User´s Manual

Turntable L-3

Table of Contents

Safety Information

Caution !

To avoid the risk of electrical shock, do not open the device or remove it from its housing. For service procedures, contact a qualified technician or the manufacturers directly.

Read the user's manual carefully and completely before using the device.

Follow all of the warnings and operating instructions contained in this manual or written on the device itself.

Store the device in a safe place!

Power Supply

Be sure to use this equipment only with the provided cables and only when connected to a suitable AC voltage source (see the chapter on technical data). The equipment can only be used with a grounded voltage source. Damaged cables are should never be used and require immediate replacement.

Electrical Charge

Before installation, be sure that the device does not contain an electrical charge. Unplug the power cord or shut off the power source.

Cables

Use only the cables that were delivered with the device. Damage that occurs from the use of cables that were not provided by the manufacturer is not covered by the warranty. Be certain that the cables lay in such a way that they do not cause a tripping hazard.

Mechanics

The device should only be used on a stable, level surface. Be certain that the drive belts can move freely without interference from other objects and that they do not rub or grind.

Breach of Warranty

The manufacturer cannot accept responsibility devices that

- were not used in accordance with the given regulations,
- were repaired or modified by unauthorized sources,
- exhibit visible external damage that was not reported upon delivery,
- were damaged by third party devices.

The manufacturer cannot be liable for damages that may occur to other devices as a result of use of this product.

Operational Range

These devices are intended to be used indoors. Avoid exposure to extreme cold, heat and moisture.

Description

The L-3 drive unit is a heavyweight turntable that makes it possible to play records at 33 1/3 and 45 rpm thanks to

the M-1 Motor Housing and a mounted tone arm. The chassis can be equipped elective with one or two tone arm bases, onto which tone arms of 9" to 12" in length can be attached by way of an adjustment mechanism. With this adjustment mechanism, on which the base plate and the attached tone arms can be progressively rotated, it's possible to set each tone arm into any desired position also under allowance of given anti-skating zero points of certain tone arms.

Delivery Contents

1 x L-3 Drive Unit incl. 1 or 2 base plates of your choice
1 x Floor disc Ø 70 mm
1 x M-1 Motor Housing incl. Adapter Base
3 x Floor discs Ø 40 mm
1 x NRM-1/S Control Unit
2 x Drive tape, 1 x drive belt in clear case
1 x IEC connector
1 x User's manual
1 x Bull's eye level big
1 x Bull's eye level small
1 x Toolkit
1 x Bearing oil
1 x Aluminum – Polish
1 Pair of white gloves

Installation

Basically the L-3 will be delivered in a pre-installed condition, therefor only a few of the following steps will be necessary to complete the turntable. Even so this manual will go into advanced installation steps to make further work more comfortable for our customer.

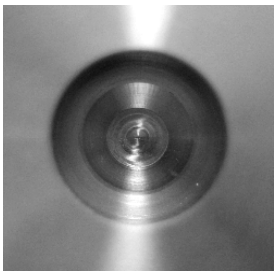
Please use the supplied pair of gloves during installation to avoid finger-prints and scratches on the surfaces of the high gloss drilled aluminium-parts.

1. Chassis and Bearing

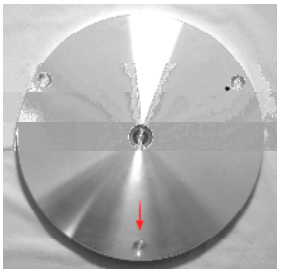
The turntable-chassis will be shipped pre-mounted, the customer has only to complete the bearing to fit the platter and to install the arm-base-plate. The bearing bushing the bearing ball and the needed oil are included.

Please start with the positioning of the small round center-plate. This defines the final position of the turntable. (pic. 7.1) The chassis-bottom must now cover the center-plate exactly centered. The countersink within the center-plate helps to do this propper. (pic. 7.2) Please rotate the chassis-bottom until one of the three countersinks is bound forward (pic. 7.3).

Pic 7.1



Pic 7.2



Pic 7.3

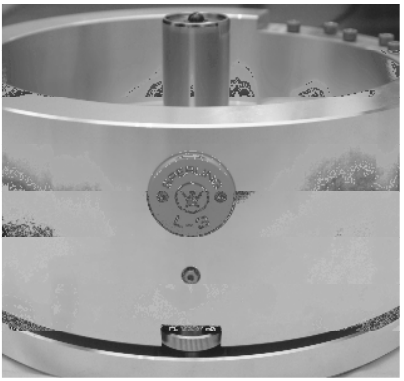
The set-up area should be solid, flat and of adequate size.

Please place the center section of the turntable on the chassis-bottom. The center spike should fit into the countersink of the small round center-plate whereas the three adjustable outer spikes should fit exactly with the three countersinks of the chassis-bottom. (pic. 8.1) The Sperling-Logo must be faced forward to ensure the correct position of the arm-base (pic. 8.2)

Please use the supplied circular level to level the chassis (pic. 8.3) Turning the adjustable spikes clockwise will sink

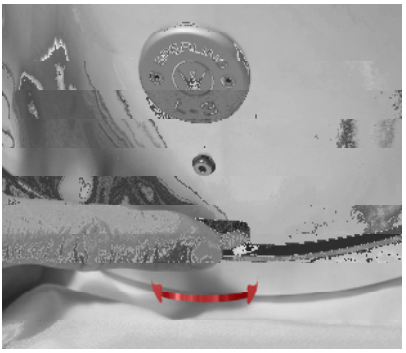
the chassis, counter-clockwise will lift it up. (pic. 8.4) The found position of these spikes can be fixed by the three small screws above the knurled-nuts. The knurled screws are fitted with 6 drilled holes in a 60° layout. These slots are for the metal pin included in delivery as a tool for finest adjustment of the turntables leveling.

Pic 8.1



Pic 8.2

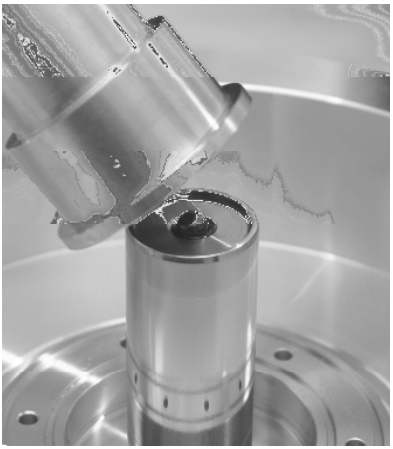
Pic 8.3



Pic 8.4

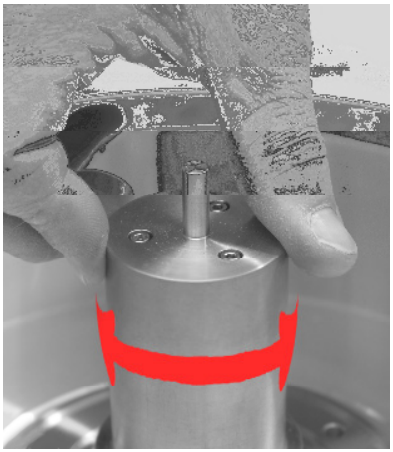
When the leveling has been done the bearing can be installed. Please de-install the bearing-cover-ring by loosen the six screws. Place the bearing ball into the countersink of the bearing-shaft. Now use the supplied oil-bottle and fill oil from above over the bearing-ball until the oil runs down the shaft into the oil-reservoir. (pic. 9.1) Stop doing so when nearly 1mm of oil covers the bottom of the reservoir. Now slide the bearing bushing carefully on the shaft using alternating motion (pic. 9.2)

Pic 9.1

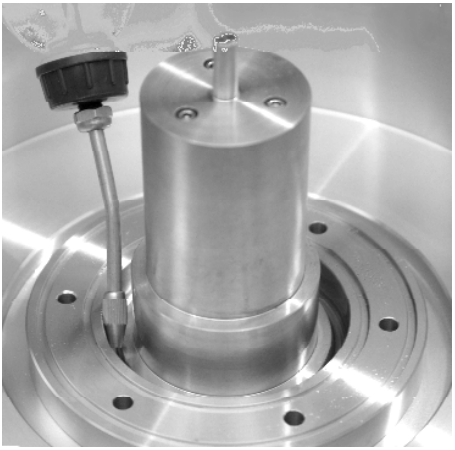


Pic 9.2

Turn the shaft a few times to make sure that the oil-film fills the whole bearing-area. (pic. 9.3)

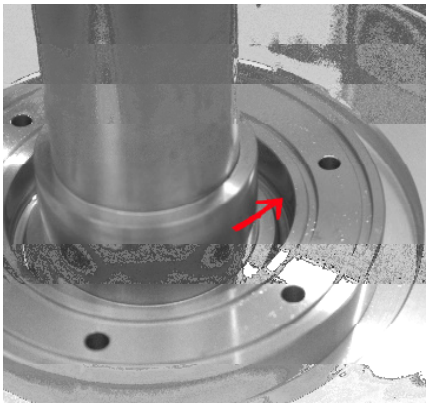


Pic 9.3

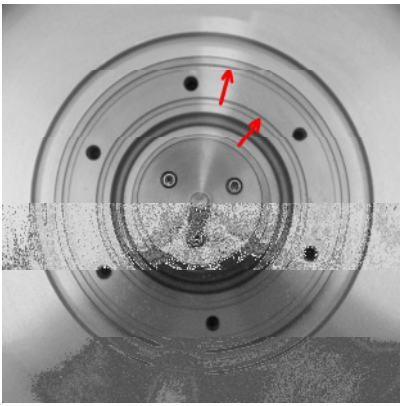


Pic 9.4

Now add oil to the reservoir (pic. 9.4) as long as the oil level reaches the code ring on the inner side of the reservoir (pic. 10.1 arrow).



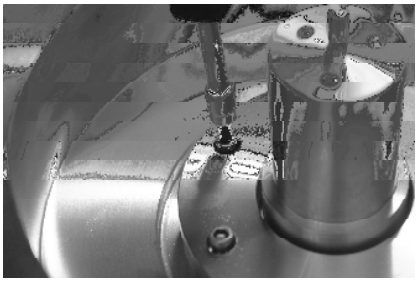
Pic 10.1



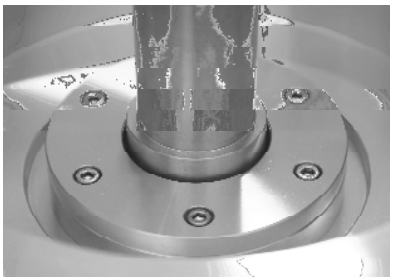
Pic 10.2

Afterwards please place the two supplied o-rings into the designated grooves of the oil-reservoir (pic. 10.2) and fix

the bearing-cover-ring with the six screws. (pic. 10.3). Please fasten the screws criss-cross to avoid bracing.



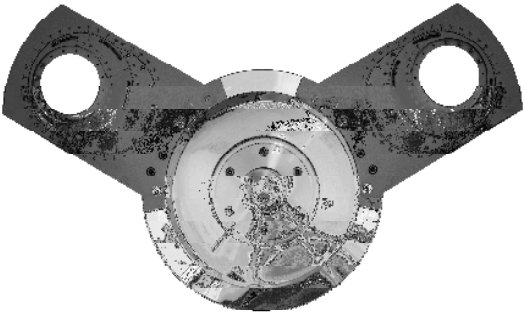
Pic 11.1



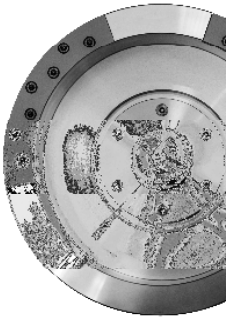
Pic 11.2

2. Installation of the Tone Arm Bases

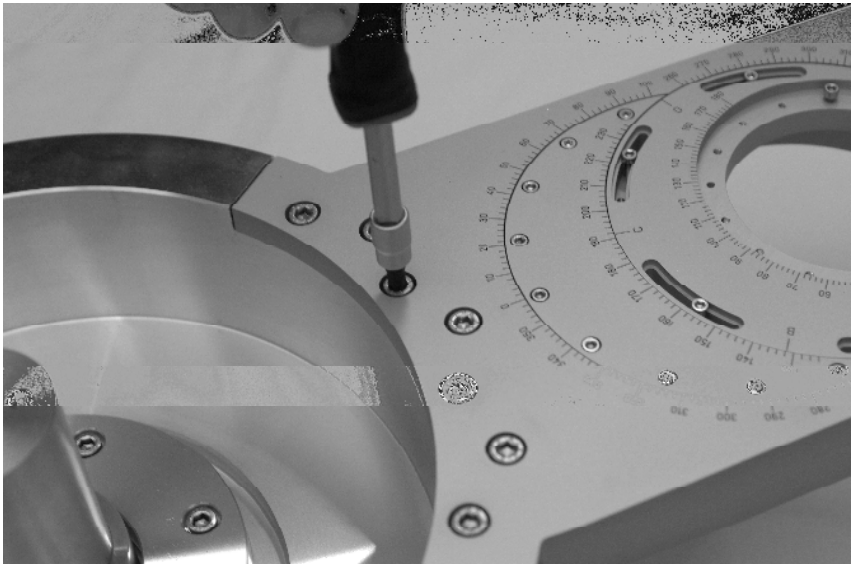
The turntable offers the opportunity to install two tone arm bases. (pic 11.1). They are not mounted on delivery. Please use the screwed-in M6x20 screws for that. Please fasten them from inwards to outwards to avoid bracing. If the turntable was ordered with only one tone arm base the unused left seating is covered by a dummy-cover (pic 11.2). When a second arm base should be installed in future please remove the dummy-cover and use the screws to fix the additional arm base.



Pic 11.1



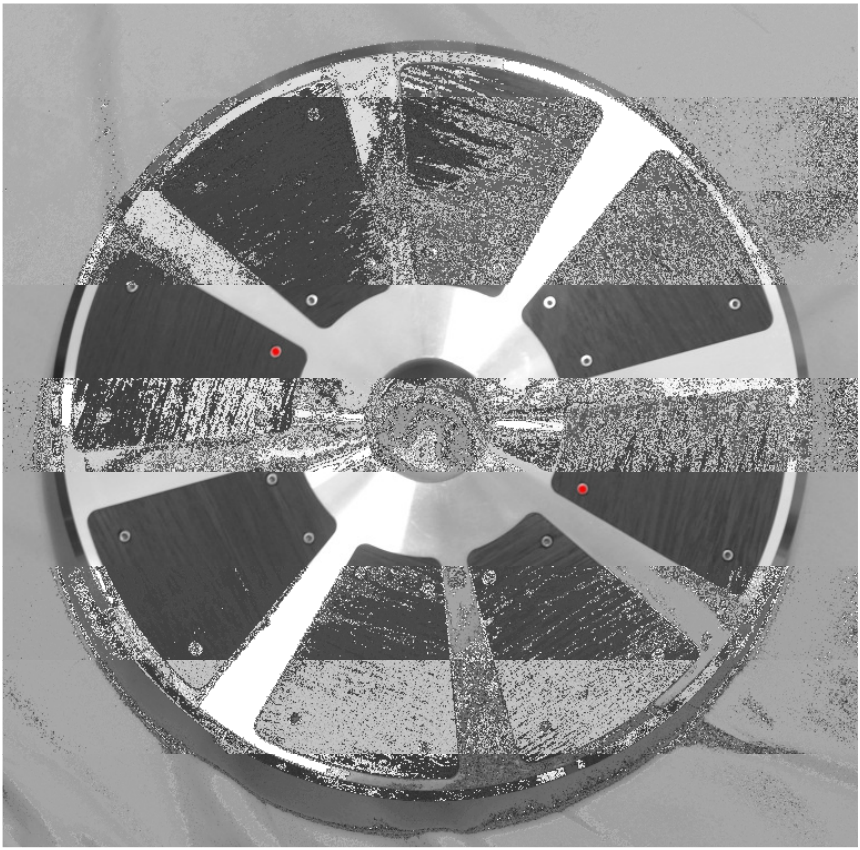
Pic 11.2



Pic 12.1

3. Platter

To install the platter one needs the supplied two black handles and the Allen key SW 2,0. Two opposing platter-inlays have srews with a red dot (pic. 13.1)

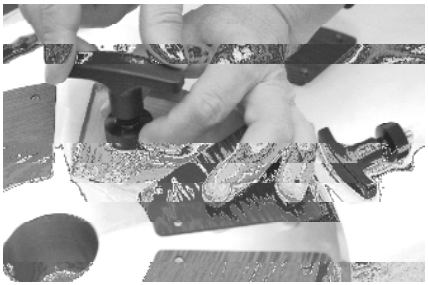


Pic 13.1

Please remove the eight screws of these two inlays. Under these inlays you will find two M8-threads (pic. 14.1) where the two handles can be screwed-in and locked with the knurled-nuts. (pic. 14.2)

Now you can slide the platter over the bearing bushing. (pic 15.1).

Pic 14.1



Pic 14.2

Please remove the handles, fit the inlays and tighten the screws. Please use the same position for the red marked screws like in the delivered condition for later installation.

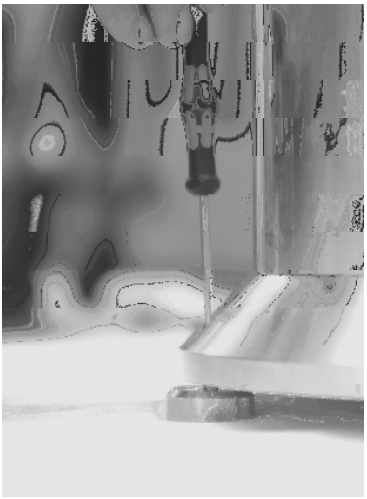
Caution! The platter must be placed absolutely vertically in order to conform with the tight production tolerances! Please avoid to tilt the platter during this installation. (pic. 15.1). Please make sure that both bearing bushing and the platter have nearly the same temperature (best 20°C). Please avoid to much difference in temperature between platter and bearing bushing. Let the platter slide down gently till the lower end position without let it fall down. This could destroy the bearing ball!

Pic 15.1

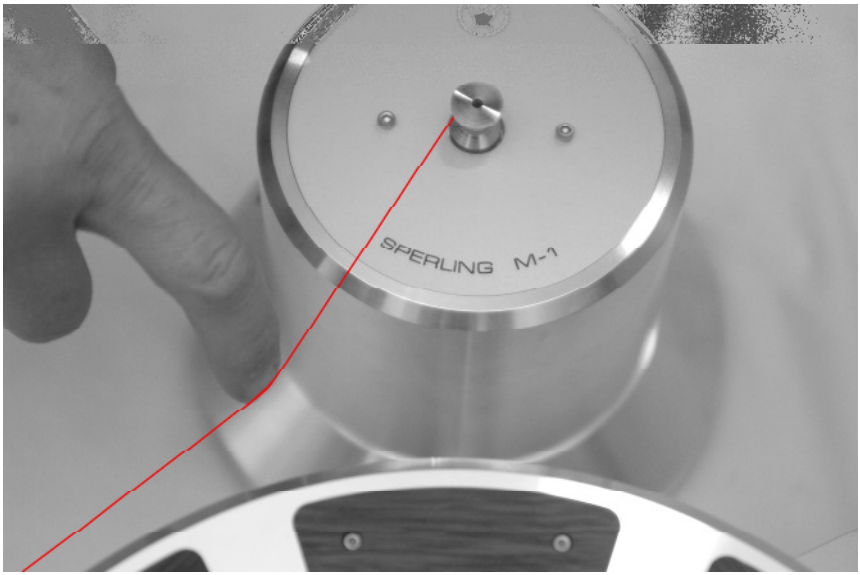
4. Motor Housing

Place the motor housing centered behind the drive unit on the provided plates with 40 mm diameter (pic 16.1). Place the provided small bull's eye level on top of the motor-pulley and level them by adjusting the three feets (pic 16.2). Turning to the right will raise the motor up and turning to the left will lower it. Place the drive belt around the turntable and the drive pulley of the motor housing. By moving the motor housing, you can make then tighten the drive belts. Be careful not to make it too tight: the distance should be such as that you can fit about one finger between pulley and platter. (pic 17.1) Be sure that the white tape's sticky side is pointing outward.

Pic 16.1



Pic 16.2

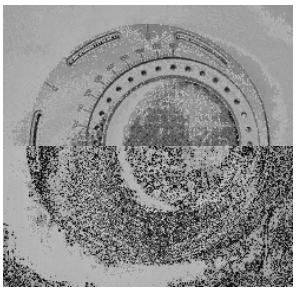


Pic 17.1

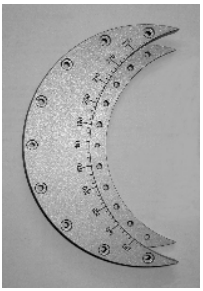
5. Mounting the Tone Arms

You can mount practically any tone arm between 9” and 12” available on the market onto the innovative tone arm bases with the rotation plate mechanism.

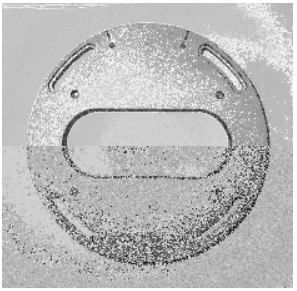
Aside from the large circle (Pic 18.1) and the circular segment (Pic 18.2), you’ll need the actual rotation plate that the tone arm is attached to in order to do this (pic 18.3). This plate is made individually for every arm or arm producer, pictured here with a plate for tone arms with SME-Cutout (see also the table on pages 31/32). The corresponding plates for the arms are delivered with the drive unit. If you want to use another tone arm in future, you can order a matching plate at any time. Custom-designs are no problem – just contact us. For individual constructions, a universal plate without holes is also available.



Pic 18.1



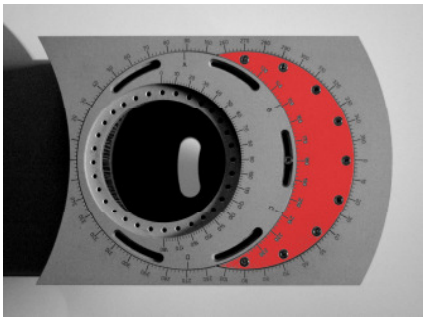
Pic 18.2



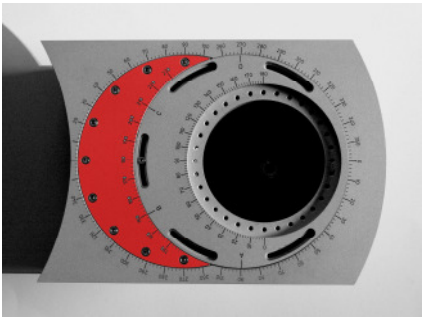
Pic 18.3

The large circle and circular segment are mounted in the position ex factory with a length of 9” to about 10.5” (Pic 19.1). For this, the semi-circle is mounted outside of the large circle inside. To mount longer tone arms of up to

12”, the semi-circle and the large circle can be interchanged (Pic 19.2). To do so, remove the M3 Allen screws with the provided SW 2.5 Allen wrench.



Pic 19.1



Pic 19.2

Now fix the tone arm onto the corresponding rotation plate. Now place the rotation plate with the tone arm in the opening of the large circle, but do not screw the screws tight yet.

In the large circle, as well as in the rotation plate, there are slots that allow you to secure them in any desired position. Through the off-center placement of the rotation plate in the large circle, and mounting distance can be achieved. At the same time, the anti-skating zero position of the tone arms can be taken into account and adjusted exactly. Don’t screw any screws into the plates – this way you can still turn them and find the optimal position of the tone arms through the usual methods and tables (i.e. IEC,

DIN, Audio, Baerwald/Löfgren, Dr. Feickert). Now you can affix the places by screwing in the screws.

→ **TIP:** On the bottom parts of the rotation plate, there are flush-mounted O-rings that can guarantee a precise leading of the rotation plate. These are delivered with a light coat of technical Vaseline to help the plate rotate more easily. If mounting activities are needed later on, be sure that there is enough smeared on the rubber leads. Only use the provided technical Vaseline for this purpose.

6. Scaling the Tone Arm Bases

Around the large circle, as well as around the smaller rotation plates, there's a scale of 0-360°. A part of the scale on the large circle is on the removable circular segment, which completes the scale circle depending on mounting. On the edges, there are letters (A - B - C - D) on the large circle with a distance of 60° from one another. On the inner small rotation plate, the letters (a - b - c - d) have a distance of 90° from one another. There are exceptions to this, especially when the mounting feet of the tone arms is too big to place the four letters. An example for this is the Dynavector DV505. In this case, there are only two letters (a - b).

6.1 Resetting the Position

If the tone arm has been mounted and adjusted, you can note the position with the help of the scale. To do this, simply write down the letter/number combination with the capital letters on the big circle with the corresponding degree and the lowercase letter with the corresponding

degree. In image 21.1 for example, it would be B-98 and d-56. With this information, you can remove and remount tone arm without losing precision in just a few minutes, as long as the small rotation plate remains mounted. In the same way, it's also possible to mount the tone arm on the other bases of the drive unit or on another L-1, L-2, or L-3 turntable.

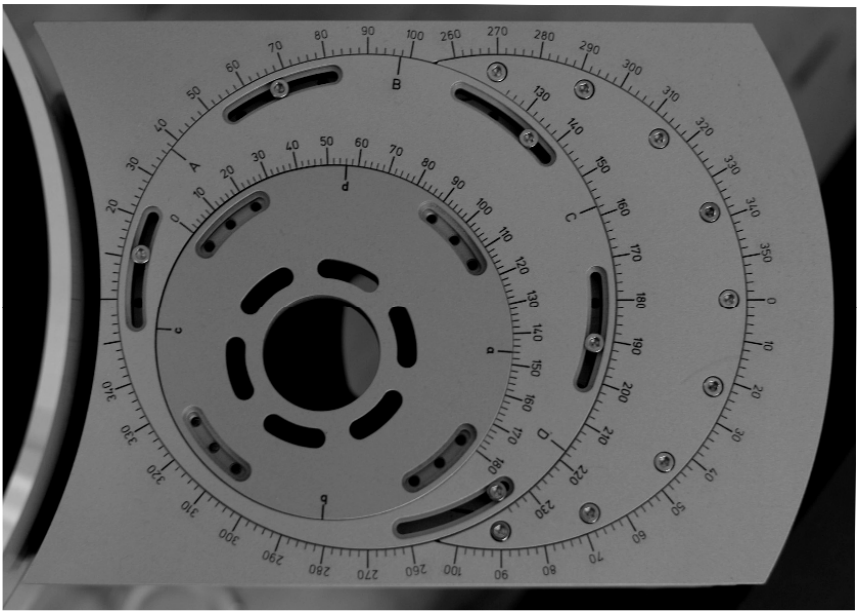


Bild 21.1

Tonality

To get the best possible sound with a HiFi device, it's also necessary to be aware of the mechanical coupling of the individual components. The L-3 provides the possibility to control both – the coupling of the bearing as well as the coupling of the vinyl to the platter.

The variation of the coupling between the bearing and the ground has a massive influence on the low frequency performance as well as on the soundstage. The L-3 offers the opportunity to variate the strenght of the coupling between bearing and ground by turning the three knurled-screws steady up or down. Turning them right will decrease (pic 22.1) turning them left will increase the coupling of the bearing (pic 20.2).

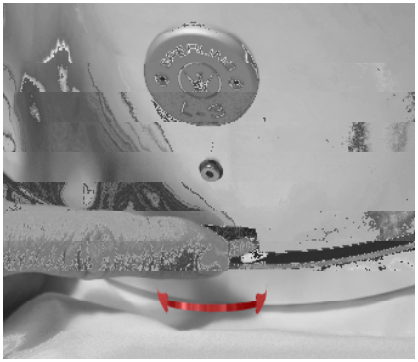


Bild 22.1

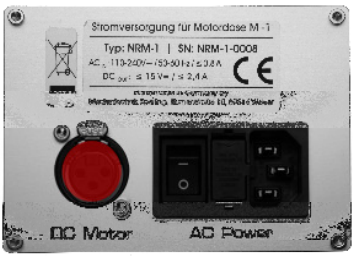
Bild 22.2

The eight inlays in the plate that the record lies on are delivered in acrylic – although they can of course be replaced with alternative materials like different kind of wood.

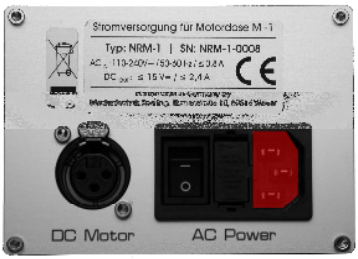
For this very reason, it's possible to adjust your drive unit according to your own individual taste, music, amp, speakers, and even the room itself. To help you accomplish this, we offer a wide range of wood types and alternative materials. Just contact us – nearly any kind of shapeable material is possible. We're of course open to suggestions and would love to hear about your experiences, which can be posted on our website at *www.sperling-audio.de*.

Connecting the Control-Unit

Please connect the supply-cable of the motor-housing with the plug „DC MOTOR“ of the Control-Unit. (Pic 24.1).

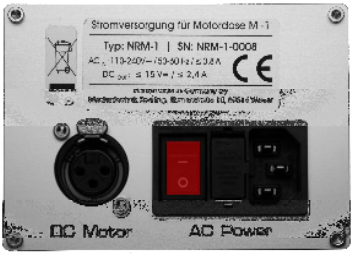


Pic 24.1



Pic 24.2

Connect the Control-Unit with the mains using the delivered power-cord (Pic 24.2). Please be aware of the maximum allowed voltages. (see technical data) . One of the contacts of the mains-plug is marked with a red ring. This contact has to be connected with the phase L of the mains. During this operation both switches (mains and speed) should stand in position „0“ (Pics 24.3 and 24.4) (on delivery).

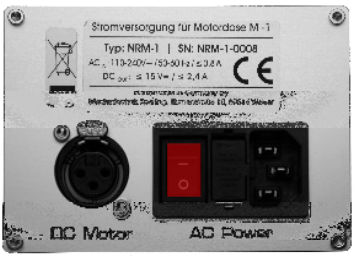


Pic 24.3

Pic 24.4

Start-Up

Turn the unit on by using the power switch on the backside (Pic 25.1).



Pic 25.1

Pic 25.2

The red led on the frontside should now indicate the standby (Pic 25.2).

Speed-control

Select the requested speed by turning the speed-switch to the left side for 33.1/3 or to the ride side for 45. Now one can use the speed-knobs (pic 26.1) for the final speed-adjustment associated by a stroboscope disc.

Bild 26.1

For both speeds ten-speeder potentiometers have been built in. The little led in the tip of the speed-switch indicates whether the motor is running.

⟶ **TIP:** Gently spin the turntable before turning on the motor. Doing so will help prevent the belts from slipping and will reduce the time it takes for everything to start working.

Quality

Thank you for choosing this high quality, made in Germany product.

All drive units are made by hand in Germany and are subjected to a 24-hour endurance test before shipping. Additionally, each drive unit is put through audible testing. The combination of these two tests guarantees the best possible operational reliability.

Care

Only clean the drive with a soft, dry towel without lint on it. Wooden parts should not be wiped off with moist materials.

To care for aluminum parts with a rotated high gloss surface, such as the turntable and the feet, we've provided you with a special cleaner. Apply it with a soft towel in the direction of the turned structure and let it dry a bit. Then polish it with another clean, lint-free towel. The parts will now have their full glossy finish and are less susceptible to fingerprinting.

Technical Data

L-3 Drive Unit

Depth	550 mm
Width	650 mm
Overall height, without tone arm	260 mm
Weight	ca. 50 kg

Motor-Housing M-1 mit Unit Base F-2

Diameter	180mm
Hight	160 mm
Weight	4800 g

NRM-1/S Power Supply

Depth	197 mm
Width	120 mm
Height	94 mm
Weight	1286 g

Allowable mains voltage: 100-240 V ≈ , 50-60 Hz

Base Plate Allocation Table / Tone arms

Order Number Base Plate	Mountable Tone Arm
L-1.3.4	Universal plate / dummy cover
L-1.3.4.01	Linn
L-1.3.4.02	Dynavector DV 505
L-1.3.4.03	SME
L-1.3.4.04	Koshin 801
L-1.3.4.05	Audio Technica ATP12

L-1.3.4.06	Zeta
L-1.3.4.07	Manticore 9”
L-1.3.4.08	Graham The Phantom
L-1.3.4.09	Raven 10.5
L-1.3.4.10	KUZMA 4 Point
L-1.3.4.11	Micro Seiki MA-505 MK III
L-1.3.4.12	IKEDA IT-407
L-1.3.4.13	reed 3P 12”
L-1.3.4.14	Ortofon RS 212 D 9"
L-1.3.4.15	Ortofon TA-110 9"
L-1.3.4.16	Durand Telos
L-1.3.4.17	Brinkmann 10.5 / 12.1
L-1.3.4.18	HiFiction AG Thales Simplicity II
L-1.3.4.19	Durand Talea II
L-1.3.4.20	Artemis TA-1L
L-1.3.4.21	AXIOM
L-1.3.4.22	IKEDA IT-407 mit VTA
L-1.3.4.23	Fuchs 13,5 "
L-1.3.4.24	Schröder Reference
L-1.3.4.25	Durand Kairos
L-1.3.4.26	Dynavector DV 507 MK II
L-1.3.4.27	Reed 2A
L-1.3.4.28	
L-1.3.4.29	
L-1.3.4.30	
L-1.3.4.31	
L-1.3.4.32	
L-1.3.4.33	
L-1.3.4.34	
L-1.3.4.35	
L-1.3.4.36	

L-1.3.4.37	
L-1.3.4.38	
L-1.3.4.39	
L-1.3.4.40	
L-1.3.4.41	
L-1.3.4.42	
L-1.3.4.43	

This table is constantly being expanded – not least because of your feedback and orders. A current list of available base plates can be found at *www.sperling-audio.de*. We cannot guarantee the completeness of the types of tone arms in the allocation table. If in doubt, contact the producer of the tone arm directly to check on compatibility.

CE

EG-Konformitätserklärung
EC-Declaration of Conformity

Hersteller: *Manufacturer:*	Medientechnik Sperling
Anschrift: *Adress:*	Blumenstraße 10 D-59514 Welver Germany
Produktbezeichnungen: *Name of products:* *Type or model:*	M-1 ; MR-1 NM-1 ; NRM-1 ; NRM-1/S

Das bezeichnete Produkt stimmt mit den Vorschriften folgender europäischer Richtlinien überein:
The indicated product is in correspondence with the following regulations of European Council:

Nummer / Kurztitel *Number / Titel*	Eingehaltene Vorschriften *Observed regulations*
89/336/EWG EMV-Richtlinie *EMC-Directive*	EN 61000-4-2, Lev. 3 EN 61000-4-3, Lev. 3 EN 61000-4-4, IN: Lev.4, Out: Level 3 EN 61000-4-5, Lev. 3 EN 61000-4-6, 10V EN 61000-4-8 EN 61000-4-11 EN 55022,B
73/23/EWG Niederspannungsrichtlinie *Low Power Directive*	

Aussteller:
Issuer:

_____
Ansgar Sperling

Ort, Datum:
Place, Date:

Welver, 28.05.2008

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, beinhaltet jedoch keine Zusicherung von Eigenschaften. *This declaration certifies the compliance with the indicated regulations, it doesn´t gurantees attributes.*

Medientechnik Sperling
Blumenstraße 10
D-59514 Welver
Germany

Fon: +49 (0) 2921 3509390
Fax: +49 (0) 2921 3509389
email: info@sperling-audio.de

USt-Id.Nr. DE 237321516
St.Nr. 343/5138/2332

Notes

Medientechnik Sperling
Dipl. Ing. Ansgar Sperling
Blumenstraße 10
59514 Welver

Germany

User's Manual – L-3 Drive Unit Version 1.0

Current: December 2014

Errors and technical changes excepted!