

SUNADAMALA DIGITAL LEHRA OPERATION MANUAL

1. GENERAL INFORMATION :

The new compact "Sunadamala" is a sophisticated electronic lehera instrument catering to the needs of classical tabla artistes. The instrument produces 202 leheras (rhythmic tunes) set to different Taals and Raags which can be selected by the user through the keyboard. The instrument utilizes the latest state-of-the-art microprocessor technology to produce a realistic sound of the lehera as played on a harmonium.

The instrument has facility to control the volume of the sound, the base pitch (sur) and the tempo of the tune. A built-in drone is also provided, the volume of which can be independently controlled. The "Sunadamala" can also be repeatedly programmed by the user to play and store two leheras of his/ her composition. The instrument automatically operates on any voltage between 90 - 260 V AC or a set of six internal dry batteries (AA size).

The special features of the improved compact model are:

1. 202 preset tunes including special "Masitkhani" and "gayaki ang" tunes.
2. Digital display of matras, tempo, tune number & pitch.
3. Accurate built-in digital pitch-pipe with fine tuning facility.
4. Four harmonium tones selectable by the user.
5. Memory facility for two user programmed leheras, pitch, tempo and tone selections.
6. Can also be used as an excellent sur-peti (drone).
7. Built-in metronome.

A three digit display provides the following indications :

- a. The currently selected tune number when the tune is not being played.
- b. The rhythmic count (matra) when the tune is being played.
- c. The Tempo setting when the FAST or SLOW keys are pressed.
- d. The Pitch setting (C, C#, D, etc) when the pitch keys are pressed.

VOLUME CONTROL : Controls the combined volume of the lehera and the drone (sur background).

ALT :- Selects alternate function of each key. Also operates as the decimal key for tune selection.

PGM :- Puts the instrument into the programming mode in which user's own lehera can be composed.

NUMBER KEYS :- Used for selecting the tune number corresponding to any taal or for programming a lehera.

DRONE CONTROL :- Controls the volume of the drone relative to the lehera.

PITCH :- Increases ('up' arrow) or decreases ('down' arrow) the pitch (sur) of the instrument.

FAST/SLOW : Increases or decreases the tempo of the lehera. Use of these keys while the lehera is playing results in increase/ decrease of the tempo in small steps. Use of these keys when the lehera is not playing results in the tempo changing to double/ half of the previous setting.

STOP :- Stops the lehera.

START : Starts the lehera from the first matra.

2. OPERATING INSTRUCTIONS : SWITCH-ON AND SELECTING TAAL AND TUNE, ADJUSTING PITCH & TEMPO

2.1 Insert the Power cord into the AC socket at the rear of the instrument for operation on AC Mains. For operation on batteries, remove this cord.

2.2 Plug the power cord into the AC wall socket.

2.3 Switch the instrument ON by turning the knob marked "VOL" clockwise and increase the volume by a quarter turn. Observe that each digit lights up followed by a scrolling display of "radel". The display finally shows 00.0. This confirms that the instrument is ready for operation.

2.4 Select any taal by pressing the number of the group corresponding to the taal. Each group contains ten leheras in different raags set to the same taal. To select another lehera of the same taal, press ALT key which would select the next tune. By pressing a number after pressing ALT, the tune of that number in the same group will be selected. eg; [2] ALT [3] would select 02.3 Jhap taal in raag Kalavati.

2.5 Press START to start the lehera. The display now indicates the matras as the lehera is played.

2.6 Press the PITCH keys marked 'up' arrow and 'down' arrow to increase or decrease the pitch of the lehera in steps of half notes. If the key is kept pressed continuously, the pitch will continue to change till the highest or lowest pitch is reached. Beyond this the corresponding key would have no effect. FINE TUNING of the pitch is possible by pressing ALT key before pressing the 'up' arrow and 'down' arrow keys. The fine tuning is achieved in small steps. When a pitch is selected, the display changes temporarily to pitch mode. A number

following the pitch alphabet indicates the fine tuned pitch. (eg., D.2 is 2 steps fine tuned above D Sharp and G.-3 is 3 steps fine tuned below G).

2.7 Press SLOW or FAST key to decrease or increase the tempo in small steps. The display changes to the Tempo mode temporarily and indicates the current tempo in MATRAS PER MINUTE.

2.8 Adjust the Drone knob as desired to obtain a sur background of the selected pitch.

2.9 Press STOP key to stop the lehera. The display now indicates the tune number already selected. Pressing START key would start the same lehera again. To select any particular tune, select the taal number, ALT key, the tune number in that taal group and the START key in that sequence. (Refer Lehra table for details).

2.10 Select group number 21.0 to obtain a steady pitch for tuning the tabla. (Set the DRONE to maximum.) Select 21.1 to obtain a complete sur-peti tone with pancham or 21.2 with madhyam.

3. CHANGING TEMPO RANGE :

3.1 For vilambit speeds, stop the lehera by pressing the STOP key and press SLOW key and START key. The lehera would now play at half the original speed. Once the lehera is started, the tempo can again be decreased or increased using the SLOW or FAST key repeatedly in small steps. The tempo can be set between 30 and 600 matras per minute through these ranges. (30 to 150 in Range 3, 60 to 300 in Range 2 and 120 to 600 in Range 1). When the instrument is initially switched ON, the tempo will be set to the value last stored by the user in memory. (Refer section 5).

4. TONE SELECTION :

The new Sunadamala can produce the leheras in four harmonium tones. To change the selection, press the TONE key while the lehera is playing. The display temporarily displays t-1 or t-2 etc as the case may be, confirming the change.

5. STORING IN MEMORY:

While any lehera is playing, pressing the number 4 key will store the present pitch, tempo and tone in memory. The display shows "st". When the instrument is switched ON the next time, the stored pitch, tempo and tone will be automatically set.

6 PROGRAMMING:

The "Sunadamala" can be programmed to play any lehera of one's choice. The instrument can store in its memory two leheras of maximum length of 60 matras each. Once programmed, these are retained even when the instrument is switched OFF. In addition, the notes can be embellished with gamak by pressing the ALT key and STOP key in sequence after the note in the programming sequence.

6.1 PROGRAMMING PROCEDURE :

6.1 Switch 'ON' the instrument as shown in paras 2.1 to 2.3.

6.2 Press PGM key to enter the programming mode. The display now indicates 'P.-0'. This corresponds to the first of two leheras that can be programmed and stored in memory as tune number 20.0.

6.3 Press any sequence of notes indicated in the yellow areas of the keyboard.

6.4 If any komal or teevra note (flat or sharp) is required, press ALT key and then the key of the note required. (eg.komal gandhar is obtained by pressing ALT key followed by GA key. Pressing the GA key without the ALT key would produce the Shuddh GA).

6.5 If any key is to be embellished with gamak, press the ALT and STOP keys in succession after pressing the required note key. This would split the note into two notes automatically. (eg. MA-GA).

6.6 Press the START key to end the sequence of notes and exit from the programming mode. The display shows "st" to confirm that the programme has been stored.

6.7 To programme another lehera without erasing the previously programmed one, press PGM again so that the display shows P.-1. Repeat the procedure from 6.3 to 6.6. This sequence will store the new lehera as tune number 20.1. Both the tunes 20.0 and 20.1 will be retained in memory till another lehera is programmed again in their place.

6.8 To play the Programmed lehera, select tune 20.0 or 20.1 as the case may be and press START. The pitch and tempo of this lehera can be altered as desired.

7. BATTERY OPERATION :

7.1 To operate the Sunadamala on batteries, pull out the AC Mains Cord from its socket at the rear of the instrument and insert six 1.5v "AA" size dry cells into the battery compartment. Operate as indicated in steps 2.3 to 2.10.

7.2 Check the condition of the batteries once in 15 days to prevent leakage and damage to the instrument by corrosion.

7.3 Weak batteries are indicated by irregular or abrupt stoppage of the lehera.

8. CONNECTING TO "TAALMALA" ELECTRONIC TABLA:

The "Sunadamala" is capable of being connected to a "Taalimala" electronic tabla to provide a synchronized lehera with tabla accompaniment. This facility is useful for Kathak dancers. Both the "Taalimala" and the "Sunadamala" should be set to the same taals to achieve proper operation. Proceed as follows :

8.1 Connect the "SYNC OUT" socket of the "Sunadamala" to the "LEHERA IN" socket of the "Taalimala". (If your "Taalimala" does not have a LEHERA IN Socket, contact the manufacturer for a clarification. Do not connect to any other socket).

8.2 Switch ON both the instruments and press the STOP keys of both.

8.3 Select the desired taal on both instruments.

8.4 Press the START key of the "Taalimala". (No sound would be heard now).

8.5 Press the START key of the "Sunadamala". Now the tabla and the lehera would both be heard together.

8.6 Adjust the tempo on the "Sunadamala" as desired. The tabla would automatically adjust its speed. (Note: The tempo knob of the Taalimala would have no effect on the tempo).

8.7 Adjust the pitch of the tabla to that of the "Sunadamala".

8.8 When the lehera is stopped, the tabla will also stop.

8.9 To restart, press STOP and START of the Taalimala and then START the "Sunadamala".

8.10 If the "Sunadamala" is put into Range 2 or Range 3 of its tempo, press the DEC key of the "Taalimala" once or twice respectively to obtain the same speed. This should be done before pressing the START key of the "Taalimala".

9. EXAMPLES OF TUNE SELECTION :

This section gives a few examples to illustrate the procedure for selection of any particular taal. Press the keys indicated in each example in the sequence indicated below :

9.1 Teen taal in raag Jaijivanti: 0, ALT, 4 (display shows 00.4)

9.2 Jhap taal in raag Hamsadhwani: 2, ALT, 9 (display shows 02.9)

9.3 Chau taal in raag Kalavati: 8, ALT,2 (display shows 08.2)

9.4 To change the previous selection to Chau Taal in raag Kausidhani, just press ALT (display shows 08.3)

9.5 Deepchandi in raag Kafi: 1, 2 (display shows 12.0)

10. HELPFUL HINTS :

10.1 If on pressing the "START" key, the instrument does not operate, switch OFF the instrument, wait for 10 seconds, switch ON and try again. If it still does not work, check that the Mains voltage is satisfactory.

10.2 Any reduction or sudden fluctuation in the Mains voltage or Battery voltage may cause the instrument to stop or behave erratically. In such a case, proceed as indicated in para 10.1.

10.3 No damage can be done to the instrument by pressing the wrong keys or pressing the keys in a wrong order, either in the normal mode or in the programming mode. The user may experiment freely to try the various functions available in the instrument. Failure of components is very remote and unlikely. The instrument is quite rugged and may be transported freely.

11. METRONOME FACILITY: When the Sunadamala is playing, pressing the ALT/MET key produces a beat for every matra similar to a metronome. The same key alternates between ON and OFF with every press. The metronome setting is also stored in memory every time the STORE operation is performed.

CAUTION : While operating the Sunadamala:

- Provide a gap of at least 15 seconds between switching OFF the instrument and switching it ON again to ensure reliable operation.
- Avoid using the instrument close to other electronic equipment such as mobile or cordless phones, pagers, etc.

VIDEO DEMONSTRATION:

<https://youtube.com/playlist?list=PL49C87800A2493893&si=GCC0dpuOsmNMuXPw>

WARRANTY

Like all Radel products, the Sunadamala carries a warranty of 3 years from the date of sale. This warranty is subject to the standard terms and conditions of the manufacturer. All users are advised to ensure that the warranty counterfoils provided with the product are returned to Radel Electronics Pvt. Ltd. within 15 days of purchase. Users may alternately register for warranty by filling up the online warranty registration form on our website <https://www.radel.in/home>. In case of any problems, users are advised to contact the manufacturers without any delay giving details of the problem, date of purchase, dealer's name and purchase document reference. The manufacturers invite users to feel free to send any feedback, suggestions and special requirements regarding the product to them.

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`SUNADAMALA' LEHERA TUNE TABLE

TEEN TAAL (16 matras)

00.0 CHANDRAKAUNS
00.1 ALHAIYA BILAWAL
00.2 PILU
00.3 RAMKALI
00.4 JAIJAIVANTI
00.5 KALAVATI
00.6 BRINDABANI SARANG
00.7 MADHUVANTI
00.8 HAMIR
00.9 EMAN

EK TAAL (12 matras)

01.0 HAMIR
01.1 AHIR BHAIRAV
01.2 TODI
01.3 JAIJAIVANTI
01.4 RAMKALI
01.5 KALAVATI
01.6 SHYAMKALYAN
01.7 KIRVANI
01.8 HAMSADHWANI
01.9 JOG

JHAPTAAL (10 matras)

02.0 BRINDABANI SARANG
02.1 TODI
02.2 JAIJAIVANTI
02.3 KALAVATI
02.4 KIRVANI
02.5 MALKKAUNS
02.6 KAUSIDHANI
02.7 HAMSADHWANI
02.8 GAUDSARANG
02.9 BHAIRAVI

JHOOMRA (14 matras)

03.0 BAGESRI
03.1 MALKKAUNS
03.2 BRINDABANI SARANG
03.3 ABHOGI
03.4 ALHAIYA BILAWAL
03.5 HAMIR
03.6 KIRVANI
03.7 AHIRBHAIRAV
03.8 KALAVATI
03.9 HAMSADHWANI

ROOPAK (7 matras)

04.0 GARA
04.1 MALKKAUNS
04.2 KAUSIDHANI
04.3 TODI
04.4 KALAVATI
04.5 HAMSADHWANI
04.6 BHAIRAV
04.7 CHANDRAKAUNS
04.8 BRINDABANI SARANG
04.9 KIRVANI

TILWADA (16 matras)

05.0 MALKKAUNS
05.1 ALHAIYA BILAWAL
05.2 HAMIR
05.3 KALAVATI
05.4 TILANG
05.5 BRINDABANI SARANG
05.6 CHANDRAKAUNS
05.7 KIRVANI
05.8 TODI
05.9 HAMSADHWANI

ADACHAUTAL (14 matras)

06.0 MALKKAUNS
06.1 TODI
06.2 EMAN
06.3 HAMIR
06.4 KALAVATI
06.5 RAMKALI
06.6 BHIMPALASI
06.7 PURYADHANASRI
06.8 BRINDABANI SARANG
06.9 JAIJAIVANTI

DHAMAR (14 matras)

07.0 KAFI
07.1 JAIJAIVANTI
07.2 EMAN
07.3 TODI
07.4 HAMIR
07.5 BRINDABANI SARANG
07.6 HAMSADHWANI
07.7 CHANDRAKAUNS
07.8 BHIMPALASI
07.9 AHIRBHAIRAV

CHAUTAAL (12 matras)

08.0 MALKKAUNS
08.1 BHIMPALASI
08.2 KALAVATI
08.3 KAUSIDHANI
08.4 EMAN
08.5 TODI
08.6 HAMIR
08.7 RAMKALI
08.8 BRINDAVNI SARANG
08.9 BAGESRI

MISCELLANEOUS

09.0 7.5 matras KHAMAJ
09.1 7.5 matras KAFI
09.2 8.5 matras KHAMAJ
09.3 8.5 matras HAMSADHWANI
09.4 9.5 matras HAMSADHWANI
09.5 9.5 matras EMAN
09.6 10.5 matras MALKKAUNS
09.7 10.5 matras AHIRBHAIRAV
09.8 11 matras BRINDAVNI SARANG
09.9 11 matras HAMSADHWANI

DADRA (6 matras)

- 10.0 BHAIRAVI
- 10.1 TODI
- 10.2 MALKAUENS
- 10.3 CHANDRAKAUNS
- 10.4 KAFI
- 10.5 DESH
- 10.6 KALAVATI
- 10.7 HAMSADHWANI
- 10.8 BAGESHRI
- 10.9 BHOOPALI

DEEPCHANDI (14 matras)

- 12.0 KAFI
- 12.1 BHAIRAVI
- 12.2 TILANG
- 12.3 KHAMAJ
- 12.4 TILAK KAMOD
- 12.5 CHANDRAKAUNS
- 12.6 JAIJAVANTI
- 12.7 HAMSADHWANI
- 12.8 KHAMAJ
- 12.9 TILANG

MATTA TAAL (9 matras)

- 14.0 SHIVRANJANI
- 14.1 DARBARI
- 14.2 LALIT
- 14.3 AHIRBHAIKAV
- 14.4 JAIJAVANTI
- 14.5 HAMSADHWANI
- 14.6 DESH
- 14.7 KEERVANI
- 14.8 YAMAN
- 14.9 MALKAUENS

RUDRATAAL (11 matras)

- 16.0 MALKAUENS
- 16.1 JAIJAVANTI
- 16.2 AHIRBHAIKAV
- 16.3 HAMIR
- 16.4 KALAVATI
- 16.5 YAMAN
- 16.6 BAGESHRI
- 16.7 KEERVANI
- 16.8 HAMSADHWANI
- 16.9 TODI

PANCHAM SAVARI (15 matras)

- 18.0 HAMIR
- 18.1 MALKAUENS
- 18.2 KIRVANI
- 18.3 BHAIKAVI
- 18.4 CHANDRAKAUNS
- 18.5 YAMAN
- 18.6 AHIR BHAIKAV
- 18.7 DURGA
- 18.8 KALAVATI
- 18.9 BHOOPALI

CHACHAR (16 matras)

- 11.0 KAFI
- 11.1 BHAIKAVI
- 11.2 TILAK KAMOD
- 11.3 KAFI
- 11.4 KALAVATI
- 11.5 HAMSADHWANI
- 11.6 KHAMAJ
- 11.7 SHIVRANJANI
- 11.8 KEERVANI
- 11.9 PURIYA DHANASRI

SOOL TAAL (10 matras)

- 13.0 TODI
- 13.1 MALKAUENS
- 13.2 HAMSADHWANI
- 13.3 ABHOI
- 13.4 PATDEEP
- 13.5 BHOOPALI
- 13.6 KEERVANI
- 13.7 YAMAN
- 13.8 AHIR BHAIKAV
- 13.9 KALAVATI

JAI TAAL (13 matras)

- 15.0 HAMSADHWANI
- 15.1 CHANDRAKAUNS
- 15.2 BRINDABANI SARANG
- 15.3 KALAVATI
- 15.4 MALKAUENS
- 15.5 AHIR BHAIKAV
- 15.6 BAGESHRI
- 15.7 RAGESHRI
- 15.8 YAMAN
- 15.9 DESH

VILAMBIT (MASITKHANI)

- 17.0 AHIRBHAIKAV
- 17.1 EMAN
- 17.2 BAGESHRI
- 17.3 SHUDDH SARANG
- 17.4 TODI
- 17.5 TEENTAAL DARBARI KANADA
- 17.6 EKTAAL GUJRITODI
- 17.7 CHOUTAAL BHAIKAV
- 17.8 JHAPTAAL SRI
- 17.9 RUPAK KAFI

KEHERWA (8 matras)

- 19.0 PAHADI
- 19.1 BHAIKAVI
- 19.2 TILAK KAMOD
- 19.3 PILU
- 19.4 KHAMAJ
- 19.5 HAMSADHWANI
- 19.6 BAGESHRI
- 19.7 KALAVATI
- 19.8 AHIR BHAIKAV
- 19.9 DURGASUR

PROGRAMMED TUNES

20.0 PROGRAMMED TUNE 1

20.1 PROGRAMMED TUNE 2

QUICK REFERENCE FOR TAALS

00.0 TEEN TAAL

01.0 EK TAAL

02.0 JHAP TAAL

03.0 JHOOMRA

04.0 RUPAK

05.0 TILWADA

06.0 ADA CHAUTAAL

07.0 DHAMAR

08.0 CHAU TAAL

9.0 MISCELLANEOUS

10.0 DADRA

21.0 SUR (SRUTI) (SHADJ)

21.1 SUR (SHADJ + PANCHAM)

21.2 SUR (SHADJ+ MADHYAM)

11.0 CHACHAR

12.0 DEEPCHANDI

13.0 SOOL TAAL

14.0 MATTA TAAL

15.0 JAI TAAL

16.0 RUDRA TAAL

17.0 VILAMBIT MASITKHANI

18.0 PANCHAM SAVARI

19.0 KEHERWA

20.0 PROGRAMME

21.0 SUR (SRUTI)