

Ovaj prijevod sastoji se od Stranica 118 / Listova 238

Broj-OV: 0399/2016

Datum: 27.06.2016.

Naziv dokumenta: Upute za korištenje - Primus 1058 Life

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Ovjereni prijevod s engleskog jezika



Upute za korištenje

Primus 1058 Life

Stranica 1 od 118
Broj-OV: 0399/2016
Datum: 27.06.2016.



KaVo. Dental Excellence.

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1 Upute za korištenje

1.1 Korisnički priručnik

Zahtjev

Pročitajte ove upute prije prve uporabe kako bi se izbjegla zloupotreba i spriječilo oštećenje.

1.1.1 Kratice

Kratice	Objašnjenje
IfU	Upute za korištenje
CI	Upute za njegu
AI	Upute za montažu
TI	Upute za tehničara
SC	Sigurnosne provjere
IEC	Međunarodno elektrotehničko povjerenstvo
RI	Upute za popravak
RK	Komplet za naknadnu ugradnju
AS	Kompleti za montažu
EP	Oklopljeni dijelovi
EMC	Elektromagnetska kompatibilnost
PI	Upute za obradu

1.1.2 Simboli

	Pogledajte Odjeljak Sigurnosni simboli/Simboli upozorenja
	Važne informacije za korisnike i tehničare
	CE oznaka u skladu s Direktivom EZ-a 93/42 za medicinske proizvode 14.4
	Potrebna radnja

1.1.3 Ciljana skupina

Ovaj dokument je namijenjen stomatolozima i stomatološkom osoblju.

1.2 Servis



KaVo korisnička služba:

+49 (0) 7351 56-1000

Service.Einrichtungen@kavo.com

Molimo navedite serijski broj proizvoda u svim upitima! Za

daljnje informacije, molimo posjetite: www.kavo.com

1.3 Uvjeti jamstva

KaVo pruža krajnjem kupcu jamstvo da će proizvod koji je naveden u primopredajnom certifikatu funkcionirati ispravno te jamči nula defekata u materijalu ili obradi za razdoblje od 12 mjeseci od datuma kupnje, ali uz sljedeće uvjete.

Nakon opravdanih pritužbi o greškama ili kratko nakon isporuke, KaVo će na temelju jamstva zamijeniti proizvod besplatno ili popraviti ga prema željama kuca. Ostala potraživanja bilo koje prirode, osobito s obzirom na naknadu su isključena. U slučaju propusta i grube nepažnje ili namjere, to se samo primjenjuje u nedostatku obvezujućih propisa koji dokazuju suprotno.

KaVo se ne može smatrati odgovornim za nedostatke i posljedice zbog prirodnog trošenja, nepravilnog čišćenja ili servisiranja, nepoštivanja operativnih uputa, servisiranja ili uputa spajanja, kalcifikacije ili korozije, kontaminiranog zraka ili pitke vode ili kemijskih

ili električnih faktora koji se smatraju nenormalnim ili nedopuštenim u skladu s tvorničkim specifikacijama.

Jamstvo ne pokriva obične žarulje, staklene proizvode, gumene dijelove i postojanost boje plastike.

Oštećenja ili posljedice koji se mogu pripisati zahvatima ili promjenama napravljenima na proizvodu od strane kupca ili treće osobe isključena su iz jamstva. Oštećenja ili posljedice koje se mogu pripisati zahvatima na ili promjenama napravljenima na proizvodu od strane kupca ili treće osobe isključena su iz jamstva.

1.4 Transport i skladištenje

1.4.1 Trenutno važeći propisi za pakiranje



Napomena

Vrijedi samo za Saveznu Republiku Njemačku..

Odložite i reciklirajte prodajnu ambalažu na odgovarajući način u skladu s važećim propisima za pakiranje, koristeći tvrtke za gospodarenje otpadom ili recikliranje. Potrebna je sukladnost sa sustavom povrata. KaVo je imao svoju tvrtku licenciranu za prodajnu ambalažu. Molimo da poštujete regionalne sustave javnog zbrinjavanja otpada.

1.4.2 Oštećenja u tranzitu

U Njemačkoj

Ako je ambalaža vidno oštećena pri dostavi, molimo postupite na sljedeći način:

1. Primatelj paketa mora zabilježiti gubitak ili štetu na potvrdu isporuke. Primatelj i predstavnik tvrtke za otpremu mora potpisati ovu potvrdu isporuke.
2. Ostavite proizvod i ambalažu u stanju u kojem ste ga primili.
3. Nemojte koristiti proizvod.
4. Prijavite štetu transportnom poduzeću.
5. Prijavite štetu KaVo-u.
6. Konzultirajte Kavov prije povratka oštećenog proizvoda.
7. Pošaljite potpisanu potvrdu isporuku KaVo-u.

Ako je proizvod oštećen, ali nije bilo vidljivih oštećenja na ambalaži po isporuci, postupite na sljedeći način:

1. Prijavite štetu transportnom poduzeću odmah a najkasnije u roku od 7 dana nakon isporuke.
2. Prijavite štetu KaVo-u.
3. Ostavite proizvode i ambalaže u stanju u kojem ste ga primili.
4. Nemojte koristiti oštećeni proizvod..



Napomena

Propust primatelja da bude u skladu s bilo kojim od gore navedenih obveza će značiti da će se smatrati da šteta nastala nakon isporuke (u skladu s Općim njemačkim uvjetima špeditera čl. 28).

Izvan Njemačke



Napomena

KaVo neće biti odgovoran za štete nastale zbog transporta. Pošiljka se mora provjeriti na dan dolaska.

Ako je ambalaža vidno oštećena pri dostavi, molimo postupite na sljedeći način:

1. Primatelj paketa mora zabilježiti gubitak ili štetu na otpremnici. Primatelj i predstavnik tvrtke za otpremu mora potpisati ovu otpremnicu. Bez tog dokaza, primatelj neće moći potvrditi zahtjev za naknadu štete protiv tvrtke za otpremu.
2. Ostavite proizvod i ambalažu u stanju u kojem ste ga primili.
3. Nemojte koristiti proizvod.

Ako je proizvod oštećen, ali nije bilo vidljivih oštećenja na ambalaži o isporuci, postupite na sljedeći način:

1. Prijavite bilo kakvu štetu transportnom poduzeću ili odmah ili najkasnije u roku od 7 dana nakon isporuke.
2. Ostavite proizvod i ambalažu u stanju u kojem ste ga primili.
3. Nemojte koristiti oštećeni proizvod.



Napomena

Ako primatelj ne postupi u skladu s bilo kojom od gore navedenih obveza, smatrat će se da je šteta nastala po isporuci (U skladu s CIM zakonom, poglavlje 5, čl. 30).

1.4.3 Podaci o ambalaži: Skladištenje i transport



Napomena

Zaštita pakiranja u slučaju da je potrebno vratiti proizvod na servisiranje ili popravak

Simboli tiskani na vanjskoj strani su za transport i skladištenje, a imaju sljedeće značenje:



Transport uspravno sa strelicom prema gore!



Lomljivo – zaštititi od udaraca!



Zaštititi od vlage!

	Dopušteno slaganje tereta
	Raspon temperature
	Vlažnost
	Tlak zraka

2 Sigurnost

2.1 Opis sigurnosne upute

2.1.1 Simbol upozorenja



Simbol upozorenja

2.1.2 Struktura



OPASNOST

Uvod opisuje vrstu i izvor opasnosti.

Ovaj odjeljak opisuje potencijalne posljedice nesukladnosti.

- Dodatni korak uključuje potrebne mjere za sprječavanje opasnosti.

2.1.3 Opis razine opasnosti

Sigurnosne upute navedene u nastavku, zajedno s tri razine opasnosti pomoći će u sprečavanju oštećenja imovine i ozljeda.



OPREZ

OPREZ

označava opasnu situaciju koja može uzrokovati štetu i blage do umjerene ozljede..



UPOZORENJE

UPOZORENJE

označava opasnu situaciju koja može dovesti do ozbiljnih ili smrtonosnih ozljeda.



OPASNOST

OPASNOST

ukazuje na maksimalnu opasnost zbog situacije koja može izravno uzrokovati smrt ili teške ozljede.

2.2 Svrha - Pravilna upotreba

2.2.1 Općenito

Korisnik mora osigurati da uređaj radi ispravno i da je u zadovoljavajućem stanju prije svake uporabe.

KaVo sustav opreme je stomatološka jedinica za liječenje u skladu s ISO 7494 sa stomatološkom stolicom u skladu s normom ISO 6875. Ovaj KaVo proizvod je namijenjen za uporabu u stomatologiji i može ga koristiti samo kvalificirano medicinsko osoblje. Svaka druga vrsta uporabe nije dopuštena.

„Pravilna uporaba“ obuhvaća sljedeće upute za uporabu i osiguranje da su svi inspeksijski i servisni zadaci obavljeni.

14.4



Sveobuhvatne smjernice i/ili nacionalni zakoni, nacionalni propisi i pravila tehnologija koje se primjenjuju na medicinske proizvode za pokretanje i korištenje KaVo proizvoda za namjeravanu svrhu moraju se primjenjivati i poštivati.

KaVo prihvaća odgovornost za sigurnost, pouzdanost i performanse komponenti koje isporučuje KaVo, pod uvjetom da:

- instalacija, uputstva, proširenja, prilagodbe, izmjene ili popravci su provedeni od strane tehničara čiju obuku je proveo KaVo ili treće osobe ovlaštene od strane KaVo-a, ili od strane osoblja ovlaštenih distributera.
- jedinica je pokretana u skladu s uputama za uporabu, njegu i instalacije.
- IT komponente isporučene od strane operatora ispunjavaju tehničke zahtjeve u tim uputama za uporabu za hardver i softver, a oni su instalirani i postavljene u skladu sa opisima tih komponenti.
- u slučaju popravka, zahtjevi IEC 62353 (DIN VDE 0751-1) „Ponovno ispitivanje i ispitivanje prije puštanja u pogon električnih predmeta medicinske opreme i sustava - opći propisi“ su ispunjeni u cijelosti.

Odgovornost korisnika je:

- koristiti samo opremu koja ispravno radi,
- zaštititi sebe, pacijenta i treću osobu od opasnosti, i
- izbjeći kontaminaciju proizvoda.

Primjenjivi nacionalni zakonski propisi moraju poštivati prilikom korištenja uređaja, a posebno sljedeće:

- Primjenjivi propisi koji reguliraju povezanost i pokretanje medicinskih uređaja.
- Trenutni propisi zaštite na radu.
- Važeći propisi o sprječavanju nesreća.

Redovito izvođenje provjere održavanja i sigurnosti je bitno za trajno osiguranje operativne i funkcionalne sigurnosti KaVo proizvoda i za prevencije štete i opasnosti.

Učestalost ispitivanja i održavanja: Održavanje mora biti izvedeno jednom godišnje, a provjera sigurnosti (STK) u intervalima od 2 godine. Kraći intervali za provjeru sigurnosti mogu se odrediti od strane provoditelja provjere ako je to potrebno..

Sljedeće osobe su ovlaštene za popravak i servisiranje KaVo proizvod:

- Tehničari ureda KaVo podružnica nakon odgovarajuće obuke za proizvod.
- Naime KaVo obučeni tehničari KaVo franšiziranih distributera.

U Njemačkoj, operatori, menadžeri opreme i korisnici su dužni da pogone svoju opremu u skladu s MPG propisima.

Usluge obuhvaćaju sve ispitne zadatke potrebne u skladu s člankom 6. Pravilnika operatora o medicinskim uređajima (Medizinprodukte-Betreiberverordnung, MPBetreibV).



Napomena

Proizvod se mora očistiti i servisirati sukladno uputama ako se neće koristiti tijekom duljeg vremenskog razdoblja.



Napomena

MULTIFLEX spojke, K/KL motori i ultrazvučni crijeva skidača kamenca KaVo-a su opremljeni zaštitnim uređajem kako bi se spriječilo da se otpadna voda vrati natrag u centar za liječenje preko nastavaka. Ako se koriste proizvodi drugih proizvođača na standardiziranim sučeljima, potrebno je osigurati da su oni opremljeni odgovarajućim zaštitnim uređajem! Ako to nije slučaj, oni se ne mogu koristiti!

Informacije o elektromagnetskoj kompatibilnosti



Napomena

Na temelju norme IEC 60601-1-2 (EN 60601-1-2) o elektromagnetskoj kompatibilnosti električnih medicinskih uređaja, moramo skrenuti pozornost na sljedeće točke:

- Medicinski električni uređaji podložni su posebnim mjerama opreza koje se odnose na elektromagnetsku kompatibilnost i moraju biti instalirani i raditi u skladu s uputama za montažu KaVo-a.
- Komunikacijski uređaji visoke frekvencije mogu ometati električne medicinske uređaje.

Vidi također:

2 10 Podaci o elektromagnetskoj kompatibilnosti prema normi EN 60601-1-2, str. 112



Napomena

KaVo ne može jamčiti usklađenost opreme, kablova i drugih sastavnica koje nije isporučio KaVo sa zahtjevima EMC IEC 60601-1-2 (DIN EN 60601-1-2). 14.4

Odlaganje



Napomena

Svaki otpad koji nastaje se mora reciklirati ili odlagati strogo u skladu sa svim važećim propisima na način koji je siguran i za ljude i okoliš.

Ako imate bilo kakvih pitanja u vezi pravilnog odlaganja KaVo proizvoda, obratite se podružnici KaVo-a.

Zbrinjavanje elektroničkih i električnih uređaja



Note

Prema EC Direktivi 2012/19 u vezi korištenih električnih i elektroničkih uređaja, ovaj proizvod podliježe navedenoj direktivi i mora se zbrinuti sukladno tome u Europi.

Za više informacija, molimo posjetite www.kavo.com ili se obratite specijaliziranom stomatološkom dobavljaču.

Za konačno odlaganje:

U Njemačkoj

Za vraćanje električnog uređaja, morate postupiti kako slijedi:

1. Na početnoj stranici www.enretec.de od enretec GmbH, možete preuzeti obrazac za odlaganje ispod stavke izbornika EOM. Preuzmite nalog za odlaganje ili ispunite ga kao online narudžbu.

2. Unesite odgovarajuću informaciju za dovršetak naloga, i pošaljite ga kao online narudžbu ili putem faksa +49 (0) 3304 3919-590 na Enretec GmbH.
Sljedeće opcije za kontakt su također na raspolaganju za pitanja i za pokretanje narudžbe za odlaganje.

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Email: eom@enretec.de and

Poštanska adresa: enretec GmbH, Geschäftsbereich eomRECYCLING®

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3. Jedinica koja nije trajno instalirana će se preuzeti u uredu.

Trajno instalirana jedinica će se podići na pločniku vaše adrese na dogovoreni datum.
Vlasnik ili korisnik uređaja će morati snositi troškove demontaže, prijevoza i ambalaže.

Međunarodno

Za informacije specifične za svaku zemlju na raspolaganju, obratite se stomatološkom dobavljaču.

2.2.2 Specifično za proizvod

Namjena specifična za proizvod i ciljna skupina

KaVo je dizajniran za stomatološko liječenje djece i odraslih.

Sustav KaVo opreme je stomatološka jedinica za liječenje u skladu s ISO 7494 opremljena stomatološkom stolicom u skladu s normom ISO 6875. KaVo trosmjerni i višenamjenski nastavci su stomatološki instrumenti u skladu s EN 1639. Oni podržavaju stomatološku primjenu u usta pacijenta dobavom zraka, vode ili mlaza. Osim toga, višenamjenski nastavak isporučuje svjetlo i grijani medij. Ovaj KaVo proizvod je namijenjen za uporabu samo u stomatologiji i može ga koristiti samo kvalificirano medicinsko osoblje.

Spajanje uređaja

KaVo odobrena dodatna oprema za komunikaciju s pacijentom. Ovi dodaci se moraju koristiti.

Pribor	Use	Name	Šifra materijala
Monitori	Monitor 19"	KaVo Screen HD	1.011.0302
	Monitor 22"	KaVo Screen One	1.011.0300
Kamera	Intraoralna kamera	ERGOCam One 130	1.011.2130
		ERGOCam One 160	1.011.2129
Kabeli između jedinice i PC	USB produžni kabel - 5 metara	USB produžni kabel 5m s 1:1 čvorište	1.004.6953
	USB produžni kabel - 10 metara	USB produžni kabel 2x5m s 1:1 čvorište	1.011.3745
	Display port kabel - 5 metara	LTG Display utor 5m Standard	1.011.3583
	Display port kabel - 10 metara	LTG Display utor 10m Standard	1.011.0298



Napomena

USB sučelje sustava može se priključiti samo na IT uređaje koje je odobrio KaVo.



Note

Pri povezivanju IT opreme na medijalni električni sustav, pogledajte EN 60601-1.

2.3 Sigurnosne upute

2.3.1 Opće informacije



Napomena

Sigurnost i pouzdanost sustava može se osigurati samo ako se slijedi opisani postupak.

OPASNOST

Opasnost od eksplozije.

Rizik o smrtno ozljede.

- ▶ Nemojte koristiti KaVo proizvod u područjima na kojima postoji opasnost od eksplozije.

UPOZORENJE

Neprikladni radni uvjeti.

Umanjenje električne sigurnosti uređaja.

- ▶ Bitno je biti u skladu s radnim uvjetima navedenima u poglavlju "Tehničke Specifikacije".

UPOZORENJE

Korištenje neovlaštene opreme ili neovlaštenih izmjena proizvoda. Dodaci koji nisu odobreni i/ili nedopuštene izmjene proizvoda mogu dovesti do opasnosti i/ili osobne ozljede ili materijalne štete.

- ▶ Koristite samo pribor koji je odobren za kombinaciju s proizvodom od strane proizvođača ili su opremljeni standardiziranim sučeljima (npr. MULTIflex spojke, INTRAmatic).
- ▶ Ne poduzimajte nikakve izmjene na uređaju osim ako one nisu odobrene od strane Proizvođača proizvoda.

UPOZORENJE

Ozljede ili oštećenja od oštećenih funkcionalnih dijelova.

Oštećenje funkcionalnih dijelova može uzrokovati daljnje oštećenje ili ozljedu.

- ▶ Provjerite uređaj, električne kablove i dodatke za moguća oštećenja izolacije i zamijenite ako je potrebno.
- ▶ Ako su funkcionalni dijelovi oštećeni: prekinite svoj rad i popravite štetu ili obavijestite tehničara u servisu!!

UPOZORENJE

Odložite proizvod na odgovarajući način. Opasnost od infekcija.

- ▶ Prije odlaganja, obradite i sterilizirajte proizvod i opremu u skladu s tim.



⚠ OPREZ

Opasnost po zdravlje i oštećenje imovine zbog nepoštivanja rasporeda servisiranja.
Opasnost od infekcije za korisnike i pacijente.
Oštećenje proizvoda.

- ▶ Pridržavajte se rasporeda servisiranja.



⚠ OPREZ

Prerano habanje i kvarovi uslijed neispravnog servisiranja i održavanja. Smanjeni životni vijek proizvoda.

- ▶ Redovita pravilna njega i održavanja!



⚠ OPREZ

Rizici od elektromagnetskih polja.
Elektromagnetska polja mogu ometati funkcije implantiranih sustava (kao što je stimulator srca).

- ▶ Pitajte pacijenta ako ima stimulator srca ili neki drugi ugrađen sustav prije početka liječenja!!



⚠ OPREZ

Smetnje uslijed elektromagnetskih polja.
Proizvod zadovoljava primjenjive zahtjeve koji se tiču elektromagnetskih polja. S obzirom na složene interakcije između opreme i mobilnih telefona, na proizvod može utjecati mobitel koji se koristi.

- ▶ Nemojte koristiti mobitele u ordinacijama, bolnicama ili laboratorijima!
- ▶ Odložite elektroničke uređaje kao što su npr. računalni mediji za pohranu podataka, slušna pomagala, itd. tijekom rada!



⚠ OPREZ

Oštećenja od tekućina.
Preostala tekućina bilo koje vrste može uzrokovati mrlje na ili oštećenja jastučića i dijelova kućišta.

- ▶ Izvadite sve zaostale tekućine, bez odlaganja.



Napomena

Operater može provoditi samo popravke ako je uređaj isključen te se pacijent u tom trenutku ne liječi.

2.3.2 Specifično za proizvod



⚠ UPOZORENJE

Ozljeda ili opasnost od zaraze od položenih instrumenata.

S obzirom na raspored instrumenata, ozljede ili infekcije na rukama ili ispod ruku mogu nastati kada pokušate dosegnuti držač ladice ili uređaj za upravljanje. Povećani rizik od infekcija od oboljelih pacijenata.

- ▶ Obratite pozornost na raspored instrumenata prilikom pristupa držaču ladice ili uređaju za upravljanje.



UPOZORENJE

Utjecaj na zdravlje zbog reverznog usisa preko instrumenata. Opasnost od infekcija. Proizvodi drugih proizvođača koji nisu opremljeni sa zaštitnim uređajem kako bi se spriječilo povlačenje vode u postrojenja za pročišćavanje preko instrumenata, može se koristiti na standardnim sučeljima

- ▶ Ako koristite proizvode drugih proizvođača na standardiziranim sučeljima, osigurajte da su proizvodi opremljeni odgovarajućim zaštitnim uređajima.
- ▶ Nemojte koristiti proizvode bez zaštitnog uređaja.



OPREZ

Sjedanje na stomatološki stolac koji je u horizontalnom položaju je povezano s rizikom od ozljeda.

- ▶ Nemojte sjediti na kraju glavu ili nožne papučice stolice pacijenta kad je u vodoravnom položaju.



OPREZ

Zakretna ručica može pasti i uzrokovati ozljede.

Ako je okretni krak preopterećen, može se oštetiti i ozlijediti pacijenta ili korisnika.

- ▶ Nikad nemojte opteretiti okretni krak, opružni krak ili stomatološku jedinicu koristeći ga kao oslonac.



OPREZ

Opasnost od ozljeda od strane ovješanih instrumenata (S tablicu).

Pacijenti se mogu ozlijediti oštrim vrhovima instrumenata.

- ▶ Kada pomičete stomatološku jedinicu, pobrinite se da nitko nije ozlijeđen.
- ▶ Upozorite pacijente i pružatelje zdravstvene skrbi na opasnost od ozljeda..



OPREZ

Opasnost od ozljeda uslijed čišćenja jedinice za liječenje.

Nedostatak uputa za osoblje za čišćenje i nedostatak pripreme jedinice za liječenje može dovesti do ozljeda osoblja za čišćenje..

- ▶ Samo iskusni profesionalci i upućene osobe za čišćenje mogu biti prisutne u sobama za liječenje.
- ▶ Pozicionirajte stolac za čišćenje i isključite uređaj.



OPREZ

Električna energija.

Strujni udar.

- ▶ Postavite vanjsko računalo izvan dohvata pacijenta održavajući minimalan razmak od 1.5 m
- ▶ Spojite računalo i opremu spojenu na računalo u skladu s IEC 60601-1/60950.



⚠ OPREZ

- ▶ Električna energija
Strujni udar od nepravilnog spajanja nemedicinskih sustava na slobodno korištena USB sučelja uređaja (ako postoje).
- ▶ Priključite bilo koji IT uređaj na medicinski sustav u skladu s IEC 60601-1.
- ▶ Koristite USB uređaja bez dodatnog napajanja (USB-powered).
- ▶ Primijenjeni dijelovi spojeni na USB sučelje elementa za stomatologa moraju biti u skladu s potrebnom izolacijom.
- ▶ USB pogonjeni uređaj koji ne zadovoljava potrebnu izolaciju za primijenjene dijelove mora biti postavljen na odgovarajući način, tako da je isključen izravni kontakt s USB-pogonjenim uređajem i pacijentom.
- ▶ Nije dopušteno dirati USB napajane uređaje koji ne ispunjava potrebnu izolaciju za primijenjene dijelove i pacijenta istovremeno.



⚠ OPREZ

Oštećenja zdravlja zbog formiranja klica. Opasnost od infekcija.

- ▶ Prije početka, isperite sve odvodne cijevi za vodu, bez instrumenata.
- ▶ Prije puštanja u pogon i nakon što se uređaj ne koristi neko vrijeme (vikendom, odmor, praznici, itd.), isperite ili očistite zrakom linije vode i zraka.
- ▶ Opcija: provedite intenzivno smanjenje klica (ako je komplet za montažu dostupan).
- ▶ Aktivirajte punjač čaše nekoliko puta.



⚠ OPREZ

Komplet za spajanje uređaja treće strane (nije obavezno): Opasnost od reinfekcije od stajace vode. Infekcija.

Kada se jedinica koja koristi vodu povezana s kompletom za spajanje treće strane, uvijek obavite sljedeće zadatke na uređaju:

- ▶ Prije početka, isperite sve odvodne cijevi za vodu, bez instrumenata (ako je primjenjivo).
- ▶ Prije stavljanja u pogon i nakon što se uređaj ne koristi neko vrijeme (vikendom, odmor, praznici, itd.), isperite i očistite linije zraka i vode.
- ▶ Pazite da je uređaj koji koristi vodu otporan na H₂O₂ budući da je voda sterilizirana s OXYGENAL 6 (pri koncentraciji do 0,02%)



⚠ OPREZ

Dugo ležanje pacijenta u stolici. Stvaranje dekubitusa.

- ▶ Poduzmite mjere protiv stvaranja dekubitusa u dugim liječenjima.



⚠ OPREZ

Opasnost od ozljeda kada se pomiče stomatološki stolac ili naslon za glavu. Kosa pacijenta ili osoblja može zahvaćena kada se premješta naslon za glavu stolca.

- ▶ Obratite pažnju na kosu pacijenta ili osoblja kada se kreće stomatološki stolac ili naslon za glavu.



⚠ OPREZ

Opasnost od ozljeda prilikom premještanja pacijenta ili stolice pacijenta. Pacijent ili osoblje za liječenje može biti uklješteno ili gumuto.

- ▶ Pozicionirajte sve pokretne dijelove, kao što su stomatološki element, element za asistenta, operativno svjetlo, ekrani, itd., izvan dometa kolizije kada premještate pacijenta ili stolicu pacijenta.



 OPREZ

Oštećenja na cijevi nastavka zbog naljepnica.

Crijevo nastavka može puknuti.

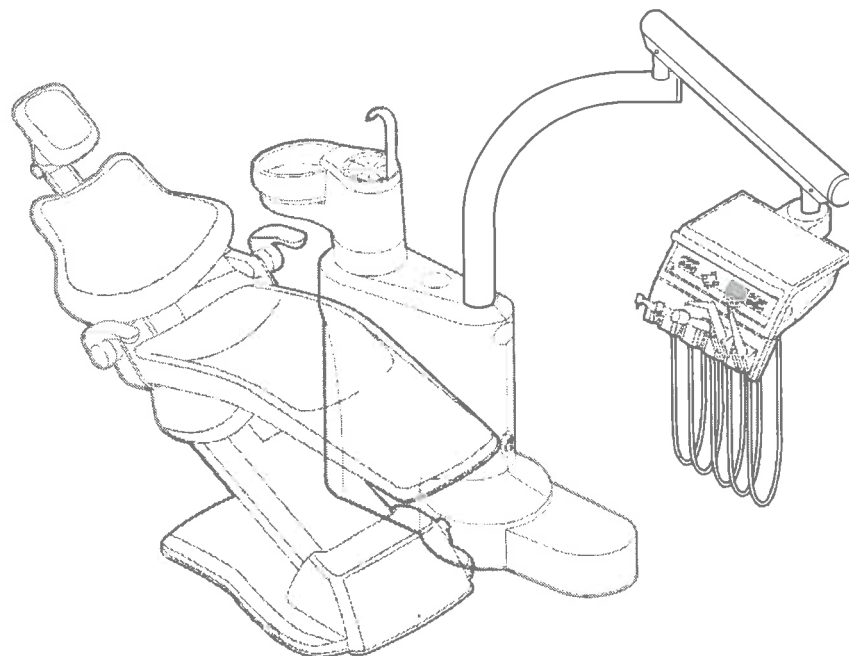
- Nemojte stavljati naljepnice ili ljepljivu traku.

3 Opis proizvoda

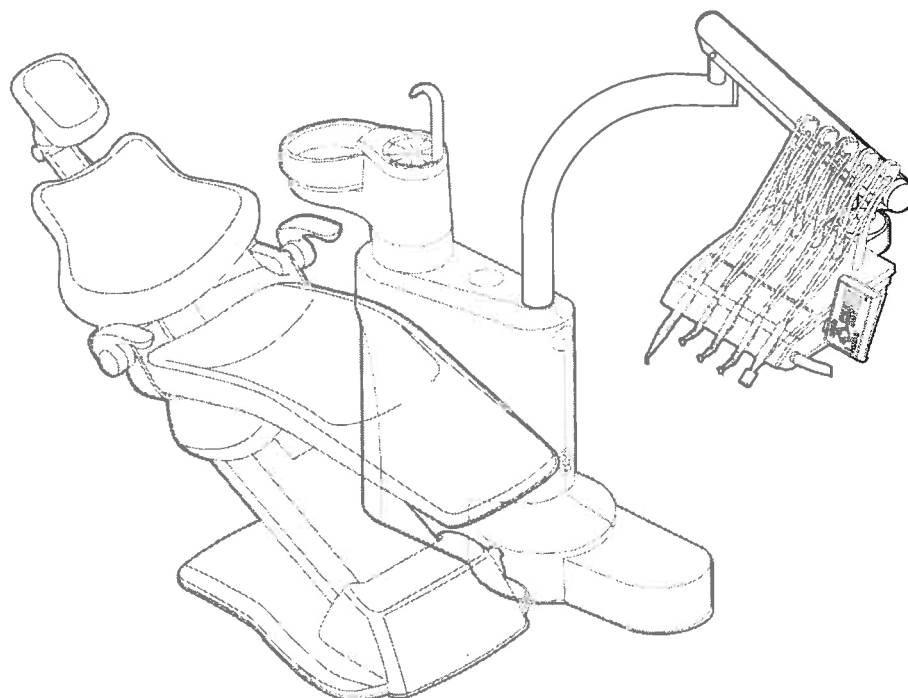
3.1 Verzije jedinice za liječenje

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Datum: 27.06.2016.

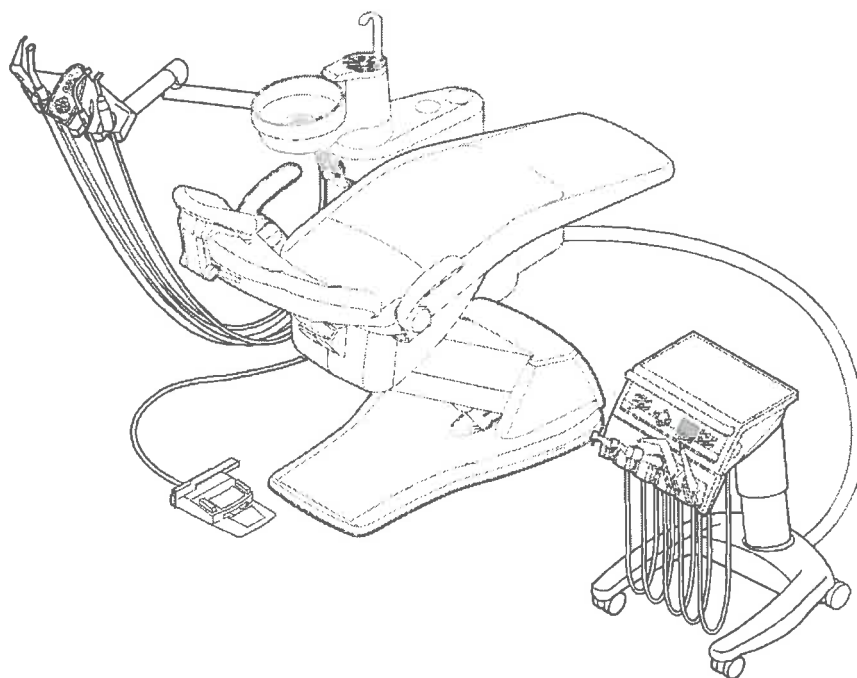
3.1.1 KaVo Primus 1058 Life TM



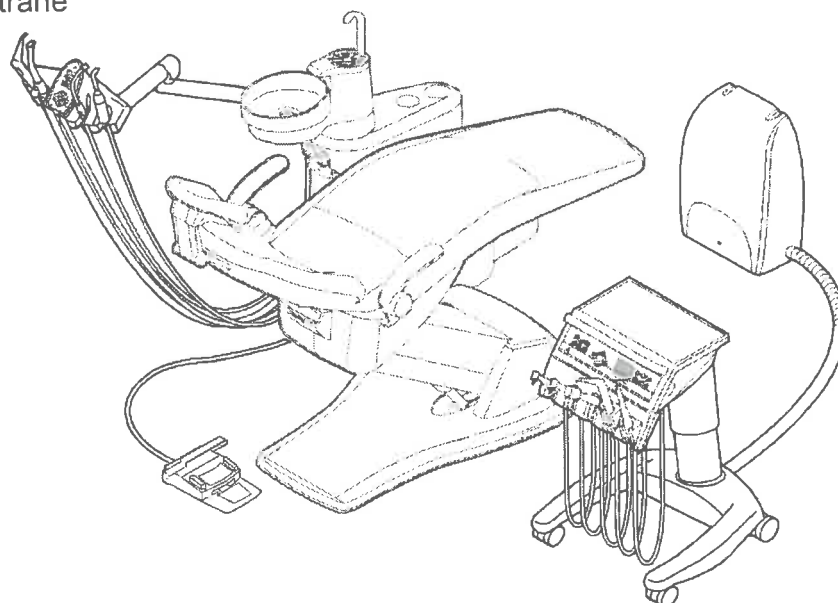
3.1.2 KaVo Primus 1058 Life S



3.1.3 KaVo Primus 1058 Life C



3.1.4 KaVo Primus 1058 Life C s kompletom za postavljanje s desne strane

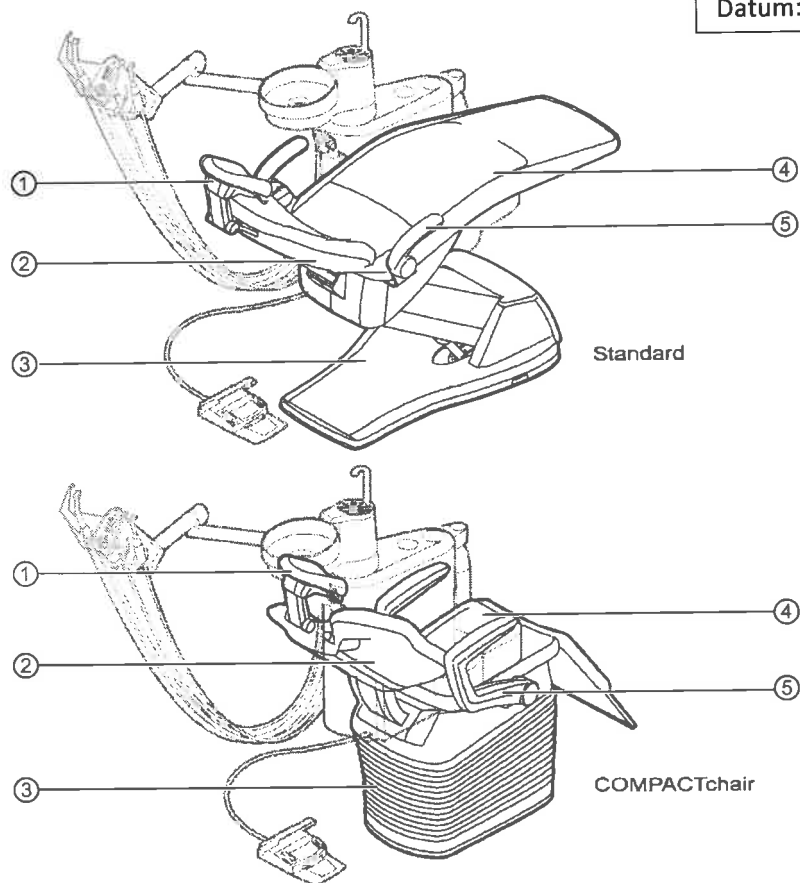


3.2 Stolica za pacijenta Standard i COMPACTchair

Stranica 21 od 118

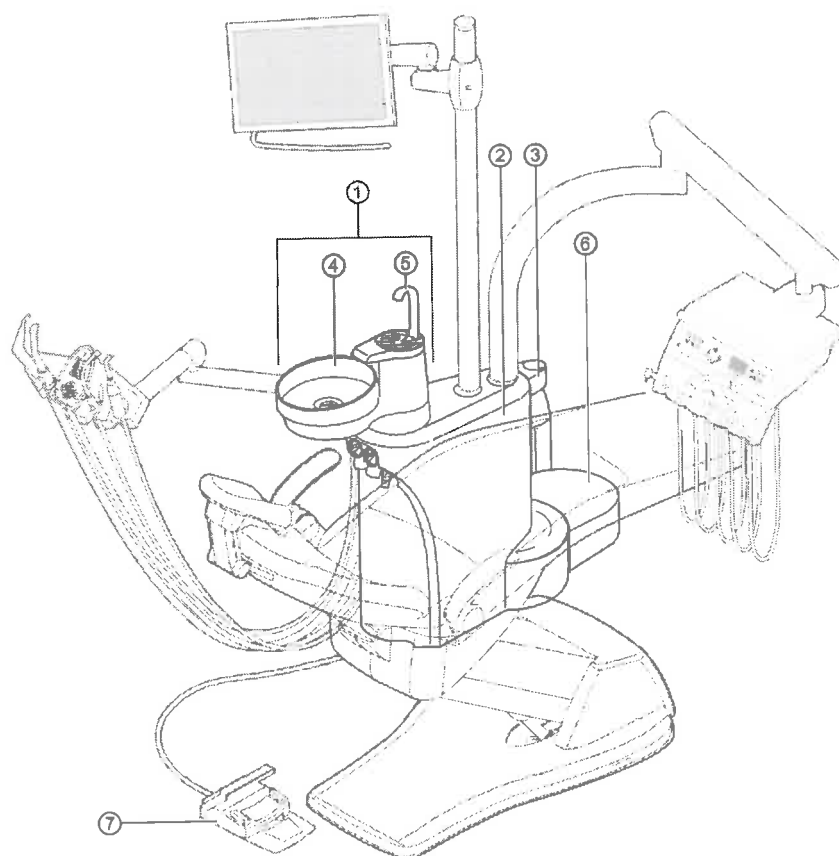
Broj-OV: 0399/2016

Datum: 27.06.2016.



- ① Naslon za glavu
- ② Naslon
- ③ Baza stolice
- ④ Sjedalo
- ⑤ Naslon za ruke (izborno)

3.3 Tijelo uređaja s jedinicom za pacijenta



① Element za pacijenta

③ Boca vode pod tlakom
(Dodatna oprema)

⑤ Punjač čaše

⑦ Nožna kontrola

② Tijelo jedinice

Središnja kontrola je smještena u tijelu jedinice.

④ Zdjela pljuvačnice

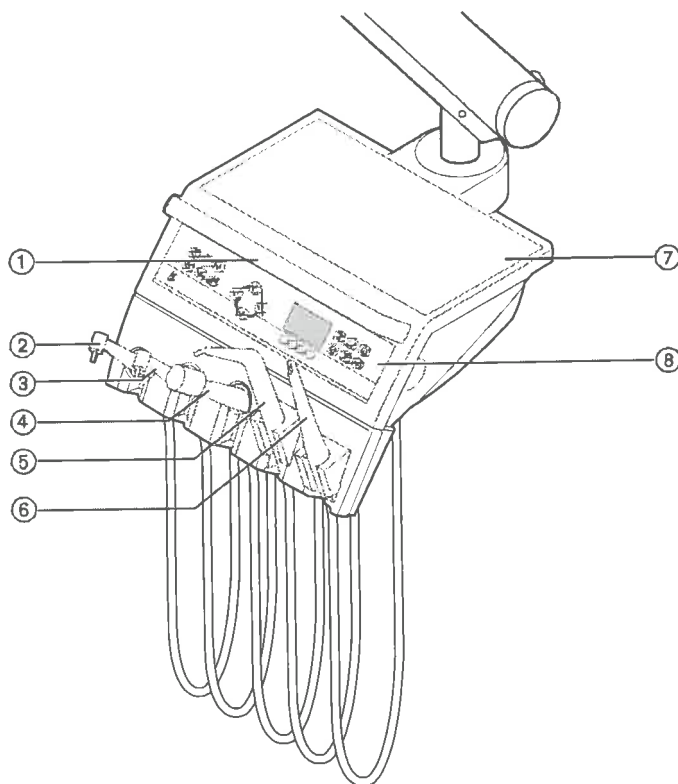
⑥ Element opskrbe

Korisnički priključak struje, vode, zraka, otpadne vode i usisnog zraka

3.4 Verzije stomatološke jedinica

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Broj-OV: 0399/2016
Datum: 27.06.2016.

3.4.1 TM/C stol



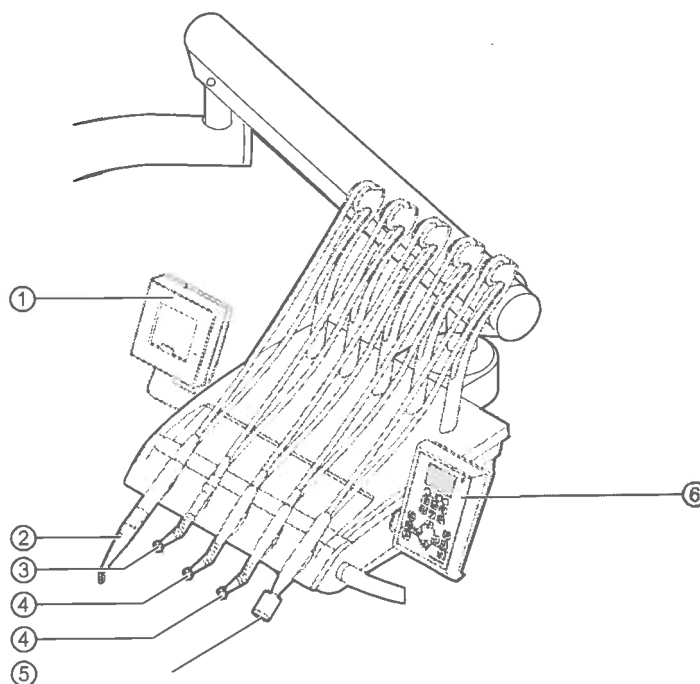
- | | |
|---|------------------------------|
| ① Ručka | ② Turbina (multiflex spojka) |
| ③ INTRA LUX motor KL 703 ili
INTRA LUX motor KL 701 | ④ Ultrazvučni skidač kamenca |
| ⑤ Nastavak s tri funkcije ili
višenamjenski nastavak | ⑥ ERGOcam One |
| ⑦ Oslonac za ladicu | ⑧ Kontrolni element |

3.4.2 S stol



Napomena

Namjena i raspored držača instrumenata može se mijenjati po potrebi i ne mora slijediti sliku.



2.3

① Mali preglednik rendgenskih slika

② Nastavak s tri funkcije ili više-namjenski nastavak

③ Turbina (multiflex spojka)

④ INTRAlux motor KL 703 LED or INTRA LUX motor KL 701

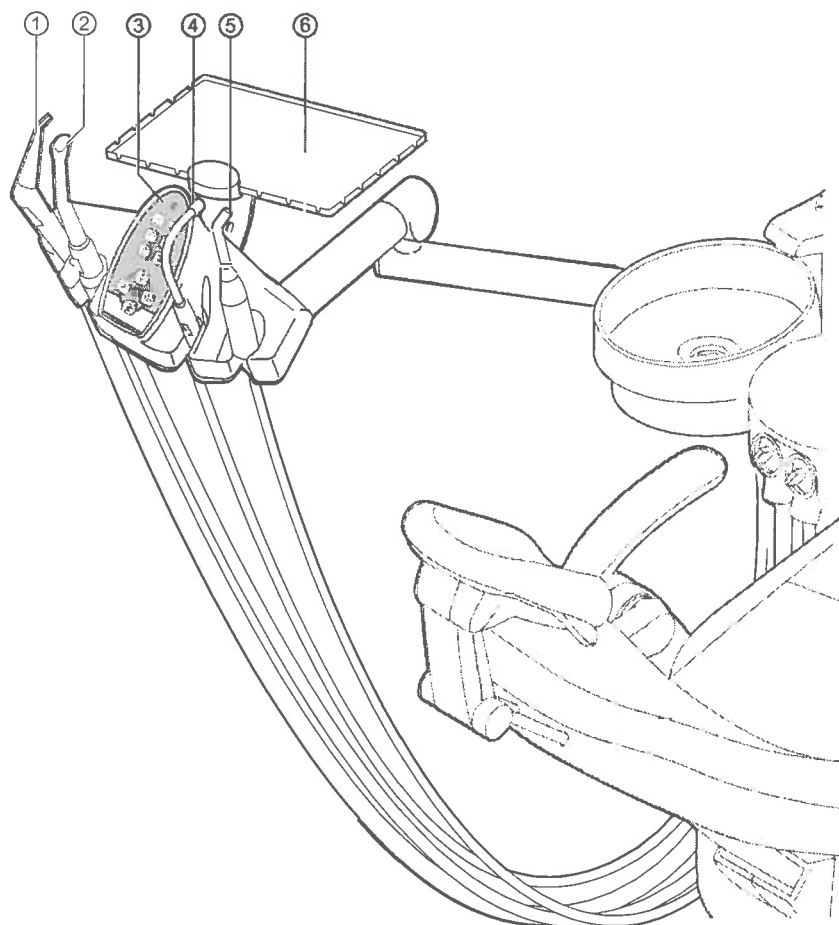
⑤ Ultrazvučni skidač kamenca

⑥ Kontrolni element

3.5 Element za asistenta – verzija

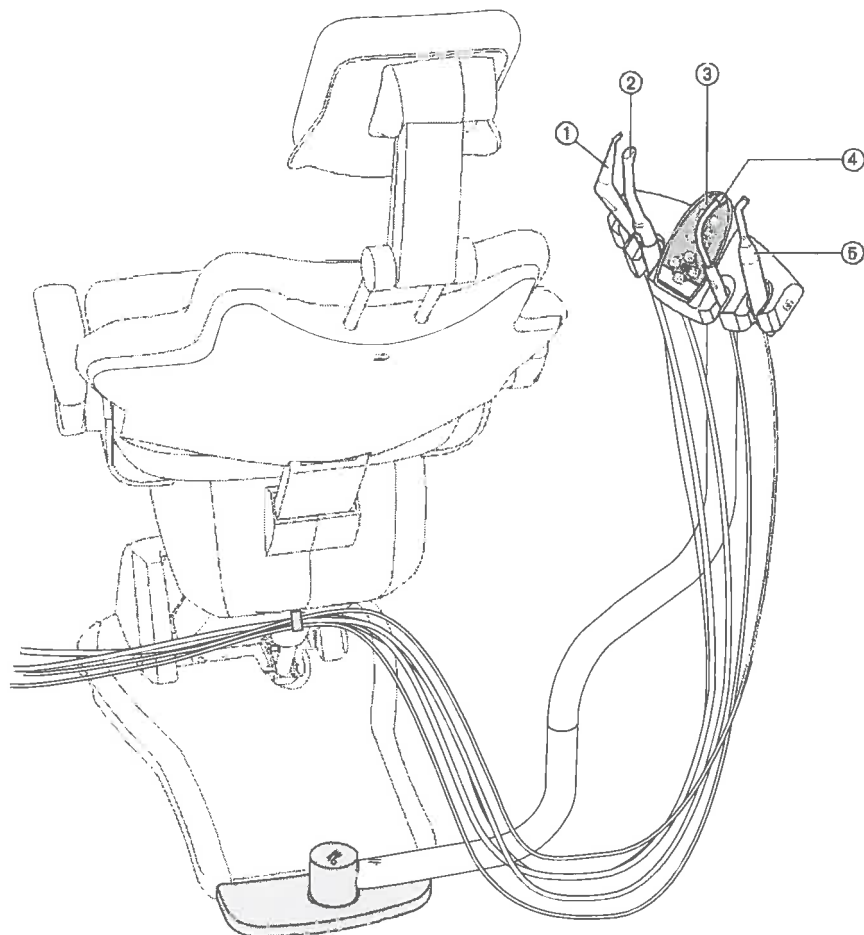
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Broj-OV: 0399/2016
Datum: 27.06.2016.

3.5.1 Standardna jedinica za asistenta



- | | |
|--|---|
| ① Nastavak s tri funkcije ili višenamjenski nastavak | ② Usis vodene maglice |
| ③ Kontrolni element | ④ Izbacivač sline |
| ⑤ Satelec Mini LED (polimerizacijski nastavak) | ⑥ Držač ladice za stomatološkog asistenta |

3.5.2 Element za asistenta desno, lijevo (izborno, samo u vezi sa stolicom za pacijenta Standard)



① Nastavak s tri funkcije

③ Kontrolni element

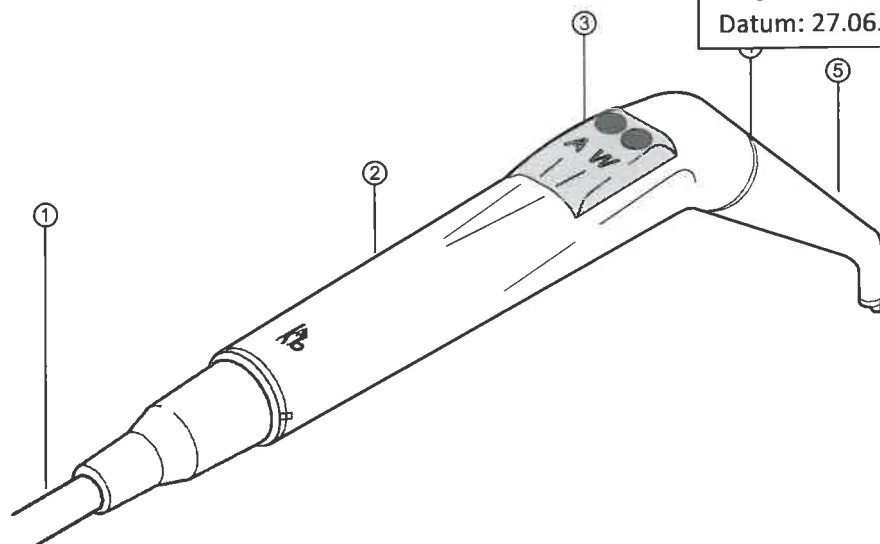
⑤ Satelec Mini LED
(polimerizacijski nastavak)

② Usis vodene

④ Izbacivač sline

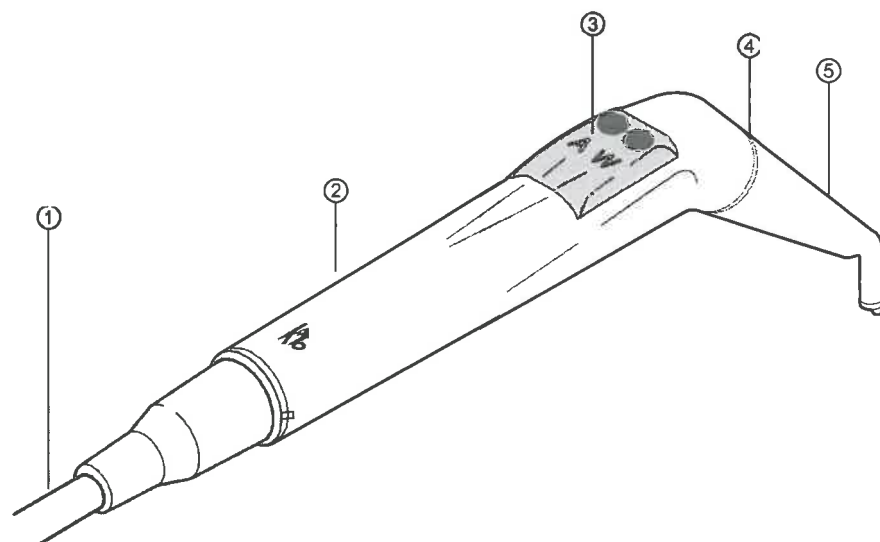
3.6 Nastavak s tri funkcije (3F nastavak) 3.4.1

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- ① Cijev MF nastavka
- ② Zahvatni rukav
- ③ Tipke medija (zrak/voda)
- ④ Označeno plavom bojom - Nastavak s tri funkcije – 3F nastavak
- ⑤ Kanila

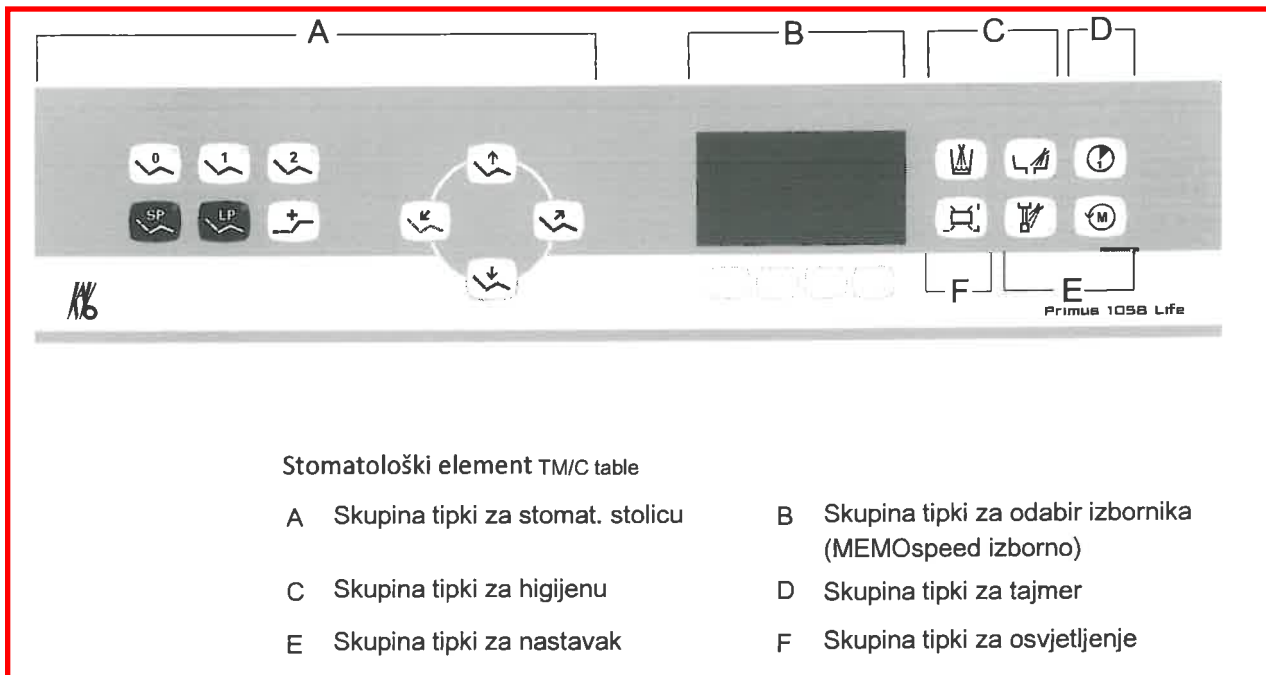
3.7 Višenamjenski nastavak (MF nastavak)



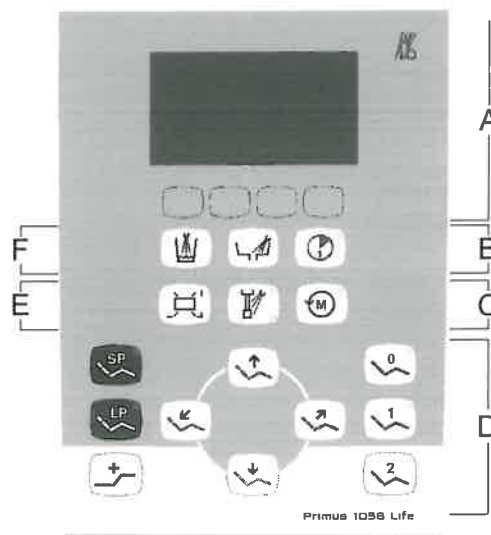
- ① Cijev MF nastavka
- ② Zahvatni rukav
- ③ Tipke medija (zrak/voda)
- ④ Označeno zlatnom bojom:: Višenamjenski nastavak – MF nastavak
- ⑤ Kanila

3.8 Kontrole

3.8.1 Stomatološki elementi

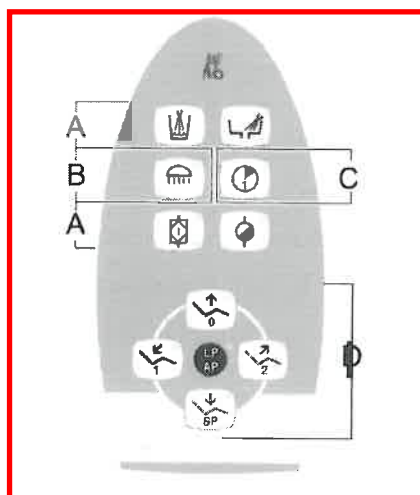


2.6



3.8.2 Jedinica za asistenta

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5.2

- A Skupina tipki za higijenu
- B Skupina tipki za osvjetljenje
- C Skupina tipki za timer
- D Skupina tipki za stomatološki

3.8.3 Skupina tipki

Skupina tipki za stomatološki stolac

Tipke jedinice za asistenta imaju dvije funkcije i pokazuju dva simbola..

Tipke elementa za asistenta	Tipka elementa za stomatologa	Naziv
		„Podizanje stolice“
		„AP 0“ tipka (automatska pozicija 0)
		„Spuštanje stolice“
		„SP“ tipka (pozicija ispiranja)
		„LP“ tipka (zadnja pozicija)
		„AP“ tipka (Uključivanje automatske pozicije)
		„Spuštanje naslona za leđa“
		„AP 1“ tipka (automatska pozicija 1)

Tipke elementa za asistenta	Tipka elementa za stomatologa	Naziv
		"Spuštanje naslona za leđa"
		"AP 2" tipka (automatska pozicija 2)
		"Uvučena pozicija"

Skupina tipki za osvjetljenje

Tipka	Naziv	Kontrolni element
	"Operativno svjetlo"	Element za asistenta
	"Preglednik rendgenskih slika"	Element za stomatologa

Skupina tipki za higijenu

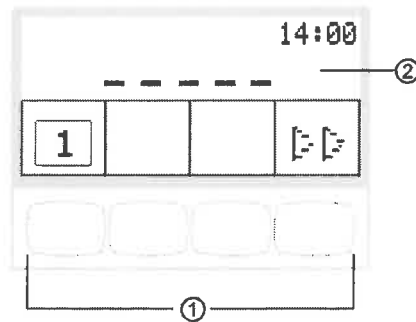
Tipka	Naziv	Kontrolni element
	"Punjač čaše"	Dentist element i element za asistenta
	"Ispiranje zdjele"	Dentist element i element za asistenta
	"Intenzivno smanjenje klica"	Element za asistenta (izborno)
	"HYDROclean" tipka	Element za asistenta

Skupina tipki za nastavak/timer

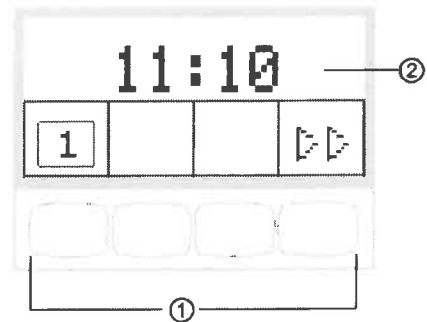
Tipka	Naziv	Kontrolni element
	"Predodabrani sprej"	Element za stomatologa
	"Smjer rotacije motora"	Element za stomatologa
	"Tajmer"	Element za stomatologa i element za asistenta

Skupina tipki za izbornik

Standby izbornik s MEMOSpeed



Standby izbornik bez MEMOSpeed

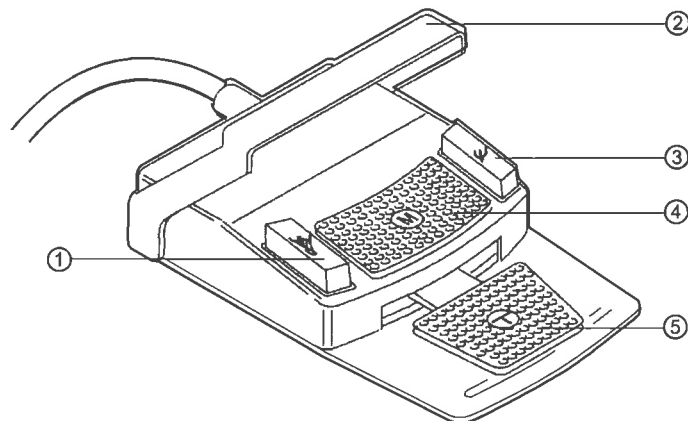


① Ključevi odabira funkcije izbornika

② Zaslón

3.8.4 Nožna kontrola

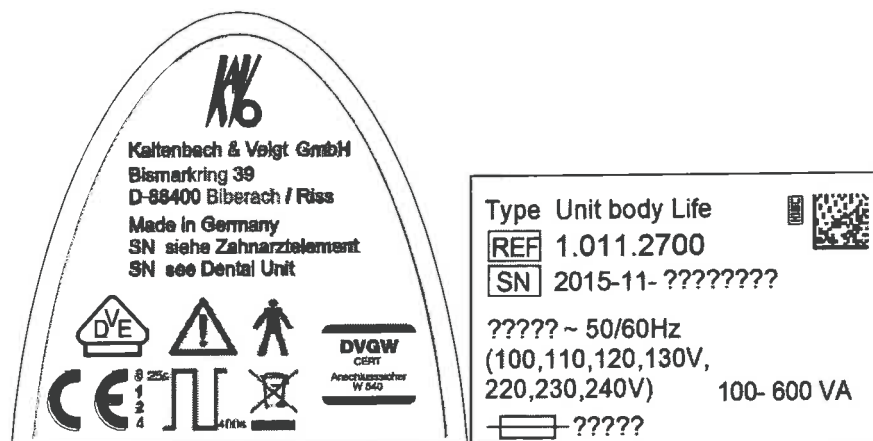
Nožni prekidač nožne kontrole ima dvije funkcije. Funkcije nožnog prekidača ovise o tome je li instrument montiran ili uklonjen.



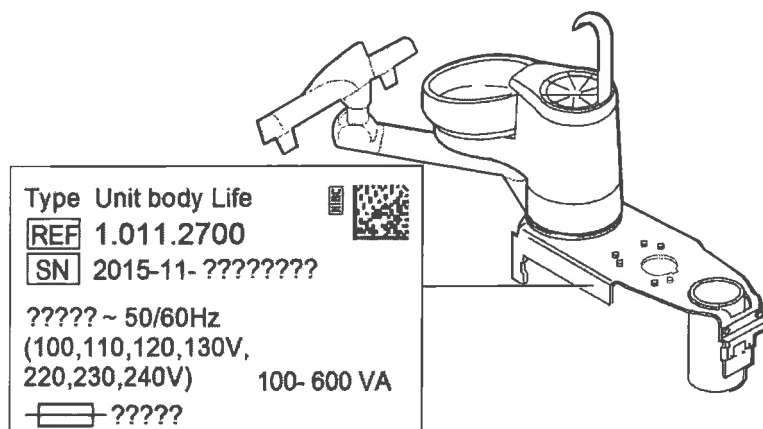
Stavka	Naziv	Funkcija s montiranim nastavkom	Funkcija s uklonjenim nastavkom
①	"Predodabir spreja/AP" nožni prekidač	Pomiče stomat. stolicu u automatski položaj.	Postavlja predodabir spreja. 7.5
②	Prekidač U-oblika	Uključuje sigurnosno isključenje	Mijenja nožne prekidače u funkciju "Pomicanje stolice".
③	Nožni prekidač "Puhanje zraka/AP"	Pomiče stomat. stolicu u automatski položaj.	Postavlja zadano puhanje zraka (chip puhalo). 7.6
④	Unakrsni prekidač: -	Mijenja položaj stomat. stolice. 7.3	Odabire smjer rotacije motora (za IN-TRA LUX motor KL 701/703 ili COMFORT-drive 200XD).
7.2	Rotacija motora obrnuto od smjera kazaljke na satu		
⑤	Nožna papučica "Nastavci"	Pokreće video/zamrzava okvir ako je CONEX-IOcom instaliran.	Pokreće motor i kontrolira brzinu/intenzitete nastavaka. 7.1

3.9 Nazivna pločica i identifikacijska pločica

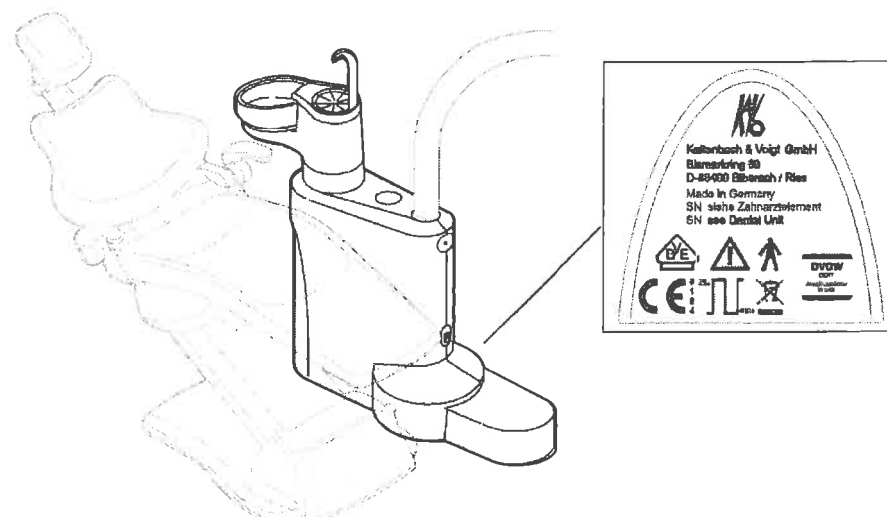
Nazivna pločica



Nazivna pločica unutra i izvana



Unutarnje mjesto za pričvršćenje nazivne pločice



Vanjsko mjesto za pričvršćenje nazivne pločice

Stranica 33 od 118
Broj-OV: 0399/2016
Datum: 27.06.2016.

SN

Serijski broj

Pročitajte i zapamtite sadržaj pratećih dokumenata



Molimo obratite pažnju na upute za uporabu



Slijedite upute za korištenje!!



Primijenjeni dio Tipa B



Primijenjeni dio Tipa BF



Način rada:

Radno vrijeme stolice za pacijenta: 25 sekundi

Vrijeme stanke stolice za pacijenta: 400 sekundi

(Dopušteno vrijeme rada odgovara općoj stomatološkoj proceduri.)

Osigurač::

"?????" ovise o nazivnom naponu te su T10 H ili T6.3H.

100 V~, 110 V~, 120 V~, 130 V~ = T10H

220 V~, 230 V~, 240 V~ = T6.3H

Za informacije o odlaganju, vidi također: Svrha - Namjena



CE oznaka u skladu s medicinskim EC propisima 93//42



VDE oznaka



DVGW certifikacija

DVGW CERT registracijski broj AS-0630BT0111

Identifikacijska pločica



Kaltenbach & Voigt
GmbH
Bismarckring 39
D-88400 Biberach



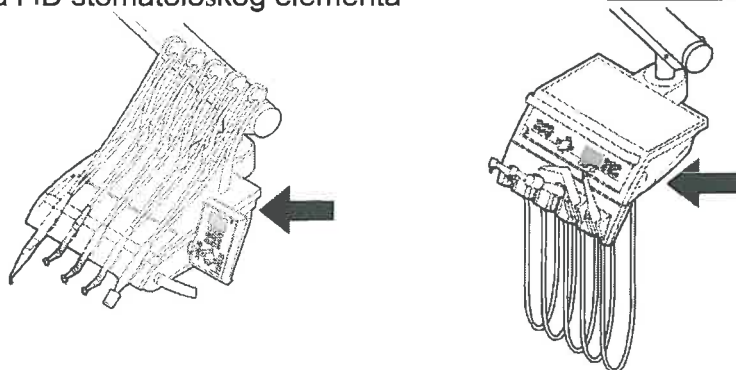
Type **PRIMUS 1058 Life**

REF **1.010.5000**

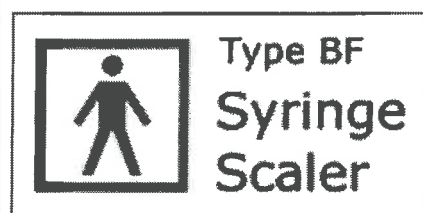
SN **2015-06-00000011**

Made in Germany

Nazivna pločica i ID stomatološkog elementa



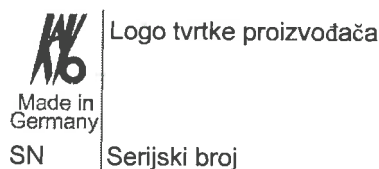
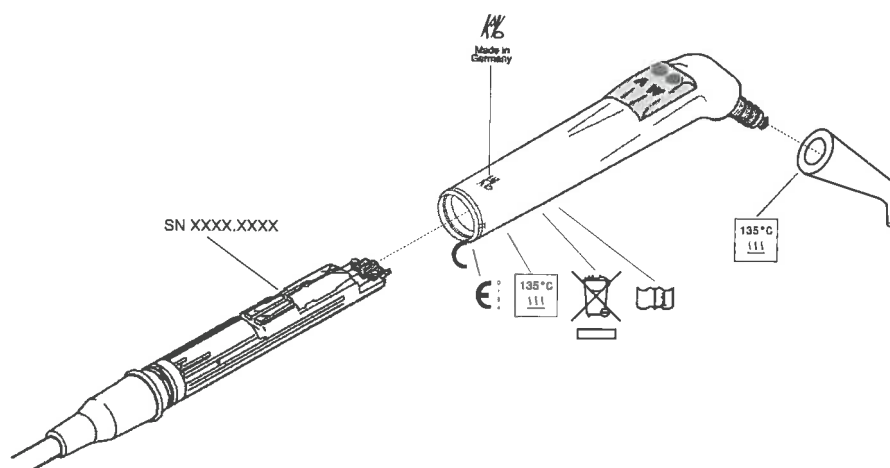
Mjesto pričvršćenja nazivne pločice i ID primijenjenih dijelova tipa BF na elementu za stomatologa



Tipska pločica Element za stomatologa (npr. stol TM) / obilježavanje primijenjenih dijelova tipa BF

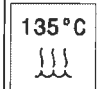
Tip	Tip uređaja
SN	Godina proizvodnje - serijski broj
REF	Broj materijala

Označavanje i obilježavanje nastavka s tri funkcije i višenamjenskog nastavka





CE oznaka u skladu s Direktivom 93/42/EEZ o medicinskim proizvodima



Mogućnost sterilizacije do 135 °C



Upute za odlaganje u skladu s Direktivom WEEE 2002/96/EC Dodatak N



Slijedite upute za korištenje

3.10 Tehnički podaci

Predložak bušenja i plan postavljanja

Plan instalacije (Ref. br. 3.002.4533)	2 lista za dešnjaka i 2 lista za ljevaka
Plan instalacije sa COMPACTchair (Ref. br. 1.003.6767)	2 lista za dešnjaka i 2 lista za ljevaka

Električni sustav

Električni priključak	3 x 2.5 mm ²
Slobodni kraj iznad poda	1 000 mm
Ulazni naponi	100/110/120/130/220/230/240 V AC
Frekvencija	50/60 Hz
Ulazni napon određuje proizvođač	Vidi nazivnu pločicu
Potrošnja energije pri 100 to 240 V	100 to 600 VA – uz odgovarajuće konfiguracije uređaja, odstupanja u tom rasponu su moguća!
Zaštita osigurača koju osigurava kupac	Automatski C 16 ili uvrtni osigurač 10 A
Zaštitni vodič iznad poda	Vidi DIN VDE 0100-710, 1000 mm
Emisija topline	360 to 3,240 kJ/h
Emisija topline	Ø 900 kJ/h
Oznaka odobrenja	CE / DVGW / VDE
Nožna kontrola	IPX1: Zaštita od kapanja vode

Nastavak s tri funkcije i višenamjenski nastavak

Ispirite prolaze vode i zraka 20 do 30 sekundi prije rada na početku dana.

Tlak vode	1.5 ± 0.3 bar; Protok tlaka; 4 x manometer
Max. statički tlak vode	2.5 ± 0.3 bar
Protok vode	80 ± 10 ml/min
Tlak zraka	3.3 ± 0.1 bar; Protok tlaka; 4 x manometer
Max. dinamički tlak zraka	4 + 0.5 bar
Protok zraka	minimalno 16 l/min
Radno vrijeme (samo višenamjenski nastavak)	1 minuta
Interval (samo višenamjenski nastavak)	3 minute

Električni višenamjenski nastavak

Sigurnost ekstra niskog napona prema DIN 24 V AC $\pm$ 10% (neuzemljeni napon)
EN 60601-1:

Frekvencija	50/60 Hz
Način korištenja	BF
Toplinski učinak za vodu	cca. 90 W
Toplinski izlaz za zrak	cca. 20 W
Napon lampe	max. 3.2 V $\pm$ 0.15 V
Visokotlačna lampa snage	max. 2.5 W

Vodoopskrba**Napomena**

Ako je voda vrlo tvrda (iznad 12 ° dH), uređaj za omekšavanje vode mora biti postavljen u procesu ionske razmjene.

Nedovoljna tvrdoća vode (ispod 8,4 ° dH) može poticati formiranje algi.

**Napomena**

Komplet za montažu „Ulazni vodeni blok“ ne uključuje separaciju vode za pročišćavanje i vode isporučene od strane lokalnog vodovoda. Operater mora poštivati i pridržavati se relevantnih nacionalnih direktiva o sprečavanju povrata. Ako se ta pravila ne poštuju, proizvođač ne može preuzeti nikakvu odgovornost za kvalitetu vode za pročišćavanje i mikrobno onečišćenje javne mreže pitke vode.

**Napomena**

Zajedno s „DVGW vodenim blokom s integriranom dezinfekcijom vode“ dezinfekcijska jedinica vode instalirana je u stomatološkim jedinicama iz KaVo-a. Dezinfekcijski OXY-GENAL 6 se kontinuirano dodaje u vodi u koncentraciji koja je neškodljiva za osobe, a higijenski učinkovita za održavanje kvalitete vode za obradu.

Rukovanje je opisano u uputama za njegu stomatoloških centara za liječenje. Dopunske mjere kao što je ispiranje vodenih linija i intenzivna dezinfekcija se moraju provesti u skladu s uputama proizvođača.

**UPOZORENJE**

Opasnost od zaraze ako se ne poštuju nacionalne smjernice. Onečišćenje vode za liječenje ili mreže vode za piće.

► Obratite pozornost i pridržavajte se nacionalnih smjernica koje se odnose na kvalitetu vode za

ljudsku potrošnju (pitka voda) - ako je dostupna.

► Obratite pozornost i pridržavajte se nacionalnih smjernica u vezi sprečavanja povrata

(Protok vode iz uređaja za pročišćavanje na javnu mrežu vode) - ako je relevantno.





UPOZORENJE

Rizik od infekcije ako se „vodeni blok, kompaktn“ koristi bez dodatnih mjera zaštite. Onečišćenje klicama procesne vode i/ili opskrbe pitkom vodom.

- S obzirom na "vodeni blok, kompaktn" komplet za montažu, imajte na umu da dezinfekcijska jedinica nije instalirana u jedinici, i poduzmite odgovarajuće mjere zaštite. KaVo predlaže da koristite „vodeni blok DVGW s integriranom jedinicom za dezinfekciju u kombinaciji s KaVo OXYGENAL 6 (Mat. br. 0.489.3451).
- Ako se komplet boce za vodu koristi s priloženim pričvršćenjem za doziranje (mat. br. 1.002.0287), dodajte odgovarajuću količinu KaVo OXYGENAL 6 (Mat. Br. 0.489.3451) sa svakim punjenjem. Točnu količinu, potražite u uputama za doziranje za smanjenje klica u vodi.

Prema DIN EN 1717, svaka jedinica koja nije navedena od strane DVGW-a mora biti osigurana s AA, AB ili AD sigurnosnim uređajem uzvodnog tipa. (DVGW komplet boce za vodu je certificiran; pogledajte sljedeći popis.)

Prilikom spajanja priključka vode, spriječite bazene bočate vode sa stajaćom vodom (također u kućnom vodovodu).

Za daljnje informacije, molimo pogledajte www.dvgw.de

Slobodna odvodnja prema DIN EN 1717 - Vodeni blok DVGW, boca s vodom DVGW, DVGW

Registarski br.: AS-0630BT0111

certificiran

Kvaliteta vode

Voda iz slavine, priključak hladne vode

Tvrdoća vode

1.5 do 2.14 mmol/l $\triangle$ 8.4 do 12 °dH pH

7.2 to 7.8

Filtriranje vode od strane korisnika

80 μ m 4.5

Priključak vode

Zaporni ventil s mesing konusnim kompresijskim navojnim priključkom 3/8" to Ø 10 mm

Priključak vode iznad poda

min. 50 mm, max. 105 mm s ventilom otvorenim

Tlak ulaza vode

2.0 do 6.0 bar

Tlak izlaza vode

4 l/min

Promjer priključka za odvod

40 mm

Odvodni priključak iznad poda

20 mm

Količina istjecanja

max. 4 l/min

Nagib odvodne cijevi vode

nizvodno od uređaja: najmanje 10 mm po metru

Dovod zraka

UPOZORENJE

Nepoštivanje bilo kojih nacionalnih smjernica o kvaliteti zubnog zraka. Opasnost od infekcija.

- Obratite pozornost i pridržavajte se nacionalnih smjernica o kvaliteti zraka – ako postoje
- Ispužite zračne linije prije puštanja u rad.



Ulazni tlak zraka	5.2 to 7 bar
Potrošnja zraka	max. 80 NI/min.
Tlak rosišta	< -30 °C (kompresor sa suhim sustavom zraka)
Sadržaj ulja	< 0.1 mg/m ³ (kompresor bez ulja))
Kontaminacija	< 100 čestica/cm ³ sa česticama veličine 1 do 5 µm
Filtracija zraka	50 µm
Priključak zraka	Zaporni ventil sa mesing konusnim kompresijskim navojnim priključkom 3/8" do Ø 10 mm
Priključak zraka iznad razine poda	min. 50 mm, max. 105 mm s otvorenim ventilom

Usis

Količina usisnog zraka na kanili vodene magle	Usisni vakuum pri usisu uređaja	
	sa mokrim usisom	sa suhim usisom
minimalno V~250 NI/min	> 60 mbar	> 85 mbar
preporučeno V~300 NI/min	> 80 mbar	> 120 mbar
Usisni vakuum statički max.	< 180 mbar	< 180 mbar



Napomena

Ako je negativni statički tlak > 180 mbar, uređaj mora biti opremljen kompletom za montažu ventila reguliranja negativnog tlaka.

Promjer usisnog priključka 40 mm

Usisni priključak iznad poda 20 mm

Vrijednosti se odnose na KaVo komplet za mjerenje (Reg. br. 0.411.8500).

Radno okruženje



⚠ UPOZORENJE

Neprikladni radni uvjeti.

Umanjenje vrijednosti električne sigurnosti uređaja.

► Bitno je poštivati radne uvjete navedene u poglavlju „Tehničke specifikacije“.

Kvaliteta poda

Kvaliteta poda mora zadovoljiti nosivu sposobnost za građevine DIN 1055 stranica 3 i imati tlačnu otpornost u skladu s DIN 18560 T 1.

Temperatura okoline

+10 do +40 °C

Relativna vlažnost

30 to 75%

Tlak zraka

700 hPa - 1,060 hPa

Max. nadmorska visina za rad

do 3,000 m

Maksimalno opterećenje

Max. nosivost pacijenta na stolici za pacijenta Standard 185 kg

Max. nosivost pacijenta COMPACTchair 135 kg

Nosač ladice elementa za stomatologa- nosivost do 2 kg

2.11

Nosač ladice elementa za asist.- nosivost do 1 kg

5.8

Element za stomatologa- nosivost do 2 kg

Uvjeti transporta i skladištenja

Temperatura okoline

-20 to +55°C

Relativna vlažnost

5% to 95% bez kondenzacije

Tlak zraka

700 to 1,060 hPa

Težina

Jedinica sa stolicom za pacijenta Standard 279 kg bruto, 224 kg neto

Uključuje čeličnu ploču za postavljanje i komunikaciju s pacijentom 344 kg bruto, 289 kg neto

Jedinica s COMPACTchair stolicom 255 kg bruto, 200 kg neto

Sa čeličnom pločom za postavljanje i komunikacijom s pacijentom 320 kg bruto, 265 kg neto

Više informacija o paketima potražite u uputama za montažu

4 Rad

Stranica 41 od 118

Broj-OV: 0399/2016

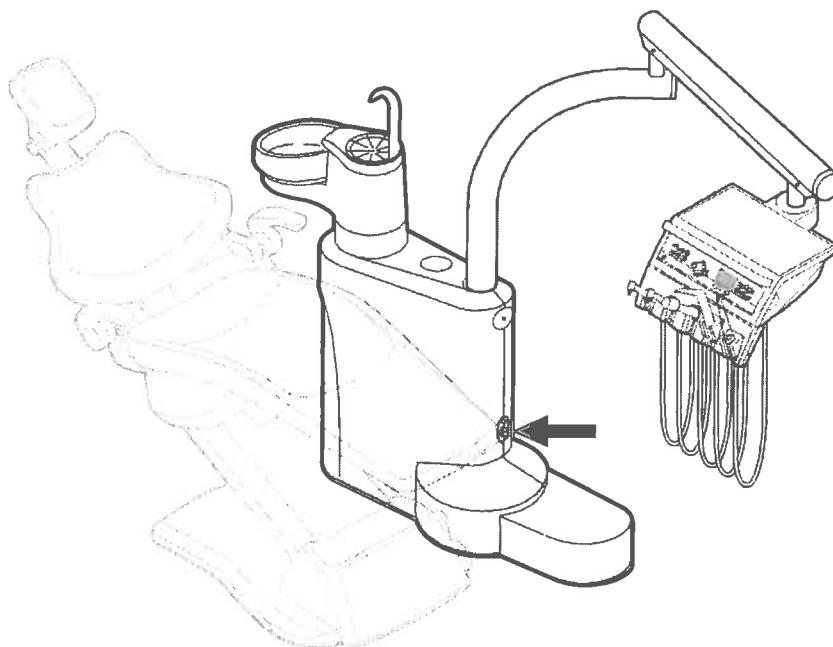
Datum: 27.06.2016.

4.1 Uključivanje i isključivanje uređaja

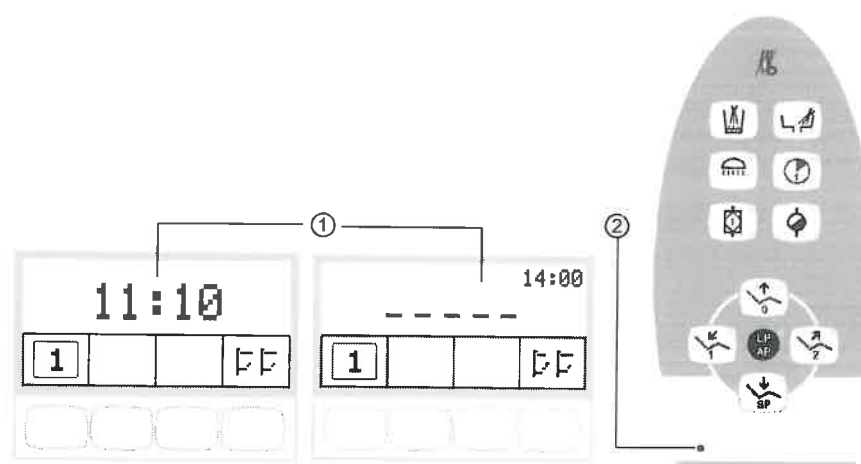


Napomena

Uvijek isključite uređaj prije odlaska iz ureda.



- ▶ Uključite uređaj pomoću glavnog prekidača.
- ▶ Zaslone jedinice za stomatologa ① pokazuje unaprijed odabrani osnovni izbornik.
- ▶ Zeleni LED „uređaj uključen“ svijetli na jedinici za stomatologa ②.



Osnovni izbornik bez MEMOSpeed/osnovnog izbornika s MEMOSpeed/elementom za asistenta

4.2 Podešavanje stomatološke stolice

4.2.1 Podešavanje naslona za ruku (izborno)

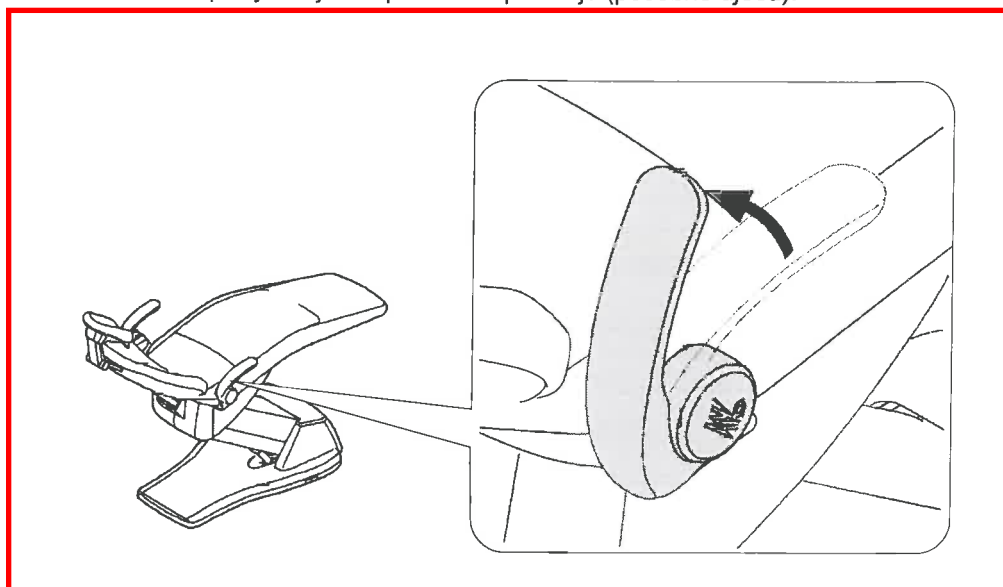
Naslon za ruku za standardnu stomatološku stolicu

Da bi olakšali pacijentima da sjede u stolici, naslon za ruke se može zakretati prema gore.



OPREZ

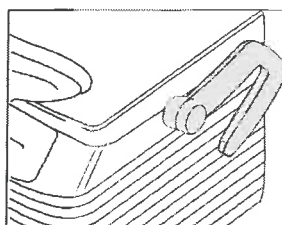
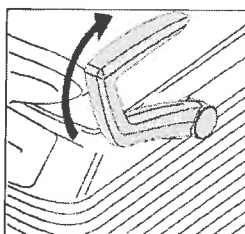
Ruke pacijenta su u lošem položaju kada se stolica podiže
Opasnost od prignječenja prstiju između naslona za leđa i naslona za ruke.
► Pazite da pacijent sjedi u pravilnom položaju (posebno djeca).



1.12

Naslon za ruke za pacijenta stolica COMPACTchair

Da bi se pacijentu olakšalo da sjedi u stolici, naslon za ruke stolice za pacijenta se može zakrenuti prema naprijed.



- Zakrenite naslon za ruke prema naprijed
- Zatim zakrenite naslon za ruku natrag na mjesto.

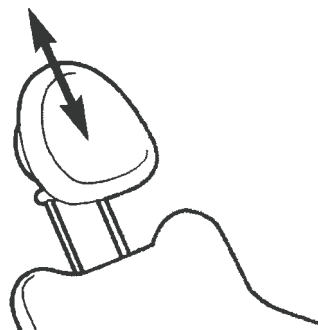
4.2.2 Podešavanje naslona za glavu

Podešavanje naslona za glavu s dvostrukim zglobovom pomoću kotačića

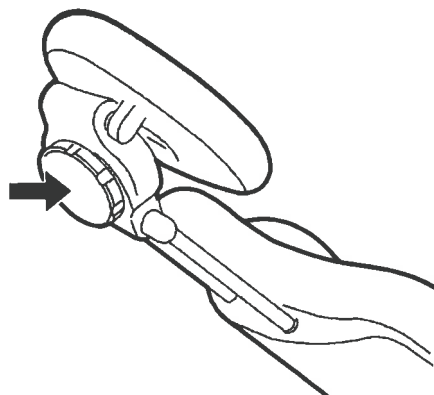


Podesite naslon za glavu. Opasnost od povrede vratnih mišića.

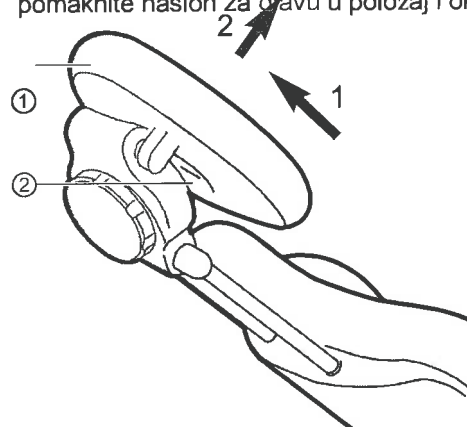
- ▶ Pazite da je pacijent svjestan postavljanja naslona.
- ▶ Pacijenti trebaju podići svoju glavu malo tijekom prilagodbe.



- ▶ Pritisnite ili izvadite naslon za glavu, ovisno o veličini pacijenta.



- ▶ Za zakret naslona za glavu, okrenite kotačić za zaključavanje na lijevoj strani, pomaknite naslon za glavu u položaj i okrenite kotačić u desno da biste ga zaključali.



- ▶ Za uklanjanje jastučića naslona za glavu, uklonite vijak ②, povucite jastuk malo prema ①, i uklonite ga prema naprijed.

Postavljanje pritisknog gumba 2-zglobnog naslona za glavu (izborno)



⚠ OPASNOST

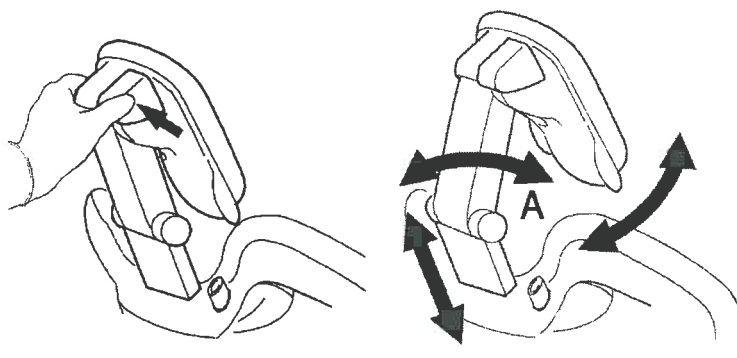
Podešavanje naslona za glavu. Opasnost od povrede vratnih mišića.

- ▶ Pazite da je pacijent svjestan postavljanja naslona.
- ▶ Pacijenti trebaju svoju glavu malo podići tijekom prilagodbe. Duljina šipke i kut naslona za glavu se mogu podesiti.
- ▶ Pritisnite tipku za zaključavanje i gurnite ili izvadite naslon za glavu, ovisno o visini pacijenta.



Napomena

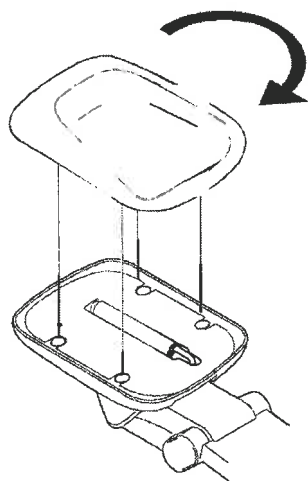
Tehničar za servis može podesiti silu kočenja..



- ▶ Pritisnite tipku za zaključavanje i pomaknite naslon za glavu u željeni položaj. Kad vraćanja naslona za glavu natrag na položaj, pobrinite se da ne postoji ništa između područja A i jastučića za glavu.

Okretanje jastučića za glavu

Jastučić naslona za glavu je rotirajući jastuk. Može se okrenuti u svrhu bolje vratne podrške, npr. kada se liječe djeca.



- ▶ Ravnomjerno povucite jastuk i rotirajte 180 °.
- ▶ Zatim montirajte i okrenite jastučić za glavu.

4.2.3 Pozicioniranje stomatološke stolice ručno

OPREZ

Opasnost od ozljeda od preopterećenja ili dinamičkog opterećenja.

Stolica za pacijenta može biti oštećena od preopterećenja.

- ▶ Nemojte izlagati stolicu za pacijenta opterećenju koje prelazi granice (Standard stolica za pacijenta 185 kg/COMPACTchair stolica za pacijenta 135 kg).
- ▶ Nemojte izlagati stolicu za pacijenta dinamičkim opterećenjima.

OPREZ

Motorizirano kretanje stolice.

Pacijent ili osoblje za liječenje može uklješteno ili srušeno.

- ▶ Pratite pacijenta i osoblja za liječenje kada se mijenja položaj pacijenta.

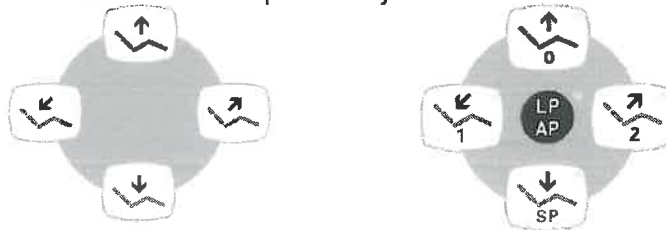
OPREZ

Opasnost od ozljeda prilikom premještanja pacijenta ili stolice za pacijenta.

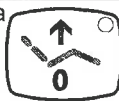
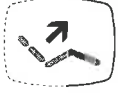
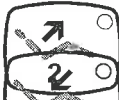
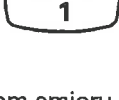
Pacijent ili osoblje za liječenje može biti uklješteno ili srušeno.

- ▶ Pozicionirajte sve pokretne dijelove, kao što su stomatološki element, element za asistenta, operativno svjetlo, ekrani, itd., izvan dometa kolizije kada premješate pacijenta ili stolicu za pacijenta.

Postavljanje stolice i naslona ručno pomoću jedinice za stomatologa ili asistenta

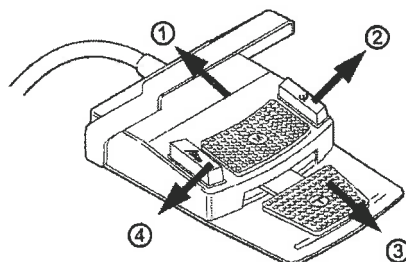


Koristite sljedeće tipke za podešavanje visine stolice i položaj naslona za leđa::

Tipka Element za	Tipka Element za	Značajka
stomatologa	asistenta	
		Stolica se pomiče prema gore.
		Stolica se pomiče prema dolje.
		Naslon za leđa se pomiče prema gore.
		Naslon za leđa se pomiče prema dolje.
▶ Pritisnite  tipku. ▶ Stolica ili naslon se kreće u željenom smjeru.		

Postavljanje stolice i naslona ručno pomoću nožne kontrole

Unakrsni prekidač nožne kontrole preuzima funkciju kotačića na elementu za stomatologa prilikom ručnog namještanja stolice za pacijenta.



Zahtjev

Svi instrumenti su svom držaču.

- Podizanje stolice: Pomaknite unakrsni prekidač na nožnoj kontroli u smjeru ①.
- Spuštanje stolice: Pomaknite unakrsni prekidač na nožnoj kontroli u smjeru ③.
- Podizanje naslona: Pomaknite unakrsni prekidač na nožnoj kontroli u smjeru ②.
- Spuštanje naslona: Pomaknite unakrsni prekidač na nožnoj kontroli u smjeru ④.

4.2.4 Automatsko pozicioniranje stomatološke stolice



OPREZ

Opasnost od ozljeda od preopterećenja ili dinamičkog opterećenja. Stolica pacijenta može biti oštećena od preopterećenja.

- Nemojte izlagati stolicu za pacijenta opterećenju koje prelazi granice (Standard stolica za pacijenta 185 kg/COMPACTchair stolica za pacijenta 135 kg).
- Nemojte izlagati stolicu za pacijenta dinamičkim opterećenjima.



OPREZ

Opasnost od prignječenja tijekom automatskog pomicanja stolice. Pacijent ili osoblje liječenje može biti prignječeno.

- Pratite pacijenta i osoblja za liječenja kod promjene položaja stolice.



OPREZ

Opasnost od ozljeda prilikom premještanja pacijenta ili stolice za bolesnika. Pacijent ili osoblje liječenje može biti prignječeno ili srušeno.

- Pozicionirajte sve pokretne dijelove, kao što stomatološki element, element za pomoćnika, operativno svjetlo, ekrani, itd. izvan dometa kolizije kada premiješate pacijenta ili stolicu za pacijenta.

Postupno podešavanje položaja stolice

Pohranite pozicije stolice

Pozicije stolice se mogu pohraniti i dohvatiti u bilo kojem trenutku pritiskom na gumb. Kada je položaj pozvan, stolica se automatski pomiče na pohranjeni položaj (tzv. „automatski položaj“ ili skraćeno „AP“).

Četiri pozicije stolice se mogu pohraniti na kontrolnim pločama. Dvije od te četiri pozicije se mogu pohraniti nožnom kontrolom.

7.4

7.7

Na primjer preporučljivo je da se pohrani položaj sjedanja i ustajanja pomoću tipke „AP 0“ i položaj ispiranja pomoću tipke „SP“.

Pozivajući se na automatske položaje pri čemu stomatolog jedinici

Sljedeće tipke mogu se koristiti za opoziv pohranjene pozicije stolice.

Tipka	Rad
	Pomicanje u položaj za ispiranje.
	Posljednji položaj prije nego što je aktivirana tipka SP.
	Pomicanje u automatski položaj 0.
	Pomicanje u automatski položaj 1.
	Pomicanje u automatski položaj 2.
	Pomicanje u uvučeni položaj.

- ▶ Kratko pritisnite željenu tipku.
- ▶ Stolica se automatski pomiče u spremljeni položaj.
- ▶ Po dolasku u spremljeni položaj, dioda na tipki je uključena.

Spremanje automatskog položaja sa stomatološkom jedinicom.

Preporučeni raspored tipki:

"SP" tipka: pozicija ispiranja

"AP 0" tipka: ulazna i izlazna pozicija

"AP 1" tipka: položaj liječenja, na primjer za liječenje donje čeljusti "

AP 2" tipka: položaj liječenja, na primjer za liječenje gornje čeljusti

„Uvučena pozicija“: Uvučena pozicija

- ▶ Premještanje stolice u željenu poziciju.
- ▶ Za spremanje položaja stolice, pritisnite tipku "AP 0", "AP 1", "AP 2", "SP" ili „Uvučena pozicija“ dok ne čujete signal.
- ▶ Prikaz diode na pritisnutoj tipki je uključen. Položaj stolice je pohranjen.

Zadnja pozicija

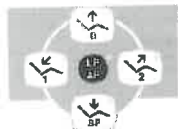
Nakon pritiska na tipku „LP“, stolica se premješta u svoj položaj prije nego je pritisnut „SP“



Napomena

Memorija se briše kad isključite uređaj. Nakon uključivanja uređaja ponovno (na primjer, u jutarnjim satima ili nakon ručka), stolica ne izvršava specifične pokrete kada pritisnete tipku „LP“.

Pozivanje automatskih pozicija s jedinicom za asistenta



- ▶ Kratko pritisnite tipku „AP“.
- ▶ LED o „AP 0“, „AP 1“, „AP 2“, „SP“ i tipke "LP" trepere približno četiri sekunde.
- ▶ Tijekom ove četiri sekunde, kratko pritisnite „AP 0“, „AP 1“, „AP 2“, „SP“ ili tipku „LP“.
- ▶ Stolac se premješta u odabrani automatski položaj.

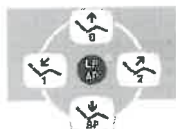
Spremanje automatskog položaja s jedinicom za asistenta.



Napomena

Automatska pozicija „Posljednja pozicija“ se pohranjuje na tipki „LP“. Pritisnite tipku „LP“ da se stolica automatski premjesti u posljednji položaj prije položaja ispiranja. Tipka „LP“ se ne može prenijeti na drugu automatsku poziciju.

- ▶ Premještanje stolice na željeno mjesto..
- ▶ Kratko pritisnite tipku „AP“.
- ▶ LED za „AP 0“, „AP 1“, „AP 2“, „SP“ i tipke "LP" trepere približno četiri sekunde.
- ▶ Tijekom ove četiri sekunde, pritisnite tipku „AP 0“, „AP 1“, „AP 2“, „SP“ ili tipku „LP“, sve dok ne čujete prijenos zvučnog signala.
- ▶ LED pritisnute tipke svijetli. Pozicija stolice je pohranjena..

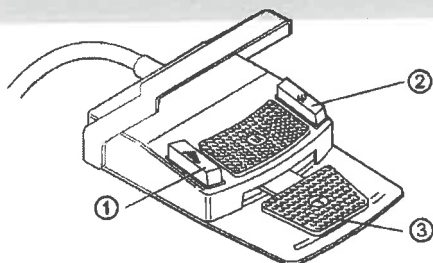


Pozivanje automatskog položaja s nožnom kontrolom



Napomena

Ako je instrument je uklonjen, funkcije stolice nožne kontrole su blokirane. Blokiranje se može ukloniti kratkim pritiskom streмена. Funkcije su tada dostupne.



① Predodabir spreja/AP 9

② Puhalo zraka/AP nožni pr.

③ Nožna papučica

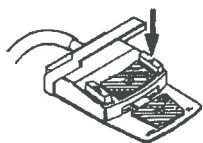
Pozicije stolice se mogu opozvati s dva nožna prekidača; Standardna postavka je kako slijedi:

- „Odabir spreja“ nožni prekidač: automatska pozicija „LP“ (zadnja pozicija)

- Nožna kontrola „Odabir spreja“: automatska pozicija „SP“ (položaj ispiranja)

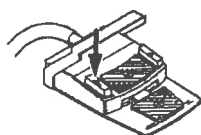
Pomaknite stolicu kada je montiran instrument

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- ▶ Pritisnite „SP“ nožno-upravljanu tipku.

ili



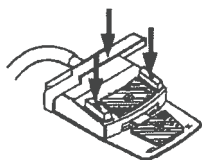
- ▶ Pritisnite „LP“ nožno-upravljanu tipku.
- ▶ Stolac se premješta u odabrani automatski položaj.

Pomaknite stolicu kada je instrument je uklonjen



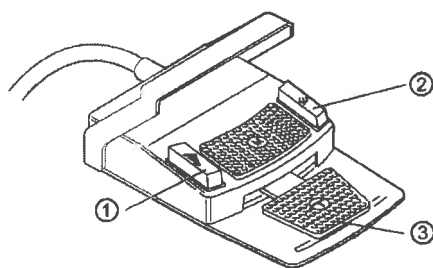
Napomena

Ako je instrument uklonjen, funkcije stolice nožne kontrole su blokirane. Blokiranje se može ukloniti kratkim pritiskom stremena. Funkcije su tada dostupne.



- ▶ Pritisnite stremen, a zatim nožni prekidač „Predodabrani sprej“ ili „Puhalo zraka“.
- ▶ Stolac se premješta u odabrani automatski položaj.

Pohranite automatski položaj s nožnom kontrolom.

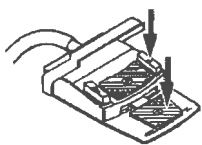


- ① Predodabir spreja/AP nožni prekid.
- ② Puhalo zraka/AP nožni pr.
- ③ Nožna papučica

1.20

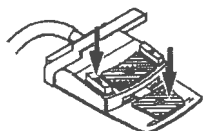
Pozicije stolice se mogu pohraniti na dva nožna prekidača; Standardna postavka je na sljedeći način:

- "Nožni prekidač za „Zadani sprej“: „LP“ automatski položaj (zadnji položaj)
- "Nožni prekidač za „Puhalo zraka“: „SP“ automatski položaj (položaj ispiranja)



- ▶ Držite pritisnutu nožnu papučicu i nožno upravljaju tipku „SP“ i istovremeno pritisnite bilo koju tipku za automatski položaj („AP 0“, „AP 1“, „AP 2“ ili „SP“) na jedinici za stomatologa ili jedinici za asistenta sve dok ne čujete zvučni signal.

- ▶ Automatska pozicija je pohranjena na nožno upravljanoj tipki ili



- ▶ Držite pritisnutu papučicu i nožno upravljaju tipku „LP“, i istodobno pritisnite bilo koji gumb za automatski položaju („AP 0“, „AP 1“, „AP 2“ ili „SP“) na jedinici za stomatologa ili jedinici za asistenta sve dok ne čujete zvučni signal.

- ▶ Automatska pozicija se pohranjuje na nožno upravljanoj tipki.

4.2.5 Sigurnosno isključivanje

Kako bi se spriječile kolizije koje proizlaze iz pomicanja stolice za pacijenta, prekidač za sigurnosno isključenje je instaliran da zaštiti pacijenta i osoblje od ozljede a jedinicu za liječenje od oštećenja.

OPREZ

Oštećenja elementa za asistenta i stomatološke stolice.

Unatoč postojanju prekidača za sigurnosno isključenje, određene pozicije jedinice za asistenta mogu se sudariti sa stomatološkom stolicom.

- ▶ Držite jedinicu za asistenta izvan raspona gibanja stolice za pacijenta.
- ▶ Uvijek pratite kretanje stolice.

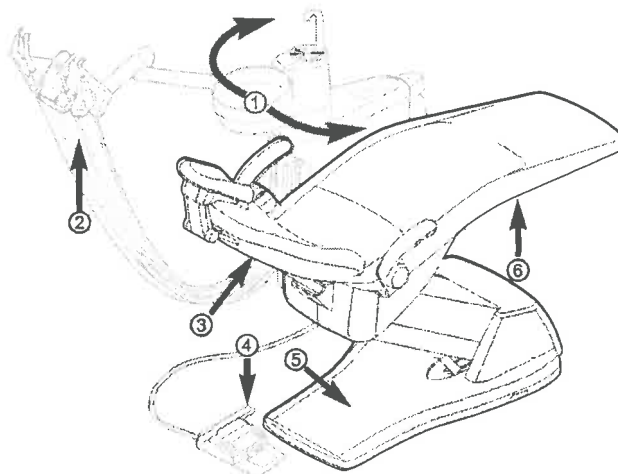
OPREZ

Uklještenje od stolice za liječenje.

Sigurnosno isključivanje stolice za liječenje se aktivira podizanjem odgovarajuće komponente. Ovisno o pacijentovoj tjelesnoj težini i polugama, može biti potrebno više sile za pokretanje objekta nešto što je po potrebno za za funkciju isključenja.

- ▶ Osoblje za liječenje se mora kretati izvan raspona zamaha stolice kada se stolica pomiče.

Sigurnosni odsječak se može naći na sljedećim mjestima na jedinici za liječenje.



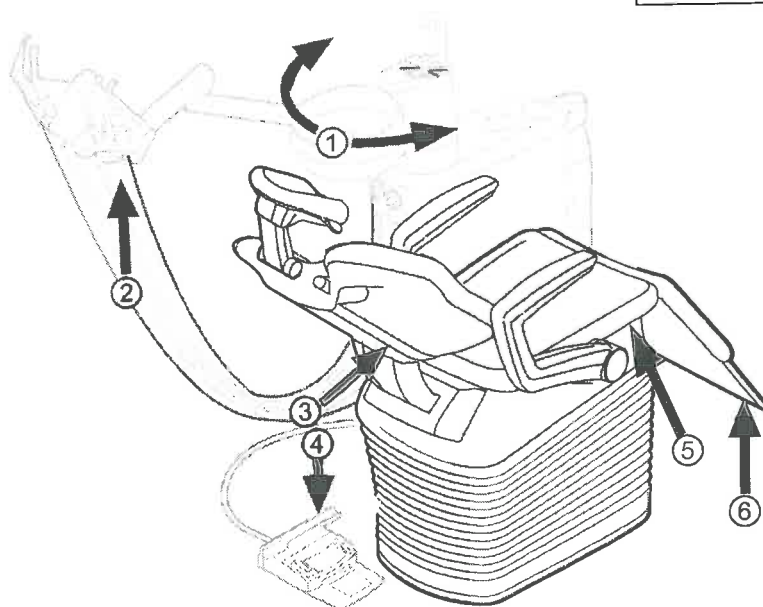
Sigurnosno isključenje za Standard stolicu za pacijenta

- ① Jedinica za pacijenta se okreće preko stolice za pacijenta
- ③ Naslon
- ⑤ Udarana ploča

- ② Element za asistenta
- ④ Nosač na nožnoj kontroli
- ⑥ Nosač na nožnoj kontroli

Stavka Br.	Sigurnosno isključenje pokrenuto	LED dioda na eleme. za asistenta	LED dioda na elementu za stomatologa
①	Jedinica za pacijenta se okreće preko stolice za pacijenta		
②	Element za asistenta		
③	Naslon		
④	Nosač na nožnoj kontroli		
⑤	Udarana ploča		
⑥	Sjedalo		

1.10



Sigurnosno isključenje za COMPACTchair stolicu za pacijenta

- | | |
|---|----------------------------|
| ① Element pacijenta se nakreće nad stomatološkom stolicom | ② Element za asistenta |
| ③ Naslon | ④ Nosač na nožnoj kontroli |
| ⑤ Oslonac za klupu/ jastučić sjedala | ⑥ Sklopivi dio sjedala |

Stavka br.	Sigurnosno isključenje pokrenuto	LED dioda na elementu za - asistenta	LED dioda na elementu za stomatologa
①	Jedinica za pacijenta se nakreće preko stolice za pacijenta		
②	Element za asistenta		
③	Naslon		
④	Nosač na nožnoj kontroli		
⑤	Oslonac za klupu/jastučić sjedala		
⑥	Sklopivi dio sjedala		

Sigurnosno isključenje javlja se kada je prekoračen kut kretanja, ili se dio jedinice za liječenje sudari s nekim predmetom.

Ako osoba ili objekt aktivira sigurnosno isključenje, stolica se odman zaustavlja. Činjenica da je sigurnosno isključivanje aktivirano prikazuje se treperenjem odgovarajućeg zaslona na jedinici za stomatologa ili asistenta.

1.28

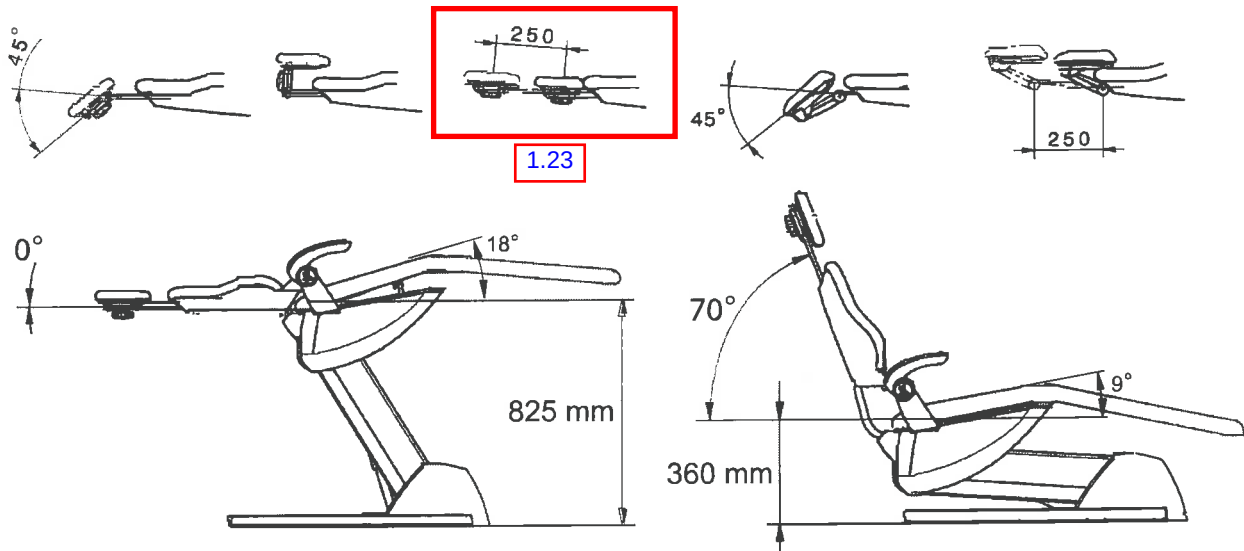


Napomena

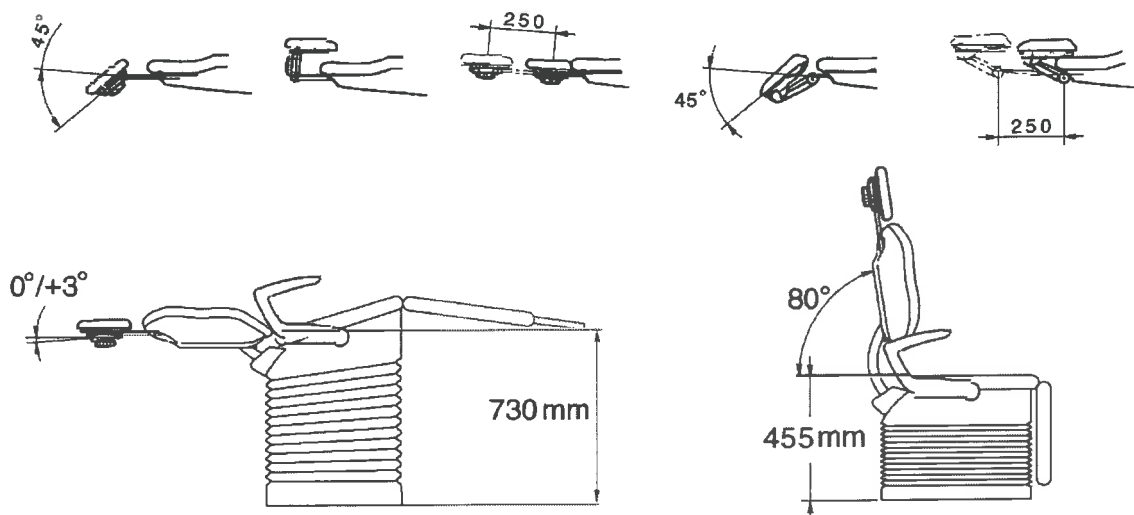
Položaj stolice se ne može mijenjati s kotačićima kada se aktivira sigurnosno isključenje.

Iznimka: Sigurnosni prekidač jedinice za pacijenta se zaustavlja samo pri kretanju stolice za pacijenta prema gore i dolje. Naslon se može pomicati gore i dolje.

4.3 Pomicanje stolice za pacijenta



Stolica za pacijenta Standard



Stolica za pacijenta COMPACTchair

4.4 Pomicanje stomatološke jedinice



Oštećenja od preopterećenja elementa za stomatologa.

Prekoračenje maksimalne težine od više od 2 kg dodavanjem nastavaka, priborom, itd., može uzrokovati štetu.

► Nemojte preopteretiti element za stomatologa!

CAUTION

Opasnost od ozljeda kada se element za stomatologa ili asistenta pomiče.
Pacijent ili osoblje pacijenta može zadobiti ozljede ili modrice.

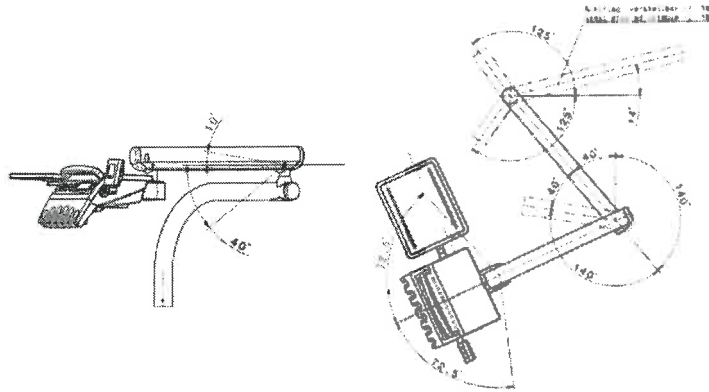
- Pratite pacijenta i osoblje prilikom pomicanja element za stomatologa ili asistenta. Zakretni raspon stomatološke jedinice je ograničen graničnicima.



Napomena

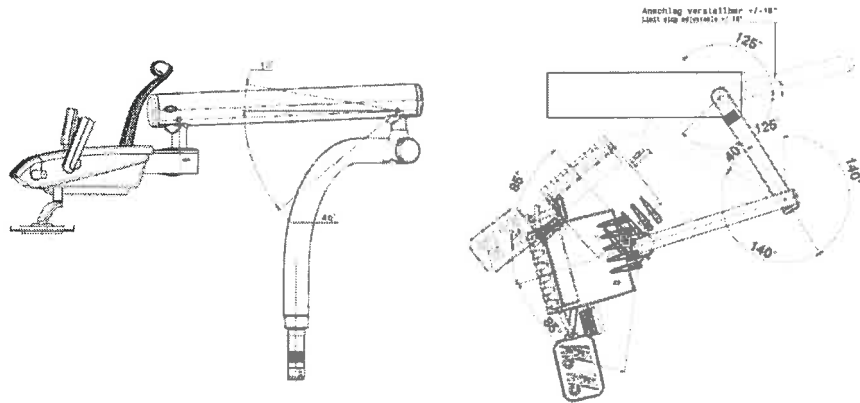
Nemojte povlačiti instrumenata crijeva stomatološke jedinice.

- Za podešavanje visine stomatološke jedinice, otpustite kočnice, podesite visinu i ponovno postavite kočnicu.



2.5

Jedinica za stomatologa TM



Element za stomatologa S

4.4.1 Pomikanje kolica



Opasnost od prevrtanja i oštećenja kolica.

- ▶ Koristite kolica samo na kontinuirano glatkom podu.
- ▶ Nemojte previše rastegnuti opskrbno crijevo za kolica.
- ▶ Pazite da nema nikakvih prepreka na podu.
- ▶ Nemojte sjediti na elementu za stomatologa ili stajati na kotačićima.





Napomena

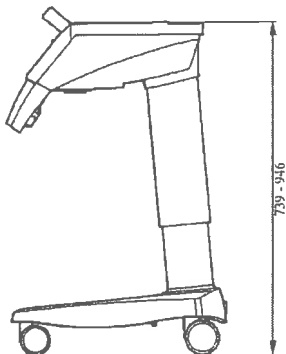
Područje u kojem se kolica mogu kretati je ograničeno duljinom linija i cijevi koje povezuju kolica na bazu uređaja. Pomičite kolica samo unutar tog raspona.

- ▶ Za promjenu položaja kolica, držite ručku kolica u obliku luka i premjestite ih u željeni položaj. Uvjerite se da nema prepreka na podu.
- Gornji dio stomatološke jedinice može se postaviti na 9 razina.



Napomena

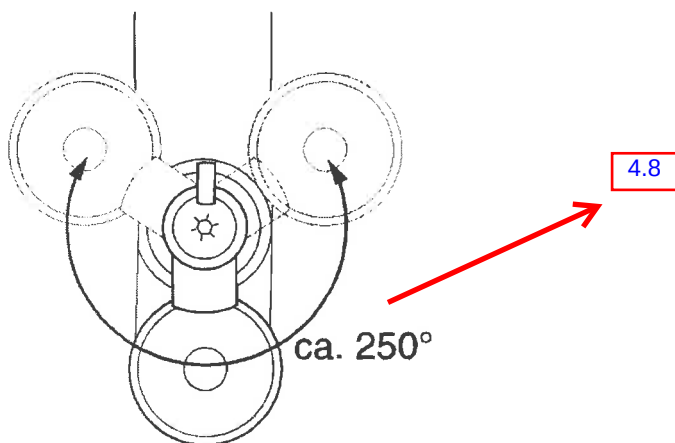
Nemojte dizati stomatološku jedinicu pomoću ručke. Ručka je samo za horizontalno pozicioniranje stomatološke jedinice.



- ▶ Podignite gornji dio stomatološke jedinice sve dok ne sjedne na svoje mjesto.
- ▶ Kako biste ju otključali iz položaja, pomaknite gornji dio skroz gore, a zatim ju premjestite prema dolje.

4.5 Premještanje jedinice za pacijenta

4.5.1 Zakretanje jedinice za pacijenta rukom



Raspon zakretanja oko 250°.



OPREZ

Lijevi naslon za ruke može se sudariti s ručno podešenom jedinicom za pacijenta kada se stolica pomiče.

Opasnost od ozljeda.

- Svaki put prije nego što se stolica podešava (automatski i ručno), zakrenite ručno podešenu jedinicu za pacijenta u položaj mirovanja.



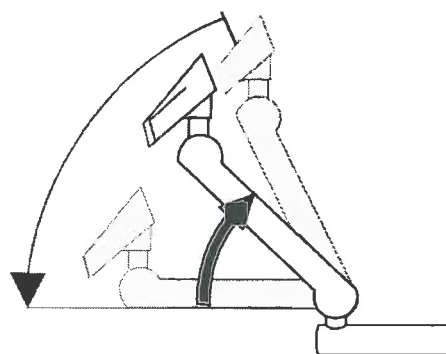
Napomena

Kada se jedinica za pacijenta nagne preko stolice za pacijenta, sigurnosno isključivanje je aktivirano.

4.6 Pomicanje elementa za asistenta

4.6.1 Podešavanje visine elementa za asistenta Standard

Jedinica za asistenta se može vertikalno pozicionirati u četiri razine.

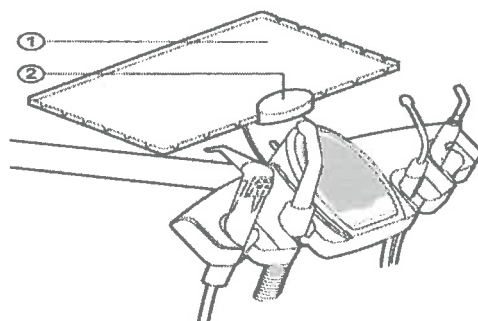


5.3

- Za postavljanje više razine, povucite pomoćni uređaj prema gore lagano dok čujno ne uskoči.
- Za postavljanje niže razine, povucite jedincu za asistenta sve dok se ne otključa, a zatim spustite jedinicu za asistenta.

Montaža nosača ladice

- Montirajte nosač ladice na element za asistenta.



① Oslonac ladice

② Nosač mlaznice za zrak

Podrška ② za nosač ladice ① je dodatni pribor.

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4.6.2 Pomicanje elementa za asistenta desno, lijevo (izborno)



OPREZ

Uklještenje od stolice za liječenje.

Osoblje za liječenje se može uklještit ili srušiti.

- Osoblje za liječenje se mora kretati izvan raspona zamaha stolice kad god se stolica pomiče.

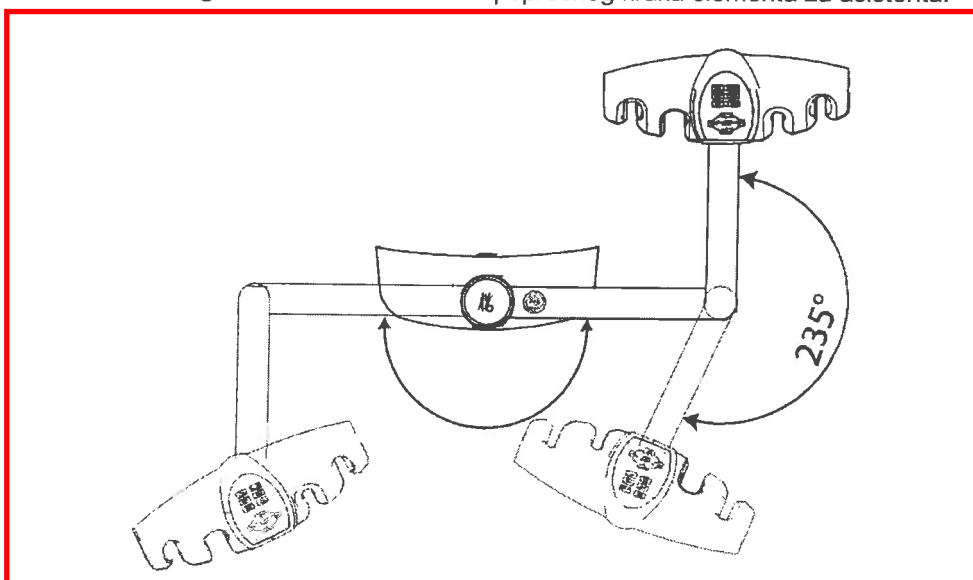


OPREZ

Materijalna šteta uzrokovana preopterećenjem.

- Ne držite nogu blizu okretne točke i/ili poprečnog kraka elementa za asistenta.

5.1



Zakretni raspon elementa za asistenta R, L (izborno)

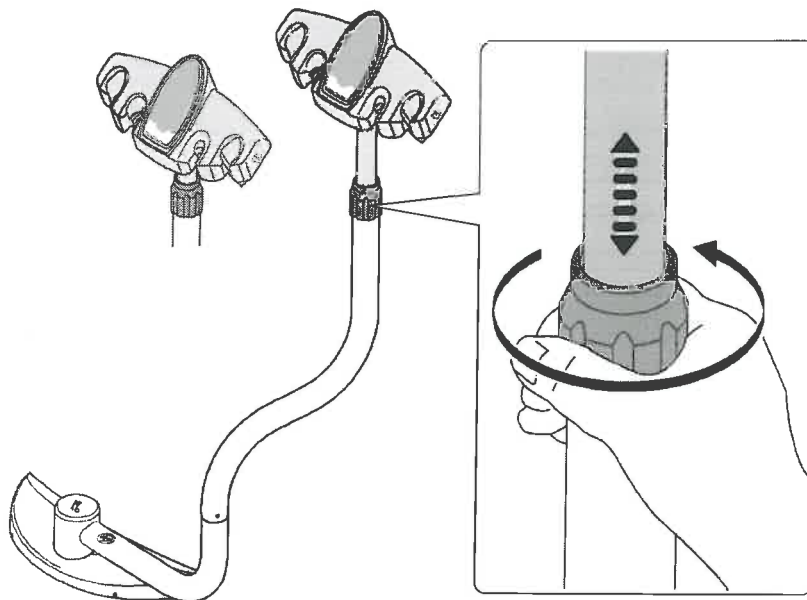
- Pomaknite naslon prije zakretanja elementa za asistenta.
- Pomaknite element za asistenta u željenu poziciju u njenom zakretnom rasponu.

Podešavanje visine elementa za asistenta desno, lijevo (izborno)



Napomena

Nastavci mogu ispasti iz nosača dok se element za stomatologa pomiče, posebice tijekom podešavanja visine. Kako bi se spriječilo oštećenje nastavaka, pobrinite se da nijedan element ne ispadne dok pomičete element za asistenta.



- ▶ Otkopčajte stezni vijak i gurnite element za asistenta u željeni položaj.
- ▶ Ponovno pritegnite stezni vijak.

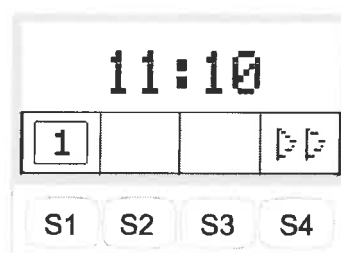
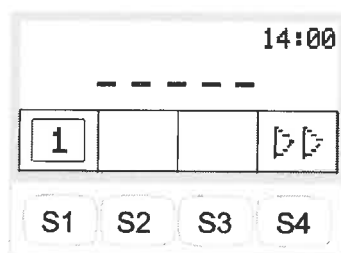
4.7 Korištenje funkcije putem izbornika

4.7.1 Korištenje korisničkog izbornika

Sljedeće opcije se mogu otvoriti u korisničkom izborniku:

Opcija	Značajka	Opis
1	Firmware	prikaz trenutne verzije firmvera.
2	Vrijeme dana	Postavite doba dana.
3	Datum	Postavite datum.
4	Način prikaza vremena	Postavljanje prikaz vremena: ▪ Vrijeme dana samo ▪ Vrijeme dana bez sekunde
5	Jezik	Postavljanje jezika izbornika:: ▪ Njemački ▪ Engleski ▪ Talijanski ▪ Francuski
6	LCD	Postavljanje kontrasta LCD zaslona.

Opcija	Značajka	Opis
7	Licence	Prikaz aktiviranih licenci
Funkcije u izborniku koriste se preko tipke odabira (S1 do S4) na ekranu		



Korisnički izbornik s MEMOSpeed/bez MEMOSpeed



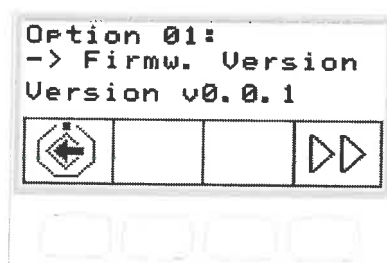
- ▶ Pritisnite tipku „Next“ (S4) za pokretanje korisničkog izbornika.

- ▶ Korisnički izbornik prikazuje opcije i parametre koji se mogu postaviti i mijenjati od strane korisnika..



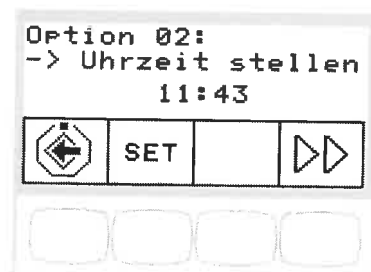
- ▶ Pritisnite tipku „Next“ (S4) za prebacivanje na sljedeću opciju.

Opcija 1: Prikaz verzije firmwarea



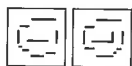
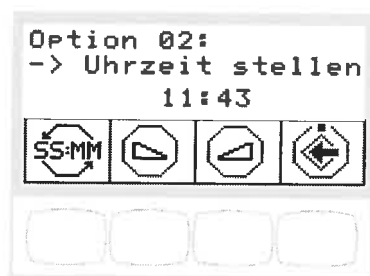
Verzija firmwarea se prikazuje

Opcija 2: Podešavanje vremena dana



- ▶ Pritisnite tipku „SET“ (S2) za promjenu vrijednosti minuta i sati.
- ▶ Vrijednosti koje treba promijeniti trepere.
- ▶ Pritisnite tipku „Save“ (S4) za spremanje odabira.





- ▶ Pritisnite tipku „Smanjenje vrijednosti“ ili „Povećanje vrijednosti“ za postavljanje označenog doba dana.



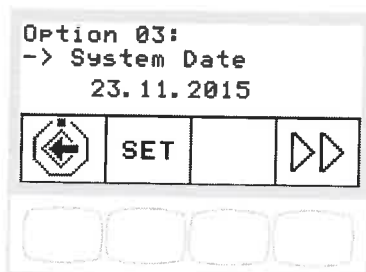
- ▶ Pritisnite: „SS MM“ (S1) za prebacivanje između sati i minuta.



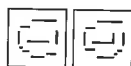
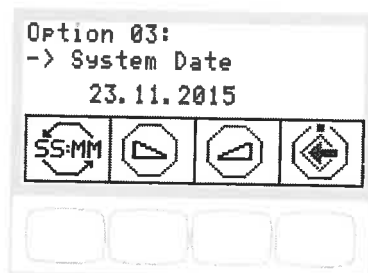
SET.

- ▶ Pritisnite tipku „Save“ (S4) tipku za spremanje vrijednosti i prebacivanje na prikaz

Opcija 3: Postavite datum



- ▶ Pritisnite tipku „SET“ (S2) za promjenu vrijednosti dana, mjeseci i godine.
- ▶ Vrijednosti koje treba promijeniti trepere.
- ▶ Pritisnite tipku „Save“ (S1) za spremanje odabira.



- ▶ Pritisnite tipku „Smanjenje vrijednosti“ ili „Povećanje vrijednosti“ za postavljanje označenih vrijednosti.

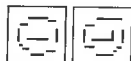
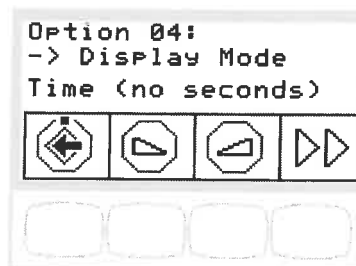
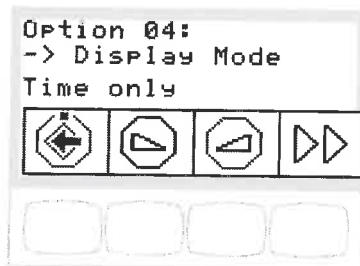


- ▶ Pritisnite: tipku „SS MM“ (S1) za prebacivanje između dana, mjeseci i godina.



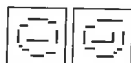
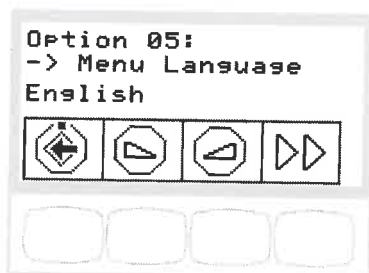
- ▶ Pritisnite tipku „Save“ (S4) za spremanje vrijednosti i prebacivanje na prikaz postavki.

Opcija 4: Podešavanje načina prikaza za vrijeme dana



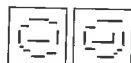
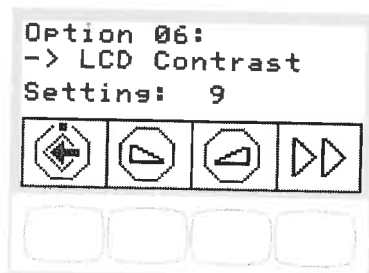
- ▶ Pritisnite tipku „Smanjenje vrijednosti“ ili „Povećanje vrijednosti“ za postavljanje načina prikaza za vrijeme dana.
- ▶ Sljedeći prikazi se mogu odabrati:
 - Vrijeme dana
 - Vrijeme (bez sekunde)

Opcija 5: Podešavanje jezika



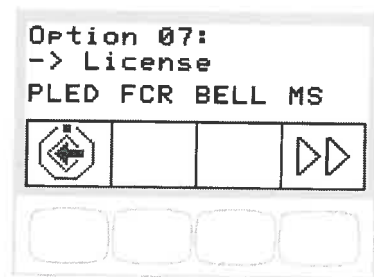
- ▶ Pritisnite tipku „Smanjenje vrijednosti“ ili „Povećanje vrijednosti“ za odabir jezika izbornika. Sljedeći jezici mogu se odabrati: Njemački, Engleski, Talijanski, Francuski.
- ▶ Pritisnite tipku „Save“ (S1) za spremanje vrijednosti.

Opcija 6: Podešavanje kontrasta zaslona



- ▶ Pritisnite tipku „Smanjenje vrijednost“ ili „Povećanje vrijednosti“ za podešavanje kontrasta na LCD-u.
- ▶ Pritisnite tipku „Save“ (S1) za spremanje vrijednosti.

Opcija 7: Prikaz licence



Prikaz aktivirane licence::

- PLED: PiezoLED
- FCR: Nožna kontrola
- BELL: Zvona
- MS: MEMOSpeed

4.7.2 Izbornik mirovanja

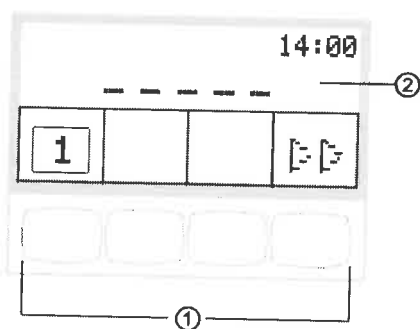
Izbornik mirovanja kao zadana postavka

Uređaj počinje u izborniku mirovanja. Dostupan samo s MEMOSpeed licencom:
Uređaj se automatski prebacuje u svoj Izbornik mirovanja kada zatvorite izbornik nastavaka i izbornik komunikacije s pacijentom.

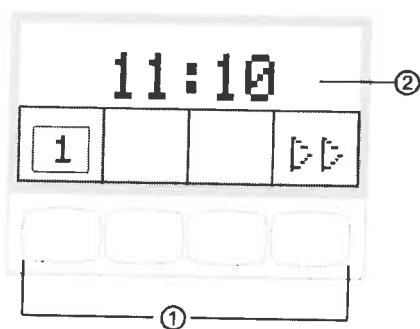
Odaberite funkciju

Na zaslonu se prikazuje prikaz polja sa simbolima za operativne funkcije.
Ispod svakog polja prikaza, tu je ključ za odabir prikazane radne funkcije.

Izbornik mirovanja MEMOSpeed



Izbornik mirovanja bez MEMOSpeed

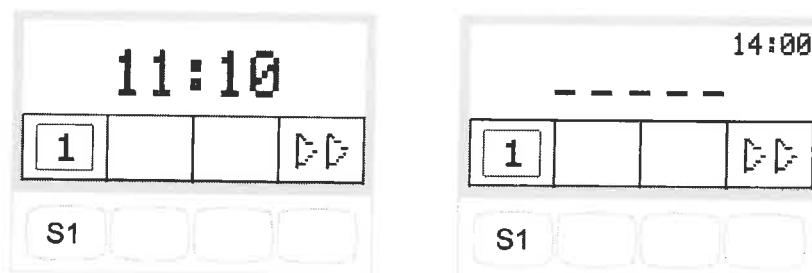


- ① Tipke za odabir funkcija izbornika
② Zaslon

Odabir stomatologa

Prvi simbol u izborniku mirovanja prikazuje trenutnog korisnika.

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Datum: 27.06.2016.

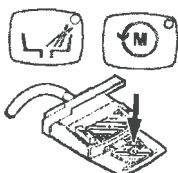
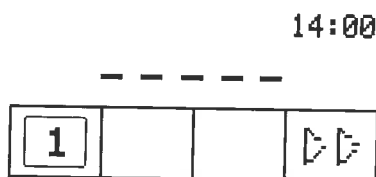


- Pritisnite tipku „S1“ za odabir stomatologa 1 ili stomatologa 2. 1.20

Dopuštanje prebacivanja razine (dostupno samo s MEMOSpeed)

Prebacivanje razine je deaktivirano u osnovnom stanju.

Prebacivanje na razinu simbola prikazuje trenutnog stomatologa.

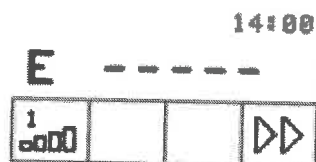


Napomena

Uređaj se ponaša kao na razini E kad je isključeno prebacivanje razine.

- Za prebacivanje između razina, držite „Smjer rotacije motora“ i tipku „Ispiranje zdjele“ i papučicu pritisnutu, dok se ne čuje zvučni signal.

Nakon aktiviranja razine prebacivanje, simbol promjene razine pokazuje razinu (E, 1 2 ili 3 - Razina E se bira u prikazanom primjeru). Prethodno odabrani stomatolog je prikazan vrlo malen u simbolu promjene razine.



Napomena

Uređaj automatski sprema aktivaciju prebacivanja razine za aktivnog stomatologa.



Napomena

Razina prebacivanja je deaktivirana koristeći istu kombinaciju tipki kao aktivacija.



- Za odabir razine, kratko pritisnite tipku za izbor za „Predodabranu razinu“.

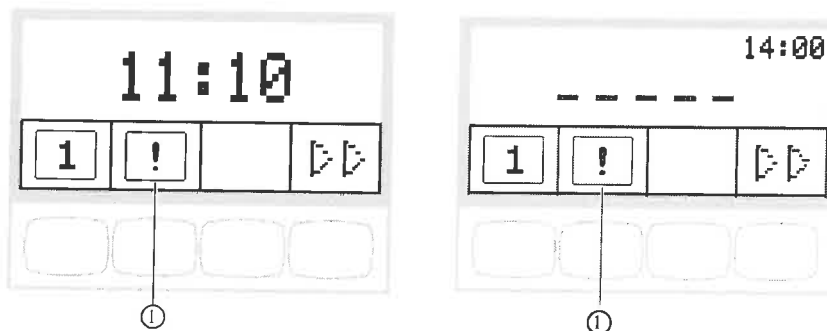
Izbor stomatologa s aktiviranim prebacivanjem razine



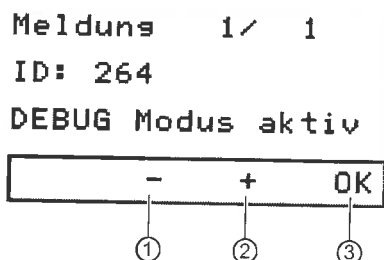
- Pritisnite tipku „Predodabir razine“ dulje vrijeme za odabir stomatologa 1 ili stomatologa 2.

Prikaz stanja u izborniku mirovanja

Ako je poruka o statusu dostupna, izbornik čekanja prikazuje uskličnik na tipki odabira "S2"①.



- Pritisnite tipku „S2“ ① za prikaz poruke o statusu.



- Pritisnite tipke za odabir "+" ② i "-" ① za prebacivanje između više poruka o statusu.
- Pritisnite tipku „OK“ tipku odabira ③ za izlaz iz prikaza poruke o statusu.

Poruke o pogreškama u prikazu statusa

Vidi također:

2 9 Rješavanje problema 108

4.7.3 Rad izbornika MEMOSpeed (izborni))

Izbornik MEMOSpeed se koristi za prikaz i postavljanje vrijednosti specifičnih za nastavak. Prikaz ovisi o tome koji instrument je povučen.

Za spremanje vrijednosti specifičnih za nastavak, postoje 3 memorijske razine (1, 2, 3) svaka dostupna za dva stomatologa (stomatolog 1 i stomatolog 2).

Spremite postavke specifične za instrument

Sljedeće postavke se mogu pojedinačno spremiti za instrumente:

Nastavak	Postavka
Turbine	Brzina raspona (dostupan samo s prebacivanjem razine) Predodabrani sprej
Motor INTRA LUX KL 701/703, COMFORTdrive	Raspon brzine (dostupno samo s prebacivanjem razine) Smjer rotacije motora Predodabrani sprej
Ultrazvučni skidač kamenca	Sprej uključen/isključen* Intenzitet (samo s prebacivanjem razine)
Višenamjenski nastavak	Grijanje uključeno/isključeno

* Samo s odgovarajućom postavkom izborniku u servisnom načinu rada

Promjena postavki turbine u izborniku



Napomena

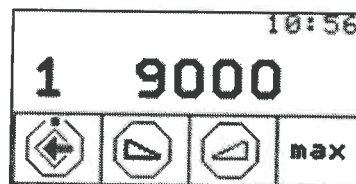
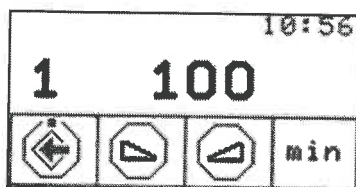
Slijedite upute za uporabu, upute za servis i upute za ugradnju u ambalaži instrumenata.



Napomena

Brzina se može podesiti na razini E samo nožnom papučicom. Brzina se ne može spremiti u razini E.

- ▶ Izvadite turbinu iz nosača.
- ▶ Kratko pritisnite tipku „Predodabrana razina“ (S1) za odabir razine.
- ▶ Pritisnite tipku „Predodabrana razina“ (S1) za 4 sekunde za promjenu postavki.
- ▶ Zaslon prelazi na izborniku postavki turbina.



Izbornik postavki za minimalnu/maksimalnu brzinu



- ▶ Pritisnite tipku „min/max“ (S4) zaključane za prebacivanje između izbornika postavki za minimalnu i maksimalnu brzinu.



ili



- ▶ Pritisnite tipku „Smanjenje vrijednosti“ za smanjenje brzine.
- ▶ Pritisnite tipku „Povećanje vrijednosti“ za povećanje brzine.



- ▶ Intenzitet je prikazan na zaslonu.
- ▶ Pritisnite tipku „Pohrani“ za spremanje vrijednosti. Možete spremiti nakon postavljanja svaku vrijednost, ili nakon postavljanja svih vrijednosti.
- ▶ Spremanje je potvrđeno zvučnim bipom.
- ▶ Ovo zatvara izbornik „Postavke“.

Podешavanje razine hlađenja

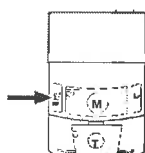
Zahtjev

Izbornik postavke za turbine je izabran..



- ▶ Pritisnite tipku „Predodabrani sprej“.

ili



- ▶ Pritisnite nožni prekidač „Predodabrani sprej“ (samo s prebacivanjem razine).

▶ Zadane vrijednosti se spremaju za postavljenu razinu memorije i zadane stomatološke razine.

Tipka	Značajka
	LED lampica ne svijetli: Nema hlađenja
	Jedna LED lampica svijetli: Status hlađenja zraka sprejom
	Obje LED diode svijetle: Status hlađenja sprejom

Promjena postavki motora u izborniku



Napomena

Slijedite upute za uporabu, upute za servis i upute za ugradnju u ambalaži instrumenata.



Napomena

Način rada motora je ekvivalentan vremenu rada od 2 minute i vremenu pauze od 5 minuta. To predstavlja moguće maksimalno opterećenje motora (puno opterećenje pri maksimalnoj brzini).

U praksi, preostale sekunde pulsni opterećenja ili preostale sekunde vremena pauze su realne s obzirom da maksimalna moguća struja motora obično nije dosegnuta. To je jednako normalnom načinu rada stomatologa.

- ▶ Izvadite motor iz držača.
- ▶ Kratko pritisnite tipku „Predodabrana razina“ (S1) za odabir razine.
- ▶ Pritisnite tipku „Predodabrana razina“ (S1) za 4 sekunde za promjenu postavki.
- ▶ Zaslon prelazi na izbornik postavki motora.

Podešavanje brzine

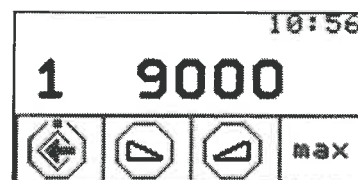
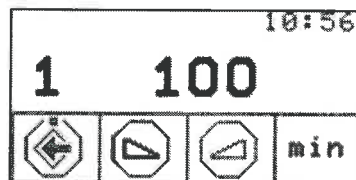
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Datum: 27.06.2016.



Napomena

Brzina se može podesiti na razini E samo nožnom papučicom. Brzina se ne može spremiti u razini E.

	Motor KL 701/KL 703	COMFORTdrive 200XD
Minimalno	100 rpm	30,000 rpm
Maksimalno	40,000 rpm	200,000 rpm



Izbornik postavki za minimalnu/maksimalnu brzinu



- ▶ Pritisnite tipku „min/max“ (S4) za prebacivanje između postavki izbornika za minimalnu i maksimalnu brzinu.



- ▶ Pritisnite tipku „Smanjenje vrijednosti“ za smanjenje brzine.

ili



- ▶ Pritisnite tipku „Povećanje vrijednosti“ za povećanje brzine.



- ▶ Brzina je prikazana na zaslonu.
- ▶ Pritisnite tipku „Spremi“ za spremanje vrijednosti. Možete spremiti nakon postavljanja svake vrijednosti, ili nakon postavljanja svih vrijednosti.
- ▶ Spremanje je potvrđeno zvučnim bipom.
- ▶ Ovime se zatvara izbornik „Postavke“.

Podešavanje razine hlađenja

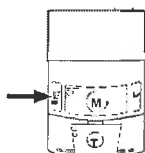
Zahtjev

Izbornik postavki za motor je odabran.



- ▶ Pritisnite tipku „Predodabrani sprej“.

ili



- ▶ Pritisnite nožni prekidač „Predodabrani sprej“.

- ▶ Zadane vrijednosti se spremaju za postavljanje zadane razine memorije i zadane stomatološke razine.

Tipka	Značajka
	LED ne svijetli: Nema hlađenja
	Jedna LED lampica svijetli: Stanje hlađenja zraka sprejem

Tipka

Značajka



Objekti LED lampice svijetle: Status hlađenja spreja



- ▶ Pritisnite tipku „Spremi“ za spremanje vrijednosti. Možete spremiti nakon postavljanja svake vrijednosti, ili nakon postavljanja svih vrijednosti.
- ▶ Spremanje je potvrđeno zvučnim bipom.
- ▶ Ovime se zatvara izbornik „Postavke“.

Podešavanje smjera rotacije motora



Napomena

Smjer rotacije motora može se mijenjati samo kada motor miruje.

Zahtjev

Izbornik postavki za motor je odabran.



- ▶ " Pritisnite tipku „Smjer rotacije motora“.

ili



- ▶ Pritisnite nožnu papučicu „Smjer rotacije motora“.



- ▶ Smjer rotacije motora se ukida svaki put kad je aktiviran unakrsni prekidač i/ili „Smjer rotacije motora“: rotacija suprotno od smjera kazaljke na satu - rotaciju u smjeru kazaljke sata.
- ▶ LED svijetli kada je postavljena rotacija motora suprotna od smjera kazaljke na satu.
- ▶ Pritisnite tipku „Spremi“ za spremanje vrijednosti. Možete spremiti nakon postavljanja svake vrijednosti, ili nakon postavljanja svih vrijednosti.
- ▶ Spremanje se potvrđuje zvučnim bipom.
- ▶ Ovo zatvara izbornik „Postavki“.

Promjena ultrazvučnog skidača kamenca PiezoLED u izborniku



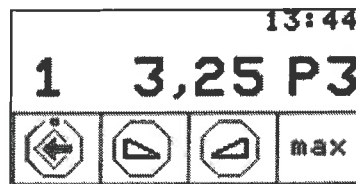
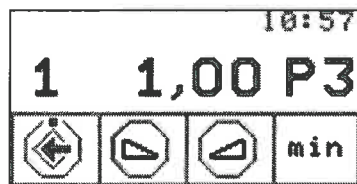
Napomena

Molimo da poštuju priložene „PiezoLED“ Upute za uporabu.

- ▶ Izvadite PiezoLED iz nosača.
- ▶ Kratko pritisnite tipku „Predodabrana razina“ (S1) za odabir razine.
- ▶ Pritisnite tipku „Predodabrana razina“ (S1) za 4 sekunde za promjenu postavki.
- ▶ Zaslona prelazi u izbornik postavki PiezoLED-a.

Podešavanje intenziteta

Intenzitet se postavlja u koracima od 0,25; minimalni intenzitet je 1,0, a najveći je 10.0.



Izbornik Postavke za minimalne/maksimalne jakosti



- ▶ Pritisnite tipku „min/max“ (S4) za prebacivanje između izbornika postavki za minimalni i maksimalni intenzitet u postavljenom načinu rada.



- ▶ Pritisnite tipku „Smanjenje vrijednosti“ da smanjite intenzitet.

ili



- ▶ Pritisnite tipku „Povećanje vrijednosti“ za povećanje intenziteta.

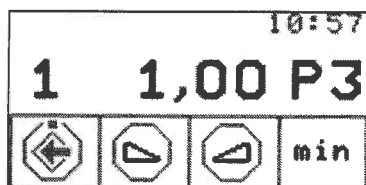
- ▶ Intenzitet je prikazan na zaslonu.

Definiranje načina rada (samo PiezoLED)



Napomena

Izbor načina ovisi o metodi liječenja i korištenom nastavku. Za više informacija o odabiru jednog načina rada, pogledajte „Operativni načini rada“ P1/P2/P3 i E odjeljak „PiezoLED Upute za uporabu“.



- ▶ Izvadite PiezoLED iz nosača.
- ▶ Pritisnite tipku „Način rad“ za odabir načina rada.
Načini rada P1/P2/P3/E su dostupni za odabir.



Postavljanje statusa hlađenja

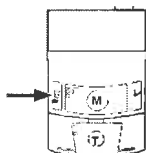
Zahtjev

Izbornik postavki za PiezoLED je izabran.



- ▶ Pritisnite tipku „Predodabrani sprej“.

ili



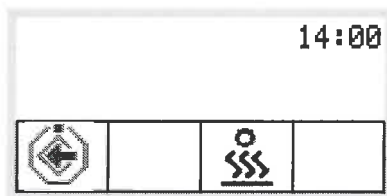
- ▶ Pritisnite nožni prekidač „Predodabrani sprej“.

Tipka	Značajka
	LED lampica nije uključena: Nema hlađenja
	Obje LED diode svijetle: Status hlađenja spreja



- ▶ Pritisnite tipku "Spremi" za spremanje vrijednosti. Možete spremiti nakon postavljanja svake vrijednosti, ili nakon postavljanja svih vrijednosti.
 - ▶ Spremanje se potvrđuje zvučnim bipom.
 - ▶ Ovime se zatvara izbornik „Postavki“.
- Promjena postavki višenamjenskog nastavka u izborniku**
- ▶ Kratko pritisnite tipku „Predodabrana razina“ za odabir razine.
 - ▶ Izvadite multifunkcionalni nastavak izvan nastavka.
 - ▶ Pritisnite tipku „Razina predodabira“ 4 sekunde kako bi se promijenile postavke.
 - ▶ Prikaz promjena u izborniku postavki višenamjenskog nastavka.

Podešavanje grijanja vode/zraka



Izbornik postavki za višenamjenski nastavak



- ▶ Podesite grijanje pomoću tipke „Grijanje vode/zraka“.

Simbol	Funkcija
	Grijanje vode/zraka“ uključeno"
	Grijanje vode/zraka“ isključeno



- ▶ Pritisnite tipku „Spremi“ za spremanje vrijednosti. Možete spremiti nakon postavljanja svake vrijednost, ili nakon postavljanja svih vrijednosti.
- ▶ Spremanje se potvrđuje zvučnim bipom.
- ▶ Ovime se zatvara izbornik „Postavki“.

4.7.4 Korištenje CONEXIOcom (izborno)



Napomena

Za pokretanje izbornika CONEXIOcom, nijedan nastavak se ne može ukloniti.



Napomena

Za sve CONEXIOcom funkcije, stomatološka jedinica mora biti spojena na instalaciju softvera KaVo „CONEXIO“.

Funkcija izbornika CONEXIOcom je za kontrolu prikaza prethodno snimljenih i spremljenih slika i videa. Da biste mogli koristiti funkcije, jedinica mora imati pristupe podacima KaVo „CONEXIO“ softvera. Za detalje o konfiguraciji pogledajte „CONEXIO“ upute za montažu.

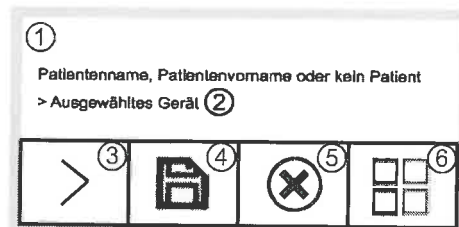
Otvaranje izbornika CONEXIOcom

Za prikaz postojeće slike, izvadite kameru s nosača. Odaberite odgovarajućeg pacijenta na računalu za tu svrhu. Također je moguće da se automatski prenese pacijent iz vašeg programa u CONEXIO. Za detalje o konfiguraciji, pogledajte „CONEXIO“ upute za montažu.

Ako nije odabran nijedan pacijent, prikazuju se slike iz međuspremnika. Ako je međuspremnik prazan, nije prikazana slika. Clipboard se automatski briše kada je pacijent odjavljen iz odgovarajuće računala.

Izbornik CONEXIOcom automatski se otvara za snimanje slika ili videa čim se uređaj (DIAGNOcam U, ERGOcam One) izvadi.

Za zatvaranje CONEXIOcom: Zamijenite aktivni uređaj.



Display CONEXIOcom

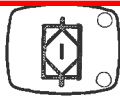
Br.	Ikona	Postavka
1	-	Info line Ova linija prikazuje aktivno ime pacijenta (ako je odabrano u CONEXIO) pod kojima su podaci dobiveni pohranjeni. Ako nije odabran nijedan pacijent, slike i video su pohranjeni u međuspremnik pod „Neraspoređeni pacijent“.
2		Ako je uređaj aktivan, tip uređaja je prikazan. Sljedeće se primjenjuje: DIAGNOcam U ERGOcam One
3	>	3 Sljedeća slika/video Da biste mogli učinkovito komunicirati s pacijentom, Zasebne slike se mogu odabrati i prikazati izravno. Ovo koristi sustav skroliranja koji je aktivan slijeva u desno i odozgo prema dolje.

Br.	Ikona	Postavka
4		Spremi sliku/video Pritisnite kratko - sprema odabranu sliku/video zapis. Pritisnite dugo - sve slike/video spremaju se u zamjensku ladicu. Ako nije odabran nijedan pacijent, slike ostaju u međuspremniku i ne mogu se trajno spremiti. Čim je pacijent odabran, ovi privremeni podaci u međuspremniku se brišu. Kada je aktivni pacijent odjavljen (ili novi pacijent prijavljen) u CONEXIO, upit se prikazuje koji zahtijeva hoće li slike biti spremljene ili pohranjene.
5		Odbaci slike/video Kratko pritisnite - briše odabrane slike/video Pritisnite dugo -sve slike/video u međuspremniku su izbrisani
6	 	Prikaz zaslona: Ovaj gumb mijenja prikaz na monitoru. Sljedeće postavke se mogu izmijeniti: 1/2/4/6 - broj slika prikazanih. Dinamička slika je uvijek prikazana kao zadnja slika u pregledu podjele

4.8 Korištenje funkcije putem jedinice za stomatologa ili asistenta

4.8.1 Korištenje higijenske funkcije

Sljedeće tipke su dostupne za higijenske funkcije:

Tipka	Naziv	Značenje	Kontrolni element
	"Punjač čaše"	Čaša se puni. - Vrijeme postavljanja se može namjestiti.	Element za stom. i element za asist./
	"Ispiranje posude"	Posuda se ispire. Vrijeme ispiranja se može postaviti. Izlazeći iz pozicije ispiranja (SP), posuda se ispire za puno radno vrijeme (funkciju može aktivirati servisni tehničar).	Element za stom. i element za asist /
	"Intenzivno smanjenje klica"	Funkcija za intenz. Smanjenje klica/ ispiranje Vidi također: 2 Upute za instaliranje	Element za asist /

2.9

2.10

Tipka	Naziv	Karakteristika	Kontrolni element
	"HYDROclean" tipka	HYDROclean funkcija	Element za asist./

Vidi također:
2 Upute za servisiranje

Sljedeće se odnosi na higijenske funkcije „Punjenje čaše“ i „Ispiranje zdjele“:

- ▶ Pritisnite tipku za aktiviranje funkcije.
- ▶ Pritisnite ponovno tipku za prekid funkcije.



Napomena

Metode pripreme mogu se pronaći u uputama za njegu.

Sljedeće postavke se mogu mijenjati::

- Vrijeme punjenja čaše
- Vrijeme ispiranja zdjele

Korištenje punjača čaše



- ▶ Pritisnite tipku „Punjač“ kratko za početak punjenja čašu.
- ▶ Započinje punjenje čaše, te onda prestaje nakon pohranjenog vremenskog razdoblja.
- ▶ Zadano = 5 s.
- ▶ On/off operacija nije podržana.
- ▶ Pritisnite tipku „Punjač čaše“ dulje od 4 sekunde za pokretanje načina programiranja.
Postavite vremensko razdoblje u koracima od 200 ms. Minimum: 0,4 s.
- ▶ Ako tipka ostaje pritisnuta, proteklo vrijeme se računa u 200 ms i akustički signal se izdaje svake sekunde.
- ▶ Kad se tipka pusti, trenutna vrijednost se pohranjuje.



Korištenje ispiranja zdjele

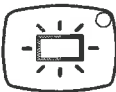


- ▶ Pritisnite tipku „Ispiranje zdjele“, kratko za početak ispiranja zdjele.
- ▶ Ispiranje se pokreće a zatim zaustavlja nakon spremljene vremenskog razdoblja.
- ▶ Zadano = 7 s. On/off operacija nije podržana.
- ▶ Pritisnite tipku „Ispiranje zdjele“ dulje od 4 sekunde za pokretanje načina programiranja.
Postavite vremensko razdoblje u koracima 200 ms. Minimum: 0,4 s.
- ▶ Ako tipka ostaje pritisnuta, proteklo vrijeme se računa u 200 ms i zvučni signal se čuje svake sekunde.
- ▶ Kad je ključ je pušten, trenutna vrijednost se pohranjuje.



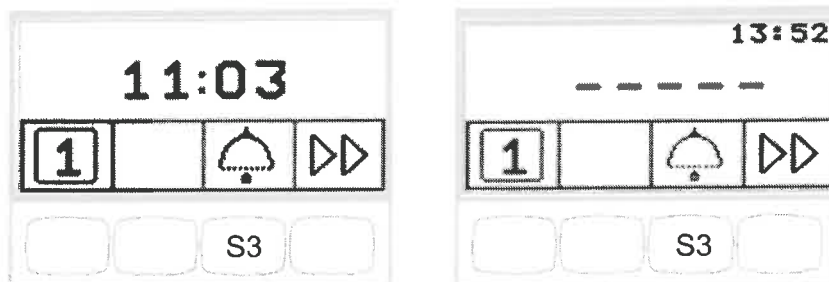
4.8.2 Korištenje svjetla i preglednika rendgenskih slika

Sljedeće tipke su dostupne za svjetlosne funkcije

Tipka	Značajka	Kontrolni element
	Paljenje/gašenje operativnog svjetla. On / Off.	Element za asistenta
	Paljenje/gašenje preglednika rendgenskih slika (dodatna oprema).	Element za stomatologa

4.8.3 Korištenje zvona (izvorno)

- ▶ Pritisnite tipku „S3“ (Funkcijska tipka „Zvono“) za aktiviranje releja zvona.
- ▶ Releji zvona aktivira tako se dugo dok je tipka pritisnuta.



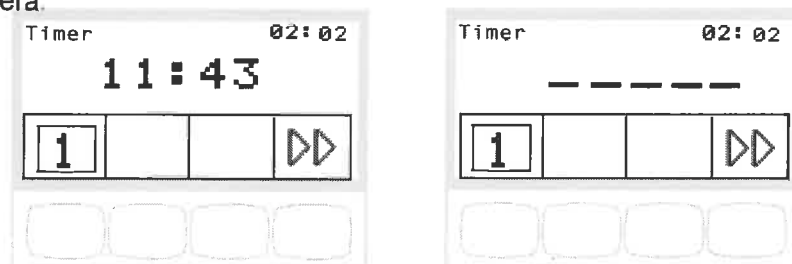
Tipka funkcije „Zvona“ bez MEMOSpeed /s MEMOSpeed

4.8.4 Korištenje tajmera



- ▶ Pritisnite tipku „Timer“ kratko za pokretanje ili zaustavljanje timera.
- ▶ LED treperi dok tajmer odbrojava.

Proteklo vrijeme se prikazuje na zaslonu u gornjem desnom kutu. Zvučni signal se izdaje nakon što je isteklo vrijeme timera.



Timer prolazi bez MEMOSpeed/s MEMOSpeed

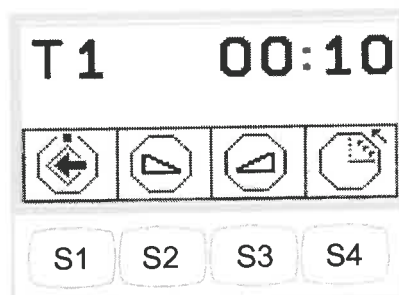
Podešavanje timera

Zahtjev

Izbornik mirovanja je izabran.



- ▶ Za postavljanje vremena tajmera (npr. Timer 1), pritisnite tipku „Timer“ sve dok ne čujete zvučni signal.
- ▶ Zaslon prelazi u izbornik postavki za vrijeme tajmera.



Tipka	Postavke
S1	Sprema parametre. Zatvara mod programiranja..
S2	Smanjivanje vrijednosti. S3 Povećavanje vrijednost.
S4	Mijenja funkciju brojača/tajmera. (Smjer brojanja)

4.8.5 Spremanje postavki nastavka (bez MEMOSpeed)

Sljedeće postavke se mogu pojedinačno: spremiti za instrumente::

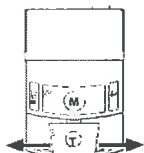
Nastavak	Postavka
Turbina	Brzina Predodabrani sprej
Motor INTRA LUX KL 701/703, COMFORTdrive	Brzina Smjer rotacije motora Predodabrani sprej
Ultrazvučni skidač kamenca	Sprej uključen/isključen Intenzitet
Višenamjenski nastavak	Grijanje uključeno/isključeno

* Samo s odgovarajućom postavkom u servisnom načinu rada

Postavljanje turbine

Podešavanje brzine

- ▶ Izvadite turbinu iz nosača..
- ▶ Za smanjivanje ili povećavanje brzine, pomaknite papučicu ulijevo ili udesno.



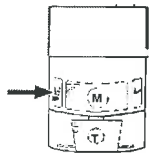
Napomena

Brzina nije prikazana na zaslonu i ne može spremiti.
Minimalna i maksimalna brzina ovisi o vrsti turbine koja se koristi.

Postavljanje statusa hlađenje

- ▶ Izvadite turbinu iz nosača.
- ▶ Pritisnite tipku „Predodabrani sprej“.





ili

- "Pritisnite nožni prekidač „Predodabrani sprej“.

Tipka	Značajka
	LED lampica ne svijetli: Nema hlađenja
	Jedna LED lampica svijetli: Status hlađenja zraka spreja
	Obje LED lampice svijetle: Status hlađenja spreja

Pohranite status hlađenja

1

- Pritisnite tipku „Save“ (S1) sve dok ne čujete zvučni signal.

Postavljanje motor



Napomena

Brzina nije prikazana na zaslonu i ne može se spremeniti.

Minimalna i maksimalna brzina ovisi o motoru koji se koristi i pričvršćenom nasadniku ili kolječniku.

Brzina, predodabir spreja se postavlja, a vrijednosti se spremaju na isti način kao i kod turbine.

Vidi također::

2 4.8.5.1 Postavljanje turbine, Str. 75

Podešavanje smjera rotacije motora



Napomena

Smjer rotacije motora može se mijenjati samo kada motor miruje.

- Izvadite motor s držača.
- Pritisnite tipku "Smjer rotacije motora"..

ili



- Pritisnite nožnu papučicu „Smjer rotacije motora“.
- Smjer rotacije motora se preokreće svaki put kad je unakrsni prekidač i/ili tipka „Smjer rotacije motora“ aktivira se: smjer rotacije obrnuto od smjera kazaljke na satu – rotacija u smjeru kazaljke na satu.
- LED svijetli kada je postavljena rotacija motora obrnuto od smjera kazaljke na satu.

1

Spremite smjer rotacije motora

- ▶ Pritisnite tipku „Save“ (S1) sve dok ne čujete zvučni signal.

Postavljanje ultrazvučnog skidača kamenca, PiezoLED i PIEZOsoft

Podesite intenzitet na isti način kao što se podešava brzina turbine.

Vidi također::

- 2 4.8.5.1 Postavljanje turbine, Str. 75

Odabir načina rada (PiezoLED jedini))



Napomena

Izbor načina ovisi o metodi obrade i vrha koji se koristi. Za više informacija o odabiru jednog načina rada, pogledajte „Vrste rada P1/P2/P3 i E odjeljak „PiezoLED Upute za uporabu“.

- ▶ Izvadite PiezoLED iz nosača.
- ▶ Pritisnite tipku „Mode“ za odabir načina rada..
Načini P1/P2/P3/E su dostupni za odabir.



Postavljanje višenamjenskog nastavka

- ▶ Izvadite višenamjenski nastavak iz držača.
- ▶ Podesite grijanje pomoću gumba „Grijanje vode/zraka.“



Simbol	Funkcija
	Grijanje vode/zraka uključeno
	Grijanje vode/zraka isključeno

Spremite status grijanja

1

- ▶ Pritisnite tipku „Save“ (S1) sve dok ne čujete zvučni signal.

4.9 Rad nožnog prekidača

4.9.1 Opće funkcije

Nožni prekidači nožnog upravljanja imaju dvije funkcije. Funkcija kontrole ovisi je li instrument u držaču ili je izvađen.

Vidi također:

- 2 Nožna kontrola

4.9.2 Pozicioniranje stolice za pacijenta nožnim upravljanjem

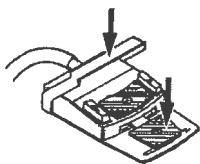
Vidi također::

- 2 Automatsko pozicioniranje stolice za pacijenta
- 2 Pozicionirajte stomatološku stolicu pomoću tipke za usmjeravanje ili 4-smjernog prekidača

4.9.3 Predodabir stomatologa

Zahtjev

Svi instrumenti su u nosaču.

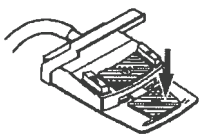


- ▶ Držite pritisnutu papučicu i pritisnite stremen.
- ▶ Svaki put kad se pritisne stremen, odabir se kreće prema sljedećem zubaru (Stomatolog 1 na 2).

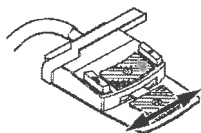
7.8

4.9.4 Pokretanje i reguliranje instrumenata

- ▶ Uklonite nastavke (kao što su turbine, motora) iz nosača.
- ▶ Nastavak je aktivan.



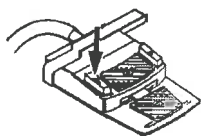
- ▶ Pritisnite nožnu papučicu.
- ▶ Uklonjeni nastavak radi pri zadanoj brzini ili intenzitetu.



- ▶ Mijenjanje brzina ili intenziteta papučicom.
- ▶ Lijevi graničnik odgovara minimalnoj brzini/intenzitetu.
- ▶ Desni graničnik odgovara maksimalnoj brzini/intenzitetu.

4.9.5 Podešavanje stanja hlađenja

- ▶ Izvadite nastavak (npr. turbina, motora) iz nosača.
- ▶ Nastavak je aktivan.



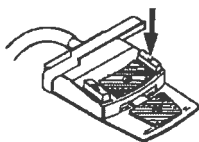
- ▶ "Pritisnite nožni prekidač „Predodabir spreja“.

- ▶ Status hlađenja se uključuje svaki put kada se pritisne nožni prekidač: špricanje zraka - spreja.
- ▶ Status hlađenja je prikazan na elementu za stomatologa.

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4.9.6 Aktiviranje puhanja zraka

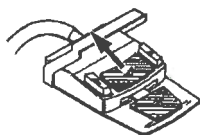
- ▶ Izvadite nastavak (kao što su turbine, motora) iz nosača.
- ▶ Nastavak je aktivan.



- ▶ Pritisnite nožno upravljaju tipku „Puhanje zraka“.
- ▶ Dok god je nožno upravljanja tipka pritisnuta puhanje zraka izlazi s uklonjene drške (ne odnosi se na PiezoLED).

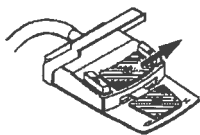
4.9.7 Predodabir rotacije motora u smjeru obrnutom od smjera kazaljke na satu

- ▶ Izvadite motor s nosača.
- ▶ Nastavak je aktivan.



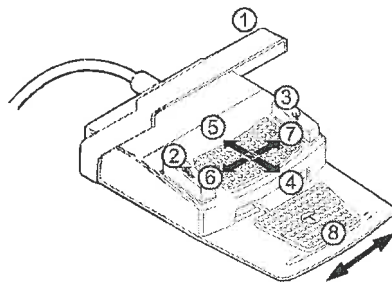
- ▶ Gurnite tipku za usmjeravanje prema gore.
- ▶ Smjer rotacije motora se obrće svaki put kad je aktivirana tipka za usmjeravanje: smjer rotacije obrnuto od smjera kazaljke na satu - smjer rotacije u smjeru kazaljke na satu.
- ▶ Smjer rotacije motora se prikazuje na elementu za stomatologa.

4.9.8 Podešavanje svjetla instrumenata



- ▶ Gurnite unakrsni prekidač u desno (funkcija reflektora).
- ▶ Hladno svjetlo uključeno.

4.9.9 Korištenje CONEXIOcom (dodatna opcija na temelju naknada)



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No	Postavka
①	Prekidač U-oblika Odbaci slike/video Kratko pritisnite - brisanje odabrane slike/videoa Dugo pritisnite - sve slike/videoa u međuspremniku se brišu
②	Prethodna slika/video Odabir prethodne slike/videoa
③	Sljedeća slika/video Odabir sljedeće slike/videoa
④	Prikaz zaslona Broj prikazanih slika (Podijeljeni prikaz) se smanjuje: Dinamičke slike su uvijek prikazane kao zadnja slika u podijeljenom prikazu.
⑤	Prikaz zaslona Broj prikazanih slika (Podijeljeni prikaz) se povećava: Dinamičke slike su uvijek prikazane kao zadnja slika u podijeljenom prikazu
⑥	Način snimanja Prebacuje se između načina snimanja, video snimanja i snimanje slike⑦ Prikaz zaslona Prebacivanje između prikaza preko cijelog zaslona i uobičajenog prikaza
⑧	Spremi sliku/video Pritisnite kratko - zamrzava dinamičku sliku. Pritisnite dugo - izravno sprema dinamičku sliku. Ako nije odabran nijedan pacijent, slike se pohranjuju izravno pod „dodijeljenog pacijenta“.



Napomena

Ako nije odabran nijedan pacijent, slike ostaju u „Zamjenskoj ladice“ i nisu spremljene trajno. Čim je izabran pacijent, ti privremeni podaci u „zamjenskoj ladici“ se brišu. Kada je aktivni pacijent odjavljen (ili novi pacijent prijavljen) u CONEXIO, upit se prikazuje s upitom hoće li slike izbrisati ili spremiti. Podaci izbrisani u ovom trenutku se ne može vratiti kasnije.

5 Metode pripreme DIN EN ISO 17664



Napomena

Metode pripreme mogu se pronaći u uputama za njegu.

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6 Pribor i oprema

6.1 Uređaj

Ime	Opis
Blok za vodu DVGW s integriranim sustav za smanjenje klica	Uz DVGW dozvolu i elektroničko praćenje razine punjenja spremnika za dezinfekciju.
Vodeni blok Compact 4.4	Bez DVGW dozvole. S filterom vode i zapornim ventilom.
Boca s vodom DVGW s vodenim blokom, Compact 4.6	S DVGW dozvolom. Sadrži punjač čaše i nasadni instrument vode koji je neovisan od vanjske opskrbe vodom, uključuje oksigenalni priključak za ručno doziranje tekućine za smanjenje klica u boci s vodom.
Čelična montažna ploča	Za instalaciju na lijevoj ili desnoj strani.
Spajanje opreme treće strane	Za spajanje ili opskrbu drugih uređaja, kao što je protok zraka kroz brze spojke.
Separator amalgama DÜRR CAS 1	Odobreni sastavi za separaciju amalgama sa separacijom većom od > 95%.
Separacija DÜRR CS1	Separacija pomoću kolektora krutih tvari. 4.10
Komplet kolektora krutih tvari	Kolektor krutih tvari iz otpadnih voda za mokri usis.
Vanjski usis	Usisavanje otpadne vode i mokro usisavanje zraka se povlači s centralne lokacije.
Vodena mlazna pumpa	Za izbacivač sline.
Operativno svjetlo EDI / KaVoLUX 540 LED T / MAIA LED	Operativno svjetlo.
Nosač ladice	Za ladicu malih nastavaka.
Grijač tople vode.	Zagrijava vodu iz čaše.
Niskotlačni regulator	Regulator za usisavanje zraka kad je usisni vakuum je previsoka.
Selektivni komplet za podršku	Uključuje izbacivač sline i/ili usisav. raspršene maglice.
Intenzivno smanjenje klica	Samo u kombinaciji s DVGW kompletom blok vode.
Potporni krak monitora	Potporni krak monitora je pričvršćena na montažni stup lampe ili Centro 1540.
Monitor	KaVo Screen One and KaVo Screen HD 1.25
Tablica servisiranja	Može se postaviti na postolje uređaja (verzija kolica)
Preglednik rendgenskih slika Röbi 1440	Za ugradnju na montažni svjetlosni stup.

6.2 Stomatološka stolica

Naziv	Opis
Naslon za ruku	Stolica pacijenta može biti opremljena s jednim ili dva naslonjača za ruke.
2-zglobni naslon za glavu s kotačićem	Kontrolirano kotačićem
2-zglobni naslon za glavu sa tipkalom	Kontrolirano tipkalom
Naslon	Pravilno držanje tijekom rada i optimalni pristup za stomatologa, posebice tijekom pedijatrijskih postupaka

6.3 Jedinica za asistenta

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Naziv	Opis
Satelec Mini LED	LED svjetlo za stvrdnjavanje.
Nastavak s tri funkcije	Višenamjenski nastavak sadrži zrak, voda, nema grijanja, i nema hladnog svjetla.
Višenamjenski nastavak	Višenamjenski nastavak sadrži zrak, vodu, grijanje, i hladno svjetlo.
Izbacivač sline, pogonjen vodom	S vodenom mlaznom pumpom.
Drugi izbacivač sline	Drugi komplet za izbacivanje sline se montira na kućište sita koje je uključeno u osnovnoj konfiguraciji.

6.4 Jedinica za stomatologa

Naziv	Opis
Multiflex LUX crijevo	Za spajanje turbine i SONICflex - i svih priključaka nastavaka na MULTIFLEX spojke.
Motor crijevo, COMFORTbase 404L COMFORTbase 404S	Za spajanje INTRA LUX motor KL 701, motor KL 703 LED, COMFORTdrive 200XD.
Komplet za montažu INTRA LUX motor KL 703 LED	Motor bez četkica sa svjetlom.
Komplet za montažu INTRA LUX motor KL 701	Motor bez četkica sa svjetlom.
KaVo COMFORTdrive 200 XD	Stomatološki nastavak za velike brzine u rasponu do 200.000 okretaja u minuti. Može biti pričvršćen samo na KaVo COMFORTbase spojku.
Nastavak s tri funkcije	Višenamjenski nastavak sadrži zrak, voda, nema grijanja, i nema hladno svjetlo.
Višenamjenski nastavak	Također dostupan kao "uspravna" verzija. Višenamjenski nastavak sadrži zrak, vodu, grijanje, i hladno svjetlo.
PiezoLED	Također dostupan kao "uspravna" verzija. Nastavak za uklanjanje zubnog kamenca s kompletima nastavaka, Skidač kamenca/Paro/Endo/Prep.
PIEZOsoft	nastavak za uklanjanje zubnog kamenca s kompletima vrhova skidača kamenca.
Preglednik rendgenskih slika 5x5	Za slike veličine 5 x 5 cm (instalirati na lijevoj ili desnoj strani elementa za stomatologa).
Grijač spreja za instrumente bez nastavaka	Grijač za grijanje sprej vode.
Držač ladice za standardnu ladicu/US ladicu/2x-standardnu ladicu	Standardna ladica, SAD ladica i/ili 2x standardna ladica (instalirati na lijevoj ili desnoj strani stomatološkog elementa).
ERGOcam One	Intraoralna kamera za dokumentaciju i komunikaciju s pacijentom.

1.25

7 Sigurnosne provjere – Upute za ispitivanje

7.1 Uvod

7.1.1 Opće upute



Napomena

Sigurnosne provjere mogu provoditi samo s električari (kako je definirano u IEC 61140) koji su primili odgovarajuću obuku uređaja koje treba provjeriti.



Napomena

Sadržaj i specifična ispitivanja u ovom dokumentu temelje se na međunarodnom standardu IEC 62353 (DIN VDE 0751-1). Ovaj standard se odnosi na testiranje i provjere medicinske električne opreme ili medicinskih električnih sustava koji su u skladu s IEC 60601-1 (DIN EN 60601-1).



Napomena

Kako bi se ocijenila sigurnost medicinskih uređaja, sustava ili komponenti medicinskih uređaja ili sustava, sigurnosne provjere moraju se provoditi u vrijeme navedeno u nastavku:

- ▶ Prije stavljanja u pogon
- ▶ Tijekom održavanja
- ▶ Tijekom pregleda i servisiranja
- ▶ Tijekom popravka
- ▶ Povodom povratnih testova



Napomena

S obzirom na uređaje koji nisu proizvedeni u skladu s IEC 60601-1 (DIN EN 60601-1), ti zahtjevi mogu se primijeniti uzimanjem u obzir obveznih sigurnosnih standarda za proizvodnju tih uređaja.



Napomena

Ako jedinica obuhvaća nekoliko električnih uređaja ili električnih uređaja od nekoliko proizvođača koji su priključeni na sustav KaVo stomatološke jedinice, podaci proizvođača sadržani u uputama za uporabu za sve proizvode a koji podliježu sigurnosnim kontrolama se moraju također poštivati.



Napomena

Pribor za uređaje koji bi mogli utjecati na sigurnost uređaja koji se ispituje ili na mjerene rezultate mora biti uključen u sve sigurnosne provjere.



Napomena

Svi testovi u pitanju koji uključuju sigurnosne provjere pribora mora biti dokumentirani.



Napomena

Nadalje, podaci proizvođača koji se nalaze u uputama za uporabu moraju se pridržavati za sve proizvode koji se ispituje i provjeravaju.



Napomena

KaVo isporučuje dnevnik medicinskih uređaja za vođenje inventara i evidentiranje bitnih glavnih podataka o medicinskom uređaju. Dnevnik medicinskih uređaja je dostupan samo na njemačkom jeziku (Mat. Br. 0.789.0480).



Napomena

Sljedeća ispitivanja i mjerenja moraju biti dokumentirana, na primjer, u dnevniku medicinskih uređaja. Preporučamo korištenje predložaka na kraju dokumentu.



Napomena

Ispitivanja se moraju provesti u redoslijedu koji je naveo proizvođač!

7.1.2 Napomene za medicinske električne sustave



Note

ME sustav je kombinacija pojedinih uređaja (kao što je definirao proizvođač), koji mora ispunjavati sljedeće uvjete:

- ▶ Barem jedan od tih uređaja mora biti medicinski električni uređaj.
- ▶ Uređaji moraju biti funkcionalno povezani, ili barem bi trebali biti spojeni primjenom višestruke utičnice.



Napomena

S ME sustavima, osoba odgovorna za sastavljanje sustava mora zajedno koristiti potrebne mjerne parametre i postupke mjerenja utvrđene u IEC 60601-1 (DIN EN 60601-1).



Napomena

Svaki pojedini uređaj u ME sustavu, koji ima poseban priključak na strujnu mrežu, i koji se može spojiti ili razdvojiti od strujne mreže bez alata, mora se provjeriti zasebno. Štoviše, ME sustav se mora provjeriti kao jedna cjelina kako bi se izbjegle situacije, u kojoj je "starenje" pojedinih uređaja može dovesti do neprihvatljivih vrijednosti.



Napomena

Ako je ME sustav ili dio sustava priključen na strujnu mrežu pomoću izolacijskog transformatora, transformator mora biti uključen u mjerenja.



Napomena

Ako je ME sustav ili dio sustava priključen na strujnu mrežu pomoću izolacijskog transformatora, transformator mora biti uključen u mjerenja.



Napomena

U ME sustavima, u kojima je više od jednog ME uređaja međusobno povezano putem podatkovnih linija ili na neki drugi način, npr. putem električki provodnih priključaka ili rashladnih cijevi, otpora uzemljenja svakog pojedinog uređaja mora se provjeriti.



Napomena

Ako bi bilo nemoguće provjeriti zasebne ME uređaje koji su funkcionalno povezani s ME sustavom pojedinačno iz tehničkih razloga, ME sustav je potrebno provjeriti u cjelini.

7.1.3 Osnovni dijelovi provjere sigurnosti

Vizualni pregled

Optička procjena sigurnosti i stanje medicinskog proizvoda i njihovog pribora

Mjerenja

- Mjerenje otpora uzemljenja u skladu s IEC 62353 (DIN VDE 0751-1)
- Mjerenje struje curenja iz uređaja EUL u skladu s IEC 62353 (DIN VDE 0751-1)
- Mjerenje struje curenja korisničkih dijelova u skladu s IEC 62353 (DIN VDE 0751-1)



Napomena

Mjerenje otpora izolacije u skladu s IEC 62353 (DIN VDE 0751-1) nije potrebno. Ova provjera je pokriven mjerenjima struje curenja koja osigurava sigurnosni tester u skladu s IEC 62353 (DIN VDE 0751-1) Dodatak C se koristi!!

Funkcionalno ispitivanje

Ispitivanje rada medicinskih uređaja, kao i testiranje svih sigurnosnih zaustavljanja u odnosu na prateću dokumentaciju/uputa za uporabu.

7.1.4 Intervali testiranja

- Interval testiranja svake 2 godine prema vrsti uređaja IIa (bez HF operacije)

7.1.5 Napomene o ispitnoj metodi, u skladu s IEC 62353

- Vrsta zaštite 1
- Tip BF
- Uređaj čvrsto priključen/prag: $SL < 0,3 \Omega$
- Mjerenje prema EUL/prag: $< 10 \text{ mA}^*$
- Mjerenje prema EGA/prag: $< 5 \text{ mA}$

* EUL prag je kompatibilan s vrijednostima definiranim u IEC 60601 (DIN EN 60601), uzimajući u obzir komentar 2 iz tablice 2.

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7.1.6 Napomene o ponovljenom ispitivanju



Napomena

Vrijednost određena u ovim testovima mora se dokumentirati i vrednovane zajedno s mjernim procesima. Izmjerene vrijednosti ne smiju prijeći navedene vrijednosti.



Napomena

Usporedbe s prethodnim mjerenjima moraju se provoditi iz izmjerenih vrijednosti, otpisuje vrijednosti praga za više od 10%. Ispitni intervali trebaju smanjiti ako je određeno pogoršanje vrijednosti!!

7.2 Upute za sigurnosne provjere

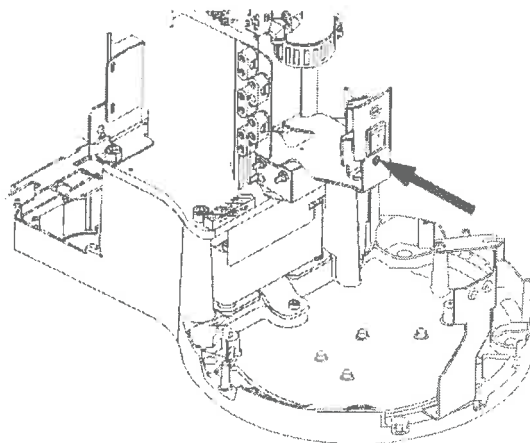
7.2.1 Pripremne mjere koje treba poduzeti na uređaju

⚠ UPOZORENJE

Električna energija.

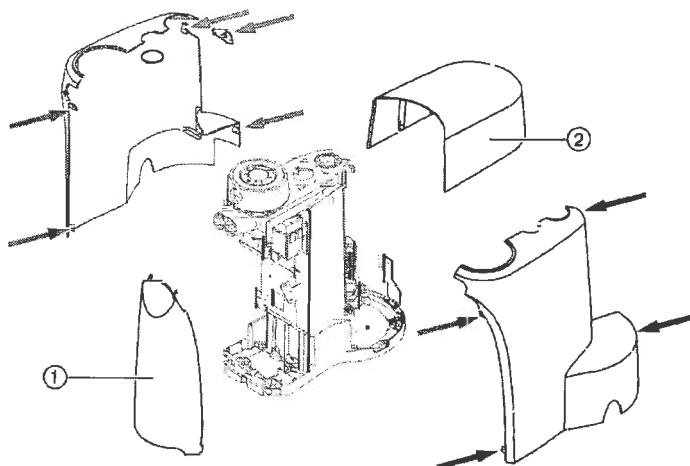
Smrt ili ozljede od strujnog udara.

- ▶ Prije servisiranja, izvucite mrežni utikač iz utičnice ili potpuno isključite uređaj iz izvora napajanja da spriječite električno djelovanje!
- ▶ Nakon pretvorbe, provjerite elektrotehničku sigurnosti u skladu s IEC 62353 (DIN VDE 0751-1).
- ▶ Isključite glavnu sklopku prije svakog servisa.
- ▶ Otpustite pričvrsni vijak na prekidaču glavnog nosača.



- ▶ Skinite poklopac ② u smjeru prema gore.
- ▶ Oslobodite stražnji poklopac ① dolje i uklonite ga.

- ▶ Odvrnite pričvrzne vijke (vidi: strelice) na omotača i skinite poklopce.



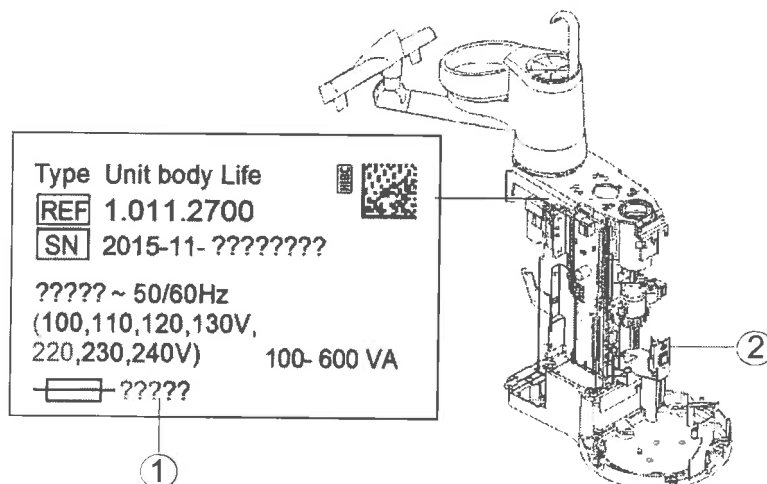
7.2.2 Vizualni pregled (inspekcija pregledom)

Provjerite sljedeće točke unaprijed:

- Je li oprema uređaja ME ili ME sustav je promijenjen od posljednjeg pregleda?
- Je li promjena dokumentirana i odobrena (test protokol, STK)?
- Postoje li naznake nedovoljne sigurnosti??

Provjerite klasu osigurača koji su dostupni izvana

- ▶ Provjerite da li je glavni osigurač na glavnom prekidaču ② jedinice u skladu s specifičnim nominalnim podacima ①.



Vizualna kontrola i procjena medicinskih uređaja i pribora

Sljedeći popis je primjer i nije mu namjera tvrditi da je potpun.

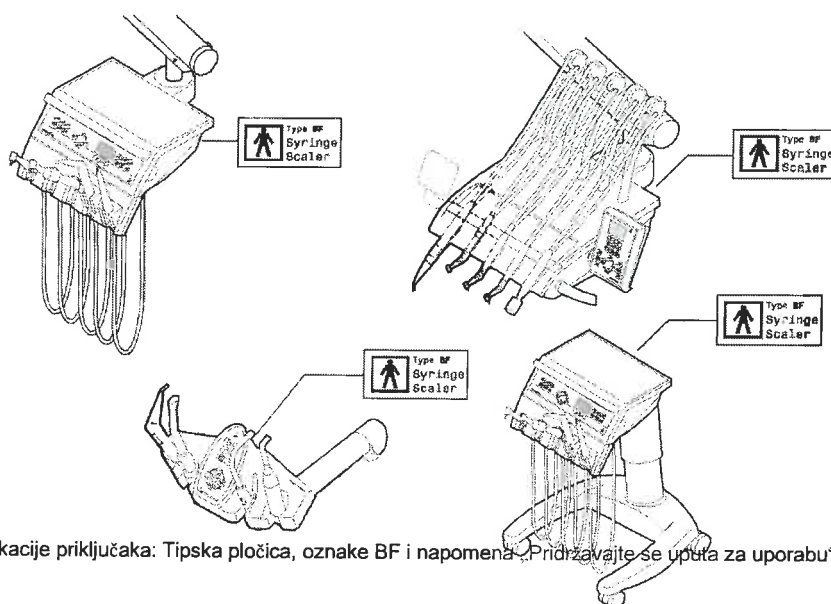
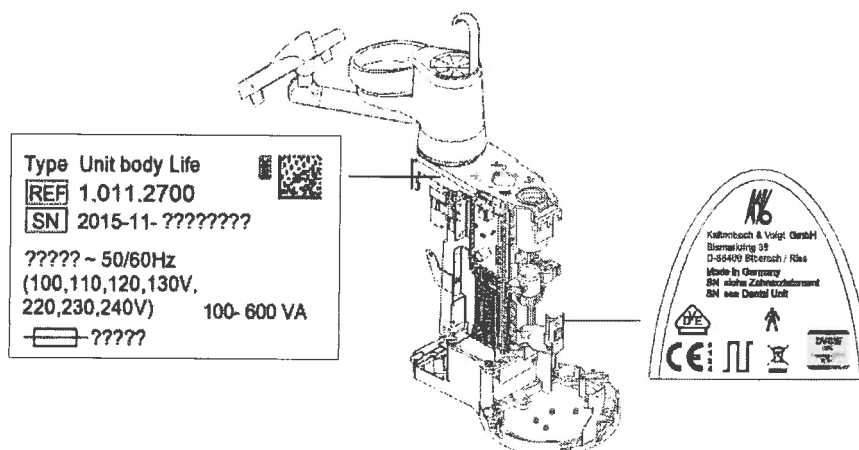
Provjerite sljedeće stavke:

- Stabilnost uređaja
- Nema oštećenja obloge ili kućište (pukotine, lom)

- Funkcioniranje sustava nosača na strani stomatologa ili asistenta, svjetiljka za liječenje i zaslon (kočnice, podešavanje visine, itd.)
- Stanje nastavka i usisnih cijevi
- Stanje svih instaliranih programskih dijelova
- Stanje kontrolne ploče
- Stanje navoja za ugradnju vrhova za nastavak ultrazvučnog skidača kamenca
- Stanje operativnog svjetla
- Nepostojanje curenja na tijelu uređaja
- Stanje elektroenergetskog priključka koji se nalaze na centru za liječenje
- Stanje priključaka zraka i vode
- Bilo koja oštećenja na preglednom prozoru i kućište ERGOcam kamere
- Datum isteka boce s vodom koja je postavljena u BS boci s vodom i dalje vrijedi

Provjera čitljivosti i cjelovitost naljepnica vezanih za sigurnost

- Provjerite jesu li prisutne i čitljive sve oznake koje se odnose na sigurnost (pločice i oznake).
- Provjerite je li prisutna i čitljiva nazivne pločice i serijski broj ploče.



Lokacije priključaka: Tipska pločica, oznake BF i napomena: "Pridržavajte se uputa za uporabu"

Kontrola dostupnosti potrebnih dokumenata

- ▶ Provjerite jesu li potrebne upute za korištenje i održavanje na raspolaganju.



Napomena

Bilo koje nepravilnosti utvrđene u vizualnim pregledom moraju biti upisane u ispitni protokol. Bitno je utvrditi da li manjkavosti i nedostaci mogu imati negativan utjecaj na siguran rad uređaja. Ako utvrđene nepravilnosti predstavljaju sigurnosnu opasnost i ne mogu se ispraviti izravno, jedinica mora biti isključena dok se ponovno ne uspostavi sigurnosni rad.

7.2.3 Sigurnosne mjere

UPOZORENJE

Opasnost za osobe zbog nedostatka njege tijekom sigurnosne provjere i ispitivanja.



- ▶ Prije spajanja centra za liječenje na pregledni prozor, odspojite ga iz napajanja vodovodne mreže.
- ▶ Izvršite sve sigurnosne provjere i ispitivanja na način koji će osigurati da neće biti nikakve opasnosti za osoblje za testiranje, pacijenata ili druge osobe.



Napomena

Sigurnosni ispitivač mora biti u skladu sa zahtjevima definiranim u IEC 62353 (DIN VDE 0751-1), Prilog C.



Napomena

Ako nisu napravljene nikakve druge specifikacije, sve vrijednosti koje se odnose na napon i struju su efektivne vrijednosti izmjeničnog napona, izravnog napona ili pulsirajućeg napona, izmjenične struje, istosmjerne struje ili pulsirajuće struje.



Napomena

Spajanje kablova kao što su podatkovni kabeli i kabeli za funkcionalno uzemljenje mogu simulirati zaštitne priključke vodiča. Ove vrste dopunskih ali nenamjernih zaštitnih uzemljenja mogu dovesti do pogrešnih mjerenja.



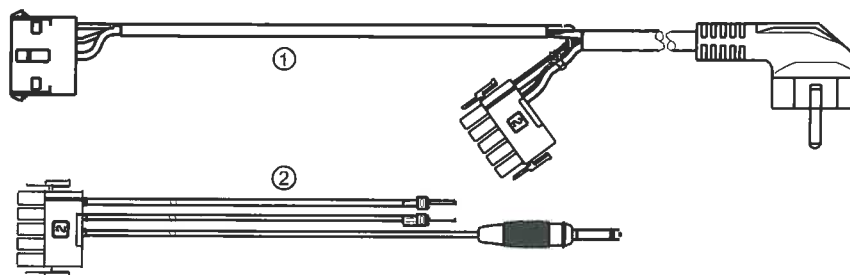
Napomena

Kabeli i žice, npr. kablovi napajanja, mjerni krugovi i podatkovne linije moraju biti raspoređeni na takav način koji će osigurati da njihov utjecaj na mjerenja bude ograničen na minimum.



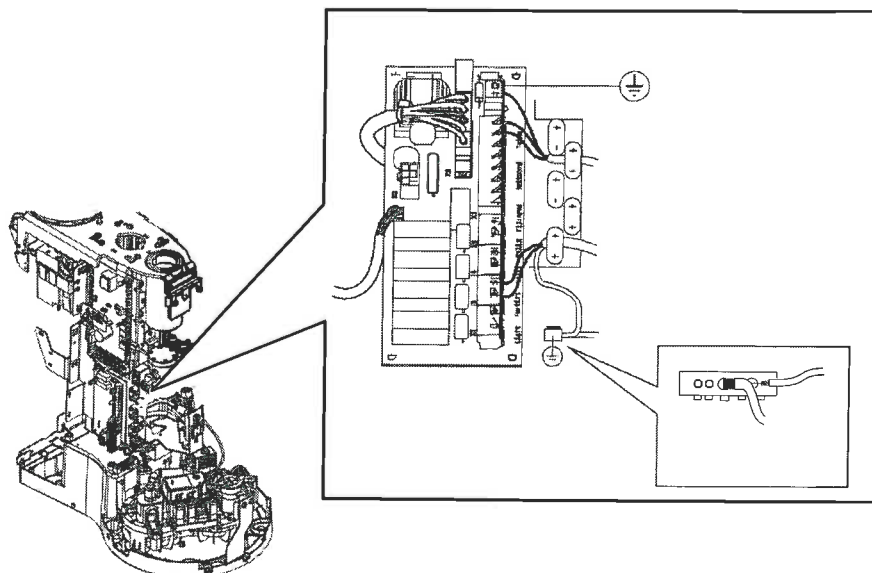
Napomena

Sljedeća pomoć za mjerenje se može naručiti: KaVo kabel za mjerenje (Mat br. 0.411.8811)



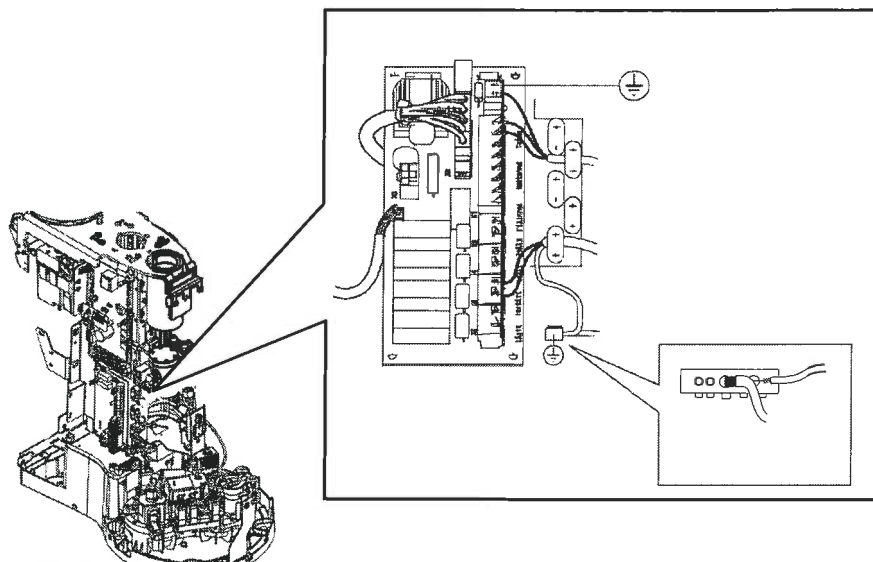
Koristeći kabel za mjerenje ① uređaj je isključen iz struje te je omogućeno priključivanje centra za liječenje na pregledni prozor. Dakle, korisnički osigurano napajanje L& N na ulaznoj ploči napajanja ne mora biti isključeno. Kabel adaptera ② je uključen u isporuku KaVo kabela za mjerenje i zahtijeva se za starije centre za liječenje koji nisu opremljeni s X2 priključkom.

Povezivanje sigurnosnog testera s Kavo kablovima za mjerenje na centar za liječenje



- ▶ Izvadite utikač X2 iz ulazne ploče napajanja i uključite u odgovarajući priključak X2 KaVo kabela za mjerenje (Mat. Br. 0.411.8811).
- ▶ Priključite drugi utikač X2 KaVo kabela za mjerenje u mrežnu karticu (x2).
- ▶ Umetnite zaštitni kontaktni utikač KaVo kabela za mjerenje u pregledni prozor.

Spajanje sigurnosnog testera bez KaVo kabela za mjerenje na centar za liječenje



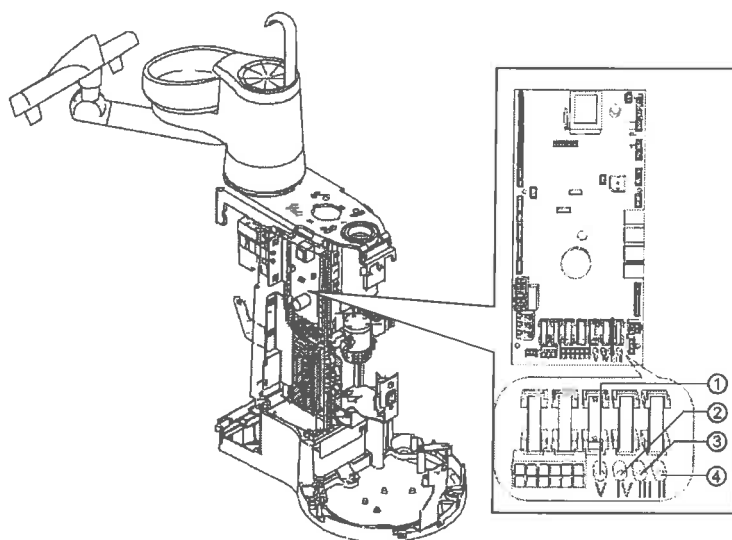
- ▶ Prebacite L + N kabel za napajanje na licu mjesta da bude bez napona.
- ▶ Isključite L + N na terminalima X1.1 i X1.2.
- ▶ Spojite sigurnosni tester izravno na terminale X1.1 (L) i X1.2 (N) i zaštitni terminal uzemljenja (PE).



Napomena

Glavna sklopka uređaja ME/ME sustava mora biti uključen tijekom mjerenja.

Spojite dijelove aplikacije [AP] na sigurnosni tester:



- ▶ Spojite ① do ④ sa sigurnosnim testerom.
- ▶ Spojite sigurnosni tester na točke mjerenja AP X.



Napomena

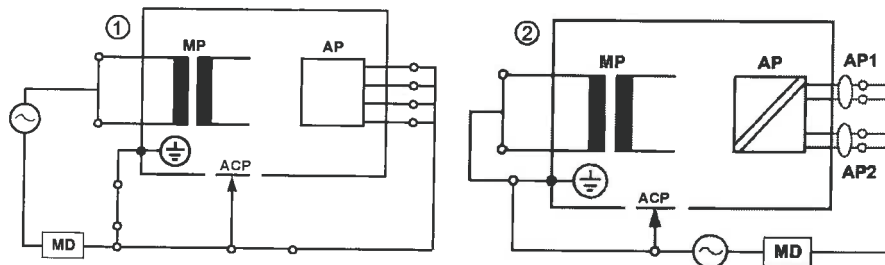
Dodatne točke mjerenja AP X se moraju uzeti u obzir u prisutnosti pribor: npr. pribor kao što su Piezo ultrazvučni skidač kamena itd.

Vidi također:

- 8 Prilog - Dodatne točke mjerenja, Stranica 105

Spojite dostupne vodljive dijelove [AKP] PE

ACP = dostupne vodljive dijelove



Napomena

Dodatne točke mjerenja ACP X se moraju se uzeti u obzir u prisutnosti pribora.

Vidi također:

- 8 Prilog – Dodatne točke mjerenja, Stranica 105

ACP na centru za liječenje

Nije potrebno da se ACP spoji na zaštitni vodič (PE) za vrijeme mjerenja na jedinici za liječenje, svi odgovarajući dijelovi su spojeni na PE i uključeni u test prije nego što napuste tvornicu.

ACP na lampama za liječenje

ACP ne treba biti spojen na lampe za liječenje tijekom mjerenja sa zaštitnim vodičem (PE), jer su svi relevantni dijelovi već povezani sa zaštitnim vodičem (PE) u tvornici te su uključeni u ispitivanje.

Izmjerite zaštitni otpor vodiča

Prag:

$< 0,3 \Omega$ (maksimalna vrijednost!)



Napomena

Integritet kabela za napajanje, naročito zaštitni kabel uzemljenja kabela za napajanje se mora osigurati. Budući da je to fiksna instalacija, evaluacija se može provesti pomoću vizualnog pregleda. Ako je određena šteta, daljnji postupak koji treba poduzeti je naveden u općim uputama.



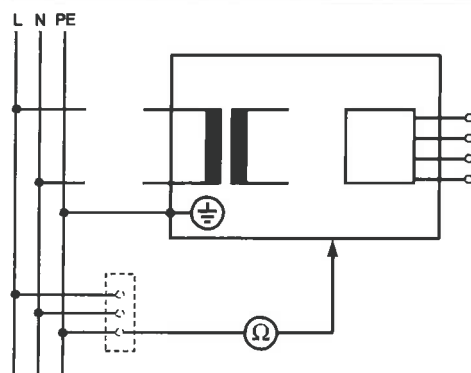
Napomena

U ovom mjerenju u obzir se može uzeti otpor zaštitnog uzemljenja mreže.



Napomena

Ako je primjenjivo: sve odvojive priključne vodove, koji su zadržani za korištenje, treba uzeti u obzir i izmjeriti odgovarajući PE.



Mjerenje zaštitnog uzemljenja

Otpor zaštitnog vodiča mora se mjeriti na sljedećim dijelovima uređaja::

- Centar za liječenje
- Lampa za liječenje
- Pribor



Napomena

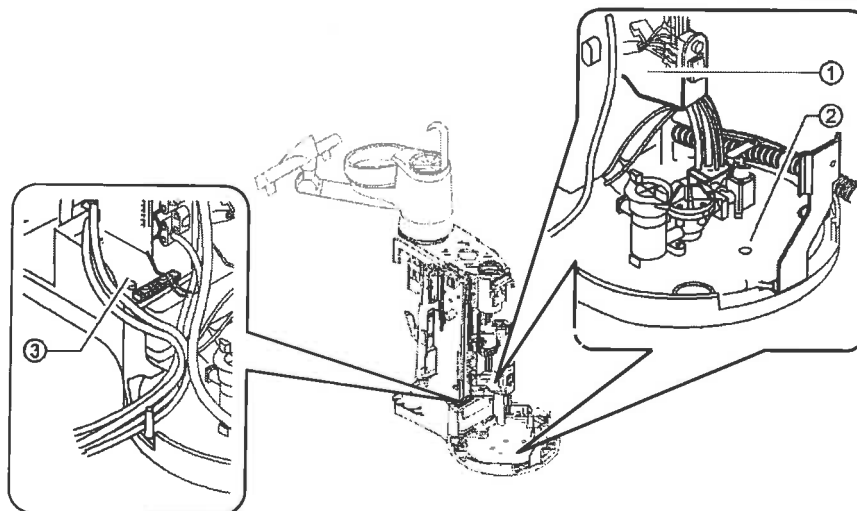
Dodatne točke mjerenja SL X treba uzeti u obzir u prisustvu dodatne opreme: npr. dodatni uređaji, kao što su priključak treće strane, USB priključak intraoralne kamere itd.

Vidi također:

- 8 Prilog - Dodatne mjerne točke, Stranica 105

Skenirajte centar za liječenje s vrhom za ispitivanje

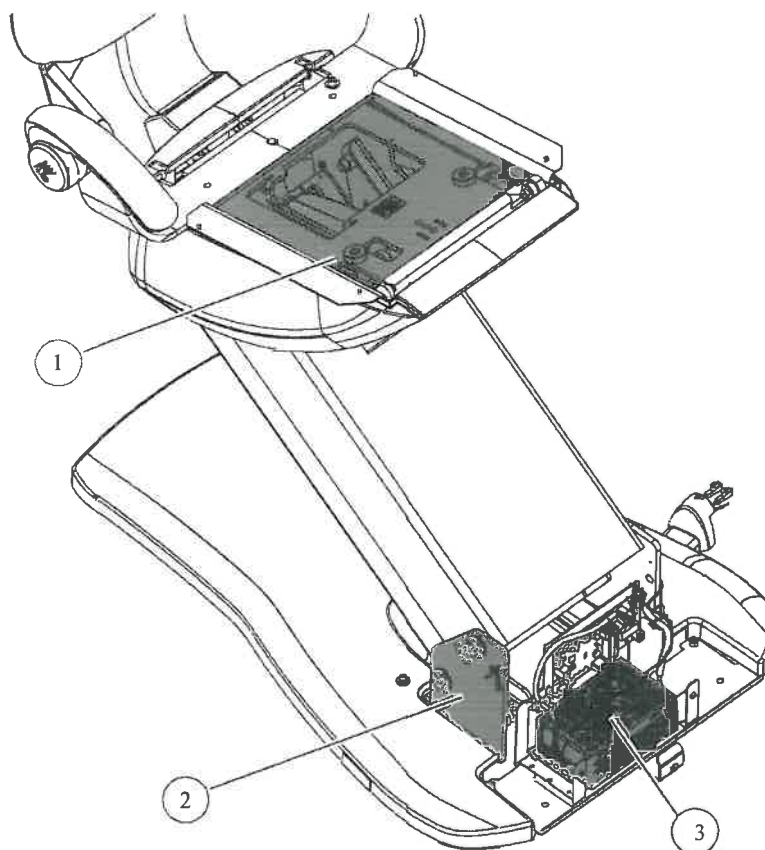
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Mjerne točke na bazi uređaja

- ① Ploča koja drži glavni prekidač
- ② Bazna ploča poklopca stalka
- ③ Okruženje priključka zaštitnog vodiča

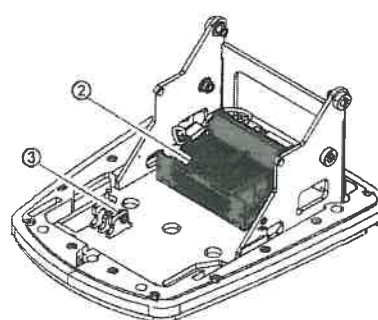
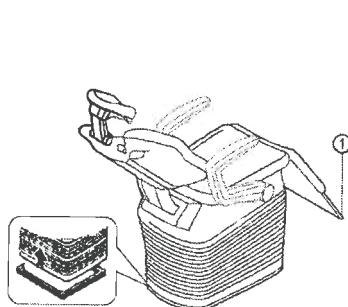
Skenirajte centar za liječenje s vrhom za ispitivanje



① Gornji dio stolice

② Osnovna ploča baze stolice

③ Prebacivanje napajanja



COMPACTchair measuring points

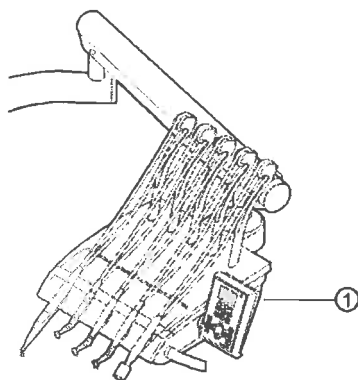
① Oslonac za noge

② Napajanje stolice

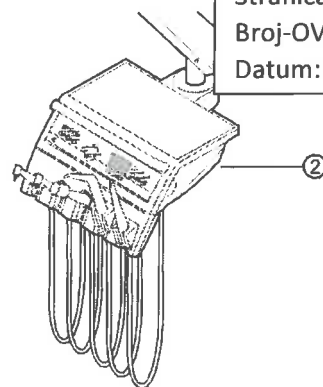
③ Osnovna ploča stolice

Skeniranje operativnog elementa s vrhom za ispitivanje

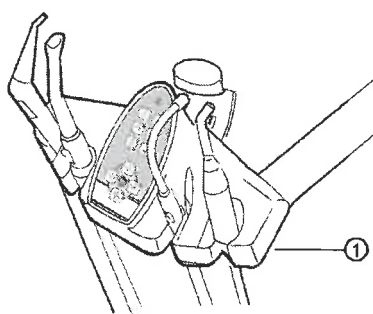
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Datum: 27.06.2016.



① Element za stomatologa: dno stola



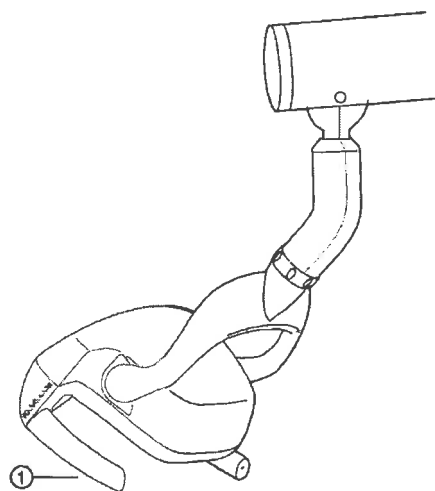
② Element za stomatologa TM: dno stola



① Element za asistenta: vijak za pričvršćivanje na dnu elementa za asistenta

Skenirajte lampu za liječenje s vrhom za ispitivanje

Operativno svjetlo KaVoLUX 540 LED U

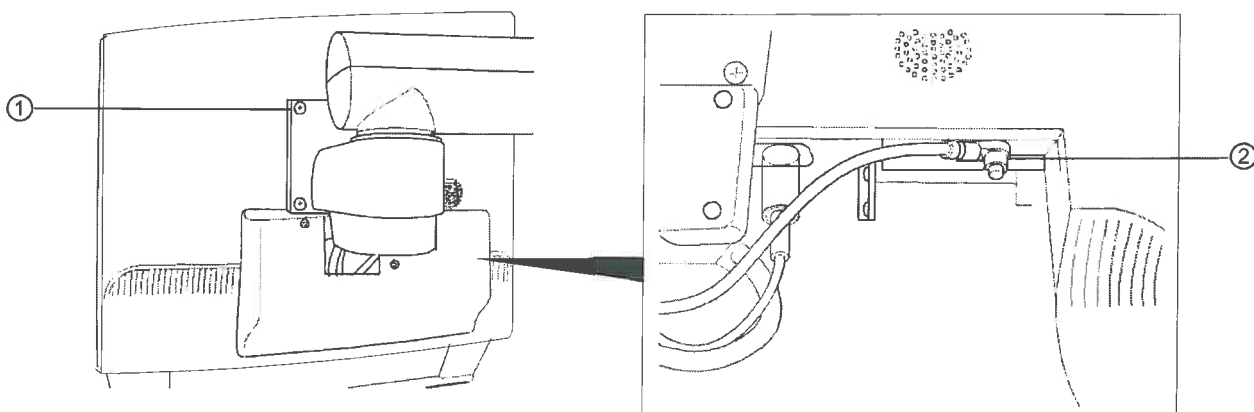


- ① Pričvrsni vijak oslonca ručke kada je zahvatni rukavac uklonjen.

Operativno svjetlo EDI/MAIA

Mjerne točke ne trebaju biti skenirani na operativnom svjetlu EDI i Maia.

Zaslon na dodir s vrhom za ispitivanje:



- ▶ Dodirnite mjernu točku ① s vrhom za ispitivanje.
- ili
- ▶ Uzorkujte mjernu točku ② nakon skidanja poklopca zaslona.

Izmjerite otpor zaštitnog vodiča pribora

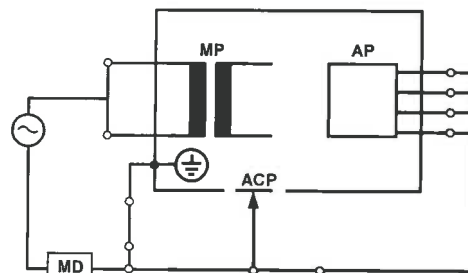
Vidi također:

2 8 Prilog - Dodatne mjerne točaka, Stranica 105

Izmjerite ekvivalentnu struju curenja uređaja

Prag:

< 10 mA (maksimalna vrijednost!)



Klasa zaštite 1



⚠ UPOZORENJE

Električna energija.

Smrt ili ozljede od strujnog udara.

- Provedite test za struju curenja na uređajima klase zaštite 1 tek nakon što provedeno ispitivanje zaštitnog uzemljenja.



⚠ UPOZORENJE

Električna energija.

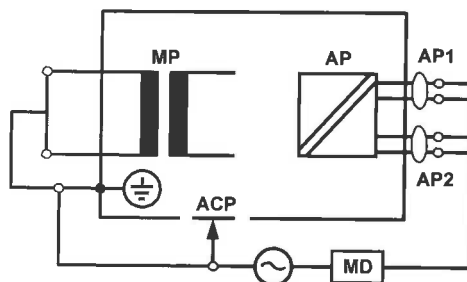
Smrt ili ozljede od strujnog udara.

- Prije spajanja centra za liječenje na kontrolni prozor, isključite jedinicu za liječenje s napajanja.

Izmjerite ekvivalentnu struju curenja uređaja

Prag:

< 5 mA (maksimalno)



Klasa zaštite 1



⚠ UPOZORENJE

Električna energija.

Smrt ili ozljede od strujnog udara.

- Provedite test za struju curenja na uređajima klase zaštite 1 tek nakon što provedeno ispitivanje zaštitnog uzemljenja.



⚠ UPOZORENJE

Električna energija.

Smrt ili ozljede od strujnog udara.

- Prije spajanja centra za liječenje na kontrolni prozor, isključite jedinicu za liječenje s napajanja.

**Napomena**

Pri ispitivanju ME uređaja s nekoliko aplikacijskih dijelova, dijelovi moraju biti spojeni u nizu. Izmjerene rezultate treba procijeniti pomoću vrijednosti praga. Aplikacijski dijelovi, koji nisu uključeni u mjerenje, ostaju otvoreni.

**Napomena**

Dodatno mjerenje struje curenja iz aplikacijskog dijela tipa B može se izvesti samo ako je to navedeno od strane proizvođača (vidi priložene dokumente).

**Napomena**

Zasebno mjerenje obično nije potrebno za dijelove aplikacije tipa B. Dijelovi aplikacija su spojeni na kućište (vidi dijagram) i uključeni u mjerenje struje curenja kućišta, pri čemu se primjenjuju iste pouzdane vrijednosti.

7.2.4 Funkcionalno ispitivanje

Sljedeći uvjeti moraju biti ispunjeni u svim funkcijskim testovima:

- Osnovna funkcija centra za liječenje mora biti zajamčena.
- Centar za liječenje mora biti prikladan za upotrebu.
- Ne smije pokazivati bilo kakve nepravilnosti, šum ili abrazije itd.

Sljedeći popis je primjer i njime se ne tvrdi da je potpun.

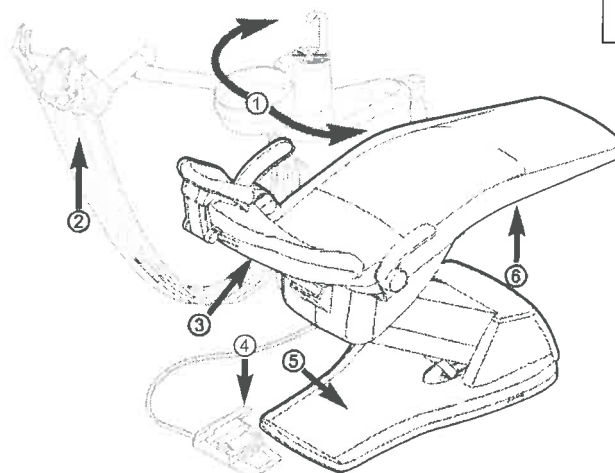
- Funkcionalni test sigurnosnih krugova (vidi dijagram ispod)
- Funkcioniranje glavnog prekidača uređaja
- Funkcioniranje zaslona
- Funkcionalni test nosača prekidača na elementu za stomatologa i asistenta
- Funkcionalni test 3F/MF nastavka - sjedište kanile
- Funkcionalni test operativnog svjetla
- Funkcionalni test usisnih crijeva
- Funkcionalni test nožne kontrole
- Funkcija stolice:
 - Kretanje u svim osima
 - Ispitivanje krajnjih prekidača
- Funkcionalni test ...

Stolica za pacijenta Standard

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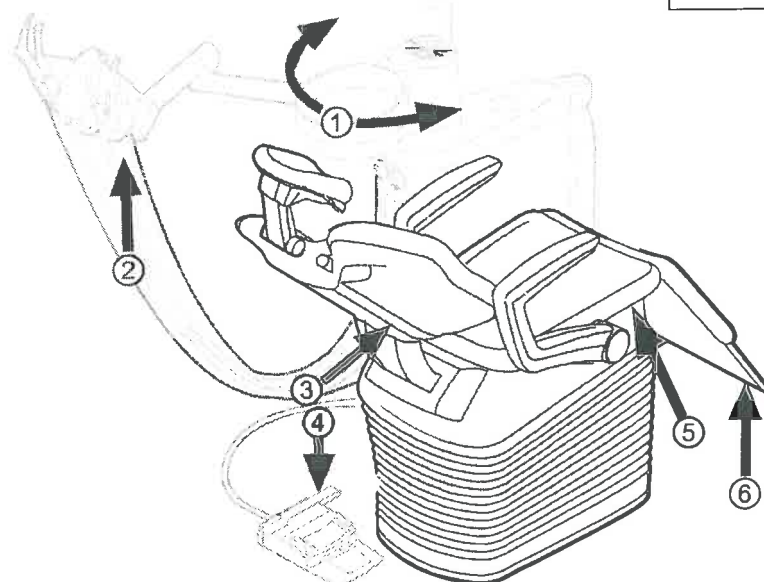


Sigurnosno isključenje za stolicu za pacijenta Standard

Stavka No.	Sigurnosno isključenje pokrenuto	LED na elementu za asistenta	LED na elementu za stomatologa
①	Jedinca pacijenta se prebaci preko stolice za pacijenta		
②	Element za asistenta		
③	Naslon		
④	Nosač na nožnoj kontroli		
⑤	Udar na ploču		
⑥	Sjedalo		

1.8

Stolica za pacijenta COMPACTchair



Sigurnosno isključenje za COMPACTchair stolicu za pacijenta

Ako osoba ili objekt aktivira sigurnosno isključenje, stolica automatski zaustavlja kretanje. Činjenica da je sigurnosno isključivanje aktivirano prikazano je odgovarajućim zaslonom koji treperi na elementu za stomatologa ili asistenta.

Stavka No.	Sigurnosno isključenje aktivirano	LED na elementu za asistenta	LED na elementu za stomatologa
①	Jedinica pacijenta se prebacuje preko stolice za pacijenta		
②	Element za asistenta		
③	Naslon		
④	Nosač na nožnoj kontroli		
⑤	Oslonac za klupu/jastuk sjedala		
⑥	Sklopivi dio sjedala		

7.2.5 Procjena i dokumentacija



Napomena

Svi testovi moraju biti dokumentirani i sveobuhvatni. Dokumenti moraju sadržavati najmanje sljedeće podatke:

- ▶ Naziv ispitnog centra
- ▶ Naziv ispitnog inženjera
- ▶ Naziv testiranih uređaja (npr. vrsta, serijski broj)
- ▶ Ispitivanja i mjerenja
- ▶ Podaci, vrsta i mjerni rezultati vizualne inspekcije
- ▶ Podaci, vrsta i mjerni rezultati
- ▶ Podaci, vrsta i mjerni rezultati funkcionalnih ispitivanja
- ▶ Oprema za mjerenje/ oprema za ispitivanje/uključujući i SN/broj testne opreme i Razdoblje kalibracije
- ▶ Konačna ocjena
- ▶ Naziv, datum i potpis testnog inženjera

Postoji predložak izvješća o ispitivanju na kraju poglavlja STK. KaVo preporučuje korištenje ovog predloška.



Napomena

Nakon ispitivanja, popravka ili podešavanja, mora se provjeriti jesu li ME oprema ili ME sustav vraćeni u stanje koje je potrebno za namjeravanu uporabu prije nego što se još jednom koristi.



Napomena

Ako nije utvrđena sigurnost ispitivane ME opreme ili ME sustava, npr. ispitivanja nisu završena s pozitivnim rezultatima, oprema ili sustavi moraju biti označeni u skladu s tim a potencijalna opasnost koja proizlazi iz opreme ili sustava mora biti isporučena u pisanom obliku nadležnoj organizaciji (operatoru u pravilu). Ova akcija nije potrebna ako se uzrok kvara može odrediti i ispraviti. Kvar se mora upisati u protokolu.



KaVo. Dental Excellence.

Test protocol - Safety check [SC]

Operator	Testing organisation
	Name of the test engineer

☐ Test before start-up

Date of testing:

☐ Recurrent test☐ Test after repair

Manufacturer:

Device:

Serial number:

Ident. no.:

next recurrent test required in

6	12	18	24
---	----	----	----

 months

Test in accordance with:

IEC 62353

Protection class:

Power connection:

Application part type:

I	II
fixed connection	
B	BF

Measuring equipment used:

Make:

Type:

Test:

Visual inspection:

Measurements:

Measured value

Protective conductor resistor

Equivalent unteakage current I_{UL} (according to figure 3)Equivalent patient leakage current I_{PL} (according to figure 6)

Insulation resistance

Functional test (according to manufacturer instructions)

passes test	
yes	no
☐	☐
☐	☐
☐	☐
☐	☐

Defect / Comment / Assessment

Overall assessment:☐ No safety or functional defects detected☐ No immediate risk, detected defects can be remedied in the short term.☐ Device must be taken out of commission until defects are remedied☐ Device fails to meet requirements. Modification / replacement of components / Withdrawal from service recommended.

Date / Signature

8 - Dodatna mjerna mjesta

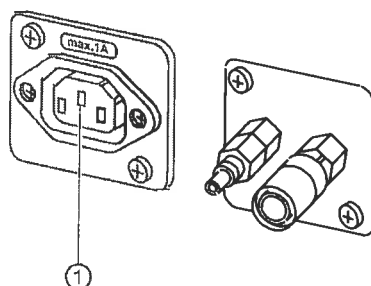


Note

S obzirom na pribor koji nije naveden ovdje, specifikacije relevantnih uputa za uporabu se moraju poštivati.

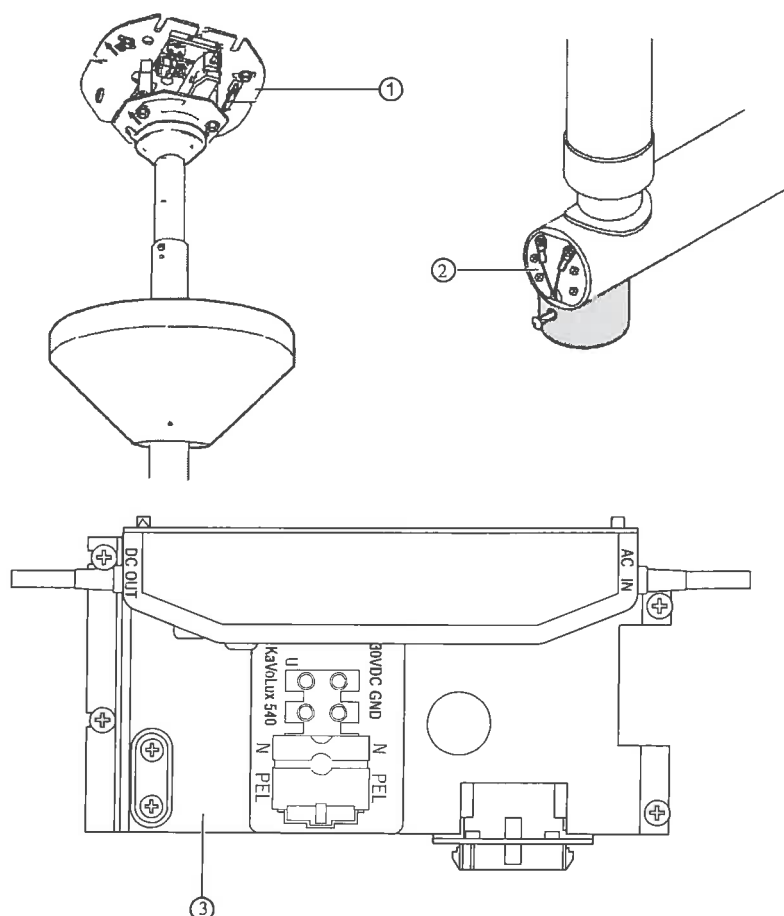
8.1 Dodatne mjesta skeniranja SL X u mjerenju zaštitnog vodiča

Spajanje opreme treće strane



- Pozicionirajte vrh za ispitivanje na srednjem kontaktu①.

Stropni adapter za komplet montaže operativnog svjetla



- ① Osnovna ploča za stropni adapter ② Okruženje priključka zaštitnog vodiča
③ Okruženje terminala zaštitnog uzemljenja

8.2 Dodatna mjerna mjesta AP X za Eul/EPL mjerenja

Skenirajte Piezo ultrazvučni skidač kamenca s ispitnom sondom



Napomena

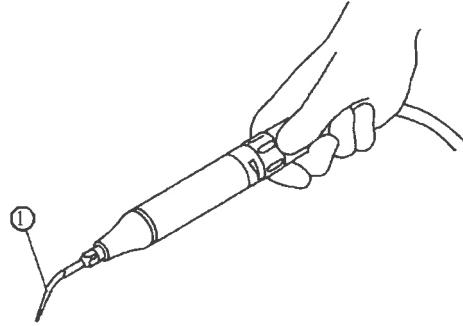
Mjerne točke moraju biti priključene na sljedeće ultrazvučne skidače kamenca:

- PiezoLED Ultrazvučni skidač kamenca

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Prezentacija mjerne točke na PiezoLED ultrazvučnom skidaču kamenca

- ① Ispitna sonda na vrhu ultrazvučnog skidača kamenca u nastavku ultrazvučnog skidača kamenca



Napomena

Prekidač na nastavku mora biti aktiviran tijekom mjerenja EPA



Napomena

Dodatne mjerne točke AP X treba uzeti u obzir u prisustvu dodatne opreme: npr. ako su spojeni uređaji trećih strana, kamere multimedijjskih sustava itd.

8.3 Dodatna mjesta priključaka ACP X (dodatna uzemljenja)



Napomena

Fiksni priključci od ACP do PE terminala se moraju uspostaviti za EUL i EPL mjerenja. To se može postići mjernim kabelom i priključnim terminalima.

9 Rješavanje problema



Napomena

U slučaju kvara, pogledajte zasebne upute za uporabu i njegu pojedinih instrumenata (kao što su turbine, motor, kamere, Satelec Mini LED, itd.).

Kvar	Uzrok	Pomoć
Ništa ne radi.	Glavni prekidač je isključ. Glavni servisni prekidač prekinuo struni krug.	▶ Uključite glavni prekidač. ▶ Isključite uređaj iz struje. ▶ Provjerite i zamijenite, ako je potrebno, glavni servisni osigurač. Glavni servisni osigurač se nalazi pored glavnog prekidača. ▶ U tu svrhu otvorite bajonet zatvarač pomoću odvijača i zamijenite osigurač finih žica. (220, 230, 240 V AC: T 6,3 H Mat. no. 0.223.2783); (100, 110, 120, 130 V AC: T 10 H Mat. no. 1.007.2529). ▶ Ponovno zatvorite bajonet zatvarač s odvijačem.
Stolica za pacijenta se ne miče	Sigurnosno isključenje je aktivirano. (LED na upravljačkoj ploči treperi.)	▶ Provjerite sigurnosno isključenje i eliminirajte razlog za isključivanje.
Zaslon bez pokazatelja.	Greška sabirnice/ hardvera.	▶ Isključite i uključite uređaj. ▶ Nazovite servisera da pogleda problem, ako on i dalje postoji.
Nema funkcije na operativnom uređaju	Greška sabirnice/ hardvera. Greška hardvera.	▶ Isključite i uključite uređaj. ▶ Nazovite servisera da pogleda problem, ako on i dalje postoji. ▶ Zaustavite rad i pozovite servisera
Nekoliko nastavaka je istovremeno aktivirano. LED na "AP1" tipki treperi (Element za stomat.) LED na "AP2" tipku treperi (Element za asistenta)	Podatkovna veza na elem. za asist. je neispravna. Podatk. veza na kontroli stolice je neispravna.	▶ Pozovite servisera. ▶ Pozovite servisera.
Turbina proizvodi glasan zvuk.	Kotač turbine neispravan.	▶ Zamijenite kotače turbine. ▶ Slijedite upute za rad turbine.
Satelec Mini LED Ne radi.	Također pogledajte: Upute za uporabu za Satelec Mini LED	▶ Također pogledajte: Upute za uporabu za Mini LED

Kvar	Uzrok	Pomoć
Nema hladnog svjetla na nastavku	Visokotlačna lampica ili Multi LED na nastavku je u kvaru.	▶ Zamijenite visokotlačnu lampu ili Multi LED.
Nema funkcije grijanja na višenamjenskom nastavku.	Grijanje spreja nije predodabrano.	Vidi također: 2 Upute za uporabu nastavka
Nema hladnog svjetla na višenamjenskom nastavku.	Funkcija grijanja je predodabrana.	▶ Predodaberite grijanje spreja.
Nema spreja u instrumentima.	Sprej nije predodabran.	▶ Poništite funkciju grijanja (i odaberite ga opet, ako se primjenjuje).
	Zatvorite prsten za kontroliranje spreja instrumenata.	▶ Predodaberite sprej. ▶ Otvorite prsten za kontrolu spreja na instrumentima.
Sprej na instrumentima je nedovoljan.	Mlaznice spreja su prijavle/začepljene.	▶ Očistite mlaznice za prskanje sukladno popratnim uputama za rad instrumenata. ▶ Zamijenite O-prstene.
Curenje u instrumentima.	O-prsteni na MULTIFLEX ili spojka motora, zahvatnom rukavcu ili kanili nastavka s tri funkcije su oštećeni.	▶ Također pogledajte: Upute za uporabu PIEZOsoft/PiezoLED
PiezoLED ili PIEZOsoft bez funkcije.	PiezoLED ili PIEZOsoft se zakreće.	▶ Otvorite klizače.
Usisne cijevi nemaju usis.	Klizači na konusnom sekcijama su zatvoreni.	▶ Zamijenite sita.
	Sita u usisnom priključaku su začepljena.	▶ Oslobodite udarnu ploču stolice.
	Udarna ploča stolice se aktivira.	▶ Zamijenite sve O-prstene na MULTIFLEX spojka.
Voda u povratnom filteru zraka.	O-prstenovi MULTIFLEX spojke su oštećeni.	▶ Zamijenite spremnik amalgama.
Čuje se melodija.	Separator amalgam	▶ Također pogledajte: Upute za uporabu za CAS 1 ili ▶ Pozovite servisnog tehničara.
	CAS1 je gotovo pun (95%).	
	CAS1 separator	
Deset zvučnih signala se čuje.	amalgama je u kvaru.	▶ Zaustavite punjenje Oxygenal spremnika.

Kvar	Uzrok	Pomoć
Bip se oglašava svakih 10 sekundi. LED na tipki „Intenzivno smanjenje klica“ treperi (zeleno). (Element za asistenta) MEMOSpeed/MEN prikazuje pogrešku. LED na „HYDROclean“ tipki treperi (crveno).	Oxygenal spremnik je prazan	▶ Ponovno napunite Oxygenal spremnik. Vidi također: - Upute za servis
ERGOcam ne radi.	Kvar separatora amalgama.	▶ Pozovite servisera. ▶ Primijetite obavijest upozorenja separatora amalgama. Također pogledajte: upute za uporabu separatora amalgama ▶ Pozovite servisera.
Nema prijenosa podataka na multimedijski izbornik jedinice.	Isključenje ventila posude u slučaju nužde (samo kada je instalirano vanjski usis)	▶ Uključite računalo. ▶ Pazite da duljina kabela ne prelazi 10 m (2 x 5 m pasivni s pojačanjem). ▶ Obavijestite administratora mreže.
Slika kamere prikazuje samo kao crno/bijele slike.	Računalo je isključeno. USB kabel predug.	▶ Ponovno pokrenite CONEXIO računalo..
Slika kamere se smrzava bez otpuštanja tipke ili pokretanja nožne kontrole.	Nepostojeći ili neispravan Ethernet priključak između stomatološke jedinice i uredsku mrežu.	▶ Zamijenite kameru u držaču, a potom ju izvadite ponovno.
Slika kamere se ne vraća na dinamičke slike.	Električna ili elektromagnetska smetnja od drugih uređaja.	
Slika kamere se smrzava bez otpuštanja gumba ili pokretanja nožne kontrole.	Električna ili elektromagnetska smetnja od drugih uređaja.	▶ Ponovno pokrenite softver.
Ponovno vađenje kamere nije riješilo problem.		
Slika kamere se smrzava bez otpuštanja gumba ili pokretanja nožne kontrole.	Električna ili elektromagnetska smetnja od drugih uređaja.	
Monitor se sam isključuje.		▶ Ponovno pokrenite jedinicu za liječenje i CONEXIO računalo.
Oxygenal spremnik je prazan. Monitor se sam isključuje.	Električna ili elektromagnetska smetnja od drugih uređaja.	

Kvar	Uzrok	Pomoć
Zvučni signal je čuje svake sekunde.	Prekidač curenja vode prepoznaje curenje vode.	▶ Uklonite vodu iz tijela jedinice. Ako je potrebno, pozovite tehničara da otkloni curenja.
Kvar	Uzrok	Pomoć
Zaslon prikazuje: ID 33	Nema CAN čvora i/ili je interna komunikacija u kvaru.	▶ Pozovite servisnog tehničara.
Zaslon prikazuje: ID 64	Voda je isključena. Voda učestalo curi.	▶ Uključite vodu. ▶ Pozovite servisera.
Zaslon prikazuje: ID 65	Kvar rada vode.	▶ Uključite vanjsko usisavanje.
Zaslon prikazuje: ID 66	Sigurnosni prekidač usisa posude je dosegnut.	▶ Provjerite i očistite ventil posude, ako je potrebno. ▶ Otklonite kvar.
Zaslon prikazuje: ID 67	Kvar funkcije amalgama separatora	2 Upute za uporabu separatora amalgama ▶ Ponovno napunite Oxygenal spremnik.
Zaslon prikazuje: ID 68	Oxygenal spremnik je prazan.	Vidi također: 2 Upute za servis ▶ Obavite servis. ▶ Pozovite servisera. ▶ Provedite intenzivnu redukciju klica.
Zaslon prikazuje: ID 69	Pozovite servisera	Vidi također: 2 Upute za servis ▶ Zamijenite Dekaseptol.
Zaslon prikazuje: ID 70	Intenzivno smanjenje klica mora biti učinjeno.	Vidi također: 2 Upute za servis ▶ Zamijenite Dekaseptol.
Zaslon prikazuje: ID 72	Dekaseptol prazan.	Vidi također: 2 Upute za servis ▶ Stavite DEKASEPTOL boca..
Zaslon prikazuje: ID XX	Dekaseptol boca..	Vidi također: 2 Upute za servis ▶ Stavite DEKASEPTOL boca..
Zaslon prikazuje: CAN	Ova greška nije opisana u ovom poglavlju.	Vidi također: 2 Upute za održavanje ▶ Pozovite tehničar.
Zaslon prikazuje:	Greška interne komunikacije.	▶ Isključite i uključite uređaj ponovno, obratite se servisnom tehničaru prema potrebi.
Zaslon prikazuje:	Jedinica ne radi.	▶ Pozovite servisera.

10 Podaci o elektromagnetskoj kompatibilnosti prema normi EN 60601-1-2

Stranica 112 od 118

Broj-OV: 0399/2016

Datum: 27.06.2016.

10.1 Elektromagnetski prijenosi

Jedinica za liječenje je dizajnirana za rad u okruženju kao što je navedeno u nastavku. Kupac ili korisnik bi trebao osigurati da se uređaj koristi u okruženju određenog tipa.

Mjerenja emitirane smetnje-	Sukladnost	Elektromagnetsko okruženje - smjernice
HF emisija prema CISPR 11	Grupa 1	Uređaj koristi HF energiju isključivo za svoje interne funkcije. Stoga, HF emisija uređaja je vrlo niska a smetnja susjednih elektroničkih uređaja je malo vjerojatna.
HF emisija prema CISPR 11	Klasa B	Uređaj je pogodan za korištenje u svim objektima, uključujući stambene objekte i objektima koji su izravno priključeni na javno napajanje koje također napaja stambene zgrade.
Emisija harmonika prema EN 61000-3-2	Klasa A	Uređaj je pogodan za korištenje u svim objektima, uključujući stambenim objektima i objektima koji su izravno priključeni na javno napajanje koje također napaja stambene zgrade.
Emisija kolebanja napona / treperenje prema / EN 61000-3-3	Zadovoljava	Uređaj je pogodan za korištenje u svim objektima, uključujući stambenim objektima i objektima koji su izravno priključeni na javno napajanje koje također napaja stambene zgrade.

10.2 Otpornost na elektromagnetske smetnje

Jedinica za liječenje je dizajnirana za rad u okruženju kao što je navedeno u nastavku. Kupac ili korisnik bi trebao osigurati da se uređaj koristi u okruženju od određenog tipa.

Ispitiv. otpornost na smetnje EN 60601 razina ispit.	Razina sukladnosti	Elektromagnetsko okruž. smjernice
Elektrostatičko pražnjenje (ESD) prema EN 61000-4-2	± 6 kontaktno pražnjenje ± 8 kV atmosfersko pražnjenje	± 2/4/6 kV kontaktno pražnjenje ± 2/4/8 kV atmosfersko pražnjenje
Brzo prolazna električna smetnja/prodori prema EN 61000-4-4	± 2 kV za vodove ± 1 kV za ulazne i izlazne linije	± 2 kV za vodove
Prenapon prema EN 61000-4-5	± 1 kV push-pull napon ± 2 kV zajednički napon -	± 1 kV push-pull napon ± 2 kV zajednički napon

Ispitiv. otpornost na smetnje EN 60601 razina ispit.	Razina sukladnosti	Elektromagnetsko okruž.	
Prekidi napona, kratkoročni prekidi i fluktuacije napona - isporuke prema EN 61000-4-11	$< 5\% U_T$ ($> 95\%$ prekida) za $\frac{1}{2}$ razdoblja $40\% U_T$ (60% prekida) za 5 razdoblja $70\% U_T$ (30% prekida) za 25 razdoblja $< 5\% U_T$ ($> 95\%$ prekida) za 5 s (250 razdoblja)	$< 5\% U_T$ ($> 95\%$ prekida) za $\frac{1}{2}$ razdob $40\% U_T$ (60% prekida) za 5 razdoblja $70\% U_T$ (30% prekida) za 25 razdoblja $< 5\% U_T$ ($> 95\%$ prekida) za 5 s (250 razdoblja)	Kvaliteta napona isporuke treba odgovarati onoj tipičnog poslovnog ili bolničkog okruženja. Ako korisnik mora imati dozvole za rad čak i ako je napajanje prekinuto, preporučuje se popraviti dobavu energije s neprekidnim napajanjem ili akumulatorom.
Magnetsko polje na frekvenciji isporuke (50/60 Hz) prema EN 61000-4-8	3 A/m	3 A/m	Magnetsko polje na frekvenciji isporuke treba odgovarati tipičnim vrijednostima u poslovnom i bolničkom okruženju.

NAPOMENA: V_T je izmjenično električno napajanje prije nego se koristi ispitivanje razine.

10.3 Preporučena sigurna udaljenost između prijenosne i mobilne HF telekomunikacijske opreme i jedinice za liječenje

Ovo je namijenjeno za uporabu u elektromagnetskom okruženju u kojem su kontrolirani parametri HF smetnje. Kupac ili korisnik može spriječiti elektromagnetsko ometanje održavanjem minimalnog razmaka između prijenosnih i mobilnih HF telekomunikacijskih uređaja (odašiljači), a ovisno o izlazu komunikacijskog uređaja kao što je dolje navedeno.

Sigurna udaljenost ovisno o frekvenciji prijenosa:

Nazivna snaga P odašiljača u W	Sigurnosna udaljenost ovisno o frekvenciji prijenosa u m		
	150 kHz to 80 MHz $d=1.17 \cdot P$	80 MHz to 800 MHz $d=1.20 \cdot P$	800 MHz to 2.5 GHz $d=2.3 \cdot P$
0.01	0.12	0.12	0.23
0.1	0.37	0.38	0.73
1	1.17	1.20	2.3
10	3.69	3.79	7.27
100	11.7	12	23
U1 = razina sukladnosti prema 4-6: 3 V _{eff}			
E1 = razina sukladnosti prema 4-3: 3 V/m			
Factor	$[3.5/U_1]$	$[12/E_1]$	$[23/E_1]$

Za odašiljače čija maksimalna nazivna snaga nije u gornjoj tablici, preporučena sigurnosna udaljenost d u metrima (m) se može izračunati pomoću jednadžbe za odgovarajući razmak, gdje je P maksimalna nazivna snaga odašiljača u vatima (W) prema uputama proizvođača.

NAPOMENA 1: U 80 MHz i 800 MHz, primjenjuje se veći raspon frekvencije

NAPOMENA 2: Ove smjernice se ne smiju primjenjivati u svakom slučaju.

Širenje elektro-

magnetskih valova se apsorbira i reflektira od zgrada, objekata i ljudi.

10.4 Otpornost na elektromagnetske smetnje

Jedinica za liječenje je dizajnirana za rad u okruženju kao što je navedeno u nastavku. Kupac ili korisnik bi trebao osigurati da se uređaj koristi u okruženju od određenog tipa.

Ispitivanja otpornosti na smetnje	EN 60601 razina ispitiv.	Razina sukladnosti	Elektromagnetsko okruženje - Smjernice
HF smetnja na razini žice prema EN 61000-4-6 HF smetnja na razini žice prema EN 61000-4-3	3 V _{eff} 150 kHz do 80 MHz izvan ISM pojasa ^a V/m 80 MHz do 2.5 GHz	3 V _{eff} 3 V/m	Ručni i mobilni bežični uređaji se ne smije koristiti na kraće udaljenosti uključujući kablove osim preporučene sigurnosne udaljenost izračunate pomoću primjerenih jednadžbi za emisije frekvencije. Preporučena sigurnosna udaljenost: $d = 1.17 \sqrt{P}$ $d = 1.17 \sqrt{P} \text{ for } 80 \text{ MHz to } 800 \text{ MHz}$ $d = 2.33 \sqrt{P} \text{ for } 800 \text{ MHz to } 2.5 \text{ GHz}$ gdje je P maksimalna nazivna snaga odašiljača u vatima (W) kao što je navedeno od strane proizvođača odašiljača i d te se preporučuje sigurnosni razmak u metrima (m). ^b Snaga polja stacionarnih bežičnih radio odašiljača kao što je mjereno lokalno treba biti niža od razina sukladnosti pri svim frekvencijama. d Smetnja je moguće u blizini uređaja koji nose sljedeće oznake. 

NAPOMENA 1: U 80 MHz i 800 MHz, primjenjuje se

NAPOMENA 2: Ove smjernice ne smiju se primjenjivati u svakom slučaju. Širenje elektromagnetskih valova se apsorbira i reflektira od zgrada, objekata i ljudi.

ISM frekvencija (za industrijske, znanstvene i medicinske primjene) između 150 kHz i 80 MHz su 6,765 MHz do 6,795 MHz; 13,553 MHz do 13,567 MHz; 26,957 MHz do 27,283 MHz, a 40,66 MHz do 40,70 MHz.

B razina usklađenosti u ISM frekvencijama između 150 kHz i 80 MHz

te u frekvencijskom području od 80 MHz do 2,5 GHz namijenjeni su za smanjenje mogućnosti mobilnih/ručnih komunikacijskih sredstava uzrokuje smetnje kada se nehotice uvode u područje pacijenta. Iz tog razloga, dodatni čimbenik

10/3 se primjenjuje u izračunu preporučenih sigurnosnih razmaka u ovim rasponima frekvencija.

^c Snaga polja od stacionarnih odašiljača, kao što je, na primjer bazne stanice mobilnih telefona i mobilnih zemaljskih radio uređaja, amaterskih radijskih postaja, AM i FM radio i televizijskih odašiljača, ne može se odrediti točno na temelju teorijskih razmatranja. Studija mjesta/gradilišta treba uzeti u obzir kako bi se utvrdila elektromagnetska zaštita okoliša u smislu stacionarnih odašiljača. Ako mjerena snaga polja na mjestu, na kojem se koristi, prelazi gore navedenu razinu usklađenosti potrebno ga je pratiti za demonstriranje pravilne funkcije. Ako se primijete bilo koja neuobičajena radna svojstva, mogu biti potrebne dodatne mjere, kao što je, na primjer, mijenjanje smjera ili korištenje drugačije lokacije.

10 Podaci o elektromagnetskoj kompatibilnosti prema normi EN 60601-1-2 | 10.4 Otpornost na elektromagnetske smetnje

^d U frekvenzijskom području od 150 kHz do 80 MHz, snaga polja treba biti manja od $3V_{\text{eff}}$ V/m.

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10 Podaci o elektromagnetskoj kompatibilnosti prema normi EN 60601-1-2 | 10.4 Otpornost na elektromagnetske smetnje

^d U frekvencijskom području od 150 kHz do 80 MHz, snaga polja treba biti manja od $3V_{\text{eff}}$ V/m.

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Broj-OV: 0399/2016
Datum: 27.06.2016.

Ja, Michael Mile Nekich, stalni sudski tumač za engleski jezik, imenovan rješenjem predsjednika Županijskog – Trgovačkog suda u Zagrebu broj 4 Su-1000/13 od 28. lipnja 2013. potvrđujem da gornji prijevod potpuno odgovara izvorniku sastavljenom na engleskom jeziku.

Broj-OV: 0399/2016

U Zagrebu, 27.06.2016.

M. Nekich



Instructions for use

Primus 1058 Life



KaVo. Dental Excellence.

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Kaltenbach & Voigt GmbH

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1 User instructions

1.1 User guide

Requirement

Read these instructions prior to first use to avoid misuse and prevent damage.

1.1.1 Abbreviations

Abbreviation	Explanation
IfU	Instructions for use
CI	Care instructions
AI	Assembly instructions
TI	Technician's instructions
SC	Safety checks
IEC	International Electrotechnical Commission
RI	Repair instructions
RK	Retrofitting kit
AS	Assembly set
EP	Enclosed parts
EMC	Electromagnetic compatibility
PI	Processing instructions

1.1.2 Symbols

	See the Safety/Warning Symbols section
	Important information for users and technicians
	CE mark according to EC Directive 93/42 for medical devices
	Action required

1.1.3 Target group

This document is for dentists and dental office staff.

1.2 Service



KaVo Customer Service:

+49 (0) 7351 56-1000

Service.Einrichtungen@kavo.com

Please refer to the serial number of the product in all inquiries!

For further information, please visit: www.kavo.com

1.3 Terms and conditions of warranty

KaVo provides the final customer with a warranty that the product cited in the hand-over certificate will function properly and guarantees zero defects in the material or processing for a period of 12 months from data of purchase, subject to the following conditions:

Upon justified complaints of flaws or a short delivery, KaVo will make good its warranty by replacing the product free of cost or repairing it according to the customer's wishes. Other claims of any nature whatsoever, in particular with respect to compensation, are excluded. In the event of default and gross negligence or intent, this shall only apply in the absence of mandatory legal regulations to the contrary.

KaVo cannot be held liable for defects and their consequences due to natural wear, improper cleaning or servicing, non-compliance with operating, servicing or connection instructions, calcification or corrosion, contaminated air or water supplies or chemical or electrical factors deemed abnormal or impermissible in accordance with factory specifications.

The warranty does not usually cover bulbs, glassware, rubber parts and the colour-fastness of plastics.

Defects or their consequences that can be attributed to interventions on or changes made to the product by the customer or a third party are excluded from the warranty.

Defects or their consequences that can be attributed to interventions on or changes made to the product by the customer or a third party are excluded from the warranty.

1.4 Transportation and storage

1.4.1 Currently valid packaging regulations



Note

Only valid for the Federal Republic of Germany.

Dispose of and recycle the sales packaging appropriately in accordance with current packaging regulations, employing waste management or recycling companies. Comply with the comprehensive return system. KaVo has had its sales packaging licensed for this purpose. Please comply with the regional public waste-disposal system.

1.4.2 Damage in transit

In Germany

If the packaging is visibly damaged on delivery, please proceed as follows:

1. The recipient of the package must record the loss or damage on the delivery receipt. The recipient and the representative of the shipping company must sign this delivery receipt.
2. Leave the product and packaging in the condition in which you received it.
3. Do not use the product.
4. Report the damage to the shipping company.
5. Report the damage to KaVo.
6. Consult with KaVo first, before returning a damaged product.
7. Send the signed delivery receipt to KaVo.

If the product is damaged but there was no discernable damage to the packaging on delivery, proceed as follows:

1. Report the damage to the shipping company immediately and no later than 7 days after delivery.
2. Report the damage to KaVo.
3. Leave the product and packaging in the condition in which you received it.
4. Do not use a damaged product.



Note

Failure on the part of the recipient to comply with any of the above-mentioned obligations will mean that the damage will be considered to have arisen following delivery (in accordance with the General German Freight Forwarders' Terms and Conditions, Art. 28).

Outside Germany



Note

KaVo shall not be held liable for damage arising from transportation. The shipment must be checked on arrival.

If the packaging is visibly damaged on delivery, please proceed as follows:

1. The recipient of the package must record the loss or damage on the delivery receipt. The recipient and the representative of the shipping company must sign this delivery receipt.
Without this evidence, the recipient will not be able to assert a claim for damages against the shipping company.
2. Leave the product and packaging in the condition in which you received it.
3. Do not use the product.

If the product is damaged but there was no discernable damage to the packaging on delivery, proceed as follows:

1. Report any damage to the shipping company either immediately or no later than 7 days after delivery.
2. Leave the product and packaging in the condition in which you received it.
3. Do not use a damaged product.



Note

If the recipient fails to comply with any of the above-mentioned obligations, the damage will be considered to have arisen following delivery (in accordance with CMR law, Chapter 5, Art. 30).

1.4.3 Information on the packaging: Storage and transportation



Note

Please keep the packaging in case you need to return the product for servicing or repair.

The symbols printed on the outside are for transportation and storage, and have the following meaning:

	Transport upright with the arrows pointing upwards!
	Fragile - protect against impact!
	Protect from moisture!

	Permissible stacking load
	Temperature range
	Humidity
	Air pressure

2 Safety

2.1 Description of safety instructions

2.1.1 Warning symbol



2.1.2 Structure



DANGER

The introduction describes the type and source of the hazard.

This section describes potential consequences of non-compliance.

- ▶ The optional step includes necessary measures for hazard prevention.

2.1.3 Description of hazard levels

The safety instructions listed here, together with the three levels of danger will help avert property damage and injury.



CAUTION

CAUTION

indicates a hazardous situation that can cause damage to property or mild to moderate injuries.



WARNING

WARNING

indicates a hazardous situation that can lead to serious or fatal injury.



DANGER

DANGER

indicates a maximal hazard due to a situation that can directly cause death or fatal injury.

2.2 Purpose – Proper use

2.2.1 General

The user must ensure that the unit works properly and is in satisfactory condition before each use.

The KaVo equipment system is a dental treatment unit in accordance with ISO 7494 with a dental chair in accordance with ISO 6875. This KaVo product is designed for use in dentistry only and may only be used by trained medical personnel. Any other type of use is not permitted.

"Proper use" includes following all the instructions for use and ensuring that all inspections and service tasks are performed.

The overarching guidelines and/or national laws, national regulations and the rules of technology applicable to medical devices for start-up and use of the KaVo product for the intended purpose must be applied and followed.

KaVo accepts liability for the safety, reliability, and performance of components supplied by KaVo, provided:

- installation, instructions, expansions, adjustments, changes or repairs were carried out by technicians trained by KaVo or third parties authorised by KaVo, or by the personnel of authorised distributors.
- the unit was operated in accordance with the instructions for use, care and installation.
- the IT components supplied by the operator meet the technical requirements in these instruction for use for hardware and software, and they are installed and set up according to the descriptions of these components.
- in the case of repairs, the requirements of IEC 62353 (DIN VDE 0751-1) "Repeat tests and tests before start-up of electrical items of medical equipment and systems - general regulations" are met in full.

It is a responsibility of the user:

- only use equipment that is operating correctly,
- protect him or herself, the patient and third parties from danger, and
- avoid contamination from the product..

The applicable national legal regulations must be observed during the use of the device, in particular the following:

- Applicable regulations governing the connection and start-up of medical devices.
- Current occupational safety regulations.
- Current accident prevention regulations.

Regular performance of maintenance and safety checks is essential for the permanent assurance of the operating and functional safety of the KaVo product and for the prevention of damage and hazards.

Testing and maintenance intervals: Maintenance must be performed once a year, the safety check (STK) at intervals of 2 years. Shorter intervals for the safety check may be specified by the tester if necessary.

The following persons are authorised to repair and service the KaVo product:

- Technicians of KaVo branch offices after appropriate product training.
- Specifically KaVo-trained technicians of KaVo franchised dealers.

In Germany, operators, equipment managers and users are obliged to operate their equipment in accordance with the MPG regulations.

The services encompass all the test tasks required in accordance with § 6 of the medical devices operator ordinance (Medizinprodukte-Betreiberverordnung, MPBetreibV).



Note

The product must be cleaned and serviced according to instructions if it is not to be used for an extended period of time.



Note

The MULTiflex couplings, the current K/KL motors, and the ultrasonic scaler hoses of KaVo are equipped as standard with a protective device to prevent treatment water from being drawn back into the treatment centre via the handpieces. If products from other manufacturers are used at the standardised interfaces, it must be ensured that they are equipped with an appropriate protective device! If this is not the case, they may not be used!

Information about electromagnetic compatibility



Note

Based on IEC 60601-1-2 (DIN EN 60601-1-2) concerning the electromagnetic compatibility of electrical medical devices, we must draw your attention to the following points:

- Medical electrical devices are subject to special precautions concerning the electromagnetic compatibility and must be installed and operated in accordance with the KaVo assembly instructions.
- High-frequency communications devices may interfere with electrical medical devices.

See also:

- 10 Data on electromagnetic compatibility according to EN 60601-1-2, Page 112



Note

KaVo cannot guarantee the compliance of accessories, cables, and other components not supplied by KaVo with the EMC requirements of IEC 60601-1-2 (DIN EN 60601-1-2).

Disposal



Note

Any waste which is generated must be recycled or disposed of in strict compliance with all applicable national regulations in a manner which is safe both for people and the environment.

If you have any questions regarding proper disposal of the KaVo product, please contact the KaVo branch.

Disposal of electronic and electrical devices



Note

According to EC directive 2012/19 concerning used electrical and electronic devices, this product is subject to the cited directive and must be disposed of accordingly within Europe.

For more information, please visit www.kavo.com or contact your specialised dental supplier.

For final disposal:

In Germany

To return an electrical device, you need to proceed as follows:

1. On the homepage www.enretec.de of enretec GmbH, you can download a form for a disposal order under the menu item eom. Download the disposal order or complete it as an online order.

2. Enter the corresponding information to complete the order, and submit it as an on-line order or by fax +49 (0) 3304 3919-590 to enretec GmbH.
The following contact options are also available for questions and for initiating a disposal order:
Phone: +49 (0) 3304 3919-500
Email: eom@enretec.de and
Postal address: enretec GmbH, Geschäftsbereich eomRECYCLING®
Kanalstraße 17
D-16727 Velten
3. A unit that is not permanently installed will be picked up at the office.
A permanently installed unit will be picked up at the curb at your address on the agreed date.
The owner or user of the device will have to bear the cost of disassembly, transportation and packaging.

International

For country-specific information on disposal, contact your dental supplier.

2.2.2 Product-specific

Designated use and target group

KaVo is designed for dental treatment of children and adults.

The KaVo equipment system is a dental treatment unit in accordance with ISO 7494 equipped with a dental chair in accordance with ISO 6875. KaVo three-way and multi-function handpieces are dental instruments in accordance with EN 1639. They support the dental application in the mouth of the patient by supplying air, water or spray. In addition, the multifunctional handpiece supplies light and heated media. This KaVo product is designed for use in dentistry only and may only be used by trained medical personnel.

Connecting devices

KaVo-approved accessories for patient communication. These accessories must be used exclusively.

Accessories	Use	Name	Material code
Monitors	Monitor 19"	KaVo Screen HD	1.011.0302
	Monitor 22"	KaVo Screen One	1.011.0300
Cameras	Intraoral camera	ERGOcam One 130	1.011.2130
		ERGOcam One 160	1.011.2129
Cables between unit and PC	USB extension cord - 5 metres	USB extension cord 5m with 1:1 hub	1.004.6953
	USB extension cord - 10 metres	USB extension cord 2x5m with 1:1 hub	1.011.3745
	Display port cable - 5 metres	LTG Display port 5m Standard	1.011.3583
	Display port cable - 10 metres	LTG Display port 10m Standard	1.011.0298



Note

The USB interfaces of the system may only be connected to IT devices approved by KaVo.



Note

When connecting IT equipment to the the medial electrical system, observe EN 60601-1.

2.3 Safety instructions

2.3.1 General information



Note

The safety and reliability of the system can only be ensured when the described procedure is followed.



DANGER

Explosion hazard.

Risk of fatal injury.

- ▶ Do not use KaVo product in areas subject an explosion hazard.



WARNING

Inappropriate operating conditions.

Impairment of the electrical safety of the device.

- ▶ It is essential to comply with the operating conditions specified in the "Technical Specifications" chapter.



WARNING

Use of un-authorised accessories or un-authorised modifications of the product.

Accessories that have not been approved and/or inadmissible modifications of the product could lead to hazards and/or personal injury or material damage.

- ▶ Only use accessories that have been approved for the combination with the product by the manufacturer or are equipped with standardised interfaces (e. g. MULTiflex couplings, INTRAmatic).
- ▶ Do not make any modifications to the device unless these have been approved by the manufacturer of the product.



WARNING

Injury or damage from damaged functional parts.

Damage to functional parts can cause further damage or personal injury.

- ▶ Check the device, electrical cables and any accessories for possible damage to the insulation and replace if necessary.
- ▶ If functional parts are damaged: discontinue your work and repair the damage or notify a service technician!



WARNING

Disposal of the product in the appropriate manner.

Infection hazard.

- ▶ Before disposal, reprocess and sterilise the product and accessories accordingly.



⚠ CAUTION

Health hazard and property damage due to non-compliance with servicing schedule.
Infection hazard to users and patients.

Product damage.

- ▶ Comply with servicing schedule.



⚠ CAUTION

Premature wear and malfunctions from improper servicing and care.

Reduced product life.

- ▶ Perform regular proper care and maintenance!



⚠ CAUTION

Risks from electromagnetic fields.

Electromagnetic fields might interfere with the functions of implanted systems (such as pacemakers).

- ▶ Ask patients if they have a cardiac pacemaker or other system implanted before you start the treatment!



⚠ CAUTION

Malfunctions due to electromagnetic fields.

The product meets the applicable requirements regarding electromagnetic fields. Given the complex interactions between equipment and cell phones, the product may be influenced by a cell phone that is in use.

- ▶ Do not use cell phones in medical offices, hospitals or laboratories!
- ▶ Put electronic devices such as e.g. computer storage media, hearing aids etc. down during operation!



⚠ CAUTION

Damage from liquids.

Residual liquids of any type can cause stains on or damage to cushions and parts of the housing.

- ▶ Remove any residual liquids without delay.



Note

The operator may only carry out repair work if the device is switched off and no patient is being treated.

2.3.2 Product-specific



⚠ WARNING

Injury or infection hazard from laid down instruments.

Given the arrangement of the instruments, injury or infections in the hand and underarm can arise when reaching for the tray holder or operating device. Increased risk of infection from diseased patients.

- ▶ Be aware of the arrangement of the instruments when accessing the tray holder or operating device.



WARNING

Health impairment due to reverse suction via the instruments.

Infection hazard.

Products from other manufacturers, which are not equipped with a protective device to prevent the drawing of treatment water into the treatment unit via the instruments, may be used at standard interfaces

- ▶ If you are using products from other manufacturers at the standardised interfaces, ensure that the products are equipped with the corresponding protective devices.
- ▶ Do not use products without a protective device.



CAUTION

Sitting down on a dental chair that is in horizontal orientation is associated with a risk of injury.

- ▶ Do not sit on the head or foot end of the patient chair when it is in a horizontal position.



CAUTION

The swinging arm may fall and cause injury.

If the swinging arm is overloaded, it can become damaged and injure the patient or user.

- ▶ Never load the swinging arm, spring arm or dentist's unit by using it as a support.



CAUTION

Risk of injury by suspended instruments (S table).

Patients may get injured by sharp instrument tips.

- ▶ When you move the dentist's unit, make sure that nobody is injured.
- ▶ Alert patients and care providers to the risk of injury.



CAUTION

Risk of injury during cleaning of the treatment unit.

Lack of instructions to the cleaning staff and lack of preparation of the treatment unit can lead to the cleaning personnel sustaining injuries.

- ▶ Only trained professionals and instructed cleaning personnel may be present in the treatment rooms.
- ▶ Position the chair for cleaning and turn the device off.



CAUTION

Electrical power.

Electrical shock.

- ▶ Set up the external PC outside of the patient environment keeping a minimal distance of 1.5 m.
- ▶ Connect the PC and equipment connected to the PC in accordance with IEC 60601-1 / 60950.

⚠ CAUTION**Electrical power**

Electrical shock from incorrectly connecting a non-medical system to the freely usable USB interfaces of the device (if any).



- ▶ Connect any IT device to the medical system in accordance with IEC 60601-1.
- ▶ Use USB devices with no additional power supply (USB-powered) only.
- ▶ Applied parts connected to the USB interface of the dentist element must comply with the requisite insulation.
- ▶ USB-powered devices failing to meet the requisite insulation for applied parts must be placed appropriately such that direct contact of the USB device and the patient is excluded.
- ▶ It is not permissible to touch USB-powered devices failing to meet the requisite insulation for applied parts and the patient at the same time.

⚠ CAUTION**Health damage due to germ formation.**

Infection hazard.



- ▶ Before starting, rinse all the water drain lines without instruments.
- ▶ Before start-up and after the device has not been used for a while (weekends, holidays, vacations, etc.), rinse or purge with air the air and water lines.
- ▶ Option: perform intensive germ reduction (if assembly kit is available).
- ▶ Actuate the tumbler filler several times.

⚠ CAUTION

Third party device connection kit (optional): Hazard of reinfection from standing water.
Infections.



When a water-using unit is connected to the third-party connection kit, always perform the following tasks on the device:

- ▶ Before starting, rinse all the water drain lines without instruments (if applicable).
- ▶ Before startup and after the device has not been used for a while (weekends, holidays, vacations, etc.), rinse or purge the air and water lines.
- ▶ Make sure that the water-using unit is resistant to H₂O₂ since the water is sterilised with OXYGENAL 6 (at a concentration up to 0.02%).

⚠ CAUTION**Long stay in the patient chair.**

Decubitus formation.



- ▶ Take precautions against the formation of decubitus in long treatments.

⚠ CAUTION**Risk of injury when the dental chair or headrest is moved.**

Hair of the patient or practice personnel may get caught when the headrest of the dental chair is moved.



- ▶ Mind the hair of the patient or practice personnel when moving the dental chair or the headrest.

⚠ CAUTION**Risk of injury when moving the patient or patient chair.**

The patient or treatment personnel can be pinched or crushed.



- ▶ Position all moving parts, such as dentist element, assistant element, operating light, screens, etc., outside the collision range when you move the patient or patient chair.



 CAUTION

Damage to the handpiece hoses from stickers.

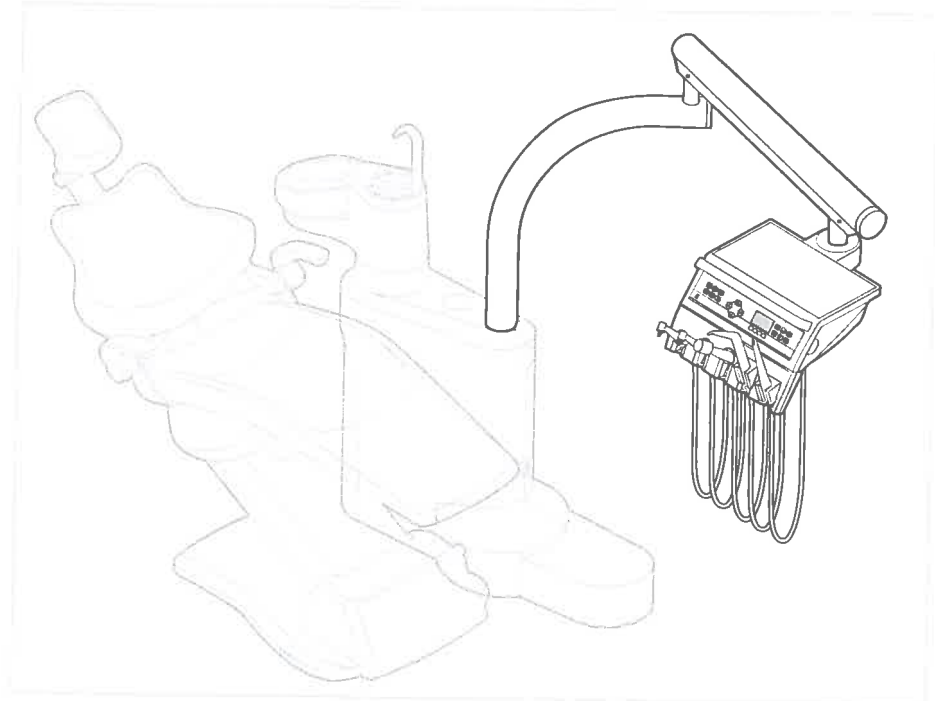
Handpiece hoses can burst.

- ▶ Do not affix stickers or adhesive tape.

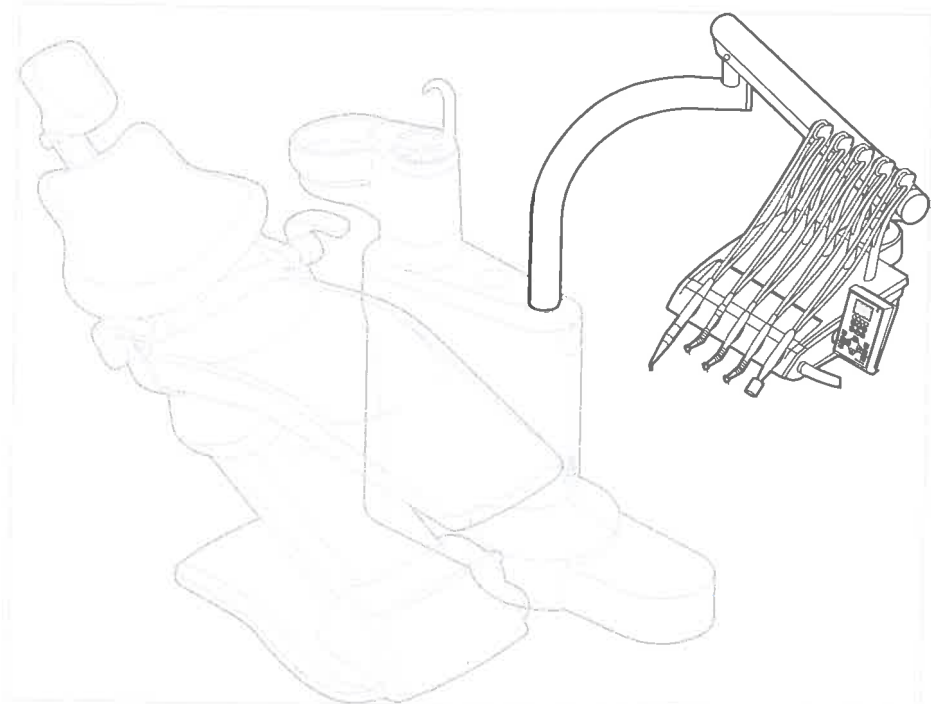
3 Product description

3.1 Treatment unit versions

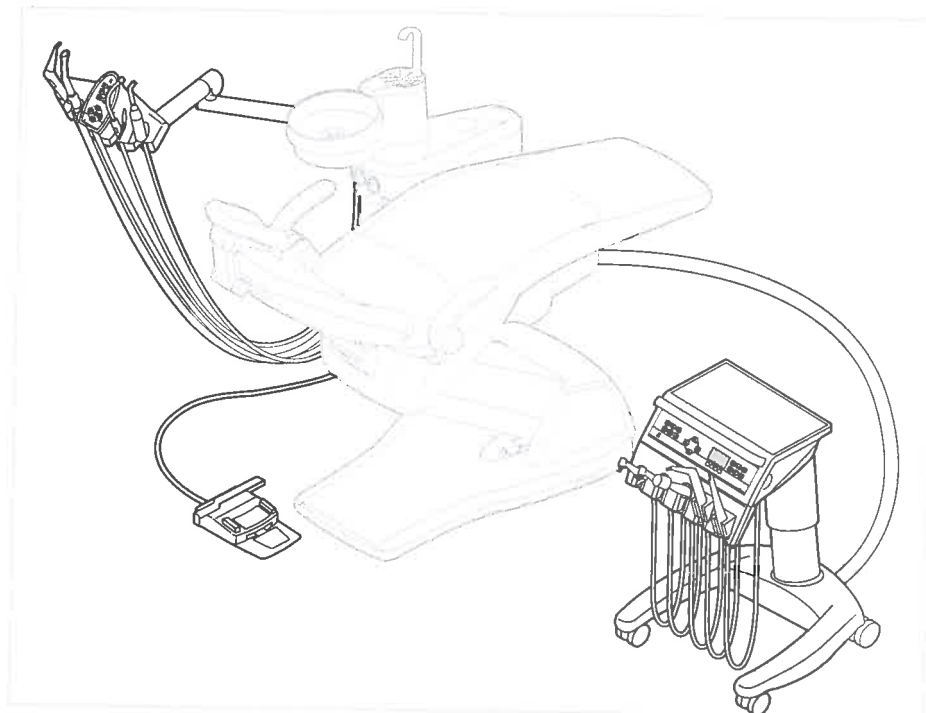
3.1.1 KaVo Primus 1058 Life TM



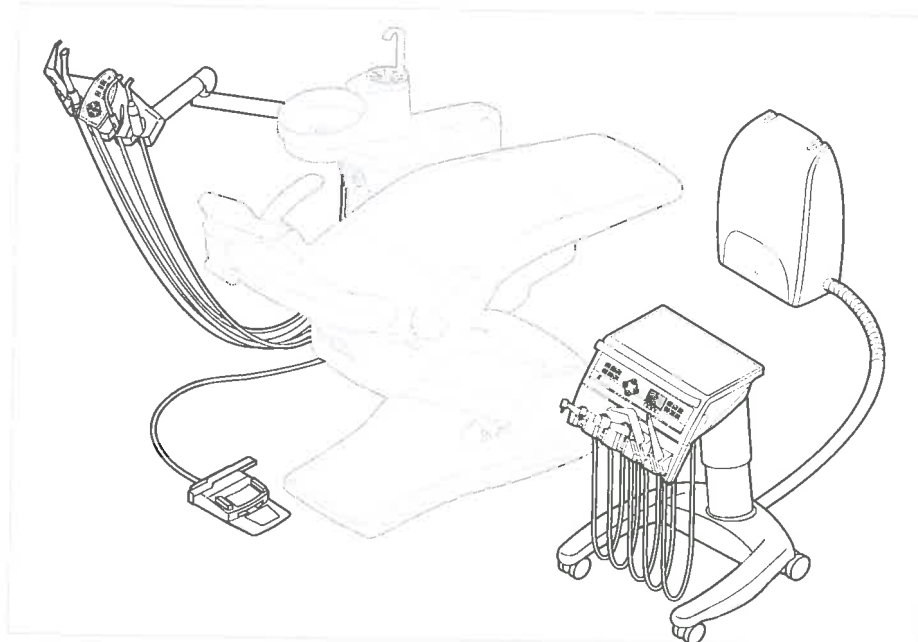
3.1.2 KaVo Primus 1058 Life S



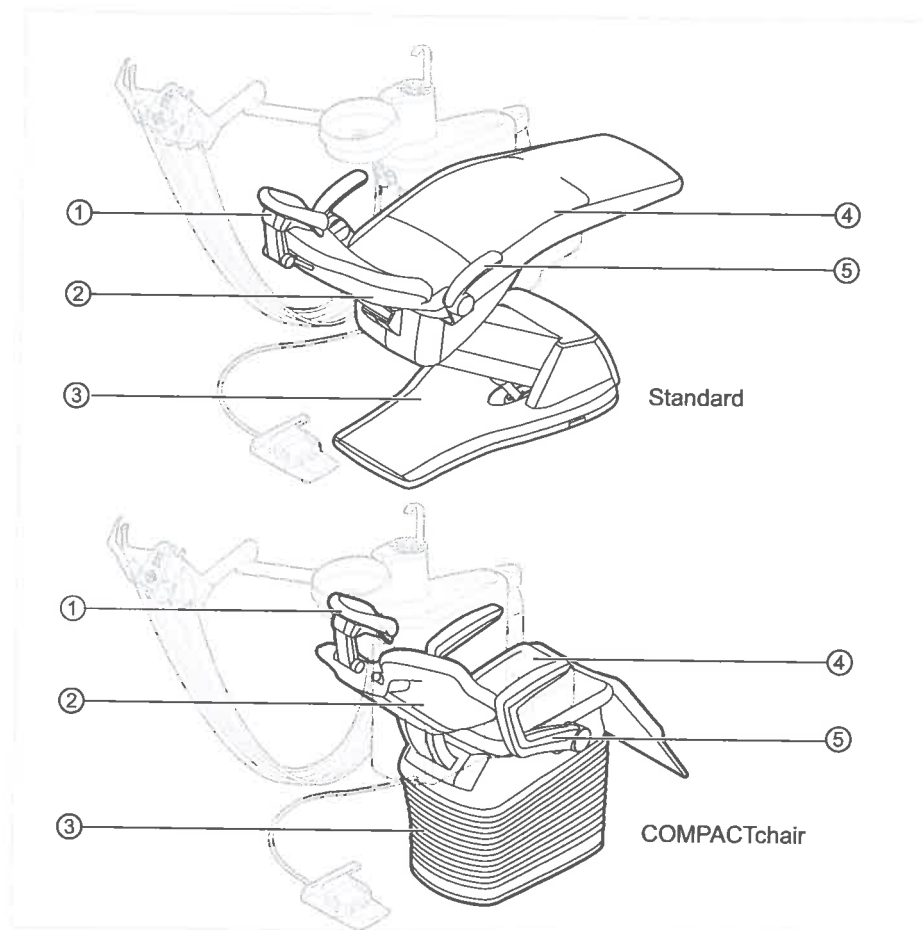
3.1.3 KaVo Primus 1058 Life C



3.1.4 KaVo Primus 1058 Life C with right-side set-up kit



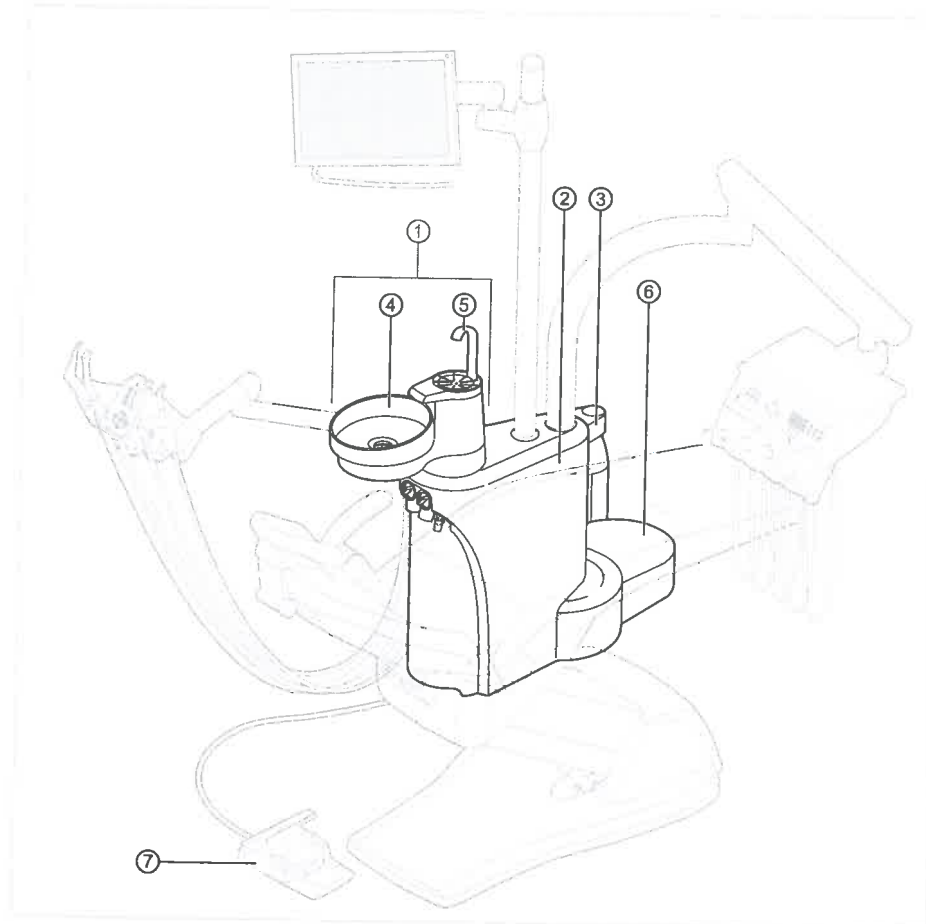
3.2 Patient chair Standard and COMPACTchair



- ① Headrest
- ③ Chair base
- ⑤ Arm rest (optional)

- ② Backrest
- ④ Seat

3.3 Device body with patient unit



① Patient element

② Unit body

The central control is housed in the unit body.

③ Pressurised water bottle
(supplementary equipment)

④ Spittoon bowl

⑤ Tumbler filler

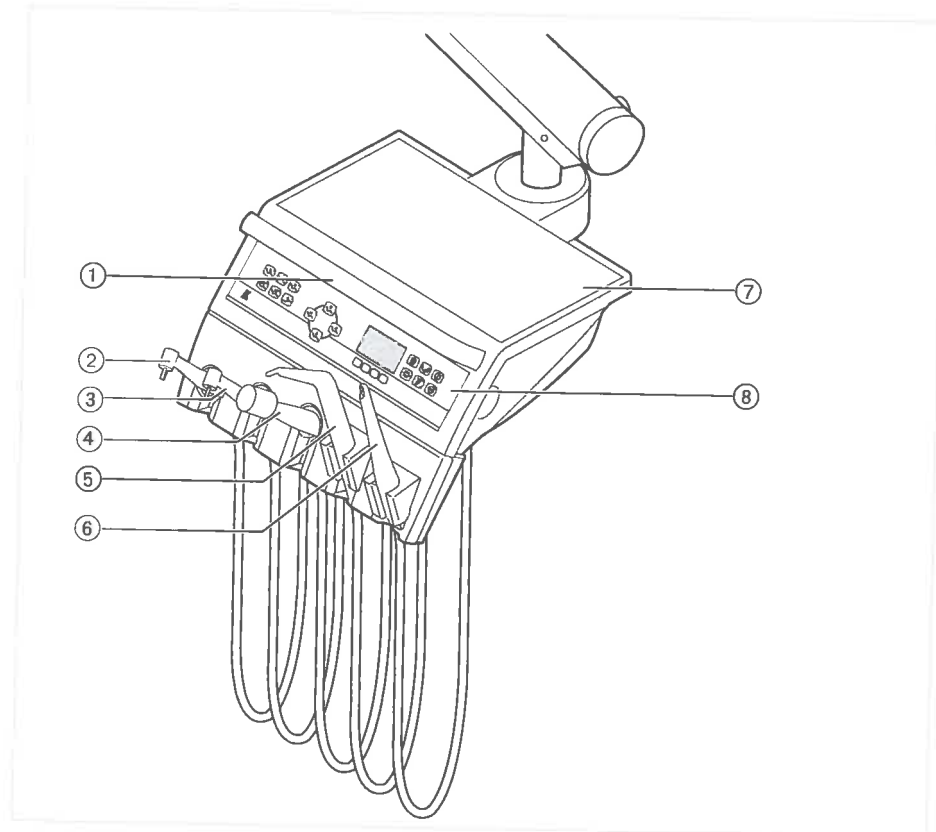
⑥ Supply element

Customer connection of power, water, compressed air, wastewater, and suction air

⑦ Foot control

3.4 Dentist unit versions

3.4.1 TM/C table



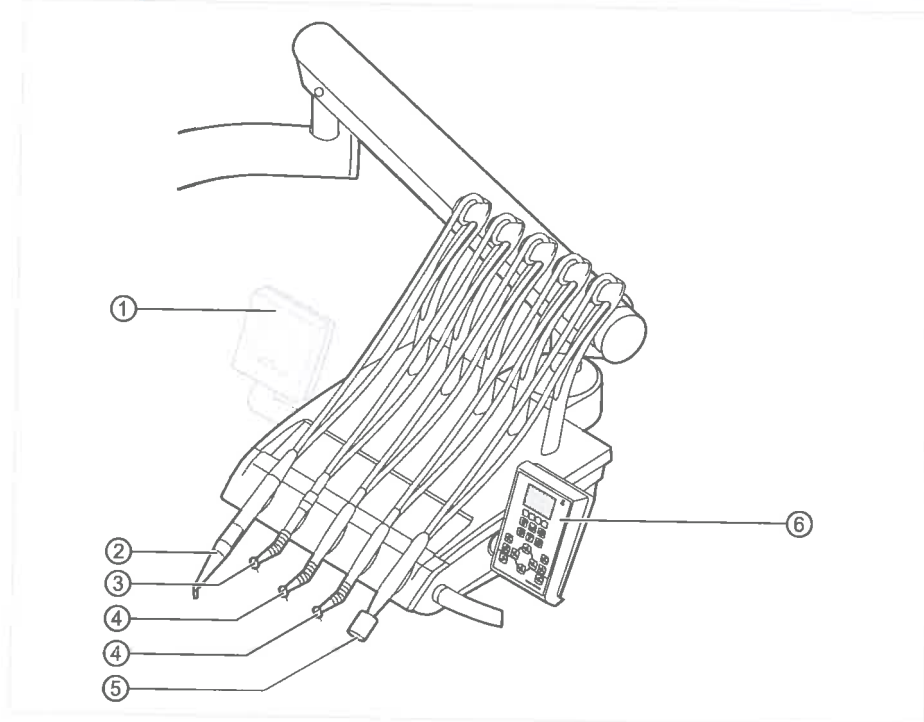
- | | |
|--|--------------------------------|
| ① Handle | ② Turbine (multiflex coupling) |
| ③ INTRA LUX motor KL 703 or
INTRA LUX motor KL 701 | ④ Ultrasonic scaler |
| ⑤ Three-function handpiece or multi-
functional handpiece | ⑥ ERGOcam One |
| ⑦ Tray support | ⑧ Control element |

3.4.2 S table



Note

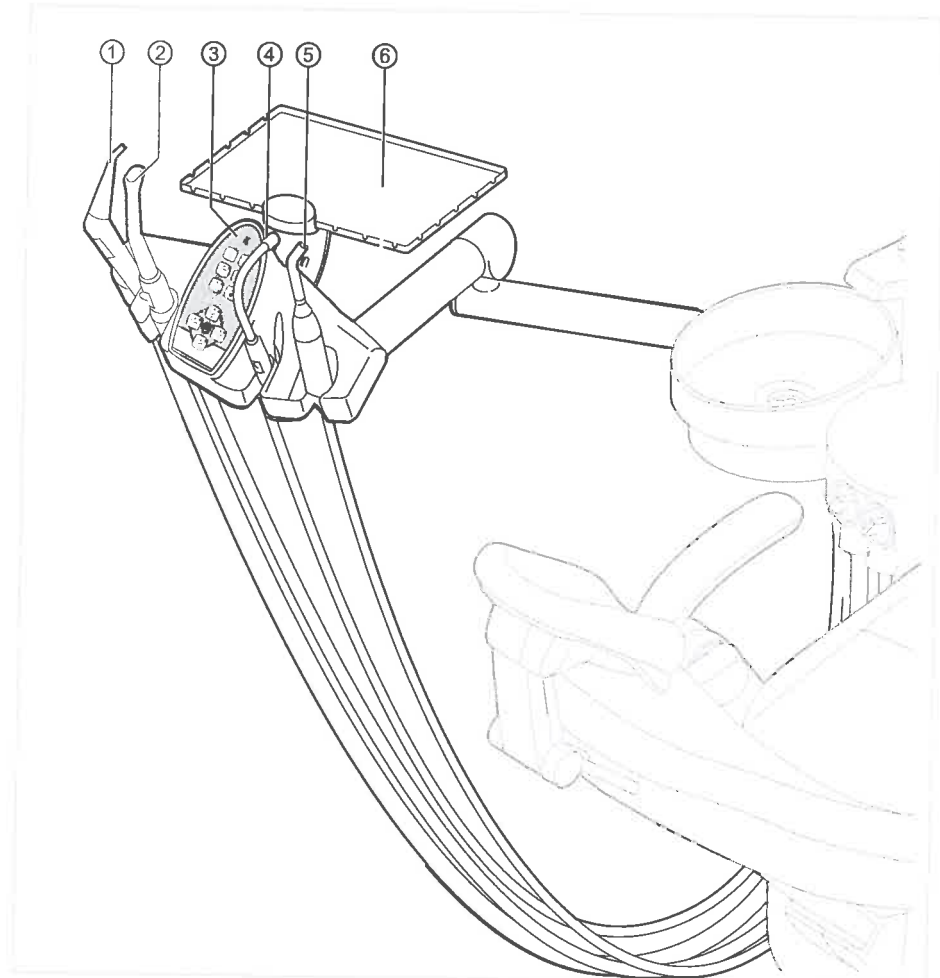
The holder assignment and arrangement of the instruments can be changed as needed and does not have to follow the picture.



- | | |
|--------------------------------|---|
| ① Small X-ray image viewer | ② Three-function handpiece or multifunctional handpiece |
| ③ Turbine (multiflex coupling) | ④ INTRAlux motor KL 703 LED or IN-TRA LUX motor KL 701 |
| ⑤ Ultrasonic scaler | ⑥ Control element |

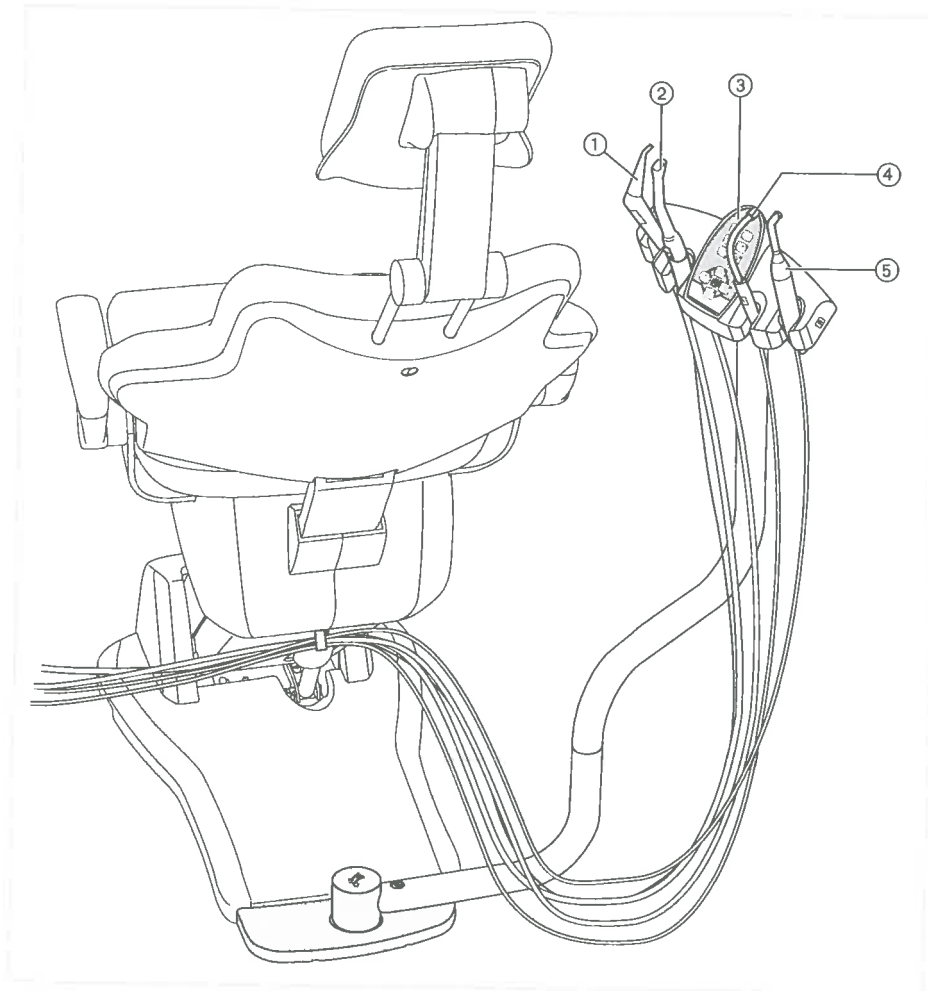
3.5 Assistant element – Versions

3.5.1 Standard assistant unit



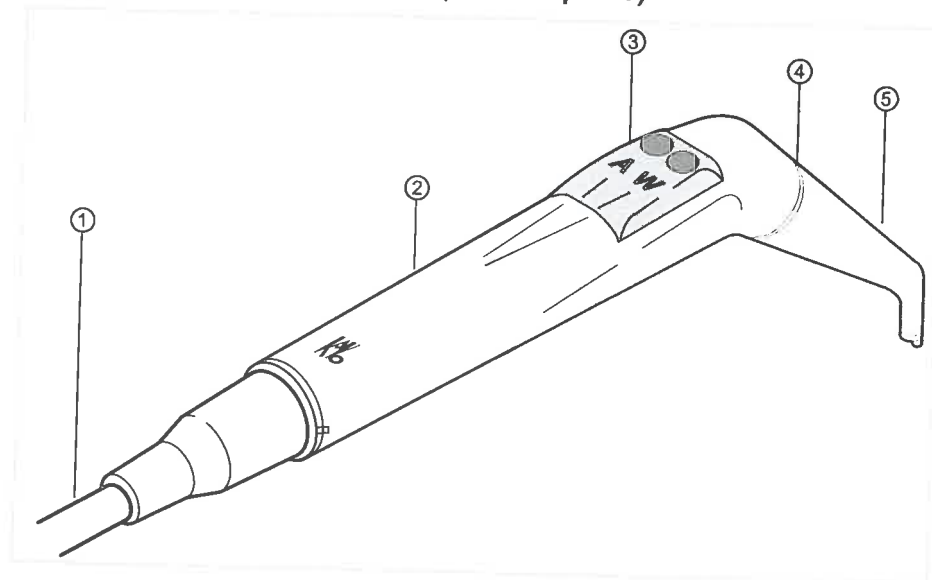
- | | |
|---|------------------------------------|
| ① Three-function or multifunctional handpiece | ② Spray mist suction |
| ③ Control element | ④ Saliva ejector |
| ⑤ Satelec Mini LED (polymerisation handpiece) | ⑥ Tray holder for dental assistant |

3.5.2 Assistant element right, left (optional, only in conjunction with patient chair Standard)



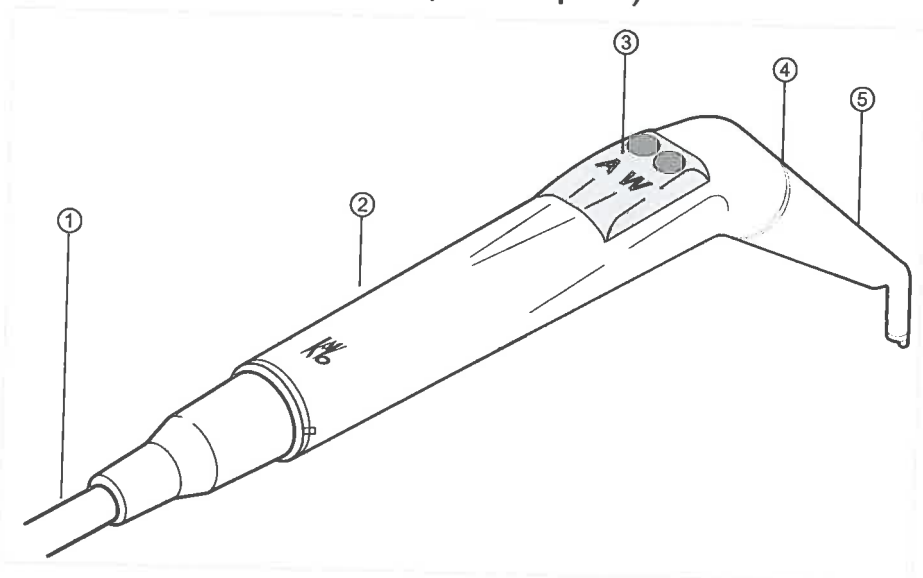
- | | |
|--|----------------------|
| ① Triple function handpiece | ② Spray mist suction |
| ③ Control element | ④ Saliva ejector |
| ⑤ Satelec Mini LED
(polymerisation handpiece) | |

3.6 Three function handpiece (3F handpiece)



- ① MF handpiece hose
- ② Gripping sleeve
- ③ Media buttons (air/water)
- ④ Labelled blue: Three-function handpiece (3F handpiece)
- ⑤ Cannula

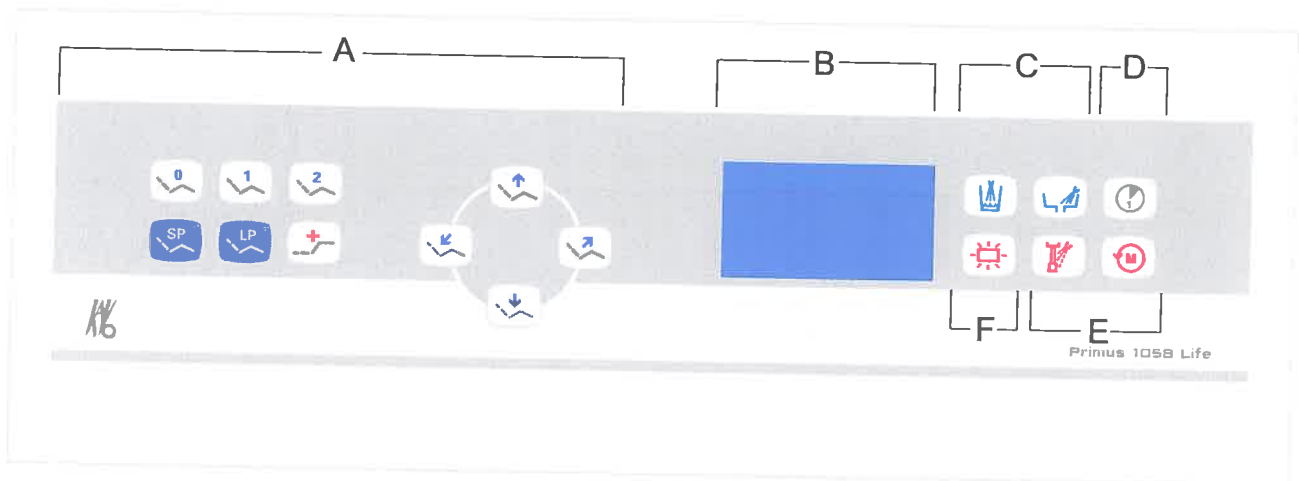
3.7 Multifunctional handpiece (MF handpiece)



- ① MF handpiece hose
- ② Gripping sleeve
- ③ Media buttons (air/water)
- ④ Labelled gold: Multifunctional handpiece (MF handpiece)
- ⑤ Cannula

3.8 Controls

3.8.1 Dentist elements



Dentist element TM/C table

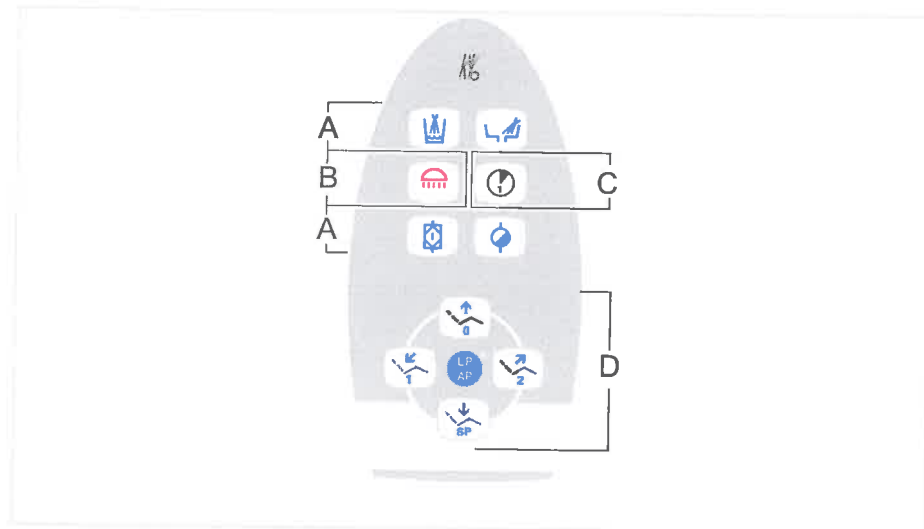
- | | | | |
|---|------------------------------------|---|---|
| A | Group of keys for the dental chair | B | Group of keys for menu selection (MEMOSpeed optional) |
| C | Group of keys for hygiene | D | Group of keys for the timer |
| E | Group of keys for the handpieces | F | Group of keys for illumination |



Dentist element S-table

- | | | | |
|---|---|---|------------------------------------|
| A | Group of keys for menu selection (MEMOSpeed optional) | B | Group of keys for the timer |
| C | Group of keys for the handpieces | D | Group of keys for the dental chair |
| E | Group of keys for illumination | F | Group of keys for hygiene |

3.8.2 Assistant unit



A Group of keys for hygiene

B Group of keys for illumination

C Group of keys for the timer

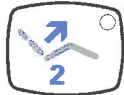
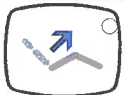
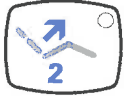
D Group of keys for the dental chair

3.8.3 Groups of keys

Group of keys for the dental chair

The keys of the assistant unit each have two functions and show two symbols.

Assistant element key	Dentist element key	Name
		"Chair up" key
		"AP 0" key (automatic position 0)
		"Chair down" key
		"SP" key (rinsing position)
		"LP" key (last position)
		"AP" key (activate automatic position)
		"Backrest down" key
		"AP 1" key (automatic position 1)

Assistant element key	Dentist element key	Name
		"Backrest up" key
		"AP 2" key (automatic position 2)
		"Collapsed position" key

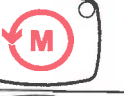
Group of keys for illumination

Key	Name	Control element
	"Operating light" key	Assistant element
	"X-ray image viewer" key	Dentist element

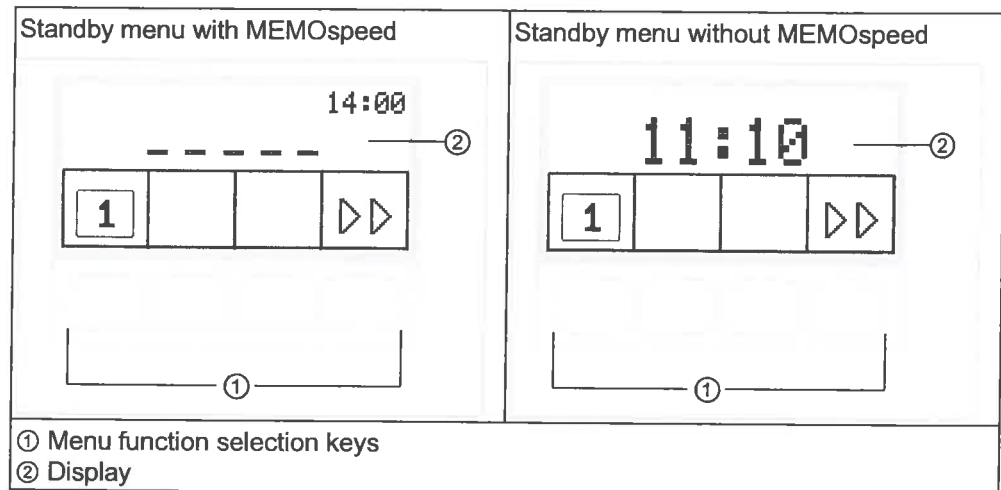
Group of keys for hygiene

Key	Name	Control element
	"Tumbler filler" key	Dentist element and assistant element
	"Bowl rinsing" key	Dentist element and assistant element
	"Intensive germ reduction" key	Assistant element (optional)
	"HYDROclean" key	Assistant element

Group of keys for the handpieces/timer

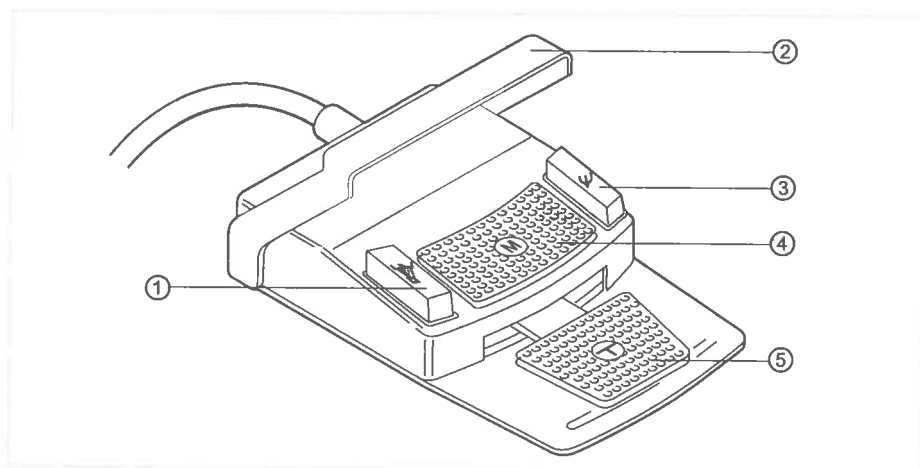
Key	Name	Control element
	"Preselected spray" button	Dentist element
	"Direction of motor rotation" button	Dentist element
	"Timer" key	Dentist element and assistant element

Group of keys for the menu



3.8.4 Foot control

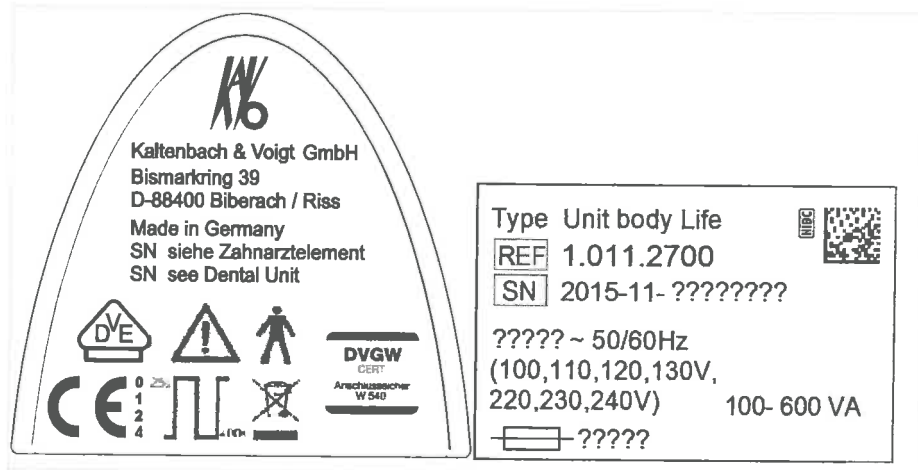
The footswitches of the foot control have two functions. The functions of the footswitches depend on if an instrument is mounted or removed.



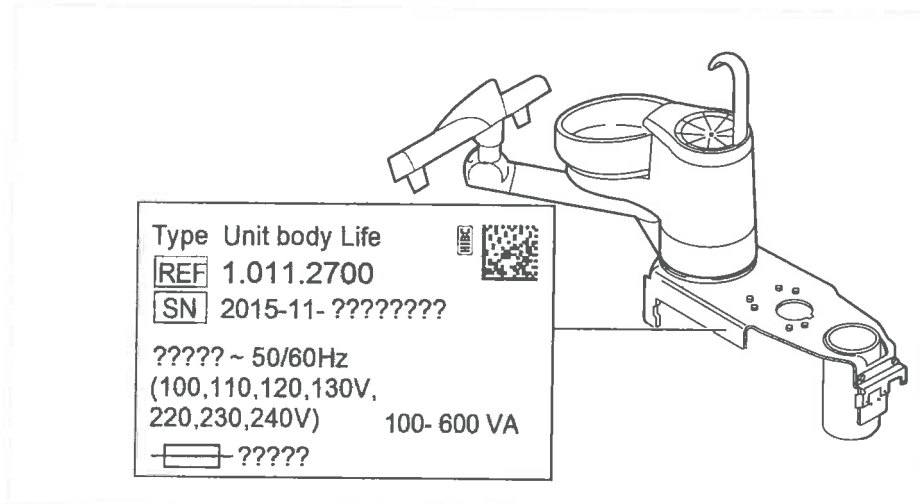
Item	Name	Function with handpiece mounted	Function with handpiece removed
①	"Spray pre-selection/AP" footswitch	Moves the dental chair into automatic position.	Sets the spray pre-selection.
②	U-shaped switch	Turns the safety shutoff On.	Switches the footswitches to the "Chair motion" function.
③	"Blown air/AP" footswitch	Moves the dental chair into automatic position.	Sets the preset blown air (chip blower).
④	Cross-switch: "Counter-clockwise motor rotation"	Changes the position of the dental chair.	Selects the direction of motor rotation (for INTRA LUX motor KL 701/703 or COMFORT-drive 200XD).
⑤	"Handpieces" foot-pedal	Generates a video/freeze frame if CONEX-IOcom is installed.	Starts the motor and controls the speed/ intensity of the handpieces.

3.9 Rating plate and identification plate

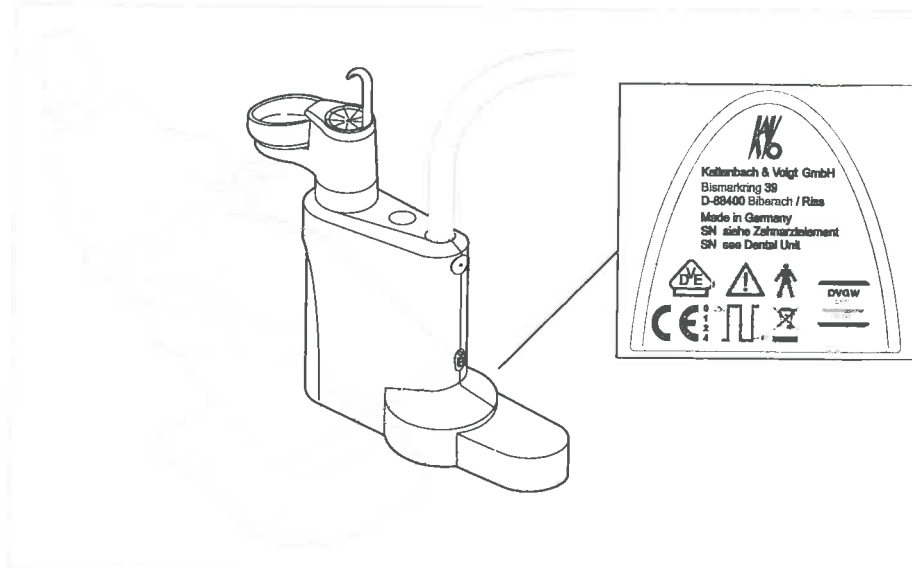
Rating plate



Rating plates inside and outside



Internal attachment site for rating plate



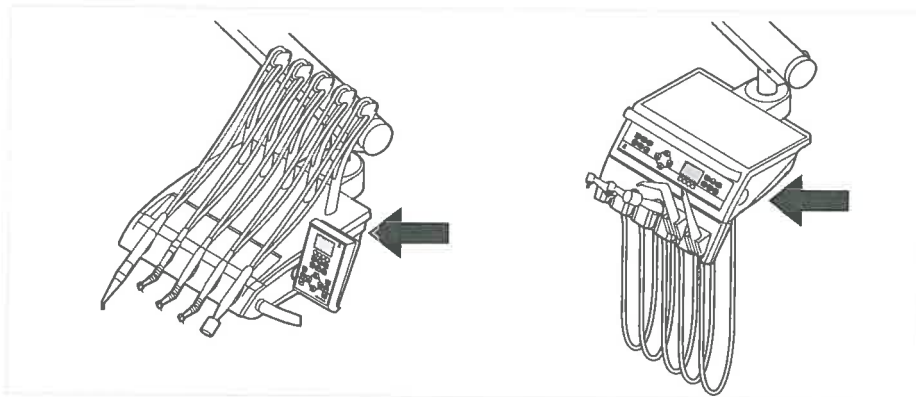
Outside attachment site for rating plate

SN	Serial number
	Read and take note of the content of accompanying documents
	Please note the instructions for use
	Follow the instructions for use!
	Type B applied part
	Type BF applied part
	Operating mode: Operating time of the patient chair: 25 seconds Pause time of the patient chair: 400 seconds (The permissible operating times correspond to common dental procedure.)
	Fuse ratings: The "?????" depend on the mains voltage and are either T10 H or T6.3H. 100 V~, 110 V~, 120 V~, 130 V~ = T10H 220 V~, 230 V~, 240 V~ = T6.3H
	For disposal information, see also: Purpose – Intended use
	CE mark according to Medical Devices Directive EC 93/42
	VDE mark
	DVGW certification DVGW CERT registration number AS-0630BT0111

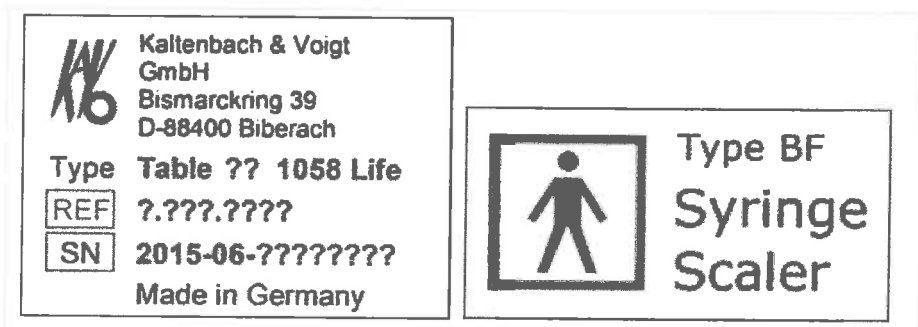
Identification plates

	Kaltenbach & Voigt GmbH		
	Bismarckring 39		
	D-88400 Biberach		
	Type	PRIMUS 1058 Life	
	REF	1.010.5000	
SN	2015-06-00000011		
Made in Germany			

Rating plate and dentist element ID



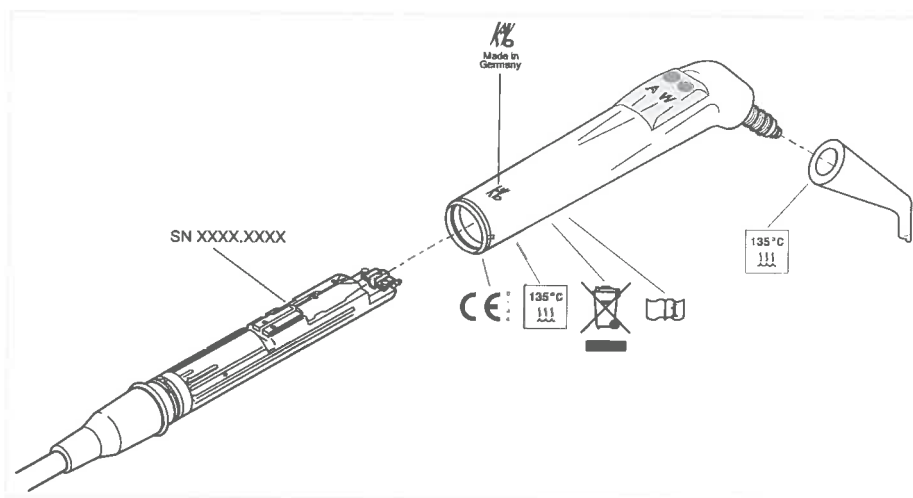
Site of attachment of rating plate and type BF applied parts ID on dentist element



Nameplate dentist element (e.g. table TM) / marking of the applied parts of type BF

Type	Device type
SN	Year of manufacture - serial number
REF	Material number

Labelling and marking of the three-function handpiece and multifunctional handpiece



 Made in Germany	Company logo of the manufacturer
SN	Serial number

	CE mark according to 93/42/EEC medical devices
	Sterilisable up to 135 °C
	Disposal instructions according to Directive WEEE 2002/96/EG Annex N
	Follow instructions for use

3.10 Technical data

Drilling template and setup plan

Installation plan (Mat. no. 3.002.4533)	2 sheets each right-handed and 2 sheets left-handed
Installation plan with COMPACTchair (Mat. no. 1.003.6767)	2 sheets each right-handed and 2 sheets left-handed

Electrical system

Electrical lead	3 x 2.5 mm ²
Free end above the floor	1 000 mm
Input voltages	100/110/120/130/220/230/240 V AC
Frequency	50/60 Hz
Input voltage set by the manufacturer	See rating plate
Power consumption at 100 to 240 V	100 to 600 VA – with appropriate device configuration, deviations in this range are possible!
Customer-provided fuse protection	Automat C 16 or screw-plug fuse 10 A
Protective conductor above floor	See DIN VDE 0100-710, 1000 mm
Heat emission	360 to 3,240 kJ/h
Heat emission	Ø 900 kJ/h
Mark of approval	CE / DVGW / VDE
Foot control	IPX1: Protection against water drips

Triple-function handpiece and multifunctional handpiece

Flush the water and air passages for 20 to 30 seconds before working at the beginning of the day.

Water pressure	1.5 ± 0.3 bar; Flow pressure; 4 x manometer
Max. static pressure water	2.5 ± 0.3 bar
Water flow	80 ± 10 ml/min
Air pressure	3.3 ± 0.1 bar; Flow pressure; 4 x manometer
Max. dynamic pressure air	4 + 0.5 bar
Air flow	at least 16 l/min
Operating time (multifunctional handpiece only)	1 minute
Interval (multifunctional handpiece only)	3 minutes

Electrical multifunctional handpiece

Safety extra-low voltage according to DIN 24 V AC $\pm$ 10% (non-grounded voltage)
EN 60601-1:

Frequency	50/60 Hz
Type of use	BF
Heat output for water	approx. 90 W
Heat output for air	approx. 20 W
Lamp voltage	max. 3.2 V $\pm$ 0.15 V
High-pressure lamp power	max. 2.5 W

Water supply



Note

If the water is very hard (above 12 °dH), a water softening device must be fitted in the ion-exchange process.

Insufficient water hardness (below 8.4 °dH) can promote the formation of algae.



Note

The "water inlet block" assembly kit does not include a separation between the treatment water and water supplied by the local water supply. The operator must observe and adhere to relevant national directives concerning the prevention of backflow. If these rules are not adhered to, the manufacturer can assume no liability for the quality of the treatment water and the microbial re-contamination of the public drinking water network.



Note

In conjunction with the "DVGW water block with integrated water disinfection" a water disinfection unit is installed in dental units from KaVo. The disinfectant OXY-GENAL 6 is continually added to the water in a concentration which is harmless for persons, but hygienically effective to maintain the quality of the treatment water. The handling is described in the care instructions of the treatment centres. Supplementary measures such as the rinsing of water conducting lines and intensive disinfection must be carried out according to the instructions of the manufacturer.



WARNING

Danger of infection if the national guidelines are not observed.

Contamination of the treatment water or the drinking water network.

- ▶ Observe and adhere to the national guidelines concerning the quality of water for human consumption (potable water) – if available.
- ▶ Observe and adhere to the national guidelines concerning the prevent of reflux (flow of water from the treatment unit to the public water network) – if relevant.





WARNING

Risk of infection if the "Water block, compact" is used without additional safeguards.

Contamination of the treatment water and/or drinking water supply with germs.

- ▶ With regard to the "Water block, compact" assembly kit, please note that no disinfection facility is installed in the unit, and take appropriate safeguards. KaVo recommends to use the "Water block DVGW with integrated water disinfection facility in combination with KaVo OXYGENAL 6 (Mat. no. 0.489.3451).
- ▶ If the Water bottle kit is used with the enclosed dosing attachment (Mat. no. 1.002.0287), add the proper amount of KaVo OXYGENAL 6 (Mat. no. 0.489.3451) with each filling. For the correct amount, please refer to the instructions of the dosing attachment for water germ reduction.

According to DIN EN 1717, each unit that is not listed by DVGW must be provided with an upstream type AA, AB or AD safety device. (The DVGW water bottle kit is certified; see the following list.)

When establishing a water connection, prevent brackish water pools with standing water (also in the house plumbing).

For further information, please refer to www.dvgw.de

Free drainage according to DIN EN 1717 - Water block DVGW, water bottle DVGW,

DVGW certified

register no.: AS-0630BT0111

Water quality

Tap water, cold water connection

Water hardness

1.5 to 2.14 mmol/l $\pm$ 8.4 to 12 °dH

pH

7.2 to 7.8

Customer water filtering

80 µm

Water connection

Shut-off valve with brass cone compression screw connection 3/8" to Ø 10 mm provided

Above-floor water connection

min. 50 mm, max. 105 mm with valve opened

Water inlet pressure

2.0 to 6.0 bar

Water inlet pressure

4 l/min

Diameter of the drain connection

40 mm

Above-floor drain connection

20 mm

Outflow quantity

max. 4 l/min

Slope of water drain pipe

downstream from device: at least 10 mm per metre

Air supply

WARNING

Non-adherence to national guidelines on the quality of the dental air.

Infection hazard.

- ▶ Observe and adhere to the national guidelines on the quality of the dental air - if existent.
- ▶ Blow through the air line prior to commissioning.



Air inlet pressure	5.2 to 7 bar
Air consumption	max. 80 NI/min.
Pressure dew point	< -30 °C (compressor with dry air system)
Oil content	< 0.1 mg/m ³ (oil-free compressor)
Contamination	< 100 particle/cm ³ with particle sizes of 1 to 5 µm
Customer air filtration	50 µm
Air connection	Shut-off valve with brass cone compression screw connection 3/8" to Ø 10 mm provided
Air connection above floor level	min. 50 mm, max. 105 mm with valve opened

Suction

	Suction vacuum at device intake	
Suction air quantity at spray mist cannula	with wet suction	with dry suction
minimal V~250 NI/min	> 60 mbar	> 85 mbar
recommended V~300 NI/min	> 80 mbar	> 120 mbar
Suction vacuum static max.	< 180 mbar	< 180 mbar



Note

If the negative static pressure is > 180 mbar, the unit must be equipped with the negative pressure regulating valve assembly kit.

Diameter of the suction connection 40 mm

Above-floor suction connection 20 mm

The values apply to the KaVo measuring set (Mat. no. 0.411.8500).

Operating environment



WARNING

Inappropriate operating conditions.

Impairment of the electrical safety of the device.

- It is essential to comply with the operating conditions specified in the "Technical Specifications" chapter.

Floor quality	The quality of the flooring must meet the load bearing ability for buildings DIN 1055 page 3 and have a pressure resistance in accordance with DIN 18560 T 1.
Ambient temperature	+10 to +40 °C
Relative humidity	30 to 75%
Air pressure	700 hPa - 1,060 hPa
Max. elevation for operation	up to 3,000 m

Maximum loads

Max. patient weight load on patient chair Standard	185 kg
Max. patient weight load COMPACTchair	135 kg
Tray holder of the dentist element - loadable up to	2 kg
Assistant unit tray holder - loadable up to	1 kg
Dentist element - loadable up to	2 kg

Transportation and storage conditions

Ambient temperature	-20 to +55°C
Relative humidity	5% to 95% non-condensing
Air pressure	700 to 1,060 hPa

Weight

Treatment unit with patient chair Standard	279 kg gross, 224 kg net
Includes steel setup plate and patient communication	344 kg gross, 289 kg net
Treatment unit with COMPACTchair	255 kg gross, 200 kg net
With steel set-up plate and patient communication	320 kg gross, 265 kg net

For more information about the packages, please refer to Assembly Instructions

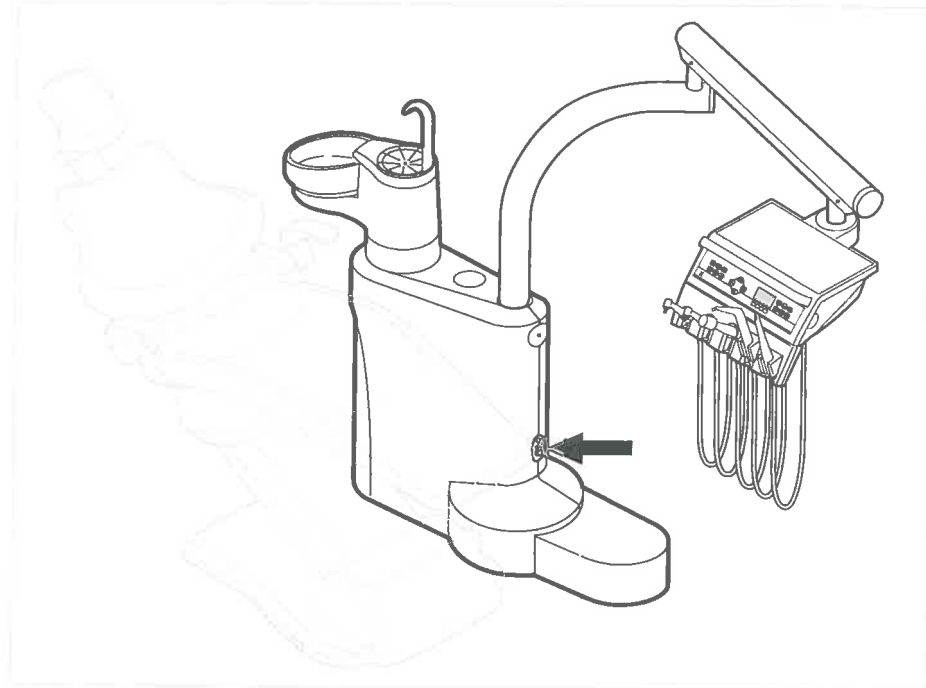
4 Operation

4.1 Switching the device on and off



Note

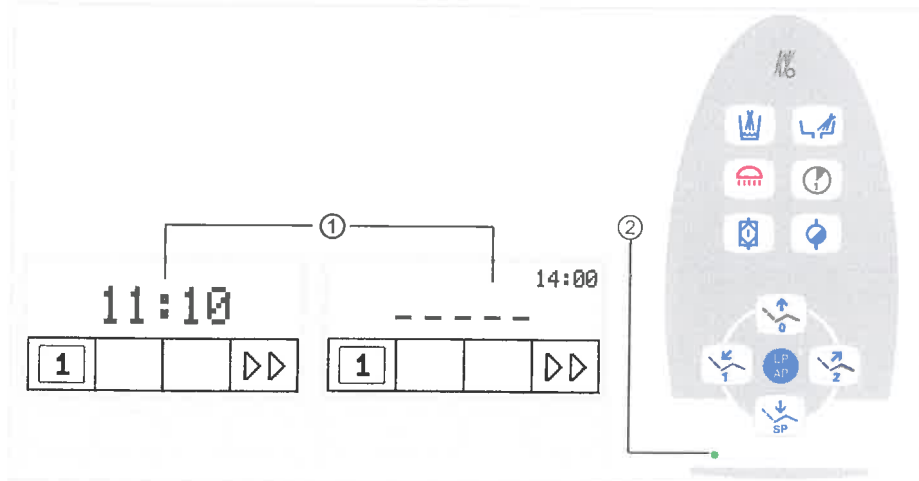
Always switch the machine off before leaving the office.



► Switch on the device using the main switch.

⇒ The display of the dentist unit ① shows the preselected basic menu.

⇒ The green LED "Device turned on" lights up on the assistant unit ②.



Basic menu without MEMOSpeed / basic menu with MEMOSpeed / assistant element

4.2 Adjusting the dental chair

4.2.1 Adjusting the arm rest (optional)

Armrest for the standard dental chair

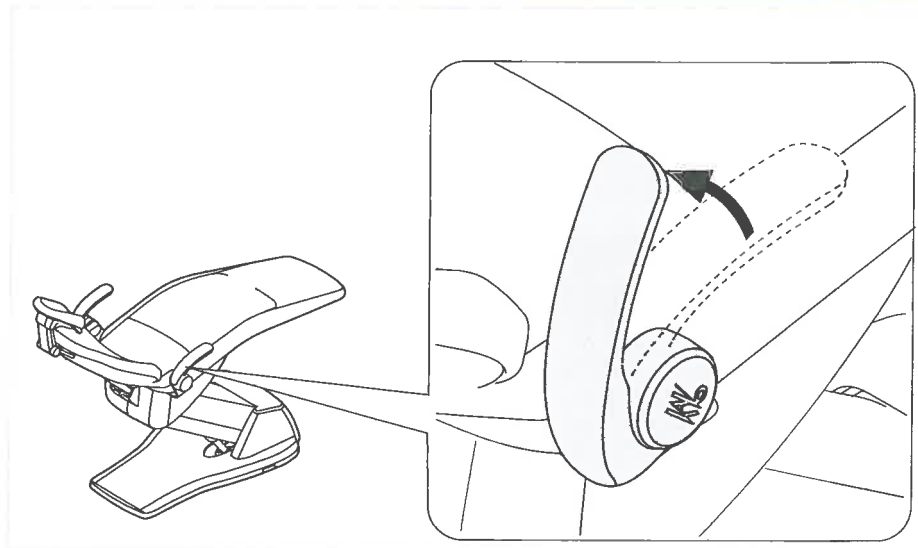
To make it easier for the patient to sit in the chair, the armrest can be swung up.



CAUTION

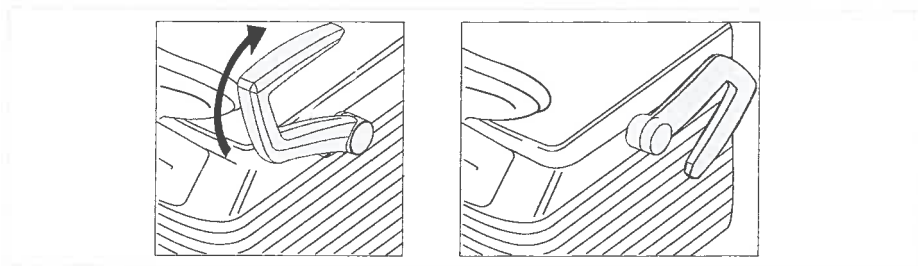
The patient's hands are in a bad position when the chair is rising
Danger of crushing fingers between the backrest and armrest.

- Make sure that the patient is sitting in the right position (especially children).



Arm rest for patient chair COMPACTchair

To make it easier for the patient to sit in the chair, the arm rest of the patient chair can be swiveled forward.



- Swivel the arm rest forward
- Then swivel the arm rest back into place.

4.2.2 Adjust head rest

Adjust double-jointed knob headrest with knob



CAUTION

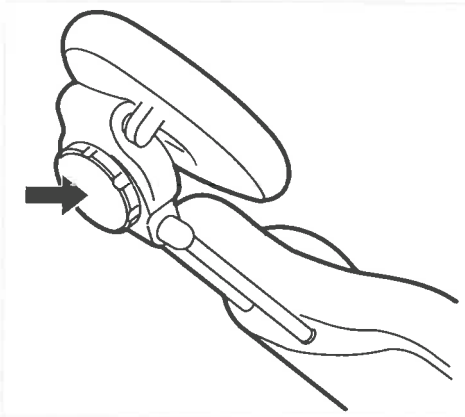
Adjusting the headrest.

Injury of neck muscles.

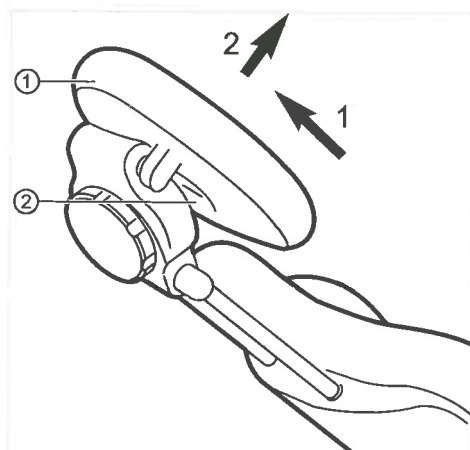
- ▶ Make sure that the patient is aware of the headrest setting.
- ▶ Patients need to raise their head slightly during adjustment.



- ▶ Push in or pull out the headrest depending on the patient's size.



- ▶ To swing the headrest, turn the locking dial to the left, move the headrest into position, and turn the dial to the right to lock it.



- ▶ To remove the headrest cushion, remove the screw ②, pull the cushion ① up slightly, and remove it to the front.

Setting the push button of 2-joint headrest (optional)



⚠ CAUTION

Adjusting the headrest.

Injury of neck muscles.

- ▶ Make sure that the patient is aware of the headrest setting.
- ▶ Patients need to raise their head slightly during adjustment.

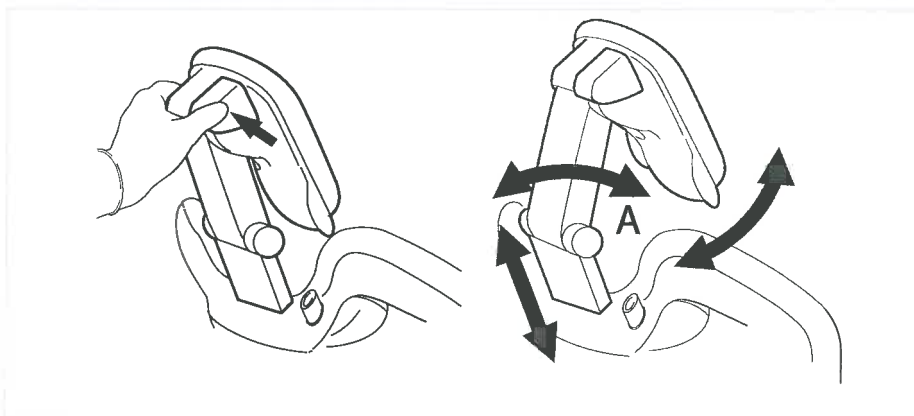
The bar length and angle of the headrest can be adjusted.

- ▶ Press the lock button and push in or pull out the headrest depending on the patient's height.



Note

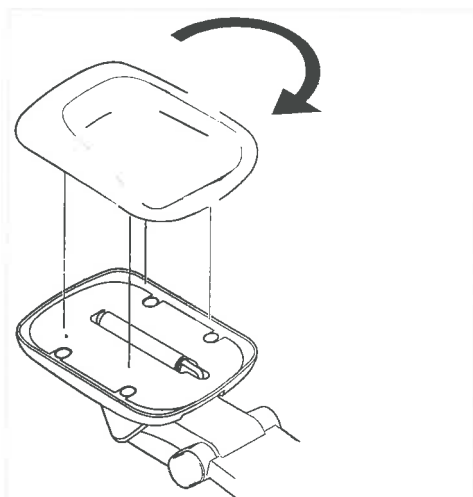
The service technician can adjust the braking force.



- ▶ Press the lock button and swing the headrest into the desired position. When swinging the headrest back into position, make sure that there is nothing between the area A and head cushion.

Turning the head cushion

The head rest cushion is a rotating cushion. It can be turned to offer better neck support, for example when treating children.



- ▶ Evenly pull the cushion up and rotate it 180°.
- ▶ Then mount and push the head cushion back on.

4.2.3 Positioning the dental chair manually



CAUTION

Danger of injury from overload or dynamic load.

Patient chair may be damaged by overloading it.

- ▶ Do not subject the patient chair to a load exceeding its limit (Standard patient chair 185 kg/ COMPACTchair patient chair 135 kg).
- ▶ Do not subject the patient chair to dynamic loads.



CAUTION

Motorised movement of the chair

The patient or treatment personnel can be clamped or crushed.

- ▶ Monitor the patient and treatment personnel when changing the patient's position.



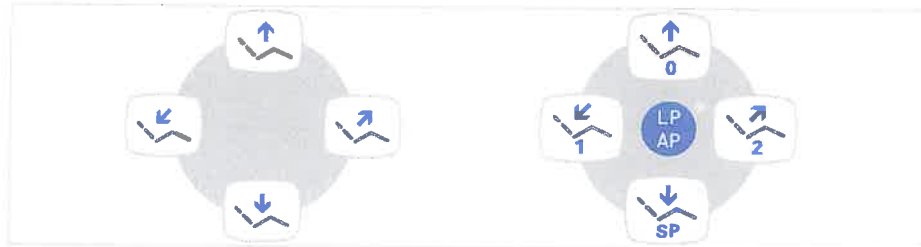
CAUTION

Risk of injury when moving the patient or patient chair.

The patient or treatment personnel can be pinched or crushed.

- ▶ Position all moving parts, such as dentist element, assistant element, operating light, screens, etc., outside the collision range when you move the patient or patient chair.

Positioning the chair and backrest manually using the dentist or assistant unit



Use the following buttons to adjust the chair height and position of the backrest:

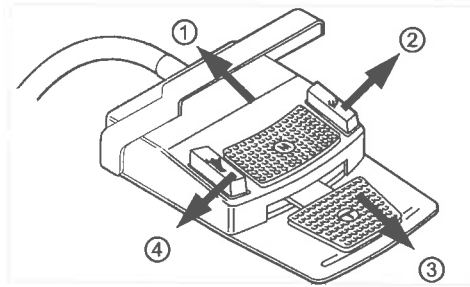
Key Dentist element	Key Assistant element	Feature
		The chair moves up.
		The chair moves down.
		The backrest moves upward.
		The backrest moves downward.

- ▶ Press the related key.

⇒ The chair or backrest moves in the desired direction.

Positioning the chair and backrest manually using the foot control

The cross switch of the foot control assumes the function of the button wheel on the dentist element during manual positioning of the patient chair.



Requirement

All instruments are in their holder.

- ▶ Chair up: Move the cross switch on the foot control in direction ①.
- ▶ Chair down : Move the cross switch on the foot control in direction ③.
- ▶ Backrest up: Move the cross switch on the foot control in direction ②.
- ▶ Backrest down: Move the cross switch on the foot control in direction ④.

4.2.4 Automatic positioning of dental chair

⚠ CAUTION

Danger of injury from overload or dynamic load.

Patient chair may be damaged by overloading it.

- ▶ Do not subject the patient chair to a load exceeding its limit (Standard patient chair 185 kg/ COMPACTchair patient chair 135 kg).
- ▶ Do not subject the patient chair to dynamic loads.

⚠ CAUTION

Danger of crushing during automatic chair movement.

The patient or treatment personnel can be clamped.

- ▶ Monitor the patient and treatment personnel when changing the chair position.

⚠ CAUTION

Risk of injury when moving the patient or patient chair.

The patient or treatment personnel can be pinched or crushed.

- ▶ Position all moving parts, such as dentist element, assistant element, operating light, screens, etc., outside the collision range when you move the patient or patient chair.

Gradually adjust the chair position

Save chair positions

The chair positions can be saved and retrieved at any time by the press of a button.

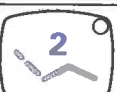
When the position is retrieved, the chair automatically moves to the saved position (the so-called "automatic position," or "AP" for short).

The four chair positions can be saved on the control panels. Two of these four positions can be saved with the foot control.

It is for example recommendable to save the sitting down and getting up position using the "AP 0" key and the rinsing position with the "SP" key.

Recalling automatic positions with the dentist unit

The following keys can be used to recall saved chair positions.

Key	Operation
	Move to the rinsing position.
	The last position before actuating the SP is assumed.
	Move to automatic position 0.
	Move to automatic position 1.
	Move to automatic position 2.
	Move to the collapsed position.

► Briefly press the desired button.

⇒ Chair automatically moves to the stored position.

⇒ Upon arrival at the stored position, the display diode on the button is turned on.

Saving automatic positions with the dentist unit

Recommended assignment of buttons:

"SP" button: rinsing position

"AP 0" button: entry and exit position

"AP 1" button: treatment position, e.g. for lower jaw treatment

"AP 2" button: treatment position, e.g. for upper jaw treatment

"Collapse position" button: collapse position

► Move the chair to the desired position.

► To save the chair position, press "AP 0", "AP 1", "AP 2", "SP" or "Collapsed position" button until you hear a signal.

⇒ The display diode of the pressed button is turned on. The chair position is saved.

Last position

After the "LP" button is pressed, the chair moves into its position before the "SP" button was pressed.



Note

The memory is erased when you turn off the device. After turning on the device again (for example in the morning or after lunch), the chair does not execute a specific movement when you press the "LP" button.



Recalling automatic positions with the assistant unit

- ▶ Briefly press the "AP" key.
- ⇒ The LEDs of the "AP 0", "AP 1", "AP 2", "SP", and "LP" keys flash for approximately four seconds.
- ▶ During these four seconds, briefly press the "AP 0", "AP 1", "AP 2", "SP" or "LP" key.
- ⇒ The chair moves into the selected automatic position.

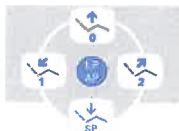
Saving automatic positions with the assistant unit



Note

The automatic position "Last position" is saved on the "LP" button. Press the "LP" button for the chair to automatically move to the last position before the rinsing position. The "LP" button cannot be assigned to another automatic position.

- ▶ Move the chair to the desired position.
- ▶ Briefly press the "AP" key.
- ⇒ The LEDs of the "AP 0", "AP 1", "AP 2", "SP", and "LP" keys flash for approximately four seconds.
- ▶ During these four seconds, press the "AP 0", "AP 1", "AP 2", "SP" or "LP" button, until a signal sound is transmitted.
- ⇒ LED of the pressed button lights up. The chair position is saved.

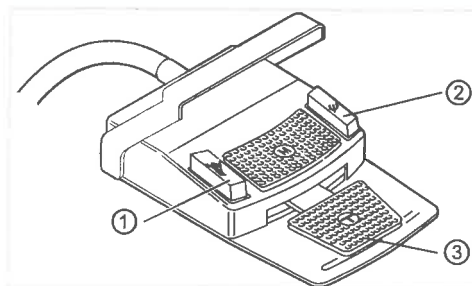


Recalling automatic positions with the foot control



Note

If an instrument is removed, the chair functions of the foot control are blocked. The blocking can be removed by briefly pressing the stirrup switch. The functions are then available.



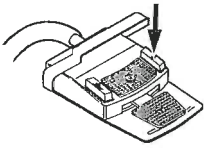
- ① Spray preselection/AP footswitch
- ② Blown air/AP footswitch
- ③ Foot pedal

The chair positions can be recalled with two foot switches; the standard setting is as follows:

- "Spray selection" foot switch: automatic position "LP" (last position)

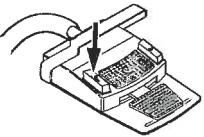
- "Blown air" foot switch: automatic position "SP" (rinsing position)

Move the chair when the instrument is mounted



- ▶ Press the "SP" foot-operated button.

or



- ▶ Press the "LP" foot-operated button.

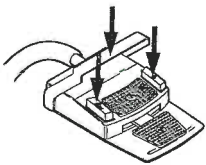
⇒ The chair moves into the selected automatic position.

Move the chair when the instrument is removed



Note

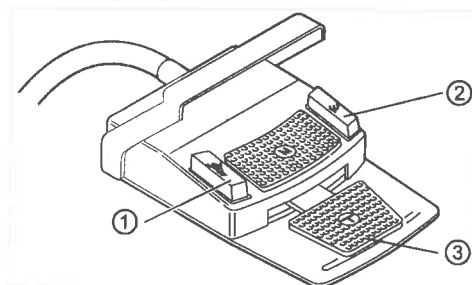
If an instrument is removed, the chair functions of the foot control are blocked. The blocking can be removed by briefly pressing the stirrup switch. The functions are then available.



- ▶ Press the stirrup switch and then the "Preselected spray" or "Blown air" foot switch.

⇒ The chair moves into the selected automatic position.

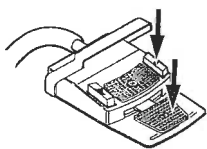
Saving an automatic position with the foot control



- ① Spray preselection/AP footswitch
- ② Blown air/AP footswitch
- ③ Foot pedal

The chair positions can be saved on two footswitches; the standard setting is as follows:

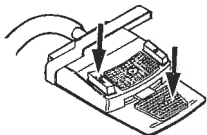
- "Spray default" footswitch: "LP" automatic position (last position)
- "Blown air" footswitch: "SP" automatic position (rinsing position)



- ▶ Hold down the foot pedal and foot-operated button "SP", and simultaneously press any button for an automatic position ("AP 0", "AP 1", "AP 2" or "SP") on the dentist or assistant unit until you hear a beep.

⇒ The automatic position is saved to the foot-operated button.

or



- ▶ Hold down the foot pedal and foot-operated button "LP", and simultaneously press any button for an automatic position ("AP 0", "AP 1", "AP 2" or "SP") on the dentist or assistant unit until you hear a beep.

⇒ The automatic position is saved to the foot-operated button.

4.2.5 Safety shut-off

To prevent collisions arising from the movement of the patient chair, safety shutoff switches are installed to protect the patient and practice personnel from injury and the treatment unit from damage.



CAUTION

Damage to the assistant element and dental chair.

Despite some safety shut-downs being present, certain positions of the assistant unit may collide with the dental chair.

- ▶ Keep the assistant unit out of the range of motion of the patient chair.
- ▶ Always monitor the chair movement.



CAUTION

Pinching from the treatment chair.

The safety shutoff of the treatment chair is activated by lifting the respective component. Depending on the patient's body weight and the leverage, more force can be exerted on the object to be triggered than is necessary to trigger the switching function.

- ▶ The treatment personnel must move outside of the chair's swinging range whenever the chair moves.

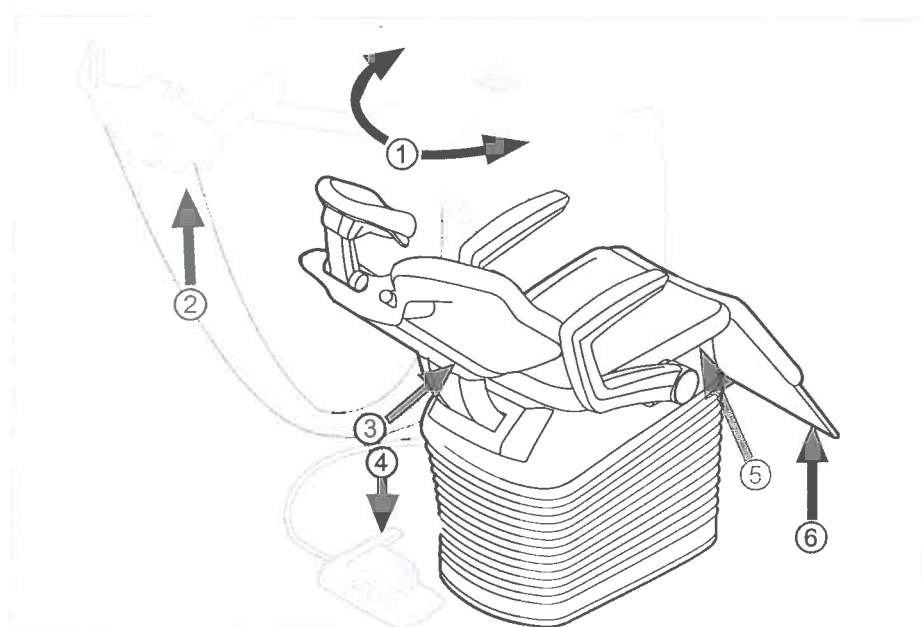
The safety cut-offs can be found at the following places on the treatment unit.



Safety shutoff for the Standard patient chair

- | | |
|---|-------------------------------|
| ① Patient unit pivoted over the patient chair | ② Assistant element |
| ③ Backrest | ④ Bracket on the foot control |
| ⑤ Kick plate | ⑥ Seat |

Item No.	Safety switch-off actuated	LED on assistant element	LED on dentist element
①	Patient unit swung over the patient chair		
②	Assistant element		
③	Backrest		
④	Bracket on the foot control		
⑤	Kick plate		
⑥	Seat		



Safety shutoff for the COMPACTchair patient chair

- | | |
|---|-------------------------------|
| ① Patient element pivoted over dental chair | ② Assistant element |
| ③ Backrest | ④ Bracket on the foot control |
| ⑤ Bench support / seat cushion | ⑥ Foldable part of the seat |

Item No.	Safety switch-off actuated	LED on assistant element	LED on dentist element
①	Patient unit swung over the patient chair		
②	Assistant element		
③	Backrest		
④	Bracket on the foot control		
⑤	Bench support / seat cushion		
⑥	Foldable part of the seat		

The safety shutoff occurs when a movement angle has been exceeded, or part of the treatment unit collides with an object.

If a person or object actuates a safety shutoff, the chair immediately stops moving. The fact that the safety shutoff has been activated is displayed by the corresponding display flashing on the dentist or assistant unit.

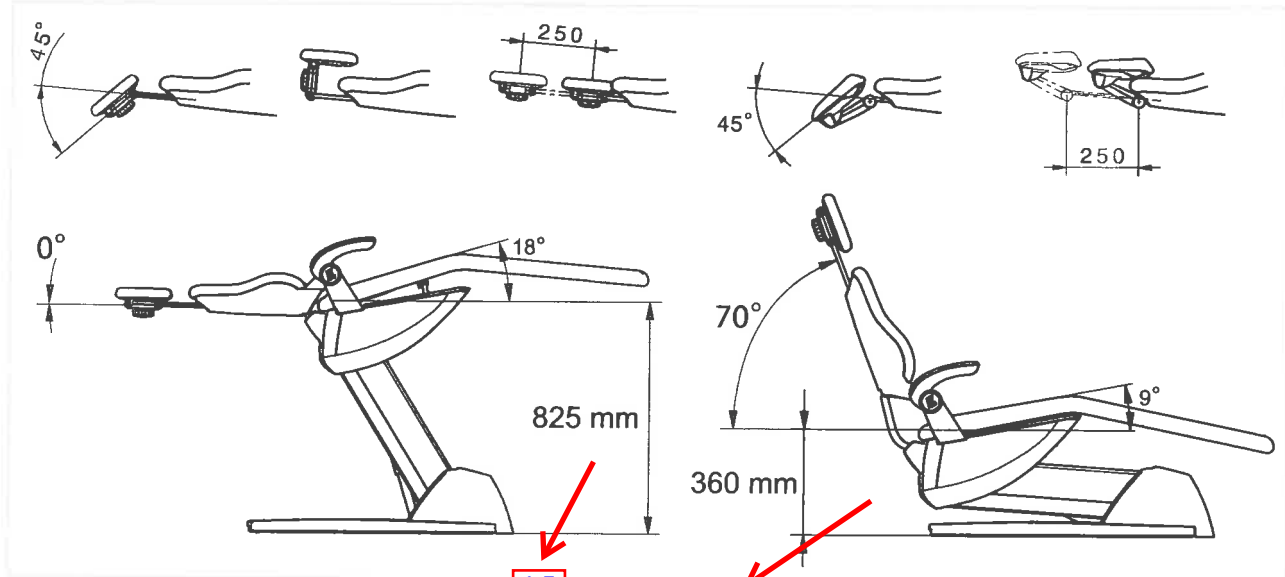


Note

The chair's position cannot be changed with the key wheels when a safety shutoff is activated.

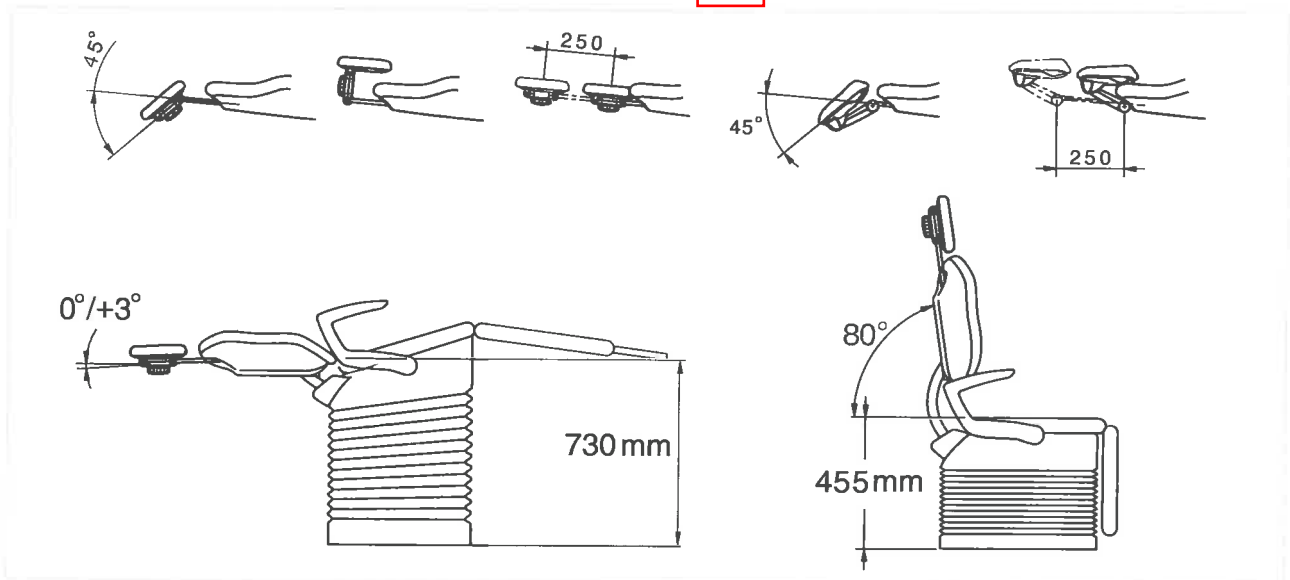
Exception: The patient unit safety switch only stops the upward and downward movement of the patient chair. The backrest can be moved up and down.

4.3 Moving the patient chair



Patient chair Standard

1.5



Patient chair COMPACTchair

4.4 Move the dentist's unit

CAUTION

Damage from overloading the dentist element.

Exceeding the maximum weight of more than 2 kg by adding handpieces, accessories, etc., can cause damage.

- Do not overload the dentist element!





Risk of injury when the dentist or assistant element is moved.

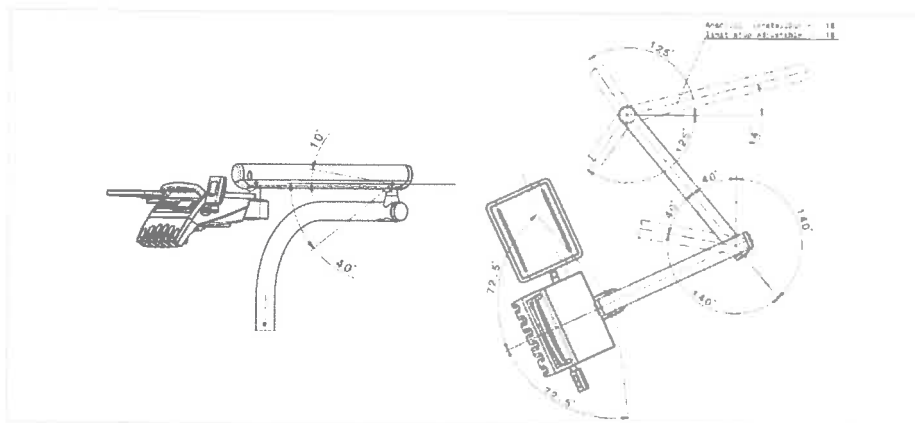
The patient or office staff may be injured or bruised.

- ▶ Monitor the patient and office staff when moving the dentist or assistant element.

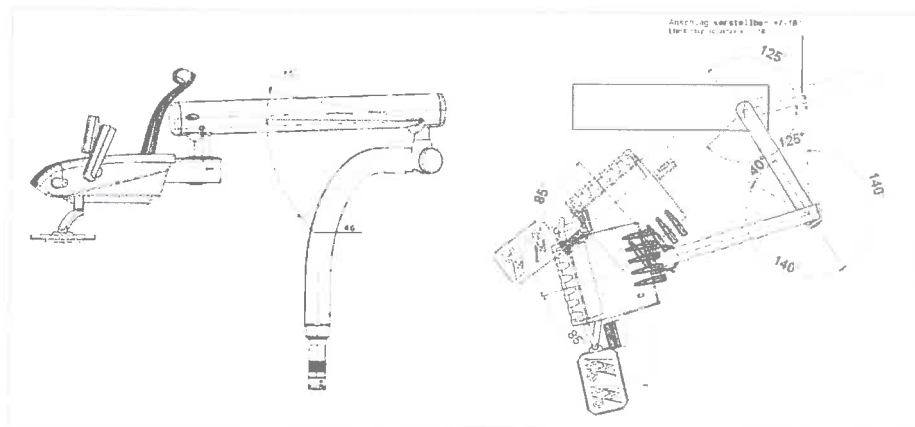
The swinging range of the dentist unit is limited by stops.

Do not pull the dentist unit by the instrument hose.

- To adjust the dentist unit height, release the brake, adjust the height, and reset the brake.



Dentist unit TM



Dentist element S

4.4.1 Move the cart



Moving and overloading the cart.

Danger of tipping and damaging the cart.

- ▶ Only use the card on a continuously smooth floor.
- ▶ Do not overextend the supply hose for the cart.
- ▶ Make sure that there are no obstructions on the floor.
- ▶ Do not sit on the dentist element or step on the castor.

**Note**

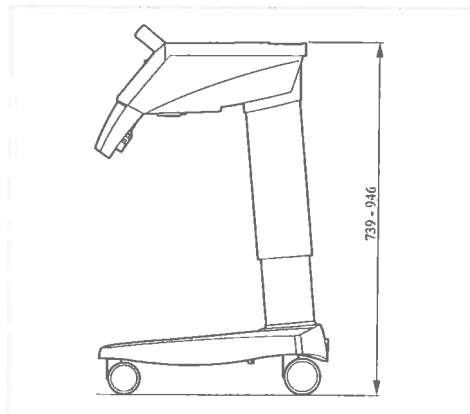
The area in which the cart can be move is restricted by the length of the lines and hoses that connect the cart to the base of the device. Only move the cart within this range.

- To change the position of the cart, hold the cart by the bow-type handle and move it to the desired position. Make sure that there are no obstructions on the floor.

The top part of the dentist's unit can be positioned in 9 levels.

**Note**

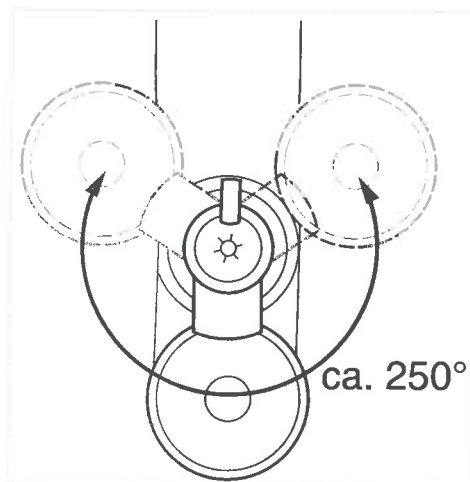
Do not lift the dentist's unit using the handle. The handle is only for horizontally positioning the dentist unit.



- Lift the top part of the dentist's unit until it locks into place.
- To release the lock, move the top part all the way up and then move it down.

4.5 Move the patient unit

4.5.1 Swing the patient unit by hand



The swinging range is about 250°.



CAUTION

The left armrest can collide with the manually adjusted patient's unit when the chair moves.

Injury hazard.

- ▶ Each time before the chair is adjusted (automatic and manual), swing the manually adjusted patient's unit into resting position.



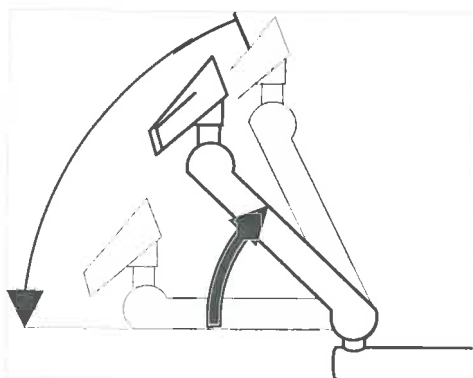
Note

When the patient unit is swung over the patient chair, the safety shutoff is activated.

4.6 Moving the assistant element

4.6.1 Adjusting the height of the Standard assistant element

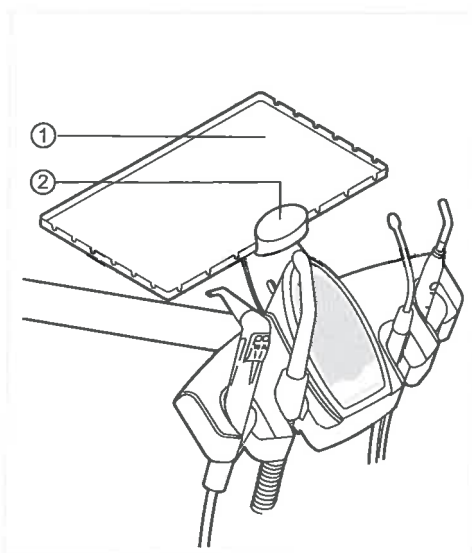
The assistant unit can be vertically positioned in four levels.



- ▶ To set a higher level, pull the assistant unit upward gently until it audibly locks in place.
- ▶ To set a lower level, pull the assistant unit all the way up until the lock releases, and then lower the assistant unit.

Mounting the tray holder

- ▶ Mount the tray holder on the assistant element.



① Tray support

② Air nozzle holder

The support ② for the tray holder ① is an optional accessory.

4.6.2 Moving the assistant element right, left (optional)



CAUTION

Pinching from the treatment chair.

The treatment staff can get pinched or crushed.

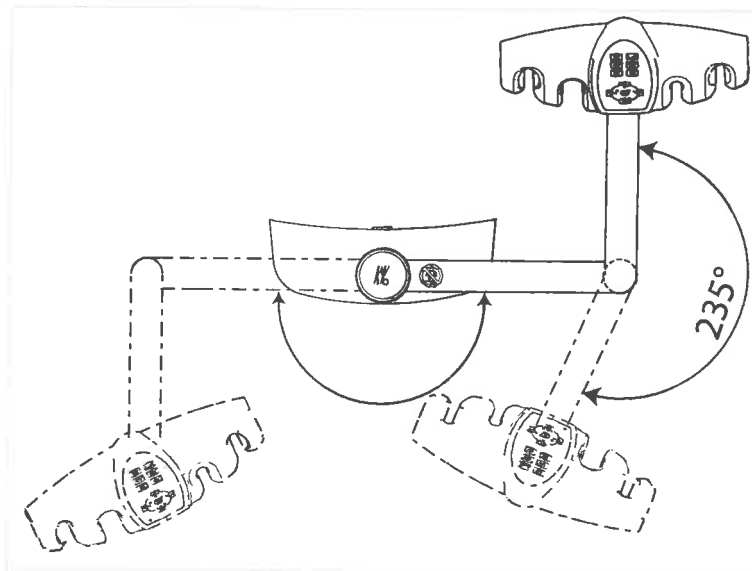
- ▶ The treatment personnel must move outside of the chair's swinging range whenever the chair moves.



CAUTION

Material damage caused by overloading.

- ▶ Do not rest your foot near the pivot point and/or transverse arm of the assistant element.



Pivoting range of assistant element r, l (optional)

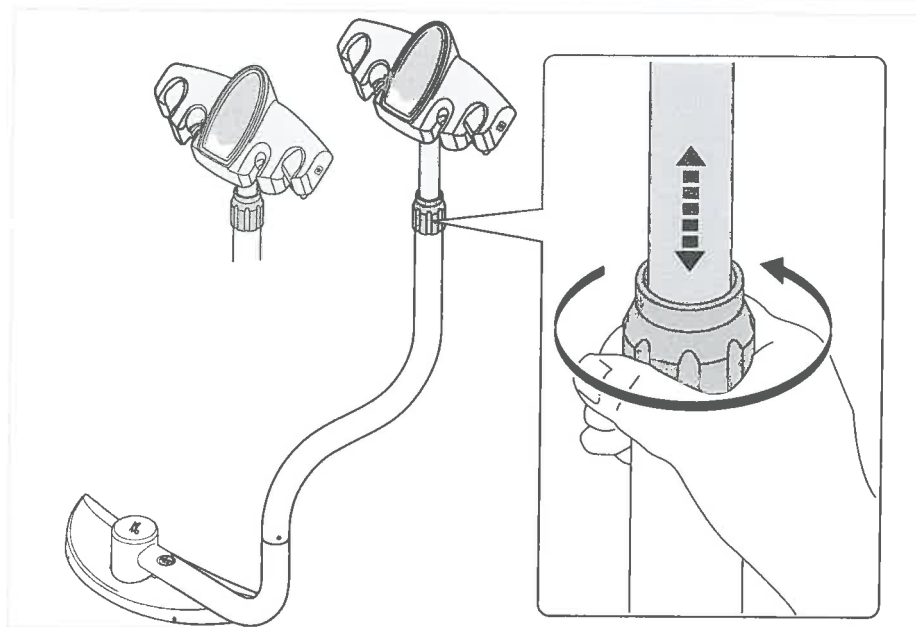
- ▶ Move the backrest up before swinging the assistant element.
- ▶ Move the assistant element to the desired position in its swinging range.

Adjusting the height of the assistant element right, left (optional)



Note

Handpieces may drop out of the holders while the assistant element is being moved, especially during adjustment of the height. In order to prevent handpieces from being damaged, make sure that no handpiece drops down while you move the assistant element.



- ▶ Undo the clamping screw and push the assistant element into the desired position.
- ▶ Re-tighten the clamping screw.

4.7 Using functions through the menu

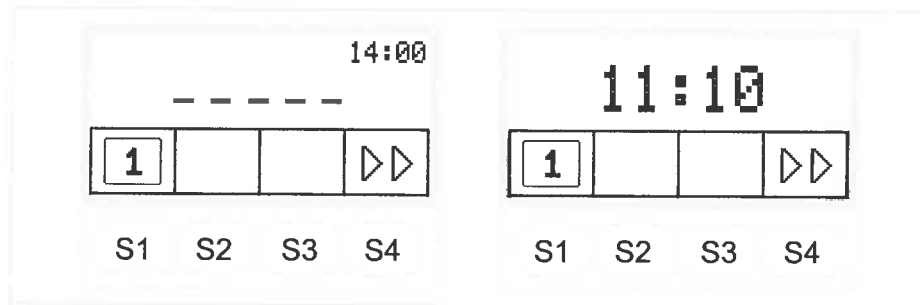
4.7.1 Using the user menu

The following options can be opened in the user menu:

Option	Feature	Description
1	Firmware	Display current firmware version.
2	Time of day	Set time of day.
3	Date	Set date.
4	Time display mode	Setting the time of day display mode: ▪ Time of day only ▪ Time of day without seconds
5	Language	Set menu language: ▪ Deutsch ▪ English ▪ Italiano ▪ Français
6	LCD	Set contrast of LCD display.

Option	Feature	Description
7	Licenses	Display of activated licenses

The functions in the menu are used through the selections keys (S1 to S4) on the display



User menu with MEMOSpeed / without MEMOSpeed



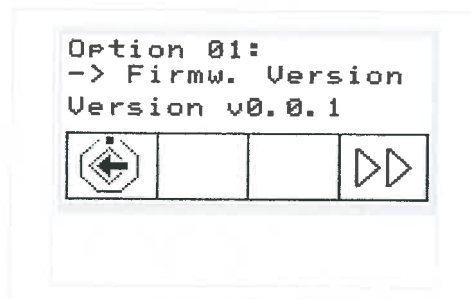
- Press the "Next" key (S4) to start-up the user menu.

⇒ The user menu displays options and parameters that can be set and changed by the user.



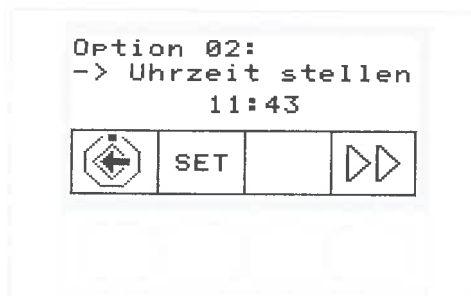
- Press the "Next" key (S4) to switch to the next option.

Option 1: Displaying the firmware version



The firmware version is displayed

Option 2: Setting the time of day

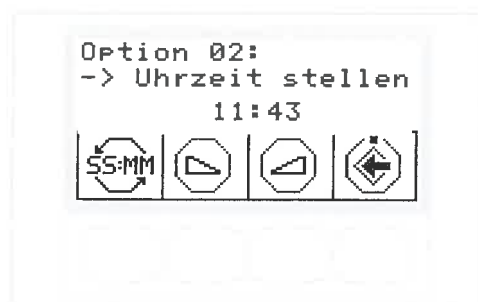


- Press the "SET" (S2) key to change the values of minutes and hours.

⇒ The value to be changed flashes.



- Press the "Save" (S4) key to save the selection made.



- ▶ Press the "reduce value" or "increase value" key to set the marked time of day.

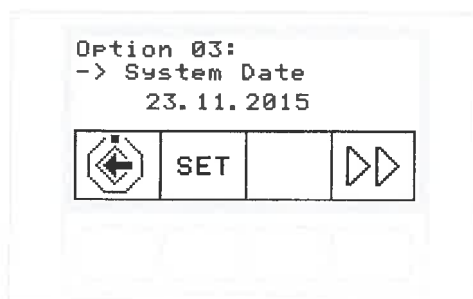


- ▶ Press the "SS:MM" (S1) key to switch between hours and minutes.



- ▶ Press the "Save" (S4) key to save the values and switch to the SET display.

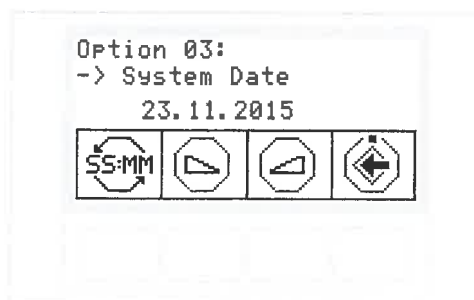
Option 3: Set the date



- ▶ Press the "SET" (S2) key to change the values of day, month, and year.
⇒ The value to be changed flashes.



- ▶ Press the "Save" (S1) key to save the selection made.



- ▶ Press the "Decrease value" or "Increase value" key to set the marked value.

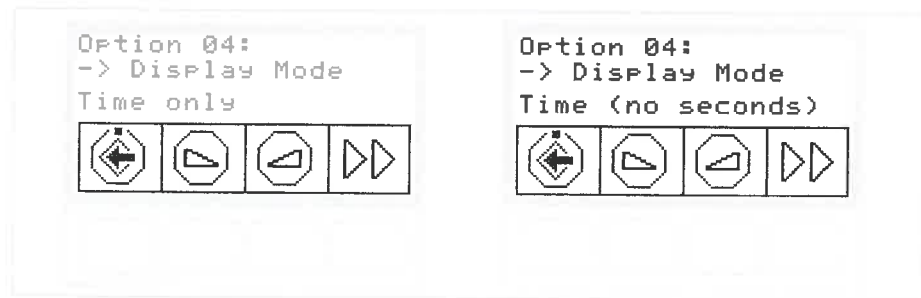


- ▶ Press the "SS:MM" (S1) key to switch between day, month, and year.



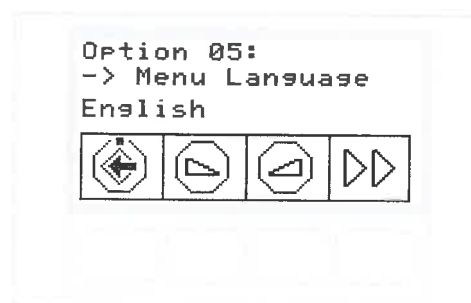
- ▶ Press the "Save" (S4) key to save the values and switch to the SET display.

Option 4: Setting the display mode for time of day



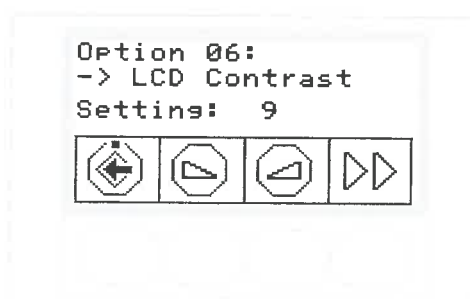
- ▶ Press the "Decrease value" or "Increase value" keys to set the time of day display mode.
- ▶ The following views can be selected:
 - Time of day only
 - Time of day (without seconds)

Option 5: Setting the language



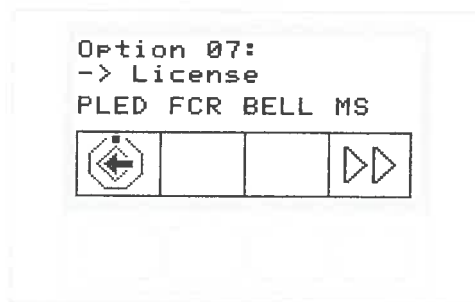
- ▶ Press the "Decrease value" or "Increase value" key to select the menu language. The following languages can be selected: Deutsch, English, Italiano, Francais.
- ▶ Press the "Save" (S1) key to save the values.

Option 6: Setting the display contrast



- ▶ Press the "reduce value" or "increase value" key to set the contrast of the LCD display.
- ▶ Press the "Save" (S1) key to save the values.

Option 7: Displaying the licenses



Displays the activated licenses:

- PLED: PiezoLED
- FCR: Foot control
- BELL: Bell
- MS: MEMOSpeed

4.7.2 Standby menu

Standby menu as default setting

The unit starts in the standby menu.

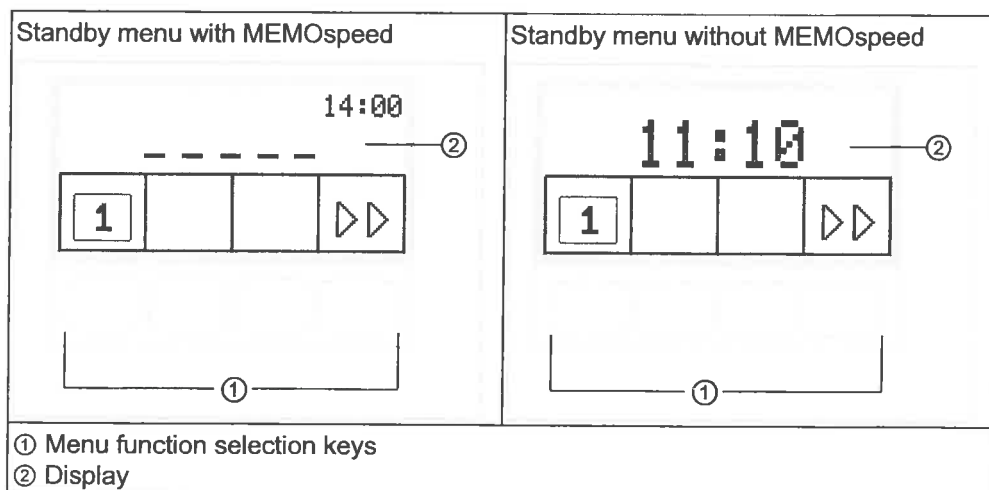
Available with MEMOSpeed licence only:

The device automatically switches to its standby menu when you close the handpiece menu and the patient communication menu.

Select function

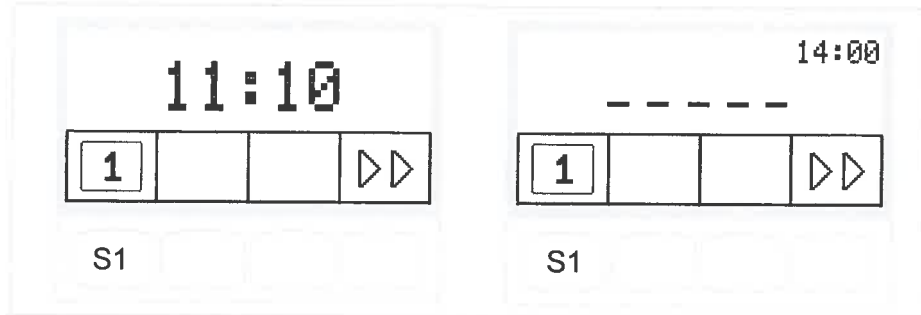
The display shows display fields with symbols for the operating functions.

Below each display field, there is a key for selecting the displayed operating function.



Select dentist

The first symbol in the stand-by menu displays the current user.

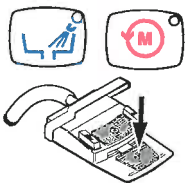
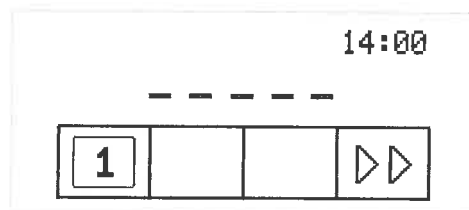


- Press the "S1" key to select dentist 1 or dentist 2.

Permitting level switching (available with MEMOSpeed only)

Level switching is deactivated in the basic state.

The level switching symbol displays the current dentist.

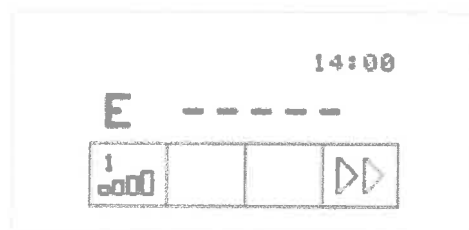


Note

The device acts like on level E when level switching is deactivated.

- To switch between levels, keep the "Direction of motor rotation" and the "Bowl flushing" keys and the foot pedal depressed, until a beep can be heard.

After activating level switching, the level switching symbol shows the level (E, 1 2 or 3 - level E is selected in the example shown). The pre-selected dentist is only displayed very small in the level switching symbol.



Note

The device automatically saves the activation of level switching for the current dentist.



Note

Level switching is deactivated using the same key combination as activation.



- To select a level, briefly press the selection button for "Preselect level".

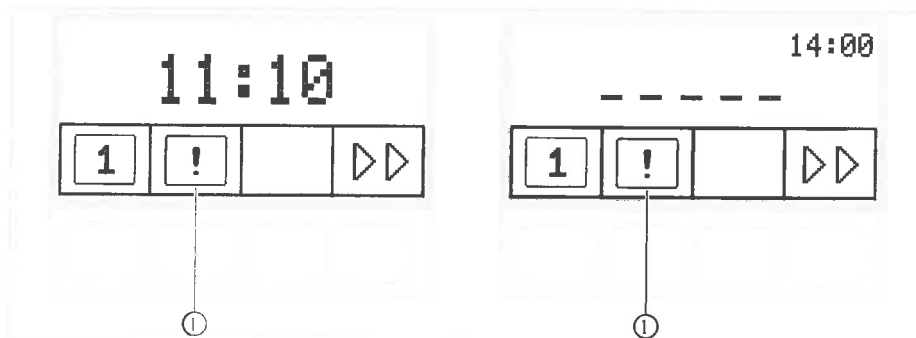
Selection of dentist with level switching activated



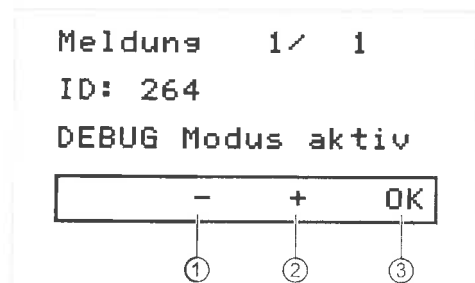
- Press the "Pre-select level" key long to select dentist 1 or dentist 2.

Status display in the Standby menu

If a status message is available, the standby menu shows an exclamation mark on selection key "S2" ①.



- Press the "S2" selection key ① to display status messages.



- Press the selection keys "+" ② and "-" ① to switch between multiple status messages.
- Press the "OK" selection key ③ to exit from the display of status messages.

Error messages in the status display

See also:

📄 9 Troubleshooting, Page 108

4.7.3 Operating the MEMOSpeed menu (optional)

The MEMOSpeed menu is used to display and set handpiece-specific values.

The display depends on which instrument was withdrawn.

To save the handpiece-specific values, there are 3 memory levels (1, 2, 3) each available for two dentists (dentist 1 and dentist 2).

Save instrument-specific settings

The following settings can be individually saved for the instruments:

Handpiece	Setting
Turbine	Speed range (available with level switching only) Preselected spray
Motor INTRA LUX KL 701/703, COMFORTdrive	Speed range (available with level switching only) Direction of motor rotation Preselected spray
Ultrasonic scaler	Spray on/off* Intensity (with level switching only)
Multifunctional handpiece	Heating on/off

* only with a corresponding setting in service mode

Changing turbine settings in the menu



Note

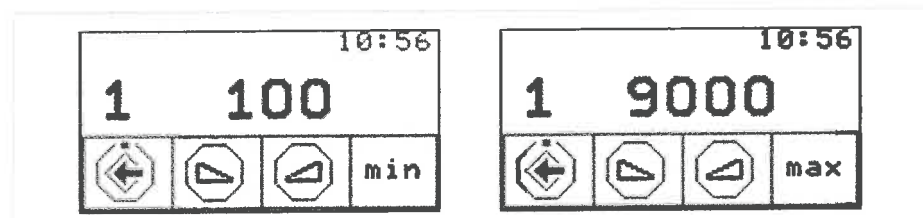
Following instructions for use, service instructions and installation instructions in the instrument packaging.



Note

The speed can be set at level E only with the foot pedal.
The speed cannot be saved in level E.

- ▶ Remove the turbine from the holder.
 - ▶ Briefly press the "Preselect level" (S1) key to select the level.
 - ▶ Press the "Preselect level" (S1) key for 4 seconds to change settings.
- ⇒ The display switches to the turbine settings menu.



Settings menu for minimal/maximal speed



- ▶ Press the "min/max" (S4) key to toggle between the settings menus for minimal and maximal speed.



- ▶ Press the "Decrease value" key to decrease the speed.

or



- ▶ Press the "Increase value" key to increase the speed.



⇒ The intensity is shown on the display.

- ▶ Press the "Save" key to save the values. You can save after setting each value, or after setting all values.

⇒ Saving is acknowledged by a beep.

⇒ This closes the "Settings" menu.

Setting the cooling level

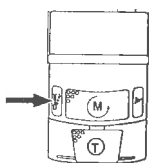
Requirement

Settings menu for turbine is selected.



- ▶ Press the "Preselected spray" button.

or



- ▶ Press the "Preselected spray" footswitch. (with level switching only)

⇒ The set values are saved each for the set memory level and the set dentist level.

Key	Feature
	No LED is on: No cooling
	One LED is on: Spray air cooling status
	Both LEDs are on: Spray cooling status

Changing motor settings in the menu



Note

Following instructions for use, service instructions and installation instructions in the instrument packaging.



Note

The motor mode is equivalent to 2 minutes operating time and 5 minutes pause. This represents the possible maximum load of the motor (full load at maximum speed).

In practice, pulse loads lasting seconds or pause times lasting seconds or minutes are realistic given that the maximum possible motor current is not normally reached. This equates to the dentist's normal way of working.

- ▶ Remove the motor from the holder.
 - ▶ Briefly press the "Preselect level" (S1) key to select the level.
 - ▶ Press the "Preselect level" (S1) key for 4 seconds to change settings.
- ⇒ The display switches to the motor settings menu.

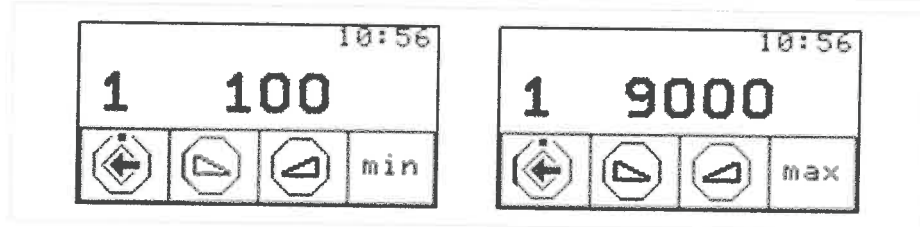
Setting the speed



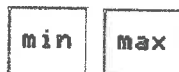
Note

The speed can be set at level E only with the foot pedal.
The speed cannot be saved in level E.

	Motor KL 701/KL 703	COMFORTdrive 200XD
Minimum	100 rpm	30,000 rpm
Maximum	40,000 rpm	200,000 rpm



Settings menu for minimal/maximal speed



- ▶ Press the "min/max" (S4) key to toggle between the settings menus for minimal and maximal speed.



- ▶ Press the key for "Decrease value" to decrease the speed.

or



- ▶ Press the "Increase value" key to increase the speed.

⇒ The speed is shown in the display.



- ▶ Press the "Save" key to save the values. You can save after setting each value, or after setting all values.

⇒ Saving is acknowledged by a beep.

⇒ This closes the "Settings" menu.

Setting the cooling level

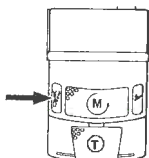
Requirement

Settings menu for motor is selected.



- ▶ Press the "Preselected spray" button.

or



- ▶ Press the "Preselected spray" footswitch.

⇒ The set values are saved each for the set memory level and the set dentist level.

Key	Feature
	No LED is on: No cooling
	One LED is on: Spray air cooling status

Key	Feature
	Both LEDs are on: Spray cooling status



- ▶ Press the "Save" key to save the values. You can save after setting each value, or after setting all values.

⇒ Saving is acknowledged by a beep.

⇒ This closes the "Settings" menu.

Setting the direction of motor rotation



Note

The direction of motor rotation can only be changed when the motor is at rest.

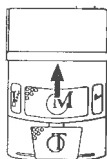
Requirement

Settings menu for motor is selected.



- ▶ Press the "Direction of motor rotation" key.

or



- ▶ Press the "Direction of motor rotation" foot pedal.

⇒ The direction of motor rotation is reversed each time the cross-switch and/or the "Direction of motor rotation" key is actuated: counterclockwise rotation - clockwise rotation.

⇒ The LED is on when CCW motor rotation is set.

- ▶ Press the "Save" key to save the values. You can save after setting each value, or after setting all values.

⇒ Saving is acknowledged by a beep.

⇒ This closes the "Settings" menu.



Changing the ultrasonic Scaler PiezoLED in the menu



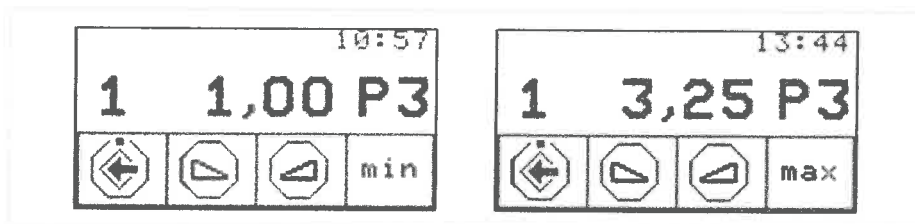
Note

Please comply with the enclosed "PiezoLED" Instructions for Use.

- ▶ Take the PiezoLED off the holder.
 - ▶ Briefly press the "Preselect level" (S1) key to select the level.
 - ▶ Press the "Preselect level" (S1) key for 4 seconds to change settings.
- ⇒ The display switches to the settings menu of the PiezoLED.

Setting the intensity

The intensity is set in steps of 0.25; the minimum intensity is 1.0, and the maximum is 10.0.



Settings menu for minimal/maximal intensity



- ▶ Press the "min/max" (S4) key to toggle between the settings menus for minimal and maximal intensity in the set operating mode.



- ▶ Press the "Decrease value" key to decrease the intensity.

or



- ▶ Press the "Increase value" key to increase the intensity.

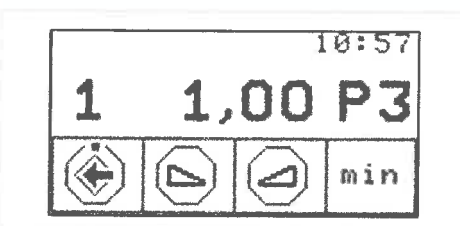
⇒ The intensity is shown on the display.

Define operating mode (PiezoLED only)



Note

The selection of the mode depends on the treatment method and the tip used. For information about the selection of an operating mode, please refer to the "Operating modes P1 / P2 / P3 and E" section of the "PiezoLED Instructions for Use".



- ▶ Take the PiezoLED off the holder.
- ▶ Press the "Mode" key to select the operating mode. Modes P1 / P2 / P3 / E are available for selection.



Setting the cooling status

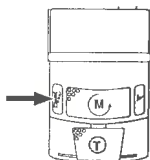
Requirement

Settings menu for PiezoLED is selected.



- ▶ Press the "Preselected spray" button.

or



- ▶ Press the "Preselected spray" footswitch.

Key	Feature
	No LED is on: No cooling
	Both LEDs are on: Spray cooling status



- ▶ Press the "Save" key to save the values. You can save after setting each value, or after setting all values.

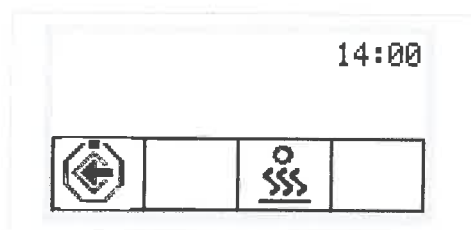
⇒ Saving is acknowledged by a beep.

⇒ This closes the "Settings" menu.

Changing the settings of the multifunctional handpiece in the menu

- ▶ Briefly press "Preselect level" key to select the level.
 - ▶ Take the multifunctional handpiece off the holder.
 - ▶ Press "Preselect level" button for 4 seconds in order to change settings.
- ⇒ The display changes to the multifunctional handpiece settings menu.

Adjusting the air/water heating



Settings menu for multifunctional handpiece



- ▶ Adjust the heating using the "Air/water heating" button.

Symbol	Function
	Air/water heating "on"
	Air/water heating "off"



- ▶ Press the "Save" key to save the values. You can save after setting each value, or after setting all values.

⇒ Saving is acknowledged by a beep.

⇒ This closes the "Settings" menu.

4.7.4 Using the CONEXIOcom (optional)



Note

To start the CONEXIOcom menu, no handpiece may be removed.



Note

For all CONEXIOcom functions, the dental unit must be connected to an installation of the KaVo "CONEXIO" software.

The function of the CONEXIOcom menu is to control the display of previously recorded and saved images and videos. In order to use the function, the unit must have access to the data of the KaVo Software "CONEXIO" software. For details on the configuration, please refer to the "CONEXIO" installation instructions.

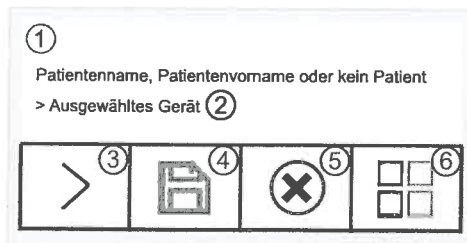
Opening the CONEXIOcom menu

To display existing images, take the camera off the holder. Select the proper patient on the corresponding PC for this purpose. It is also feasible to automatically transfer the patient from your invoicing programme to CONEXIO. For details on the configuration, please refer to the "CONEXIO" installation instructions.

If no patient is selected, images from the clipboard are displayed. If the clipboard is empty, no image is displayed. The clipboard is deleted automatically when the patient is logged off the corresponding PC.

The CONEXIOcom menu is opened automatically for recording of images or videos as soon as a device (DIAGNOcam U, ERGOcam One) is taken out.

To close CONEXIOcom: Replace the active device.



Display CONEXIOcom

No	Icon	Setting
1	-	Info line This line displays the active patient name (if selected in CONEXIO) under which the data obtained are stored. If no patient is selected, images and videos are stored in the clipboard under "unassigned patient".
2	-	If a device is active, the device type is shown. The following is implemented at this time: DIAGNOcam U ERGOcam One
3	>	Next image/video To be able to communicate efficiently with the patient, individual images can be selected and displayed directly. This uses a rolling system that advances from left to right and from top to bottom.

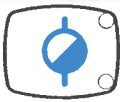
4.8 Using function through the dentist or assistant unit

4.8.1 Using the hygiene functions

The following buttons are available for the hygiene functions:

Key	Name	Feature	Control element
	"Tumbler filler" key	The tumbler is being filled. Filling time can be set	Dentist element and assistant element/
	"Bowl rinsing" key	The bowl is being rinsed. Rinsing time can be set. Leaving the rinsing position (SP), the bowl is rinsed for the full rinsing time (function can be activated by service technician).	Dentist element and assistant element/
	"Intensive germ reduction" key	Intensive germ reduction/rinsing function See also:  Servicing instructions	Assistant element/

No	Icon	Setting
4		Save image/video Press briefly - saves the selected image/video. Press long - all images/videos are saved in the swap tray. If no patient is selected, the images stay in the clipboard and cannot be saved permanently. As soon as a patient is selected, these temporary data in the clipboard are deleted. When an active patient is logged off (or a new patient is logged on) in CONEXIO, a query is shown asking whether the images in the shall be deleted or saved. Data deleted at this point cannot be restored subsequently.
5		Discard image/video Press briefly - deletes the selected image/video Press long - all images/videos in the clipboard are deleted
6		Screen display: This button changes the display on the monitor. The following settings can be made: 1/2/4/6 – number of images displayed. The live image is always shown as the last image in split view.
		
		
		

Key	Name	Feature	Control element
	"HYDROclean" key	HYDROclean function See also: 📄 Servicing instructions	Assistant element/

The following applies to the hygiene functions, "Tumbler filling" and "Bowl rinsing":

- ▶ Press key to activate the function.
- ▶ Press key again to discontinue the function.



Note

The preparation methods can be found in the care instructions.

The following settings can be changed:

- Tumbler filling time
- Bowl rinsing time

Using the tumbler filling



- ▶ Press the "Tumbler" button briefly to start filling the tumbler.

⇒ Tumbler filling is started and then stopped after the saved period of time.

⇒ Default = 5 s.

⇒ An on/off operation is not supported.



- ▶ Press the "Tumbler filling" key for more than 4 seconds to start the programming mode.

Set the period of time in 200 ms increments. Minimum: 0.4 s.

⇒ If the key stays depressed, the elapsed time is counted in 200 ms steps and an acoustical signal is issued each second.

⇒ Once the key is released, the current value is saved.

Using the bowl flush



- ▶ Press the "Bowl flush" key briefly to start the bowl flush.

⇒ The bowl flush is started and then stopped after the saved period of time.

⇒ Default = 7 s. An on/off operation is not supported.



- ▶ Press the "Bowl flush" key for more than 4 seconds to start the programming mode.

Set the period of time in 200 ms increments. Minimum: 0.4 s.

⇒ If the key stays depressed, the elapsed time is counted in 200 ms steps and an acoustical signal is issued each second.

⇒ Once the key is released, the current value is saved.

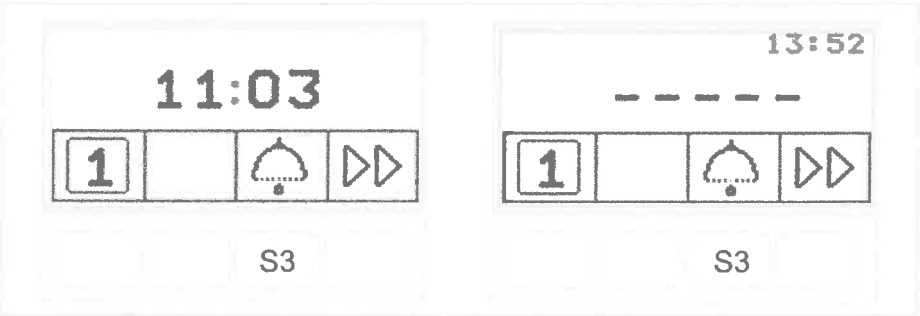
4.8.2 Using lamp and X-ray image viewer

The following buttons are available for the light functions:

Key	Feature	Control element
	Turning the operating light On / Off.	Assistant element
	Turning the X-ray image viewer (accessory equipment) On / Off.	Dentist element

4.8.3 Using the bell (optional)

- ▶ Press the "S3" key ("Bell" function key) to activate the bell relay.
- ⇒ The bell relay is activated for as long as the key is being pressed.



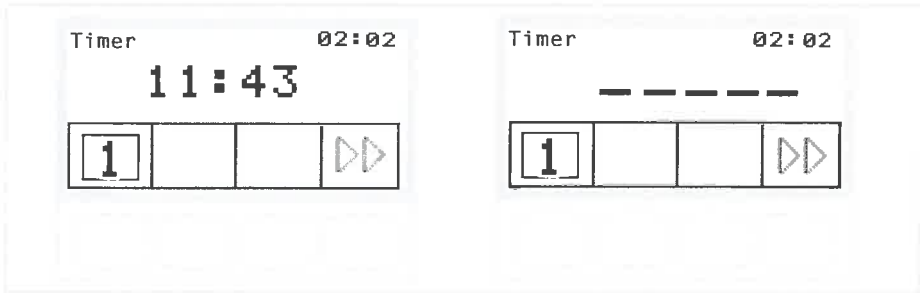
"Bell" function key without MEMOSpeed /with MEMOSpeed

4.8.4 Using the timer



- ▶ Press the "Timer" key briefly to start or stop the timer.
- ⇒ LED flashes while the timer counts down.

The elapsed time is shown in the display on the top right.
A beep is issued after the timer time is elapsed.



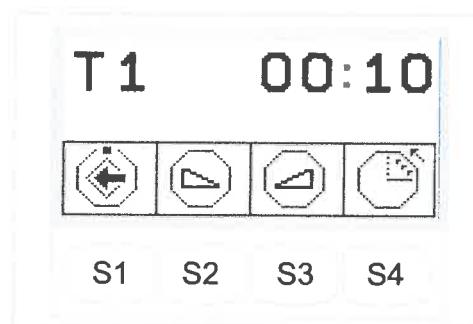
Timer elapsing without MEMOSpeed / with MEMOSpeed

Setting the timer

Requirement
Standby menu is selected.



- ▶ To set a timer time (e.g. Timer 1), press the "Timer" key until you hear a beep.
- ⇒ The display switches to the settings menu for the timer time.



Key	Settings
S1	Saves the parameters. Quits the programming mode.
S2	Decreases the value.
S3	Increases the value.
S4	Switches counter/timer function. (Direction of counting)

4.8.5 Saving handpiece settings (without MEMOSpeed)

The following settings can be individually saved for the instruments:

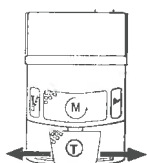
Handpiece	Setting
Turbine	Speed Preselected spray
Motor INTRA LUX KL 701/703, COMFORTdrive	Speed Direction of motor rotation Preselected spray
Ultrasonic scaler	Spray on/off* Intensity
Multi-functional piece	Heating on/off

* only with a corresponding setting in service mode

Setting the turbine

Setting the speed

- ▶ Remove the turbine from the holder.
- ▶ To reduce or increase the speed, move the foot pedal to the left or right.



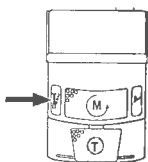
Note

The speed is not shown in the display cannot be saved.
The minimum and maximum speed depends upon the type of turbine that is used.

Setting the cooling status

- ▶ Remove the turbine from the holder.
- ▶ Press the "Preselected spray" button.





or

- Press the "Preselected spray" footswitch.

Key	Feature
	No LED is on: No cooling
	One LED is on: Spray air cooling status
	Both LEDs are on: Spray cooling status

Save the cooling status

1

- Press the "Save" (S1) key until you hear a beep.

Setting the motor



Note

The speed is not shown in the display cannot be saved.

The minimum and maximum speed depends on the motor that is used and the attached straight or contra-angle handpiece.

The speed, spray preselection are set and the values are saved in the same manner as with the turbine.

See also:

■ 4.8.5.1 Setting the turbine, Page 75

Setting the direction of motor rotation



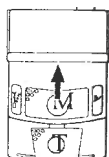
Note

The direction of motor rotation can only be changed when the motor is at rest.

- Take motor off the holder.
- Press the "Direction of motor rotation" key.



or



- Press the "Direction of motor rotation" foot pedal.

⇒ The direction of motor rotation is reversed each time the cross-switch and/or the "Direction of motor rotation" key is actuated: counterclockwise rotation - clockwise rotation.

⇒ The LED is on when CCW motor rotation is set.

Save the direction of motor rotation

1

- ▶ Press the "Save" (S1) key until you hear a beep.

Setting the ultrasonic scalers, PiezoLED and PIEZOsoft

Set the intensity the same way you set the speed of the turbine.

See also:

- 4.8.5.1 Setting the turbine, Page 75

Selecting the operating mode (PiezoLED only)



Note

The selection of the mode depends on the treatment method and the tip used. For information about the selection of an operating mode, please refer to the "Operating modes P1 / P2 / P3 and E" section of the "PiezoLED Instructions for Use".

- ▶ Take the PiezoLED off the holder.
- ▶ Press the "Mode" key to select the operating mode.
Modes P1 / P2 / P3 / E are available for selection.

P1

Setting the multifunctional handpiece

- ▶ Take the multifunctional handpiece off the holder.
- ▶ Adjust the heating using the "Air/water heating" button.



Symbol	Function
	Air/water heating "on"
	Air/water heating "off"

Save the heating status

1

- ▶ Press the "Save" (S1) key until you hear a beep.

4.9 Operating the foot switch

4.9.1 General functions

The footswitches of the foot control have two functions. The function of the control depends on whether an instrument is in its holder or whether it has been removed.

See also:

- Foot control

4.9.2 Positioning the patient chair with the foot control

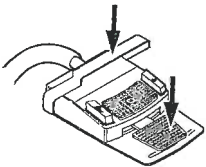
See also:

- ▣ Automatic positioning of patient chair
- ▣ Position the dental chair using the button cross or 4-way switch

4.9.3 Preselect dentist

Requirement

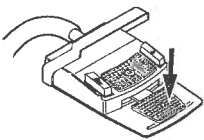
All instruments are in their holder.



- ▶ Hold down the foot pedal and press the stirrup switch.
- ⇒ Each time the stirrup switch is pressed, the selection advances to the next dentist (dentist 1 to 2).

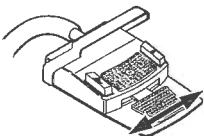
4.9.4 Start and regulate instruments

- ▶ Remove the handpiece (such as turbine, motor) from the holder.
- ⇒ The handpiece is active.



- ▶ Press the foot pedal.

⇒ The removed handpiece runs at the set speed or intensity.



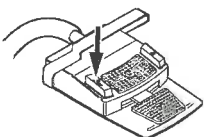
- ▶ Changing speed or intensity with the foot pedal.

⇒ The left stop corresponds to the minimum speed/intensity.

⇒ The right stop corresponds to the maximum speed/intensity.

4.9.5 Setting the cooling condition

- ▶ Remove the handpiece (e.g turbine, motor) from the holder.
- ⇒ The handpiece is active.

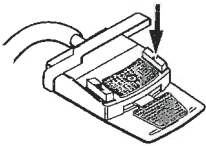


- ▶ Press the "Preselected spray" footswitch.

- ⇒ The cooling status is switched each time the foot switch is pressed: spray air - spray.
- ⇒ The cooling status is displayed on the dentist element.

4.9.6 Activate blown air

- ▶ Remove the handpiece (such as turbine, motor) from the holder.
- ⇒ The handpiece is active.

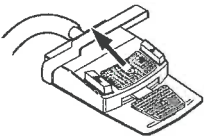


- ▶ Press the "Blown air" foot-operated button.

- ⇒ As long as the foot-operated button is pressed, blown air exits from the removed handpiece (does not apply to PiezoLED).

4.9.7 Preselect counterclockwise motor rotation

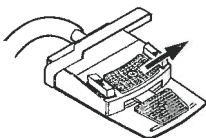
- ▶ Take motor off the holder.
- ⇒ The handpiece is active.



- ▶ Slide the cross switch upward.

- ⇒ The direction of motor rotation is reversed each time the cross-switch is actuated: counterclockwise rotation - clockwise rotation.
- ⇒ The direction of motor rotation is displayed on the dentist element.

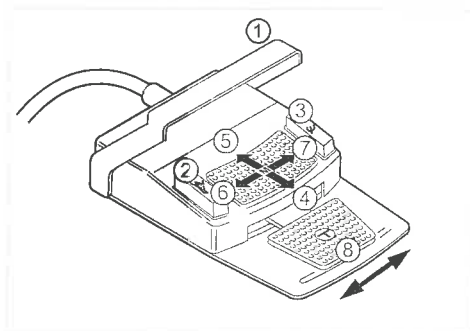
4.9.8 Adjusting the instrument light



- ▶ Slide the cross switch to the right. (spotlight function)

- ⇒ Cold light "On".

4.9.9 Using CONEXIOcom (fee-based additional option)



No	Setting
①	U-shaped switch Discard image/video Press briefly - deletes the selected image/video Press long - all images/videos in the clipboard are deleted
②	Previous image/video Select previous image/video
③	Next image/video Select next image/video
④	Screen display The number of displayed images (Split View) is reduced: The live image is always shown as the last image in split view.
⑤	Screen display The number of displayed images (Split View) is increased: The live image is always shown as the last image in split view
⑥	Capture Mode Toggles between the recording modes, video recording and image recording
⑦	Screen display Toggles between full screen and normal view
⑧	Save image/video Press briefly - freezes the live image Press long - saves the live image directly. If no patient is selected, the images are stored directly under "unassigned patient".

**Note**

If no patient is selected, the images stay in the "Swap Tray" and are not saved permanently. As soon as a patient is selected, these temporary data in the "Swap Drying" are deleted. When an active patient is logged off (or a new patient is logged on) in CONEXIO, a query is shown asking whether the images shall be deleted or saved. Data deleted at this point cannot be restored subsequently.

5 Preparation methods DIN EN ISO 17664



Note

The preparation methods can be found in the care instructions.

6 Accessories and kits

6.1 Device

Name	Description
Water block DVGW with integrated water germ reduction system	With a DVGW permit and electronic monitoring of the filling level of the disinfection container.
Water block compact	Without DVGW permit. With water filter and shutoff valve.
Water bottle DVGW with water block, compact	With DVGW permit. Features a tumbler and handpiece water supply that is independent of external water supply, includes Oxygenal dosing attachment for manual dosing of the germ reduction liquid into the water bottle.
Steel mounting plate	For installation on the left or right.
Connecting third-party equipment	To connect or supply third-party devices such as an airflow through the quick couplings.
Amalgam separator DÜRR CAS 1	Approved amalgam separation systems with a separation > 95 %.
Separation DÜRR CS1	Separation using a solids collector.
Solids collector kit	Wastewater solids collector for wet suctioning.
External suction	Wastewater and wet suction air are drawn from a central location.
Water jet pump	For saliva ejector.
Operating light EDI / KaVoLUX 540 LED T / MAIA LED	Operating light.
Tray support	For the small handpiece tray.
Warm water heater	Heats the tumbler water.
Low-pressure regulator	Regulator for suction air when the suction vacuum is too high.
Selective support kit	Turns on the saliva ejector and/or spray mist suction.
Intensive germ reduction	Only in combination with DVGW water block kit.
Monitor support arm	The monitor support arm is either affixed to the lamp mount pole or a Centro 1540.
Monitor	KaVo Screen One and KaVo Screen HD
Service table	Can be mounted on a device stand (cart version)
X-ray image viewer Röbi 1440	For installation on the light mounting pole.

6.2 Dental chair

Name	Description
Armrest	The patient chair can be fitted with one or two arm rests.
2-hinge head rest with rotary knob	Controlled by rotary knob
2-hinge headrest with push button	Controlled by push button
Backrest Progress	Correct working posture and optimum access for the dentist, especially during pediatric procedures

6.3 Assistant unit

Name	Description
Satelec Mini LED	LED curing light.
Triple function handpiece	Multifunctional handpiece featuring air, water, no heating, and no cold light.
Multifunctional handpiece	Multifunctional handpiece featuring air, water, heating, and cold light.
Saliva ejector, water-operated	With water jet pump.
Second saliva ejector	The second saliva ejector kit is mounted on the sieve housing that is included in the basic configuration.

6.4 Dentist unit

Name	Description
Multiflex LUX hose	For connection of turbine and SONICflex and all handpieces fitting on the multiflex coupling.
Motor hose, COMFORTbase 404L COMFORTbase 404S	For connection of INTRA LUX motor KL 701, motor KL 703 LED, COMFORTdrive 200XD.
Assembly kit INTRA LUX motor KL 703 LED	Brushless motor with light.
Assembly kit INTRA LUX motor KL 701	Brushless motor with light.
KaVo COMFORTdrive 200 XD	Dental handpiece for the high speed range up to 200,000 rpm. It can be attached only to the KaVo COMFORTbase coupling.
Triple function handpiece	Multifunctional handpiece featuring air, water, no heating, and no cold light. Also available as an "upright" version.
Multifunctional handpiece	Multifunctional handpiece featuring air, water, heating, and cold light. Also available as an "upright" version.
PiezoLED	Handpiece for the removal of dental calculus with the tip sets, Scaler / Paro / Endo / Prep.
PIEZOssoft	Handpiece for the removal of dental calculus with the Scaler tip sets.
X-ray image viewer 5x5	For image size of 5 x 5 cm (install on left or right side of dentist element).
Spray heater for instruments without handpieces	Heater for spray water heating.
Tray holder for a standard tray / US tray / 2x-standard tray	Standard tray, US tray, and/or 2x-standard trays (install on left or right side of dentist element).
ERGOcam One	Intraoral camera for documentation and patient communication.

7 Safety checks - testing instructions

7.1 Introduction

7.1.1 General instructions



Note

The safety checks may only be carried out by one or more electricians (as defined in IEC 61140) who have received appropriate training for the device to be inspected.



Note

The contents and specified tests in this document are based on the international standard, IEC 62353 (DIN VDE 0751-1). This standard applies to the testing and inspections of medical electrical equipment or medical electrical systems complying with IEC 60601-1 (DIN EN 60601-1).



Note

In order to evaluate the safety of medical devices, systems or components of medical devices or systems, the safety checks must be carried out at the times specified below:

- ▶ Prior to startup
- ▶ during maintenance
- ▶ during inspections and servicing
- ▶ following repair
- ▶ on the occasion of recurrent tests



Note

With regard to devices that have not been manufactured in accordance with IEC 60601-1 (DIN EN 60601-1), these requirements can be applied taking the mandatory safety standards for the production of these devices into consideration.



Note

If the unit comprises several electrical devices or electrical devices from several manufacturers that are connected to a system in connection with the KaVo dental unit, the manufacturer data contained in the instructions for use for all products subject to safety controls must also be observed.



Note

Accessories to ME devices that could have an impact on the safety of the device to be tested or the measured results must be included in the safety checks.



Note

All tests concerning the included safety checks of accessories must be documented.



Note

Furthermore, the manufacturer data contained in the instructions for use must be adhered to in all products to be tested and inspected.

**Note**

KaVo offers a medical device book for keeping an inventory and recording essential master data on the medical device. The medical device book is only available in German (Mat. no. 0.789.0480).

**Note**

The following tests and measurements must be documented, for example in the medical device book. We recommend using the templates at the end of the document.

**Note**

The tests must be performed in the order specified by the manufacturer!

7.1.2 Notes for medical electrical systems

**Note**

An ME System is the combination of individual devices (as defined by manufacturers) that must meet the following conditions:

- ▶ At least one of these devices must be a medical electrical device.
- ▶ The devices must be functionally connected or at least they should be connected by the application of a multiple socket outlet.

**Note**

With ME systems, the person responsible for putting the system together must employ the necessary measuring parameters and measuring procedures defined in IEC 60601-1 (DIN EN 60601-1).

**Note**

Each individual device in an ME system, which has a separate connection to the power supply mains, or which can be connected to or separated from the power supply mains without the aid of a tool, must be checked individually. Moreover, the ME system must be checked as one unit to avoid the situation, in which the „aging“ of individual devices lead to unacceptable values in sum.

**Note**

An ME system that is connected to the power supply mains by means of a multiple socket outlet must be treated as one device during checks and testing.

**Note**

If the ME system or part of the system is connected to the power supply mains by means of an isolating transformer, the transformer must be included in the measurements.

**Note**

In ME systems, in which more than one ME device are interconnected via data lines or otherwise, e. g. via electrically conductive attachments or coolant tubes, the earth wire resistance of every single device must be checked.

**Note**

If it should be impossible to check single ME devices that are functionally connected to an ME system individually for technical reasons, the ME system must be checked as a whole.

7.1.3 Essential parts of the safety check

Visual inspection

Optical appraisal of the safe and usable condition of the medical device and its accessories.

Measurements

- Measurement of the earth wire resistance in accordance with IEC 62353 (DIN VDE 0751-1)
- Measurement of the leakage current of the device EUL in accordance with IEC 62353 (DIN VDE 0751-1)
- Measurement of the leakage current of the user part EPL in accordance with IEC 62353 (DIN VDE 0751-1)

**Note**

Measurement of the insulation resistance in accordance with IEC 62353 (DIN VDE 0751-1) is not required. This check is covered by the measurement of the leakage current provided a prescribed safety tester in accordance with IEC 62353 (DIN VDE 0751-1) Annex C is used!

Functional test

Medical device function test as well as testing of all safety shutdowns with reference to accompanying documentation/ instructions for use.

7.1.4 Testing intervals

- Testing interval every 2 years according to device type IIa (without HF surgery)

7.1.5 Notes on the test method in accordance with IEC 62353

- Protection class 1
- Type BF
- The device is firmly connected / threshold: $SL < 0,3 \Omega$
- Measurement according to EUL / threshold: $< 10\text{mA}^*$
- Measurement according to EGA / threshold: $< 5 \text{mA}$

*The EUL threshold is compatible with the value defined in IEC 60601 (DIN EN 60601), taking comment 2 from table 2 into consideration.

7.1.6 Notes on repeat testing



Note

The value determined in these tests must be documented and evaluated together with the measuring processes. The measured values may not overshoot the specified values.



Note

Comparisons with previous measurements must be carried out if the measured values undershoot the threshold values by more than 10 %. The test intervals should be reduced if a deterioration in values is determined!

7.2 Instructions for safety checks

7.2.1 Preparatory measures to be undertaken on the device



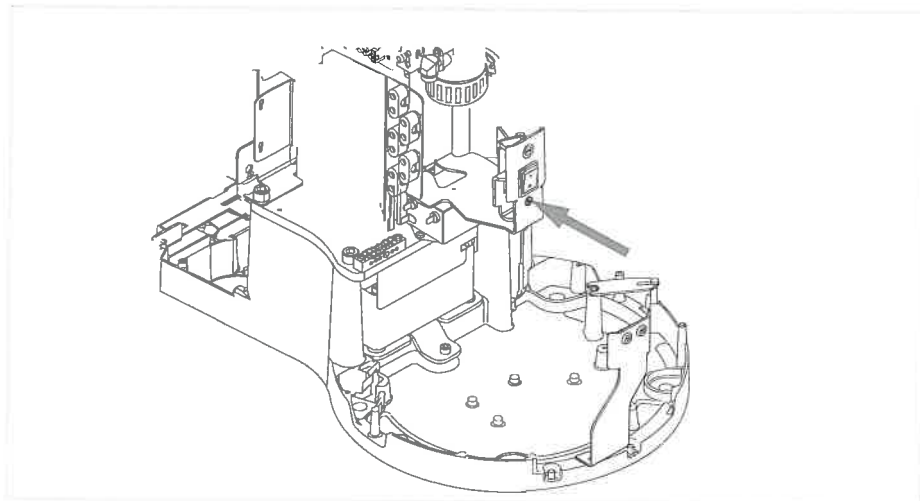
Electrical power.

Death or injury from electric shock.

- ▶ Before servicing, pull the mains plug out of the socket or completely disconnect the device from the power to de-energise it!
- ▶ After conversion, check the electrotechnical safety in accordance with IEC 62353 (DIN VDE 0751-1).

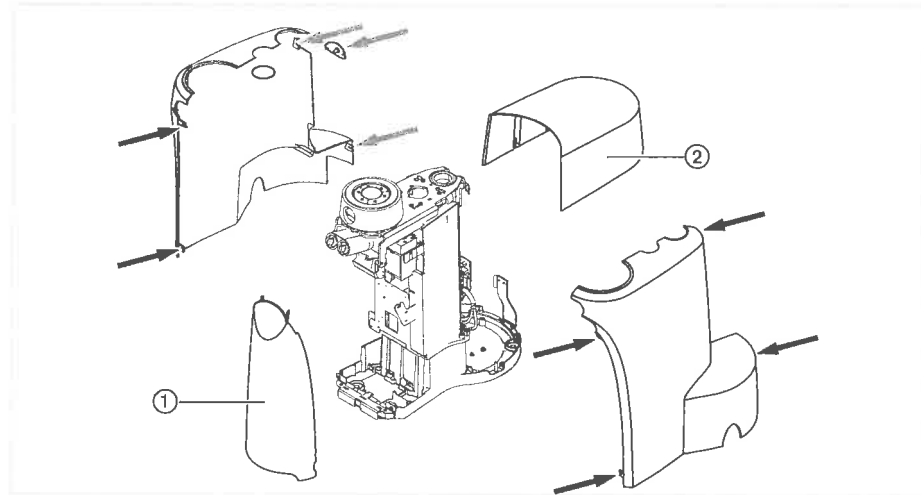


- ▶ Turn off the main switch before any servicing work.
- ▶ Loosen the fastening screw on the bracket master switch.



- ▶ Take off the cover ② in upward direction.
- ▶ Release the rear cover ① below and remove it.

- Unscrew the fastening screws (see: arrows) of the cladding and take off the covers.



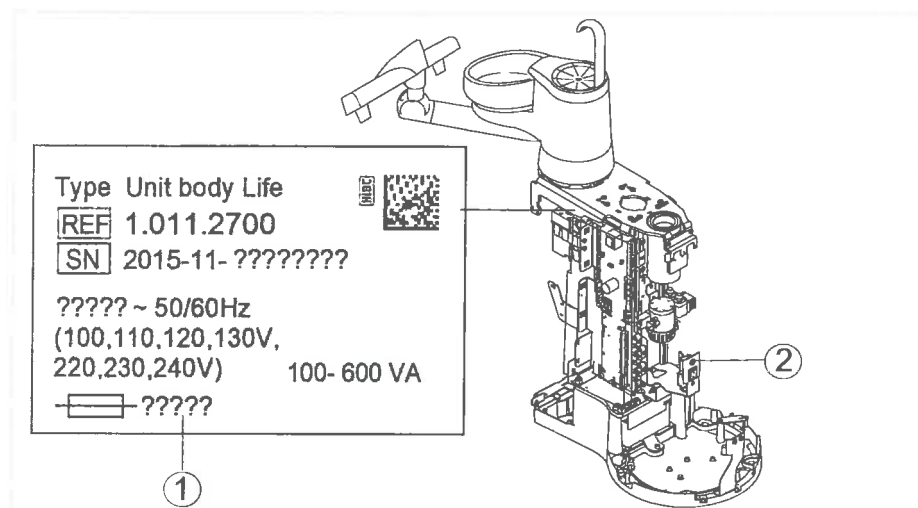
7.2.2 Visual inspection (inspection by examination)

Check the following points in advance:

- Has the equipment of the ME device or the ME system been changed since the last inspection?
- Was the change documented and approved (test protocol, STK)?
- Are there any indications of insufficient safety?

Check the ratings of fuses that are accessible from outside

- Verify whether the main fuse on the main switch ② of the unit complies with the specified nominal data ①.



Visual inspection and appraisal of the medical device and accessories

The following list is an example and makes no claim of being complete.

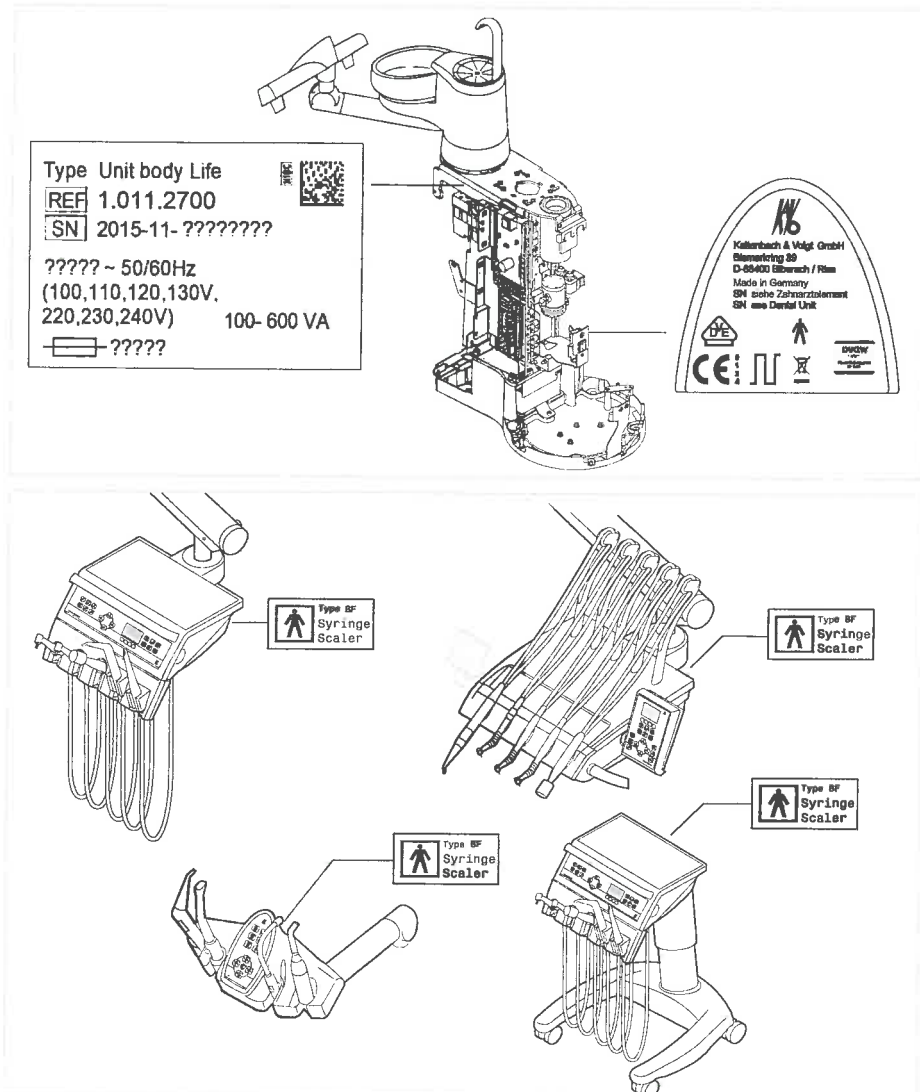
Check the following items:

- Stability of the device
- No damage to the cladding or casing (cracks, breakage)

- Functioning of the carrier systems on dentist and assistant side, treatment lamp, and display (brakes, height adjustment, etc.)
- Condition of the handpiece and suction hoses
- Condition of all installed application parts
- Condition of the control panels
- Condition of the threads for the fitting of tips to the ultrasound scaler handpiece
- Condition of the operating light
- Absence of leaks on the body of the device
- Condition of the power connection provided by the treatment centre
- Condition of air and water connections
- Any damage on the sight window and the casing of the camera ERGOcam
- Expiry date of the water bottle inserted in the BS water bottle not exceeded

Check of legibility and completeness of the safety-related labels

- Check if all safety-related markings (plates and labels) are present and legible.
- Check if the rating plate and serial number plates are present and legible.



Attachment locations: nameplate, markings BF and note "Comply with the instructions for use"

Control of the availability of the necessary documents

- ▶ Verify whether the required instructions for use and care instructions are available in the surgery.



Note

Any irregularities determined in the visual inspection must be recorded in the test protocol. It is essential to determine whether defects and deficiencies could have an adverse impact on the safe operation of the unit. If the determined irregularities present a safety hazard and cannot be rectified directly, the unit must be closed down until safe operation is restored.

7.2.3 Safety measurement



Danger to persons due to a lack of care exercised during the safety checks and testing.



- ▶ Prior to connecting the treatment centre to the sight window, disconnect from the mains supply network.
- ▶ Carry out all safety checks and tests in a manner that will ensure that there will be no danger to the testing personnel, patients or other persons.



Note

The safety tester must comply with the requirements defined in IEC 62353 (DIN VDE 0751-1), Annex C.



Note

If no other specifications have been made, all values relating to voltage and current are effective values of alternating voltage, direct voltage or pulsating voltage res. alternating current, direct current or pulsating current.



Note

Connection cables such as data cables and cables for the functional earth could simulate protective conductor connections. These types of supplementary but unintentional protective earth connections could lead to erroneous measurements.



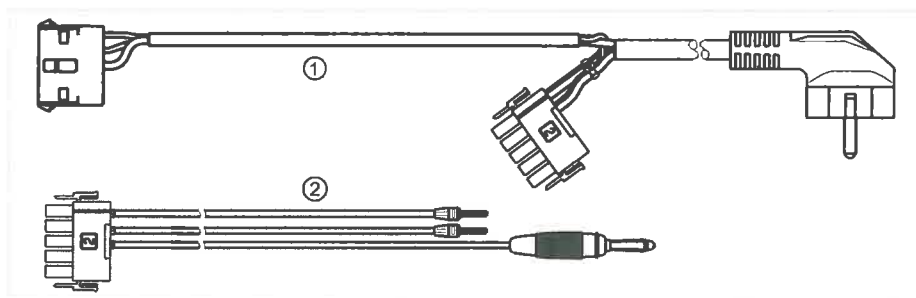
Note

Cables and wires e.g. power supply cords, measuring circuits and data lines must be arranged in such a manner that will ensure that their influence on measurements will be restricted to a minimum.



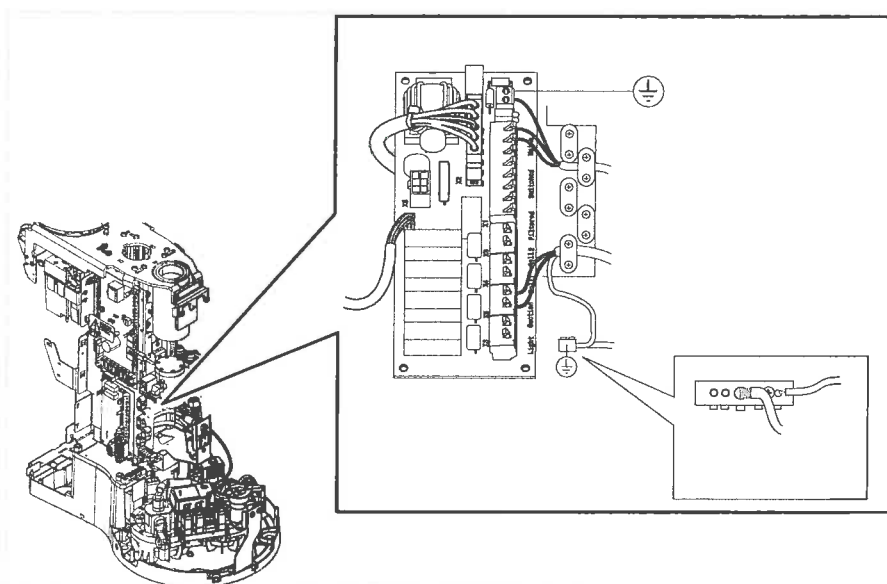
Note

The following measuring aid can be ordered: KaVo measuring cable (Mat. no. 0.411.8811)



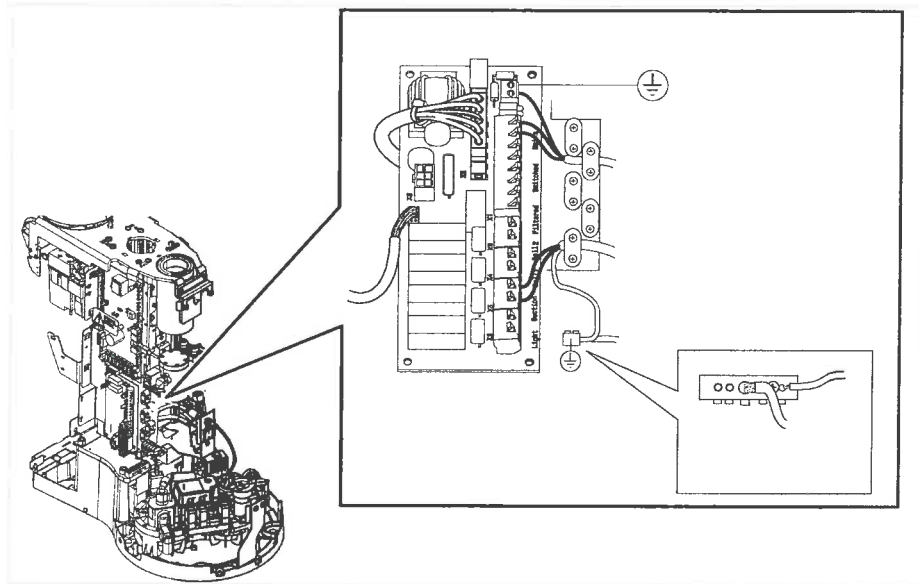
Using the measuring cable ① the unit is disconnected from the mains supply and connection of the treatment centre to the sight window is enabled. Hence, the customer-provided mains supply L & N on the power input board need not be disconnected. The adapter cable ② is included in the delivery of the KaVo measuring cable and is required for older treatment centres that are not equipped with an X2 connector.

Connecting the safety tester with KaVo measuring cables to the treatment centre



- Remove plug X2 from the power input board and plug into the matching connector X2 of the KaVo- measuring cable (Mat. no. 0.411.8811).
- Plug the second plug X2 of the KaVo measuring cable into the network card (X2).
- Insert the protective contact plug of the KaVo measuring cable into the sight window.

Connecting the safety tester without the KaVo measuring cable to the treatment centre



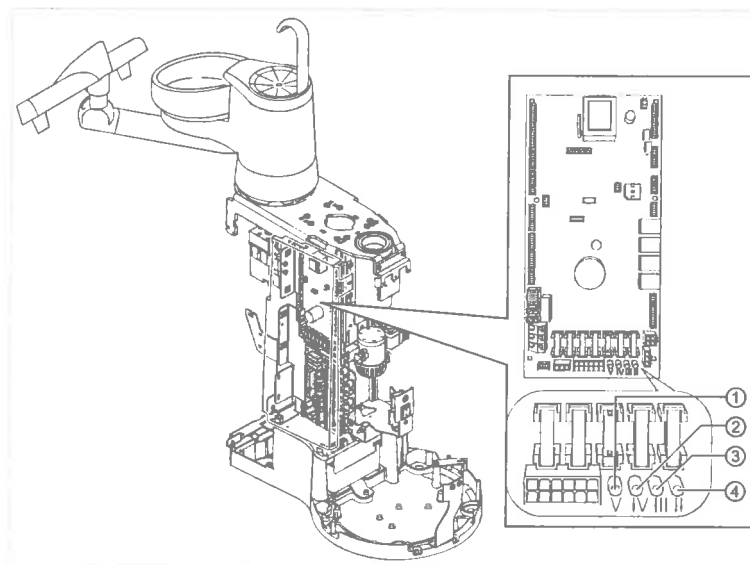
- ▶ Switch L + N of the on-site power supply cord to be voltage-free.
- ▶ Disconnect L + N on terminals X1.1 and X1.2.
- ▶ Connect the safety tester directly to terminals X1.1 (L) and X1.2 (N) and protective earth conductor terminal (PE).



Note

The main switch of the ME device / ME system must be turned on during measurement.

Connect the application parts [AP] to the safety tester:



- ▶ Connect ① to ④ with the safety tester.
- ▶ Connect the safety tester to measuring points AP X.



Note

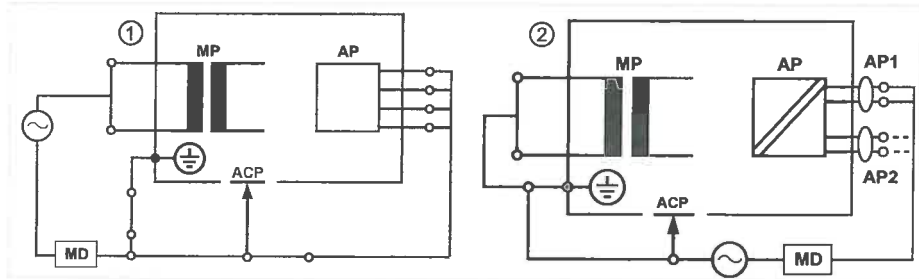
Additional measuring points AP X must be taken into consideration in the presence of accessories: e.g. accessories such as PIEZO ultrasonic scaler, etc.

See also:

8 Annex - Additional measuring points, Page 105

Connect accessible conductive parts [ACP] with PE

ACP = accessible conductive parts



Note

Additional measuring points ACP X must be taken into consideration in the presence of accessories.

See also:

8 Annex - Additional measuring points, Page 105

ACPs on the treatment centre

No ACPs need to be connected to the protective conductor (PE) during the measurement on the treatment unit, as all relevant parts are connected to the PE and included in the test before they leave the factory.

ACPs on treatment lamps

No ACPs need to be connected to the treatment lights during the measurement with the protective conductor (PE) because all relevant parts have already been connected with the protective conductor (PE) in the factory and are included in the test.

Measure protective conductor resistance

Threshold:

< 0,3 Ω (maximum value!)



Note

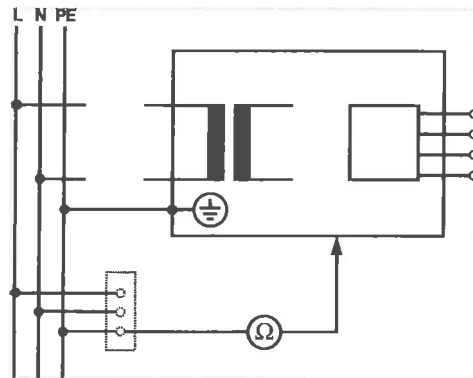
The integrity of the power supply cable, in particular the protective earth wire of the power cable must be ensured. As this is a fixed installation, the evaluation can be conducted by means of a visual inspection. If damage is determined, the further procedure to be taken is specified in the general instructions.

**Note**

In this measurement the resistance of the protective earth connection of the supply network can be taken into consideration.

**Note**

If applicable: all removable supply connection lines, which are retained for use, should be taken into consideration and the respective PE measured.



Protective earth measurement

The protective conductor resistance must be measured at the following parts of the device:

- Treatment centre
- Treatment lamp
- Accessories

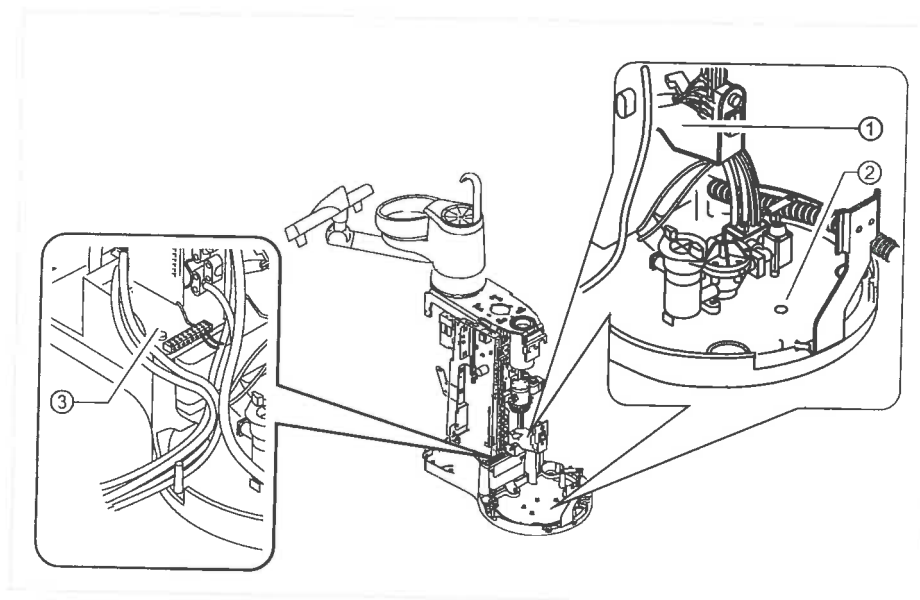
**Note**

Additional measuring points SL X need to be taken into consideration in the presence of accessories: e.g. additional devices, such as third-party connector, USB port of the intraoral camera, etc.

See also:

📄 8 Annex - Additional measuring points, Page 105

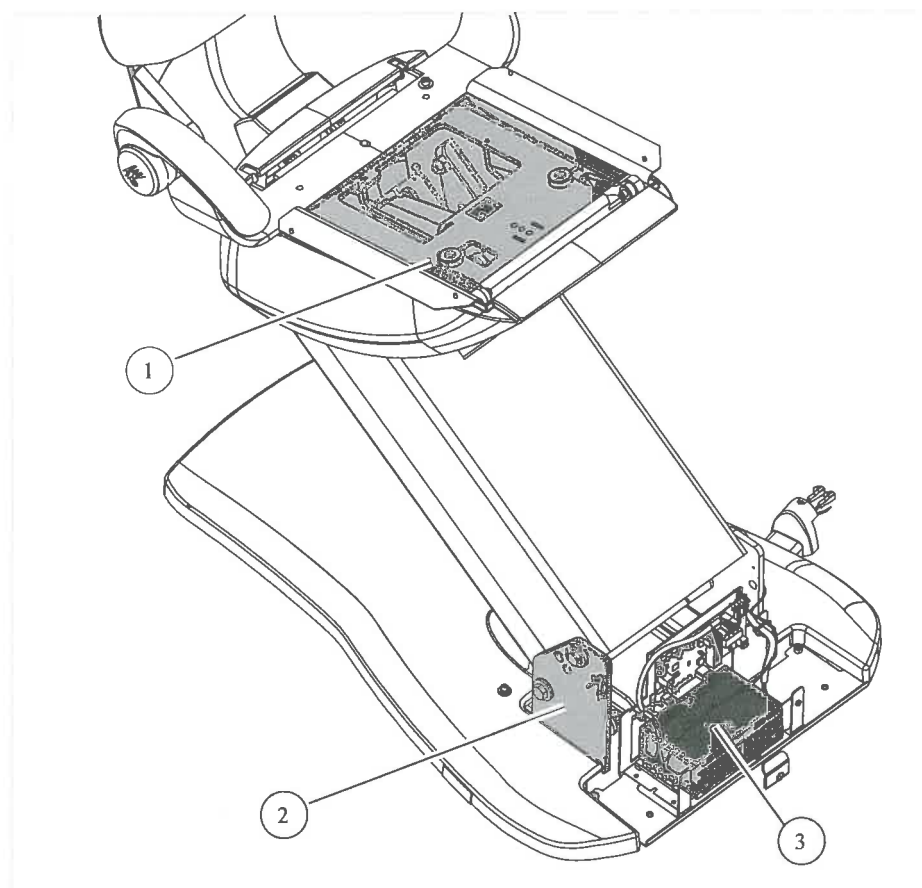
Scan the treatment centre with the test tip



Measuring points on the device base

- ① Main switch holding plate
- ② Stand cover base plate
- ③ Surroundings of the protective conductor terminal

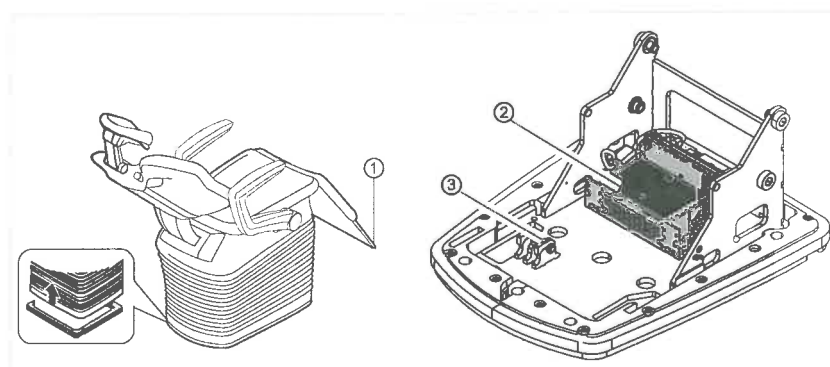
Scanning the patient chair with the test tip



① Top part of the chair

② Base plate of chair base

③ Switching power supply



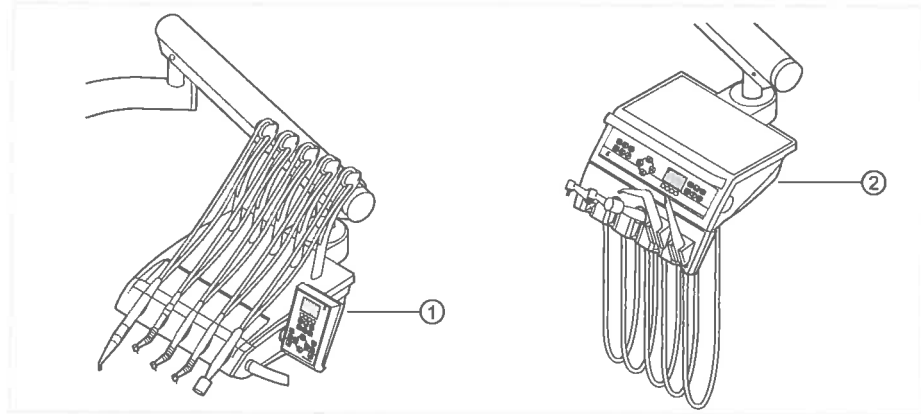
COMPACTchair measuring points

① Leg rest

② Chair power supply

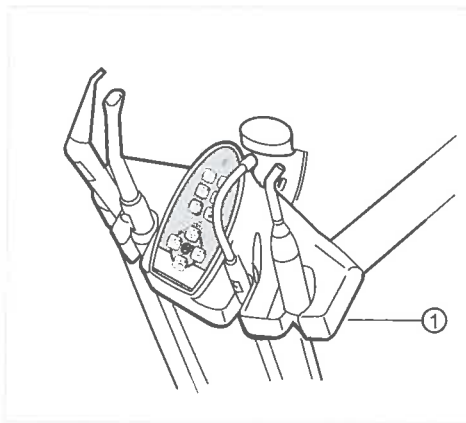
③ Chair base plate

Scanning the operating elements with the test tip



① Dentist element S: table bottom

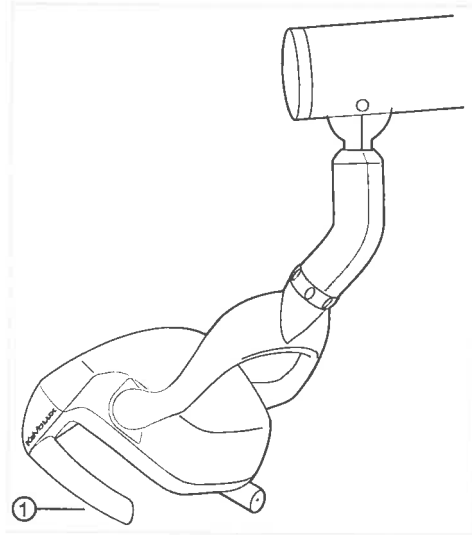
② Dentist element TM: table bottom



① Assistant element: fastening screw on the bottom of the assistant element

Scan the treatment lamp with the test tip

Operating light KaVoLUX 540 LED U

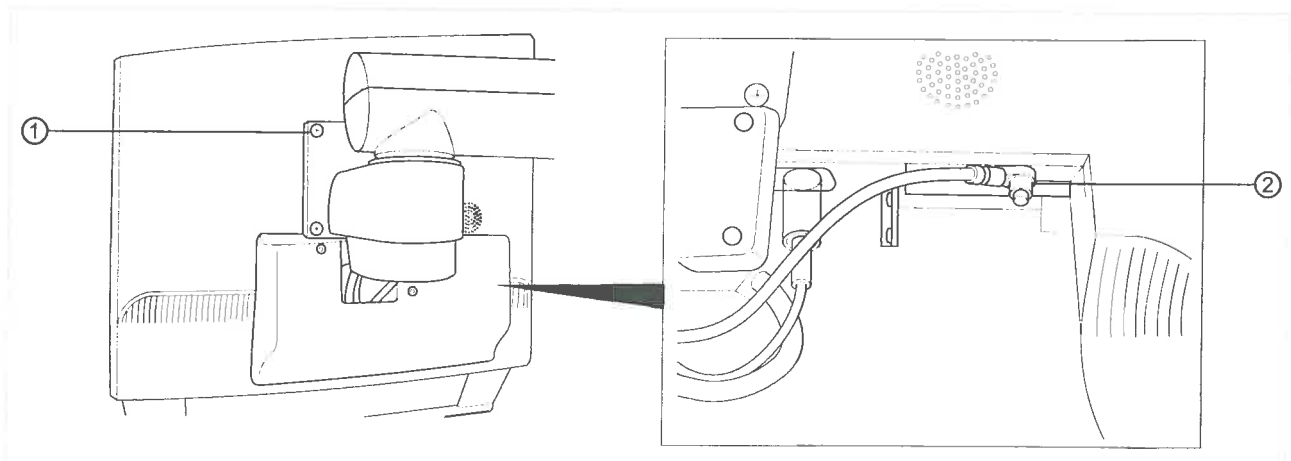


- ① Fastening screw of the handle support when the gripping sleeve has been removed

Operating light EDI/MAIA

No measuring points need to be scanned on the operating lights EDI and MAIA.

Touch monitor with test tip:



- ▶ Touch measuring point ① with the test tip.
- or
- ▶ Sample the measuring point ② after removing the display cover.

Measure protective conductor resistance of accessories

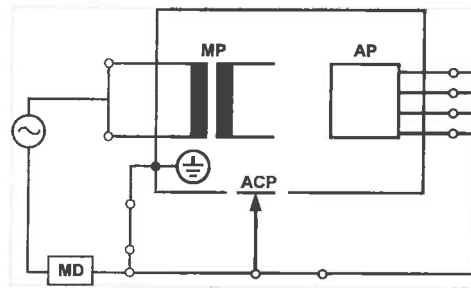
See also:

■ 8 Annex - Additional measuring points, Page 105

Measure equivalent unit leakage current

Threshold:

< 10 mA (maximum value!)



Protection class 1

WARNING

Electrical power.

Death or injury from electric shock.

- Conduct test for leakage current in devices of Protection Class 1 only after the protective earth test has been passed.

WARNING

Electrical power.

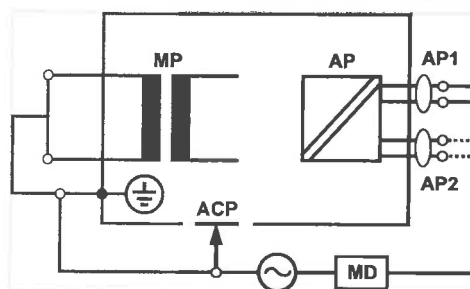
Death or injury from electric shock.

- Prior to connecting the treatment centre to the sight window, disconnect the treatment unit from the mains supply network.

Measure equivalent patient leakage current

Threshold:

< 5 mA (maximum)



Protection class 1

WARNING

Electrical power.

Death or injury from electric shock.

- Conduct test for leakage current in devices of Protection Class 1 only after the protective earth test has been passed.

WARNING

Electrical power.

Death or injury from electric shock.

- Prior to connecting the treatment centre to the sight window, disconnect the treatment unit from the mains supply network.

**Note**

In the testing of ME devices with several application parts, the parts must be connected in succession. The measured results must be evaluated using the threshold values. Application parts, which are not included in the measurement, remain open.

**Note**

An additional measurement of the leakage current from type B application parts need only be carried out if this is specified by the manufacturer (see accompanying documents).

**Note**

A separate measurement is not usually required for type B application parts. The application parts are connected to the casing (see diagram) and included in the measurement of the leakage current of the casing, whereby the same reliable values are applicable.

7.2.4 Functional test

The following conditions must be fulfilled in all function tests:

- The basic function of the treatment centre must be guaranteed.
- The treatment centre must be fit for use.
- It must not exhibit any irregularities, noise or abrasion etc.

The following list is an example and makes no claim of being complete.

- Function test of the safety circuits (see diagram below)
- Functioning of the master switch of the device
- Functioning of the displays
- Function test of the holder switch of the dentist and assistant element
- Functional test of the 3F/MF handpiece – seating of the cannula
- Functional test of operating light
- Function test of the suction hoses
- Function test of the foot control
- Function of the chair:
 - Travel on all axes
 - Testing of the limit switches
- Functional test ...

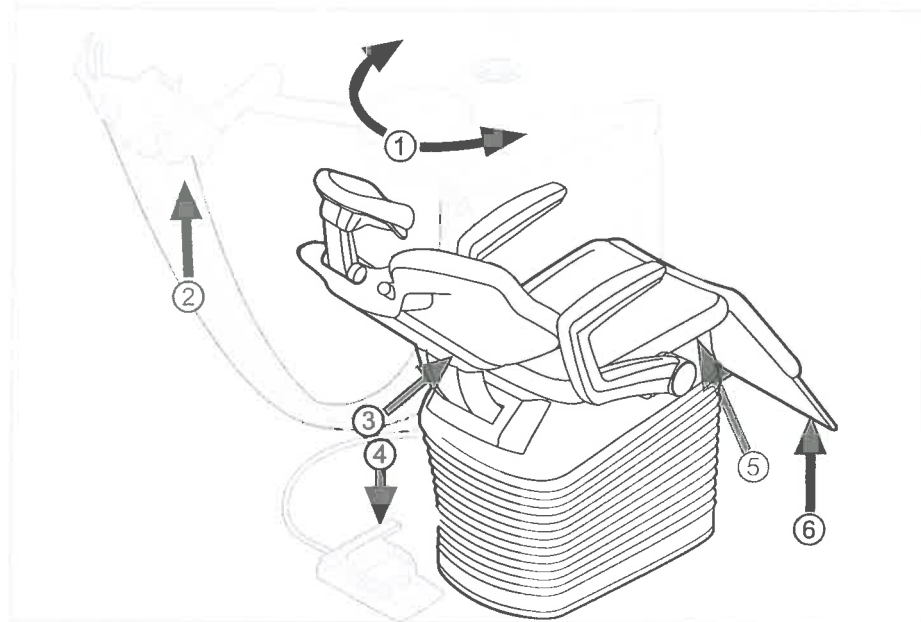
Patient chair Standard



Safety shutoff for the standard patient chair

Item No.	Safety switch-off actuated	LED on assistant element	LED on dentist element
①	Patient unit swung over the patient chair		
②	Assistant element		
③	Backrest		
④	Bracket on the foot control		
⑤	Kick plate		
⑥	Seat		

Patient chair COMPACTchair



Safety shutoff for the COMPACTchair patient chair

If a person or object actuates a safety shutoff, the chair immediately stops moving. The fact that the safety shutoff has been activated is displayed by the corresponding display flashing on the dentist or assistant unit.

Item No.	Safety switch-off actuated	LED on assistant element	LED on dentist element
①	Patient unit swung over the patient chair		
②	Assistant element		
③	Backrest		
④	Bracket on the foot control		
⑤	Bench support / seat cushion		
⑥	Foldable part of the seat		

7.2.5 Assessment and documentation

Note

All tests conducted must be documented comprehensively. The documents must contain at least the following particulars:

- ▶ Name of the test centre
- ▶ Name of the test engineer
- ▶ Name of the tested device (e. g. type, serial number)
- ▶ Tests and measurements
- ▶ Data, type and measuring results of the visual inspections
- ▶ Data, type and measuring results
- ▶ Data, type and measuring results of function tests
- ▶ Measuring/test equipment including SN/test equipment number and calibration period
- ▶ Final evaluation
- ▶ Name, date and signature of test engineer

There is a copy of a test report template at the end of chapter STK. KaVo recommends the use of this template.

Note

Following testing, repair or adjustment, it must be verified whether the ME equipment or ME system has been restored to the state that is required for the intended usage before it is employed once again.

Note

If the safety of the tested ME equipment or ME system has not been established, e.g. the tests have not been completed with positive results, the equipment or system must be marked accordingly and the potential hazard emanating from the equipment or system must be communicated in writing to the RESPONSIBLE ORGANISATION (to the operator, as a rule). This action is not required if the cause of the malfunction could be determined and rectified. The defect must be recorded in the protocol.



KaVo. Dental Excellence.

Test protocol - Safety check [SC]

Operator	Testing organisation
	Name of the test engineer

☐ Test before start-up**Date of testing:**☐ Recurrent test☐ Test after repair

Manufacturer:

Device:

Serial number:

Ident. no.:

next recurrent test required in

6	12	18	24
---	----	----	----

 months

Test in accordance with: IEC 62353

I	II
fixed connection	
B	BF

Protection class.:

Power connection:

Application part type:

Measuring equipment used:**Make:****Type:****Test:****Visual inspection:****Measurements:****Measured value**

Protective conductor resistor

Equivalent unit leakage current EUL (according to figure 3)

Equivalent patient leakage current EPL (according to figure 6)

Insulation resistance

Functional test (according to manufacturer instructions)

passes test	
yes	no
☐	☐

☐	☐
--------------------------	--------------------------

☐	☐
--------------------------	--------------------------

☐	☐
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☐	☐
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☐	☐
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Defect / Comment / Assessment**Overall assessment:**

- ☐ No safety or functional defects detected
- ☐ No immediate risk, detected defects can be remedied in the short term.
- ☐ Device must be taken out of commission until defects are remedied!
- ☐ Device fails to meet requirements - Modification / replacement of components / Withdrawal from service recommended.

Date / Signature

8 Appendix - Additional measuring sites

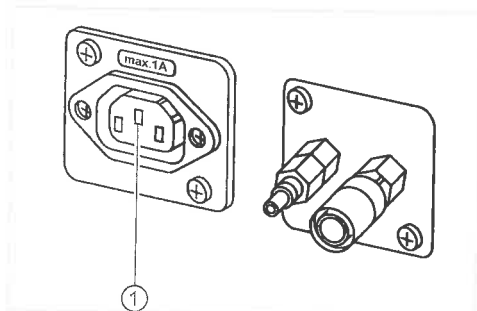


Note

With reference to accessories not listed here, the specifications of the relevant instructions for use must be observed.

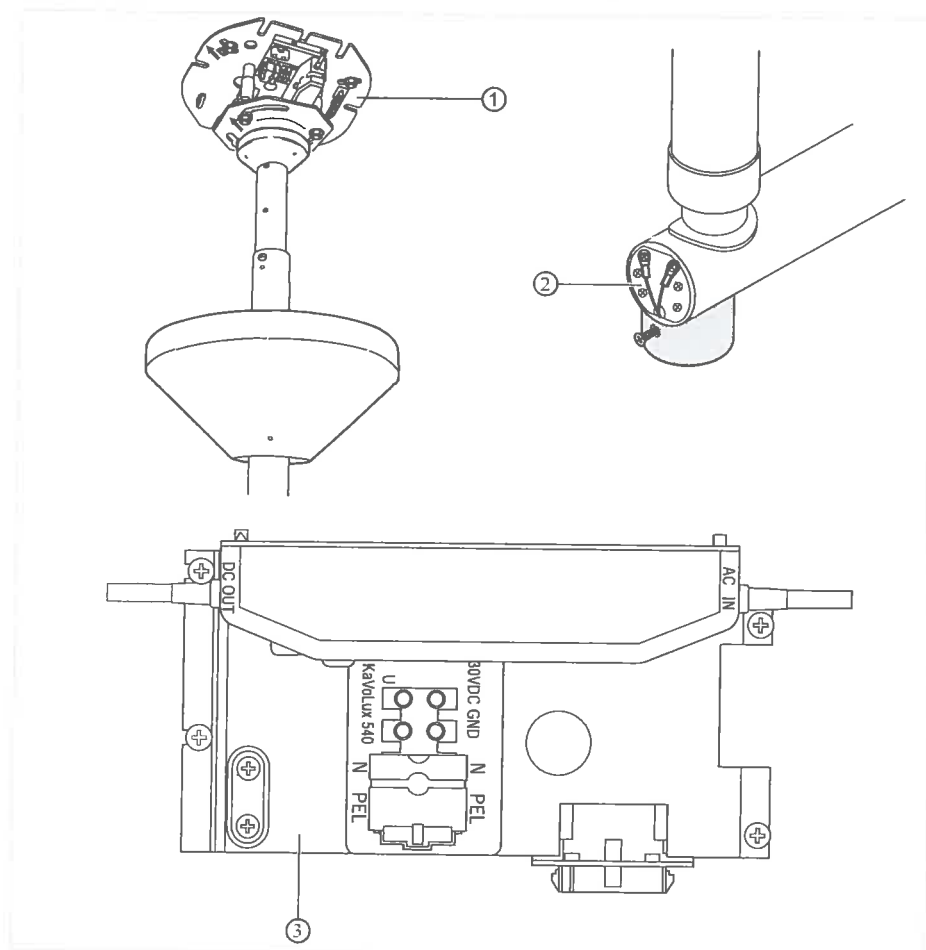
8.1 Additional scanning sites SL X in the protective conductor measurement

Connecting third-party equipment



- Position the test tip on the middle contact ①.

Ceiling adapter for operating light assembly kit



- ① Base plate for the ceiling adapter
- ② Surroundings of the protective conductor connector
- ③ Surroundings of the protective earth conductor terminal

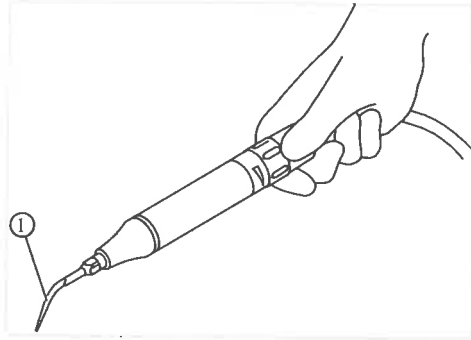
8.2 Additional measuring sites AP X for EUL/EPL measurement

Scan the PIEZO ultrasonic scaler with test probe



Note

Measuring points must be connected on the following ultrasonic scalers:
- PiezoLED ultrasonic scaler



Exemplary presentation of the measuring point on the PiezoLED ultrasonic scaler

- ① Test probe on ultrasonic scaler tip in ultrasonic scaler handpiece



Note

The switch on the handpiece must be activated during the EPA measurement



Note

Additional measuring points AP X need to be taken into consideration in the presence of accessories: e.g. if third-party devices are connected, camera of the multi-media system, etc.

8.3 Additional connection sites ACP X (additional earth connections)



Note

A fixed connection from ACP to the PE terminal must be established for the EUL and EPL measurement. This can be accomplished with a measuring cable and connection terminals.

9 Troubleshooting

**Note**

In case of malfunctions, consult the separate instructions for the use and care of the individual instruments (such as the turbine, motor, camera, Satelec Mini LED, etc.).

Malfunction	Cause	Remedy
Nothing works.	Main switch is off.	► Turn on main switch.
	Main service fuse interrupted the electric circuit.	► Unplug the unit from the mains. ► Check and replace, if required, the main service fuse. The main service fuse is situated next to the master switch. ► For this purpose, open the bayonet closure with a screwdriver and replace the fine-wire fuse. (220, 230, 240 V AC: T 6,3 H Mat. no. 0.223.2783); (100, 110, 120, 130 V AC: T 10 H Mat. no. 1.007.2529). ► The re-close the bayonet closure with the screwdriver.
The patient chair does not move.	The safety shutoff is activated. (LED on the control panel flashes.)	► Check the safety shutoff and eliminate the reason for the shutoff.
Display without indicator.	Bus / hardware error.	► Turn the device off and on. ► Call the service technician to look into the problem if it continues to exist.
Operating device no function.	Bus / hardware error.	► Turn the device off and on. ► Call the service technician to look into the problem if it continues to exist.
Several handpieces are simultaneously activated.	Hardware error.	► Stop working and call the service technician
The LED on the "AP1" button flickers. (Dentist element)	The data connection to the assistant element is faulty.	► Call a service technician.
The LED on the "AP2" button flickers. (Assistant element)	The data connection to the chair control is faulty.	► Call a technician.
Turbine making loud running noises.	Turbine wheel faulty.	► Replace turbine wheels. Follow the operating instructions for the turbine.
The Satelec Mini LED does not work.	Also refer to: Instructions for use for the Satelec Mini LED	► Also refer to: Instructions for use for the Satelec Mini LED

Malfunction	Cause	Remedy
No cold light on the handpieces.	The high-pressure lamp or Multi LED on the handpiece is defective.	▶ Replace the high-pressure lamp or Multi LED. See also:  Instructions for Use of the handpiece
No heating function on the multifunctional handpiece.	Spray heating not preselected.	▶ Pre-select spray heating.
No cold light on the multifunctional handpiece.	The heating function is preselected.	▶ Deselect the heating function (and select it again, if applicable).
No spray in the instruments.	No spray preselected.	▶ Preselect spray.
	Close the ring for controlling the spray on the instruments.	▶ Open the ring for controlling the spray on the instruments.
Spray at the instruments is insufficient.	The spray nozzles are dirty/clogged.	▶ Clean the spray nozzles according to the accompanying instrument operating instructions.
Leaks in instruments.	O-rings at MULTIflex or motor coupling, gripping sleeve or cannula of the triple-function handpiece are damaged.	▶ Replace O-rings.
PiezoLED or PIEZOsoft without function.	PiezoLED or PIEZOsoft not pivoting.	▶ Also refer to: Instructions for Use of the PIEZOsoft/ PiezoLED
The suction hoses do not have any suction.	Sliders on the conical sections are closed.	▶ Open the sliders.
	Sieves in suction connector are clogged.	▶ Replace sieves.
	Chair kick plate is being actuated.	▶ Release the chair kick plate.
Water in the return air filter.	O-rings of the MULTIflex coupling are damaged.	▶ Replace all O-rings of the MULTIflex coupling.
A melody sounds.	The amalgam separator CAS1 is almost full (95%).	▶ Exchange the amalgam container.
	The CAS1 amalgam separator is defective.	▶ Also refer to: Instructions for use for the CAS 1 or ▶ Call a Service technician.
Ten beeps are issued.	The Oxygenal container is too full.	▶ Stop filling the Oxygenal container.

Malfunction	Cause	Remedy
Beeps every 10 seconds. The LED on the "Intensive germ reduction" key flashes (green). (Assistant element) MEMOSpeed/ men displays an error.	The Oxygenal container is empty.	▶ Refill the Oxygenal container. See also: ▶ Servicing instructions
LED on "HYDROclean" button (red) flashes.	Malfunction in the amalgam separator.	▶ Call a service technician. ▶ Note the amalgam separator warning notice. Also refer to: Operating instructions of the amalgam separator See also: ▶ Operating instructions of the amalgam separator
	Emergency shut off of the bowl valve (only when external suction is installed)	▶ Call a technician.
ERGOcam does not work.	PC is switched off.	▶ Turn on the computer.
	USB cable too long.	▶ Make sure that the cable length does not exceed 10 m (2 x 5 m passive with repeater).
No data transmission to the multimedia menu of the unit.	No or faulty ethernet connection between dental unit and office network.	▶ Notify network administrator.
Camera images shows images only as black/white images.	Electrical or electromagnetic interference by other equipment.	▶ Restart the CONEXIO PC.
Camera image freezes without the release button or foot control having been triggered. Camera image fails to return to live image mode.	Electrical or electromagnetic interference by other equipment.	▶ Replace the camera in the holder and then take it out again.
Camera image freezes without the release button or foot control having been triggered. Taking the camera out again did not solve the problem.	Electrical or electromagnetic interference by other equipment.	▶ Restart the software.
Camera image freezes without the release button or foot control having been triggered. The monitor turns itself off.	Electrical or electromagnetic interference by other equipment.	▶ Restart the treatment unit and the CONEXIO PC.

Malfunction	Cause	Remedy
An acoustic signal is issued every second.	Leaking water switch recognises leaking water.	► Remove water from the unit body. If necessary, have a technician fixed the leak.
Malfunction	Cause	Remedy
Display shows: ID 33	No CAN node and/or internal communication is faulty.	► Call a service technician.
Display shows: ID 64	Water is shut off.	► Turn water on.
	Water works leaks strongly.	► Call a technician.
	Water works malfunction	
Display shows: ID 65	Safety switch of bowl suction has been reached.	► Turn external suction on. ► Check and clean, if required, the bowl valve.
Display shows: ID 66	Amalgam separator malfunction	► Remedy the malfunction. See also: ⓘ Instructions for Use of amalgam separator
Display shows: ID 67	The oxygenal container is empty.	► Refill the Oxygenal container. See also: ⓘ Servicing instructions
Display shows: ID 68	Call for service	► Have a service performed. ► Call a technician.
Display shows: ID 69	Intensive germ reduction must be done.	► Carry out an intensive germ reduction. See also: ⓘ Servicing instructions
Display shows: ID 70	Dekaseptol empty.	► Replenish Dekaseptol. See also: ⓘ Servicing instructions
Display shows: ID 72	Dekaseptol bottle.	► Insert the DEKASEPTOL bottle. See also: ⓘ Care instructions
Display shows: ID XX	This error is not described in this chapter.	► Call a technician.
Display shows: CAN fail	Internal communication error.	► Turn the unit off and on again, consult a service technician according to need.
Display shows: System State	Unit does not work.	► Call a service technician.

10 Data on electromagnetic compatibility according to EN 60601-1-2

10.1 Electromagnetic Transmissions

The treatment unit is designed for operation in an environment as specified below. The customer or user of the should make sure that the device is used in an environment of the specified type.

Measurements of emitted interference	Conformance	Electromagnetic environment - Guidelines
HF emissions according to CISPR 11	Group 1	The device uses HF energy for its internal functions exclusively. Therefore, the HF emission of the device is very low and interference with adjacent electronic devices is unlikely.
HF emissions according to CISPR 11	Class B	The device is suitable for use in all facilities including residential ones, and facilities that are directly connected to a public power supply that also supplies residential buildings.
Emission of harmonics according to EN 61000-3-2	Class A	The device is suitable for use in all facilities including residential ones, and facilities that are directly connected to a public power supply that also supplies residential buildings.
Emission of voltage fluctuations/ flicker according to EN 61000-3-3	Conforms	The device is suitable for use in all facilities including residential ones, and facilities that are directly connected to a public power supply that also supplies residential buildings.

10.2 Resistance to electromagnetic interference

The treatment unit is designed for operation in an environment as specified below. The customer or user of the should make sure that the device is used in an environment of the specified type.

Interference immunity tests	EN 60601 test level	Compliance level	Electromagnetic environment - Guidelines
Electrostatic discharge (ESD) according to EN 61000-4-2	± 6 kV contact discharge ± 8 kV atmospheric discharge	± 2/4/6 kV contact discharge ± 2/4/8 kV atmospheric discharge	Floors should be made of wood or concrete or be fitted with ceramic tiles. If the floor is fitted with synthetic material, the relative humidity must be at least 30%.
Fast transient electrical interference / bursts according to EN 61000-4-4	± 2 kV for power lines ± 1 kV for input and output lines	± 2 kV for power lines	The quality of the supply voltage should correspond to that of a typical business or hospital environment.
Surges according to EN 61000-4-5	± 1 kV push-pull voltage ± 2 kV common mode voltage	± 1 kV push-pull voltage ± 2 kV common mode voltage	The quality of the supply voltage should correspond to that of a typical business or hospital environment.

10 Data on electromagnetic compatibility according to EN 60601-1-2 | 10.3 Recommended safe distance between portable and mobile HF telecommunications equipment and the treatment unit

Interference immunity tests	EN 60601 test level	Compliance level	Electromagnetic environment - Guidelines
Voltage interruptions, short-term interruptions and fluctuations of the supply voltage according to EN 61000-4-11	$< 5\% U_T$ (> 95% interruption) for $\frac{1}{2}$ period $40\% U_T$ (60% interruption) for 5 periods $70\% U_T$ (30% interruption) for 25 periods $< 5\% U_T$ (> 95% interruption) for 5 s (250 periods)	$< 5\% U_T$ (> 95% interruption) for $\frac{1}{2}$ period $40\% U_T$ (60% interruption) for 5 periods $70\% U_T$ (30% interruption) for 25 periods $< 5\% U_T$ (> 95% interruption) for 5 s (250 periods)	The quality of the supply voltage should correspond to that of a typical business or hospital environment. If the user needs the to work even if the power supply is interrupted, we recommend supplying energy to the from an uninterruptible power supply or battery.
Magnetic field at a supply frequency (50/60 Hz) according to EN 61000-4-8	3 A/m	3 A/m	Magnetic fields at the mains frequency should correspond to typical values in a business and hospital environment.

NOTE: U_T is the alternating mains voltage before the test level is used.

10.3 Recommended safe distance between portable and mobile HF telecommunications equipment and the treatment unit

The is intended for use in an electromagnetic environment in which the HF interference parameters are controlled. The customer or user of the can help prevent electromagnetic interference by maintaining the minimum clearance between portable and mobile HF telecommunication devices (transmitters) and the depending on the output of the communication device as indicated below.

Safe distance depending on the transmission frequency:

Rated power P of the transmitter in W	Safe distance depending on the transmission frequency in m		
	150 kHz to 80 MHz $d=1.17\sqrt{P}$	80 MHz to 800 MHz $d=1.20\sqrt{P}$	800 MHz to 2.5 GHz $d=2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.37	0.38	0.73
1	1.17	1.20	2.3
10	3.69	3.79	7.27
100	11.7	12	23
U1 = Compliance level according to 4-6: 3 V _{eff} E1 = Compliance level according to 4-3: 3 V/m			
Factor	[3.5/U1]	[12/E ₁]	[23/E ₁]

For transmitters whose maximum rated power is not in the above table, the recommended safe distance d in meters (m) can be calculated using the equation for the respective gap, where P is the maximum rated power of the transmitter in Watts (W) according to the manufacturer's information.

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2: These guidelines may not be applicable in every case. The spread of electromagnetic waves is absorbed and reflected by buildings, objects and people.

10.4 Immunity to electromagnetic interference

The treatment unit is designed for operation in an environment as specified below. The customer or user of the should make sure that the device is used in an environment of the specified type.

Interference immunity tests	EN 60601 test level	Compliance level	Electromagnetic environment - Guidelines
Wire-based HF interference according to EN 61000-4-6 Wireless HF interference according to EN 61000-4-3	3 V _{eff} 150 kHz to 80 MHz outside the ISM bands ^a V/m 80 MHz to 2.5 GHz	3 V _{eff} 3 V/m	Handheld and mobile wireless devices should not be used at a shorter distance from the including cables than the recommended safe clearance calculated using the appropriate equation for the emission frequency. Recommended safe distance: $d = 1.17 \sqrt{P}$ $d = 1.17 \sqrt{P}$ for 80 MHz to 800 MHz $d = 2.33 \sqrt{P}$ for 800 MHz to 2.5 GHz where P is the maximal nominal power of the transmitter in watts (W) as specified by the transmitter manufacturer and d is the recommended safe clearance in metres (m). ^b The field strength of stationary wireless radio transmitters as measured locally ^c should be lower than the conformance level at all frequencies. ^d Interference is possible in the vicinity of devices bearing the following icon. 

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2: These guidelines may not be applicable in every case. The spread of electromagnetic waves is absorbed and reflected by buildings, objects and people.

^aThe ISM frequency bands (for industrial, scientific, and medical applications) between 150 kHz and 80 MHz are 6.765 MHz to 6.795 MHz; 13.553 MHz to 13.567 MHz; 26.957 MHz to 27.283 MHz, and 40.66 MHz to 40.70 MHz.

^bThe compliance levels in the ISM frequency bands between 150 kHz and 80 MHz and in the frequency range from 80 MHz to 2.5 GHz are intended to reduce the probability of mobile/handheld communications facilities causing interference when they are inadvertently introduced into the patient area. For this reason, the additional factor of 10/3 is applied in the calculation of the recommended safe clearances in these ranges of frequencies.

^cThe field strength of stationary transmitters, such as, e.g. base stations of mobile phones and mobile terrestrial radio devices, amateur radio stations, AM and FM radio and television transmitters, cannot be determined exactly based on theoretical considerations. A site study should be considered to determine the electromagnetic environment in terms of stationary transmitters. If the measured field strength at the site, at which the is used, exceeds the compliance levels shown above, the should be monitored to demonstrate proper function. If any uncommon performance characteristics are observed, additional measures may be required, such as, e.g., changing the orientation or using a different location for the .

10 Data on electromagnetic compatibility according to EN 60601-1-2 | 10.4 Immunity to electromagnetic interference

^d In the frequency range of 150 kHz to 80 MHz, the field strength should be less than $3V_{\text{eff}}$ V/m.



