignment protractor has also been designed to act as a height gauge. Measure the distance from the surface or the record to the top of the tonearm tube at the front of the arm using the left-hand scale.



121

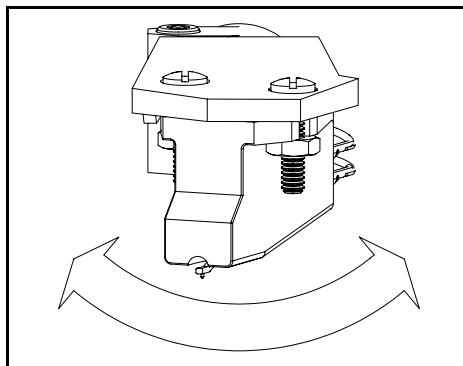
Re-position the alignment protractor about 6mm from the edge of the record. Using the right-hand scale repeat the measurement and compare it with the first one. Adjust with the VTA thumbwheel until similar readings are obtained indicating that the arm is level with the surface of the record. Re-lock the pillar clamp screw. View the arm in the playing position and re-adjust as necessary.

Other settings can be noted and used for special needs.



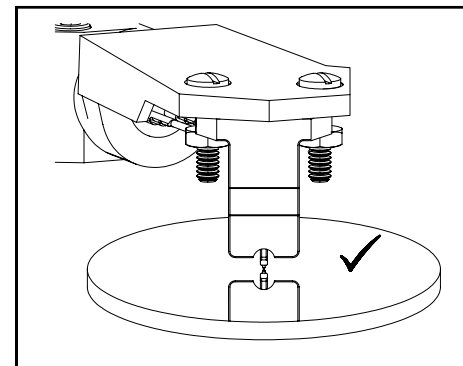
122 Azimuth Adjustment

Place a small mirror on the turntable and rest the stylus on it. Viewed in this way any departure from the vertical is accentuated and easily visible.



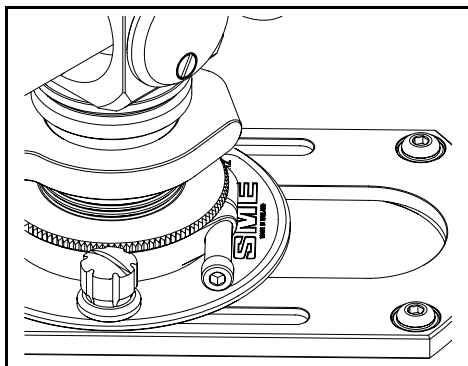
123

Release the headshell clamp bolt by one quarter turn, see 113. The stylus must be clear of the mirror whilst this is done. Holding the headshell close to the tonearm, rotate it in the required direction. The clamp bolt allows enough movement for this adjustment.



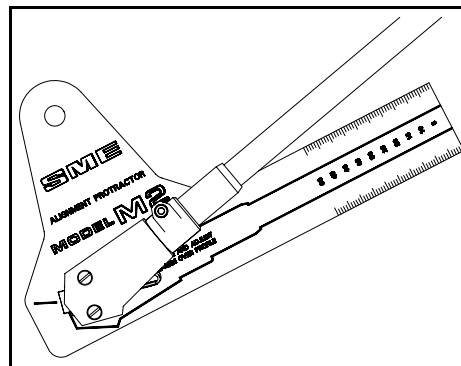
124

Re-check with the mirror and when satisfied tighten the headshell clamp bolt firmly with the 2mm A/F wrench, avoiding excessive force.



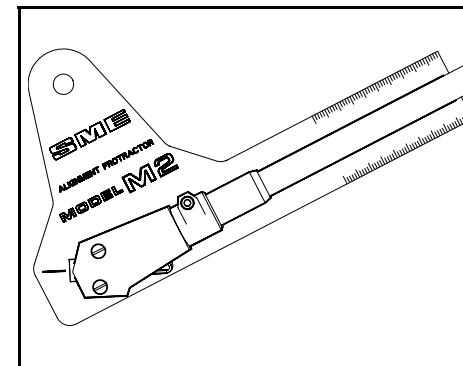
125 Horizontal tracking angle (HTA) adjustment

Place the tonearm into the armrest and release the two base clamp nuts, using a snugly fitting screwdriver. Move the base on the bedplate as far forwards as it will go.



126

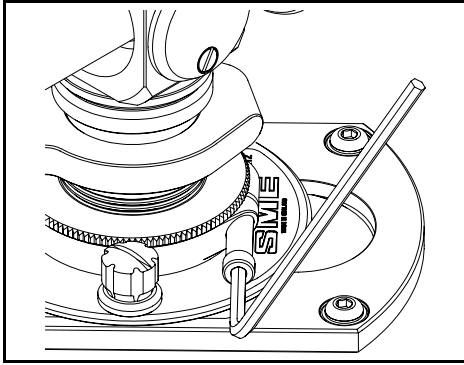
With a record on the turntable, place the alignment protractor onto the record spindle. Check that the VTF has been set to suit the cartridge in use. A small cross indicates the stylus position on the protractor. Move the arm out of the armrest and place it so that the stylus enters the indent formed at the center of the small cross,



127

Most cartridges have a stylus - fixing hole dimension of 9.5mm. With these, the outlines of the tonearm and protractor will coincide when viewed directly from above the centreline of the tonearm. With others according to the position of the stylus, it will be necessary to view slightly to the left or right of the centreline; the only requirement for the correct HTA being that the outlines appear to coincide as shown.

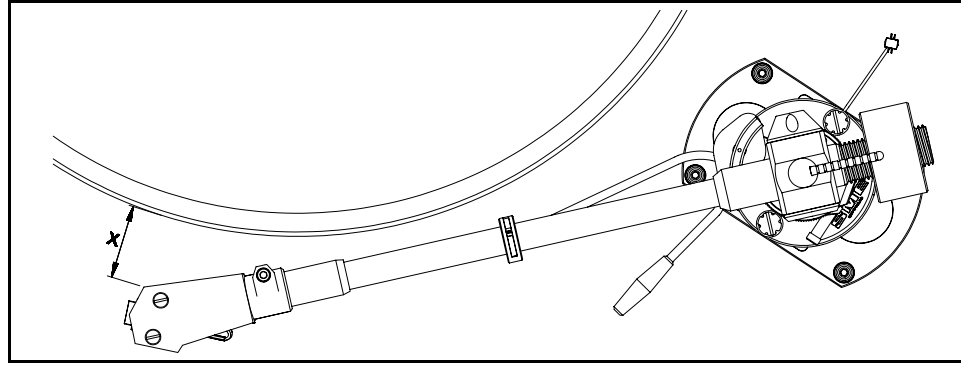
Replace the tonearm in the armrest and remove the protractor.



128 Positioning the armrest

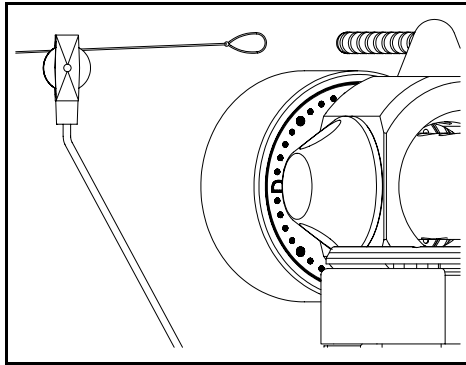
Release the pillar clamp screw using the 2mm A/F wrench.

Height adjustment will be maintained by the VTA thumbwheel.



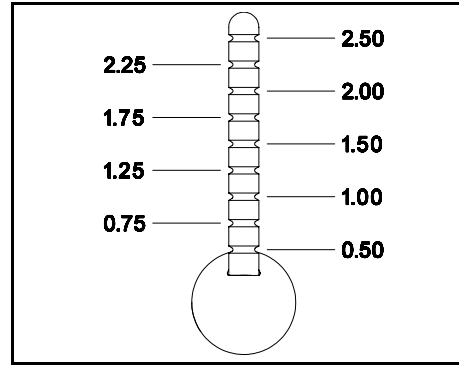
129

Rotate the pillar to position the armrest conveniently in relation to the turntable. The dimension 'X' should not be more than 75mm or less than 25mm. Tighten the pillar clamp screw firmly, avoiding excessive force.



130 Anti-skate adjustment

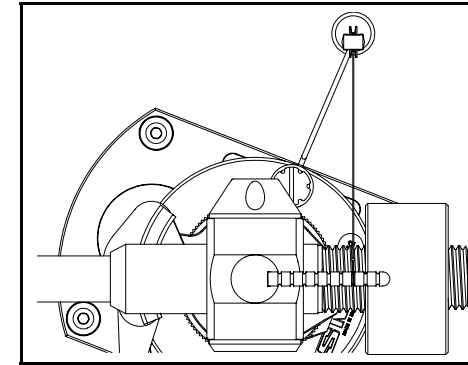
Thread the filament through the guide pulley housing and pass the loop over the anti-skate lever.



131

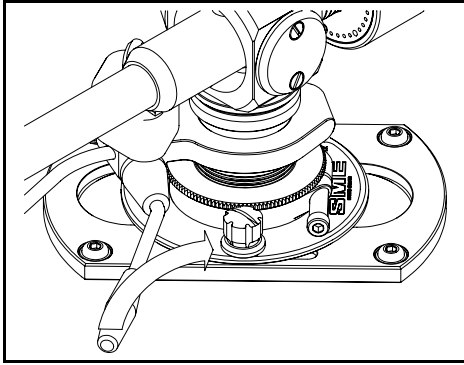
Drop the loop into the groove corresponding to the vertical tracking force being used.

Anti-skate is always a matter of compromise. The values indicated are a good starting point. Note how the stylus enters the run-in groove. 'Snatch' would indicate the need for a lower value.



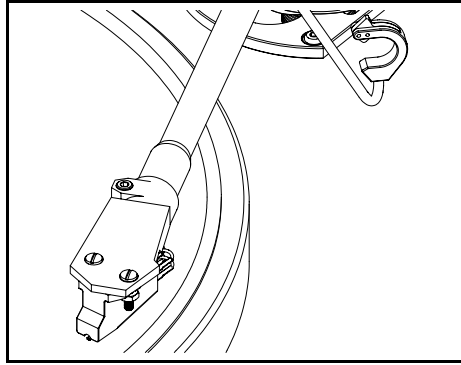
132

Loosen the inner base clamp nut enough to allow movement of the anti-skate guide. Position the guide so that the filament is approximately 90° to the anti-skate lever when the stylus is over the outer groove of a twelve inch record. Firmly re-lock the base clamp nut. Rotate the guide pulley housing to align it with the filament, which must lie in the groove of the pulley.



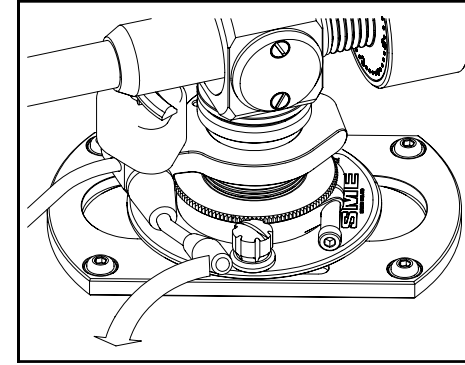
133 Operation

Rotate the control lever fully, in the direction of the arrow, and move the tonearm out from the armrest.



134

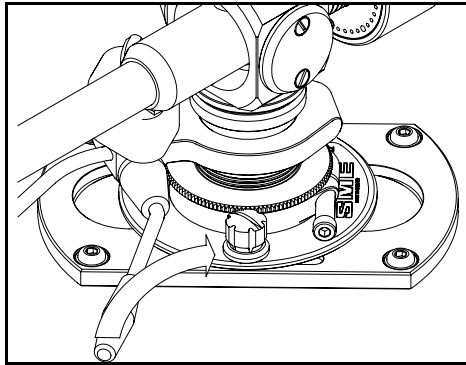
Position the arm so that the stylus is over the selected track of the record.



135

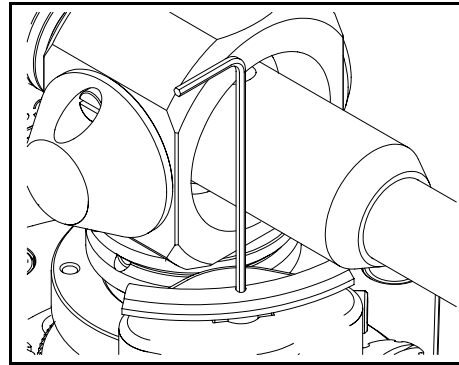
To lower the stylus onto the record move the control lever forwards, in the direction of the arrow, just past top dead centre. This will set the control in motion, at which point it will take over the movement of the lever, giving a smooth controlled descent.

Note: For the correct descent times the control must be operated exactly as above. The descent speed will increase considerably if the lever is pushed down instead of being allowed to fall of its own accord.



136 Operation (continued)

To raise the stylus from the record move the control lever back to its original position. When the arm is not in use it should always be returned to the arm rest for safety.

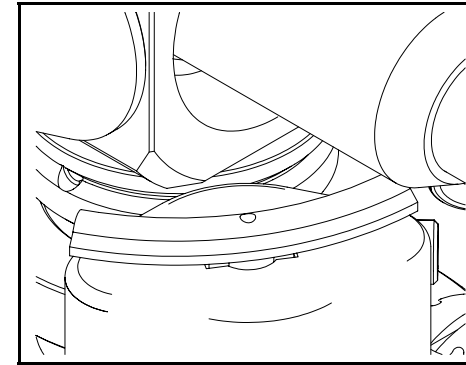


137 Adjusting height of lift

The raising and lowering control is set to suit the majority of cartridges but the height raised above the record can be changed to meet individual needs.

The small hole in the centre of the arm lift provides access to the adjustment screw. Insert the long leg of the 0.89mm A/F wrench through this hole to engage the screw. Clockwise rotation will decrease the height of the lift: anti-clockwise rotation will increase it.

The adjustment is sensitive so the wrench should only be turned a few degrees at a time. Apply firm downward pressure to the arm lift after each clockwise rotation of the adjustment screw.



138 Cleaning the arm lift

If the arm drifts outwards during raising or lowering it indicates contaminant on the rubber pad. To restore positive working, wipe the pad with a damp cloth and repeat with a paper tissue until dry. Clean the underside of the tonearm in the same manner where it contacts the rubber pad.

Appendix

We hope these instructions have made the installation of your Series M2 precision pick-up arm straightforward. Care for it as you would a camera. *Do not* apply oil or other lubricant to any part of it. *Do not* attempt to take it to pieces or interfere with any of the screws except as directed in the instructions. To do so will invalidate the warranty and may occasion costly repairs.

If you have a problem concerning operation or service, contact us at the address overleaf in the first instance, quoting the unit's model and serial number. *Do not* send the arm to us unless requested to do so. We provide a quick, efficient service through our agents or direct from the factory to any part of the world.

SME

MANUFACTURED · SME LTD · STEYNING · SUSSEX · ENGLAND

Tel +44 (0)1903 814321 · Fax +44 (0)1903 814269
info@sme.ltd.uk