

PAUL

Naudojimo instrukcija

Lietuvių



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1. Mielas vartotojau,

Dėkojame, kad įsigijote darbo kėdę Sirona PAUL.

Pateikiama techninė dokumentacija yra produkto dalis. Jūs visuomet turėtumėte laikyti šią dokumentaciją pasiekiamą.

Šios naudojimo instrukcijos parodo įvairius darbo kėdės modelius.

Priežiūra ir valymas turėtų būti atliekami remiantis atitinkamomis instrukcijomis.

Būtina laikytis visos saugumo informacijos, kad išvengtų asmeninių sužalojimų ir materialinės žalos.

Jūsų Sirona komanda

2. Saugumo informacija

Įrenginio modifikavimas

Šio įrenginio modifikacijos, kurios galėtų įtakoti naudotojo, pacientų ar trečiųjų šalių saugumą, yra draudžiamos įstatymo!

Priedai

Tam, kad užtikrinti produkto saugumą, šis įrenginys turi būti naudojamas tik su originaliais Sirona priedais arba trečiųjų šalių priedais specialiai patvirtintais Sirona. Vartotojas prisiima riziką naudodamas nepatvirtintus priedus.

Apkrova

Prašome laikytis 135 kg maksimalios darbo kėdės apkrovos.

3. Produkto apžvalga

PAUL

- Aukščio reguliavimas su rankiniu paleidimu
- Žiedas kojoms (papildomas) 



4. Eksploatacija

4.1 Aukščio reguliavimas su rankiniu paleidimu



Valdymo svirtis, skirta rankiniam nuleidimui randasi po sėdyne.

- **Pakėlimas**

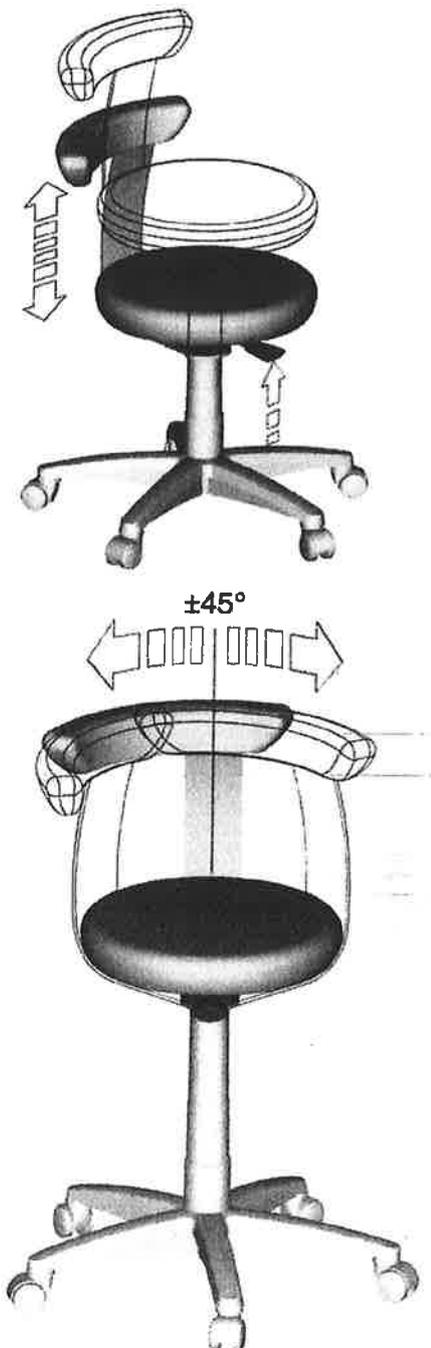
Kiek įmanoma pakelkite savo svorį nuo sėdynės ir patraukite valdymo svirtį į viršų.

- **Nuleidimas**

Palikite savo svorį ant sėdynės ir patraukite valdymo svirtį į viršų.

4.2 Atrama

Atrama gali būti pasukama $\pm 45^\circ$.



5. Priežiūra ir valymas

5.1 Priežiūros ir valymo priemonės

PASTABA

Patvirtintos priežiūros ir valymo priemonės

Naudokite tik Sirona patvirtintas priežiūros ir valymo priemones!

Nuolat atnaujinamą patvirtintų priemonių sąrašą galite atsisiųsti internetu iš:

"www.sirona.com" / "SERVICE" / "Care and cleaning" / "Care and cleaning agents"

Jei neturite prieigos prie interneto, Jūs galite užsisakyti sąrašą iš savo medžiagų tiekėjo.

Užsakymo numeris: 59 70 905

5.2 Priežiūra ir valymas

- **Dezinfekcija**

Paviršiai gali būti purškiami arba valomi paviršių dezinfektantais

- **Valymas**

Reguliariai pašalinkite purvą, nešvarumus ir dezinfektantų liekanas, naudodami silpnas valymo priemones.

- **Apmušalai**

Apmušalams naudokite tik priežiūros ir valymo priemones patvirtintas Sirona, žiūrėti „Priežiūros ir valymo priemonės“.

- **Apsauga nuo medikamentų**

Dėl aukštos koncentracijos ir sudėtyje esančių medžiagų, daugelis medikamentų gali ištirpdyti, išėsti, nubalinti ar išblukinti paviršius. Vienintelis žalos išvengimo būdas yra nedelsiant nuvalyti medikamentus drėgnu audiniu ir valymo priemone.

- **Ratukai**

Reguliariais intervalais valykite darbo kėdės ratukus, kad išvengtumėte žalos grindims.

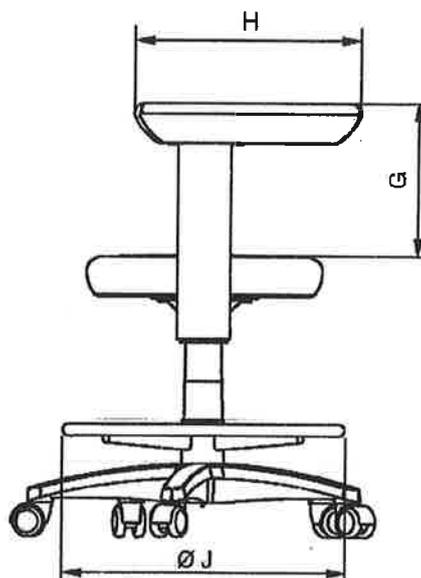
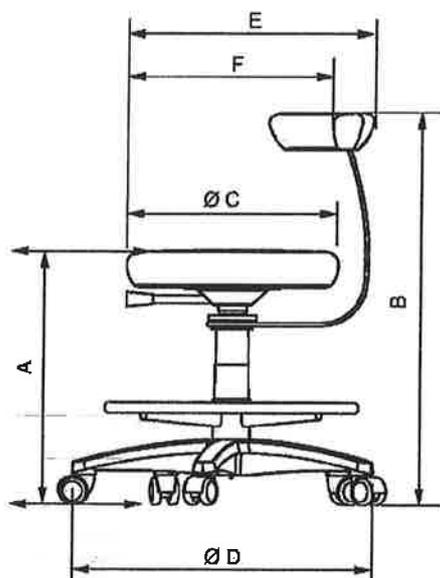


6. Techniniai duomenys

	Matmenys milimetrais
A Sėdynės aukštis (atitinka DIN, apkrauta) Pneumatinė spyruoklė, trumpa	405 – 520
Pneumatinė spyruoklė, ilga	505 – 625
B Bendras aukštis (žemiausioje pozicijoje, neapkrauta) Pneumatinė spyruoklė, trumpa	705
Pneumatinė spyruoklė, ilga	805
C Sėdynės plotis	Ø400
D Žvaigždės pagrindas	Ø600
E Bendras gylis (išskyrus žiedą kojoms)	465
F Sėdynės gylis (atitinka DIN, nugaros įlinkimo vietoje)	385
G Atramos aukštis	265
H Atramos plotis	407
J Žiedas kojoms	Ø508

Bendras svoris

10,0 – 12,0 kg – tinkama asmenims, sveriantiems iki 135 kg



Consumables and selected spare parts for Intego

Dentosept S

Silver-free water line disinfectant solution for use in the fresh water bottle (6 x 1 liter)

Booster cushion for small patients

for the ergonomic and comfortable seating of small patients and children

Silicone pad

for covering the dentist element, autoclavable

- for TS dentist element
- for the CS dentist element and the Comfort assistant element

Tray Tablet for swiveling tray holder

- for two standard trays (ca. 370 x 285 mm)
- for one standard tray (surface approx. 180 x 280 mm)

**Silicone pad for tray large****Silicone pad for tray small****Removable silicone sleeves for handles**

2 pcs. hygiene protection covers for handles. Prevent cross-contamination, autoclavable.

Isolation sleeve for Endo 6:1 handpiece (5 pcs.)

for use with ApexLocator

Isolation sleeve for T1 Line Endo 6 L handpiece with light (5 pcs.)

for use with ApexLocator

ApexLocator support

for hygienic storage of the ApexLocator cables

Centrifuge rotor for amalgam separator**Handles for LEDlight Plus (2 pcs.)**

sterilizable

Handle sleeves for LEDview Plus (2 pcs.)

sterilizable

Handle sleeves for LEDview Plus (4 pcs.)

sterilizable

Hygienic protective sleeves for LEDview handles

Sterilizable silicone, 2 pcs.

Accessories for Sivision digital

Cable set Sivision digital HDMI 10 m for connecting a suitable PC consisting of 10-m HDMI, USB, Ethernet, audio and ground line each.

Cable set Sivision digital HDMI 5 m for connecting a suitable PC consisting of 5 m HDMI, USB, Ethernet and ground line each.

	REF.	EUR without VAT	Pr.Gr.
<input type="checkbox"/>	6610310	143.--	29
<input type="checkbox"/>	5446062	233.--	29
<input type="checkbox"/>	6417773	71.--	29
<input type="checkbox"/>	6417765	39.--	29
<input type="checkbox"/>	6477439	177.--	29
<input type="checkbox"/>	6477447	73.--	29
<input type="checkbox"/>	5910109	90.--	29
<input type="checkbox"/>	5910117	68.--	29
<input type="checkbox"/>	6450857	58.--	29
<input type="checkbox"/>	6324631	25.50	94
<input type="checkbox"/>	6539089	25.50	94
<input type="checkbox"/>	6540947	103.--	29
<input type="checkbox"/>	1434138	61.--	29
<input type="checkbox"/>	6684372	52.--	29
<input type="checkbox"/>	6497353	52.--	
<input type="checkbox"/>	6598267	91.--	29
<input type="checkbox"/>	6255959	39.--	29
<input type="checkbox"/>	6329655	998.--	91
<input type="checkbox"/>	6446111	390.--	91

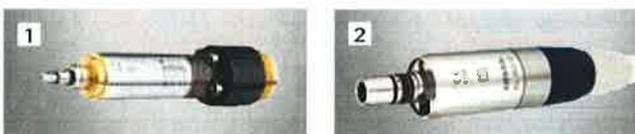
BL/BL E and BL ISO C/E/BL Implant motors – the powerful, brushless micromotors

Brushless, compact and hygienic

- Dentsply Sirona brushless BL motors are not only extra short, they are also the lightest and most ergonomic in the world
- These brushless micromotors are electronically controlled with perfection
- The BL/BL E and BL ISO C/E motors have a back-suction valve
- Motors and adapters are sterilizable and maintenance-free

Only the best in performance

- With their 90–40,000 rpm speed range (depending on the combination of Dentsply Sirona motor and treatment unit; more details in the specifications) they always offer maximum torque
- The microprocessors also provide quiet and stable operation at rapidly changing motor speeds
- The BL/BL E and BL ISO C/E motors support the Apex function depending on the treatment unit
- The slim and lightweight BL Implant implantology motor with internal cooling provides a max. torque of 5 Ncm, with no air outlet at the preparation site



1 Dentsply Sirona BL motor

Compatible with T1 Classic straight and contra-angle handpiece program

2 Dentsply Sirona BL ISO C motor

Compatible with T1/T2/T3 Line and T2/T3 S-Line straight and contra-angle handpiece program

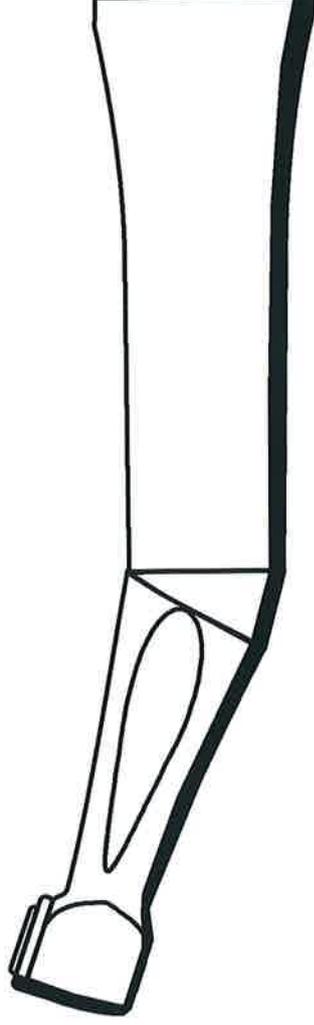
Models Specifications	BL motor ¹ BL E motor ²	BL ISO C motor ³ BL ISO E motor ⁴	BL Implant motor ^{**}
Number of revolutions (rpm)*	- 90–40,000 ¹ - 1,200–40,000 ² - 100–40,000 ² In conjunction with eControl	- 90–40,000 ³ - 2,000–40,000 ⁴ (Sinus) - 1,200–40,000 ⁴ (Intego) - 100–40,000 ² in conjunction with eControl (Intego Pro)	- 90–40,000
Max. torque (Ncm)	- 2,4	- 3,0	- 5,0
Max. power (W)	- 45	- 61	- 80
Motor diameter (mm)	- 16	- 22	- 22
Motor length (mm)	- 54	- 45	- 61
Weight (g)	- 65	- 61	- 106
Cooling air requirement (l/min)	- 20	- 20	- 20
Spray air pressure (bar)	- 2,7	- 2,7	-
Spray water pressure (bar)	- 2	- 2	-

Versions/ Usage of	BL/BLE ² motor	BL motor + ISO adapter	BL ISO C ³ /E ⁴ motor	BL Implant motor ^{**}
Dentsply Sirona				
T1 Classic	■	■	-	-
T1/T2/T3 Line T2/T3 S-Line	-	■	■	-
Implant 20:1	-	-	-	■
SiroNiTi Apex & SiroNiTi Air Plus Apex	-	■	■***	-
Other suppliers				
INTRAmatic [®] Lux	-	■	■	-
INTRAmatic [®] – without light	-	■	■	■
ISO 3964 – without light and spray	-	■	■	■
Ref.		60 00 793		62 12 208
Ref. with LED	63 19 714 65 46 225 ²		63 37 518 ³ 64 45 399 ⁴	

* Maximum rotation speed depends on the configuration of the Dentsply Sirona treatment unit. ** In combination with the Teneo Dentsply Sirona treatment unit. *** Apex function in combination with BL ISO C motor and Teneo/Sinus or BL ISO C motor and Intego Pro.

Dokumentą elektroniniu
parašė **INDRIS GIEDRIUS**
INDRIS GIEDRIUS, KALINIAUSKAS
Data: 2020-09-21 00:21:01
Paskirtis: Vertimas tikras

Sirona
The Dental Company



English

Operating Instructions

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Operating Instructions ENDO 6:1

1 Before you begin ...

ENDO 6:1 complies with state-of-the-art technical regulations. ENDO 6:1 complies with the ISO 14457 standard.

1. Read the operating instructions prior to using ENDO 6:1.
2. Only use ENDO 6:1 for the applications described in the operating instructions.
3. Observe the applicable hygiene standards, occupational safety regulations and accident prevention measures for ENDO 6:1.

Intended use

ENDO 6:1 is used to hold and drive burr instruments for the purposes of rotary processing and is intended for the following uses in dentistry:

- Endodontics
 - Endometry
- None

Contraindications

This product is intended only for use by trained dental personnel in dental practices and laboratories.

1.1 Structure of the document

1.1.1 Labeling of information

- To prevent injuries, please observe the warnings.

Warnings are labeled as follows:

▲ **DANGER!** indicates a danger **leading** to death or serious injury if not avoided.

▲ **WARNING!** indicates a danger that **may lead** to death or serious injury if not avoided.

▲ **CAUTION!** indicates a danger that **may lead** to injury if not avoided.

- To prevent material damage and additional expenses, please observe all instructions for use.

Instructions for use are labeled as follows:

NOTICE! indicates measures for the prevention of material damage.

Instructions for use

IMPORTANT: indicates information on the avoidance of additional expenses and other important information.

Tip: indicates information for facilitating work.

1.1.2

Formats and symbols

The formats and symbols used in this document have the following meaning:

<ul style="list-style-type: none"> ✓ Prerequisite 1. First action step 2. Second action step <p>or</p> <ul style="list-style-type: none"> ➤ Alternative action ↳ Result ➤ Individual action step 	Requests you to do something.
Use of formats and symbols [→ 8].	Identifies a reference to another text passage and specifies its page number.
• List	Identifies a list.

1.2

Service life of Sirona instruments

When used as intended:

- Non-moving parts of Sirona instruments have a typical service life of approx. 5 years
- Moving parts of Sirona instruments have a typical service life of approx. 3 years

No warranty claim can be inferred here, as wear may occur earlier or later than indicated above depending on use, frequency of sterilization, and frequency of maintenance.

Elastomers, e.g. O-rings, must be replaced depending on their degree of wear.

For safety and technical reasons, check the clamping system of the contra-angle and straight handpiece burs on an annual basis.

2 Safety information

Obligations of the user

- Use only fault-free materials that do **not** deviate from the specified data [→ 13].
- Protect yourself, patients, and others against any foreseeable dangers. To do this, follow the safety information.
- Comply with the Intended use of the equipment.
- You should always keep these operating instructions within reach for further reference.

Preventing the spread of infections and cross contamination

Prevent the spread of infections and cross contamination between patients, users, and third parties. Sterilize equipment after each patient.

Take the appropriate hygiene measures, e.g. wear protective gloves.

If the instrument is defective, the area around the instrument head may heat up, thus creating a risk of burning the patient's oral mucosa.

Instrument head overheating

Malfunction or damage

Discontinue use immediately in case of malfunction, unusual or different sounds or damage. Damaged instruments may cause injury. Notify the dental dealer or the manufacturer.

Repair

Do **not** repair the instrument yourself.

Spare and accessory parts

Use only original Sirona parts or parts approved by Sirona. Safe operation is **not** guaranteed for parts that have not been approved by Sirona.

Operating conditions:

Temperature: +10 °C – +30 °C

If you have any questions, please contact your dental depot or the manufacturer.

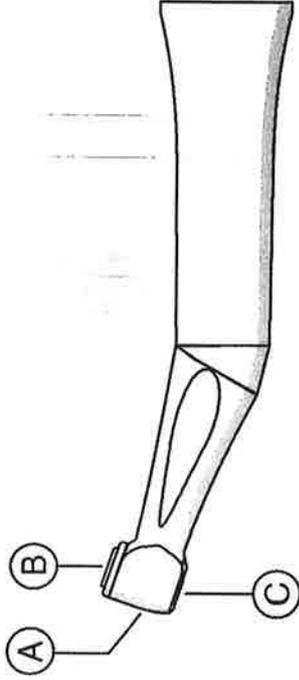
3 Technical description

3.1 Task

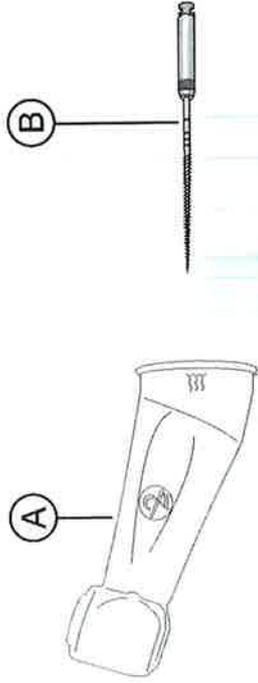
The instrument serves for transmitting the driving power and speed of the electric motor or air motor (handpiece coupling according to ISO 3964) to the preparation tool.

3.2 ENDO 6:1 components

Contra-angle handpiece



A	Instrument head
B	Pushbutton
C	Opening for the clamping system



Accessories

A	Insulating sleeve
B	File

3.3 Technical data

Instrument

	ENDO 6:1
Gear ratio	6:1
Maximum motor speed in rpm	40 000

	ENDO 6:1
Maximum operating speed in rpm	6 700
Clamping system	CA
Internal cooling media	-
Back suction stop	-
Light function	-
Apex measuring function ¹	x
Instrument coupling	INTRAmatic®

1. Apex measuring function depending on the treatment center and its accessories

File

	ENDO 6:1
Shank diameter in mm	2.334 - 2.35
Maximum total length in mm	25
Maximum working diameter in mm (ISO 2157)	2.1
Gripping length in mm	≥ 11
Standard	ISO 1797-1, Type 1

3 Technical description

CE
0123

Operating Instructions ENDO 6:1

This product bears the CE mark in accordance with the provisions of the Council Directive 93/42/EEC of June 14, 1993 concerning medical devices (MDD).

4 Preparation



4.1 Initial start-up and longer breaks in use

- Sterilize the instrument and accessories prior to startup.
- Clean and maintain the instrument after longer breaks in use.

5 Operation

NOTICE! Use only faultless files in order to prevent fatigue fractures of the files as far as possible.

⚠ CAUTION! Do not pull the patient's cheek back with the contra-angle handpiece while the motor is running. This would actuate the pushbutton, thus creating a risk of burning the patient's oral mucosa.

IMPORTANT: For application details and operating data of the different preparation tools, please refer to the information provided by the manufacturer.

5.1 Replacing the instrument

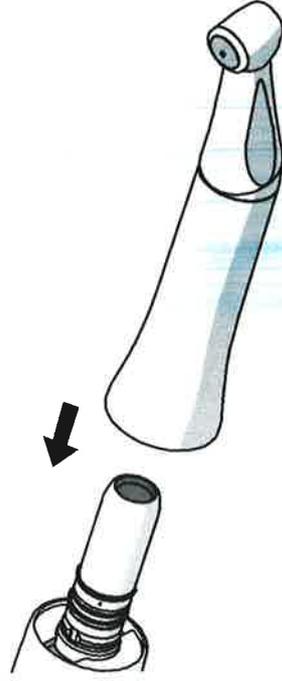
⚠ CAUTION! The instrument should only be fitted or removed when the motor is at standstill.

Attaching the instrument

- ✓ The motor is at a standstill.
- Insert the instrument until it snaps into place.

Removing the instrument

- ✓ The motor is at a standstill.
- Detach the instrument. Do not pull on the supply hose while doing this.



5.2 Attaching and removing a file

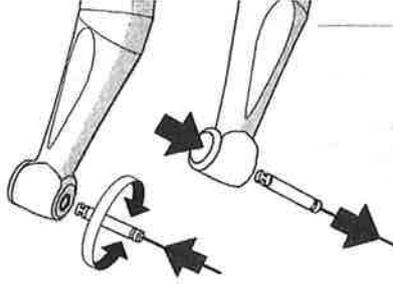
NOTICE! Use only faultless files in order to prevent fatigue fractures of the files as far as possible.

Attaching a file

- ✓ The drive has come to a stop.
- 1. Insert the file by gently rotating it until it snaps into place. In doing so, do **not** press the pushbutton.
- 2. Then pull and turn the file to check that it is firmly seated.

Removing a file

- ✓ The file has come to a stop.
- Remove it while pressing and holding down the pushbutton.

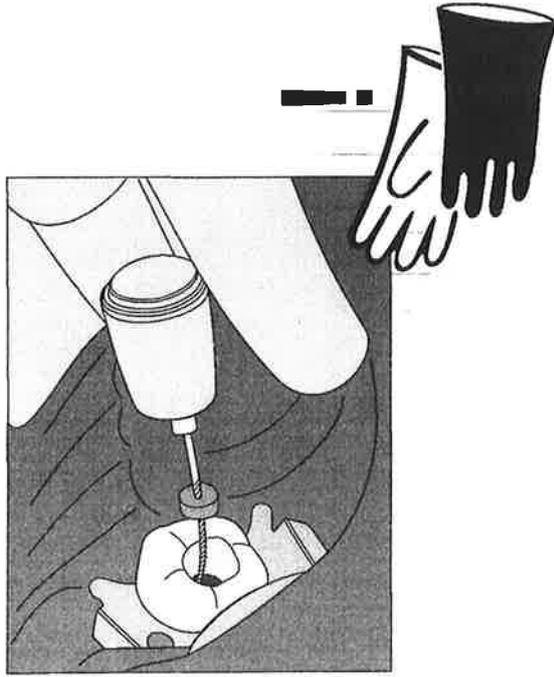


5.3

Recommendation for the treatment procedure

NOTICE! Use only faultless files in order to prevent fatigue fractures of the files as far as possible.

- The different file systems require different working techniques. For this reason, please always observe the information provided by the file manufacturer.
- Work without exerting any pressure on the file.
- The ApexLocator function is used to support the root canal preparation process in combination with SIROEndo Pocket or a treatment center with the apex measurement function. The number of X-rays can be reduced with ENDO 6:1. However, you must always take at least one X-ray to determine the depth for preparatory work. A clinical evaluation including knowledge of the anatomy of root canals is important for interpreting the results.

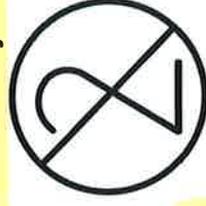


- When performing the APEX measurement, wear appropriate insulated gloves. We recommend performing the treatment with a cofferdam, while using an insulating sleeve. This will prevent inaccurate measurements caused by undesired leakage currents. During the measurement, the instrument must not come into contact with the patient's mucosa, metallic tooth restorations, or the mucosal electrode.
- If the limit torque is exceeded, a gentle creaking may be heard and vibrations felt. Remove the file by gently pulling it toward the coronal end. If this is not possible, switch the drive to counterclockwise rotation and pull the file out of the channel.
IMPORTANT: Check the file afterwards for damage or deformation (untwisting) and replace it, where necessary.

5.4 Mounting and removing the insulating sleeve



NOTICE! Insulating sleeves are only used once. Change the insulating

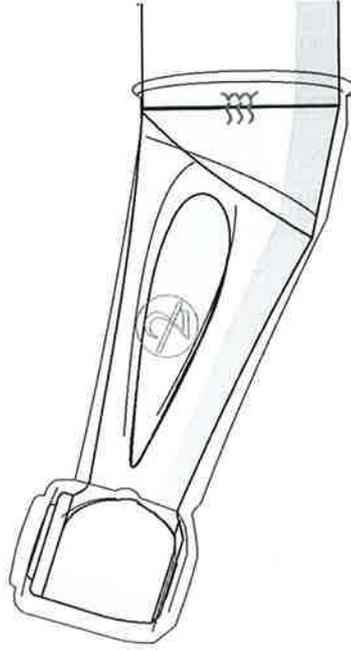


sleeve after each patient.

Fitting an insulating sleeve

- ✓ You have sterilized the insulating sleeve.
- ✓ The motor is at a standstill.
- ✓ A file is not clamped in place.

1. Twist the insulating sleeve carefully this way and that and pull the insulating sleeve fully over the instrument.
2. Attach the file [→ 20].



Removing an insulating sleeve

- ✓ The motor is at a standstill.
- 1. Remove the file.
- 2. Remove the insulating sleeve.
- 3. Dispose of the insulating sleeve [→ 41].

6 Follow-up

6.1 After each treatment session

NOTICE! Condition immediately, or at the latest, one hour after treatment.

NOTICE! Only use Sirona T1 Spray.

✓ Wear appropriate protective clothing.

1. Remove the file with tweezers.
2. Pre-disinfect directly at the treatment center/tabletop unit [→ 27].
3. Detach the instrument from the drive.
4. Transport the instrument to the hygiene room in a suitable transport container.
5. Conduct automatic conditioning [→ 28]. Manual conditioning [→ 31] is possible in exceptional cases if the national/local regulations are followed.

6. Apply spray to the instrument [→ 33].
7. Sterilize the instrument and accessories [→ 37].

0.2

At the end of the work day

- Apply spray to the instrument [→ 33].

NOTICE! Do not leave any instruments on the motor overnight, in order to prevent oil from leaking into the electric motor. Never lubricate the electric motor.

7 Conditioning

7.1 Conduct pre-disinfection

- ✓ Wear appropriate protective clothing.
 - ✓ All disinfectants must be approved in your country and have proven bactericidal, fungicidal and virucidal properties. Only use disinfectants with **no** protein-fixing properties.
1. Spray the surface with disinfectant.
 2. Wipe the disinfectant off with a cloth.
- ↳ For further conditioning, the instrument should be dry and free of residue.

Please observe the manufacturer's instructions for using instrument disinfectants.

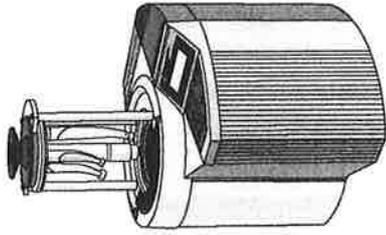
7.2 Automated cleaning and disinfecting ...

7.2.1 ... with a DAC UNIVERSAL

We recommend using **Sirona DAC UNIVERSAL** for automated cleaning, disinfection, care, and unwrapped sterilization.

For further details, refer to the operating instructions supplied with the unit.

- ✓ The pushbutton chuck is manually maintained [→ 35].
 - ✓ The instrument is conditioned using the DAC UNIVERSAL.
1. Check whether the instrument is clean after conditioning under good lighting (min. 500 lux) and color rendering index (min. 80 Ra).
 2. If it is still dirty, repeat the process.
- ☞ For further conditioning, the instrument should be dry and free of residue.



3. Pack the instrument in packaging material suitable for sterilization and storage. e.g. paper/plastic composite packaging.
4. Sterilize the instrument [→ 37].

7.2.2

... with cleaning and disinfection equipment

The instrument can also be cleaned and disinfected in a suitable piece of cleaning and disinfection equipment.

The cleaning and disinfection equipment used must be approved by its manufacturer for the cleaning and disinfection of dental instruments and comply with EN ISO 15883-1 (e.g. 95°C (203°F) and 10 min. holding time).

For further details, refer to the operating instructions supplied with the unit.

- ✓ The instrument is conditioned with a cleaning and disinfection device.

95°C
203°F



1. Check whether the instrument is clean after conditioning under good lighting (min. 500 lux) and color rendering index (min. 80 Ra).
2. If it is still dirty, repeat the process.
 - ↳ For further conditioning, the instrument should be dry and free of residue.
3. Blow the instrument out with max. 3 bar.
4. Manual care of mechanical parts [→ 33].
5. Manual care of the push button chuck [→ 35].
6. Pack the instrument in packaging material suitable for sterilization and storage. e.g. paper/plastic composite packaging.
7. Sterilize the instrument [→ 37].

7.3

Manual cleaning and disinfection

IMPORTANT: Manual conditioning is possible in exceptional cases if the national/regional regulations are followed. The national/regional regulations are to be checked before.

NOTICE! Condition immediately, or at the latest, one hour after treatment.

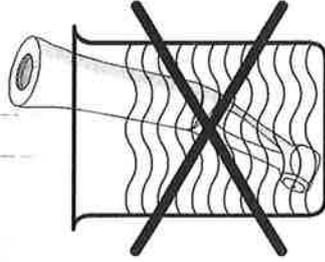
NOTICE! Never clean in an ultrasound bath!

NOTICE! Never immerse in disinfectant solution!

NOTICE! Only use Sirona T1 Spray.

IMPORTANT: Use a soft, clean, and disinfected brush for cleaning.

- ✓ Wear appropriate protective clothing.
- ✓ All disinfectants must be approved in your country and have proven bactericidal, fungicidal and virucidal properties. Only use disinfectants with **no** protein-fixing properties.



1. Brush the instrument under running water (< 38 °C, < 100 °F, at least drinking water quality) and good lighting (min. 500 lux) and color rendering index (min. 80 Ra) until no more dirt can be seen, for at least 10 seconds.
2. Flush the drive channels with spray.
3. Conduct thermal disinfection or unwrapped steam sterilization.
4. Maintain mechanical parts manually [→ 33].
5. Maintain the push button chuck manually [→ 35].
6. Pack the instrument in packaging material suitable for sterilization and storage. e.g. paper/plastic composite packaging.
7. Sterilize the adapter [→ 37].

7.4 Manual maintenance

7.4.1 Maintenance of mechanical parts

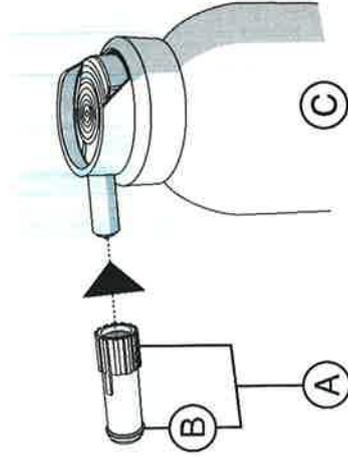
Intervals

- At least every noon and evening
- Prior to each sterilization
- After every thermal disinfection without integrated maintenance

Required accessories

- | | |
|---|--------------------------|
| A | Spray adapter |
| B | O-ring for spray adapter |
| C | T1 Spray |

NOTICE! Only use Sirona T1 Spray.



Process

- ✓ The spray adapter is disinfected.
 - ✓ The O-ring on the spray adapter is intact.
1. Fit the spray adapter onto the nozzle of the spray can.
 2. Insert the instrument until it snaps into place and hold it.
 3. Spray the instrument for 1 - 2 seconds.
IMPORTANT: Hold the spray can upright.
 4. Wipe any spray that comes out with a disinfection cloth.
 5. Repeat the process until the spray is clear.



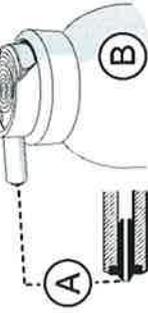
7.4.2 Care of the push button chuck

Use Sirona T1 Spray on the push button chuck to remove deposits and ensure proper functioning of the clamping system.

Interval

- At least once a week

Required accessories



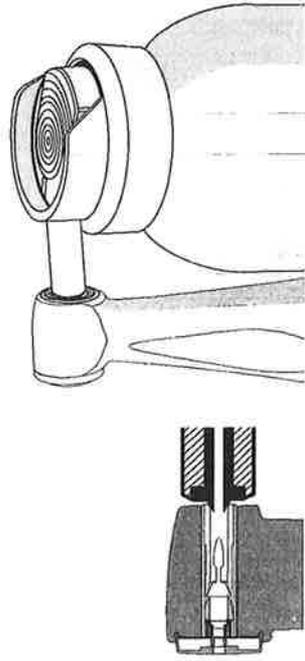
A	Black nozzle insert
B	Sirona T1 Spray

NOTICE! Only use Sirona T1 Spray.

Procedure

✓ The instrument is clean and disinfected.

1. Press the contra-angle handpiece head with the chuck firmly against the spray can nozzle.
2. Spray the chuck for 1 - 2 seconds.
IMPORTANT: Hold the spray can upright.
3. Wipe any spray that comes out with a disinfection cloth.





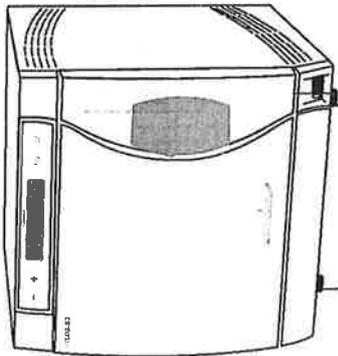
7.5 Sterilizing

- ✓ The instrument is clean and disinfected.
- ✓ Instrument maintenance is complete.
- ✓ The instrument can be sterilized in packaging suitable for sterilization and storage: paper/plastic composite packaging according to ISO 11607.
- Sterilize the instrument in the steam sterilizer with saturated water vapor.

Overpressure: 2.04 bar (29.59 psi)

Temperature: 134°C (274° F)

Holding time: 3 min.



Steam sterilizers that comply with either EN 13060 class B (for example, DAC PREMIUM / DAC PROFESSIONAL) or EN 13060 class S and are also suitable for the sterilization of straight/contra-angle handpieces are approved.

NOTICE! Do not exceed 140°C (284°F), even during the drying phase.
After sterilizing

1. Remove the instrument from the steam sterilizer immediately.
⚠ CAUTION! The instrument is hot. Risk of burns!
NOTICE! Do not attempt to accelerate the cooling process by immersing the instrument in cold water. This can damage your instrument.
2. Store all instruments so that they are protected from contamination.
3. Sterilize again once the storage period has elapsed.

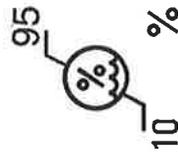
9 Storage and transport conditions



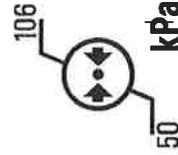
Protect from
moisture



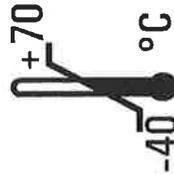
Sensitive
contents



Relative
humidity



Air pressure



Temperature

After a severe change in
temperature, allow sufficient
time for acclimation.

10 Disposal

- According to current information, the product does not contain any substances that are hazardous to the environment.
- Disinfect the product prior to disposal.
- Observe the applicable disposal regulations for your area.

We reserve the right to make any alterations which may be required due to technical improvements.

D3451.201.01.06.02 07.2017

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THE DENTAL
SOLUTIONS
COMPANY™



T1, T2 and T3 instrument series

As individual as your
own handwriting

dentsplysirona.com



Only the best for every application

For optimum work results, the right instruments are necessary, though only with lightweight and easily handled tools can precise outcomes be achieved. We consistently meet this requirement with our instrument series. Whichever series you choose, you will receive top-quality products that make work enjoyable - for all areas of application and work steps.

Whatever the day brings,
Dentsply Sirona always
offers the right solution



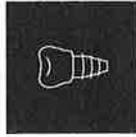
Endodontics
Endodontik



Endodontics



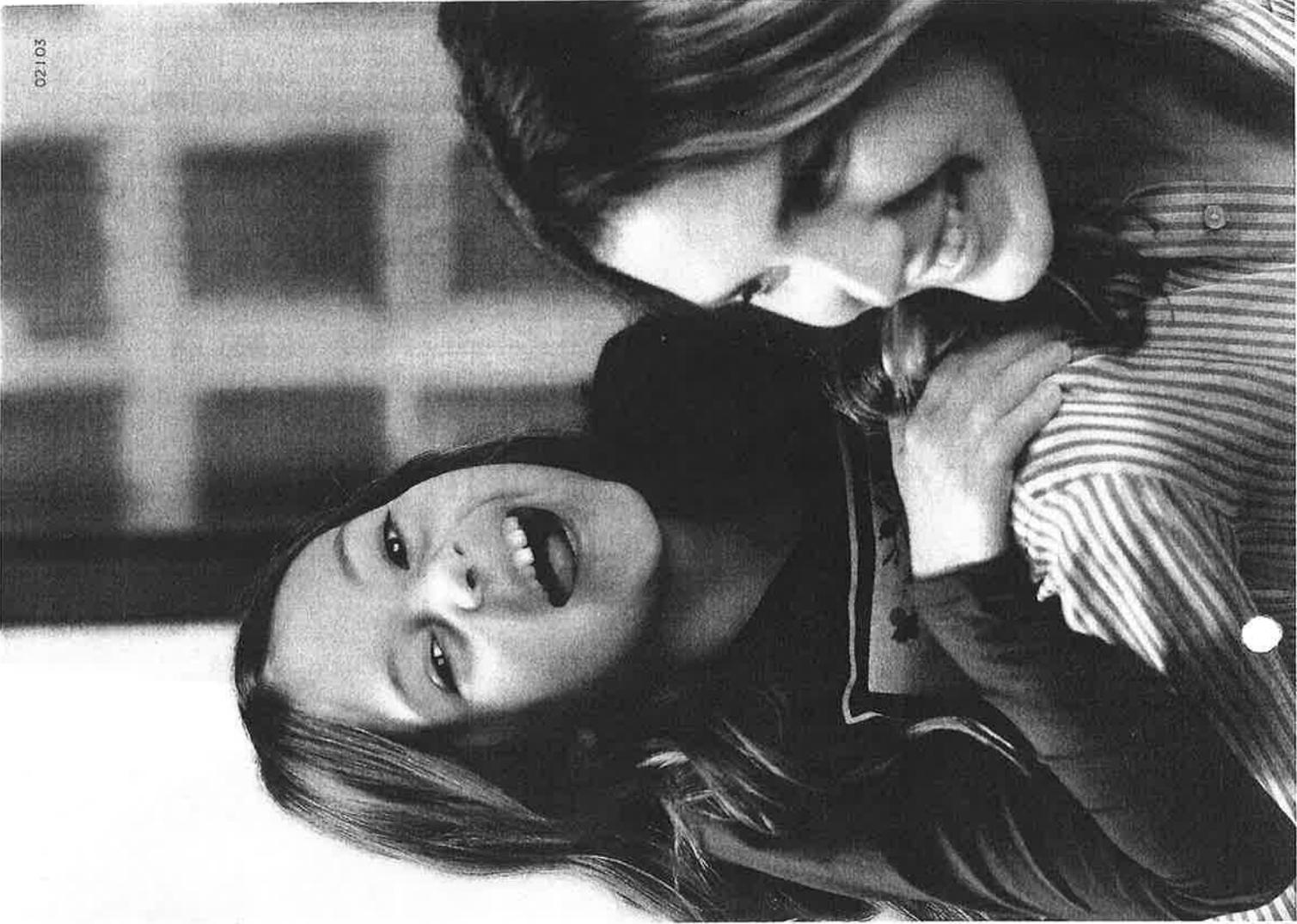
Endodontics



Endodontics



Endodontics



Turbines - very powerful yet very quiet

Our turbine portfolio offers products for every need. They all have one thing in common: complete operating control at maximum output - and, what's more, they are quieter than ever before.



Every turbine offers:

- Up to 25 watt for high torque
- Optimal view, thanks to ideal lighting and small head dimensions reduced head volume of up to 19%
- Double bar keratin stop (protective head system)
- Robust ceramic ball bearings
- Quick-stop function, quick bur run-down time reduced by up to 50% due to a wear-free quick stop
- Unbelievably low noise output as a result of the 4-nozzle spray
- Ergonomic: can be sterilized and thermally disinfected
- Dynamic Speed Control (DSC) for smoother operation at lower rotational speed
- Polyethylene Vetal filter



Every single product boasts excellent quality features



Small head dimensions

The small head dimensions of the Dentsply Sirona instruments ensure ergonomic comfort and precise results while guaranteeing an optimum view at all times. The head of the mini turbine has a diameter of only 9.7 mm at 21 W power.



Ergonomic design made of high quality material

Regardless if made fully out of titanium as the T1 Premium class or robust stainless steel with exceptionally good grip, as in the T2 and T3 classes, the materials of the new turbine generation support your work in the best way possible.



Dynamic Speed Control (DSC)

The DSC ensures that the idling speed of a dental turbine is limited without reducing its power.



Wear-free Quick Stop

Without mechanical influence, the T1 and T2 Control turbines have a bur run-down time of less than one second.



Long service life guaranteed

All Dentsply Sirona instruments stand for a long service life with a warranty of at least 12 months.

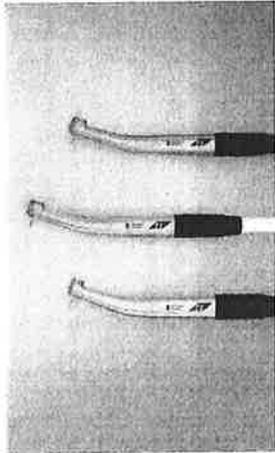


Strong Grip

The turbines of the T2 and T3 classes are equipped with a surface finish providing an exceptionally strong grip which supports comfortable working.

T1 turbines – perfection that fits in your hand

Premium class turbines lie ideally balanced in your hand. Regardless of whether you choose the T1 Control, T1 Boost or T1 mini, all turbines offer high power, provide optimum control at all times and are extremely quiet when working.



T1 turbines offer these benefits:

- Ergonomic lightweight titanium sleeves: 22% lighter than before
- DLC coated ceramic ball bearings*
- Dynamic Speed Control (DSC) for smoother operation and less tearing.
- Economical replacement of the rotor cartridge by the user
- Reduction of head volume at steady or even increased power.

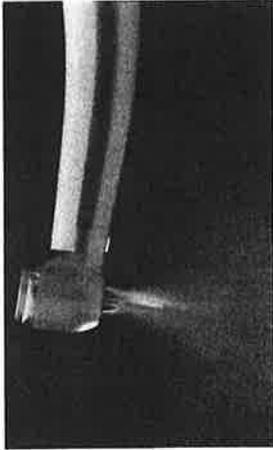
T2 turbines – quality you can rely on

You can rely on our T2 class turbines for any situation. The continuous high performance, the ergonomic shape together with a surface finish for strong grip, these turbines made of stainless steel are guaranteed to satisfy.



T2 turbines offer these benefits:

- High robustness due to sleeves made of stainless steel and surface finish for strong grip.
- Robust ceramic ball bearings
- Dynamic Speed Control (DSC) for smoother operation and less tearing
- Suitable for all common quick-coupling versions (Click S, 50)
- Economical replacement of the rotor cartridge by the user



Low noise level: T2 turbines with 4-nozzle spray

The best possible quality made in Germany.

"Made in Germany" – this is Dentsply Sirona's continually renewed brand promise of making customer satisfaction its uppermost priority. The promise is alive. And here in Germany, we breathe new life into it on a daily basis. The excellent quality of our instruments is based on three typical German values: thoroughness, reliability and a pioneering spirit.

T3 turbines – quick coupling

The turbines of the T3 class are made of stainless steel, are easy to clean and have a good grip due to a surface finish. Up to 26 watts of power and ceramic ball bearings ensure efficient working in the long run. In other words: lasting efficiency.



T3 mini: With the extra small mini head options you receive optimum access to the molar region and an optimal view of the preparation site. T3 mini has an impressive head size (height: 12.7 mm, diameter: 9.7 mm) to torque ratio.

T3 Boost: The robust T3 Boost does it all! The stainless steel turbine stands out due to its ease of use and has the required power to satisfy every requirement.

The T3 turbines also offer:

- A low-vibration clamping system
- Integrated water filter

T3 turbines – fixed connection

The long-term stable materials ensure that our T3 turbines with fixed connection remain sturdy for years to come. The turbine with 4-nozzle spray is especially quiet and the high-quality sleeve is simple and easy to clean.



T3 mini: With the extra small mini head options you have optimum access to the molar region and an optimal view of the preparation site. T3 mini has an impressive head size (height: 12.7 mm, diameter: 10.2 mm) to torque ratio.

T3 Racer: With up to 30 watts, the T3 Racer is by far the most powerful fixed connection turbine. This means that you can work even faster and even more efficiently.

The T3 turbines (fixed connection) also offer:

- Your choice of midwest 4-hole and Borden 2/3-hole
- A low-vibration clamping system



T1, T2 and T3 instrument series -
your requirements, your choice



Reliability is a priority.

"I only consider instruments with top-class features and excellent workmanship."

Quality counts.

"Instruments with a high degree of functionality and ideal ergonomics are the only right choice for me."

Benefit from proven products.

"I will only consider instruments which offer good value for money."

T1 Line instrument series -
Stay flexible with ease.

T1 turbine instrument series -
Perfection that fits in your hand.

T2 Line/T2 S-Line instrument series -
The comfortable solution.

T2 turbine instrument series -
Quality you can rely on.

T3 Line/T3 S-Line instrument series -
Continued cost-effectiveness.

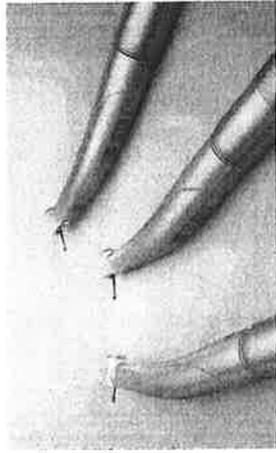
T3 turbine instrument series -
Quick coupling/fixed connection.



T1 Line – stay flexible with ease

The high-quality straight and contra-angle handpiece series T1 Line excels due to its ergonomic design. It sits feather-light in your hand thanks to the titanium sleeves. This guarantees fatigue-free working and precise results. You stay flexible with the ISO interface, regardless of the treatment center you are using.

This guarantees fatigue-free working and precise results. You stay flexible with the ISO interface, regardless of the treatment center you are using.

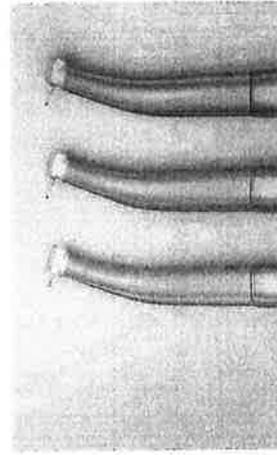


The T1 Line offers you these benefits:

- 3-year warranty
- Longer service life thanks to DLC (Diamond like Carbon) coated ball bearings
- Optimal illumination for an excellent view
- A universal ISO interface
- Adaptability to motors with light thanks to the ISO Slider*

T2 Line – the comfortable solution

T2 Line is the robust straight and contra-angle handpiece series in the comfort class. Quality and Dentsply Sirona's expertise are combined to create a product series with functionality and reliability to ensure complete focus on the treatment.



Take advantage of the many convenient features:

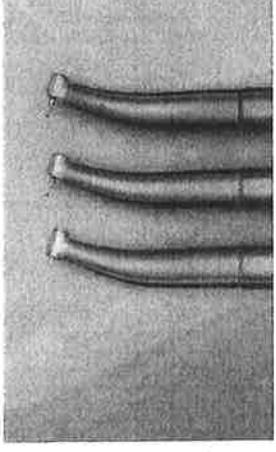
- 2-year warranty
- Optimal illumination for an excellent view
- A universal ISO interface
- Adaptability to motors with light thanks to the ISO Slider*

T2 S-Line:

- Considerably shorter, thus improved ergonomics
- Very lightweight thanks to the compact size
- Smallest head dimensions just 8.7 mm in diameter

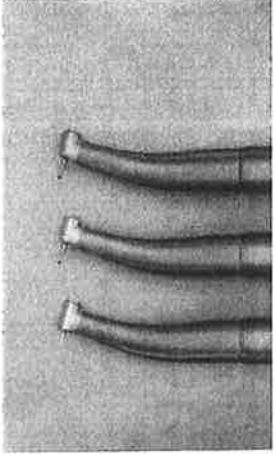
T3 Line – continued cost-effectiveness

The straight and contra-angle handpieces of the T3 class with their extremely robust titanium sleeves are sturdy and an investment that will provide satisfaction for years to come.



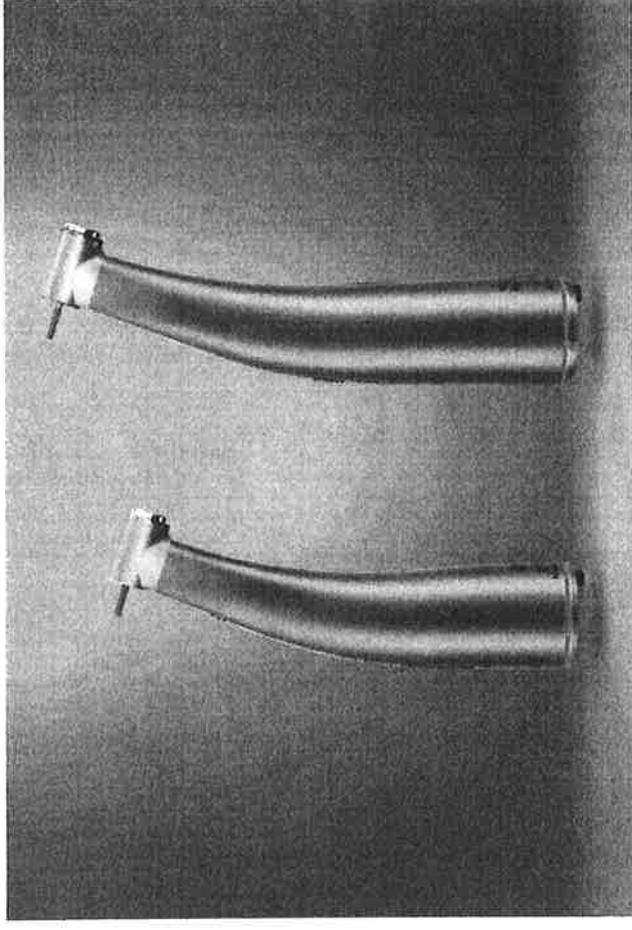
The T3 Line also offers:

- Universal ISO interface



T3 S-Line

- Considerably shorter, thus improved ergonomics
- Very lightweight thanks to the compact size
- Smallest head dimensions just 8.7 mm in diameter



Comparison T2 Line and T2 S-Line: 117% shorter

The right contra-angle handpiece for every task

The premium class is Dentsply Sirona's comprehensive range of special contra-angle handpieces. This way, you are guaranteed to find the right solution for every task.



Prophy for prophylaxis

The contra-angle handpiece Prophy enables brilliant polishing of teeth and material surfaces in connection with brushes and cords.



EVA 04 L/11 L for micropreparations

Due to the flexibility of the file adjustment, the EVA contra-angle handpiece is especially good for polishing, removing composite residues and smoothing root surfaces.



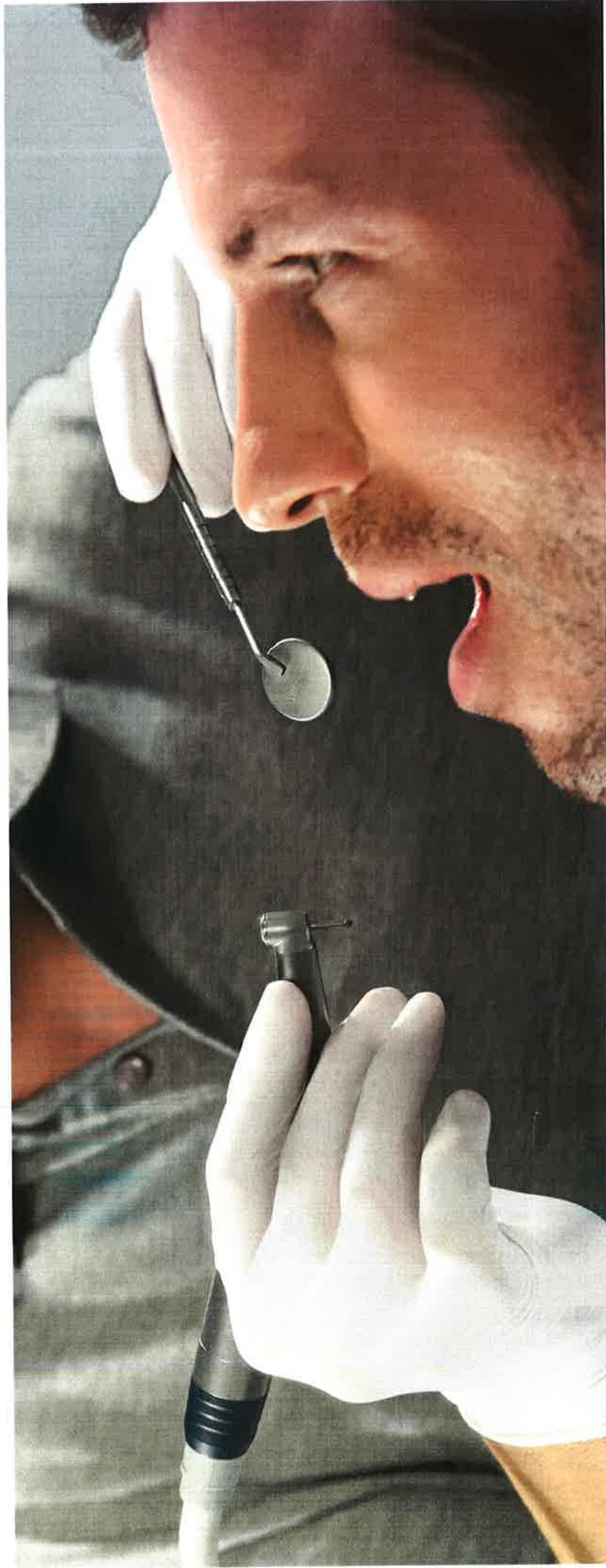
Endo L for endodontics

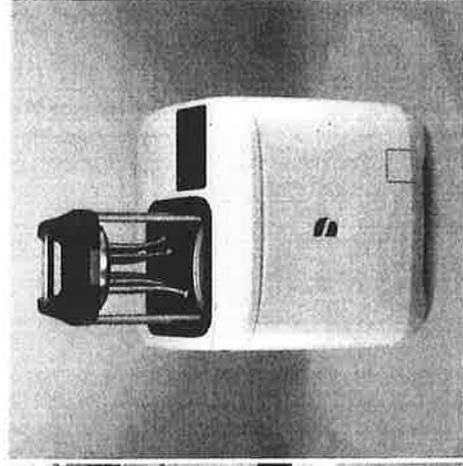
The 2-in-1 root canal preparation principle is based on offering a single contra-angle handpiece that enables efficient use of hand files and mechanically operated steel files.



Endo 6 L for endodontics/endometry

In combination with the AperLocator file Endo 6 L allows for localization of the apex without a file clamp. The extra small head ensures that the dentist has the best possible view of the root canal.





Want to eliminate infection control risks? Then activate DAC Universal

Comply with infection control standards at the touch of a button and avoid cross-contamination: Be on the safe side with DAC Universal. Patients and staff can rely on this all-round protection and put their complete trust in treatment with reprocessed and thermally disinfected instruments.

Easy handling

- New design
- Touch display with intuitive user interface
- Guided maintenance workflow Check & Clean

Cost-effective reprocessing

- Low operating and consumption costs – no use of cleaning and disinfection chemicals and chemoindicators
- Low investment costs in instruments thanks to cooling at the end of the process and therefore quick return to service

Fully automatic reprocessing

- Six instruments in approx. 15 minutes
- Internal and external cleaning, lubrication (if needed) and disinfection* of straight and contra-angle handpieces, turbines, ultrasonic handpieces and tips, nozzles of multifunctional syringes and powder jet devices as well as powder jet handpieces
- Process safety through automatic program selection
- LAN interface for electrical documentation

Legal certainty

- Cleaning and disinfection process which can be validated
- Cleaning and disinfection process in accordance with EN ISO 15883-1/-2

Overview of technical data

T1 Line

Types	Gear ratio/ reduction	Speeds	Head diameter (mm)	Head height (mm)	Features	Indication	Ref.
T1 Line C 200 L	1:5	Up to approx. 200,000	Approx. 8,7	Approx. 14,6	Die 1, 6 FF	Carb. and chrom. preparation	33 28 452
T1 Line C 40 L	1:1	Up to approx. 40,000	Approx. 8,7	Approx. 12,4	Die 2, 5 / 12	Finishing	33 28 437
T1 Line C 6 L	6:1	Up to approx. 6,000	Approx. 8,7	Approx. 12,4	Die 2, 35 / 8	Exhausting	33 28 429
T1 Line C 16 L	2:1:1	Up to approx. 16,000	Approx. 8,7	Approx. 12,4	Die 2, 35 v/B	Exhausting	33 23 101
T1 Line H 40 L	1:1	Up to approx. 40,000	-	-	Die 2, 35 HBA/v/B	Pre-machining	60 31 277

Contra-angle handpiece red 1:1 with 4-nozzle spray, contra-angle handpieces: blue 1:1 and green 6:1 or 3:1 with nozzle spray handpiece, blue 1:1 with nozzle spray.

T1 turbines

Types	Power (W)	Head diameter (mm)	Head height (mm)	Weight (g)	Idling speed (rpm)	Indication
T1 Control	Up to 12	Approx. 11,5	Approx. 13,0	Approx. 41	Approx. 250,000	Utility preparation
T1 Blast	Up to 26	Approx. 11,4	Approx. 12,7	Approx. 44	Approx. 270,000	Contra-angle handpiece
T1 Mini	Up to 21	Approx. 9,7	Approx. 12,7	Approx. 43	Approx. 410,000	Contra-angle handpiece

Dentaply Sirona connection

Types/Ref.	Dentaply Sirona connection	Head diameter (mm)	Head height (mm)	Weight (g)	Idling speed (rpm)	Indication
T1 Central	66 89 365	66 89 365	66 89 365	66 89 365	66 89 365	66 89 365
T1 Blast	66 89 389	66 89 389	66 89 389	66 89 389	66 89 389	66 89 389
T1 Mini	66 89 421	66 89 421	66 89 421	66 89 421	66 89 421	66 89 421

Dentaply Sirona quick coupling/Ref.

4-hole standard interface with light, spray control and back suction stop

Types/Ref.	R (LED), with return airflow	R (LED), with return airflow	R (LED), without return airflow
	18 94 589	63 19 706	41 74 467

Special contra-angle handpieces

Types	Gear ratio/ reduction	Speeds/cycles	Features	T1 Classic Ref.	T1 Line Ref.	Indication
Prophy	2.4:1	Up to approx. 5,000	5-way nozzle (4 for air)	58 00 278	18 04 001	Prophy-tips
EVA 04 L	-	Stroke 0.4 mm	-	58 99 237	32 25 260	Polishing
EVA 11 L	-	Stroke 1.1 mm	-	58 99 245	41 77 016	Polishing
Endo L	-	Nozzle 1, 30°	Short, dia. 3.6-4.0/ Adapter dia. 2.35	58 99 260	55 68 552	Endodontics
Endo G1	3:1	Up to approx. 6,000	No. 1, 35 v/B	-	65 27 181	Endodontics



Overview of technical data



T2 Line

Types	Gear ratio/reduction	Speeds	Head diameter (mm)	Head height (mm)	Features	Indication	Ref.
T2 Line A 200 L	1:5	Up to approx. 200,000	Approx. 87	Approx. 2,6	Die 1,5 FG	Cavity and crown preparation	63 76 177
T2 Line A 40 L	1:1	Up to approx. 40,000	Approx. 87	Approx. 12,4	Die 2,35 V18	Finishing	63 76 184
T2 Line A 6 L	6:1	Up to approx. 6,000	Approx. 87	Approx. 2,4	Die 2,35 WB	Excavating	63 76 193
T2 Line A 140 L	1:1	Up to approx. 40,000	-	-	Die 2,35 HB V18	Preparation	63 76 201

Contra-angle handpieces red 1:5 with 1-nozzle spray, contra-angle handpieces, blue 1:1 and green 6:1 with 1-nozzle spray, handpiece, blue 1:1 with nozzle spray

T2 S-Line

Types	Gear ratio/reduction	Speeds	Head diameter (mm)	Head height (mm)	Features	Indication	Ref.
T2 S-Line AS 200 L	1:5	Up to approx. 200,000	Approx. 87	Approx. 4,5	Die 1,5 FE	Cavity and finish preparation	65 76 065
T2 S-Line AS 40 L	1:1	Up to approx. 40,000	Approx. 87	Approx. 12,4	Die 2,35 WR	Finishing	65 76 073
T2 S-Line AS 6 L	6:1	Up to approx. 6,000	Approx. 87	Approx. 2,4	Die 2,35 WB	Excavating	65 76 081

Contra-angle handpieces red 1:5 with 4-nozzle spray, contra-angle handpieces, blue 1:1 and green 6:1 with 1-nozzle spray

T2 turbines

Types	Power (W)	Head diameter (mm)	Head height (mm)	Weight (g)	Idling speed (rpm)	Indication
T2 Control	Up to 22	Approx. 11,9	Approx. 13,0	Approx. 54	Approx. 250,000	Cavity preparation
T2 Boost	Up to 22	Approx. 11,9	Approx. 13,0	Approx. 54	Approx. 370,000	Cavity preparation
T2 mini	Up to 21	Approx. 9,7	Approx. 10,2	Approx. 53	Approx. 410,000	Cavity preparation

Types/ref.	Dentsply Sirona connection	KaVo connection	W&H connection	NSK connection
T2 Control	66 89 520	66 89 546	66 89 561	66 89 603
T2 Boost	66 89 629	66 89 617	66 89 602	66 89 678
T2 mini	66 89 702	66 89 744	66 89 769	66 89 785

Types	Power (W)	Head diameter (mm)	Head height (mm)	Weight (g)	Idling speed (rpm)	Indication
T2 Boost	Up to 26	Approx. 11,4	Approx. 13,0	Approx. 54	Approx. 370,000	Cavity preparation
T2 mini	Up to 21	Approx. 9,7	Approx. 10,2	Approx. 53	Approx. 410,000	Cavity preparation

Types	Power (W)	Head diameter (mm)	Head height (mm)	Weight (g)	Idling speed (rpm)	Indication
T2 Boost	66 89 801	66 89 827	66 89 827	66 89 827	66 89 827	Cavity preparation
T2 mini	66 89 843	66 89 856	66 89 856	66 89 856	66 89 856	Cavity preparation

Types/ref.	Dentsply Sirona connection	KaVo connection	W&H connection	NSK connection
T2 Boost	66 89 801	66 89 827	66 89 827	66 89 827
T2 mini	66 89 843	66 89 856	66 89 856	66 89 856

Types	Power (W)	Head diameter (mm)	Head height (mm)	Weight (g)	Idling speed (rpm)	Indication
T2 Boost	Up to 30	Approx. 11,9	Approx. 13,0	Approx. 70	Approx. 400,000	Cavity preparation
T2 Boost	Up to 30	Approx. 11,9	Approx. 13,0	Approx. 46	Approx. 400,000	Cavity preparation
T2 mini	Up to 21	Approx. 10,2	Approx. 10,7	Approx. 47	Approx. 410,000	Cavity preparation
T2 mini Boost	Up to 24	Approx. 10,2	Approx. 10,7	Approx. 47	Approx. 410,000	Cavity preparation

Types	Power (W)	Head diameter (mm)	Head height (mm)	Weight (g)	Idling speed (rpm)	Indication
T2 Boost	66 89 801	66 89 827	66 89 827	66 89 827	66 89 827	Cavity preparation
T2 mini	66 89 843	66 89 856	66 89 856	66 89 856	66 89 856	Cavity preparation

Types/ref.	Dentsply Sirona connection	KaVo connection	W&H connection	NSK connection
T2 Boost	66 89 801	66 89 827	66 89 827	66 89 827
T2 mini	66 89 843	66 89 856	66 89 856	66 89 856

Types	Power (W)	Head diameter (mm)	Head height (mm)	Weight (g)	Idling speed (rpm)	Indication
T2 Boost	Up to 30	Approx. 11,9	Approx. 13,0	Approx. 70	Approx. 400,000	Cavity preparation
T2 Boost	Up to 30	Approx. 11,9	Approx. 13,0	Approx. 46	Approx. 400,000	Cavity preparation
T2 mini	Up to 21	Approx. 10,2	Approx. 10,7	Approx. 47	Approx. 410,000	Cavity preparation
T2 mini Boost	Up to 24	Approx. 10,2	Approx. 10,7	Approx. 47	Approx. 410,000	Cavity preparation

Types	Power (W)	Head diameter (mm)	Head height (mm)	Weight (g)	Idling speed (rpm)	Indication
T2 Boost	66 89 801	66 89 827	66 89 827	66 89 827	66 89 827	Cavity preparation
T2 mini	66 89 843	66 89 856	66 89 856	66 89 856	66 89 856	Cavity preparation

T3 Line

Types	Gear ratio/reduction	Speeds	Head diameter (mm)	Head height (mm)	Features	Indication	Ref.
T3 Line E 200	1:5	Up to approx. 200,000	Approx. 87	Approx. 14,6	Die 1,6 FG	Cavity and crown preparation	63 92 579
T3 Line E 40	1:1	Up to approx. 40,000	Approx. 87	Approx. 12,4	Die 2,35 V18	Finishing	63 92 667
T3 Line E 6	6:1	Up to approx. 6,000	Approx. 87	Approx. 12,4	Die 2,35 WB	Excavating	63 92 655
T3 Line EH 140	1:1	Up to approx. 40,000	-	-	Die 2,35 HB V18	Preparation	63 92 711

T3 Line: Contra-angle handpieces, red 1:5 with 4-nozzle spray, contra-angle handpieces, blue 1:1 and green 6:1 with 1-nozzle spray.

T3 S-Line

Types	Gear ratio/reduction	Speeds	Head diameter (mm)	Head height (mm)	Features	Indication	Ref.
T3 S-Line ES 200	1:5	Up to approx. 200,000	Approx. 87	Approx. 14,6	Die 1,6 FG	Cavity and crown preparation	65 76 123
T3 S-Line ES 40	1:1	Up to approx. 40,000	Approx. 87	Approx. 12,4	Die 2,35 WR	Finishing	65 76 131
T3 S-Line ES 6	6:1	Up to approx. 6,000	Approx. 87	Approx. 12,4	Die 2,35 V18	Excavating	65 76 149

T3 S-Line: Contra-angle handpieces red 1:5 with 4-nozzle spray, contra-angle handpieces, blue 1:1 and green 6:1 with 1-nozzle spray

T3 turbines - quick coupling

Types	Power (W)	Head diameter (mm)	Head height (mm)	Weight (g)	Idling speed (rpm)	Spray	Features (mm)	Indication
T3 Boost	Up to 26	Approx. 11,4	Approx. 13,0	Approx. 54	Approx. 370,000	4	1,6 FG	Cavity preparation
T3 mini	Up to 21	Approx. 9,7	Approx. 10,2	Approx. 53	Approx. 410,000	4	1,6 FS	Cavity preparation

Types/ref.	Dentsply Sirona connection	KaVo connection
T3 Boost	66 89 801	66 89 827
T3 mini	66 89 843	66 89 856

Dentsply Sirona quick coupling/Ref

4-hole standard interface with light spray central end back suction stop

T3 turbines - fix connection

Types	Power (W)	Head diameter (mm)	Head height (mm)	Weight (g)	Idling speed (rpm)	Spray	Features (mm)	Indication	Ref.
T3 Boost	Up to 30	Approx. 11,9	Approx. 13,0	Approx. 70	Approx. 400,000	4	1,6 F-3	Cavity preparation	61 60 345
T3 Boost	Up to 30	Approx. 11,9	Approx. 13,0	Approx. 46	Approx. 400,000	4	1,6 F-3	Cavity preparation	64 60 427
T3 mini	Up to 21	Approx. 10,2	Approx. 10,7	Approx. 47	Approx. 410,000	4	1,6 FS	Cavity preparation	66 01 731
T3 mini Boost	Up to 24	Approx. 10,2	Approx. 10,7	Approx. 47	Approx. 410,000	4	1,6 FS	Cavity preparation	66 01 756

Dentsply Sirona

Sirona Dental Systems GmbH
Fabrikstraße 31, 64625 Bensheim, Germany
dentsplysirona.com

Procedural Solutions

Preventive
Restorative
Orthodontics
Endodontics
Implants
Prosthetics

Enabling Technologies

CAD/CAM
Imaging
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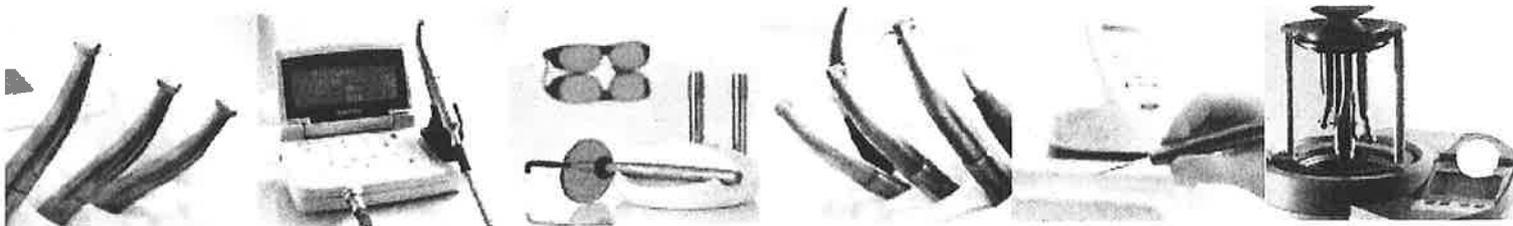
Subject to technical changes and errors in the text. Order No. A91100-1445-C052-01-7600. Printed in Germany. Dispo No. 04603 CEW17 WS 0212V0

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Paper versions of the instructions may not be available for all of these products. You can easily download an electronic PDF version of these instructions at www.dentsplysirona.com/manuals.

Products and applications – everything under control



Cavity preparation

Straight and contra-angle handpieces

- T1 Classic
- T1 Line
- T2 Line/T2 S-Line
- T3 Line/T3 S-Line
- T4 Line

Turbines

- T1 Turbines
- T2 Turbines
- T3 Turbines
- T4 Turbines

Caries control

- SiroInspect

Scaler and tips

- PerioSonic
- SiroSonic/L/TL
- Tips

Endodontics

Straight and contra-angle handpieces

- T1 Classic
- T1 Line

Endo motor and contra-angle handpieces

- SiroNiTi Apex/Air Plus Apex
- SiroEndo Pocket
- Endo 6:1

Diode laser

- SiroLaser Blue
- SiroLaser Advance Plus
- SiroLaser Xtend

Scaler and tips

- PerioSonic
- SiroSonic/L/TL
- Tips

Prophylaxis

Straight and contra-angle handpieces

- T1 Classic
- T1 Line
- T2 Line/T2 S-Line
- T3 Line/T3 S-Line
- T4 Line

Scaler and tips

- PerioSonic
- SiroSonic/L/TL
- Tips

Periodontology

Diode laser

- SiroLaser Blue
- SiroLaser Advance Plus
- SiroLaser Xtend

Scaler and tips

- PerioSonic
- SiroSonic/L/TL
- Tips

Implantology/Surgery

Contra-angle handpieces

- T1 Classic KM 1,6 L
- Implant 20:1

Diode laser

- SiroLaser Blue
- SiroLaser Advance Plus
- SiroLaser Xtend

Scaler and tips

- PerioSonic
- SiroSonic/L/TL
- Tips

In general

Hygiene systems

- DAC Universal
- DAC Premium/
DAC Premium Plus
- DAC Professional/
DAC Professional Plus
- SiroSeal-Professional/
SiroSeal Premium
- Water treatment

Motors

- Motor SL/SL ISO
- Motor BL/BL E/BL ISO
C/E/BL Implant

Syringes

- Sprayvit E/M

SiroInspect – don't let checkups become a matter of luck

With SiroInspect you can be sure of recognising caries quickly and simply during dental excavation. Unlike manual staining, for example, you are able to see straight away whether any treatment is needed: red-fluorescent light indicates all carious areas on a large scale. It will be easy for you to make the right decision and you will know with certainty to what extent existing caries has to be excavated. And there will be no change to the sequence of your normal working routine – simply switch on the probe, carry out your checkup and then treat as usual.

Your advantages at a glance:

The advantages are on your side with SiroInspect, because working with SiroInspect means safe, quick, and easy checkups.

Safe

SiroInspect is a reliable aid for your decisions. Making your work minimally invasive and patient friendly.

Fast

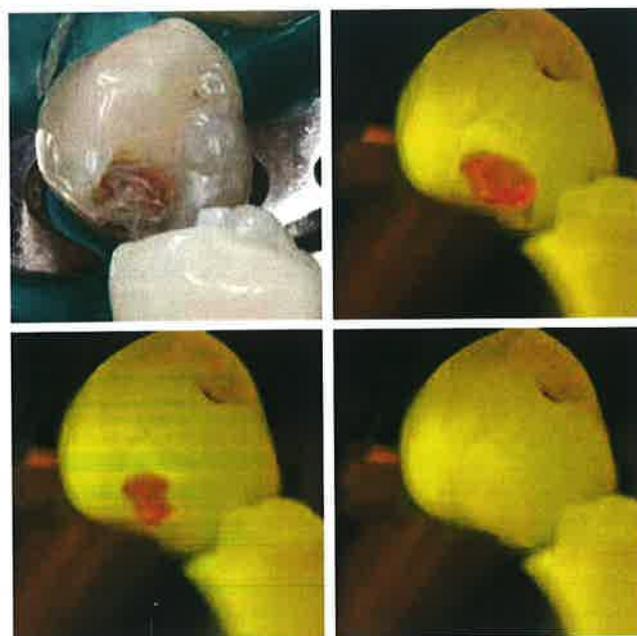
It takes a few seconds for stains to work. SiroInspect needs just the simple press of a button – and you will immediately see where excavation is needed.

Simple

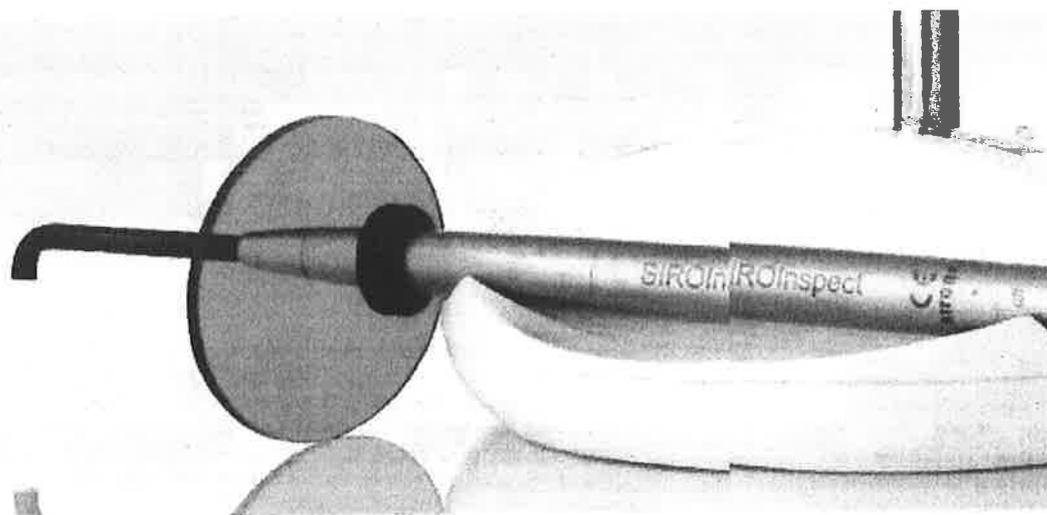
SiroInspect is easy to operate and can be flexibly integrated into your workflow. Its cable-free operation enables you to treat in more than one room with a single instrument.

Red fluorescence for caries – and your check-up becomes a mere “thumbs up”

During excavation the probe illuminates the tooth with violet light (approx. 405 nm). This stimulates both decomposition products of caries bacteria as well as healthy dentine to fluoresce. The “clip on filter” supplied with the SiroInspect filters out short wavelengths below 500 nm. Light of higher wavelengths remains visible thanks to the filter. In this way, red fluorescing carious areas can be recognised both quickly and safely. Healthy tooth material differs in this respect by fluorescing green.



© Prof. Dr. Wolfgang Buchalla



98% of red-fluorescing dentin were clearly associated with porphyrins, decomposition products of caries bacteria.*

* Buchalla, Porphyrins are the Cause of Red Fluorescence of Carious Dentine Verified by Gradient Reversed-Phase HPLC, 2008.

SirolInspect – tried and tested

Our innovations are subjected to numerous tests before being brought to the market. SirolInspect and FACE® technology were also put through their paces in various scientific trials and user studies to check for any teething problems. The result: SirolInspect with FACE® technology works with greater reliability than other control methods for the prevention of secondary caries.

Advantages compared to conventional methods

System	Sensitivity	
	Study*	Study**
SirolInspect with FACE® technology	94%	100%
Tactile probe	76%	89%
Caries detector	65%	78%

System	Specificity	
	Study*	Study**
SirolInspect with FACE® technology	83%	91%
Tactile probe	65%	77%
Caries detector	17%	27%

* Lennon, Residual Caries Detection Using Visible Fluorescence, 2002.

** Buchalla, Luminescence Assisted Caries Excavation, 2004.

Everything you need – scope of delivery and accessories

Scope of delivery	Ref.
SirolInspect (incl. probe, battery charger with power adapter, 2 rechargeable batteries, 2 fibre optic sources 90°-sterilizable, 2 clip on filters, clinical guideline)	63 25 174
SirolInspect GB	64 08 749
SirolInspect USA, CA	64 08 756
SirolInspect AUS	64 08 764

Accessories

Accessory	Ref.
Charging station	63 75 435
Probe, complete (body, fibre optic source 90°, rechargeable batteries, 2 clip on filters)	63 75 534
Body (without fibre optic source, without rechargeable batteries)	63 75 401
Fibre optic source 90°	63 75 419
Fibre optic source 90° (pack of 3)	63 75 484
Fibre optic source 140°	63 75 542
Fibre optic source 140° (pack of 3)	63 75 559
Diagnostic glasses (orange)	63 75 518
Rechargeable batteries	63 75 443
Clip on filter (2 pcs.)	64 30 057

Only the best for every application

For optimal work results, you need the right instruments, but you will only achieve precise results if these instruments are lightweight and easy to use. We consistently meet this requirement with our instrument series. Whichever series you choose, you will receive top-quality products that make your work enjoyable – for all application areas and workflow steps.

No matter what the day brings,
Dentsply Sirona always has the right solution



Cavity and crown preparation



Endodontics



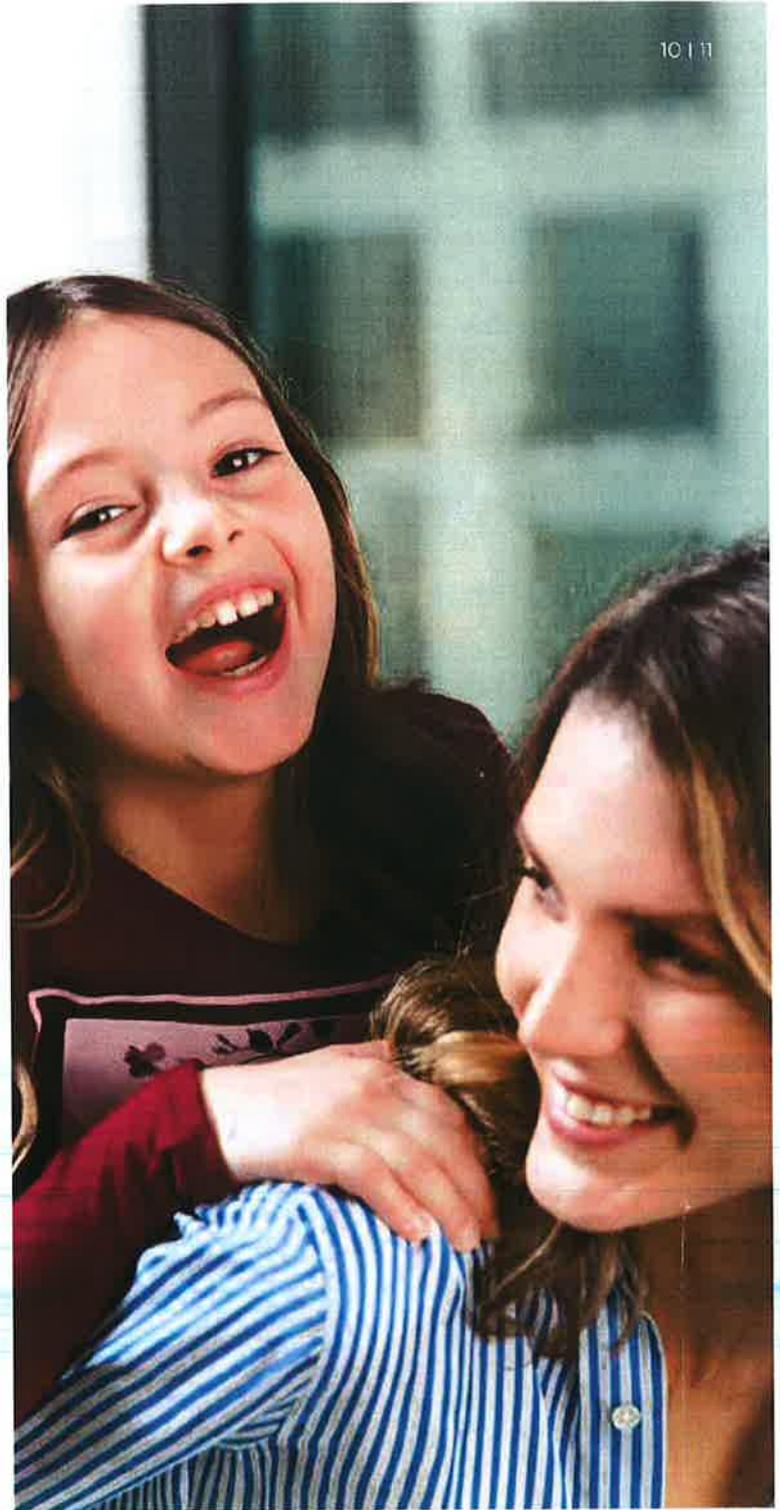
Prophylaxis



Implantology

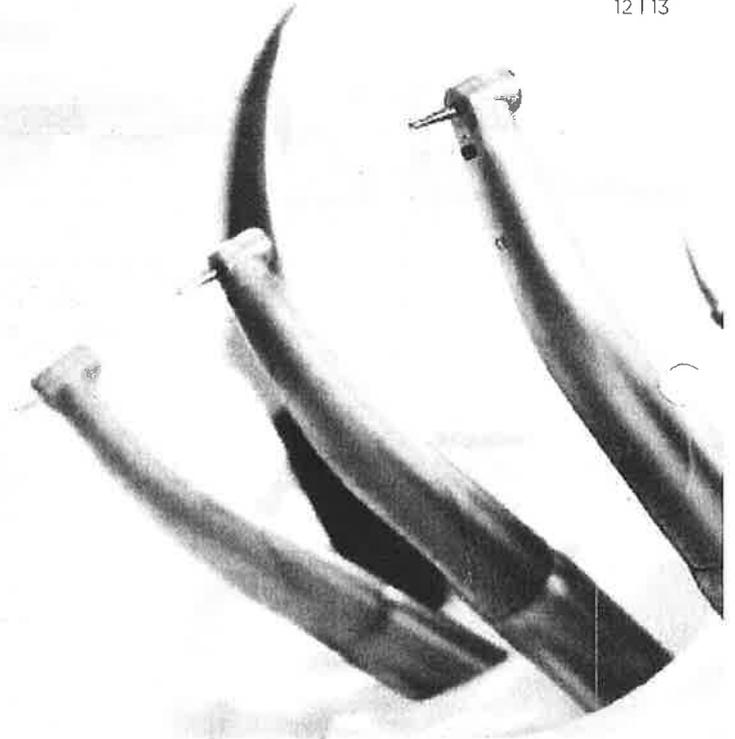


Surgery

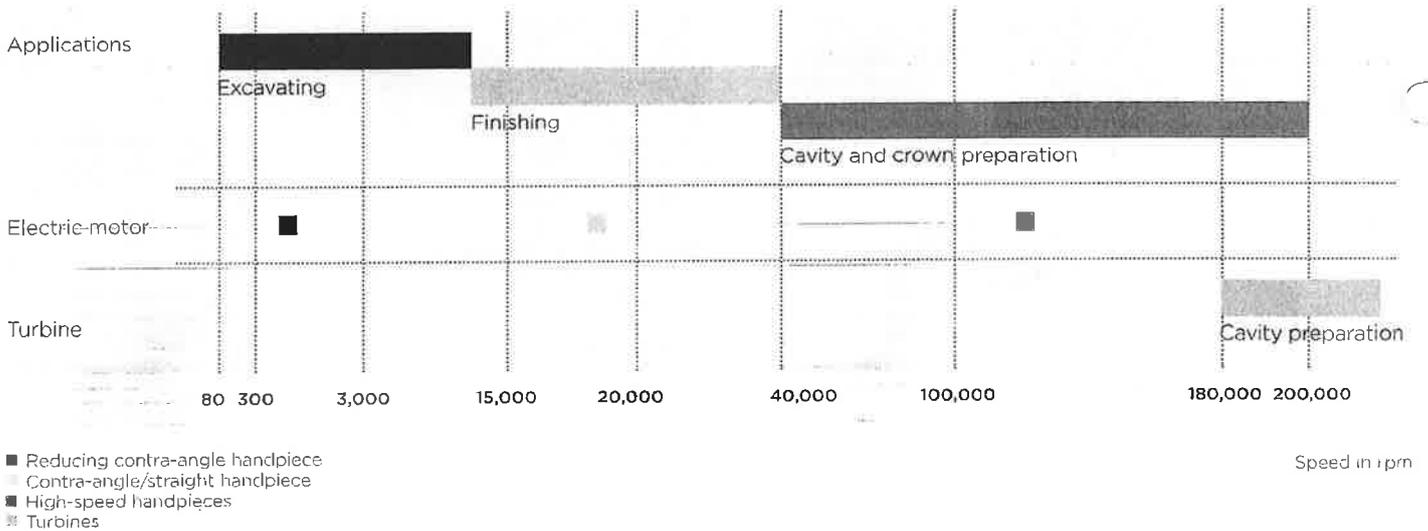


Always the right speed for the best efficiency.

What tasks are the different standard instruments suitable for? Straight and contra-angle handpieces with different speed ranges and turbines are used depending on the desired application.



Instrument classes – application and speed range



Turbines – the power of silence

The extensive portfolio of Dentsply Sirona turbines offers dental turbines for every possible wish. All the turbines have one thing in common: complete operating control at maximum output – and with the 4-nozzle spray quieter than ever. Simply choose your favorites within the available T-Classes according to your personal preferences and method of working.

Whether which turbine you prefer, Dentsply Sirona suits each individual demand. With the exclusive Click & Go interfaces the Dentsply Sirona turbines are compatible with all the popular types of coupling. This allows you to swap turbines in seconds – at no extra cost.

T1 – Reliability is a priority

T1 turbines are excellent manufactured and are top-of-the-line equipment.

T2 – Quality counts

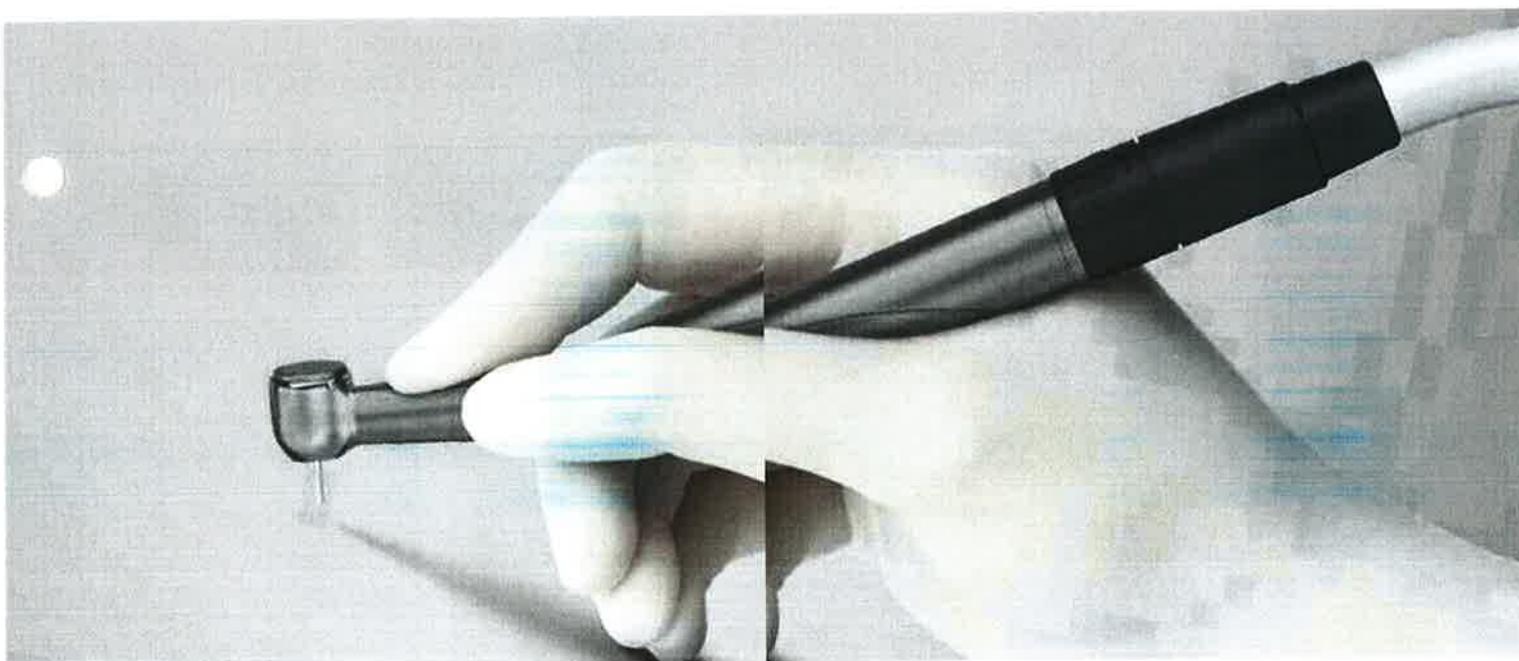
T2 turbines feature high functionality and ideal ergonomics.

T3 – Benefit from proven products

T3 turbines have a good price-performance ratio.

T4 – The entrance to the Dentsply Sirona world

Dentsply Sirona T4 turbines stand for reliable quality made in Germany.



T1 turbines – precision in the palm of your hand

T1 class turbines lie ideally balanced in your hand. Regardless of whether you choose the T1 Control, T1 Boost, or T1 mini, all turbines offer high performance, give you optimal control at all times, and are extremely quiet during operation.

- Up to 23 watts for high torque
- Optimal view thanks to ideal lighting and small head dimensions
- Double back-suction stop (protective head system)
- Quick-stop function: quick burr run-down time
- Unbelievably quiet thanks to the 4-nozzle spray
- Hygienic: can be sterilized and thermally disinfected
- Ergonomic, lightweight titanium sleeves
- DLC coated ceramic ball bearings
- Control function: continuous operation at low noise level
- Suitable for all common quick-coupling versions (Click & Go)
- Economical replacement of the rotor cartridge by the user

* Longer service life due to DLC (diamond-like carbon) coated ball bearings

T1 turbines –
overview of technical data:

Types	Power (W)	Head diameter (mm)	Head height (mm)	Weight (g)	Idling speed (rpm)
T1 Control	✳ - 22	- 12.4	- 13.8	- 56	- 250,000
T1 Boost	✳ - 23	- 11.9	- 13.0	- 55	- 370,000
T1 mini	✳ - 20	- 10.2	- 12.7	- 54	- 400,000

Interface type	Ref.		
	T1 Control	T1 Boost	T1 mini
Dentsply Sirona	63 86 598	63 86 606	63 86 630
KaVo	63 86 754	63 86 911	63 86 994
W&H	63 86 770	63 86 929	63 87 000
NSK	63 86 812	63 86 937	63 87 018

F/B Dentsply Sirona quick coupling:

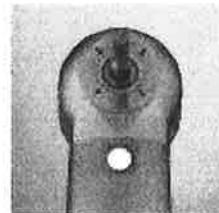
4-hole standard interface with light, spray control, and back-suction stop RR (LED): for instruments with a return air duct F: for instruments without a return air duct



R: Ref. 18 94 583
R (LED): Ref. 63 19 706

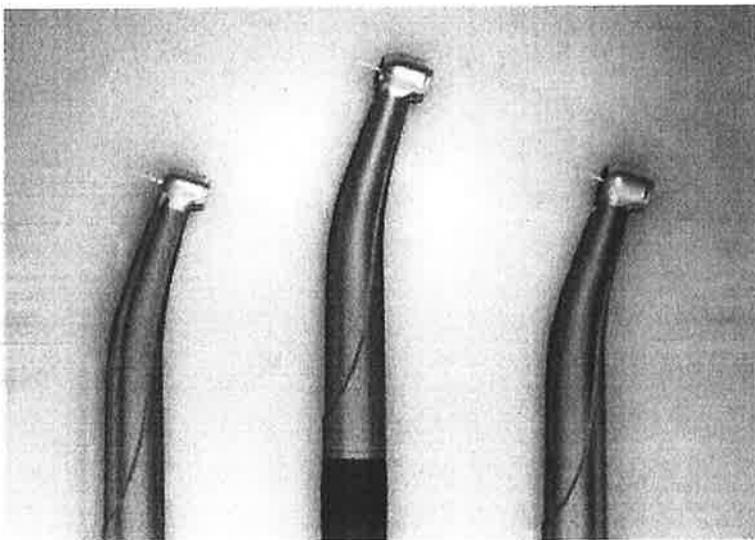


F: Ref. 41 74 467



The 4-nozzle spray makes the T1 turbines the quietest in their class.

2-year warranty



T2 turbines - quality you can rely on

You can rely on our T2 Class turbines in any situation. The continuous high performance, the ergonomic shape together with the titanium-coated exterior sleeve and the robust workmanship of our turbines are guaranteed to not let you down.

- Up to 23 watts for high torque
- Optimal view thanks to ideal lighting and small head dimensions
- Double back-suction stop (protective head system)
- Robust ceramic ball bearings
- Quick-stop function: quick burr run-down time
- Unbelievably quiet thanks to the 4-nozzle spray
- Hygienic: can be sterilized and thermally disinfected
- Easy-to-grip titanium-coated sleeve
- Control function: continuous operation at low noise level
- Suitable for all common quick-coupling versions (Click & Go)
- Economical replacement of the rotor cartridge by the user



T2 turbines - overview of technical data*

Types	Power (W)	Head diameter (mm)	Head height (mm)	Weight (g)	Idling speed (rpm)
T2 Control	✳ - 22	- 12,4	- 13,8	- 57	- 250.000
T2 Boost	✳ - 23	- 11,9	- 13,0	- 56	- 370.000
T2 mini	✳ - 20	- 10,2	- 12,7	- 55	- 400.000

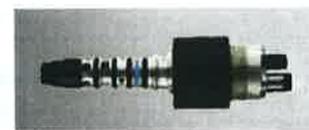
Interface type	Ref.		
	T2 Control	T2 Boost	T2 mini
Dentsply Sirona	63 86 648	63 86 655	63 86 663
KaVo	63 87 737	63 87 778	63 87 802
W&H	63 87 752	63 87 786	63 87 810
NSK	63 87 760	63 87 794	63 87 828

F/B Dentsply Sirona quick coupling:

4-hole standard interface with light, spray control, and back-suction stop RR (LED): for instruments with a return air duct F: for instruments without a return air duct



R: Ref. 18 94 588
R (LED): Ref. 63 19 706



F: Ref. 41 74 467



Low noise level
T2 turbines with 4-nozzle spray

2-year
warranty

T3 Turbines - quick coupling

The titanium-coated turbines of the T3 Class are easy to clean and have a good grip. Up to 23 watts of power and ceramic ball bearings ensure efficient work for a long time. In other words: lasting efficiency.

T3 mini: With the extra small mini head options you get optimum access to the molar region and an optimal view of the preparation site. T3 mini has an impressive head size (height: 12.7 mm, diameter: 10.2 mm) to torque ratio.

T3 Boost: The robust T3 Boost does it all! The titanium-plated turbine stands out due to its ease of use and has the required power to satisfy every requirement.

- Up to 23 watts for high torque
- Optimal view thanks to ideal lighting and small head dimensions
- Double back-suction stop (protective head system)
- Robust ceramic ball bearings
- Quick-stop function: quick burr run-down time
- Unbelievably quiet thanks to the 4-nozzle spray
- Hygienic: can be sterilized and thermally disinfected
- Suitable for all common quick-coupling versions (Click & Go)
- Clamping system with low vibration

T3 Turbines - quick coupling
Technical data overview:

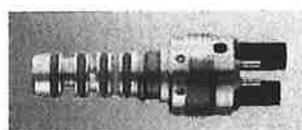
Types	Power (W)	Head diameter (mm)	Head height (mm)	Weight (g)
T3 Boost	-23	- 11.9	- 13.0	- 56
T3 mini	-20	- 10.2	- 12.7	- 55

Types	Speed (min ⁻¹)	Spray	Equip-ment (mm)	Indication
T3 Boost	-370,000	4	1.6 FG	Cavity preparation
T3 mini	-400,000	4	1.6 FG	Cavity preparation

Types/Ref.	Sirona interface	KaVo interface	W&H interface	NSK interface
T3 Boost	63 87 919	63 87 927	63 87 935	63 87 943
T3 mini	63 87 950	63 87 968	63 87 976	63 87 984

Dentsply Sirona - quick coupling:

4 hole standard connection without light, without spray regulation and with anti-retraction stop

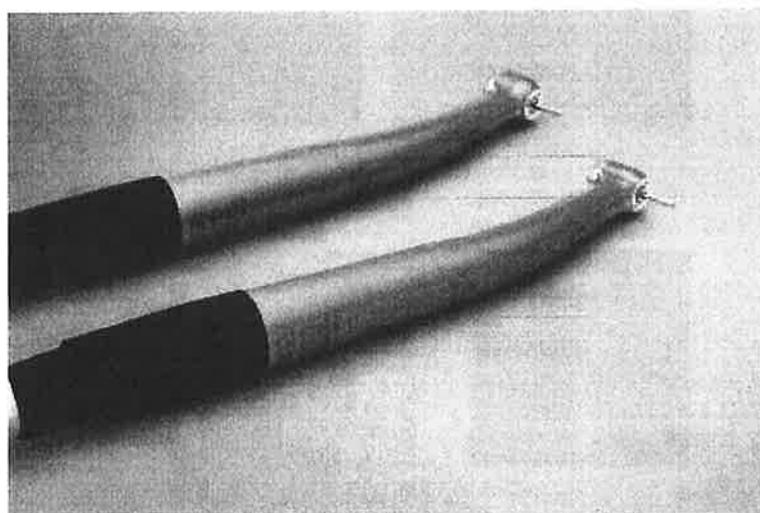


B, units without exhaust of drive air: Ref: 58 61 724



Extremely quiet:
T3 Turbines with 4-nozzle spray

1 Year
Guarantee



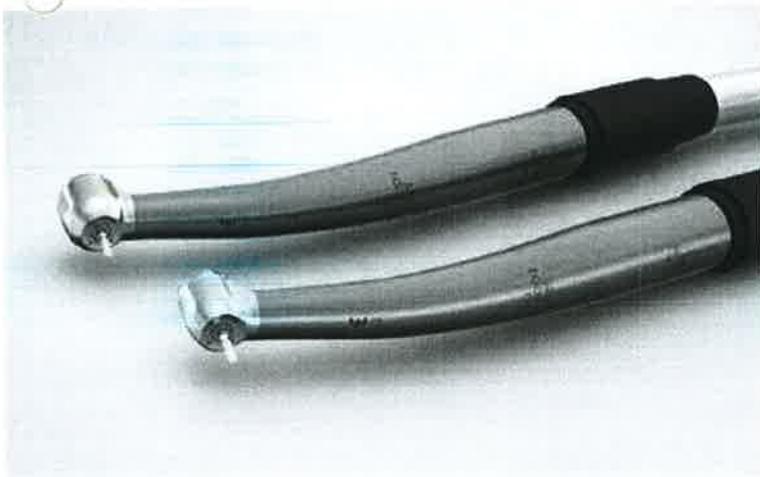
T3 Turbines – fixed connection

The long term stable materials ensure that our T3 Turbines with fixed connection remain sturdy for years to come. The turbine with 4-nozzle spray is especially quiet and the high-quality sleeve is simple and easy to clean.

T3 Racer: With up to 30 watts, the T3 Racer is by far the most powerful fixed connection turbine. This means that you can work even faster and even more efficiently.

T3 mini: With the extra small mini head options you get optimum access to the molar region and an optimal view of the preparation site. T3 mini has an impressive head size (height: 12.7 mm, diameter: 10.2 mm) to torque ratio.

- Quality "Made in Germany"
- Most powerful turbine with 30 watts
- Very silent thanks to 4-nozzle spray
- Stainless steel, long term stable material
- Durable ceramic ball bearings
- Small head dimensions for better visibility and access
- Protective Head System (PHS) for a lower risk of cross-contamination
- Quick stop function (QSF) allowing for faster stop of the burr
- Clamping system with low vibrations for more precision
- Hygiene: can be sterilized and thermally disinfected



T3 Turbines – fixed connection Technical data overview:

Types	Power (W)	Head diameter (mm)	Head height (mm)	Weight (g)	Speed (min ⁻¹)
T3 Racer Midwest	-30	- 11.9	- 13.0	- 46	-400,000
T3 Racer Borden	-30	- 11.9	- 13.0	- 46	-400,000
T3 mini Midwest	-24	- 10.2	- 12.7	- 47	-410,000
T3 mini Borden	-24	- 10.2	- 12.7	- 47	-410,000

Types	Spray	Equipment (mm)	Indication	Ref.
T3 Racer Midwest	4	1,6 FG	Cavity preparation	64 60 385
T3 Racer Borden	4	1,6 FG	Cavity preparation	64 60 427
T3 mini Midwest	4	1,6 FG	Cavity preparation	66 01 731
T3 mini Borden	4	1,6 FG	Cavity preparation	66 01 756



ISO 4-hole



Borden 2/3-hole



Extremely quiet
T3 Turbines with 4-nozzle spray

1 Year
Guarantee

T4 Turbines* - the entrance to the Dentsply Sirona world

The turbine of the T4 class convinces with its combination of an essential design and exceptional high power level of up to 26 watts. Regardless which treatment unit you use, with Midwest 4-hole and Borden 2/3-hole you have always the right choice.

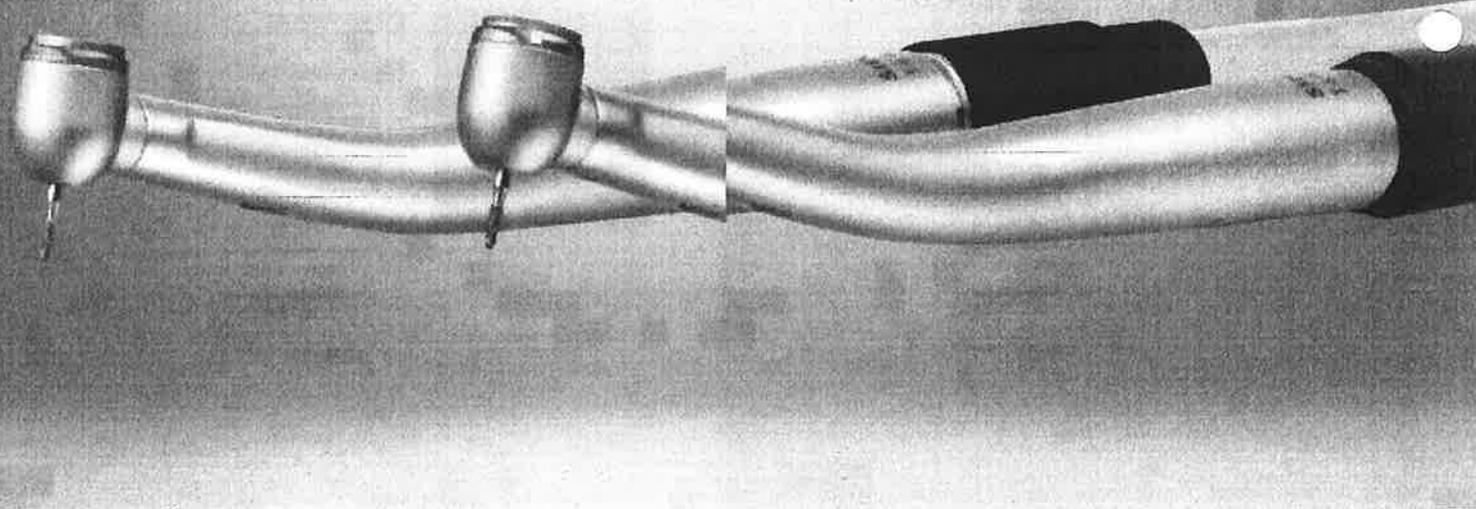
- Essential design out of stainless steel
- Ceramic ball bearings
- Single spray
- Up to 26 watts
- Push button chuck

* Not available in all countries.

T4 Turbines -
Technical data overview:

Types	Head diameter (mm)	Head height (mm)	Weight (g)	Speed (min ⁻¹)
T4 Racer Midwest	- 11,9	- 13	- 48	-400,000
T4 Racer Borden	- 11,9	- 13	- 48	-400,000

Types	Spray	Equipment (mm)	Ref.	Ref. Package of 25
T4 Racer Midwest	Single	1.6 FG	66 24 394	63 86 234
T4 Racer Borden	Single	1.6 FG	66 24 402	64 12 816



Straight and contra-angle handpieces – unique in every class

The straight and contra-angle handpiece program from Dentsply Sirona is characterized by high flexibility. Straight and contra-angle handpieces from Dentsply Sirona are the perfect tools for standard preparations like e.g. processing fissures, removing tooth enamel and dentine, refining the edge of the cavity or placing pins. With their vast variety of versions they are also ideal for prosthodontics, micropreparation, surgery, endodontics and prophylaxis.

T1 Classic – no compromises

T1 Classic instruments are designed so that you get the best results with every patient.

T1 Line – reliability is a priority

T1 Line instruments are expertly manufactured and are top-of-the-line equipment.

T2 Line/T2 S-Line – quality counts

T2 Line instruments feature high functionality and ideal ergonomics.

T3 Line/T3 S-Line – benefit from proven products

T3 Line instruments have a good price-performance ratio.

T4 – The entrance to the Dentsply Sirona world

Dentsply Sirona basic instruments stand for reliable quality made in Germany for a cost effective use.

Titanium, the exclusive material

As the only manufacturer in the dental field worldwide, we are using super-plastic titanium forming technology in our instruments' manufacturing process. With this unique combination of process and material, we succeeded in producing instruments resulting to be amongst the lightest in their class.

Thermoformed titanium can be used everywhere where extreme durability and stability is important and each gram of weight counts, e.g. for jet engine parts in aerospace engineering.



T1 Classic – perfection in balance

T1 Classic is first-class technology. The ideal positioning of the SL motor in the light titanium sleeve ensures that it fits perfectly balanced in your hand. Challenging jobs become child's play and your preparation results are first class.

- Perfect hygiene: can be sterilized and thermally disinfected
- Optimal spray system
- Unbelievably quiet thanks to the 4-nozzle spray
- Optimal view thanks to the small head dimensions
- Ergonomic lightweight titanium casing
- Curved, elegant design for exceptional ergonomics
- Perfect balance with the SL/BL motors
- Longer lifespan thanks to DLC coated ball bearings*
- Optimal illumination for an excellent view

* Longer service life due to DLC (diamond-like carbon) coated ball bearings

T1 Classic –
overview of technical data:

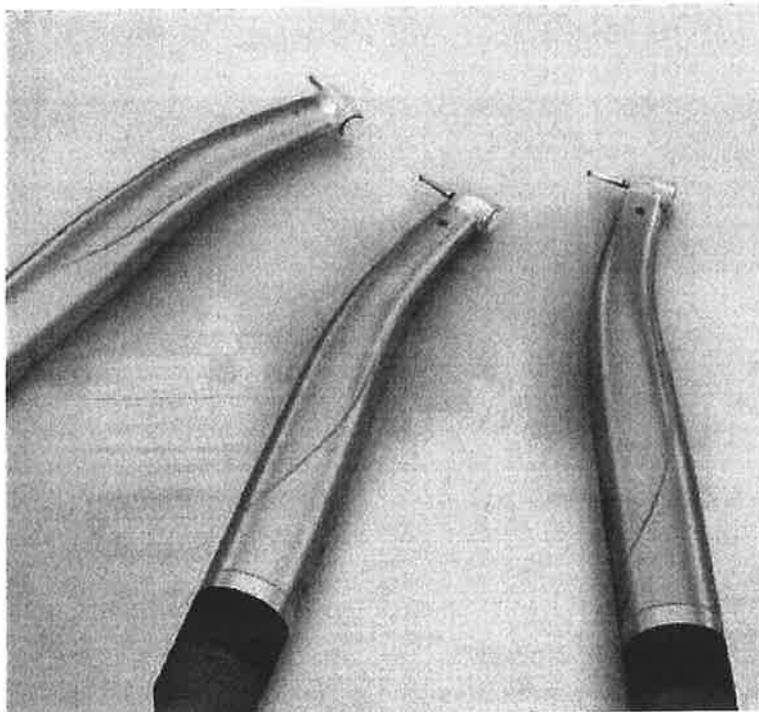
Types/Ref.	Gear ratio/reduction	Head diameter (mm)	Head height (mm)	Features	Speeds (rpm)
T1 Classic S 200 L * ● 58 98 866	1:5	- 8.7	- 14.6	Ø 1.6 FG	- 200,000
T1 Classic S 40 L * ● 58 98 874	1:1	- 8.7	- 12.4	Ø 2.35 WB	- 40,000
T1 Classic S 6 L * ● 58 98 882	6:1	- 8.7	- 12.4	Ø 2.35 WB	- 6,000
T1 Classic S 1,6 L * ● 58 98 890	24:1	- 8.7	- 12.4	Ø 2.35 WB	- 1,600
T1 Classic SH 40 L * ● 60 31 400	1:1	-	-	Ø 2.35 HB/WB	- 40,000

Contra-angle handpiece, red 1:5 with 4-nozzle spray, contra-angle handpiece, blue, 1:1 and green 6:1/24:1 with 1-nozzle spray, handpiece, blue 1:1 with 1-nozzle spray.



Unbelievably quiet:
T1 Classic with 4-nozzle spray

3-year
warranty

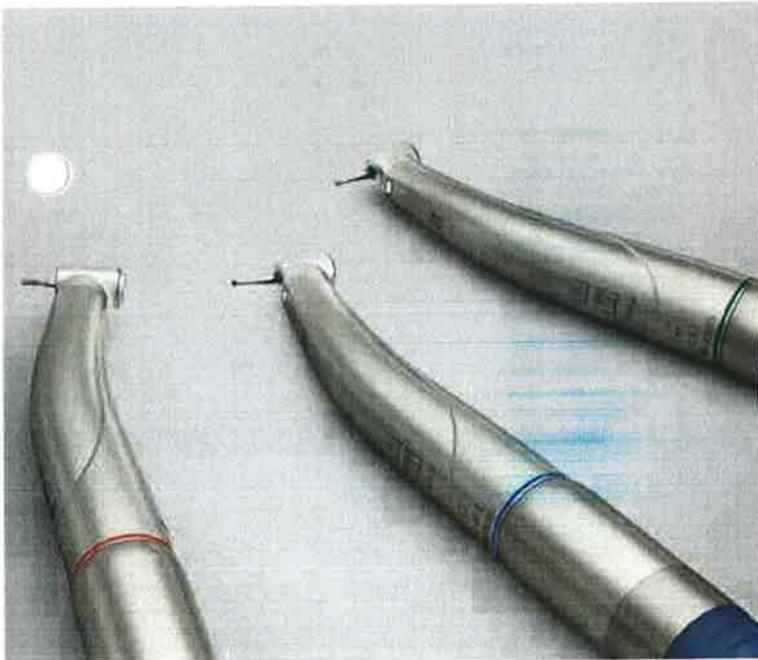


T1 Line – stay flexible with ease

The high-quality T1 Line straight and contra-angle handpiece series excels due to its ergonomic design and sits feather-light in your hand thanks to the titanium sleeves. This guarantees fatigue-free working and precise results. You stay flexible with the ISO interface, regardless of the treatment unit you are using.

- Perfect hygiene: can be sterilized and thermally disinfected
- Optimal spray system
- Unbelievably quiet thanks to the 4-nozzle spray
- Optimal view thanks to the small head dimensions
- Ergonomic lightweight titanium casing
- Longer service life due to DLC-coated ball bearings*
- Optimal illumination for an excellent view
- Universal ISO interface
- Can be adapted to motors with light thanks to the ISO Slider®

* Longer service life due to DLC (diamond-like carbon) coated ball bearings



T1 Line – overview of technical data:

Types/Ref.	Gear ratio/reduction	Head diameter (mm)	Head height (mm)	Features	Speeds (rpm)
T1 Line C 200 L * ● 33 28 452	1:5	- 8.7	- 14.6	Ø 1.6 FG	- 200,000
T1 Line C 40 L * ● 33 28 437	1:1	- 8.7	- 12.4	Ø 2.35 WB	- 40,000
T1 Line C 6 L * ● 33 28 429	6:1	- 8.7	- 12.4	Ø 2.35 WB	- 6,000
T1 Line C 1,6 L * ● 33 28 411	24:1	- 8.7	- 12.4	Ø 2.35 WB	- 1,600
T1 Line H 40 L * ● 60 31 277	1:1	-	-	Ø 2.35 HB/WB	- 40,000

Contra-angle handpiece, red 1:5 with 4-nozzle spray, contra-angle handpiece, blue, 1:1 and green 6:1/24:1 with 1-nozzle spray. handpiece, blue 1:1 with 1-nozzle spray.

With T1 Line you benefit from the flexible ISO interface and the quiet 4-nozzle spray.



3-year
warranty

T2 Line/T2 S-Line – the comfortable solution

The T2 Line is the robust straight and contra-angle handpiece in the comfort class. Quality and Dentsply Sirona's expertise are combined to create a product series with functionality and reliability to ensure that you can completely focus on the treatment.

- Perfect hygiene: can be sterilized and thermally disinfected
- Optimal spray system
- Unbelievably quiet thanks to the 4-nozzle spray
- Optimal view thanks to the small head dimensions
- Ergonomic lightweight titanium casing
- Optimal illumination for an excellent view
- Universal ISO interface
- Can be adapted to motors with light thanks to the ISO Slider®

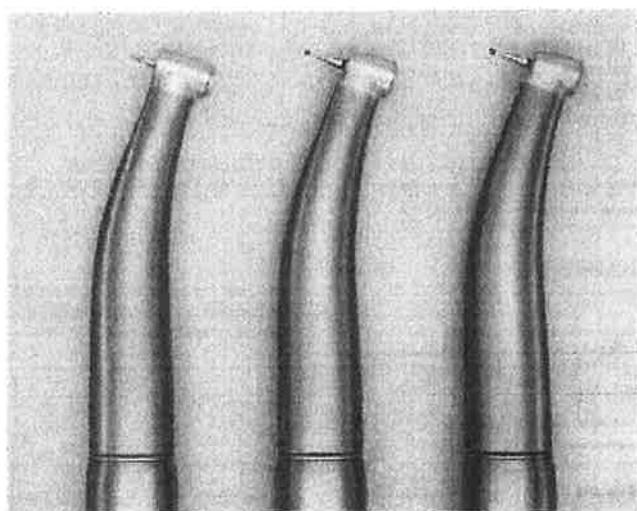


Unbelievably quiet thanks to the 4-nozzle spray.

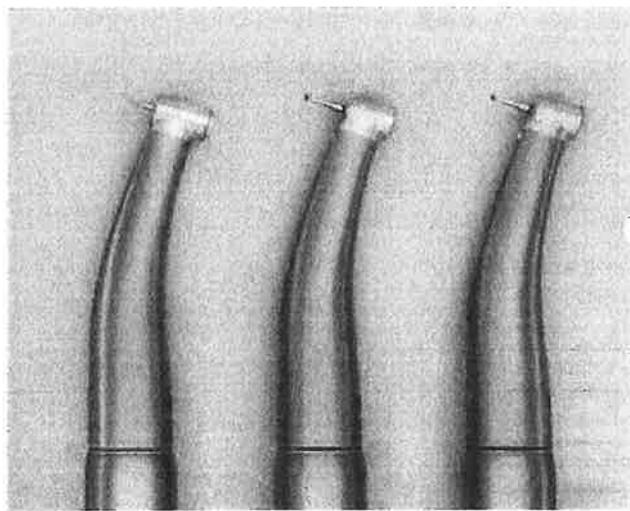
2-year
warranty

New: T2 S-Line

- Considerably shorter, thus improved ergonomics
- Very light thanks to the compact size
- Smallest head dimensions, just 8.7 mm in diameter



T2 Line



T2 S-Line

T2 Line – overview of technical data:

Types/Ref.	Gear ratio/ reduction	Head diame- ter (mm)	Head height (mm)
T2 Line A 200 L ✱ ● 63 76 177	1:5	- 8.7	- 14.6
T2 Line A 40 L ✱ ● 63 76 185	1:1	- 8.7	- 12.4
T2 Line A 6 L ✱ ● 63 76 193	6:1	- 8.7	- 12.4
T2 Line AH 40 L ✱ ● 63 76 201	1:1	-	-

Types/Ref.	Features	Speeds (rpm)	Indication
T2 Line A 200 L ✱ ● 63 76 177	Ø 1.6 FG	- 200,000	Caries and crown preparation
T2 Line A 40 L ✱ ● 63 76 185	Ø 2.35 WB	- 40,000	Finishing
T2 Line A 6 L ✱ ● 63 76 193	Ø 2.35 WB	- 6,000	Excavating
T2 Line AH 40 L ✱ ● 63 76 201	Ø 2.35 HB/WB	- 40,000	Preparation

Contra-angle handpiece, red 1:5 with 4-nozzle spray, contra-angle handpiece, blue, 1:1 and green 6:1 with 1-nozzle spray, handpiece, blue 1:1 with 1-nozzle spray.

T2 S-Line – overview of technical data:

Types/Ref.	Gear ratio/ reduction	Head diame- ter (mm)	Head height (mm)
T2 S-Line AS 200 L ✱ ● 65 76 065	1:5	- 8.7	- 14.6
T2 S-Line AS 40 L ✱ ● 65 76 073	1:1	- 8.7	- 12.4
T2 S-Line AS 6 L ✱ ● 65 76 081	6:1	- 8.7	- 12.4

Types/Ref.	Features	Speeds (rpm)	Indication
T2 S-Line AS 200 L ✱ ● 65 76 065	Ø 1.6 FG	- 200,000	Caries and crown preparation
T2 S-Line AS 40 L ✱ ● 65 76 073	Ø 2.35 WB	- 40,000	Finishing
T2 S-Line AS 6 L ✱ ● 65 76 081	Ø 2.35 WB	- 6,000	Excavating

Contra-angle handpiece, red 1:5 with 4-nozzle spray, contra-angle handpieces, blue 1:1 and green 6:1 with 1-nozzle spray

T3 Line/T3 S-Line - continued cost-effectiveness

The straight and contra-angle handpieces of the T3 class with their extremely robust titanium sleeves are sturdy and an investment that will give you joy for years to come.

- Perfect hygiene: can be sterilized and thermally disinfected
- Optimal spray system
- Quiet thanks to the 4-nozzle spray
- Optimal view thanks to the small head dimensions
- Unbelievably ergonomic lightweight titanium casing
- Universal ISO interface

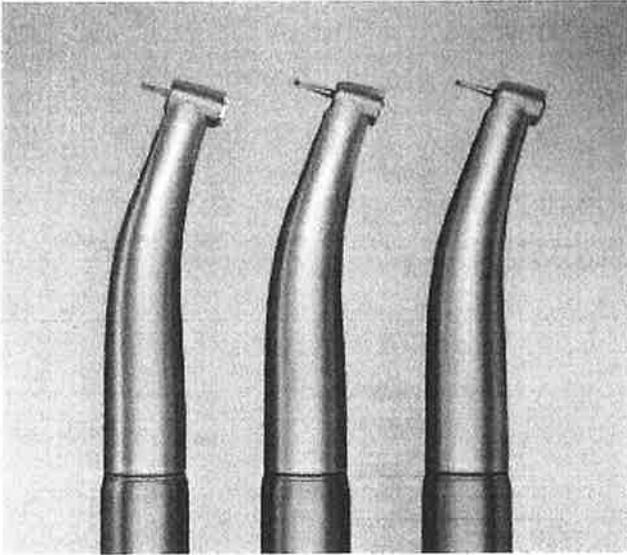


Extremely quiet:
T3 Line with 4-nozzle spray

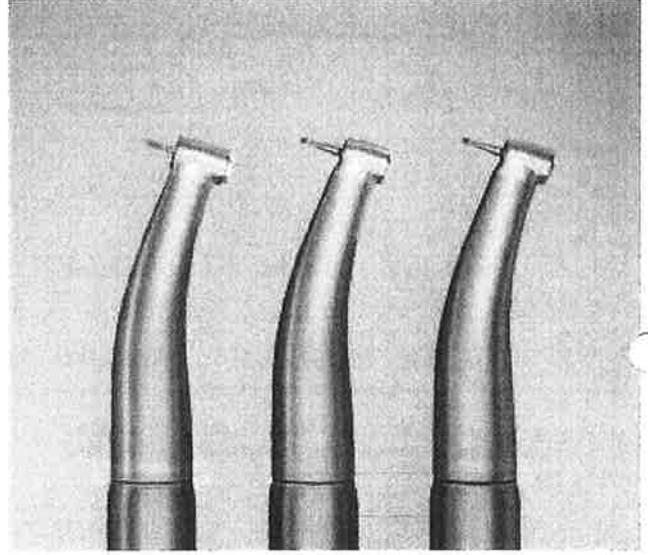
1 Year
Guarantee

New: T3 S-Line

- Considerably shorter, thus improved ergonomics
- Very lightweight thanks to the compact size
- Smallest head dimensions, just 8.7 mm in diameter



T3 Line



T3 S-Line

T3 Line -

Technical data overview:

Types + Ref.	Gear ratio/reduction	Head diameter	Head height (mm)
T3 Line E 200 ● 63 92 679	1:5	- 8.7	- 14.6
T3 Line E 40 ● 63 92 687	1:1	- 8.7	- 12.4
T3 Line E 6 ● 63 92 695	6:1	- 8.7	- 12.4
T3 Line EH 40 ● 63 92 711	1:1	-	-

Types + Ref.	Equipment	Speed (min ⁻¹)	Indication
T3 Line E 200 ● 63 92 679	Ø 1.6 FG	- 200,000	Cavity and crown preparation
T3 Line E 40 ● 63 92 687	Ø 2.35 WB	- 40,000	Finishing
T3 Line E 6 ● 63 92 695	Ø 2.35 WB	- 6,000	Excavating
T3 Line EH 40 ● 63 92 711	Ø 2.35 HB/WB	- 40,000	Preparation

Contra-angle handpiece, red 1:5 with 4-nozzle spray,
Contra-angle handpieces, blue 1:1 and green 6:1 with 1-nozzle spray.

T3 S-Line -

Technical data overview:

Types + Ref.	Gear ratio/reduction	Head diameter	Head height (mm)
T3 S-Line ES 200 ● 65 76 123	1:5	- 8.7	- 14.6
T3 S-Line ES 40 ● 65 76 131	1:1	- 8.7	- 12.4
T3 S-Line ES 6 ● 65 76 149	6:1	- 8.7	- 12.4

Types + Ref.	Equipment	Speed (min ⁻¹)	Indication
T3 S-Line ES 200 ● 65 76 123	Ø 1.6 FG	- 200,000	Cavity and crown preparation
T3 S-Line ES 40 ● 65 76 131	Ø 2.35 WB	- 40,000	Finishing
T3 S-Line ES 6 ● 65 76 149	Ø 2.35 WB	- 6,000	Excavating

Contra-angle handpiece, red 1:5 with 4-nozzle spray,
Contra-angle handpieces, blue 1:1 and green 6:1 with 1-nozzle spray.

T4 Line* – the entrance to the Dentsply Sirona world

The straight and contra-angle handpiece of the T4 class delivers with an essential design and a robust steel sleeve. Due to the air motor – available with Midwest 4-hole or Borden 2/3-hole – you will stay flexible, regardless of the treatment unit you are using.

- Essential design out of stainless steel
- External Spray
- Push button chuck
- For use with burs that have a 2.35 mm burr shaft diameter

* Not available in all countries.

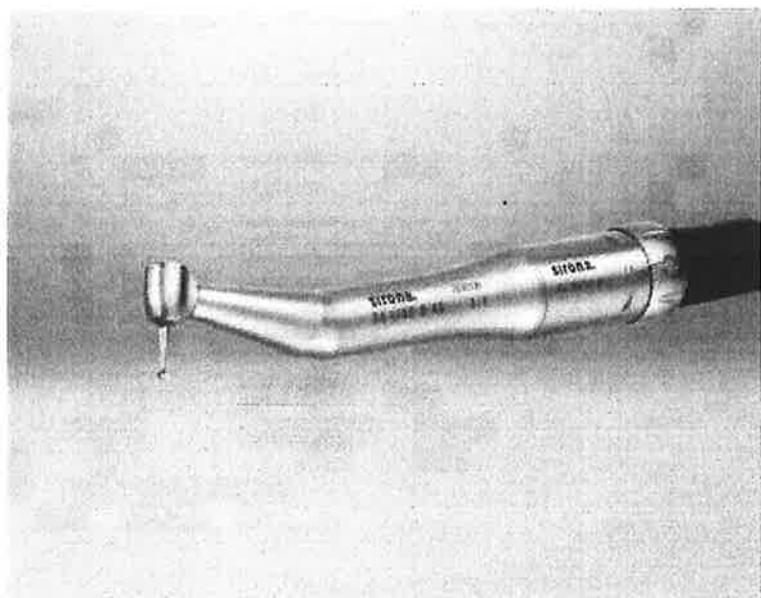
T4 Line –
Technical data overview:

Types + Ref.	Speed (rpm)	Spray	Head diameter (mm)	Head height (mm)
T4 Line B 40	max. 40.000*	external	- 8,7	- 12,4
T4 Line BH 40	max. 40.000	-	-	-
T4 Air Motor BM/BO	-22.000**	external	-	-

Types + Ref.	Weight (g)	Equip-ment	Ref.	Ref. pack- age of 25
T4 Line B 40	-72	Ø 2,35 WB	64 01 827	64 02 106
T4 Line BH 40	-77	Ø 2,35 WB	64 01 843	64 02 114
T4 Air Motor BM/BO	-90	-	64 39 884 64 39 892	64 32 962/ 64 32 970

* -22.000 if connected to the T4 Air Motor BM/BO

** clockwise/counterclockwise



ISO interface and push button for rapid burr change allow efficient handling.

Special contra-angle handpieces – the right contra-angle for every task

Dentsply Sirona offers a wide range of special contra-angle handpieces. This way, you are guaranteed to find the right solution for every task.

Special contra-angle handpieces – overview of technical data:

Types	Gear ratio/reduction	Speeds/cycles (rpm)	Features
Prophy	* 2.4:1	- 5,000	Snap-on & Screw-in
EVA 04 L	* -	Stroke 0.4 mm	-
EVA 11 L	* -	Stroke 1.1 mm	-
Endo L	* -	Movement $\pm 30^\circ$	\varnothing 3.6–4.0 shaft/ adapter \varnothing 2.35
Endo 6 L	* 6:1	- 6,000	\varnothing 2.35 WB
KM 1.6 L	* 24:1	- 1,600	\varnothing 2.35 WB
Condens	* -	- 12,000	-

Types	T1 Classic Ref.	T1 Line Ref.
Prophy	58 99 278	18 94 901
EVA 04 L	58 99 237	33 29 260
EVA 11 L	58 99 245	41 77 015
Endo L	58 99 260	58 69 552
Endo 6 L	-	65 27 191
KM 1.6 L	58 99 252	-
Condens	-	18 94 737



Prophy

For prophylaxis

The contra-angle handpiece Prophy enables brilliant polishing of teeth and material surfaces in connection with brushes and caps.



EVA 04 L/11 L

For micropreparations

Due to the great flexibility of the file adjustment, this contra-angle handpiece is especially good for polishing and removing composite residues and for smoothing root surfaces.



Endo L

For endodontics

The 2-in-1 root canal preparation principle is based on offering a single contra-angle handpiece that enables efficient use of hand files and mechanically operated steel files.



Endo 6 L

For endodontics/endometry

In combination with the ApexLocator, the Endo 6 L allows for localization of the apex without a file clamp. The extra small head ensures that the dentist has the best possible view of the root canal.



KM 1.6 L

For surgery

The Kirschner/Meyer principle, in which the rinsing liquid/coolant is discharged directly into the milling area at the burr tip, enables atraumatic preparation and optimally supports surgical interventions.



Condens

For amalgam fillings

Amalgam fillings can be easily condensed using the Condens contra-angle handpiece combined with DENTATUS AVA tips.

Implant 20:1 – sophisticated down to the smallest detail

Top quality, easy to dismantle, and long-lasting

This contra-angle handpiece for implantology and surgical applications – Implant 20:1 – is equipped with high-quality, precise gears that offer you optimal speed and torque (up to 70 Ncm) for all drilling and shaping applications. The extremely small head diameter provides the best view of the preparation site. Implant 20:1 is therefore ideally suited for all implant and surgical work.

Powerful and flexibly applicable

- The contra-angle handpiece works with the ISO interface.
- Due to its maximum speed of 2,000 min⁻¹* and its high torque of up to 70 Ncm, it is suitable for all drilling and shaping applications.
- Cooling is possible with an internal and external spray.
- It can be used for everything from smoothing the alveolar crest to screwing in the implants.

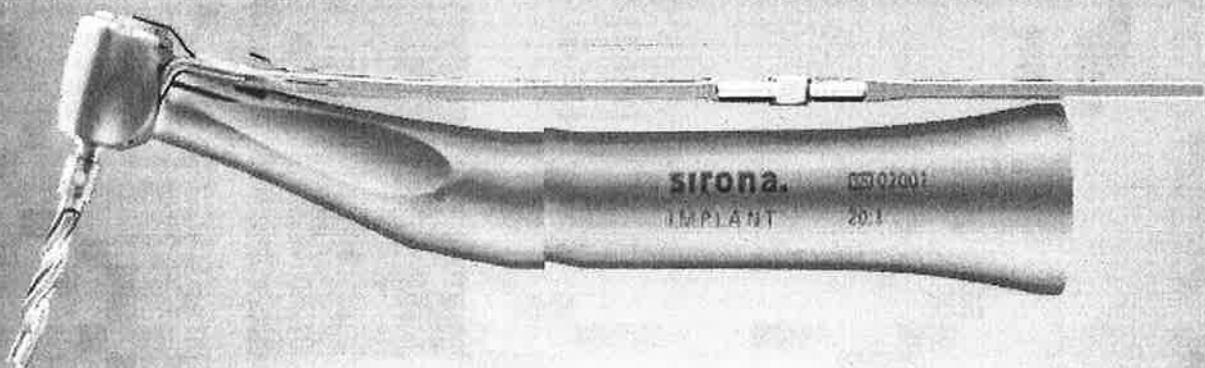
Hygienically perfect!

- The contra-angle can be dismantled easily without any tools.
- The handpieces can be sterilized and thermally disinfected.

Technical data	Implant 20:1
Weight (g)	- 72
Gear ratio/reduction	20:1
Max. speed (rpm)	- 2.000*
Max. torque (Ncm)	- 70
Head height without burr (mm)	- 13.8
Head diameter (mm)	- 10.3
Equipment	Ø 2.35 mm, RA with internal cooling
Chuck	Push-button tension system
Interface	ISO interface

Type	Description/ Equipment	Ref.
Implant 20:1	For implantology and surgery, can be dismantled, gear reduction 20:1	60 43 702

* With a motor speed of - 40.000 rpm.



SiroNiTi Apex/ SiroNiTi Air Plus Apex – the contra-angle handpieces for safe root canal preparation

Endodontics made quick and efficient.

The SiroNiTi Apex and SiroNiTi Air Plus Apex contra-angle handpieces ensure safe and efficient root canal treatment. Both are equipped with a 5-level torque control that can be adjusted easily right on the device. Torque cards included with the contra-angle handpieces specify the torque level suitable for each particular file of the selected file system. As soon as the selected speed is reached, unique retro-rotation caused by gentle release of the coupling prevents the files from blocking the root canal.

The SiroNiTi Apex/SiroNiTi Air Plus Apex contra-angle handpiece allows you to locate the apex even more comfortably. With the gold clip, you can connect many electronic apex locators directly without using a file clamp.

Everything revolves around perfection

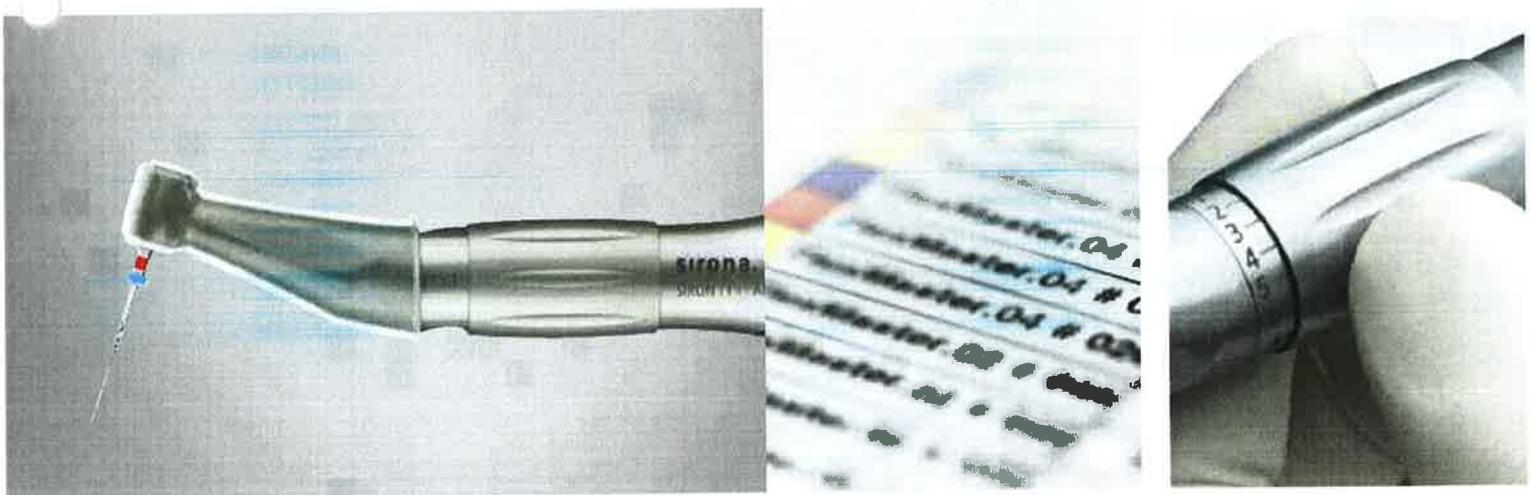
- With a reduction ratio of 115:1, SiroNiTi Apex is perfectly compatible with an electric motor, and SiroNiTi Air Plus Apex (66:1) is more suitable for an air motor.
- All standard nickel-titanium file system with Ø 2.35 mm can be used.
- The ISO interface allows for free selection of the micromotor.

Hygienically perfect!

- The contra-angle handpieces can be sterilized and thermally disinfected

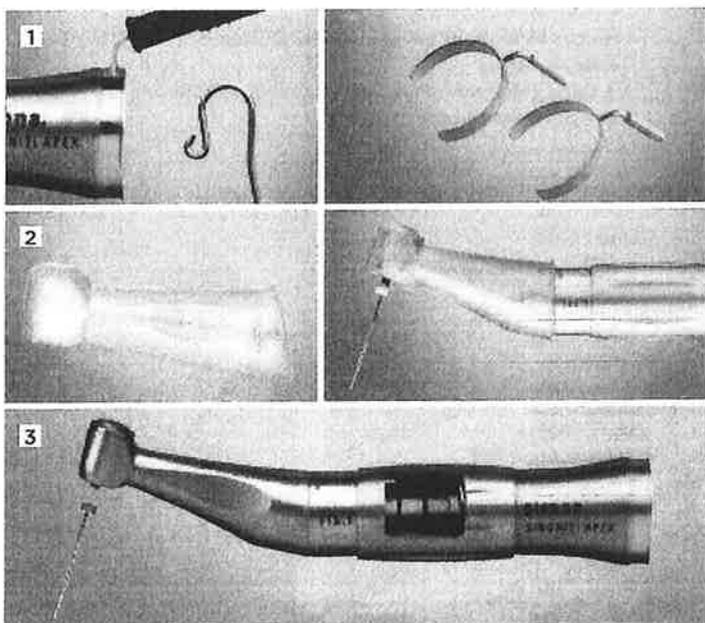
Safely, quickly, and thoroughly.

- Torque cards recommend the suitable torque limits in 5 levels, which can be set by turning a preselection ring directly on the contra-angle handpiece.
- The wear-free, gold-plated magnetic coupling prevents blocking of the file.
- Retro-rotation prevents blocking of the file when the torque is exceeded.
- A large selection of endometric units can be connected to the gold clip for apex location.



SiroNiTi Apex/ SiroNiTi Air Plus Apex – safety is as valuable as gold

- 1** When you connect the mucosal electrode and the measurement cable of your apex locator to the contact pin, you have a complete "endodontic system" at your disposal. The contact pin on the gold clip is available in diameters of 2 mm and 1.5 mm – suitable for endometrial devices.
- 2** The new insulation sleeve enables safer apex location: just pull the single-use sleeve over the handpiece and sterilize the instrument after treatment.
- 3** The gold-plated magnetic coupling prevents blocking the file using retrograde rotation.



SiroNiTi Apex/SiroNiTi Air Plus Apex –
overview of technical data:

Recommended use depending on file system	SiroNiTi Apex	SiroNiTi Air Plus Apex
Electric motor	■	■
Air motor	-	■

Technical data	SiroNiTi Apex	SiroNiTi Air Plus Apex
Gear ratio/reduction	115:1	66:1
Max. operating speed (rpm)	- 350	- 600
Rotary movement	360°	360°
Chuck	press button	press button
Equipment	2.35 WB	2.35 WB
Torque levels	5	5
NiTi files	All available file systems	All available file systems

Types	Description/Features	Ref.
SiroNiTi Air Plus Apex	For connection to an air motor or an electric motor for file systems with higher permissible speed ranges	63 24 615
SiroNiTi Apex	For connection to an electric motor for file systems with normal speed ranges	61 74 234
Clip dia. 2 mm (gold-plated)	e.g., for ProPex and ProPex II – Dentsply Sirona Raypex 4 and Raypex 5 – VDW Root XZ – Morita Apex Pointer – MicroMega iPEX – NSK Mini apex locator – Sybron Endo	63 45 230
Clip dia. 1.5 mm (gold-plated)	e.g., for ApexMaster – EMS	63 45 248
Insulation sleeve	Insulation sleeve for endo (5 pcs.)	63 24 631

SiroEndo Pocket – the mobile endodontic solution

Safety to go

The true advantages of the SiroEndo Pocket will pay off for you if you perform root canal preparation in several treatment rooms. This compact, battery-powered unit can be used wherever and whenever you need it. And of course, you can also use it while it is charging.

In addition to the integrated apex locator, SiroEndo Pocket also has a file library that can always be updated with the newest files.

We also paid special attention to ease of use. The display can be tilted to offer optimal viewing comfort; the language of the settings can be selected individually.

Intuitive operation

The display is clearly arranged and has easy-to-understand icons.

Always in view

The integrated apex locator ensures optimal measuring accuracy without a file clamp when using the Sirona Endo 6:1.

Insulation sleeve

The new insulation sleeve enables safer apex location.

Optimally equipped

In the preprogrammed and continually updated file library, you can quickly locate your required system and file type.

Wireless treatment

The SiroEndo Pocket is equipped with a storage battery (operating time: approx. 2 hours) that also allows the unit to be used when it is charging.



SiroEndo Pocket – overview of technical data:

Properties	SiroEndo Pocket
Voltage (V)	- 100-240
Frequency (Hz)	- 47-63
Power (W)	- 30
Motor speed (rpm)	- 1,200-19,200
Torque (Ncm)*	- 0.2-5
Battery operation	yes

Designation	Description/Equipment	Ref.
SiroEndo Pocket incl. Endo 6:1	Complete with control unit, motor, hose, foot control, power supply unit, cable for mucosal electrode, cable for file clamp, 2 mucosal electrodes, and SiroEndo pocket memory stick	61 95 882
contra-angle handpiece Endo 6:1	Suitable for apex measurement without file clamp, gear reduction 6:1	59 94 277

Accessories	Ref.
SiroEndo pocket memory stick	61 96 674
SiroEndo pocket software update stick	61 96 682
SiroEndo pocket cable for mucosal electrode + mucosal electrode	61 96 716
SiroEndo pocket cable for file clamp + file clamp	61 96 724
SiroEndo pocket battery pack	61 96 732
SiroEndo pocket motor incl. cable	61 96 740
SiroEndo pocket motor cable (length 1,700 mm)	61 96 757
SiroEndo pocket motor cartridge	61 96 765
Insulation sleeve for Endo 6:1 (5 pcs.)	63 24 631

* Depending on the contra-angle handpiece used.

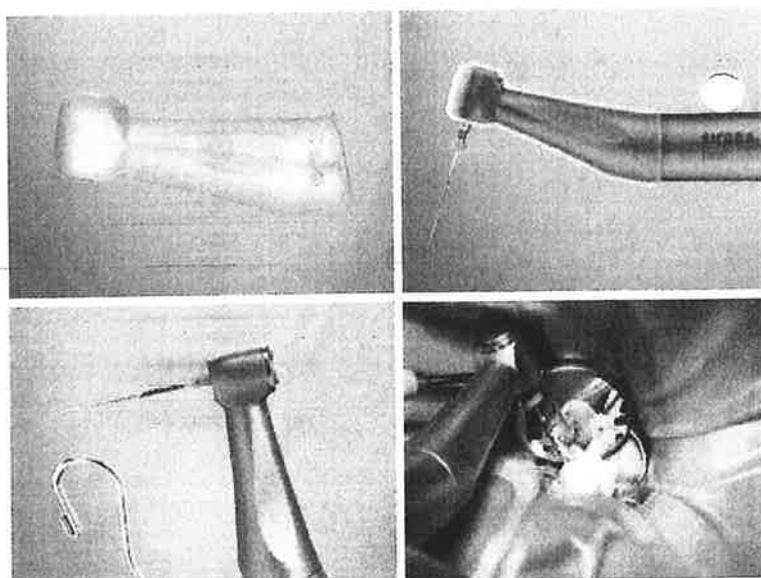
Endo 6:1 – the optimal contra-angle handpiece for root canal preparation

In combination with an apex locator, the compact Endo 6:1 contra-angle handpiece facilitates locating the apex without the need for a file clamp. Depth is measured directly via the contra-angle handpiece. The extremely compact head ensures that the dentist has the best possible view of the root canal, and the slim design without a file contact clip is the key to perfect ergonomics. Thanks to the practical ISO interface, the user has a free choice of micromotors.

Ideal in combination with:

- SiroEndo Pocket
- Intego endodontic function

The new insulation sleeve enables safer apex location: just pull the single-use sleeve over the handpiece and sterilize the instrument after treatment. The contra-angle handpieces can be sterilized and thermally disinfected.



SiroLaser Blue – three wavelengths, many options

Dental diode lasers have clear benefits compared to conventional treatment methods, with largely scar-free wound healing and improved antibacterial efficacy. For patients, the use of lasers means less post-operative pain and therefore less need for medication. And your practice also benefits, as having satisfied patients is the best way to ensure success. The compact SiroLaser Blue is the first dental diode laser to have a blue, an infrared, and a red diode. This enables it to cover a range of more than 20 indications, therefore ensuring virtually boundless applications in your practice routine.

Which diode for which application?

The blue diode with 445 nm is ideally suited to all surgical applications and for hemostasis. Depending on wavelength, the laser beam may be absorbed well or less well by the tissue. The blue diode (with 445 nm) can thus achieve a substantially better cutting result at a lower wattage than infrared laser light (i.e. about 810, 940, 970 nm) at a higher power rating. Thanks to the new wavelength, for the first time it is now possible to cut without tissue contact using a diode laser. The proven infrared 970-nm diode is used to reduce bacteria levels in periodontology and endodontics. The additional red 660-nm diode is used for 'soft laser' applications such as LLLT or biostimulation. The SiroLaser Blue thus covers all possible indications for treatment with a diode laser.

All indications at a glance

Endodontics

Endo. germ reduction
Gangrene bacterial reduction
Pulpotomy
etc.

Periodontology

Perio. germ reduction
Peri-implantitis
etc.

Miscellaneous

Apthous ulcers
Medical bleaching*
Desensitization
Hemostasis
Herpes
Soft laser treatment

Surgery

Abscess
Epulis
Fibroma
Frenectomy
Gingivectomy
Gingivoplasty
Implant removal
Incisions/excisions
Operculectomy
Gingival troughing

etc

* e.g. as endodontic follow-up treatment; no predefined treatment program

Technical data

Wavelength and operating performance	445 nm +/-5 nm / 0.2 - 3.0 W (CW) 660 nm +/-5 nm / 25, 50 and 100 mW (CW) 970 nm +/-10/+15 nm / 0.2 - 2.0 W (CW)
Laser operating mode	Continuous wave, chopped mode
Frequency	1-10.000 Hz
Duty cycle	Variable
Weight	- 1.3 kg (incl. handpiece and battery)
Dimensions	- 19.7 cm x 18.2 cm x 18.9 cm



SiroLaser Advance Plus – a Plus for your practice

Effective germ reduction. Minimally invasive surgery. Support during CEREC restorations. Even treatment of herpetic lesions and medical bleaching. For patients, the use of lasers means less post-operative pain and therefore less need for medication. Satisfied patients are the best way to ensure success. The new SiroLaser Advance Plus by Dentsply Sirona enhances your practice. SiroLaser Advance Plus is designed for experts and less experienced users alike. With SiroLaser Advance Plus, you'll enjoy intuitive and versatile use to fully concentrate on each patient.

Intuitive handling:

- Touchscreen navigation
- Clear user prompts
- Self-explanatory menu icons

Immediate treatment:

- Pre-set programs for key applications
- Optional help menu for each pre-set program to assist less experienced users
- Sterile delivered disposable fibers

Individual customization:

- 24 programmable applications
- User profiles, each with a personal access code

Versatile operation:

- Ergonomic handpiece with light-touch finger switch
- Battery-operated for greater portability
- Additional 660 nm diode for Low-Level-Laser Therapy (LLLT)

All indications at a glance

Endodontics

Endodontic germ reduction
Gangrene germ reduction
Pulpotomy
etc.

Periodontology

Periodontic germ reduction
Peri-implantitis
etc.

Other

Aphthous ulcers
Desensitization
Hemostasis
Herpes
Medical Bleaching*
Soft laser therapy

Surgery

Abscess
Epulis
Fibroma
Frenectomy
Gingivectomy
Gingivoplasty
Implant uncoverly
Incisions/excisions
Operculectomy
Gingival troughing
etc.

* e.g. following an endodontic treatment: no predefined treatment program

Technical data

Wavelength and operating performance	660 nm +/-5 nm / 25, 50 and 100 mW (CW) 970 nm -10/+15 nm / 0.2- 7.0 W (CW); -14W (Peak Pulse)
Laser operating mode	Continuous wave, chopped mode, peak pulse
Frequency	1-10.000 Hz
Duty cycle	Variable
Weight	- 1.3 kg (incl. handpiece and battery)
Dimensions	- 19.7 cm x 18.2 cm x 18.9 cm

For more information, see www.sirona.com/laser



SiroLaser Advance Plus – easy operation and useful features

- **Sterile disposable fibers (EasyTips):** Before every treatment simply stick one of the practical EasyTips on the handpiece of the SiroLaser Advance Plus – and you can then start the treatment directly. All of this without time-consuming assembly steps, without wrapping and without sterilization. All fibers are made in Germany.
- **Therapy light guides (MultiTips):** For soft laser applications and medical bleaching (e.g. as endodontic follow-up treatment).
- **More than 20 preset programs:** For every treatment, there is already a preset program. You simply select the desired treatment on the touchscreen and start working. In addition, the Help function assists you to administer the treatment properly.
- **Six favorites can be selected:** There are some treatment types that you perform more frequently than others. To avoid the need to scroll through all of the programs, you can conveniently configure your individual home screen.
- **Application memory:** The last 50 applications of each user are saved by the device and can conveniently be retrieved from the USB port.
- **Individual user profiles:** You may have several people in your practice who use the SiroLaser Advance Plus for treatment. No problem, since up to 6 password-protected user profiles can be adapted individually to suit your needs.
- **Integrated battery:** Full mobility and flexibility. The battery charges while you are working.
- **Intuitive user interface:** The user interface is designed so intuitively that you will immediately find what you are looking for.
- **Handpiece with integrated finger switch:** The integrated finger switch makes an additional foot pedal obsolete. Autoclavable stainless steel handpiece sleeve.
- **Delegatability*:** You can delegate applications in soft laser therapy to your practice assistant.
- **Flexible laser activation:** Integrated finger switch at the handpiece – or optional wireless foot control.
- **Quickly ready for use:** Standby mode for immediate availability without switching off the device.
- **Technical safety checks*:** A technical safety check is required by law. For the SiroLaser Advance Plus, it is required only every two years – for other providers, generally once a year.
- **Warranty:** 2 years

Scope of delivery

- SiroLaser Advance Plus incl. stainless steel handpiece with integrated finger switch
- Battery pack (already mounted)
- Additional handpiece sleeve for alternating operation
- Demo set of disposable, non-sterile fiber tips:
2 × EasyTip 320 µm, 2 × EasyTip Endo, 2 × EasyTip 200 µm
- Combined bending tool
- Fibercutter
- 3 laser safety goggles (for dentist, dental assistant, and patient)

Accessories	Ref.
Handpiece sleeve with keypad	64 87 784
EasyTip 320 µm (25 pieces)	64 98 062
EasyTip 200 µm (25 pieces)	64 98 484
EasyTip 200 µm Endo (25 pieces)	65 35 905
MultiTip 8 mm, therapy light guide	65 41 465
MultiTip 4 mm, therapy light guide	65 41 499
Optic protective cap for handpiece (5 pieces)	65 79 580
Fibercutter	60 91 669
EasyBend – Bending tool	65 44 097
Wireless foot control	62 56 841
Laser safety goggles for users SiroLaser Advance Plus	65 41 564
Laser goggles for patients SiroLaser Advance Plus	65 41 523
Laser safety goggles for eyeglasses wearers SiroLaser Advance Plus	65 41 572
Laser loupe glasses flip-up with exchangeable lenses (magnification: 3.0x; working distance: 400 mm)	66 25 177
Laser loupe glasses flip-up with exchangeable lenses (magnification: 3.0x; working distance: 350 mm)	66 25 169
SiroLaser Advance Plus Ref.-No. for the following countries: France 65 40 764; Switzerland 65 40 756; Finland 65 40 715; Norway 65 40 715; Sweden 65 40 715; Denmark 65 40 723; ROW 65 75 505. Further countries on request.	

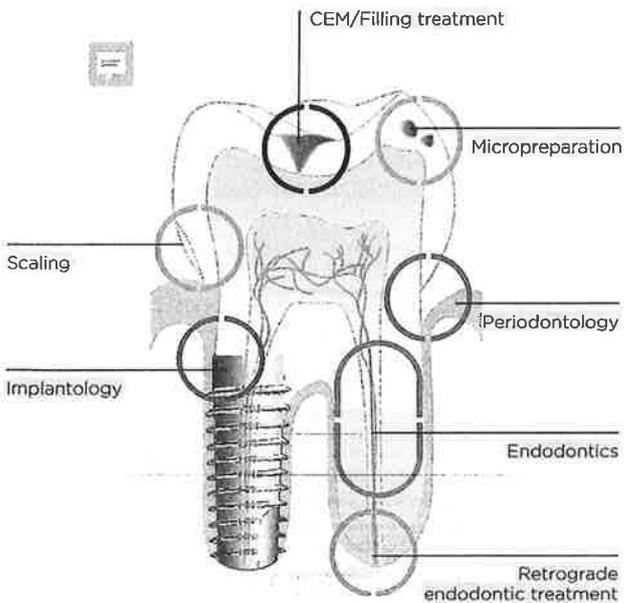
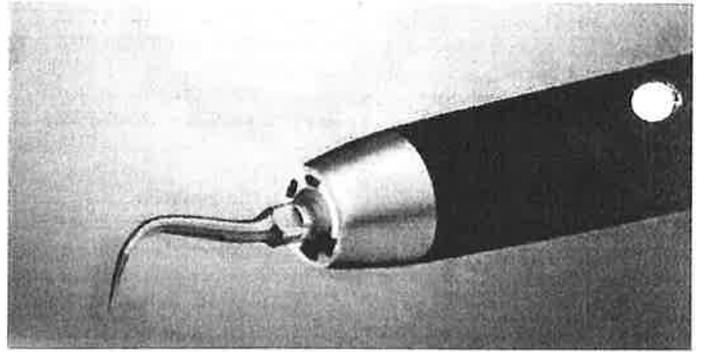
* Depends on country-specific regulations.

PerioSonic/SiroSonic/L/TL – unlimited ultrasonic applications

There is more than you expect

PerioSonic/SIROSONIC/L/TL ultrasonic handpieces go above and beyond satisfying the increasing requirements and demands of a modern dental practice. The power control enables dentists to use it perform sensitive periodontal treatments requiring a low power setting as well as for micropreparations.

PerioSonic, SiroSonic L, and SiroSonic TL also feature powerful lighting for optimal illumination of the oral cavity.



Versatile with a range of tips

- Preventative and periodontal treatments can be performed optimally.
- Additional applications include rinsing and retrograde preparation of root canals.
- Preparing cavities as well as placing inlays can both be performed easily.

Powerful and controlled treatment

- The controlled, linear oscillations generate high cavitation effects at the tip of the instrument.
- Optimal control of power and water right on the handpiece:

Perfect hygiene

- Handpiece and tips can be sterilized
- External rinsing fluids can be used with the corresponding spray adapters

PerioSonic/SiroSonic/L/TL - overview of technical data:

Technical data	PerioSonic/SiroSonic/ SiroSonic L/SiroSonic TL	LED
Drive	Piezoelectric	
Oscillation	Linear	
Oscillating frequency (kHz)	25-32	
Illumination*	LED -16,000 Lux	
Handpiece diam. (mm)	max. 18	
Handpiece grip diam. (mm)	- 12 / - 18	
Handpiece length (mm) (without instrument tip)	- 96 / - 101	
Weight (g)	- 47 / - 50	

Types	Versions	Ref.
SiroSonic	Without light, incl. tips no. 3L and no. 4L	59 13 517
SiroSonic L	With light, incl. tips no. 3L and no. 4L	59 13 509
SiroSonic TL	With light, incl. tips no. 3L and no. 4L	62 12 216
PerioSonic	With light and signal ring	60 30 410

Accessories	Application	Ref.
Spray adaptor	For SiroSon/SiroSon L and SiroSonic/SiroSonic L or use with externally supplied special rinsing fluids	60 02 286
PerioSonic spray adaptor	For SiroSonic TL and PerioSonic for use with externally supplied special rinsing fluids	61 41 852
Torque key	For fastening the tip to the handpiece securely	60 06 196

* Not for SiroSonic

PerioSonic/SiroSonic S/L, SiroSonic/L/TL - matching tips:

For scaling

Wide range of tips available for all stages of supragingival scaling.

Accessories	Application	Ref.
Tip no. 1L*	For initial lingual and buccal scaling	89 24 250
Tip no. 2L*	Versatile, lingual, buccal, and approximal	89 24 268
Tip no. 3L*	Universal bilateral, subgingival, and interdental	18 94 455
Tip set no. 3L* (2 pcs.)	s. tip no. 3L	64 12 451
Tip set no. 3L* (6 pcs.)	s. tip no. 3L	65 41 044
Tip no. 4L*	Universal, ideal for supragingival and subgingival tooth surfaces and interdental areas	18 94 463
Tip set no. 4L* (2 pcs.)	s. tip no. 4L	64 12 469
Tip set no. 4L* (6 pcs.)	s. tip no. 4L	65 41 051
Checkcard for tips	Tool for checking the lengths of instruments no. 1L-no. 4L, SiroPerio 1 and 4PS	54 55 667

For micropreparation

Selectively diamond-coated tips with a 20° bevel for minimally invasive preparation and adhesive treatment of small approximal cavities. Cooling spray is deposited directly on the preparation site. Contra-angle ensures universal access to all quadrants with only 2 tips/sizes.

Accessories	Application	Ref.
SiroPrep M1* small	Mesial	59 04 276
SiroPrep D1* small	Distal	59 47 309
SiroPrep M2* standard	Mesial	59 47 358
SiroPrep D2* standard	Distal	59 47 366
SiroPrep-Set, comprising: SiroPrep M1/M2 and D1/D2, incl. torque wrench		59 50 253

* incl. torque wrench

PerioSonic/SiroSon S/L,
SiroSonic/L/TL- matching tips

For periodontology

For removing deposits in subgingival tissue as well as in deep gingival pockets. With SiroPerio you have the best possible access to all areas to effectively remove deposits. Maximum comfort through good accessibility even in bifurcations.

Accessories	Application	Ref.
SiroPerio PE1* Straight bristles 	for rinsing and cleaning roots in deep gingival pockets	60 44 825
SiroPerio PE2* Right curvature 	for cleaning roots in deep gingival pockets in the posterior area	60 44 833
SiroPerio PE3* Left curvature 	for cleaning roots in deep gingival pockets in the posterior area	60 44 841
SiroPerio 4 PS* Especially for use with PerioScan 	for detection and root scaling in deep gingival pockets with PerioScan	61 77 005
SiroPerio PE5* Right curvature 	for cleaning roots in deep gingival pockets in the posterior area	63 43 078
SiroPerio PE6* Left curvature 	for cleaning roots in deep gingival pockets in the posterior area	63 43 086
SiroPerio-Set, consisting of: SiroPerio 1-3 incl. torque wrench		59 50 246

For filling therapy

Accessories	Application	Ref.
CEM-Set Nr. 6L* including: 1 CEM-Tip No. 6L, 2 Contact inserts for inlays. 	for inserting ceramic inlays (i.e. CEREC) with thixotropic composites	18 94 307
Contact attachment	for CEM tip No. 6L, 10 pcs. for inlays	18 94 372*

For implantology

Accessories	Application	Ref.
SiroImplant IPI only for SiroSon L, SiroSonic/L/TL and PerioSonic 	for cleaning implants as well as metal and ceramic restorations	63 43 052
Use of IPI for SiroImplant IPI	Scope of delivery: 5 pcs.	63 43 094

For endodontics

Accessories	Application	Ref.
Endo tip No. 5 only for SiroSon L, SiroSonic L, SiroSonic TL, PerioSonic	for rinsing root canals with NaOCl	60 02 310
Knurled bush and endo key for Endo tip No. 5	for tightening the clamping forceps or for assembling and disassembling the Endo tip	18 95 080

For retrograde root treatment

Selective diamond-coated tips for retrograde apicoectomies. The tips are angled at approx. 20° (right or left) to facilitate access to the preparation site.

Accessories	Application	Ref.
SiroRetro KR* Short, angled to the right 	For the lower left jaw or upper right jaw	54 57 895
SiroRetro KL* Short, angled to the left 	For the lower right jaw or upper left jaw	54 57 887
SiroRetro GR* Long, angled to the right 	For the lower left jaw or upper right jaw	54 57 911
SiroRetro GL* Long, angled to the left 	For the lower right jaw or upper left jaw	54 57 903
SiroRetro set, consisting of: SiroRetro KR/KL und GR/GL, incl. torque wrench		54 57 929

* Including torque wrench

Motors. Made by Dentsply Sirona – powerful and reliable

Power you can rely on

Sirona's electric motors cover a very wide range of speeds, and therefore can be used for many different tasks in dental practice. They stand for exceptional reliability and durability and impress with their superb performance features.

Huge in versatility

The wide range of speed of Dentsply Sirona motors ensures a wide variety of applications. The constantly high torque is optimally adapted through electronic compensation to each work situation. The interfaces are very diverse with the Dentsply Sirona interface, ISO standard, INTRAmatic®, or INTRAmatic® Lux.

Always ergonomic

Dentsply Sirona is the unique supplier of two interfaces: Motor BL/BL E/SL for T1 Classic as well as BL ISO C/E and SL ISO for the T1/T2/T3 Line and T2/T3 S-Line. The contra-angle handpiece feels very well balanced in the hand, especially with the T1 Classic with built-in BL/BL E/SL motor.

INTRAmatic® Lux is a registered trademark of KaVo Dental GmbH, Germany.



1 Dentsply Sirona-Motor SL

Compatible with T1 Classic straight and contra-angle handpiece-program

2 Dentsply Sirona-Motor SL ISO

Dentsply Sirona-Motor SL incl. attachable ISO adapter. For Dentsply Sirona T1 Classic as well as for all straight and contra-angle handpieces with ISO Interface such as the T1/T2/T3 Line and T2/T3 S-Line



SL/SL ISO motor – proven, robust, and reliable

Durable, robust, and hygienic

- With 200 to 40,000 revolutions per minute, the SL and SL ISO collector motors from Dentsply Sirona facilitate a broad range of applications.
- A soft start and stop protect the motor as well as the straight and contra-angle handpieces.
- Freely rotating hose prevents spin effect.
- The SL ISO motor's removable adapter can be sterilized
- For Dentsply Sirona C Line treatment centers

Technical data	SL/SL ISO motor (SL motor incl. ISO adapter)	LED
Number of revolutions (rpm)	- 200-40,000	
Max. torque (Ncm)	- 2.4	
Max. power (W)	- 58	
Motor diameter (mm)	- 16/22	
Motor length (mm)	- 50/61,5	
Weight (g)	- 47/87	
Cooling air requirement (NI/min)	- 30	
Spray air pressure (bar)	- 2,7	
Spray water pressure (bar)	- 2	

Description	Versions	Ref.
SL motor		41 76 710
SL ISO motor	SL motor + adapter ISO	60 35 989
ISO adapter	with light and spray	60 00 793
Basic adapter (Apex)	with light, without spray	59 83 072

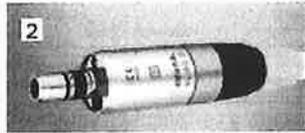
BL/BL E and BL ISO C/E/BL Implant motors – the powerful, brushless micromotors

Brushless, compact and hygienic

- Dentsply Sirona brushless BL motors are not only extra short, they are also the lightest and most ergonomic in the world
- These brushless micromotors are electronically controlled with perfection
- The BL/BL E and BL ISO C/E motors have a back-suction valve
- Motors and adapters are sterilizable and maintenance-free

Only the best in performance

- With their 90–40,000 rpm speed range (depending on the combination of Dentsply Sirona motor and treatment unit; more details in the specifications) they always offer maximum torque
- The microprocessors also provide quiet and stable operation at rapidly changing motor speeds
- The BL/BL E and BL ISO C/E motors support the Apex function depending on the treatment unit
- The slim and lightweight BL Implant implantology motor with internal cooling provides a max. torque of 5 Ncm, with no air outlet at the preparation site



1 Dentsply Sirona BL motor
Compatible with T1 Classic straight and contra-angle handpiece program

2 Dentsply Sirona BL ISO C motor
Compatible with T1/T2/T3 Line and T2/T3 S-Line straight and contra-angle handpiece program

Models Specifications	BL motor ¹ BL E motor ²	LED	BL ISO C motor ³ BL ISO E motor ⁴	LED	BL Implant motor ^{5*}
Number of revolutions (rpm) [*]	- 90–40,000 ¹ - 1,200–40,000 ² - 100–40,000 ² In conjunction with eControl		- 90–40,000 ³ - 2,000–40,000 ⁴ (Sinus) - 1,200–40,000 ⁴ (Intego) - 100–40,000 ² in conjunction with eControl (Intego Pro)		-90–40,000
Max. torque (Ncm)	- 2.4		- 3.0		- 5.0
Max. power (W)	- 45		- 61		- 80
Motor diameter (mm)	- 16		- 22		- 22
Motor length (mm)	- 54		- 45		- 61
Weight (g)	- 65		- 81		- 106
Cooling air requirement (Nl/min)	- 20		- 20		- 20
Spray air pressure (bar)	- 2.7		- 2.7		-
Spray water pressure (bar)	- 2		- 2		-

Versions/ Usage of	BL/BL E ² motor	BL motor + ISO adapter	BL ISO C ³ / E ⁴ motor	BL Implant motor ^{5*}
Dentsply Sirona				
T1 Classic	■	■	-	-
T1/T2/T3 Line T2/T3 S-Line	-	■	■	-
Implant 20:1	-	-	-	■
SironiTi Apex & SironiTi Air Plus Apex	-	■	■***	-
Other suppliers				
INTRAmatic [®] Lux	-	■	■	-
INTRAmatic [®] – without light	-	■	■	■
ISO 3964 – without light and spray	-	■	■	■
Ref.		60 00 793		62 12 208
Ref. with LED	63 19 714 ¹ 65 46 225 ²		63 37 518 ³ 64 45 899 ⁴	

* Minimum rotation speed depends on the configuration of the Dentsply Sirona treatment unit. ** In combination with the Teneo Dentsply Sirona treatment unit. *** Apex function in combination with BL ISO C motor³ and Teneo/Sinius or BL ISO E motor⁴ and Intego pro.

Sprayvit E/M – multifunctional syringe with or without light

Keep your examinations completely under control

Sprayvit, Dentsply Sirona's multifunctional syringe, guarantees this. With optional pinpoint lighting, built-in heater, and rotatable nozzle, Sprayvit adapts optimally to the particular requirements.

Comfortable and flexible treatment

- 360° freely rotatable nozzle
- Pinpoint lighting of up to 25,000 Lux for preparation control
- Nozzle G with light is optimally suited to the initial examination
- Adhesive dentistry is made possible with dry air
- All media quickly heat up to physiological temperatures

Safe and hygienic down to the last detail

- All media are separated until the outlet
- Highest reliability is ensured even with hard tap water
- Outer sleeves and nozzles are easily removable and sterilizable
- The replaceable keypad is easy to clean
- The back-suction stop valve prevents the absorption of spray water



Technical data	Sprayvit E/M
Water heating capacity (W)	max. 120, max. 22V*
LED current (mA)	~ 100
Water flow (ml/min)	≥ 130
Air flow (NI/min)	≥ 13
Total length with bent nozzle (mm)	~ 171
Length from keypad to tip of nozzle (mm)	~ 75
Weight without hose (g)	~ 85

* only for Sprayvit M

Types	Versions	Ref.
Sprayvit M, 5-way (Sinus + Teneo)	Including nozzle G (long), with LED, Spray water heated, water button on the right	63 21 793
	Including nozzle G (long), with LED, Spray water heated, water button on the left	63 21 801
Sprayvit E, 3-Way (Intego pro)	Including nozzle (short), with LED, without heating, water button on the right	64 36 195
	Including nozzle (short), with LED, without heating, water button on the left	64 36 203

Types	Versions	Ref.
Nozzle G	Long, bent, with light	59 92 180
	Long, bent, without light	59 92 206
Sprayvit nozzle G set (6 pcs.)	Long, bent, with light	65 41 226
Nozzle (option for assistant)	Short, straight, with light	41 77 785
	Short, straight, without light	59 92 198
Handpiece sleeve, for regular sterilization	Right water line	60 02 179
	Left water line	60 02 187
LED	for Sprayvit E/M	63 22 007
Keypad		63 21 728

The Dentsply Sirona hygiene competence – sophisticated systems for maximum safety

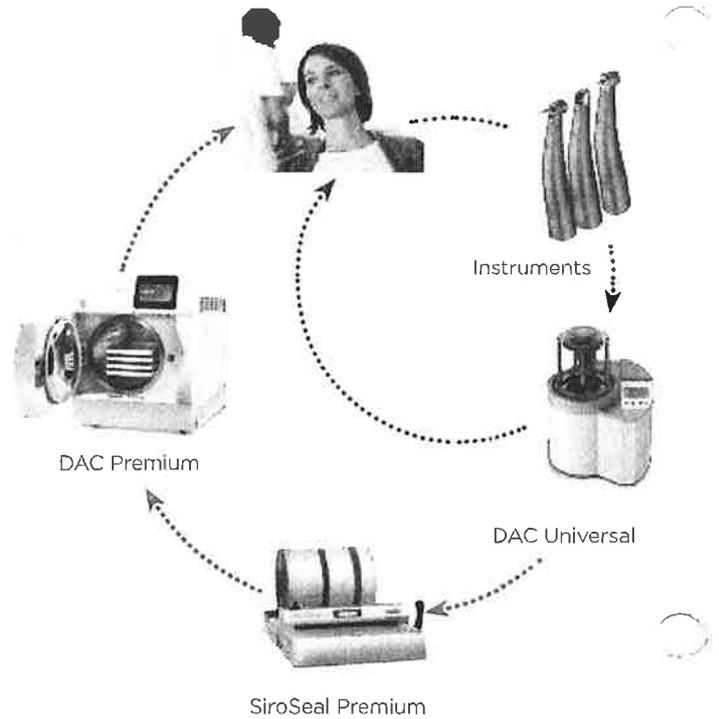
Optimal hygiene – definitely the right solution

Practice hygiene is becoming ever more important and is increasingly monitored. Ensure all-round protection for yourself, your practice team, and your patients by using instruments reprocessing with a high level of hygienic safety and comprehensive documentation options. Hygiene solutions from Dentsply Sirona are suitable for the cleaning, care, disinfection, and sterilization of dental instruments.

With the DAC Premium und DAC Professional product lines, Dentsply Sirona class B autoclaves are capable of meeting the highest medical requirements. They are universally suitable for all sterilization products.

SiroSeal sealing devices allow instruments to be packaged for storage and transport.

Regardless of your hygiene workflows, we have the appropriate solution.



■ Critical

■ Semi-critical

DAC Universal – close your hygiene gap

The combination autoclave cleans, oils, and disinfects/sterilizes up to six straight and contra-angle handpieces, turbines, ultrasonic handpieces and tips, as well as the nozzles of multi-functional syringes and powder jet devices at the touch of a button.



Professional care

- Cleaning, lubrication if necessary, disinfection, and sterilization in a single cycle
- Internal and external cleaning of straight and contra-angle handpieces, turbines, ultrasonic handpieces, and tips as well as the nozzles of multi-functional syringes and powder jet devices
- Disinfection or sterilization of instruments

Fully automatic reprocessing

- 6 instruments in next to no time
- Process-reliable and time-saving
- Simple operation
- An interface for electronic documentation systems

Cost-efficient reprocessing

- Low operating and consumption costs – no use of cleaning and disinfection chemicals
- Low instrument investment costs thanks to quick return to service

Legal certainty

- Cleaning, disinfection, and sterilization process which can be validated
- Cleaning, disinfection, and sterilization process in accordance with ISO 15883 and EN 13060 class S

DAC Universal – the extraordinary is our standard

Hygiene without gaps

The versatility of the DAC Universal is unparalleled. Regardless of whether you want to reprocess unwrapped or solid instruments: It's your choice.



Rotating instruments

With the 2 standard programs of the DAC Universal, you can clean, lubricate, and sterilize up to 6 instruments in a short time. They are then immediately available for the next patient.



Non-rotating instruments

Ultrasonic handpieces and tips as well as the nozzles of multi-functional syringes and powder blasting devices are cleaned internally and externally prior to thermal disinfection. The ultrasonic tips are reprocessed together with the corresponding torque wrench.



Solid instruments

With the Basket lid, solid instruments are cleaned and sterilized quickly and efficiently. This lowers the risk of human error and protects against possible injuries.

Specifications	DAC Universal
Power supply	- 90-120V AC/190-240V AC, 50/60 Hz
Power consumption (kW)	- 1.1
Water quality	demineralized or distilled water (< 3 µS)
Water tank capacity (l)	- 1.8
Oil tank capacity (l)	- 0.2
Height, open (cm) (with standard lid)	- 53
Height, closed (cm) (with standard lid)	- 35
Width (cm)	- 38
Depth (cm)	- 37
Weight (kg)	- 23

Basic equipment DAC Universal

Designation	Description/models	Ref.
DAC Universal	Equipped with: Standard lid without adapter, 1 can NitramOil care concentrate Indicator holder "Standard" Air filter	65 43 321 (GER) 65 40 087 (Europe) 65 40 079 (World)
Waste water tank installation kit	Comprising: - Waste water tank - Pressure gauge - Water filter - Air filter holder - Filter for filter housing (6 pcs.) - NitraClean tablets (100 pcs.) - Chemical indicators, class 5 (100 pcs.)	64 33 267
Installation kit, waste water tank	Comprising: - Waste water tank - Pressure gauge - Water filter - Air filter holder - Filter for filter housing (6 pcs.) - NitraClean tablets (100 pcs.) - Chemical indicators, class 5 (100 pcs.)	64 33 275

Designation	Description/models	Ref.
Standard lid	For rotating instruments	60 51 739
Flex lid	Ultrasonic instruments, syringes	65 35 855
Basket lid	For solid instruments	61 26 200
NitramOil	200 ml, white for series no. 6 500 - 13 999, 100 000 - 103 999 and 200 000 - 201 999	60 86 628
NitramOil#2	200 ml, blue for series no. 14 000 - 99 999, 104 000 - 199 999 and 202 000 - 999 999	62 59 118
Lid holder	For wall and table	62 59 109
NitraClean Tablets	for chamber cleaning and use with basket lid 100 pcs.	60 53 842
Indicator holder Standard		60 51 788
Indicator holder Flex		65 42 489
Class 5 chemical indicator	100 pcs.	58 92 059

Large adapter selection

Dentsply Sirona has the largest selection on the market of special adapters for literally every instrument in your practice.

Standard lid

Adapter for straight and contra-angle handpieces	Ref.
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	Sirona T1 Classic/TE adapter	60 51 705
	ISO/INTRAmatic® adapter	60 51 648
	KaVo and Bien-Air contra-angle head adapter	60 51 663

Turbine adapter	Ref.
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	Sirona quick coupling R/F/B adapter	60 51 697
	KaVo MULTIflex adapter	60 51 655
	W&H Roto quick adapter	60 51 671
	BienAir UNIFIX adapter	60 51 713
	NSK PTL adapter	60 51 804
	NSK QDJ adapter	60 51 812
	Borden adapter, 2-3 hole	60 51 861
	Castellini CERAMIC FREEDOM adapter	60 51 762
	Midwest/ISO 4/5-hole turbine with fixed connection adapter	60 51 853
	Morita Alpha adapter	60 51 911
	Morita CP4 adapter	60 51 929
	Osada OFJ adapter	60 85 745
	Yoshida QUICK JOINT adapter	63 23 831

Flex lid*

Ultrasonic scaler for ultrasonic handpieces, tips, and multifunctional syringe attachments	Ref.
--	------

Adapter for ultrasonic handpieces:

	Sirona SiroSonic TL /PerioSonic adapter	65 36 135
	Sirona SiroSonic /L adapter	65 36 143
	EMS Piezon handpiece adapter	66 13 538

Adapter for multi-functional syringe nozzles:

	Sirona Sprayvit nozzle adapter	65 36 150
	Sirona Sprayvit nozzle 4000 adapter	65 36 168

Adapter for ultrasonic tips:

	Sirona ultrasonic tip adapter: for tips for the following Siro- Son S/C8/L instruments; SiroSonic /L; SiroSonic TL; Perjo- Sonic: L, PE, PS, SiroRetro, SiroPrep	65 36 127
	EMS ultrasonic tip adapter	66 10 708
	Satelec ultrasonic tip adapter	66 10 716

* The Flex lid is intended only for reprocessing scaling and periodontology tips. The Flex lid is not intended for the reprocessing of implant, endo, micropreparation and CEM tips.

DAC Premium - highest standards, easily achieved

DAC Premium und DAC Premium Plus use the same double-walled sterilization chambers (twin-chamber technology) as hospital autoclaves. The chambers are preheated with steam, which is then used for sterilization. You save time, energy costs, and both you and your patients are protected by the best possible sterilization result in a reliable and legally compliant manner. The twin-chamber technology also offers a decisive advantage here because the air is very quickly evacuated from the cavities of the instruments, sterilization packages, and the chamber. With autoclaves of the DAC Premium class, you can quickly and easily begin traceability of the instruments used on patients and thereby solidify your quality management.

Safe

- Legal certainty by complying with all relevant standards
- A higher hygiene standard is achieved in the practice
- Documentation possible via printer, CF card, or PC software

Easy

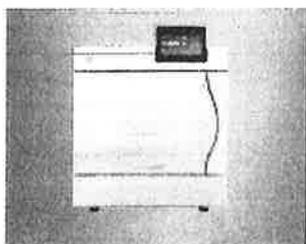
- Intuitive operation via the color touch display
- Compact solution with integrated fresh water and waste water tank
- Simple installation as a standalone device

High-tech

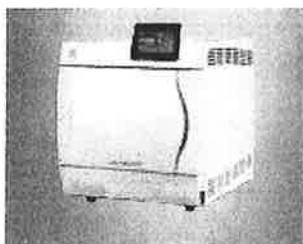
- Twin-chamber technology
- Particularly rapid air evacuation from instrument chambers and cavities
- High sterilization quality
- Short sterilization cycles (e.g. Quick program B in 20 minutes including drying)

Ecological

- Energy-saving mode: automatic reduction of standby temperature
- Pre-selection of the required time to start the autoclave



The DAC Premium with a chamber volume of 18.4 l



DAC Premium Plus has a 23.8-liter chamber

Specifications	DAC Premium	DAC Premium Plus
Ref.	65 26 920 65 36 929 (AUS)	65 26 938 65 36 937 (AUS)
Electrical connection	3,400 W/220-240V 50/60 Hz	3,400 W/220-240V 50/60 Hz
External dimensions (W x H x D)	47 x 56.5 x 57.5 cm	47 x 56.5 x 69 cm
Sterilization chamber (Ø x depth)	25 x 35 cm	25 x 45 cm
Weight (without load)	59 kg	66 kg
Chamber volume	18.4 l	23.8 l
Max. load	6 kg instruments or 2 kg textiles	7 kg instruments or 2.5 kg textiles
Reservoir (dem. water/ dist. water)	Fresh water side: 5 l (approx. 7 cycles); waste water side: 3 l	Fresh water side: 5 l (approx. 7 cycles); waste water side: 3 l

	Operating time (without drying)		Drying time
DAC Premium/ DAC Premium Plus	Load up to 6 kg ¹ /7 kg ² of unwrapped instruments	Load up to 2 kg ¹ /2.5 kg ¹ of textiles	
Universal program	21 min	-	12 min
Quick program B*	14 min	-	6 min
Quick program S**	10 min	-	2 min
Gentle program	36 min	39 min ¹ / 43 min ²	12 min
Prion program	58 min	-	12 min

All times depending on load and power and water supply.
* Max 1.5 kg wrapped or 6/7 kg unwrapped ** Unwrapped
1) DAC Premium 2) DAC Premium Plus

Accessory	Ref.
NitraPrint 60	65 43 172
NitraPrint	61 17 324
NitraFlash	61 34 394
SiroDem	58 86 168
NitraDem Direct Connect	62 59 852
Test set for Bowie&Dick test (20 pcs.)	58 92 034
Test set for Helix test	58 92 042

DAC Professional – an investment in quality

No matter what size chamber you choose, DAC Professional class autoclaves are a safe investment. German manufacturing, certified production standards, and a stainless steel chamber ensure extremely high quality and durability. Both versions are suitable for all thermostable items and types of sterilization, no additional sterilization device is required. Operator errors are a thing of the past with the integrated display and market-tested user interface.

Safe

- Legal certainty by complying with all relevant standards
- A higher hygiene standard is achieved in the practice
- Reduced risk of contamination for patients
- Documentation with printer or CF card (using a CF card reader) without additional documentation software

Easy

- Compact solution with integrated fresh water and waste water tank
- Simple installation as a standalone device

Cost-effective

- A quick solution instead of slow table-top sterilizers
- Easy handling minimizes errors
- Sterilization (quick program S) is possible in just 15 minutes (without drying)
- Activated preheating for short operating times
- Integrated control of fresh water guarantees error-free operation and prevents damage to the instruments



DAC Professional with a chamber volume of 17 l



The DAC Professional Plus has a 22.6-liter chamber

Specifications	DAC Professional	DAC Professional Plus
Ref.	61 45 309 (DE) 60 93 475 (EN) 61 26 705 (F) 61 26 713 (AUS)	65 26 912 (DE) 65 36 879 (EN) 65 36 887 (F) 65 36 895 (AUS)
Electrical connection	2,100 W / 220-240V 50/60 Hz	2,100 W / 220 - 240V 50/60 Hz
External dimensions (W x H x D)	42.5 x 48.5 x 63 cm	42.5 x 48.5 x 75.5 cm
Sterilization chamber (Ø x depth)	25 x 35 cm	25 x 45 cm
Weight (without load)	45 kg	50 kg
Chamber volume	17 l	22.6 l
Max. load	5 kg instruments or 1.8 kg textiles	
Reservoir (dem. water/ dist. water)	Fresh water side: 5 l (approx. 7 cycles); waste water side: 3 l	

	Operating time (without drying)		Drying time
DAC Professional/ DAC Professional Plus	Load up to 5 kg of unwrapped instruments	Load up to 1.8 kg of textiles	
Universal program	30 min	-	20 min
Quick program B*	30 min	-	10 min
Quick program S**	15 min	-	5 min
Gentle program	45 min	45 min	20 min
Prion program	45 min	-	20 min
Vacuum test	18 min (empty)	-	-

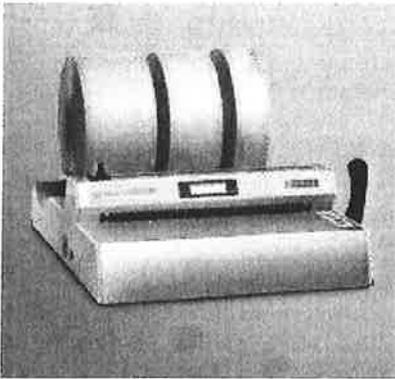
All times depending on load, power and water supply.

* Max 1.5 kg wrapped or 6 or 7 kg unwrapped ** unwrapped

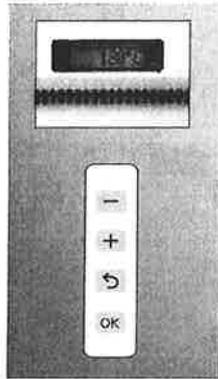
Accessory	Ref.
NitraPrint 60	65 43 172
NitraPrint	61 17 324
NitraFlash	61 34 334
SiroDem	58 86 168
NitraDem Direct Connect	62 59 852
Test set for Bowie&Dick test (20 pcs.)	58 92 034
Test set for Helix test	58 92 042

SiroSeal - seals with the best possible level of safety

The sealing process is reproducible and can be validated with SiroSeal Premium. Outstanding ease of use, performance, and convenient options for process documentation make SiroSeal Premium the new benchmark for sealing devices of this class. And all with an unbeatable heat-up time of 90 seconds and a sealing time of just 3 seconds.



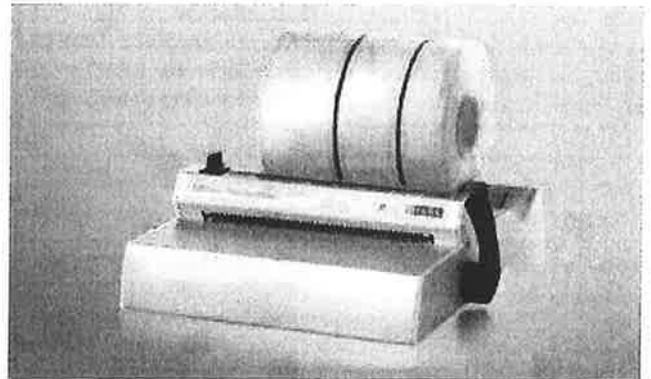
SiroSeal Premium



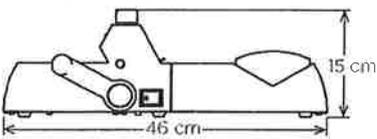
LCD display and LED status display and 4-button operating concept

SiroSeal Professional – safe, proven, and powerful

SiroSeal Professional is a stable, high-performance bar sealing device. It features a visual and acoustic indicator that displays, for example, operational readiness after a short warm-up time of about 2 minutes. In addition, the reproducible sealing time is also indicated visually and acoustically.



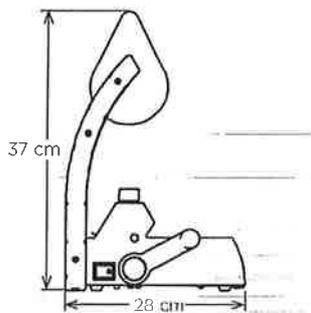
“Standard” roll holder



Ref. 65 28 801

No matter the version you choose, our user-friendly and convenient roll holders make sterilization packaging as easy as possible. With the integrated cutter, the packages are cut to size according to the requirements of the practice and to the size of the instruments to be packaged. Both roll holders can be used with both bar sealing devices.

“Comfort” roll holder



Ref. 65 28 819

Specifications	SiroSeal Premium	SiroSeal Professional
Ref.	65 26 961	65 26 953
Electrical connection	300 W / 220-240V 50/60 Hz	300 W / 220-240V 50/60 Hz
External dimensions (W x H x D)	41.5 x 15 x 24 cm	41.5 x 15 x 24 cm
Weight (without load)	5.4 kg	5.4 kg
Temperature range	100 - 210°C	160 - 200°C
Sealing time	approx. 3 sec.	approx. 3 sec.
Heat-up time	approx. 90 sec.	approx. 2 min.
Seal seam length	max. 275 mm	max. 275 mm
Seal width	10 mm	10 mm
Interfaces	1 x USB memory stick, 1 x USB PC interface	-

Water treatment from Dentsply Sirona – in just seconds, cost-effective and compliant

Safe water quality for clean instruments

Optimal water quality is the essential basic prerequisite for efficient hygiene processes. This protects the systems and instruments, thus prolonging their service life and cutting repair costs.

Dentsply Sirona water treatment systems guarantee this optimal water quality. For this reason, they are the perfect companions for DAC Universal, DAC Premium, DAC Professional, and other hygiene systems.

NitraDem Direct Connect solution and filter package for direct connection

SiroDem solution for hose-filling (depressurized)

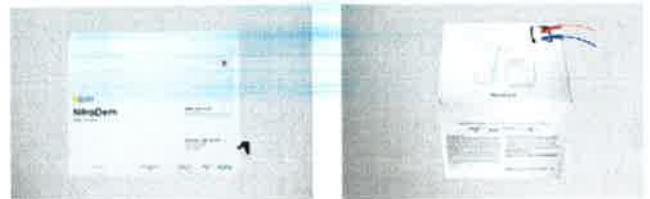


NitraDem Direct Connect – direct water connection for maximum quality

NitraDem Direct Connect provides high-quality demineralized water directly to the DAC Universal and any other autoclave. It operates as a fully automatic, highly efficient water treatment system and conforms to class 5 of the European DIN-EN 1717 standard, which prevents a direct connection between water system and autoclave. NitraDem Direct Connect constantly monitors water quality. The NitraDem Filter uses the ion-exchange principle and is very easy to change.

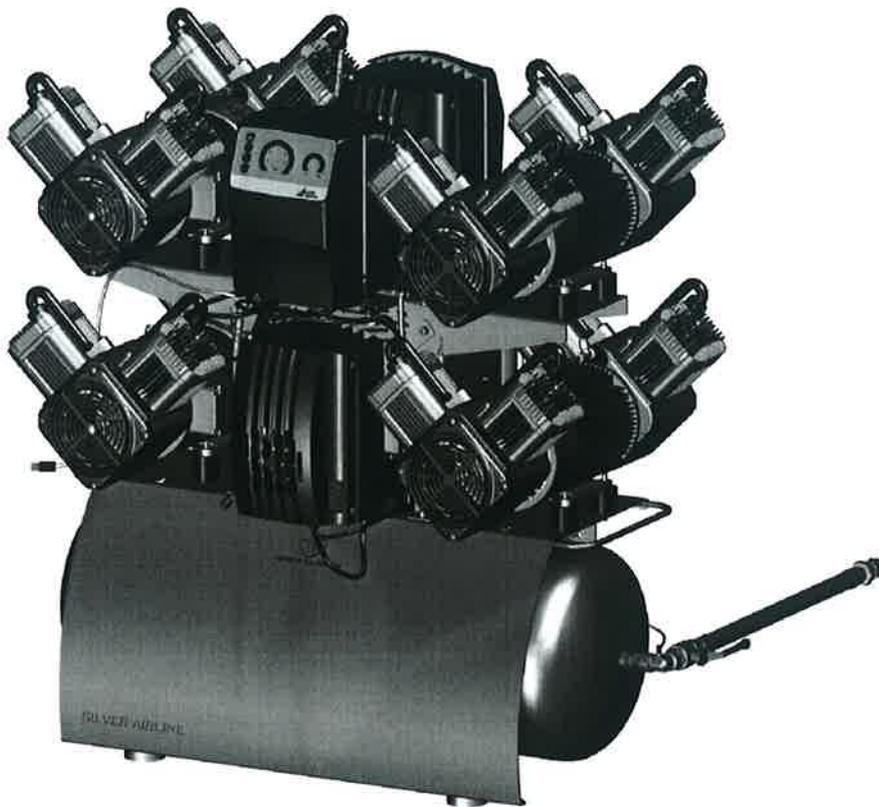
Specifications	NitraDem Direct Connect
Electrical connection (V) / (Hz)	- 100-240 / 50-60
Flow rate (l/h)	45
Water quality (µs/cm)	0.1-12
Dimensions (H x W x D) (cm)	26.5 x 30 x 12
Weight (kg)	6.3
Capacity/10° dH (l)	430
Conductivity test	■
Fixed connection	■
Special feature	DIN EN 1717-compliant for direct connection

Description	Ref.
NitraDem Direct Connect complete set	62 59 852
NitraDem filter	61-98 431
Water pistol	62 59 084
NitraDem Direct Connect	NitraDem filter



Quattro P 20

EN



Installation and operating instructions

CE 0297

4852100006L02



 **DÜRR
DENTAL**

1907V005

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 **Important information**

1 About this document

These installation and operating instructions represent part of the unit.

 If the instructions and information in these installation and operating instructions are not followed, Dürr Dental will not be able to offer any warranty or assume any liability for the safe operation and the safe functioning of the unit.

The German version of the installation and operating instructions is the original manual. All other languages are translation of the original manual. These installation and operating instructions apply to:

Quattro P 20

Order number: 4852-54; 4852100022;
4852100023

1.1 Warnings and symbols

Warnings

The warnings in this document are intended to draw your attention to possible injury to persons or damage to machinery.

The following warning symbols are used:



General warning symbol



Warning – dangerous high voltage



Warning – hot surfaces



Warning - automatic start-up of the unit

The warnings are structured as follows:

**SIGNAL WORD****Description of the type and source of danger**

Here you will find the possible consequences of ignoring the warning

- Follow these measures to avoid the danger.

The signal word differentiates between four levels of danger:

- **DANGER**
Immediate danger of severe injury or death
- **WARNING**
Possible danger of severe injury or death
- **CAUTION**
Risk of minor injuries
- **NOTICE**
Risk of extensive material/property damage

Other symbols

These symbols are used in the document and on or in the unit:



Note, e.g. specific instructions regarding efficient and cost-effective use of the unit.



Observe the operating instructions.



Disconnect all power from the unit.



Refer to the accompanying electronic documents.



Air



Dispose of correctly in accordance with EU Directive 2012/19/EU (WEEE).



CE labelling with the number of the notified body



Order number



Serial number



Medical device



Health Industry Bar Code (HIBC)



Manufacturer

1.2 Copyright information

All circuits, processes, names, software programs and units mentioned in this document are protected by copyright.

The Installation and Operating Instructions must not be copied or reprinted, neither in full nor in part, without written authorisation from Dürr Dental.

2 Safety

Dürr Dental has designed and constructed this unit so that when used properly and for the intended purpose it does not pose any danger to people or property.

Despite this, the following residual risks can remain:

- Personal injury due to incorrect use/misuse
- Personal injury due to mechanical effects
- Personal injury due to electric shock
- Personal injury due to radiation
- Personal injury due to fire
- Personal injury due to thermal effects on skin
- Personal injury due to lack of hygiene, e.g. infection



WARNING

The development of emphysema

Soft tissue can be damaged as a result of careless handling.

- › Do not dwell in the area being treated for any longer than is necessary.

2.1 Intended purpose

The compressor is designed to supply compressed air for dental applications.

2.2 Intended use

The air supplied by the compressor is suitable for driving dental tools.

The compressed air generated by the compressor is delivered to the pipeline system of the surgery. The entire compressed air system must be designed in such a way that the quality of the compressed air generated by the compressor is not impaired.

With this prerequisite, the air provided by the compressor is also suitable for blow-drying tooth preparations.

2.3 Improper use

Any use of this appliance / these appliances above and beyond that described in the Installation and Operating Instructions is deemed to be incorrect usage. The manufacturer cannot be held liable for any damage resulting from incorrect usage. The operator will be held liable and bears all risks.

**WARNING****Risk of explosion due to ignition of combustible materials**

- › Do not operate the unit in any rooms in which inflammable mixtures may be present, e.g. in operating theatres.
- › The unit is not suitable for providing an air supply to respirators.
- › This unit is not suitable for drawing up fluids or for compressing aggressive gases or potentially explosive gases.

2.4 General safety information

- › Always comply with the specifications of all guidelines, laws, and other rules and regulations applicable at the site of operation for the operation of this unit.
- › Check the function and condition of the unit prior to every use.
- › Do not convert or modify the unit.
- › Comply with the specifications of the Installation and Operating Instructions.
- › The Installation and Operating Instructions must be accessible to all operators of the unit at all times.

2.5 Specialist personnel**Operation**

Unit operating personnel must ensure safe and correct handling based on their training and knowledge.

- › Instruct or have every user instructed in handling the unit.

The following groups are not permitted to operate or use a commercially operated unit:

- People without the necessary experience and knowledge
- People with reduced physical, sensory or mental capabilities
- Children

Installation and repairs

- › Installation, readjustments, alterations, upgrades and repairs must be carried out by Dürr Dental or by qualified personnel specifically approved and authorized by Dürr Dental.

2.6 Electrical safety

- › Observe and comply with all the relevant electrical safety regulations when working on the unit.
- › Replace any damaged cables or plugs immediately.

2.7 Notification requirement of serious incidents

The user / patient is required to report to the manufacturer and the competent authority of the Member State, in which the user and/or patient is established, any serious incident that has occurred in relation to the device.

2.8 Only use original parts

- › Only use Dürr Dental parts or accessories and special accessories specifically approved by Dürr Dental.
- › Only use only original wear parts and replacement parts.



Dürr Dental accepts no liability for damages or injury resulting from the use of non-approved accessories or optional accessories, or from the use of non-original wear parts or replacement parts. The use of non-approved accessories, optional accessories or non-genuine wear parts / replacement parts (e.g. mains cable) can have a negative effect in terms of electrical safety and EMC.

2.9 Transport

The original packaging provides optimum protection for the unit during transport.

If required, original packaging for the unit can be ordered from Dürr Dental.



Dürr Dental will not accept any responsibility or liability for damage occurring during transport due to the use of incorrect packaging, even where the unit is still under guarantee.

- › Only transport the unit in its original packaging.
- › Keep the packing materials out of the reach of children.

2.10 Disposal



The unit must be disposed of properly. Within the European Union, the unit must be disposed of in accordance with EU Directive 2012/19/EU (WEEE).

› If you have any questions about the correct disposal of parts, please contact your dental trade supplier.



An overview of the waste keys for Dürr Dental products can be found in the download area at www.duerrdental.com (document no. P007100155).



Product description

3 Overview

3.1 Scope of delivery

The following items are included in the scope of delivery (possible variations due to country-specific requirements and/or import regulations):

Quattro P 20 4852-54

Quattro P 20 4852100022

Quattro P 20 4852100023

- Pressure tank
- Compressor units
- Connection parts
- Vibration dampers
- Network cable, 3 m
- Installation and operating instructions
- Appliance log book

3.2 Optional items

The following items can optionally be used with the unit; these items do not bear the CE mark:

Sterile filter 1640-981-00

Pressure reducer 4852100014

3.3 Wear parts and replacement parts

The following working parts must be replaced at regular intervals (refer also to "Maintenance"); these articles do not bear the CE mark:

Air intake filter 0832-982-00

Fine filter 1610-121-00

Sterile filter 1640-981-00

Sintered filter 1650-101-00



Any repairs exceeding routine maintenance may only be carried out by qualified personnel or our service.



Information about replacement parts is available from the portal for authorised specialist dealers at:
www.duerrdental.net.



If the mains cable of this unit is damaged it must only be replaced by an original mains cable from the manufacturer.

4 Technical data

4.1 Quattro P 20

Electrical data		4852-54	
Rated voltage	V	400	
Mains frequency	Hz	50	60
Nominal current at 8 bar (0.8 MPa)	A	17.6	19.2
Speed	rpm	1440	1700
Type of protection		IP 21	
Mains fuses *	A	25	
Max. permissible mains impedance in accordance with EN 61000-3-11 **	Ω	0.13	

* Circuit breaker fuse characteristics B, C or D in acc. with EN 60898-1

** Mains impedance at 6 switching cycles per hour. If the number of switching cycles per hour is higher a lower mains impedance is required.

General technical data			
Pressure tank volume	l	90	
Suction power, approx.	l/min	1685	2025
Delivery at 5 bar (0.5 MPa) *	l/min	885	1030
Pressure build-up phase 0 - 7.5 bar (0 - 0.75 MPa) c.	s	45	40
Duty cycle	%	100	
Start-up pressure	bar (MPa)	5.5 (0.55)	
Cut-off pressure	bar (MPa)	7.5 (0.75)	
Cut-off pressure, max. adjustable	bar (MPa)	9.0 (0.9)	
Safety valve, maximum permissible operating pressure	bar (MPa)	10 (1)	
Pressure dew point at 7 bar (0.7 MPa) **	$^{\circ}\text{C}$	$\leq +5$	
Dimensions (H x W x D) ***	cm	114 x 115 x 77	
Weight	kg	300	
Noise level ****	dB(A)	75	77

* Delivery without membrane drying unit, at +20 $^{\circ}\text{C}$ and 1013 mbar (0.1 MPa)

** Value determined at an ambient temperature of +30 $^{\circ}\text{C}$

*** Values without accessories and add-on parts

**** Noise level in accordance with ISO 3744

Filter mesh size

Compressor air intake filter	μm	3
Fine filter for membrane drying unit	μm	3
Sterile filter for membrane drying unit	μm	0.01

Filter mesh size

Sintered filter for membrane drying unit	µm	35
--	----	----

Network connection

LAN technology		Ethernet
Standard		IEEE 802.3u
Data rate	Mbit/s	100
Connector		RJ45
Type of connection		Auto MDI-X
Cable type		≥ CAT5

Ambient conditions during storage and transport

Temperature	°C	-10 to +55
Relative humidity	%	max. 95

Ambient conditions during operation

Temperature	°C	+10 to +40
Ideal temperature	°C	+10 to +25
Relative humidity	%	max. 95

Classification

Medical devices class		IIa
-----------------------	--	-----

4.2 Quattro P 20

Electrical data		4852100022 4852100023	
Rated voltage	V	400	
Mains frequency	Hz	50	60
Nominal current at 8 bar (0.8 MPa)	A	17.6	19.2
Speed	rpm	1440	1700
Type of protection		IP 21	
Mains fuses *	A	25	
Max. permissible mains impedance in accordance with EN 61000-3-11 **	Ω	0.13	

* Circuit breaker fuse characteristics B, C or D in acc. with EN 60898-1

** Mains impedance at 6 switching cycles per hour. If the number of switching cycles per hour is higher a lower mains impedance is required.

General technical data			
Pressure tank volume	l	90	
Suction power, approx.	l/min	1685	2025
Delivery at 5 bar (0.5 MPa) *	l/min	885	1030
Pressure build-up phase 0 - 7.5 bar (0 - 0.75 MPa) c.	s	45	40
Duty cycle	%	100	
Start-up pressure	bar (MPa)	5.5 (0.55)	
Cut-off pressure	bar (MPa)	7.5 (0.75)	
Cut-off pressure, max. adjustable	bar (MPa)	9.0 (0.9)	
Safety valve, maximum permissible operating pressure	bar (MPa)	10 (1)	
Pressure dew point at 7 bar (0.7 MPa) **	°C	≤ +5	
Dimensions (H x W x D) ***	cm	114 x 115 x 77	
Weight	kg	300	
Noise level ****	dB(A)	75	77

* Delivery without membrane drying unit, at +20°C and 1013 mbar (0.1 MPa)

** Value determined at an ambient temperature of +30 °C

*** Values without accessories and add-on parts

**** Noise level in accordance with ISO 3744

Filter mesh size		
Compressor air intake filter	µm	3
Fine filter for membrane drying unit	µm	3
Sterile filter for membrane drying unit	µm	0.01
Sintered filter for membrane drying unit	µm	35

Network connection

LAN technology		Ethernet
Standard		IEEE 802.3u
Data rate	Mbit/s	100
Connector		RJ45
Type of connection		Auto MDI-X
Cable type		≥ CAT5

Ambient conditions during storage and transport

Temperature	°C	-10 to +55
Relative humidity	%	max. 95

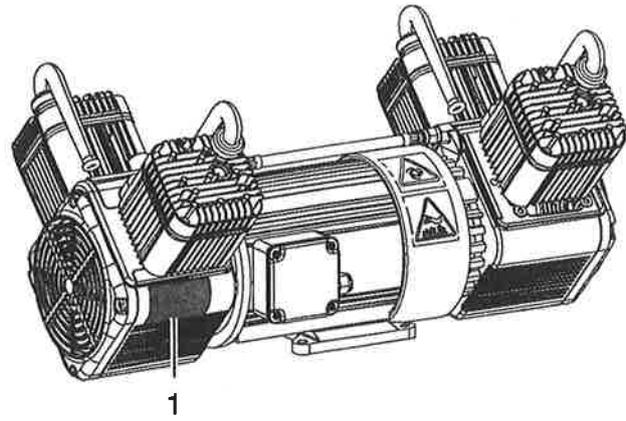
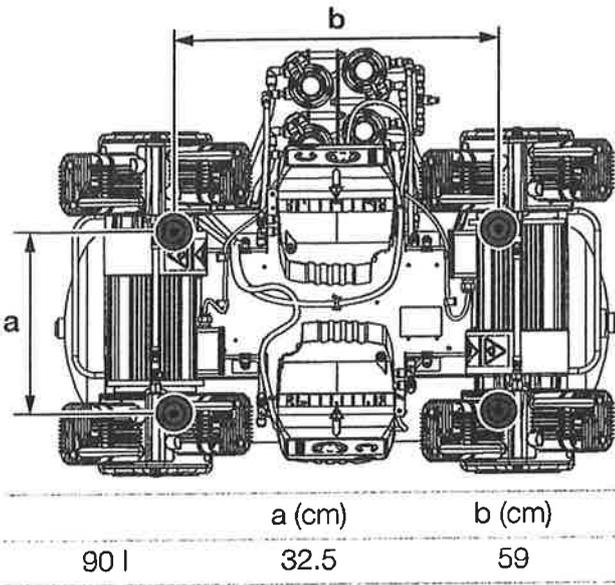
Ambient conditions during operation

Temperature	°C	+10 to +40
Ideal temperature	°C	+10 to +25
Relative humidity	%	max. 95

Classification

Medical devices class	IIa
-----------------------	-----

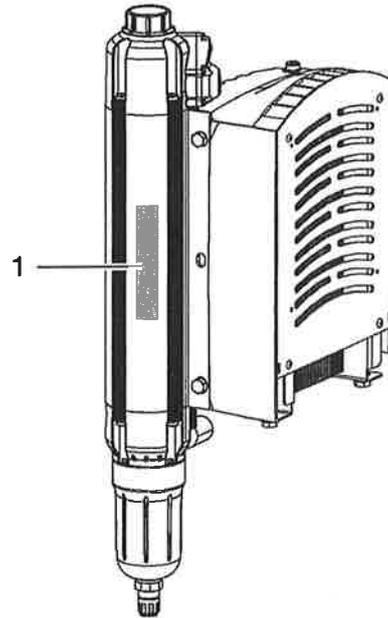
EN 4.3 Distance between rubber feet



1 Compressor unit type plate

Membrane drying unit

The type plate of the membrane drying unit is located on the side of the membrane drying unit.

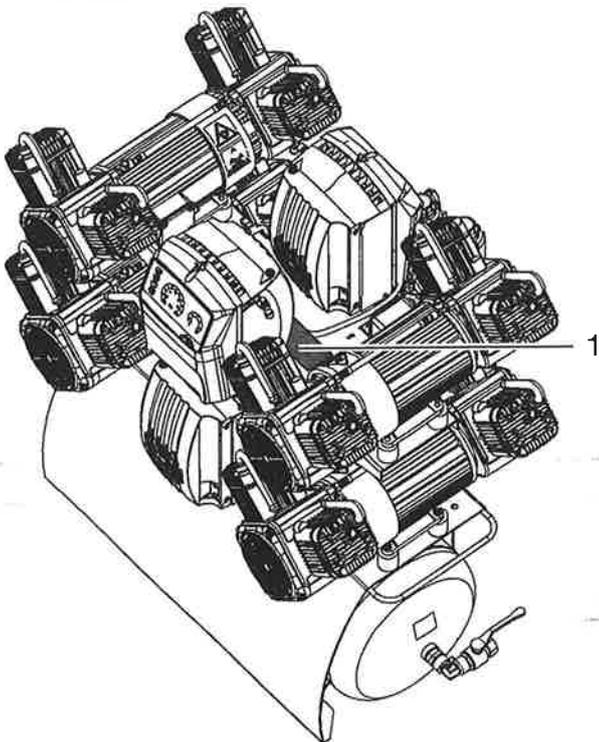


1 Membrane drying unit type plate

4.4 Type plate

Complete system

The type plate of the overall system is located on the console.



1 Type plate for the overall system

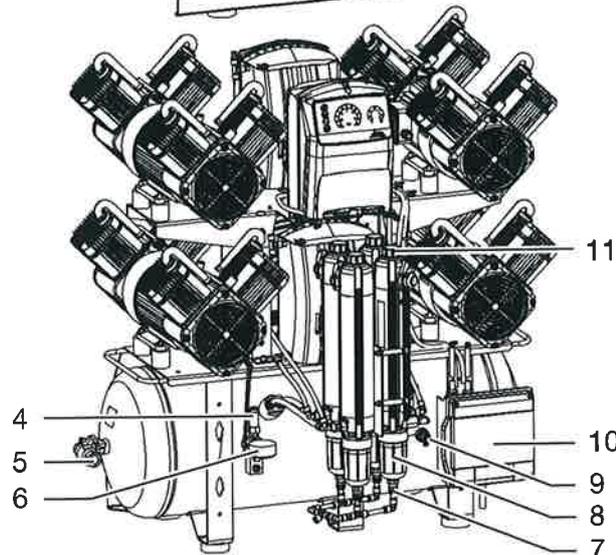
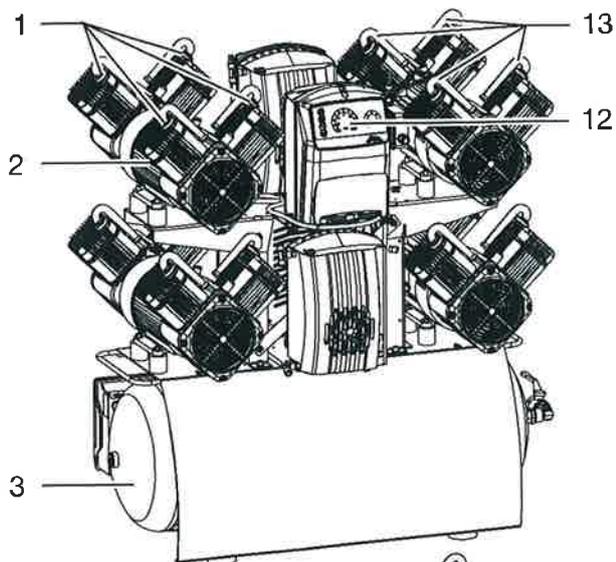
Compressor unit

The type plate of the compressor unit is located on the crankcase below the cylinder.

4.5 Evaluation of conformity

This device has been subjected to conformity acceptance testing in accordance with the current relevant European Union guidelines. This equipment conforms to all relevant requirements.

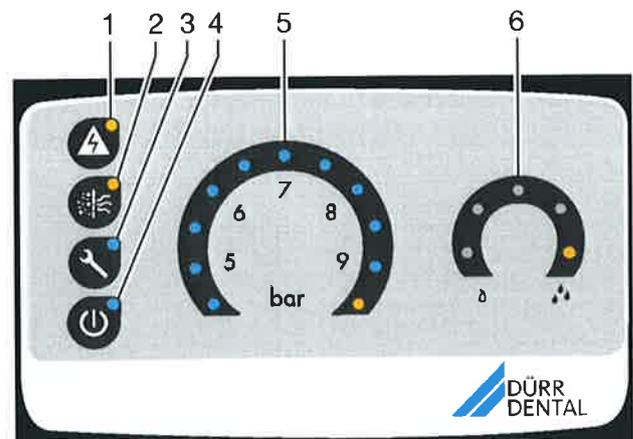
5 Operation



- 1 Air intake filter
- 2 Compressor unit
- 3 Pressure tank
- 4 Safety valve
- 5 Compressed air connection (3/4")
- 6 Pressure gauge/display
- 7 Automatic/manual condensate drain valve, membrane drying unit
- 8 Sintered filter for membrane drying unit
- 9 Condensate drain valve
- 10 Fuse box
- 11 Fine filter or sterile filter, membrane drying unit
- 12 Controller
- 13 Intake connector

The compressor unit draws in atmospheric air and compresses it without oil. It then transports the oil-free compressed air to the membrane drying unit. The cooler and the membrane dryer extract moisture from the compressed air. The oil-free, hygienic and dry air is stored in the pressure tank ready for use in connected devices. All of the measurement data for the unit comes together in the control (e.g. pressure in the pressure tank, temperature of the motor windings), where it is then evaluated. Likewise, various settings (e.g. switch-on/cut-off pressure) can be adjusted, or the unit can be connected via the network to monitoring software.

5.1 Operating panel



- 1 Fault button with orange LED
- 2 Filter change button with orange LED
- 3 Service key with blue LED
- 4 Standby button with blue LED
- 5 Pressure range display/adjustment
- 6 Pressure dew point display

Different messages and the status of the unit are displayed on the operating panel. In addition, different functions can be started via the buttons.

5.2 Start-up behaviour

On compressors with an electronic controller, the compressor units are switched on with a time delay. The time delay depends on the operating mode selected on the controller.

Operating mode:

- Eco: 180 s
- Balanced: 60 s
- Boost: 10 s

Alternating control:

EN

The compressor unit with the shortest operating time since the compressor was connected to voltage is started. This distributes the operating time more or less uniformly between the compressor units. If the compressor is disconnected from the voltage and is then reconnected to the power supply, compressor unit 1 will start first again.

 **Assembly**

6 Requirements

-  The unit must not be set up or operated within the vicinity of the patients (within a radius of 1.5 m).

The unit can be installed either at the same level as the surgery room or on a floor below (e.g. cellar).

Due of the amount of noise generated, we recommend that the unit is installed in an adjoining room.

The pipes provided on-site must at least meet the country-specific requirements for drinking water.

-  Further information can be found in our separate planning information leaflet for compressed air.

6.1 Installation/setup room

The room chosen for set up must fulfil the following requirements:

- Closed, dry, well-ventilated room
- Should not be a room made for another purpose (e. g. boiler room or wet cell)
- If the unit is installed in a machine room, e.g. in an adjoining room or cellar, the requirements set out in ISO-TS 22595 must be complied with.

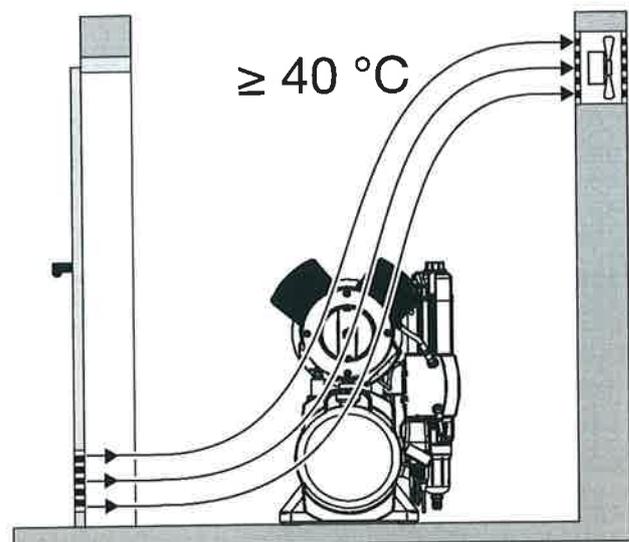


NOTICE

Risk of overheating due to insufficient ventilation

The units generates heat. Possibility of heat damage and/or reduced service life of the unit.

- › Do not cover the unit.
- › Install a fan for auxiliary ventilation in rooms where ambient temperatures exceed ≥ 40 °C while the unit is in operation.



6.2 Setup

The following conditions must be taken into account for installation:

-  The air is filtered when it is sucked in. This does not alter the composition of the air. For this reason it is important to keep the sucked-in air free of harmful substances (e.g. do not suck in exhaust gases or contaminated exhaust air).
- Clean, level and sufficiently stable subsurface (note the weight of the unit).
 - Type plate easy to read.
 - Unit easy to access for operation and maintenance.
 - Easy-to-access power outlet to which the unit is connected.
 - Maintain sufficient distance to the wall (at least 20 cm).
 - The compressed air pipe should be routed as closely as possible to the place of installation (note the length of the hose supplied).

6.3 Information about electrical connections

- › Ensure that the electrical connections to the mains power supply are established in accordance with current valid national and local regulations and standards governing the installation of low voltage units in medical facilities.
- › Observe the current consumption of the devices that are to be connected.

7 Transport



WARNING

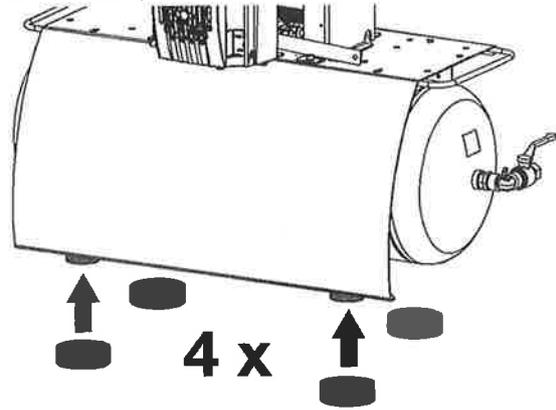
Risk of explosion of the pressure tank and pressure hoses

- › The pressure tank and the pressure hoses must be vented before they are stored or transported.
- › Protect the unit against moisture, dirt and extreme temperatures during transport ("4 Technical data").
- › Always make sure that the condensate collector chamber is empty before transporting the unit ("14 Taking out of use").
- › Always transport the unit in an upright position.
- › Only transport the unit using the transport handles provided.
- › Check the unit for transport damage.

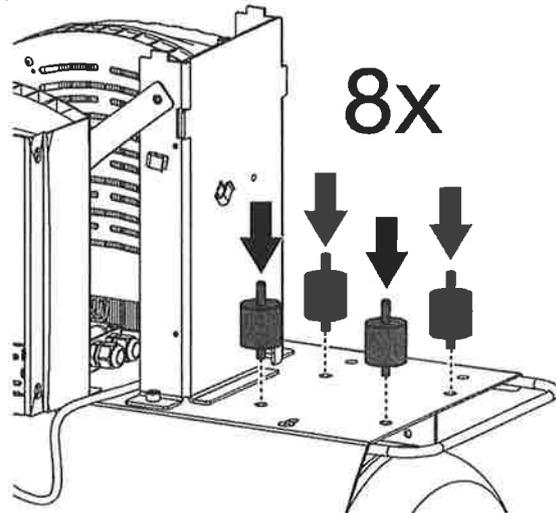
8 Installation

8.1 Installing the compressor unit

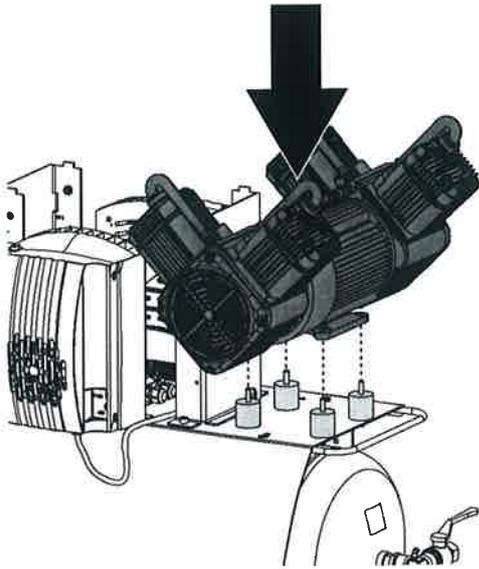
- › Place the pressure tank with the rubber feet in the rubber pads.



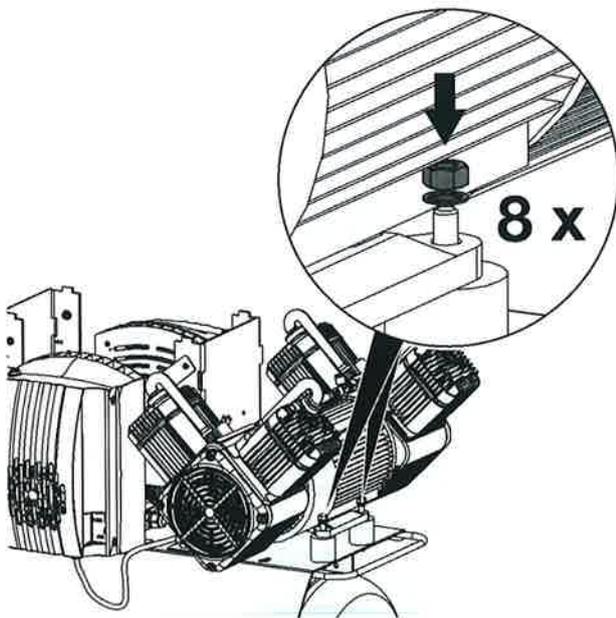
- › Screw the vibration reducers into the retaining plate.



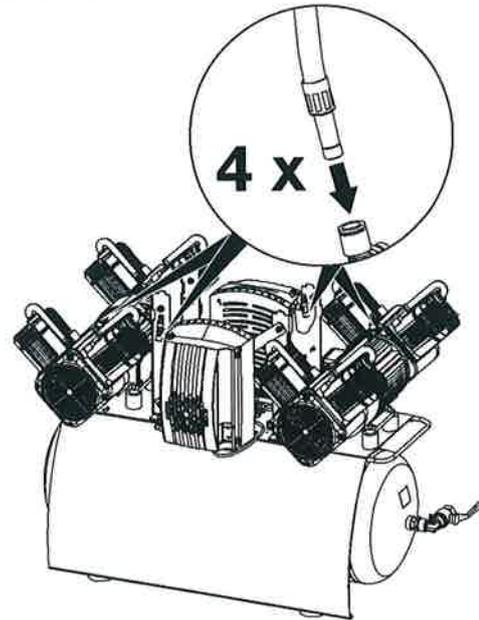
- › Place the compressor units on the vibration reducers.



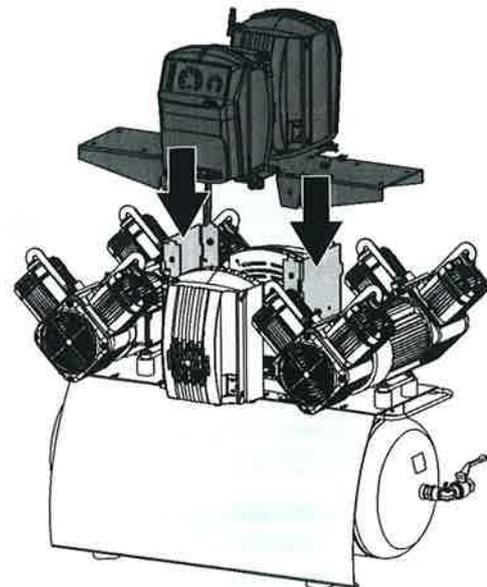
- › Attach the compressor units with the lock washers and nuts.



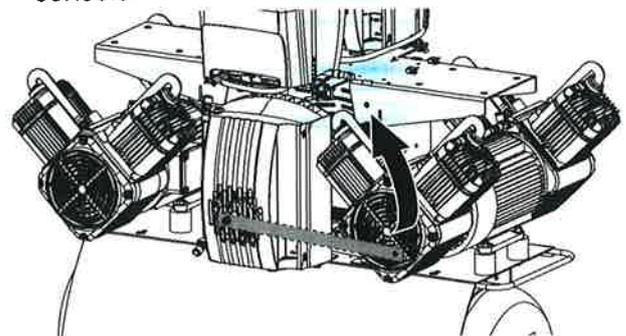
- › Connect the compressor units via the pressure hose to the upper connections of the coolers.



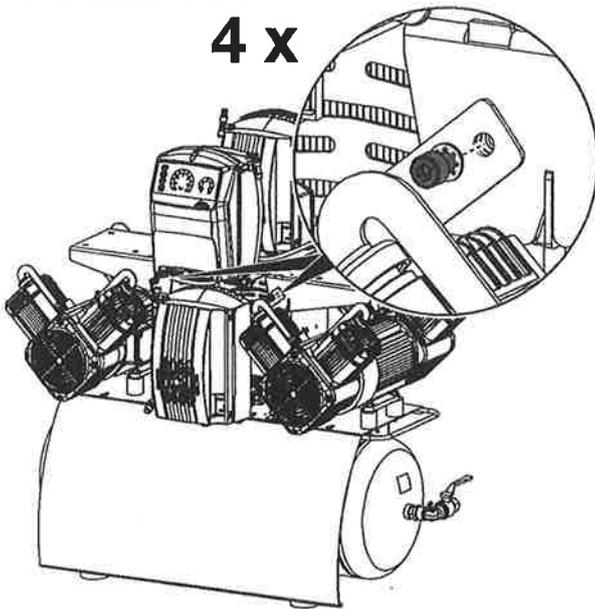
- › Place the console on the supports.



- › Rotate the crossbeam upwards towards the console.

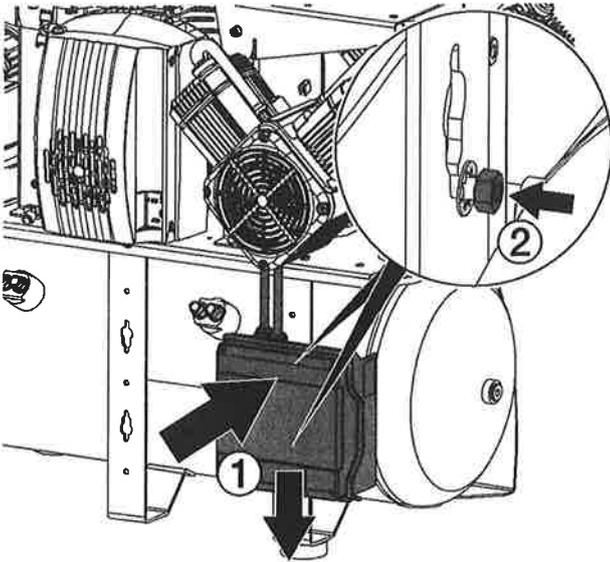


- › Attach the crossbeam to the console with a lock washer and screw.



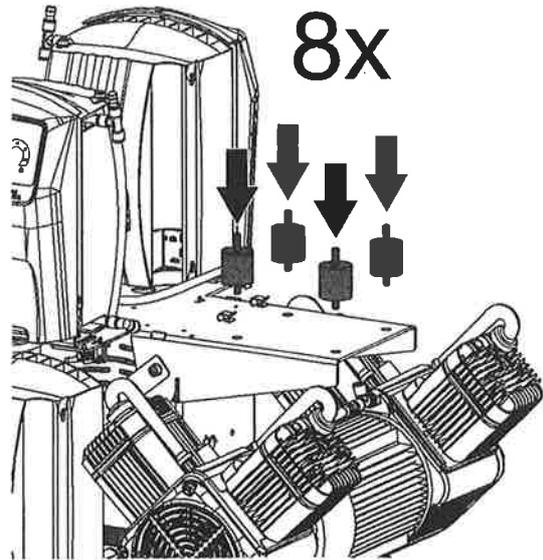
4 x

- › Hook the fuse box in the keyholes and attach it with a lock washer and nut.



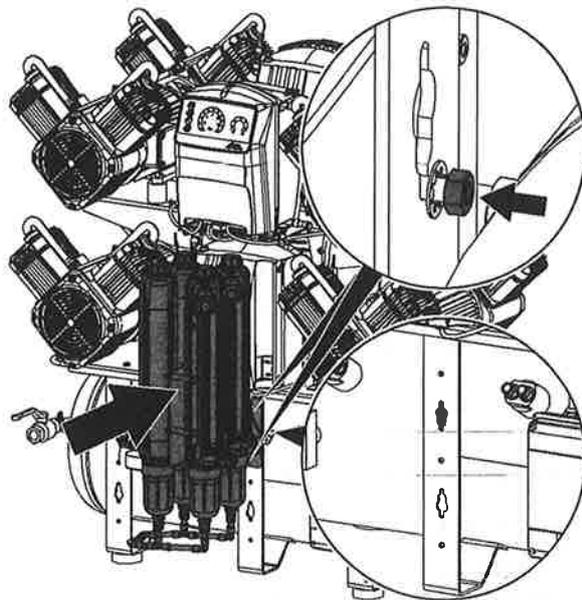
- › Fix the cables of the fuse box in place on the pre-mounted eyelets using cable ties.

- › Screw the vibration reducers into the console.

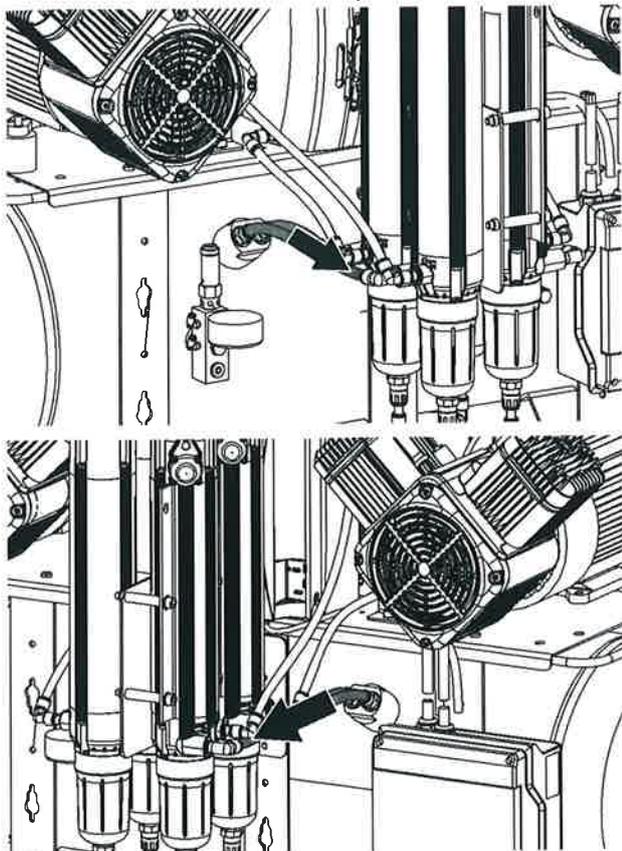


8x

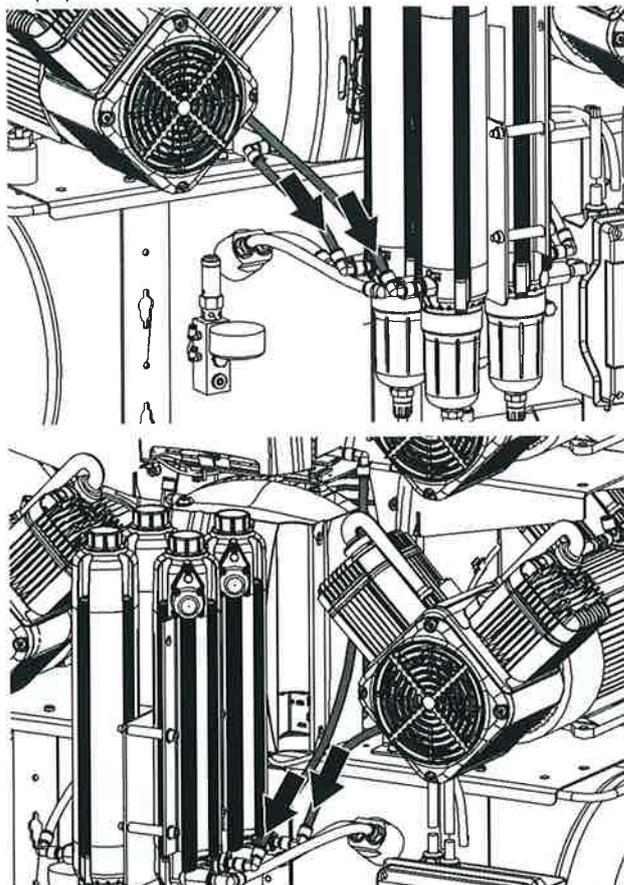
- › Place the compressor units on the vibration reducers.
- › Attach the compressor units with the lock washers and nuts.
- › Connect the compressor units via the pressure hose to the upper connections of the coolers.
- › Attach the membrane dryer to the pressure tank with a lock washer and nut.



- › Connect the hoses of the pressure tank to the outlet of the membrane dryers (OUT).

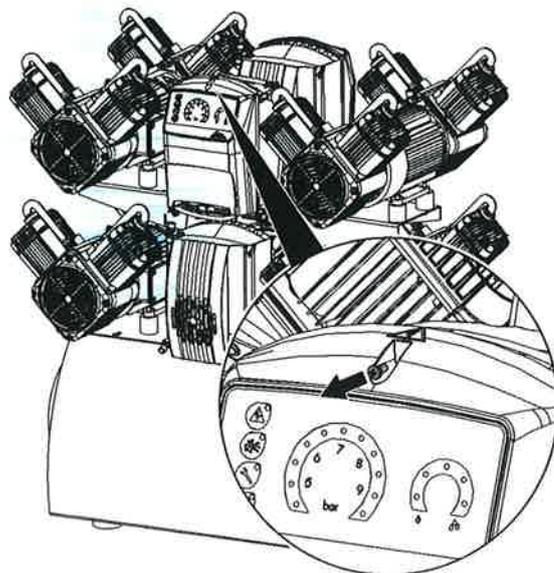


- › Connect the hoses of the lower connections of the coolers to the inlet of the membrane dryers (IN).



Warning – risk of dangerous electric voltages

- › The mains plug must not be plugged in. If it is plugged in, unplug it.
- › Loosen the fastening screws of the covers for the controllers.

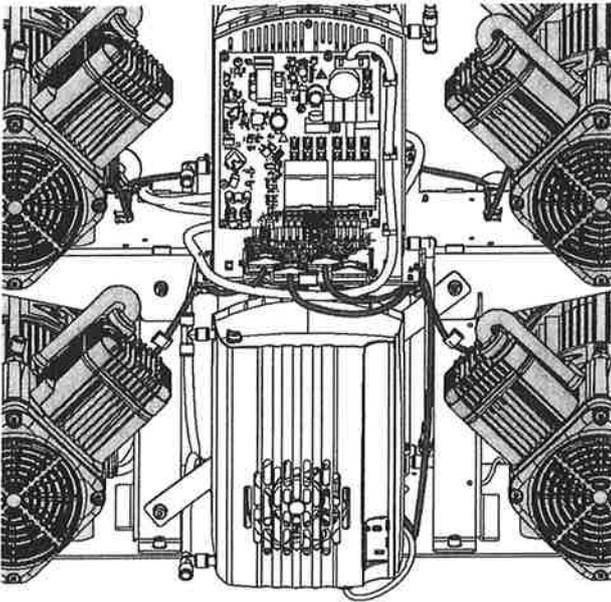




NOTICE

The operating panel cable is very short and can damage the PCB when the cover is removed.

- › Carefully remove the cover of the control.
- › Unplug the operating panel cable.
- › Lay the cables of the lower compressor units and the free cable of the distribution box upwards to the main controller. Then guide it through the strain relief and secure it. Lay the cables of the upper compressor units to the auxiliary controller. Then guide it through the strain relief and secure it.



- › Plug the temperature sensor connector and the power supply of the compressor units into the sockets provided.

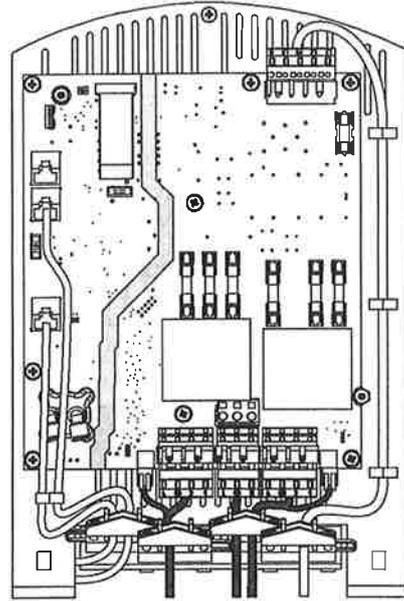


Fig. 1: Main controller

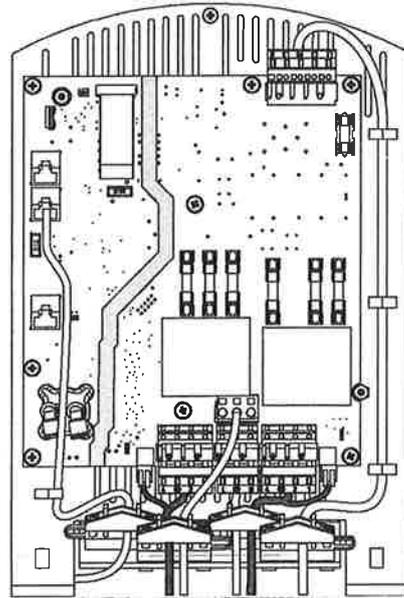
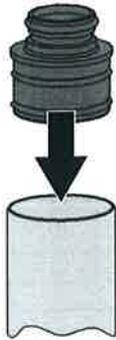


Fig. 2: Auxiliary controller



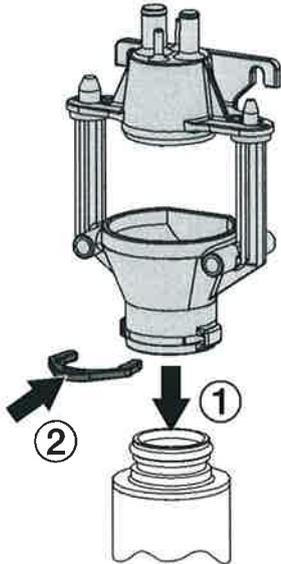
When routing the cables, maintain the correct gaps between control cables and supply cables.

- › Insert the Dürr Connect transition piece into the drain pipe.

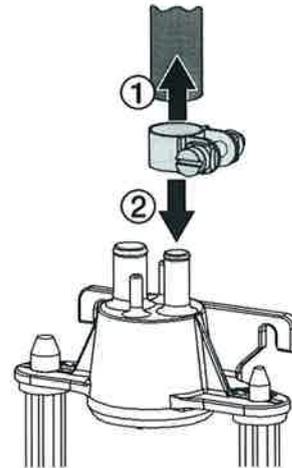


i If the Dürr Connect connector interface (DN 40) included in the scope of delivery does not fit the existing drain pipe, additional connector interfaces can be purchased from Dürr Dental.

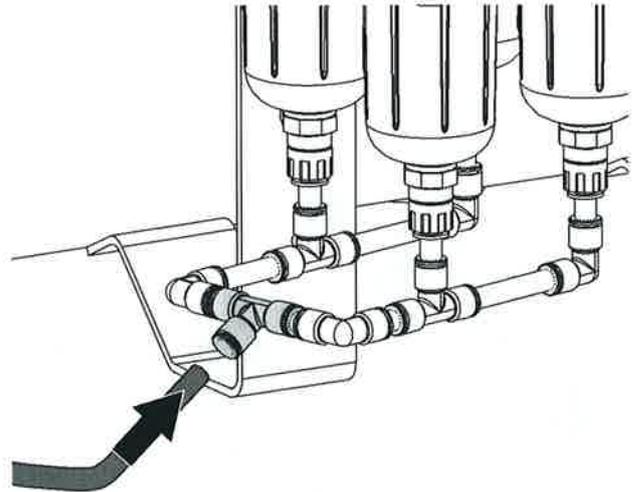
- › Place the free drop section onto the transition piece and secure with the ring clamp.



- › Secure the connection hose of the membrane dryer to the free drop section with the hose clip.



- › Connect the hose from the free drop section to the membrane dryer with the connection.



Connect the network cable for the monitoring software

i A network connection is only required when using monitoring software.

- › Connect the network cable to the network socket.

Installation of the cover

- › Connect the operating panel cable again.
- › Attach the cover of the control again and fasten it with the screw.



DANGER

Risk of electric shock due to defective mains cable

› Mains cables must not be allowed to come into contact with any hot surfaces on the unit.

› Attach the cables using the cable clips.

8.2 Establishing the compressed air connection

✓ Connection line to pipe system at the height of the tank connection

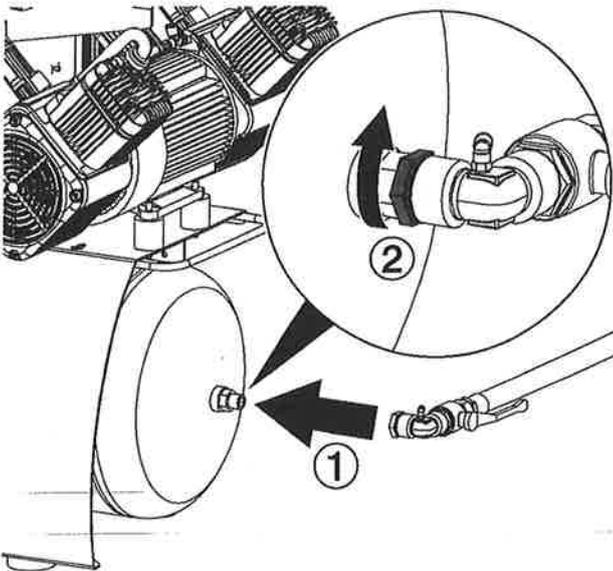
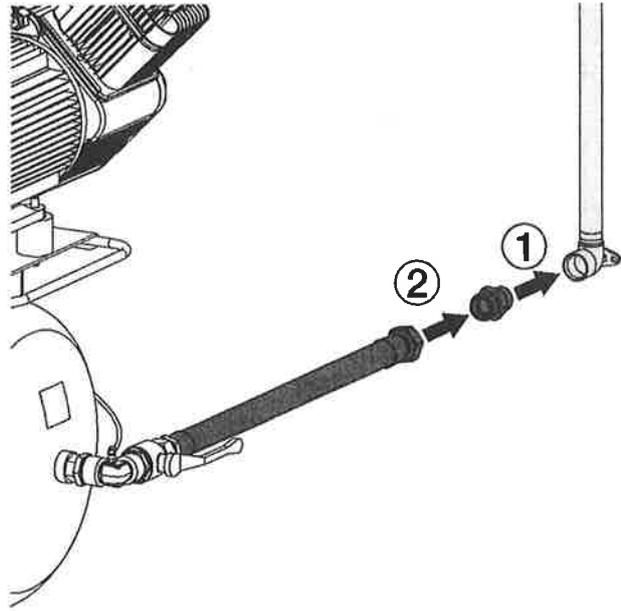
✓ 3/4" corner joint, pointing forwards



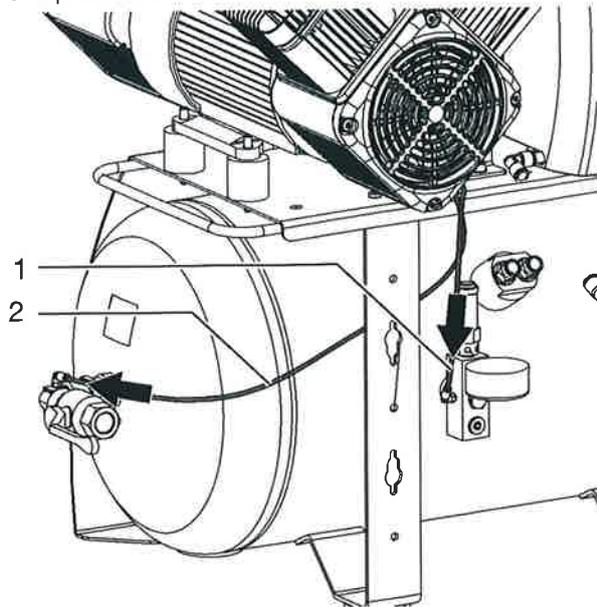
The supplied flexible pressure hose between the pipe system and the compressor prevents vibrations from being transmitted and thus reduces noise. This ensures safe and reliable operation.

› Connect the pre-mounted pressure hose to the connecting sleeve at the pressure tank and fasten with the union nut.

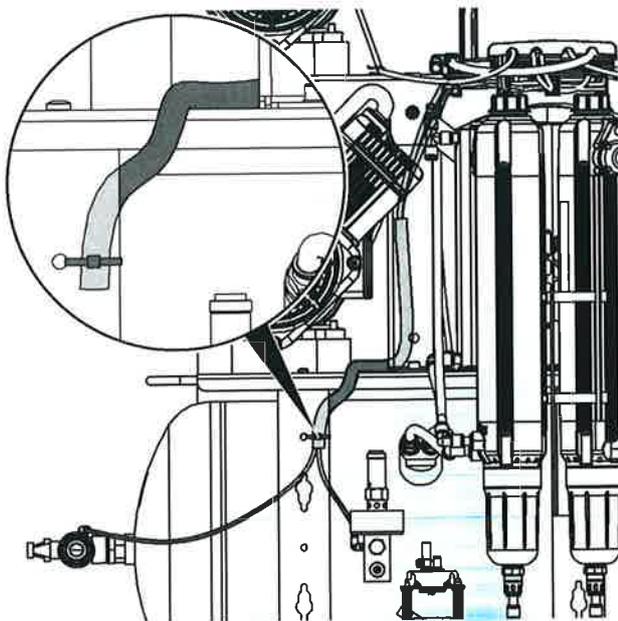
› Connect the pressure hose with the supplied connecting sleeve to the pipe system.



- › Connect the pressure hoses from the controllers. Additionally pull the hoses through the hose from the accessories and secure the latter to the pressure tank with a cable tie.



- 1 Auxiliary control pressure hose
- 2 Main control pressure hose



8.3 Network connection

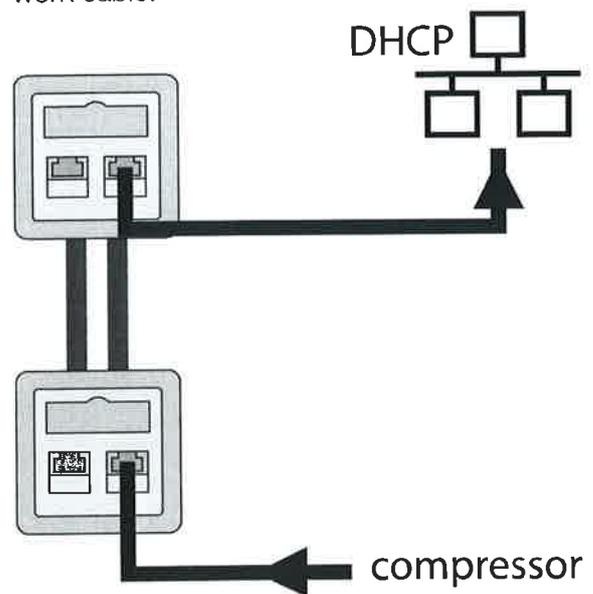
Purpose of the network connection

The network connection is used to exchange information or control signals between the unit and a software installed on a computer, in order to, e. g.:

- Display parameters
- Select operating modes
- Indicate messages and error situations
- Change unit settings
- Activate test functions
- Transmit data for archiving
- Provide documents concerning the units

 During initial installation, we recommend a router or server with DHCP so that the unit is detected in the network.

- › Plug the network cable into the control and into a network socket.
- › Connect to the computer network with the network cable.



8.4 Electrical connections

Safety when making electrical connections

 The unit has no main power switch. For this reason it is important that the unit is be set up in such a way that the plug can be easily accessed and unplugged if required.

- › The unit must only be connected to a correctly installed power outlet.
- › Make sure that none of the electrical cables leading to the unit are under any mechanical tension.
- › Before initial start-up check that the mains supply voltage and the voltage stated on the type plate match (see also "4. Technical data").

Establishing the electrical connections



DANGER

Risk of electric shock due to defective mains cable

- › Mains cables must not be allowed to come into contact with any hot surfaces on the unit.
- › Connect the mains plug to an earthed power outlet.
The unit will start immediately when the mains plug is connected.
- › Check whether the power outlet is switched via the surgery main power switch.
This ensures that the unit starts up automatically after the surgery main switch is routinely switched off and back on again.

9 Commissioning



In many countries technical medical products and electrical devices are subject to regular checks at set intervals. The owner must be instructed accordingly.

- › Carry out an electrical safety check in accordance with applicable local regulations (e.g. the German Ordinance on the Installation, Operation and Use of Medical Devices / Medizinprodukte-Betreiberverordnung) and record the results as appropriate, e.g. in the technical log book.
- › Carry out and document the instruction and handover for the unit.



A sample handover report is included in the attachment.

9.1 Checking the compressor units

- › Switch on the unit.
- › Check that all units start up one after the other as dictated by the set operating type.
If any units fail to start up, check the connection between the main controller/auxiliary controller and the connectors.

9.2 Checking the switch-on/cut-off pressure

The switch-on/cut-off pressure is preset at the factory. Check the adjustment during first start-up.

When the mains plug is connected the compressor will start after a short delay.

- › Read off the cut-off pressure from the pressure gauge.
- › Drain the air from the pressure tank (e.g. via the condensate drain valve) until the unit starts and then close it again.

- › Read off the pressure when the unit starts up. If the readings deviate from the values preset at the factory, adjust the values to the factory settings. If other pressure values are required, take care to observe the maximum pressure difference.

9.3 Checking the safety valve

Correct operation of the safety valve must be checked when the unit is started up for the first time and again subsequently at regular intervals.

-  At the factory, the safety valve is set to 10 bar (1 hPa), checked and stamped.



DANGER

Risk of explosion of the pressure tank and pressure hoses

- › Do not change the safety valve settings.

- › Fill the pressure tank to the cut-off pressure.



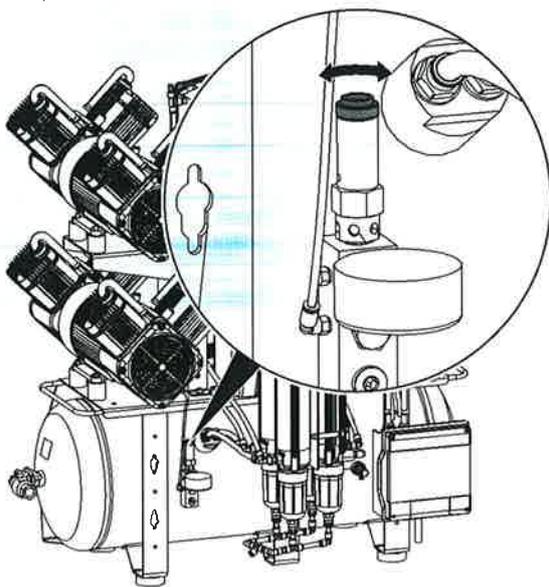
WARNING

Risk of damage to the safety valve

Risk of explosion of the pressure tank and pressure hoses due to a defective safety valve

- › Do not use the safety valve to vent the pressure tank.

- › To open, rotate the screw of the safety valve anti-clockwise until the valve begins to blow off. Only allow the safety valve to blow for a short period.



- › Turn the screw clockwise as far as it will go. The valve must now be closed again.
- › Press and hold the service key  until the safety valve triggers. The compressor units keep running as long as the button is pressed. The defined cut off pressure is not taken into account.

9.4 Draining the condensation water

Temperature changes during transport may cause condensation water to accumulate in the pressure tank. The condensation water can only be drained from the pressurised pressure tank.

- › Start up the unit and wait until the cut-off pressure is reached.
- › At maximum tank pressure, slowly open the condensate drain valve.
- › Close the condensate drain valve as soon as all of the accumulated condensation water has been blown out.

9.5 Monitoring the unit via the network

The following requirements must be met in order to monitor the unit on the computer:

- Unit connected to the network
- Current monitoring software installed on the computer

Combining devices safely

- The overall safety of the unit and its main performance features are independent of the network. The device is designed for operation independent of a network. However, some of the functions are not available in this case.
- Incorrect manual configuration can lead to significant network problems. The expert knowledge of a network administrator is required for configuration.
- The data connection utilises part of the bandwidth of the network. Interactions with other medical devices cannot be completely ruled out. Apply the IEC 80001-1 standard for risk assessment.
- The device is not suitable for direct connection to the public internet.

Network configuration

Various options are available for network configuration:

- ✓ Automatic configuration via DHCP (recommended).
- ✓ Automatic configuration via Auto-IP for direct connection of unit and computer.
- ✓ Manual configuration.
- › Configure the network settings of the unit using the software or, if available, the touch screen.
- › Check the firewall and release the ports, if applicable.

Network protocols and ports

Port	Purpose	Service
45123 UDP, 45124 UDP	Unit recognition and configuration	
1900 UDP	Service detection	SSDP / UPnP
502 TCP	Unit data	
514 ¹⁾ UDP	Event protocol data	Syslog
22 TCP	Diagnosis	Telnet, SSH
123 UDP	Time	NTP

- 1) The port can vary depending on the configuration.

10 Adjustment options

10.1 Adjustment of the switch-on/cut off pressure



WARNING

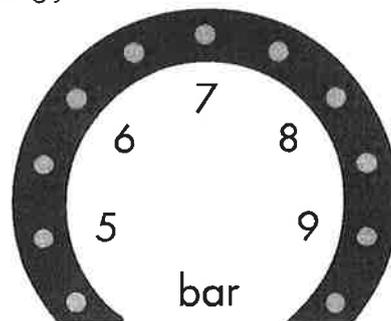
Risk of explosion of the pressure vessel

The pressure vessels used in the compressors are designed to withstand continuous pressure changes of 2 bar and can be used continuously under these pressure changes.

- › For load changes > 2 bar (max. permissible: 3 bar), comply with the maximum load change cycles specified in the operating instructions of the pressure vessel.

The pressure adjustment is performed in standby mode.

- › Standby button:  press for at least 2 seconds.
- › Service key:  press for at least 2 seconds. The blue LEDs in the operating panel flash. They are touch-sensitive and can be adjusted accordingly.



The blue LEDs in the operating panel flash. They are touch-sensitive and can be adjusted accordingly.



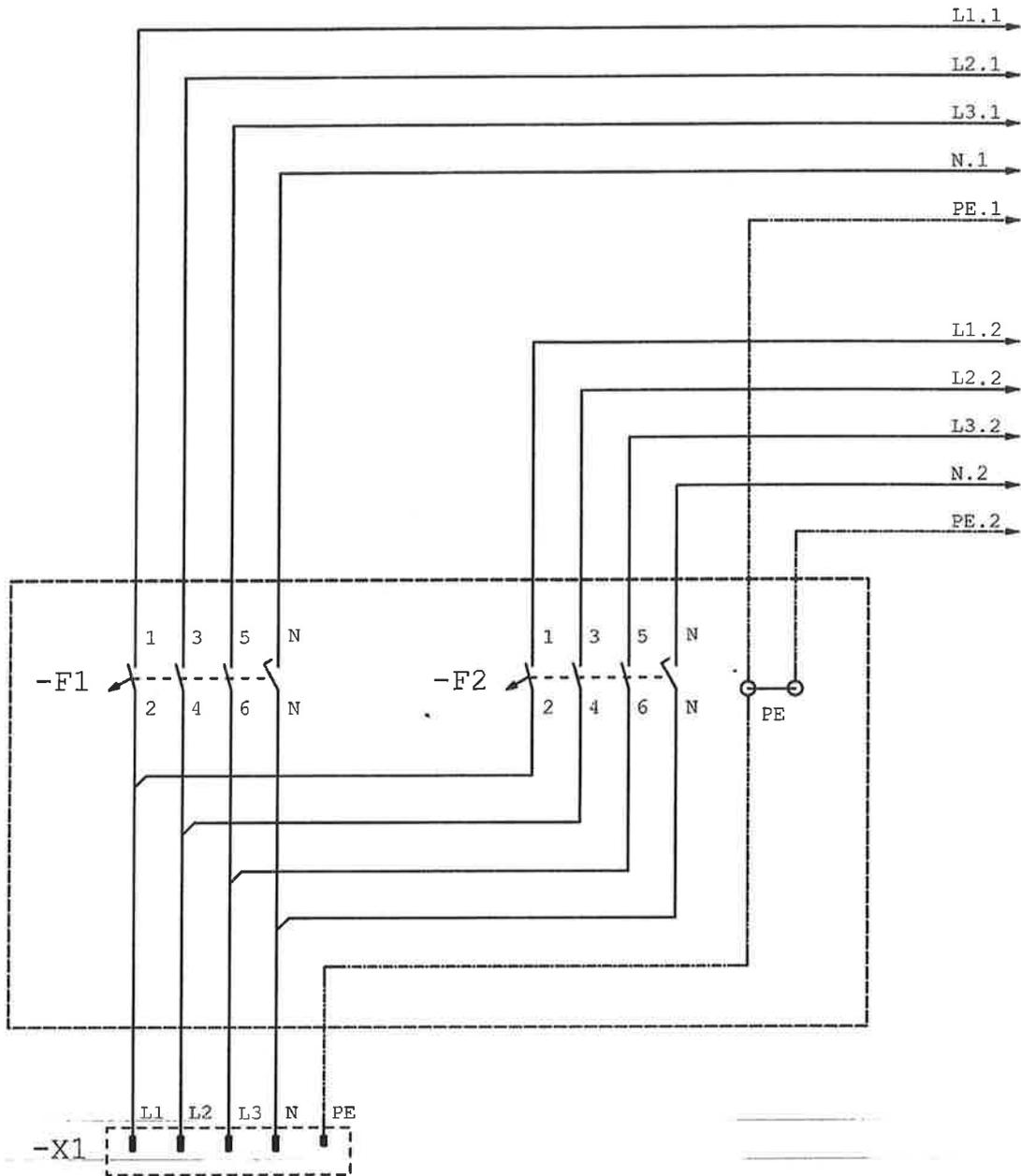
The pressure adjustment is performed in 0.5 bar increments by touching the LED.

The blue LEDs in the operating panel flash. They are touch-sensitive and can be adjusted accordingly.

- › Touch the first flashing LED with your finger and swipe to the required **switch on pressure**.
- › Touch the last flashing LED with your finger and swipe to the required **cut off pressure**.

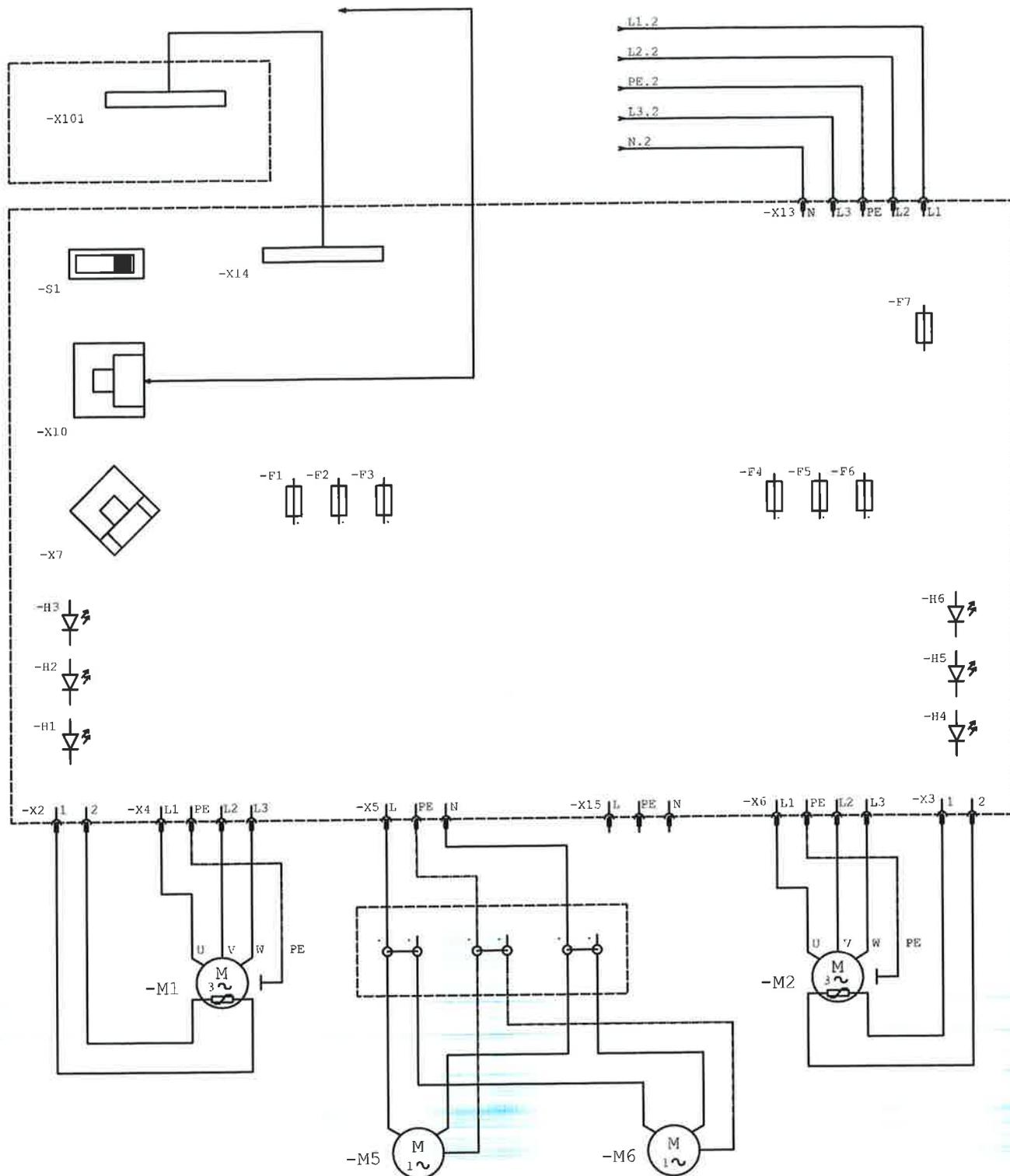
11 Controller

11.1 Mains connection



- X1 Mains connection 3/N/PE AC 400 V
- F1 Fuse C16A
- F2 Fuse C16A

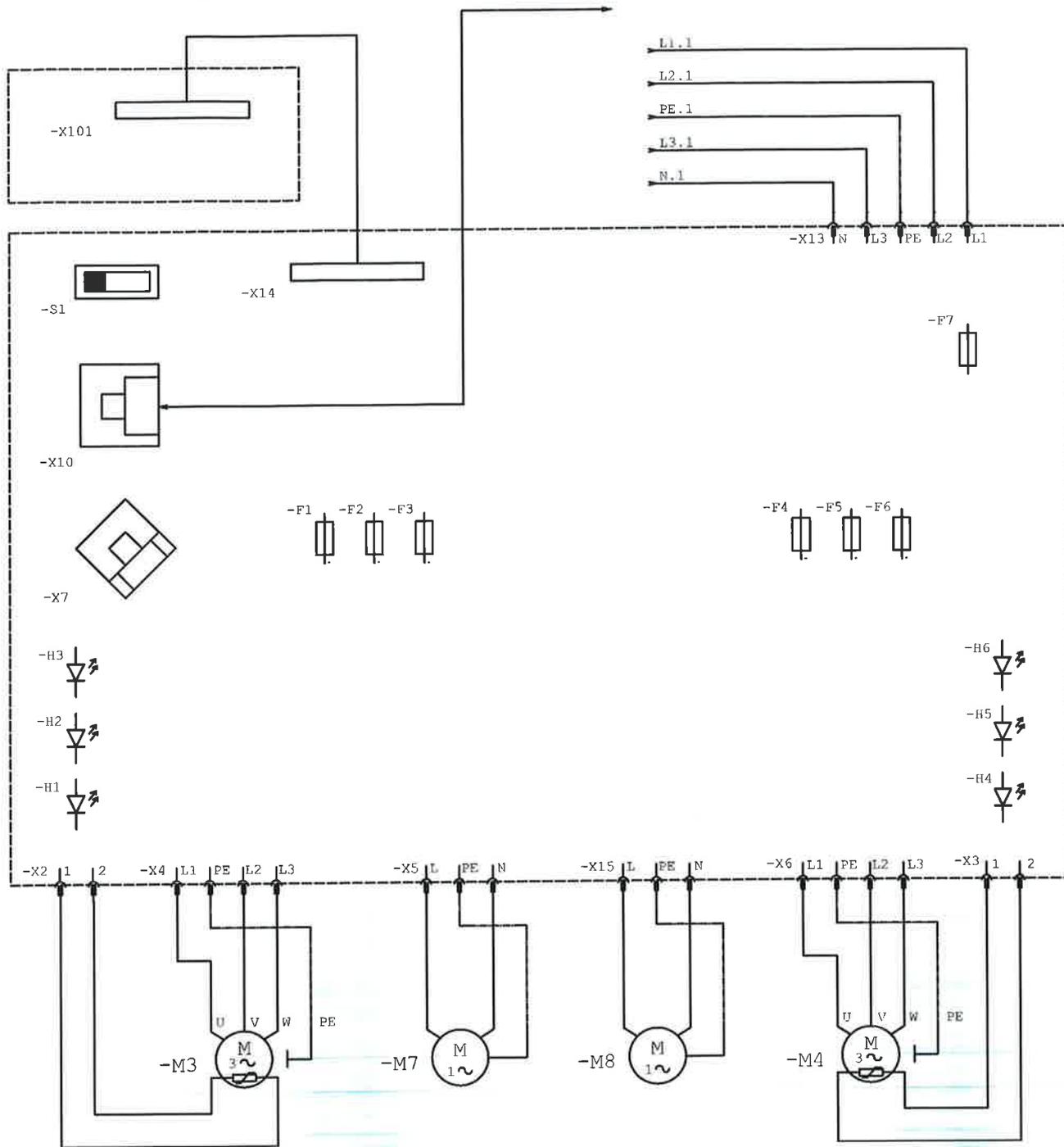
11.2 Main controller



- F1 Fuse T10AH
- F2 Fuse T10AH
- F3 Fuse T10AH
- F4 Fuse T10AH
- F5 Fuse T10AH
- F6 Fuse T10AH

F7	Fuse T1.6AH
H1	Status indicator LEDs for temperature sensor, compressor unit 1
H2	Status indicator LEDs for temperature sensor, compressor unit 1
H3	Status indicator LEDs for temperature sensor, compressor unit 1
H4	Status indicator LEDs for temperature sensor, compressor unit 2
H5	Status indicator LEDs for temperature sensor, compressor unit 2
H6	Status indicator LEDs for temperature sensor, compressor unit 2
M1	Compressor unit 1
M2	Compressor unit 2
M5	Cooling fan motor, membrane drying units 1 and 2
M6	Cooling fan motor, membrane drying units 1 and 2
S1	Switch, main controller/auxiliary controller
X2	Temperature sensor, compressor unit 1
X3	Temperature sensor, compressor unit 2
X4	Connection, compressor unit 1
X5	Cooling fan motor connection, membrane drying units 1 and 2
X6	Connection, compressor unit 2
X7	Network connection
X10	Network connection for connection to main controller/auxiliary controller
X13	Mains connection
X14	Operating panel connection on the control board
X101	Connection, operating panel

11.3 Auxiliary controller



- F1 Fuse T10AH
- F2 Fuse T10AH
- F3 Fuse T10AH
- F4 Fuse T10AH
- F5 Fuse T10AH
- F6 Fuse T10AH
- F7 Fuse T1.6AH
- H1 Status indicator LEDs for temperature sensor, compressor unit 3

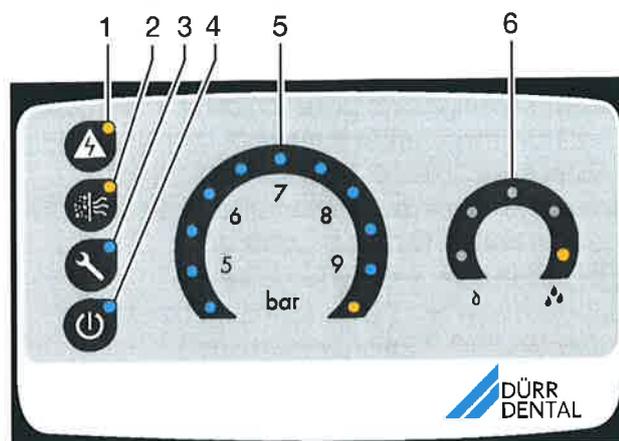
H2	Status indicator LEDs for temperature sensor, compressor unit 3
H3	Status indicator LEDs for temperature sensor, compressor unit 3
H4	Status indicator LEDs for temperature sensor, compressor unit 4
H5	Status indicator LEDs for temperature sensor, compressor unit 4
H6	Status indicator LEDs for temperature sensor, compressor unit 4
M3	Compressor unit 3
M4	Compressor unit 4
M7	Cooling fan motor, membrane drying unit 3
M8	Cooling fan motor, membrane drying unit 4
S1	Switch, main controller/auxiliary controller
X2	Temperature sensor, compressor unit 3
X3	Temperature sensor, compressor unit 4
X4	Connection, compressor unit 3
X5	Connection, cooling fan motor, membrane drying unit 3
X6	Connection, compressor unit 4
X7	Network connection
X10	Network connection for connection to main controller/auxiliary controller
X13	Mains connection
X14	Operating panel connection on the control board
X15	Connection, cooling fan motor, membrane drying unit 4
X101	Connection, operating panel

 Usage

12 Operation

 Prior to working on the unit or in case of danger, disconnect it from the mains.

12.1 Operating panel



- 1 Fault button with orange LED
- 2 Filter change button with orange LED
- 3 Service key with blue LED
- 4 Standby button with blue LED
- 5 Pressure range display/adjustment
- 6 Pressure dew point display

Different messages and the status of the unit are displayed on the operating panel. In addition, different functions can be started via the buttons. The device is operated via the operating panel of the main control. The auxiliary control is inactive (standby button flashing) and cannot be operated.

Buttons

Fault button  Display of alarm messages with different levels of importance. This can be faults, warning messages and information (see "12.6 Fault" "12.7 Emergency mode").

Filter replacement button  "Maintenance required" display for the various filters (see "13.2 Changing the filter").

Service key 

Check of the safety valve and adjustment of the pressure range (see "9.3 Checking the safety valve" and "10.1 Adjustment of the switch-on/cut off pressure").

Standby button 

Switching between normal operation and standby mode (see "12.3 Normal operation") and "12.4 Standby mode").

Pressure range

The pressure is displayed and can be adjusted in this area.

The pressure is displayed via:

1. Blue LED (≤ 4.5 bar): only illuminates while the pressure is building up during start-up operation
2. - 10. Blue LEDs (= 5 - 9 bar): these indicate the pressure status in increments of 0.5 bar
11. Orange LED (> 9 bar): the pressure in the container is too high (i.e. outside the adjustment range). Adjustment options (see "10.1 Adjustment of the switch-on/cut off pressure").

Pressure dew point

The current pressure dew point temperature is displayed in this area. The compressed air can cool down to this temperature without the water condensing.

The pressure dew point is displayed via:

- 4 blue LEDs: 0°C / 5°C / 10°C / 15°C
 - 1-2 blue LEDs light up when the system is running in the normal working range.
 - 1 orange LED: $\geq 20^\circ\text{C}$, i.e. dry compressed air is no longer ensured.
- As soon as the orange LED lights up the blue LEDs go out.



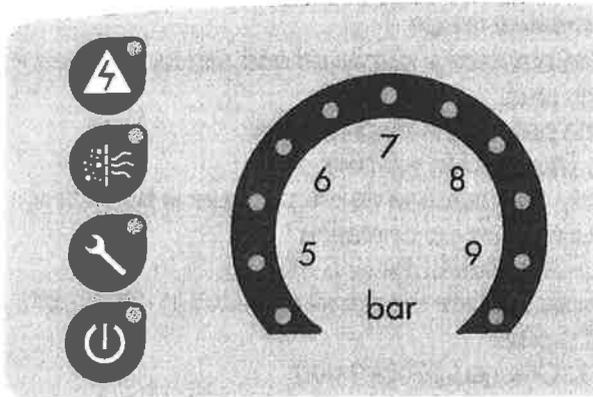
12.2 Switching the unit on/off

- › Switch the unit on and off via the surgery main switch.

The compressor unit will start up automatically and fill the pressure tank. When the cut-off pressure is reached the compressor unit switches itself off automatically.

12.3 Normal operation

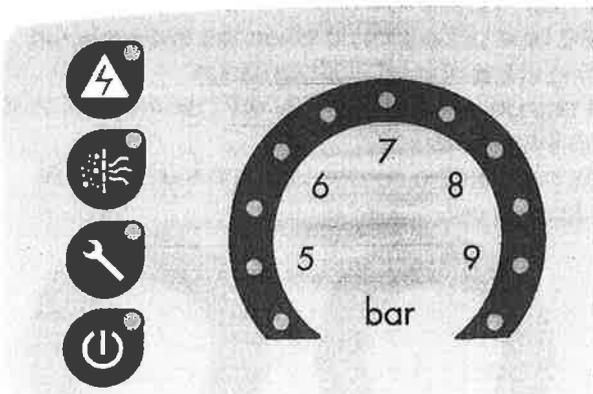
The unit is in normal operation as soon as the plug is inserted in the power outlet. The compressor runs until the cut off pressure is reached. The LEDs light up in the pressure range display.



12.4 Standby mode

The following are possible in standby mode:

- you can switch off the unit without disconnecting it from the mains.
- You can switch to set-up mode.
- › Switching from normal mode to standby mode:
Standby button: ⏻ press for at least 2 seconds.
The LED comes on.



- › Press the standby button again ⏻ to switch to normal mode.

12.5 Set-up mode

The following can be carried out in set-up mode:

- Adjusting the pressure range (see "10.1 Adjustment of the switch-on/cut off pressure").
- Confirming filter replacement (see "13.2 Changing the filter").
- Deactivating emergency mode (see "12.7 Emergency mode").
- › In standby mode, press the service key as well ⏻ to go into set-up mode.

12.6 Fault

The control monitors the functions of the unit and signals faults according to their importance. Faults, warnings or information can be displayed. Faults are triggered as a result of faults in component assemblies or as a result of sensor defects. The unit is switched off and the LED of the fault button flashes or lights up.

- ⚠️ Fault button, orange LED *flashes*

Normal mode or emergency mode can be activated, see "12.7 Emergency mode").

- ⚠️ Fault button, orange LED *lights up*

As well as faults, the LED on the fault button also lights up to indicate warning messages and information.

The unit continues to operate in normal mode.

This keeps the operator informed about emergency mode, humidity, leaks or overheating.

Warning messages and information are automatically deactivated after the fault has been rectified, with exception of emergency mode.

12.7 Emergency mode

If a unit fails, the compressor can be switched to emergency mode:

- ⚠️ Fault button, orange LED flashes.

1 aggregate has failed.

- › Flashing ⚠️ fault button: press the button.

The compressor continues to run with one unit.

The fault button lights up to indicate that emergency mode is active.

- › Have the necessary repairs to the unit carried out.

13 Maintenance



Prior to working on the unit or in case of danger, disconnect it from the mains.



CAUTION

Risk of infection due to burst filters

Particles enter the compressed air network and can therefore enter the mouth of the patient.

- › Replace filters in accordance with the maintenance schedule.

13.1 Maintenance schedule



NOTICE

Risk of damage to the unit due to blocked filters

Continuous running due to reduced delivery. Damage to the unit due to burst filters.

- › Replace filters in accordance with the maintenance schedule.

Maintenance interval	Maintenance work
At regular intervals	› Empty the collector tray under the membrane drying unit (the interval may vary depending on the ambient conditions and method of working; empty it daily if the humidity is high).
Annually	<ul style="list-style-type: none"> › Replace the air intake filter in the compressor unit – every six months if the concentration of dust is high. › Replace the fine or sterile filter. › Replace the sintered filter.
Every 4 years	› Replace the vibration dampers.
In accordance with national law	<ul style="list-style-type: none"> › Check the safety valve. › Carry out recurring safety inspections (e.g. pressure tank inspections, electrical safety inspections) in accordance with applicable national laws.

13.2 Changing the filter



NOTICE

Shortened service life, bad air quality, reduced delivery

- › Replace the filter 1x per year or as soon as the yellow LED lights up.

 Filter replacement button, yellow LED lights up.



As soon as the LED lights up, it can be temporarily switched off by pressing the button. Every time the unit is switched back on the LED comes on again.

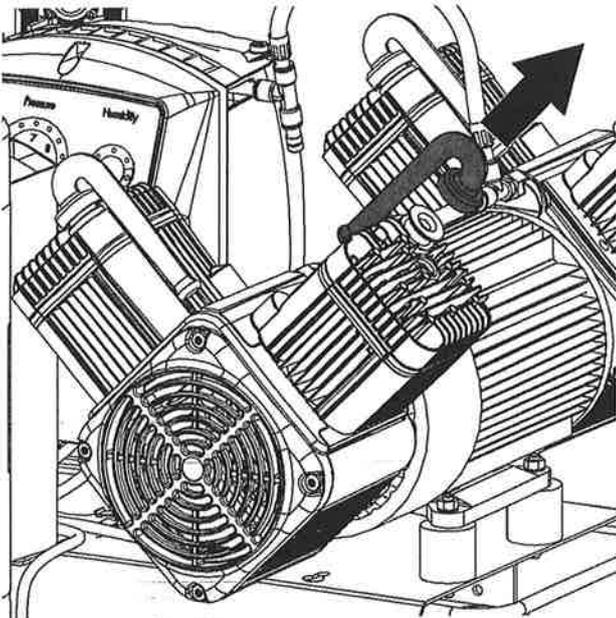
The LED only goes out permanently once replacement of the filter has been confirmed in set-up mode.

Disconnecting the unit from the mains

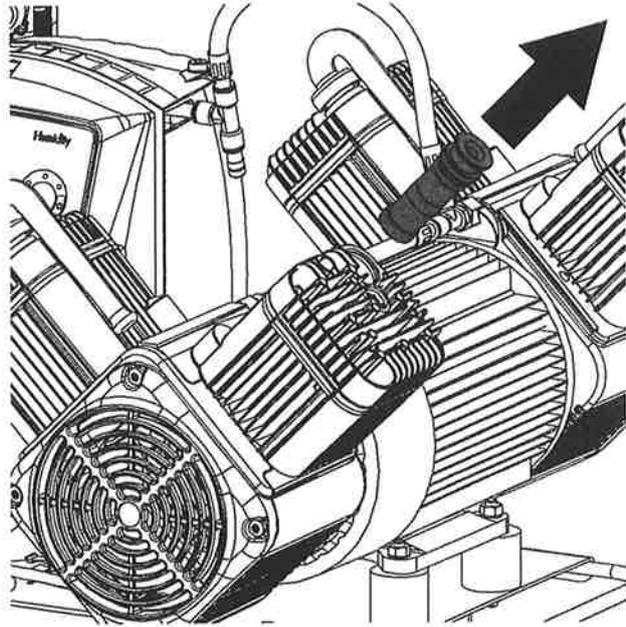
- › Standby button:  press for at least 2 seconds.
- › Unplug the mains plug.

Replacing the air intake filter

- › Remove the noise reducer.



- › Remove the air intake filter.



- › Insert a new air intake filter.
- › Replace the noise reducer.

Changing the fine/sterile filter of the membrane drying unit

- › Switch off the unit.
- › Disconnect all power from the device.
- › Unscrew and remove the filter cover.
- › Remove the fine/sterile filter.
- › Insert the new fine/sterile filter.
- › Replace the filter cover and close.



Replacing the sintered filter of the membrane drying unit

- › Unscrew and remove the filter housing.
- › Remove the sintered filter.
- › Insert a new sintered filter.

- › Replace the filter housing and close.



Confirming the filter replacement

- › Connect the mains plug.
- ›  press for at least 2 seconds.
- ›  press for at least 2 seconds. The unit is now in setup mode.
- ›  Orange LED flashes
- ›  Press to confirm filter replacement.

Resetting the unit to normal operation

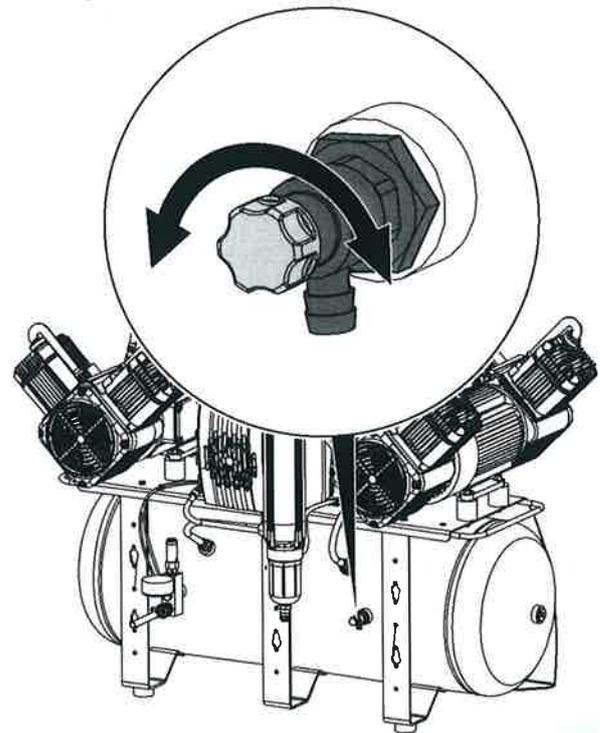
- ›  Touch.
- › **Resetting the unit to standby mode**
- ›  Touch.

14 Taking out of use

14.1 Taking the unit out of use

If the compressor is not to be used for a longer period of time, it is recommended that the unit be properly shut down and taken out of operation. To do so, any accumulated condensation water must be drained from the pressure tank and from the membrane drying unit.

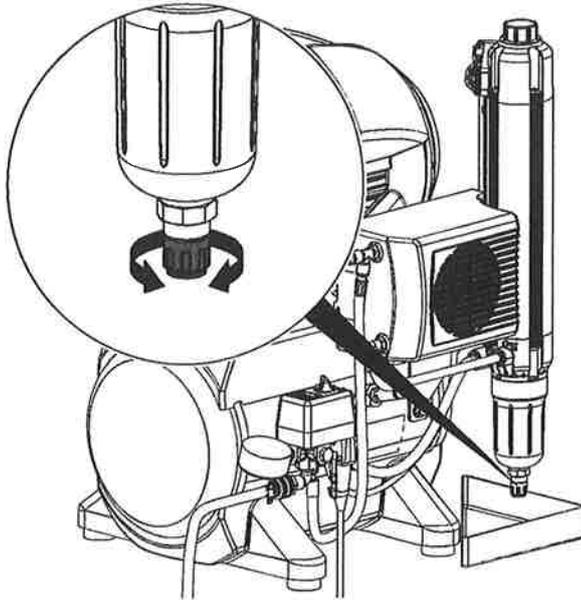
- › If the unit is in stand-by mode, press the button .
- › Wait until the pressure tank is completely full (switches off automatically).
- › Slowly open the condensate drain valve.



Once the start-up pressure has been reached the compressor will switch on.

- › With the compressor switched on and the condensate drain valve open, wait until no more condensation water emerges.

- › While the compressor is running, open the condensate drain valve on the membrane drying unit. When no more water emerges, close the condensate drain valve.



- › Unplug the mains plug.
- › Allow all of the pressure to vent off.
- › Close the condensate drain valve.
- › Disconnect the compressor from the pipe system.

14.2 Storage of the unit



WARNING

Risk of explosion of the pressure tank and pressure hoses

- › The pressure tank and the pressure hoses must be vented before they are stored or transported.
- › Protect the unit against moisture, dirt and extreme temperatures during transport (refer to the section on "Ambient conditions").
- › Only store the unit when it has been completely emptied.

? Troubleshooting

15 Tips for operators

i Any repairs exceeding routine maintenance may only be carried out by qualified personnel or our service.

Error	Possible cause	Remedy
LED on the filter replacement button lights up	Filter replacement required	<ul style="list-style-type: none"> › Replace the intake filter, fine/sterile filter and sintered filter (see "13.2 Changing the filter").
Compressor will not start	No display on the operating panel No mains voltage	<ul style="list-style-type: none"> › Check the main power switch, mains fuse and mains voltage, inform an electrician if necessary.
	Fault button flashes (if compressor is equipped with 2 units) Emergency mode possible	<ul style="list-style-type: none"> › Activate emergency mode: Press the fault button, (see "12.7 Emergency mode"). Compressor runs with 1 unit. › Inform a service technician
	Fault button lit up Compressor defective	<ul style="list-style-type: none"> › Disconnect the mains plug and inform a service technician.
Compressor starts up, no display on the operating panel	Operating panel defective	<ul style="list-style-type: none"> › Disconnect the mains plug and inform a service technician.
The operating panels of the main and auxiliary controllers are displaying information simultaneously (pressure range and pressure dew point)	Fault in communications between the main controller and auxiliary controller	<ul style="list-style-type: none"> › Switch the device off and back on again (disconnect the mains plug), inform a service technician if necessary.

Error	Possible cause	Remedy
Compressor does not switch off or has difficulty reaching the cut off pressure	Excessive air extraction	› Check air requirements and dimensioning of the compressor.
	Air intake filter dirty	› Replace the air intake filter.
	Leak in the compressed air pipe network	› Check the compressed air pipe network, if necessary disconnect the mains plug and inform a service technician.
	Leak in the compressed air lines of the compressor station	› Check the pressure hoses on the compressor, membrane drying unit and distributor block; if necessary disconnect the mains plug and inform a service technician.
	Flow noise at the membrane drying unit	› Check the pressure hoses on the compressor; if necessary inform a service technician.
	Change in the delivery of the compressor unit	› Disconnect the mains plug and inform a service technician.
Compressor switches on without any compressed air being extracted	Leak in the compressed air pipe system	› Check the compressed air pipe system; if necessary disconnect the plug and inform a service technician.
	Leak in the compressed air lines of the compressor	› Check the pressure hoses on the compressor, membrane drying unit and distributor block; if necessary disconnect the mains plug and inform a service technician.
Fault button flashing	Compressor unit defective	› Activate emergency mode: press the fault button, (see "12.7 Emergency mode"). Compressor runs with 1 unit › Inform a service technician.
Fault button lit up	Unit is defective	› Unplug the mains plug. › Inform a service technician.
Knocking or loud noises on the compressor	Compressor unit defective	› Inform a service technician.

16 Tips for service technicians

16.1 Notes on repairs

If a unit has failed and needs to be replaced, this can be done while the system is running. To do so, the following steps must be observed:

- ✓ Emergency mode is activated
- ✓ Defective unit section in the fuse box is de-energised
- › Remove the cover from the controller.
- › Check that there is no current at the connection of the defective unit.
- › Replace the defective unit.
- › Attach the cover of the controller again.
- › Connect the unit section in the fuse box again.
- › Completely unplug and plug in the unit via the mains plug.

17 Handover protocol

This document confirms the qualified handover and provision of instructions for the medical device from Dürr Dental. This must be carried out by a qualified adviser for the medical device, who will instruct you in the proper handling and operation of the medical device.

Product name	Order number (REF)	Serial number (SN)

- Visual inspection of the packaging for any damage
- Unpacking the medical device and checking for damage
- Confirmation of the completeness of the delivery
- Instruction in the proper handling and operation of the medical device based on the operating instructions

Notes:

Name of person receiving instruction:

Signature:

Name and address of the qualified adviser for the medical device:

Date of handover:

Signature of the qualified adviser for the medical device:

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