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Обособена позиция № 7

ДОГОВОР ЗА ОБЩЕСТВЕНА ПОРЪЧКА

5785 от 36-5785мпр - 32/22.05.2018г.

Днес, ... г., в гр. София, след проведена процедура за възлагане на обществена поръчка, открита с Решение № 5785мпр-97 от 31.10.2017 г. на директора на „Научноизследователски институт по криминалистика" - МВР в качеството на упълномощено лице по смисъла на чл. 7, ал. 1 от Закона за обществените поръчки (ЗОП) и на основание чл. 112, ал.1 от ЗОП се сключи настоящият договор, между:

1. **МИНИСТЕРСТВО НА ВЪТРЕШНИТЕ РАБОТИ,** със седалище и адрес на управление: гр.София, ул. „Шести септември" № 29, БУЛСТАТ 000695235, ИН по ДДС: BG000695235, представлявано от Добринка Маркова – Директор НИК-МВР, упълномощена със заповед рег. № 8121з-737/30.05.2017 г. на министъра на вътрешните работи, от една страна, наричан по-долу **„ВЪЗЛОЖИТЕЛ"**, и

2. **„МЕДИЦИНСКА ТЕХНИКА ИНЖЕНЕРИНГ" ООД**, със седалище и адрес на управление: гр. София 1750, район „Младост", ж.к. „Младост" 1, бл. 28Б, ЕИК (БУЛСТАТ) 831641528, представлявано от Йонка Христова Гетова-Христанова, действаща в качеството си на управител, от друга страна, наричана по-долу **„ИЗПЪЛНИТЕЛ",** се сключи настоящия договор за следното:

I. ПРЕДМЕТ НА ДОГОВОРА

Чл. 1. (1) ВЪЗЛОЖИТЕЛЯТ възлага, а ИЗПЪЛНИТЕЛЯТ приема да достави, инсталира, въведе в експлоатация и да обучи за работа с него служители на НИК-МВР, ротационен микротом с държач на проби и стерео микроскоп, във връзка с изпълнението на обществена поръчка с предмет **„Закупуване на аналитична техника за изследвания в областта на природните науки", обособена позиция № 7 „Доставка на ротационен микротом с държач на проби и стерео микроскоп"**, проект „Повишаване капацитета на полицейското разследване и криминалистичните изследвания" BG/ISF-SO5-NO1-A22, съфинансиран по фонд „Вътрешна сигурност".

(2) ИЗПЪЛНИТЕЛЯТ се задължава да изпълни дейностите по ал. 1 в съответствие с Техническото предложение и ценовата оферта, неразделни части от договора.

II. СРОК И МЯСТО НА ИЗПЪЛНЕНИЕ

Чл. 2. Срокът за изпълнение на поръчката: „ротационен микротом с държач на проби и стерео микроскоп" е до 180 дни от подписване на договора.

Чл. 3. Настоящият договор влиза в сила от датата на подписването му от двете страни. Изпълнението на договора започва от деня, следващ датата на подписването му.

Чл. 4. Място за изпълнение на доставката и извършване на дейностите, свързани с нея е:
-НИК-МВР, гр. София, бул. „Александър Малинов“ № 1

III. КАЧЕСТВО

Чл. 5. (1) Качеството на доставката следва да отговаря на техническите характеристики от Техническото предложение на ИЗПЪЛНИТЕЛЯ и да е в пълно съответствие с изискванията на Техническата спецификация на ВЪЗЛОЖИТЕЛЯ.

(2) ИЗПЪЛНИТЕЛЯТ гарантира, че оборудването предмет на доставката е ново, неизползвано и не е спряно от производство.

(3) Доставката следва да е придружена с Техническа документация/инструкция за ползване и сертификатите за качество на производителя.

IV. ЦЕНА

Чл. 6. (1) Общата стойност на договора е в размер на **47 480.00 лв.** (четиридесет и седем хиляди четиристотин и осемдесет лева) без ДДС, съответно **56 976.00 лв.** (петдесет и шест хиляди деветстотин седемдесет и шест лева) с ДДС, съгласно ценовата оферта на ИЗПЪЛНИТЕЛЯ, неразделна част от настоящия договор.

(2) Всички цени от Ценовата оферта на ИЗПЪЛНИТЕЛЯ са фиксирани/крайни за времето на изпълнение на Договора, включват всички разходи на ИЗПЪЛНИТЕЛЯ, и не подлежат на промяна.

(3) ИЗПЪЛНИТЕЛЯТ няма право да търси и претендира за допълнителни плащания или по-високи цени от посочените в ал. 1.

(4) В случай че се дължи освобождаване от митница на доставката – предмет на настоящият договор, освобождаването е за сметка на ИЗПЪЛНИТЕЛЯ.

(5) В цената по ал. 1 са включени всички разходи за мита, акцизи, труд, обучение и транспорт до мястото на изпълнение посочено в чл. 4 на настоящия договор.

V. НАЧИН НА ПЛАЩАНЕ

Чл. 7. ВЪЗЛОЖИТЕЛЯТ заплаща на ИЗПЪЛНИТЕЛЯ дължимото възнаграждение за приета доставка по реда на чл. 20 с банков превод в рамките на 30 (тридесет) дни след предоставяне на двустранно подписан предавателно-приемателен протокол и оригинална фактура; ИЗПЪЛНИТЕЛЯТ представя на ВЪЗЛОЖИТЕЛЯ оригиналната фактура в срок до 3 дни след подписване на протокола по чл. 20, ал. 8.

Чл. 8. (1) ВЪЗЛОЖИТЕЛЯТ извършва плащанията по банков път чрез банков превод по банковата сметка на ИЗПЪЛНИТЕЛЯ, както следва:

IBAN: BG 09 UNCR 7630 1000 0431 12

BIC: UNCR BGSF

БАНКА: УниКредит Булбанк АД, гр. София, клон Централен, пл. „Св. Неделя“ 7

(2) Във фактурите, които ИЗПЪЛНИТЕЛЯТ издава във връзка с изпълнението на настоящия договор, следва да бъде указано, че разходът се извършва по проект **BG/ISF-SO5-**

(3) ВЪЗЛОЖИТЕЛЯТ не заплаща суми за непълно и/или некачествено извършени от ИЗПЪЛНИТЕЛЯ дейности преди отстраняване на всички недостатъци, установени с двустранно подписан констативен протокол. Отстраняването на недостатъците е за сметка на ИЗПЪЛНИТЕЛЯ.

(4) При промяна на банковата сметка, Изпълнителя се задължава незабавно да уведоми за това Възложителя като му посочи новата си банкова сметка.

VI. ПРАВА И ЗАДЪЛЖЕНИЯ НА ИЗПЪЛНИТЕЛЯ

Чл. 9. ИЗПЪЛНИТЕЛЯТ има право:

1. да получи уговорената цена при изпълнение на поръчка в размера и при условията на този договор.

2. да иска от ВЪЗЛОЖИТЕЛЯ необходимото съдействие за изпълнение на поръчката;

3. да иска от ВЪЗЛОЖИТЕЛЯ да приеме изпълнената поръчка;

Чл. 10. ИЗПЪЛНИТЕЛЯТ няма право да ползва подизпълнител при изпълнение на договора.

Чл. 11. Когато ИЗПЪЛНИТЕЛЯТ има изискуемо вземане по този договор срещу другата страна, той няма право да отказва да изпълни свое задължение, докато ВЪЗЛОЖИТЕЛЯТ не изпълни насрещното си задължение по договора.

Чл. 12. ИЗПЪЛНИТЕЛЯТ е длъжен:

1. да изпълни поръчката с грижата на добрия търговец в сроковете, определени в този договор;

2. да осъществи доставка, монтаж, инсталация и да въведе в експлоатация оборудването, съгласно приложените към договора Техническа спецификация, ценова оферта и техническото предложение, и да проведе обучение на персонала на НИК-МВР на мястото посочено в чл. 4; Времето и графика на обучение се съгласуват писмено между страните, като Изпълнителят осигурява присъствие на обучаващите лица за договорените в графика период и часове. За извършеното обучение страните или упълномощени от тях лица подписват двустранен протокол.

3. да изпълни доставката, пълно, точно, и качествено, в срока, определен по този договор и при спазване на действащата нормативна уредба, в това число изискванията по охрана на труда, санитарните и противопожарни норми.

4. да отстрани за своя сметка допуснатите недостатъци, грешки и установени дефекти в процеса на изпълнението на договора.

5. да прехвърли на ВЪЗЛОЖИТЕЛЯ собствеността и риска върху техническото оборудване при доставянето му след подписването на двустранен предавателно-приемателен протокол;

6. да осигурява възможност на ВЪЗЛОЖИТЕЛЯ за осъществяване на текущ контрол и да предоставя информация за хода на изпълнението.

7. да организира транспортирането, разтоварването, монтирането, тестването и пускането в експлоатация на доставката за своя сметка.

8. да предоставя гаранционно обслужване при условията на този договор;

9. да не използва по никакъв начин, включително за свои нужди, или да не разгласява пред трети лица каквито и да било данни и информация, станали му известни при или по повод изпълнението на настоящия договор, за цели, които не са свързани с предмета на този Договор, или която информация ВЪЗЛОЖИТЕЛЯТ няма интерес да бъде разкривана, освен с предварителното писмено съгласие на ВЪЗЛОЖИТЕЛЯ. ИЗПЪЛНИТЕЛЯТ поема задължение да осигури тези действия от всяко лице от екипа си.

10. да съдейства на националните или други компетентни органи при извършване на одити, контрол и проверки при усвояването и разходването на средствата по този договор.

11. ИЗПЪЛНИТЕЛЯ е длъжен да предприеме необходимите мерки, за да осигури визуалната идентификация на предоставената доставка (лого на програмата с информация за източника на финансиране)

12. ИЗПЪЛНИТЕЛЯТ се задължава да предприеме всички необходими мерки за избягване на конфликт на интереси, както и да уведоми незабавно ВЪЗЛОЖИТЕЛЯ относно обстоятелство, което предизвиква или може да предизвика подобен конфликт.

13. При изпълнение поръчката да спазва всички приложими към предмета на обществената поръчка нормативни изисквания, международните стандарти и изискванията на грантовото споразумение.

14. Да изпълнява указанията и изискванията на ВЪЗЛОЖИТЕЛЯ, изразени при съгласуване, одобряване и приемане изпълнението на дейностите по договора, да отстранява недостатъци и пропуски и да извършва необходимите поправки за своя сметка.

15. Да докладва на ВЪЗЛОЖИТЕЛЯ за всички заподозрени и/или доказани случаи на измама и/или нередност.

16. Изпълнителят се задължава да спазва режима на достъп и правилата за вътрешен ред и безопасност на работа в помещенията на Възложителя.

17. При изпълнение на възложената му с този Договор работа, Изпълнителят се задължава да не нарушава авторските и другите сродни права на трети лица и да спазва всички разпоредби на действащото българско законодателство във връзка със защита на правата на интелектуална собственост на трети лица. Изпълнителят гарантира, че Софтуерните продукти, така както са доставени не накърняват никакви права на интелектуална собственост, притежавани от трети лица. Изпълнителят гарантира, че притежава всички необходими права на интелектуална собственост или за своя сметка ще осигури законосъобразно придобиване на всички права и други съгласия, необходими му за изпълнение на предмета на Договора.

VII. ПРАВА И ЗАДЪЛЖЕНИЯ НА ВЪЗЛОЖИТЕЛЯ

Чл. 13. ВЪЗЛОЖИТЕЛЯТ има право:

1. да изисква от ИЗПЪЛНИТЕЛЯ да изпълнява в срок и без отклонения съответните дейности, съгласно Техническото предложение.

2. да извършва проверка във всеки момент от изпълнението на договора относно качество, количества, технически параметри, без това да пречи на оперативната дейност на ИЗПЪЛНИТЕЛЯ.

3. да претендира отстраняването на отклонения и недостатъци за сметка на ИЗПЪЛНИТЕЛЯ при установяване на некачествена работа, която не е в съответствие с Техническото предложение на ИЗПЪЛНИТЕЛЯ.

4. да откаже да приеме доставеното техническо оборудване, ако открие недостатъци в него или несъответствия между него и изискванията на този договор.

Чл. 14. ВЪЗЛОЖИТЕЛЯТ се задължава:

1. да заплати на ИЗПЪЛНИТЕЛЯ възнаграждение в размер, при условия и в срокове съгласно настоящия договор.

2. да приеме доставеното техническо оборудване;

3. да оказва необходимото съдействие на ИЗПЪЛНИТЕЛЯ при изпълнението на договора;

4. да предостави на разположение на ИЗПЪЛНИТЕЛЯ техническата информация и съдействие, които са поискани във връзка с изпълнението на дейностите по договора.

VIII. ГАРАНЦИЯ ЗА ИЗПЪЛНЕНИЕ

Чл. 15. (1) За обезпечаване изпълнението на настоящия договор ИЗПЪЛНИТЕЛЯТ представя към момента на сключването на договора гаранция за добро изпълнение в размер на 5 % (пет на сто) от общата стойност на договора без ДДС, равна на **2 374.00 лв.** /две хиляди триста седемдесет и четири лева/.

(2) Гаранцията за изпълнение на договора се представя от ИЗПЪЛНИТЕЛЯ под формата на парична сума или банкова гаранция или застраховка, която обезпечава изпълнението чрез покритие на отговорността на Изпълнителя.

(3) В случай, че ИЗПЪЛНИТЕЛЯТ избере да предостави гаранцията под формата на парична сума, тя следва да бъде преведена в определения размер по следната банкова сметка на Възложителя: IBAN: BG09 BNBG 9661 3300 1462 01, BIC Code: BNBGBGSD, „БЪЛГАРСКА НАРОДНА БАНКА“, адрес пл. „Княз Александър I“ № 1, на името на „Министерство на вътрешните работи“.

(4) В случай, че ИЗПЪЛНИТЕЛЯТ избере да предостави гаранцията под формата на банкова гаранция, същата трябва да е оригинална, безусловна, неотменима и със срок на валидност 30 дни след изтичане на гаранционния срок, посочен в техническото предложение на ИЗПЪЛНИТЕЛЯ. Когато поръчката не бъде изпълнена в договорения краен срок, ИЗПЪЛНИТЕЛЯТ е длъжен да удължи срока на банковата гаранция или да предостави на ВЪЗЛОЖИТЕЛЯ нова банкова гаранция с валидност за периода на изпълнение на поръчката плюс 30 (тридесет) дни, не по-късно от 5 (пет) работни дни преди изтичане срока на банковата гаранция. При непредставяне в посочения срок на документ, удостоверяващ изпълнението на ангажимента от страна на ИЗПЪЛНИТЕЛЯ, ВЪЗЛОЖИТЕЛЯТ има право да предяви иск за усвояване на гаранцията в пълен размер.

(5) Обслужването на банковата гаранция за изпълнение, таксите и други плащания по нея, банковите преводи, комисионните, както и поддържането на банковата гаранция за изпълнение за целия период на действие на договора, са за сметка на ИЗПЪЛНИТЕЛЯ.

(6) Половината от гаранцията за изпълнение на договора се освобождава в срок от 30 (тридесет) дни след подписване на протокола по чл. 20, ал. 8. Остатъка от гаранцията за изпълнение на договора се освобождава в срок от 30 (тридесет) дни след изтичане на гаранционния срок и точното изпълнение на задълженията на ИЗПЪЛНИТЕЛЯ по този договор, без да се дължат лихви на ИЗПЪЛНИТЕЛЯ. Когато договорът е прекратен преди

неговото изпълнение, гаранцията за изпълнение се освобождава в срок от 30 (тридесет) дни след неговото прекратяване, без да се дължат лихви на ИЗПЪЛНИТЕЛЯ.

(7) Когато гаранцията за изпълнение е застраховка, се представя оригиналът й, покриваща 100 % от стойността на гаранцията за изпълнение и със срок на валидност крайния срок на изпълнение на договора, плюс гаранционния срок, плюс 30 (тридесет) дни. Когато поръчката не бъде изпълнена в договорения краен срок, Изпълнителят е длъжен да удължи срока на предоставената застраховка или да предостави на Възложителя нова застраховка с валидност - периодът на изпълнение на поръчката плюс 30 (тридесет) дни, не по-късно от 5 (пет) работни дни преди изтичане срока на застраховката. При непредставяне в посочения срок на документ, удостоверяващ изпълнението на ангажимента от страна на Изпълнителя, Възложителят има право да предяви искане за изплащане на застраховката в пълен размер.

(8) ВЪЗЛОЖИТЕЛЯТ задържа гаранцията за изпълнение на договора, ако в процеса на неговото изпълнение възникне спор между страните, до приключването му с влязло в сила съдебно решение или споразумение.

(9) ВЪЗЛОЖИТЕЛЯТ задържа гаранцията за изпълнение при пълно виновно неизпълнение на поръчката, както и при разваляне на договора по вина на ИЗПЪЛНИТЕЛЯ.

(10) ВЪЗЛОЖИТЕЛЯТ има право да удържи от стойността на гаранцията за изпълнение размера на начислените неустойки по раздел XI от този договор.

IX. ГАРАНЦИОНЕН СРОК

Чл. 16. (1) Гаранционният срок на доставката е **49** (четиридесет и девет) месеца, като започва да тече от датата на подписването на протокола по чл. 20 ал. 8.

(2) Всички дефекти, които не са причинени от неправилно действие на служители на ВЪЗЛОЖИТЕЛЯ, се отстраняват от и за сметка на ИЗПЪЛНИТЕЛЯ.

Чл. 17. (1) При поява на дефекти или технически проблеми в гаранционния срок, ВЪЗЛОЖИТЕЛЯ е длъжен писмено да уведоми ИЗПЪЛНИТЕЛЯ.

(2) В рамките на гаранционния срок ИЗПЪЛНИТЕЛЯТ е длъжен да предприеме действия по: установяване на проблема с доставените изделия и да възстанови нормалната работоспособност на дефектиралите изделия в срок, съгласно техническото предложение на ИЗПЪЛНИТЕЛЯ. ИЗПЪЛНИТЕЛЯТ организира и осигурява транспорта от клиента до сервиза и обратно, като поема изцяло разходите за тези дейности.

(3) Когато е необходим ремонт в сервиз на ИЗПЪЛНИТЕЛЯ товаро - разтоварните дейности и транспортът на изделията до сервиза и обратно са за сметка на ИЗПЪЛНИТЕЛЯ.

(4) В случай, че се установят скрити недостатъци, за които ИЗПЪЛНИТЕЛЯТ е бил уведомен в рамките на гаранционния срок, той е длъжен да ги отстрани или замени некачественото устройство с ново със същите или по-добри характеристики, ако недостатъкът го прави негодно за използване по предназначение. Срокът за това е съгласно техническото предложение на ИЗПЪЛНИТЕЛЯ. Всички разходи по замяната са за сметка на ИЗПЪЛНИТЕЛЯ.

Чл. 18. (1) ИЗПЪЛНИТЕЛЯТ е длъжен да осигури надеждно обслужване и поддръжка на доставката в гаранционния срок и в съответствие с изискванията на техническата спецификация.

(2) ИЗПЪЛНИТЕЛЯТ трябва да осигури контактна точка за подаване на заявки за сервизна услуга (ЗСУ). Достъпът до нея трябва да е осигурен чрез телефонен номер, факс и е-

mail в Р България и не трябва да поставя потребителите пред нуждата да плащат разговори по международни тарифи или за телефони с добавена стойност.

(3) Контактната точка за подаване на ЗСУ е: телефон 02/6427117, факс 02/9712410, e-mail service@mte-bg.com

(4) ИЗПЪЛНИТЕЛЯТ е длъжен да осигури обслужване в рамките на работното време 8:30 до 17:30 в работни дни на всички постъпили ЗСУ.

(5) Представител на ВЪЗЛОЖИТЕЛЯ подава ЗСУ, като съобщава серийния номер на повреденото оборудване и идентифицираните последствия от повредата. ИЗПЪЛНИТЕЛЯТ потвърждава приемането на ЗСУ и предоставя номера, под който е регистрирана заявката.

Чл. 19. (1) Ремонтът се извършва с нови резервни части, модули и възли. Протокол за извършена сервизна услуга (ПСУ) изготвя сервизният специалист от Изпълнителя, на когото е възложено изпълнението на ЗСУ. В протокола се описва как е решен проблемът, какви модули са подменени и в какви срокове е станало това. ПСУ е на хартиен носител в два екземпляра и се подписва и от двете страни - по един представител за всяка страна. Ремонтът трябва да се извърши за не повече от 10 (десет) работни дни от подаване на ЗСУ.

(2) В случай на използване на нови съвместими резервни части или подобни възли и устройства със същата функционалност, ИЗПЪЛНИТЕЛЯТ да гарантира, че няма да се наруши работоспособността на системата.

(3) Резервните части и модули необходими за отстраняването на повредите са за сметка на ИЗПЪЛНИТЕЛЯ, в т.ч. и обявените от производителя за консумативи;

(4) При всички сервизни действия, носещи опасност за работоспособността на компютърните системи да се прави архив и да се проверява наличието и състоянието на архивите;

(5) Повредени магнитни носители на информация не се връщат на ИЗПЪЛНИТЕЛЯ.

(6) ИЗПЪЛНИТЕЛЯТ извършва текуща профилактика на доставената техника съгласно документацията. Всички необходими консумативи за извършване на профилактиката са за сметка на ИЗПЪЛНИТЕЛЯ.

X. ПРИЕМАНЕ НА ДОСТАВКИТЕ

Чл. 20 (1) Приемането на дейностите по чл. 1 се извършва на мястото на изпълнение, посочено в чл. 4. Приемане изпълнението на дейностите по договора се удостоверява, с двустранно подписан предавателно-приемателен протокол, подписан в два екземпляра от представители на ИЗПЪЛНИТЕЛЯ и ВЪЗЛОЖИТЕЛЯ. Предавателно-приемателният протокол се подписва след представяне на подписан констативен протокол за проведени тестове.

(2) След получаване на доставката, ВЪЗЛОЖИТЕЛЯТ е длъжен да я прегледа и ако констатира недостатъци или несъответствие с договореното, с техническата спецификация на ВЪЗЛОЖИТЕЛЯ и техническото предложение на ИЗПЪЛНИТЕЛЯ, ВЪЗЛОЖИТЕЛЯТ и ИЗПЪЛНИТЕЛЯТ съставят двустранен констативен протокол за констатирани недостатъци/ несъответствия.

(3) След съставянето на двустранния констативен протокол по ал. 2, ИЗПЪЛНИТЕЛЯТ е длъжен незабавно да подмени изделията, за които има рекламация, и/или да отстрани констатираните недостатъци в съответствие с техническата спецификация на ВЪЗЛОЖИТЕЛЯ и техническата си оферта за своя сметка.

(4) ИЗПЪЛНИТЕЛЯТ съвместно с представители на ВЪЗЛОЖИТЕЛЯ провеждат приемателни тестове на доставеното техническо оборудване, за което се подписва протокол между представители на страните по договора.

(5) В случай че не са открити недостатъци и/или несъответствия на доставката или други дейности, или същите бъдат отстранени по реда на ал. 3, ИЗПЪЛНИТЕЛЯТ и ВЪЗЛОЖИТЕЛЯТ подписват предавателно-приемателни протоколи за тази част на доставката или дейностите по договора.

(6) След инсталиране на доставеното оборудване ИЗПЪЛНИТЕЛЯТ демонстрира покриването на заложените в техническата спецификация и техническото предложение на ИЗПЪЛНИТЕЛЯ показатели. След постигане на заложените показатели се подписва протокол за въвеждане на оборудването в експлоатация.

(7) След въвеждане в експлоатация на апаратурата и софтуера се провежда обучение на служителите на НИК-МВР съгласно документацията. След приключването му се съставя протокол за обучение.

(8) След приключване на курса се съставя приемо-предавателен протокол за доставяне, инсталиране, въвеждане в експлоатация и проведено обучение за работа.

(9) Приемането на изпълнението на доставката по реда на ал. 8 не освобождава ИЗПЪЛНИТЕЛЯ от отговорност за скрити недостатъци на доставените изделия, които не са могли да бъдат установени по реда на ал. 3. Рекламации относно скрити недостатъци се правят в седемдневен срок от откриването им, но не по-късно от гаранционния срок по чл. 16.

(10) Страните определят оторизирани лица по договора, които да подписват предавателно-приемателните и констативните протоколи.

(11) Собствеността и рискът от случайно погиване на доставката преминават от ИЗПЪЛНИТЕЛЯ върху ВЪЗЛОЖИТЕЛЯ от момента на подписването на предавателно-приемателния протокол за приемане на доставката по ал. 8.

(12) ВЪЗЛОЖИТЕЛЯТ е длъжен да заведе на отчет всички активи, които са предмет на договора.

(13) След изтичането на гаранционният срок по член 16 се подписва окончателен предавателно-приемателен протокол между ИЗПЪЛНИТЕЛЯ и ВЪЛОЖИТЕЛЯ, удостоверяващ, че ИЗПЪЛНИТЕЛЯ е осъществил гаранционната поддръжка в сроковете по чл. 16 от настоящия договор.

XI. НЕУСТОЙКИ

Чл. 21. При забавено изпълнение на отделни задължения по договора от ИЗПЪЛНИТЕЛЯ, същият дължи на ВЪЗЛОЖИТЕЛЯ неустойка в размер на 0.5 на сто за всеки просрочен ден, но не повече от 10 (*десет на сто*) на сто от стойността на договора.

Чл. 22. При лошо изпълнение, ИЗПЪЛНИТЕЛЯТ дължи неустойка в размер на 5 % (пет на сто) от стойността на договора.

Чл. 23. При частично неизпълнение, ИЗПЪЛНИТЕЛЯТ дължи неустойка в размер на 20 % (двадесет на сто) от стойността на неизпълнената част.

Чл. 24. Ако е в забава за плащане, ВЪЗЛОЖИТЕЛЯТ дължи неустойка в размер на законната лихва върху неизплатената в срок сума за всеки просрочен ден.

Чл. 25. При пълно виновно неизпълнение на договора, ИЗПЪЛНИТЕЛЯТ заплаща неустойка в размер 20 (двадесет) на сто от цената по договора.

Чл. 26. (1) При прекратяване на договора по чл. 31, ал. 2, т. 3 ВЪЗЛОЖИТЕЛЯ не дължи неустойки, лихви и пропуснати ползи на ИЗПЪЛНИТЕЛЯ.

(2) При прекратяване на договора по чл. 31, ал. 2, т. 3 ВЪЗЛОЖИТЕЛЯТ дължи на ИЗПЪЛНИТЕЛЯ извършената и неразплатена доставка, доказана с фактура и предавателно-приемателен протокол.

Чл. 27. При прскратяванс на договора по чл. 31, ал. 2, т. 1 страните не си дължат неустойки.

Чл. 28. За дължимия размер на съответната неустойка по този договор изправната страна съставя протокол и го предоставя на неизправната страна. В срок от 10 (десет) работни дни, считано от датата на протокола, неизправната страна превежда по посочена от изправната страна банкова сметка, дължимата неустойка.

Чл. 29. Страните по този договор запазват правото си да търсят обезщетение за вреди по общия ред, ако тяхната стойност е по-голяма от изплатените неустойки по реда на този договор.

XII. ИЗМЕНЕНИЕ И ПРЕКРАТЯВАНЕ НА ДОГОВОРА

Чл. 30. Изменението на договора се извършва по взаимно съгласие с подписване на двустранен анекс между страните. Изменението на договора не трябва да води до нарушение на разпоредбите в ЗОП, регламентиращи правните основания за изменение на договор за обществена поръчка.

Чл. 31. (1) Настоящият договор се прекратява с неговото изпълнение и след изтичане на гаранционния срок.

(2) Договорът може да бъде прекратен предсрочно в следните случаи:

1. По взаимно съгласие на страните изразено в писмена форма, с което се уреждат и финансовите взаимоотношения между страните за извършените от страна на ИЗПЪЛНИТЕЛЯ и одобрени от ВЪЗЛОЖИТЕЛЯ дейности по изпълнение на договора.

2. Едностранно от ВЪЗЛОЖИТЕЛЯ с 14 (четиринадесет) дневно писмено предизвестие при виновно неизпълнение на задължение от страна на ИЗПЪЛНИТЕЛЯ.

3. Когато са настъпили съществени промени във финансирането на обществената поръчка, предмет на договора, извън правомощията на ВЪЗЛОЖИТЕЛЯ, които той не е могъл да предвиди и предотврати, с писмено уведомление, веднага след настъпване на обстоятелствата.

4. При констатирани нередности по смисъла на европейското законодателство и/или конфликт на интереси с изпращане на едностранно писмено предизвестие от ВЪЗЛОЖИТЕЛЯ до ИЗПЪЛНИТЕЛЯ.

5. при условията на чл. 118 от Закона за обществените поръчки;

(3) ВЪЗЛОЖИТЕЛЯТ има право едностранно без предизвестие да прекрати действието на договора, когато:

1. ИЗПЪЛНИТЕЛЯТ не извърши част или цялата доставка по чл. 1, ал. 1 в сроковете, договорени между страните или не отстрани в разумен срок, определен от ВЪЗЛОЖИТЕЛЯ, констатирани недостатъци;.

2. ИЗПЪЛНИТЕЛЯТ забави изпълнението на доставката с повече от 10 /десет/ дни, считано от деня следващ датата на изтичане на уговорения срок. В този случай ВЪЗЛОЖИТЕЛЯТ не дължи обезщетения, неустойки и/или пропуснати ползи на ИЗПЪЛНИТЕЛЯ, но има право да задържи представената гаранция за добро изпълнение.

3. Когато ИЗПЪЛНИТЕЛЯТ използва подизпълнител, без да е декларирал това в офертата си, или използва подизпълнител, който е различен от този, посочен в офертата му;

4. Когато ИЗПЪЛНИТЕЛЯТ бъде обявен в несъстоятелност или когато е в производство по нссъстоятелност или ликвидация.

(4) Възложителят може да прекрати договора едностранно без предизвестие и с уведомление, изпратено до Изпълнителя:

т. 1 При системно (три и повече пъти) неизпълнение на задължение за гаранционна поддръжка в срока на гаранцията, както и при пълно неизпълнение на задълженията на Изпълнителя за гаранционна поддръжка;

т. 2 при пълно неизпълнение на задълженията на Изпълнителя за обучение на персонала на Възложителя;

Чл. 32. Всяка от страните може да развали този договор с едностранно 14 (четиринадесет) дневно писмено предизвестие до другата страна при пълно или частично неизпълнение, забавено или лошо изпълнение на задълженията на другата страна. Разваляне на договора не се допуска, ако неизпълнената част от задължението е незначителна с оглед интереса на изправната страна.

XIII. КОНФИДЕНЦИАЛНОСТ

Чл. 33. ИЗПЪЛНИТЕЛЯТ и ВЪЗЛОЖИТЕЛЯТ третират като конфиденциална всяка информация, получена при и по повод изпълнението на договора.

Чл. 34. ИЗПЪЛНИТЕЛЯТ няма право без предварителното писмено съгласие на ВЪЗЛОЖИТЕЛЯ да разкрива по какъвто и да е начин и под каквато и да е форма договора или част от него и всякаква информация, свързана с изпълнението му, на когото и да е, освен пред своите служители. Разкриването на информация пред такъв служител се осъществява само в необходимата степен за целите на изпълнението на договора.

Чл. 35. ВЪЗЛОЖИТЕЛЯТ и ИЗПЪЛНИТЕЛЯТ гарантират конфиденциалност при използването на предоставените документи, материали и информация по договора, като не ги предоставя на трети лица, освен ако тези трети лица имат законово основание за това.

XIV. ИНФОРМАЦИЯ И ПУБЛИЧНОСТ

Чл. 36. ИЗПЪЛНИТЕЛЯТ се задължава всички информационни материали при доставка да включват в тях:

- Наименованието на проекта: „Повишаване капацитета на полицейското разследване и криминалистичните изследвания“ BG/ISF – SO5-NO1-A22 – съфинансиран по Фонд „Вътрешна сигурност”
- Флаг на Европейския съюз и Република България
- Пояснение: Проектът е съфинансиран от Европейския фонд за вътрешна сигурност на Европейския съюз

XV. НЕПРЕОДОЛИМА СИЛА

Чл. 37. (1) Страните не носят отговорност за неизпълнение на задълженията си, ако неизпълнението на задълженията е предизвикано от действието на непредвидимо и непредотвратимо събитие от извънреден характер и извън разумния им контрол, възникнало след сключване на договора, което прави изпълнението невъзможно (форсмажорно обстоятелство, непреодолима сила). Страната, която се позовава на форсмажорно обстоятелство, трябва да докаже причинната връзка между неизпълнението на задълженията си и непреодолимата сила.

(2) Настъпването на форсмажорното обстоятелство по ал. 1 се доказва с надлежно оформен документ от компетентен държавен орган и се фиксира със съставяне и подписване на двустранен протокол.

(3) Страната, която се позовава на форсмажорното обстоятелство, трябва в 3 (три) дневен срок от настъпването му, писмено да уведоми за това другата страна. При неизпълнение на това задължение страната няма право да се позовава на форсмажорни обстоятелства.

(4) Неизправната страна, която е била в забава при настъпването на непреодолимата сила, няма право да се позовава на форсмажорно обстоятелство.

(5) Не е налице непреодолима сила, ако съответното обстоятелство се е случило вследствие на неположена дължима грижа от страна по този договор или ако при полагане на дължимата грижа това обстоятелство може да бъде преодоляно.

(6) Докато трае непреодолимата сила, изпълнението на задълженията се спира.

(7) Ако непреодолимата сила продължи повече от 100 (сто) дни и няма признаци за скорошното й преустановяване, Възложителят има право да прекрати договора едностранно като писмено уведоми другата страна. Ако непреодолимата сила трае толкова, че Изпълнителят вече няма интерес от изпълнението той има право да прекрати договора едностранно като писмено уведоми другата страна.

XVI. СЧЕТОВОДНА ОТЧЕТНОСТ, ПРОВЕРКИ И ОДИТ

Чл. 38. (1) ИЗПЪЛНИТЕЛЯТ е длъжен да води точна и редовна документация и счетоводна отчетност, отразяващи изпълнението на договора, използвайки подходяща система за регистрация на документацията. Счетоводните отчети и разходите, свързани с изпълнението на договора, трябва да са в съответствие с изискванията на законодателството и да подлежат на ясно идентифициране и проверка.

(2) ИЗПЪЛНИТЕЛЯТ съхранява и предоставя всяка изискана от ВЪЗЛОЖИТЕЛЯ, националните и европейските компетентни органи, както и от други лица и органи имащи право на проверка или одит, информация относно изпълнението на този договор в срок до 2026 година от приключване на договора.

(3) ИЗПЪЛНИТЕЛЯТ приема, че националните компетентни органи и европейските компетентни органи могат да извършват одит директно чрез свои служители или оторизирани лица. Този одит може да бъде извършван през периода на изпълнение на договора, до извършване на окончателното плащане и след това/по всяко време. Когато е намерено за

подходящо, констатациите от одита могат да доведат до възстановяване на суми от ИЗПЪЛНИТЕЛЯ.

(4) ИЗПЪЛНИТЕЛЯТ се задължава да дава достъп на служители на националните компетентни органи, на европейските компетентни органи или оторизирани от тях лица до сгради и помещения, където са се провеждали дейности по договора, както и до цялата информация, включително и на електронен носител, необходима за извършване на одит.

XVII. ЗАКЛЮЧИТЕЛНИ РАЗПОРЕДБИ

Чл. 39. (1) Страните по този договор могат да го допълват и изменят само в предвидените от закона случаи, по взаимно съгласие, изразено писмено.

(2) Всички допълнително възникнали въпроси след подписването на договора ще се решават от двете страни на добра воля с двустранни писмени споразумения.

Чл. 40. (1) Всички заявки, съобщения, уведомления и известия, свързани с изпълнението на договора са валидни, ако са направени в писмена форма на български език и са връчени лично срещу подпис, изпратени с препоръчано писмо с обратна разписка, или по факс. Изпратените по факс материали се приемат за редовно връчени, ако са изпратени на посочения от адресата номер на факс и е получено автоматично генерирано съобщение, потвърждаващо изпращането.

(2) За валидни адреси на приемане на съобщения и уведомления, свързани с настоящия договор се смятат:

1. за ВЪЗЛОЖИТЕЛЯ: Директор на НИК-МВР, гр. София, бул. „Ал. Малинов" № 1, тел. + 359 2 982 90 06, факс + 359 2 982 91 21;

2. за ИЗПЪЛНИТЕЛЯ: „Медицинска Техника Инженеринг" ООД, гр. София 1750, ж.к. „Младост 1", ул. „Димитър Моллов" , бл. 28 Б, тел.: 02/4627117, 0889210889, факс: 02/9712410, e-mail: info@mte-bg.com

Чл. 41. (1) При промяна на посочени адреси, телефони и други координати и данни, всяка от страните е длъжна да уведоми другата в тридневен срок от настъпване на промяната.

(2) Ако страната по договора не изпълни задължението си по ал. 1 се счита, че съобщенията са връчени редовно.

Чл. 42. Нищожността на някоя клауза от договора не води до нищожност на друга клауза или на договора като цяло.

Чл. 43. Всички спорове, породени от този договор или отнасящи се до него, или до допълнителни споразумения към него, включително и споровете, породени от или отнасящи се до тълкуване, недействителност, неизпълнение или прекратяване, ще бъдат решавани по взаимно съгласие с подписване на двустранно споразумение. Ако между страните не бъде постигнато споразумение, спорът се отнася за решаване пред компетентен съд. Когато предметът на спора между страните е за имуществени права, той се отнася за разрешаване пред компетентен съд в град София.

Чл. 44. Неразделна част от този договор са:

1. Приложение № 1 – Техническа спецификация – 3 стр.

2. Приложение № 2 – Техническото предложение на ИЗПЪЛНИТЕЛЯ, подадено в процедурата за възлагане на обществена поръчка – 151 стр.;

3. Приложение № 3 – Ценово предложение на ИЗПЪЛНИТЕЛЯ, подадено в процедурата за възлагане на обществена поръчка – 1 стр.;

Чл. 45. За неуредените въпроси в този договор се прилага законодателството на Република България.

Този договор се състави и подписа в три еднакви оригинални екземпляра – два за ВЪЗЛОЖИТЕЛЯ и един за ИЗПЪЛНИТЕЛЯ.

ЗА ВЪЗЛОЖИТЕЛЯ: ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД	**ЗА ИЗПЪЛНИТЕЛЯ:** ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД
1. . *(n* ДІ ДС ..... *Дата на подписване:*	. . (У Й ВА ..... *Дата на подписване:*
2. ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД ..... (подпис) Лице, отговорно за счетоводните записвания: 16.05.2018 г. *Дата на подписване:*	

Проект: „ПОВИШАВАНЕ КАПАЦИТЕТА НА ПОЛИЦЕЙСКОТО РАЗСЛЕДВАНЕ И КРИМИНАЛИСТИЧНИТЕ ИЗСЛЕДВАНИЯ“ BG/ISF – SO5-NO1-A22 – съфинансиран по Фонд „Вътрешна сигурност”

ТЕХНИЧЕСКА СПЕЦИФИКАЦИЯ

Посочените в техническите спецификации стойности са минимални.

Приложение № 1

Обособена позиция № 7 „Доставка на един брой ротационен микротом с държач на проби и стерео микроскоп“

№	Показател	Изискана стойност
1	Ротационен микротом за ръчно и автоматизирано рязане на многослойни материали за последващо микроскопско изследване	да
2	Моторизирано подаване на материала за рязане	грубо и фино
3	Възможност за извършване на срезове	четири различни режима: единичен, непрекъснат, на интервали (постъпателен) и възвратно-постъпателен
4	Възможност за регулиране на скоростта на извършване на срезовете при автоматичен и единичен срез	да
5	Информационен панел за работните параметри на апарата	да
6	Ретракция на пробата	да
7	Ретракция на пробата при ръчен режим	да
8	Аварийно спиране, заключване на маховика	да
9	Режими при рязане с индивидуално настройване на дебелината	Два независими режима – режим на изравняване (триминг) и режим на рязане
10	Плавен контрол на скоростта на рязане / изравняване	да
11	Тавичка / ваничка за събиране на срезовете	да
12	Държач за ножчета	нисък и висок профил

13	Предпазител за държача на ножчетата и механизъм за изваждане на ножа без контакт с него	да
14	Независими механизми за заключване	два броя
15	Параметри за рязане при режим на изравняване с възможност за настройка	от 5 до 500 μm или по-голям обхват
16	Дебелина на срезовете при режим на рязане	от 0.5 до 100 μm или по-голям обхват
17	Скорост на извършване на срезовете (триминг)	от 0 до 420 mm/s и по-голяма
18	Хоризонтално подаване на пробата	28 mm или по-малко
19	Срез по вертикала	72 mm или по-малко
20	Прецизна ориентация (X / Y) на материала с индикатори за зануляване в две точки	8°
21	Клампа (държач) за захващане на материали за рязане с две челюсти	да
22	Клампа (държач) за захващане на фолио и тънки материали	да
23	Ножчета за твърди материали	5 кутии
24	Стереомикроскоп	да
25	Параметри на оптиката	
25.1	Плавно (zoom) увеличение	6.3:1 и повече
25.2	Общо увеличение	минимум 6.3x – 40x
25.3	Работно разстояние	115 mm и повече
25.4	Видимо поле на окуляра	минимум 22 mm
25.5	LED осветление – светлинен пръстен	да

ЗАБЕЛЕЖКА: Участниците следва да представят описания, брошури или други подходящи материали, като посочат линк на сайта на производителя, на който те са достъпни, потвърждаващи, че предлаганите от тях изделия покриват изискванията на техническата спецификация. За показатели, за които не могат да се представят такива материали и линкове се представят декларации от производителя, придружени с превод на български език, потвърждаващи, че съответният апарат притежава изискваните характеристики.

Минималният гаранционен срок следва да бъде 24 (двадесет и четири) месеца, считано от датата на приемателен протокол за въвеждане на изделията в експлоатация и проведено обучение.

МИНИСТЕРСТВО НА ВЪТРЕШНИТЕ РАБОТИ
ДИРЕКЦИЯ
ВЯРНО С ОРИГИНАЛА

В рамките на гаранционния срок се извършват следните профилактични дейности:

Основно почистване на апарата – един път в година.

ЗАБЕЛЕЖКА: Всички необходими консумативи за извършване на профилактични дейности се осигуряват от изпълнителя.

1. В гаранционния срок всички необходими резервни части, в т.ч. обявените от производителя за консумативи, и положеният труд за ремонт и профилактика на техниката, както и необходимите пътни и др. разноски са за сметка на изпълнителят.
2. В рамките на гаранционния срок изпълнителят отстранява всички повреди в рамките на 10 работни дни от уведомяването му.
3. Място на изпълнение – град София, бул. „Ал. Малинов“ №1, НИК – МВР.
4. Техническото лице, което ще отговоря за инсталирането и поддържането на предлаганото оборудване, предмет на поръчката, да е преминало обучение за инсталиране и поддържане на оборудването, предмет на поръчката или на аналогична апаратура с тази, предмет на поръчката. Участникът е длъжен да представи сертификат за преминалото обучение на техническото лице.

Предвижда се двудневно обучение на двама служителя за работа с микротома.

Изпълнителят е длъжен да осигури надеждно обслужване и поддръжка на доставката в гаранционния срок и в съответствие с изискванията на техническата спецификация.

Кандидатът осигурява една конкретна точка за заявяване на проблеми, в която са налични всички начини за подаване на заявката за сервизна услуга (ЗСУ) - телефон, факс, ел. поща.

Изпълнителят е длъжен да осигури обслужване в рамките на работното време 8:30 до 17:00 в работни дни на всички постъпили ЗСУ.

Представител на възложителя подава ЗСУ, като съобщава серийния номер на повреденото оборудване и идентифицираните последствия от повредата. Изпълнителят потвърждава приемането на ЗСУ и предоставя номера, под който е регистрирана заявката.

Ремонтът се извършва с нови резервни части, модули и възли. Протокол за извършена сервизна услуга (ПСУ) изготвя сервизният специалист от изпълнителя, на когото е възложено изпълнението на ЗСУ. В протокола се описва как е решен проблемът, какви модули са подменени и в какви срокове е станало това. ПСУ е на хартиен носител в два екземпляра и се подписва и от двете страни - по един представител за всяка страна. Ремонтът трябва да се извърши за не повече от 10 (десет) работни дни от подаване на ЗСУ.

В случай на използване на нови съвместими резервни части или подобни възли и устройства със същата функционалност, изпълнителят да гарантира, че няма да се наруши работоспособността на системата.

Резервните части и модули необходими за отстраняването на повредите са за сметка на изпълнителя, в т.ч. и обявените от производителя за консумативи.

МИНИСТЕРСТВО НА ВЪТРЕШНИТЕ РАБОТИ
ДИРЕКЦИЯ „УПРАВЛЕНИЕ НА СОБСТВЕНОСТТА
И СИГУРНОСТ“
ВЯРНО С ОРИГИНАЛА
20 г.

Образец № 3Ж

ПРЕДЛОЖЕНИЕ ЗА ИЗПЪЛНЕНИЕ НА ПОРЪЧКАТА

УВАЖАЕМИ ДАМИ И ГОСПОДА,

След запознаване с документацията за участие в процедура за възлагане на обществена поръчка с предмет „Закупуване на аналитична техника за изследвания в областта на природните науки" **по обособена позиция № 7** „Доставка на ротационен микротом с държач на проби и стерео микроскоп", ние:
„Медицинска Техника Инженеринг" ООД
/изписва се името на участника/
ЕИК 831641528
/БУЛСТАТ или ЕИК/
Р България, гр.София 1750, ж.к.Младост 1, ул."Димитър Моллов", бл.28Б
/адрес по регистрация/
предлагаме да изпълним поръчката, съгласно изискванията на Възложителя при следните условия, както следва:
1.

№	Показател	Изискана стойност от Възложителя	Предложена стойност от Участника
			Предлагам апарат **Марка : Leica** **Модел: Leica RM2265** **Микроскоп: Leica S9E**
1	Ротационен микротом за ръчно и автоматизирано рязане на многослойни материали за последващо микроскопско изследване	да	Ротационен микротом **Leica RM2265** за ръчно и автоматизирано рязане на многослойни материали за последващо микроскопско изследване
2	Моторизирано подаване на материала за рязане	грубо и фино	Моторизирано подаване на материала за рязане – грубо и фино

чл. 2, ал. 2 от ЗЗЛД

3	Възможност за извършване на срезове	четири различни режима: единичен, непрекъснат, на интервали (постъпателен) и възвратно-постъпателен	Възможност за извършване на срезове чрез четири различни режима: единичен, непрекъснат, на интервали (постъпателен) и възвратно-постъпателен – *SINGLE, CONT, ROCK, STEP*
4	Възможност за регулиране на скоростта на извършване на срезовете при автоматичен и единичен срез	да	Възможност за регулиране на скоростта на извършване на срезовете- 0 – 420 mm/s при автоматичен и единичен срез, през модула за управление
5	Информационен панел за работните параметри на апарата	да	Информационен панел за работните параметри на апарата на предния панел, както и на дистанционния модул за управление
6	Ретракция на пробата	да	Ретракция на пробата във всички режими
7	Ретракция на пробата при ръчен режим	да	Ретракция на пробата при ръчен режим – 5-100 µm с 5 µm инкремент
8	Аварийно спиране, заключване на маховика	да	Аварийно спиране – чрез натискане на червен авариен бутон на предния корпус на апарата, заключване на маховика – чрез палец за заключване, както и чрез ръкохватка разположена в дясната част на апарата под маховика
9	Режими при рязане с индивидуално настройване на дебелината	Два независими режима – режим на изравняване (триминг) и режим на рязане	Режими при рязане с индивидуално настройване на дебелината- два независими режима – режим на изравняване (триминг) и режим на рязане - *TRIM, SECT*

ВЯРНО С ОРИГИНАЛА

ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

10	Плавен контрол на скоростта на рязане / изравняване	да	Плавен контрол на скоростта на рязане / изравняване - 0 – 420 mm/s,чрез ротационен бутон на дистанционния модул за управление
11	Тавичка / ваничка за събиране на срезовете	да	Тавичка / ваничка за събиране на срезовете
12	Държач за ножчета	нисък и висок профил	Държач за ножчета нисък и висок профил
13	Предпазител за държача на ножчетата и механизъм за изваждане на ножа без контакт с него	да	Предпазител за държача на ножчетата и механизъм за изваждане на ножа без контакт с него - *Knife guard with blade ejector*
14	Независими механизми за заключване	два броя	Независими механизми за заключване – два броя. Един разположен върху маховика и ръкохватка разположена в дясната част на апарата под маховика
15	Параметри за рязане при режим на изравняване с възможност за настройка	от 5 до 500 µm или по-голям обхват	Параметри за рязане при режим на изравняване (trimming) с възможност за настройка от 1 до 600 µm
16	Дебелина на срезовете при режим на рязане	от 0.5 до 100 µm или по-голям обхват	Дебелина на срезовете при режим на рязане от 0.25 до 100 µm
17	Скорост на извършване на срезовете (триминг)	от 0 до 420 mm/s и по-голяма	Скорост на извършване на срезовете (триминг) - от 0 до 420 mm/s
18	Хоризонтално подаване на пробата	28 mm или по-малко	Хоризонтално подаване на пробата - 24± 1 mm
19	Срез по вертикала	72 mm или по-малко	Срез по вертикала 70mm

ВЯРНО С ОРИГИНАЛА

ЧП. 2, АП. 2 ОТ 33ЛД

20	Прецизна ориентация (X / Y) на материала с индикатори за занулуване в две точки	8°	Прецизна ориентация (X / Y) на материала с индикатори за занулуване в две точки в диапазон 8°
21	Клампа (държач) за захващане на материали за рязане с две челюсти	да	Клампа (държач) за захващане на материали за рязане с две челюсти, размер 40 x 40mm, No : 14 0502 37998
22	Клампа (държач) за захващане на фолио и тънки материали	да	Клампа (държач) за захващане на фолио и тънки материали (Foil clamp type 1) ; No : 14 0402 09307
23	Ножчета за твърди материали	5 кутии	Ножчета за твърди материали – 5кутии
24	Стереомикроскоп	да	Стерео микроскоп **Leica S9E**, вграден върху микротома, чрез специална стойка
25	Параметри на оптиката		Параметри на оптиката
25.1	Плавно (zoom) увеличение	6.3:1 и повече	Плавно (zoom) увеличение 9:1
25.2	Общо увеличение	минимум 6.3x – 40x	Общо увеличение от 6.1x до 50x
25.3	Работно разстояние	115 mm и повече	Работно разстояние 122 mm
25.4	Видимо поле на окуляра	минимум 22 mm	Видимо поле на окуляра – 23mm
25.5	LED осветление – светлинен пръстен	да	**Leica LED 1000** осветление – светлинен пръстен RL 66/40; No : 30210002
			Допълнителни параметри : - Минимална дебелина на рязане 0,25 µm - Стойка за микроскоп за вграждане към микротома - **LED 1000** – LED Dual Hi Power Spot осветление с гъвкави рамена; No : 30220007 - Микротомът има автоматично, моторизирано, хоризонтално придвиждане на ма

ВЕРНО С ОРИГИНАЛА
20..... г.
ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

2. Задължаваме се:

2.1. Гаранционният срок да не е по-малък от 24 месеца, считано от датата на подписване на окончателния приемателен протокол за въвеждане на изделията в експлоатация и проведено обучение.

2.2. В рамките на гаранционния срок да се извършва един път в годината основно почистване на апарата. Всички необходими консумативи за извършване на профилактичните дейности се осигуряват от нас.

2.3. В гаранционния срок всички необходими резервни части, в т.ч. обявените от производителя за консумативи, и положеният труд за ремонт и профилактика на техниката, както и необходимите пътни и др. разноски са за наша сметка.

2.4. В рамките на гаранционния срок ще отстраняваме всички повреди в рамките на 10 работни дни от уведомяването.

2.5. Техническото лице, което ще отговоря за инсталирането и поддържането на предлаганото оборудване, предмет на поръчката да е преминало обучение за инсталиране и поддържане на оборудването предмет на поръчката или на аналогична апаратура с тази, предмет на поръчката. Прилагаме сертификат за преминалото обучение на техническото лице.

2.6. Да проведем двудневно обучение на двама служители за работа с микротома.

2.7. Да осигурим надеждно обслужване и поддръжка на доставката в гаранционния срок и в съответствие с изискванията на техническата спецификация.

2.8. Да посочим контактна точка за заявяване на проблеми, в която да са налични всички начини за подаване на заявка за сервизна услуга (ЗСУ) - телефон, факс, e-mail.

2.9. Да осигурим обслужване в рамките на работното време 8:30 до 17:30 в работни дни на всички постъпили ЗСУ.

2.10. След подаване на ЗСУ от представител на Възложителя, с посочване на сериен номер на повреденото оборудване и идентифицираните последствия от повредата, да потвърдим приемането на ЗСУ и предоставим номер, под който е регистрирана заявката.

2.11. Ремонтът ще се извършва с нови резервни части, модули и възли. Протокол за извършена сервизна услуга (ПСУ) се изготвя от сервизният специалист, на когото е възложено изпълнението на заявка за сервизно обслужване (ЗСУ). В протокола се описва извършената услуга, какви модули са подменени и в какви срокове. ПСУ изготвя на хартиен носител в два екземпляра се подписва от двете страни- по един за всяка страна. Ремонтът се извършва за не повече от 10 (десет) работни дни от подаване на ЗСУ.

2.12. В случай на използване на нови съвместими резервни части или подобни възли и устройства със същата функционалност, гарантираме, че няма да се наруши работоспособността на системата.

3. Допълнителна информация за предложените изделия:

ВЯРНО С ОРИГИНАЛА

20.....г.

ЧП. 2, АП. 2 ОТ ЗЗПД

3.1. Микроскопът **е** ~~**не е**~~ вграден. */ненужното се зачертава/*

3.2. **Има** ~~**Няма**~~ LED осветление с гъвкави рамена.

/ненужното се зачертава/

3.3. **Има** ~~**Няма**~~ автоматично, моторизирано, хоризонтално придвижване на материала.

/ненужното се зачертава/

ДЕКЛАРИРАМ, ЧЕ:

1. Декларирам, че сме запознати и ще изпълним всички точки от Техническата спецификация и документацията за участие в процедурата.
2. Приемам мястото на изпълнение гр. София, бул. „Ал. Малинов“ №1, НИК-МВР.
3. Приемам срока на изпълнение на доставката да е до 180 дни след сключване на договора.
4. Предлагаме гаранционен срок на доставяните **49 месеца** .
5. Контактната точка за заявяване на проблеми е: телефон, факс, имейл тел. 02 / 6427117, факс: 02 / 9712410, e-mail: service@mte-bg.com

Прилагаме следните документи, информация и декларации, неразделна част от настоящото предложение:

1. Брошури и други подходящи материали, като посочат линк на сайта на производителя, на който те са достъпни, потвърждаващи, че предлаганите от нас изделия покриват изискванията на техническата спецификация. За показатели, за които не могат да се представят такива материали и линкове се представят декларации от производителя, придружени с превод на български език, потвърждаващи, че съответният апарат притежава изискваните характеристики.
2. Сертификат за преминалото обучение на техническото лице.
3.....

Предложението за изпълнение на участника трябва да съдържа всички точки от техническата спецификация.

Дата 30.11.2017г.

ПОДПИС и ПЕЧАТ:.....

Галина Ценова /име и фамилия

ЧП. 2, АЛ. 2 ОТ ЗЗЛД

ВЯРНО С ОРИГИНАЛА

Образец № 4

ДЕКЛАРАЦИЯ

за съгласие с клаузите на приложения проект на договор

Долуподписаният: Галина Василева Ценова
/собствено, бащино, фамилно име/
Притежаващ лич ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД издадена на 10.05.2014г. от МВР – гр. София
/дата на издаване/ /място на издаване/
адрес: гр. София, ж.к.Света Троица, бл.313А, вх.В, ет.4, ап.58,
/постоянен адрес/
представляващ „Медицинска Техника Инженеринг“ ООД, в качеството си на Пълномощник, /наименование на юридическото лице, физическото лице - ЕТ/
/длъжност/
седалище гр.София 1750, ж.к.Младост 1, бл.28Б /ул.Димитър Моллов/,
адрес на управление: гр.София 1750, ж.к.Младост 1, бл.28Б /ул.Димитър Моллов/, тел./факс тел.02 4627117 / факс:02 9712410,
БУЛСТАТ/ЕИК ЕИК 831641528,

ДЕКЛАРИРАМ, ЧЕ:

Приемам условията за изпълнение на обществената поръчка открита с решение № 5785 мпр – 97 / 31.10.2017г. на Възложителя, заложени в приложения към документацията проект на договор, с предмет **„Закупуване на аналитична техника за изследвания в областта на природните науки”** по обособена позиция № 7

„Доставка на ротационен микротом с държач на проби и стерео микроскоп“
(изписва се наименованието на обособената позиция)

гр: София
дата: 04.12.2017г.

ДЕКЛАРАТОР ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД
(Галина Ценова, пълномощник на „М и И“ ООД)
/име и фамилия и подпис/

Забележка: Декларацията се подава от лицето, което представлява участника. Декларацията се подава и от участник - физическо лице.

Образец № 5

ДЕКЛАРАЦИЯ

за срока на валидност на офертата
в процедура за възлагане на обществена поръчка с предмет:

„Закупуване на аналитична техника за изследвания в областта на природните науки" по

обособена позиция № 7 „Доставка на ротационен микротом с държач на проби и стерео микроскоп"

(изписва се номера и наименованието на обособената позиция)

Долуподписаният: Галина Василева Ценова
/собствено, бащино, фамилно име/

Притежаващ лич ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД издадена на 10.05.2014г. от МВР – гр. София
/дата на издаване/ /място на издаване/

адрес: гр. София, ж.к.Света Троица, бл.313А, вх.В, ет.4, ап.58,
/постоянен адрес/

представляващ Медицинска Техника Инженеринг" ООД, в качеството си на Пълномощник, /наименование на юридическото лице, физическото лице - ЕТ/
/длъжност/

седалище гр.София 1750, ж.к.Младост 1, бл.28Б /ул.Димитър Моллов/,

адрес на управление: гр.София 1750, ж.к.Младост 1, бл.28Б /ул.Димитър Моллов/, тел./факс тел.02 4627117 / факс:02 9712410,

БУЛСТАТ/ЕИК ЕИК 831641528,

ДЕКЛАРИРАМ, ЧЕ:

ДЕКЛАРИРАМ, ЧЕ:

Срокът на валидност на офертата е ***3 (три) месеца***, посочени в раздел IV.2.6) на Обявлението, считано от датата, която е посочена за дата на получаване на офертата в раздел IV.2.2) на Обявлението, приложено към документацията за участие в процедурата с предмет **„Закупуване на аналитична техника за изследвания в областта на природните науки" "**

гр: София
дата: 04.12.2017г.

ДЕКЛАРАТЧЛ. 2, АЛ. 2 ОТ ЗЗЛД
(Галина Ценова, Пълномощник на „МТИ" ООД)
/име и фамилия и подпис/

Забележка: Декларацията се подава от лицето, което представлява участника. Декларацията се подава и от участник - физическо лице.

Translation agency

Превод от английски език

Living up to Life

Leica

Сертификат за обучение

Настоящото удостоверява, че

Цветомир Колев

успешно завърши курса на обучение

LBS NUS – сервизно изпитване – RM2265

Инструктор: **Петер Хиршфелд**
10-и ноември 2014 г.

ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

Подписаната Лина Иванова Генева, удостоверявам верността на извършения от мен превод от английски език на български език на приложения документ – Сертификат за обучение от 10.11.2014 г. Преводът се състои от 1 страница.

Преводач:
Лина Генева

ВЕРНО С ОРИГИНАЛА
20.... г.

11

Living up to Life

Leica
MICROSYSTEMS

Certification of Training

This certificates that

Tsvetomir Kolev

has successfully completed the training course

LBS NUS - Service Test - RM2265

Instructor:
Peter Hirschfeld
10th November 2014

ВЯРНО С ОРИГИНАЛА
20.... г.
ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

Превод от английски език

Leica Microsystems Cambridge Ltd.
515 Coldhams Lane
Cambridge
CB1 3YZ
Обединено кралство

Leica
MICROSYSTEMS

Leica Microsystems Cambridge Ltd.
Програма за обучение

Настоящото удостоверява, че

Николай Байнов

„Медицинска техника"

е завършил успешно посоченият по-долу курс, проведен от
Leica Microsystems Cambridge Ltd.

Обучение относно цифрови изображения
5 – 9 юни 2006 г.

Подпис (подпис, не се чете)

ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

Richard Hayden
Ръководител обучение

Подписаният Валентин Василев Василев удостоверявам верността на гореизложения от мен превод от английски език на български език на приложения документ Удостоверение от Leica Microsystems. Преводът се състои от 1 страница.
Преводач:
Валентин Василев Василев, л.к. 149875518

ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

Leica Microsystems Cambridge Ltd.
515 Coldhams Lane
Cambridge
CB1 3YZ
United Kingdom

Leica
MICROSYSTEMS

Leica Microsystems Cambridge Ltd.
Training Programme

This is to certify that

Nikolay Baynov

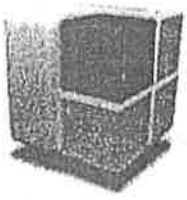
Medical Technics

Has successfully completed the below course run by
Leica Microsystems Cambridge Ltd.

Digital Imaging Training
5th – 9th June 2006

Signed ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

Richard Hayden
Training Manager



ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

ВЯРНО С ОРИГИНАЛА

20

Translation agency

Превод от английски език

СЕРТИФИКАТ ЗА ОБУЧЕНИЕ

Настоящото удостоверява, че

НИКОЛАЙ БАЙНОВ

успешно завърши курса на обучение

Основи на оптиката – 4. Контрастни методи

Инструктор: Юлия Пьотген
06.10.2010 г.

ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

Leica MICROSYSTEMS

Подписаната, Лина Иванова Генева, удостоверявам верността на извършения от мен превод от английски на български език на приложения документ. Преводът се състои от 1 страница.

Преводач:
Лина Генева

ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

ВЯРНО С ОРИГИНАЛА

Certification of Training

This certifies that

Nikolay Baynov

has successfully completed the training course

Basics of Optics - 4. Contrasting Methods

Instructor: Julia Poettgen
6th October 2010

Leica
MICROSYSTEMS

ЧП. 2, АЛ. 2 ОТ ЗЗПД
ВЯРНО С ОРИГИНАЛА
..... 20..... г.

Translation agency

Превод от английски език

From Eye to Insight

Leica MICROSYSTEMS

СЕРТИФИКАТ ЗА ОБУЧЕНИЕ

Настоящото удостоверява, че

НИКОЛАЙ БАЙНОВ

успешно завърши курса на обучение

Основи на оптиката – 1. Теории на светлината

Инструктор: Беате Браун

01.07.2016 г. ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

ВЯРНО С ОРИГИНАЛА

Подписаната, Лина Иванова Генева, удостоверявам верността на извършения от мен превод от английски на български език на приложения документ. Преводът се състои от 1 страница.

Преводач:
Лина Генева

ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

МИНИСТЕРСТВО НА ВЪТРЕШНИТЕ РАБОТИ
ДИРЕКЦИЯ "УПРАВЛЕНИЕ НА СОБСТВЕНОСТЬ И СОЦИАЛНИ ДЕЙНОСТИ"
ВЯРНО С ОРИГИНАЛА
20 г. /

"ИНК 75" ООД гр. София, ул. Граф Игнатиев 40, вх. Б; тел./факс: (02)988 00 95; e-mail: office@ink-bg.com; http://www.ink-bg.com

G10629.25

-17

From Eye to Insight

Leica
MICROSYSTEMS

Certification of Training

This certifies that

Nikolay Baynov

has successfully completed the training course

Basics of Optics - 1. Theories of Light

ВЯРНО С ОРИГИНАЛА
.....20.....г.
чл. 2, ал. 2 от ЗЗЛД

Instructor: Beate Braun

1st July 2016

Translation agency

Превод от английски език

From Eye to Insight

Leica MICROSYSTEMS

СЕРТИФИКАТ ЗА ОБУЧЕНИЕ

Настоящото удостоверява, че

НИКОЛАЙ БАЙНОВ

успешно завърши курса на обучение

Основи на оптиката – 6. Стереомикроскопи

Инструктор: Ив Силвестър

01.07.2016 г.

ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

Подписаната, Лина Иванова Генева, удостоверявам верността на извършения от мен превод от английски на български език на приложения документ. Преводът се състои от 1 страница.

Преводач:
Лина Генева

ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

ВЕРНО С ОРИГИНАЛА

From Eye to Insight

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Certification of Training

This certifies that

Nikolay Baynov

has successfully completed the training course

Basics of Optics - 6. Stereomicroscopy

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чл. 2, ал. 2 от ЗЗЛД

Instructor: Yves Sylvestre

1st July 2016

Translation agency

Превод от английски език

From Eye to Insight

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СЕРТИФИКАТ ЗА ОБУЧЕНИЕ

Настоящото удостоверява, че

НИКОЛАЙ БАЙНОВ

успешно завърши курса на обучение

Основи на оптиката – 3. Микроскопи

ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

Инструктор: Беате Браун

15.08.2017 г.

Подписаната, Лина Иванова Генева, удостоверявам верността на извършения от мен превод от английски на български език на приложения документ. Преводът се състои от 1 страница.

Преводач:
Лина Генева

ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

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From Eye to Insight

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Certification of Training

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has successfully completed the training course

Basics of Optics - 3. Microscopes

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Instructor: **Beate Braun** **15th August 2017**

"ИНК 75" ООД гр. София, ул. Граф Игнатиев 40, вх. Б; тел./факс: (02)988 00 95; e-mail: office@ink-bg.com; http://www.ink-bg.com

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Настоящият документ удостоверява, че

Николай Байнов, Медицинска техника инженеринг ООД, България,

успешно завърши курс на обучение за системи за изображение CytoVision

Приложен софтуер и потребителски операции;

Ръчно заснемане, автоматично сканиране и модули за анализ

с отличие

на ***30-и април – 4-и май 2012 г.***

Даден от ***Карл С. Лазко*** на ***4-и май 2012 г.***

Подписаната Лина Иванова Генева, ЕГН 7509236934, удостоверявам верността на извършения от мен превод от английски език на български език на приложения документ – Сертификат за обучение от 04.05.2012 г. Преводът се състои от 1 страница.

Преводач:
Лина Генева

ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

ИНК 75 ООД София

ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД

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Translation agency

CERTIFICATE OF TRAINING

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This document certifies that

Nikolay Baynov, Medical Technics Engineering Ltd., Bulgaria

successfully completed the CytoVision Imaging Systems Training Course

Application software and user operations;

Manual Capture, Automated Scanning and Analysis modules

with distinction

on *30th April – 4th May 2012*

Awarded by *Karl S. Laczko* on *4th May 2012*

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чл. 2, ал. 2 от ЗЗЛД

„Медицинска Техника Инженеринг“ ООД

ОПИСАНИЕ - СПИСЪК С ЛИНКОВЕ КЪМ БРОШУРИ И РЪКОВОДСТВА С ТЕХНИЧЕСКИ ПАРАМЕТРИ

За обособена позиция № 7 „Доставка на ротационен микротом с държач на проби и стерео микроскоп“

За Ротационен микротом с държач на проби Leica RM2265 и стерео микроскоп Leica S6

1. **Брошура микротом Leica RM2265**
   http://drp8p5tqcb2p5.cloudfront.net/fileadmin/downloads_lbs/Leica%20RM2265/Brochures/95.11560_Rev_C_Brochure_RM2265_EN.pdf

2. **Списък технически параметри микротом Leica RM2265**
   http://drp8p5tqcb2p5.cloudfront.net/fileadmin/downloads_lbs/Leica%20RM2265/Acceptance%20and%20Specifications/Leica_RM2265_technical_data_EN.pdf

3. **Ръководство за употреба микротом Leica RM2265**
   http://drp8p5tqcb2p5.cloudfront.net/fileadmin/downloads_lbs/Leica%20RM2265/User%20Manuals/Leica_RM2265_IFU_2v2I_en.pdf

4. **Микротомни ножчета**
   http://www.leicabiosystems.com/histology-consumables/microtome-blades/premium-surgipath-db80-series/products/surgipath-db80-lx/

5. **Стерео микроскоп Leica S9E**
   https://www.leica-microsystems.com/fileadmin/downloads/Leica%20S9%20E/Brochures/Leica_S_Serie_TechData_EN.pdf

6. **Осветление Leica LED 10000 за стерео микроскоп**
   https://www.leica-microsystems.com/fileadmin/downloads/Leica%20LED1000/Brochures/LeicaLED1000e.pdf

Дата: 07.12.2017г.
Гр.София

Подпис: ЧЛ. 2, АЛ. 2 ОТ ЗЗЛД
/инж.Галина Ценова, Пълномощник на „МТИ“ ООД

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Advancing Cancer Diagnostics
Improving Lives

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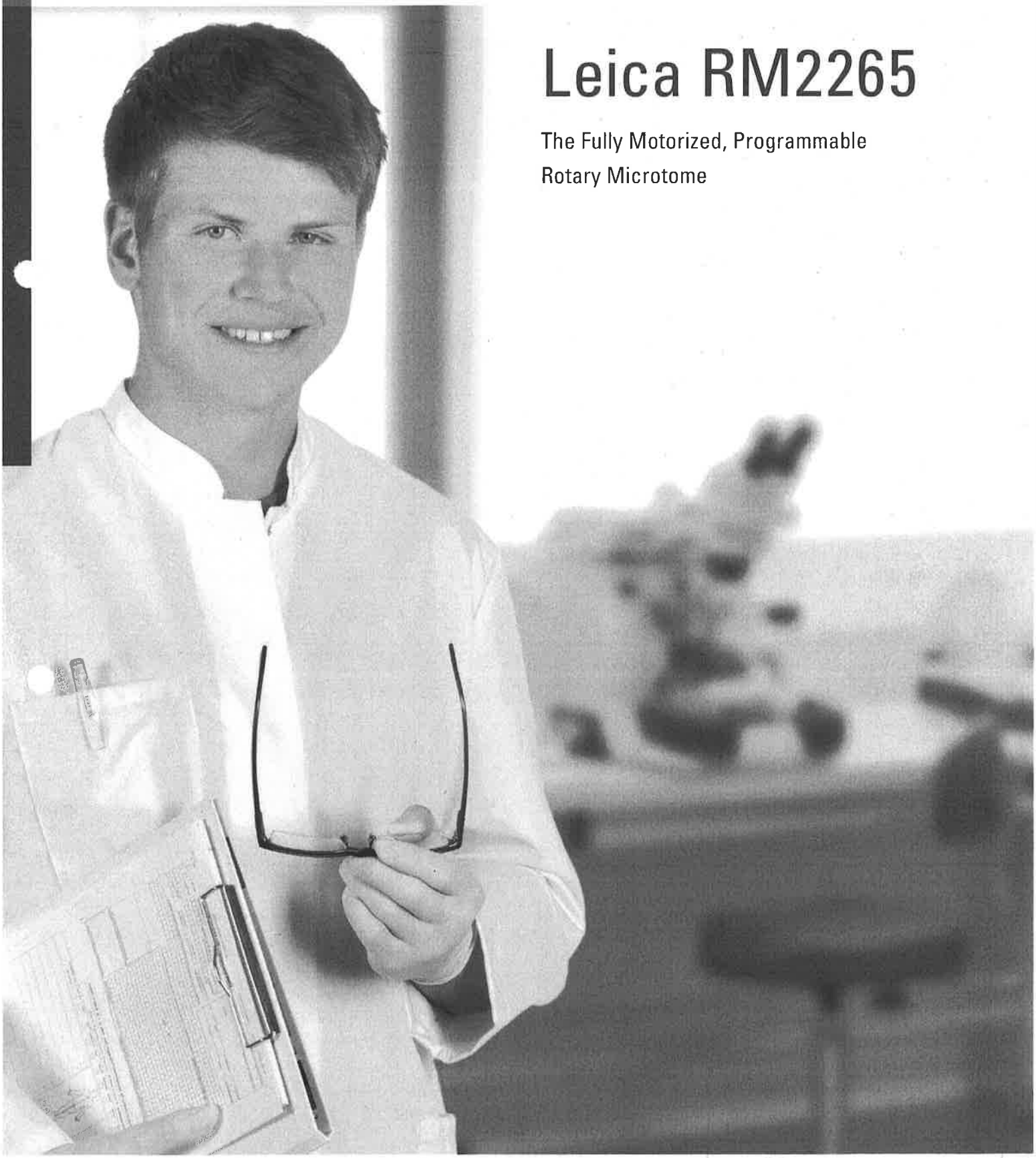

Leica RM2265

The Fully Motorized, Programmable
Rotary Microtome

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Versatility Without Compromise: The Leica RM2265

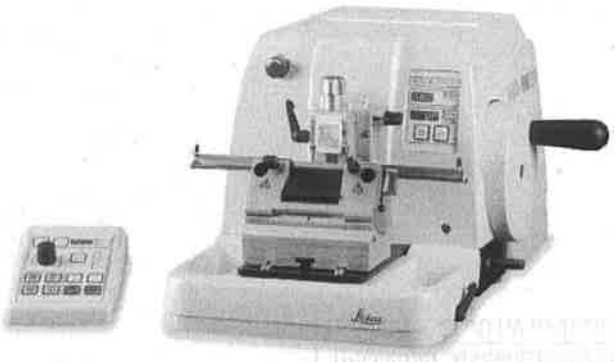
When it comes to selecting a microtome, many factors have to be taken into consideration: Reliability, innovative technology, efficiency, ergonomics and safety.

Leica Biosystems offers a microtome that can satisfy all of your laboratory's requirements: the fully motorized, versatile Leica RM2265 rotary microtome. It is the top-of-the-line product in the Leica RM2200 series and is designed to produce superior sections of a multitude of specimen types with ease. Its outstanding technology allows it to be used for semi-thin to thick sectioning of soft or hard specimens; routine as well as special biomedical research applications; and industrial quality assurance and materials research applications.

With the Leica RM2265, a total of six sectioning modes are available: In motorized operation there are four operating mode selections: continuous, single or step stroke, and program mode. In manual operation it is possible to use the conventional method of completing a full handwheel rotation or the intuitive "rock" mode. When the handwheel is moved back and forth over a small distance, each change in direction is electronically detected and automatically converted into an advance or retraction movement of the specimen arm.

The Leica RM2265 features at a glance

- Patented Force Compensation System by Leica Biosystems provides extremely smooth manual handwheel operation
- Precision Micrometer Feed System provides semi-thin to thick sectioning via stepper motor from 0.25 µm to 100 µm in sectioning mode and 1 µm – 600 µm in trimming mode
- Automatic, variable specimen retraction, depending on sectioning speed
- Two separate programs for trimming and sectioning mode
- Speed control through the cutting window for enhanced efficiency
- Programmable vertical object head stop position, especially ideal for the LN22 (phased out)
- Ergonomically optimized handwheel handle
- Low-maintenance cross roller bearings
- Enclosed micrometer mechanism
- Magnetized section waste tray
- Wide range of accessories for special applications



Ergonomics and user safety

The smooth-running safety handwheel has an ergonomically shaped handle. A handwheel locking device for one-thumb operation locks the specimen arm in the uppermost position, which is ideal for changing the specimen and/or blade. A second locking mechanism on the microtome base allows locking the object head in any position.

Easy-to-clean

Due to the rounded shape of the one-piece housing, section waste is easily removed. The integrated slot cover prevents debris from entering the internal mechanisms of the microtome.

Control panel operation

The automated functions of the microtome are controlled via a separate control panel with touch-sensitive buttons that allow "blind operation". Panel inclination is adjustable, and the panel can be positioned either on the left or right side of the instrument.

Universal knife holder base

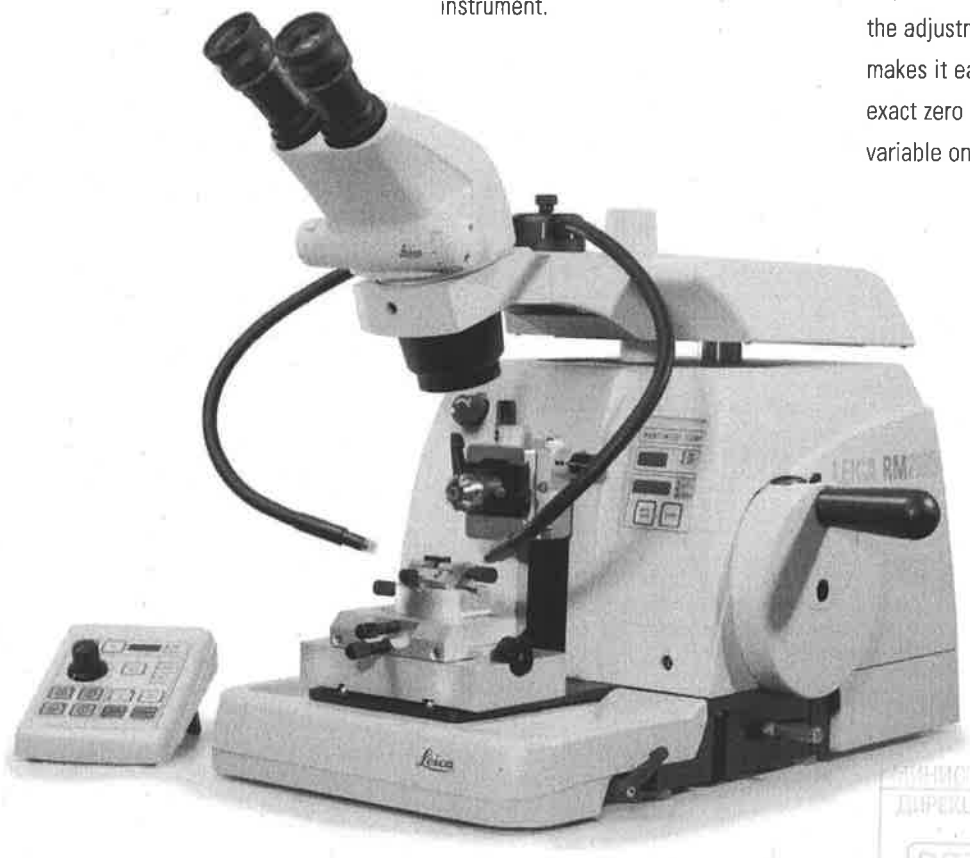
The knife holder base is suitable for holding various disposable blade or reusable knife holders, making it possible to section a variety of specimen types.

Utmost versatility for many special requirements

A wide choice of optional accessories includes a microscope carrier with two fiber optic light guides for the optimal illumination of the knife and specimen.

Precise specimen orientation with clear zero reference point

The orientation mechanism sets standards of precision. Guided by visual indicators, the adjustment of calibrated controls makes it easy to orient a specimen to an exact zero position or to a measurable variable on the x/y axis.



ВЯРНО С ОРИГИНАЛА

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TECHNICAL SPECIFICATIONS

Section thickness	
Setting thickness setting range	0.25 µm – 100 µm
Setting values	0.25 µm
	from 0.5 – 5.0 µm in 0.5 µm increments
	from 5 – 20 µm in 1 µm increments
	from 20 – 60 µm in 5 µm increments
	from 60 – 100 µm in 10 µm increments
Trimming section thickness setting range	1 – 600 µm
Setting values	from 1 – 10 µm in 1 µm increments
	from 10 – 20 µm in 2 µm increments
	from 20 – 50 µm in 5 µm increments
	from 50 – 100 µm in 10 µm increments
	from 100 – 600 µm in 50 µm increments
Specimen retraction	
Manual Operation	programmable from 5 – 100 µm in 5 µm increments; can be turned off
Motorized Operation	varying with the sectioning speed; can be turned off
Electronic coarse feed	300 µm/s or 800 µm/s
Sectioning speed range	0 – 420 mm/s
Horizontal specimen feed	approx. 24± 1 mm

Vertical specimen stroke	70 mm
Sectioning modes	6 total
	2 manual modes (regular and rocking mode)
	4 motorized modes (continuous, single or step stroke, and program mode)
Maximum specimen size (L x H x W)	50 x 60 x 40 mm (1.96 x 2.36 x 1.57 in.)
Specimen orientation	horizontal: ±8°, vertical: ±8°
Power draw max	340 VA
Nominal supply voltages	100 V / 120 V / 230 V / 240 V
Nominal frequency	50/60 Hz
Dimensions basic instrument	
(L x W x H)	563 x 413 x 305 mm (22.16 x 16.25 x 12 in.) (without magnifier or microscope carrier)
Weight (without accessories)	approx. 37 kg (approx. 81 lbs)
Dimensions control panel	
(W x D x H)	121 x 166 x 50 mm (4.76 x 6.53 x 1.96 in.)
Weight	approx. 0.68 kg (approx. 1.45 lbs)

Wide range of accessories on request. Technical specification subject to change. Certificates CE, c-CSA-us.
Up-to-date development, production, and quality control procedures certified under DIN EN ISO 9001 to ensure the highest quality and reliability.

LEICA BIOSYSTEMS

Leica Biosystems (LeicaBiosystems.com) is a global leader in workflow solutions and automation, integrating each step in the workflow. As the only company to own the workflow from biopsy to diagnosis, we are uniquely positioned to break down the barriers between each of these steps. Our mission of "Advancing Cancer Diagnostics, Improving Lives" is at the heart of our corporate culture. Our easy-to-use and consistently reliable offerings help improve workflow efficiency and diagnostic confidence. The company is represented in over 100 countries and is headquartered in Nussloch, Germany.

Contact your Leica Biosystems representative today to learn more about the Leica RM2265 rotary microtome.

95.11500 Rev. E - 11/2016
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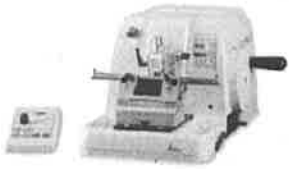

Technical Data Sheet
Leica RM2265 - Fully Motorized Rotary Microtome

Approvals:	CE/c-CSA-us
Room conditions	
Room temperature range:	+ 10 °C to + 35 °C
Operating temperature range:	+ 10 °C to + 35 °C
Relative humidity:	max. 80% , non condensing
Storage location	
Storage temperature range:	+ 5 °C to + 50 °C
Humidity:	< 85%
Nominal supply voltages:	100/120/230/240 V AC±10 %
Nominal frequency:	50/60 Hz
Power draw:	340 VA
Protective class:	I
Power fuses:	2 x T3.2 A UL listed
Pollution degree:	2
Overvoltage installation category:	II
Maximum heat emission:	340 J/s
Microtome	
Section thickness setting:	0.25 - 100 µm 0.25 µm 0.5 to 5 µm in 0.5 µm increments 5 to 20 µm in 1 µm increments 20 to 60 µm in 5 µm increments 60 to 100 µm in 10 µm increments
Trimming section thickness setting:	1 - 600 µm 1 to 10 µm in 1 µm increments 10 to 20 µm in 2 µm increments 20 to 50 µm in 5 µm increments 50 to 100 µm in 10 µm increments 100 to 600 µm in 50 µm increments
Object feed:	24 mm ± 1 mm, feed motion via step motor / 1 inch
Vertical stroke:	70 mm / 2.76 inches
Sectioning modes:	6
Maximum specimen size (LxHxW):	50 x 60 x 40 mm / 1.97 x 2.36 x 1.57 inches
Maximum sectioning area w/o retraction:	65 mm / 2.56 inches (without specimen orientation)
Maximum sectioning area with retraction:	60 mm / 2.36 inches
Specimen orientation:	
Horizontal:	± 8 °
Vertical:	± 8 °
Repositioning of knife holder base:	
North-south:	± 24 mm / 0.94 inches
Specimen retraction:	
in manual operation:	5 - 100 µm in 5 µm increments, can be turned off
in motorized operation:	10 - 70 µm, varying with the sectioning speed, can be turned off
Electric coarse feed:	300 µm/s and 800 µm/s
Sectioning speed:	0; 0.5 - 420 mm/s ±10 %.
Return speed:	approx. 120 - 420 mm/s ±10 %
Dimensions	
Basic instrument	
Width (with handwheel):	413 mm / 16.26 inches
Width (without handwheel):	300 mm / 11.81 inches
Depth (with waste tray):	618 mm / 24.33 inches
Depth (without waste tray):	520 mm / 20.47 inches
+ connecting socket	+ 40 mm / 1.6 inches
Working height (knife edge):	100 mm / 3.94 inches (measured from the base plate)
Working height (knife edge):	168 mm / 6.61 inches (measured from the table)
Height (total):	305 mm (with storage area on the housing) / 12.01 inches

СЪГЛАСНО С ОРИГИНАЛА
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Weight (without accessories):	approx. 37 kg / 81,5 lbs

Control Panel

Width:	121 mm / 4.76 inches
Depth:	166 mm / 6.53 inches
Height:	50 mm / 1.97 inches
Height (in inclined position):	81 mm / 3.19 inches
Weight (net):	approx. 0.68 kg / 1.45 lbs

ВЯРНО С ОРИГИНАЛА
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Instructions for Use

Leica RM2265

Rotary Microtome

CE

Instructions for Use

Leica RM2265 V 2.2, English 09/2016

Order No. 14 0503 80101 RevI

Always keep this manual with the instrument.
Read carefully before working with the instrument.

ВЗЯТО С ОРИГИНАЛА
20 г.

The information, numerical data, notes and value judgments contained in this manual represent the current state of scientific knowledge and state-of-the-art technology as we understand it following thorough investigation in this field.
We are under no obligation to update the present manual periodically and on an ongoing basis according to the latest technical developments, nor to provide our customers with additional copies, updates etc. of this manual.
To the extent permitted in accordance with the national legal system as applicable in each individual case, we shall not be held liable for erroneous statements, drawings, technical illustrations etc. contained in this manual.
In particular, no liability whatsoever is accepted for any financial loss or consequential damage caused by or related to compliance with statements or other information in this manual.
Statements, drawings, illustrations and other information regarding the contents or technical details of the present Instructions for Use are not to be considered warranted characteristics of our products.
These are determined only by the contract provisions agreed between ourselves and our customers.
Leica reserves the right to change technical specifications as well as manufacturing processes without prior notice. Only in this way is it possible to continuously improve the technology and manufacturing techniques used in our products.
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For the instrument serial number and year of manufacture, please refer to the identification label attached to the instrument.

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Leica Biosystems Nussloch GmbH
Heidelberger Str. 17 - 19
D-69226 Nussloch
Germany
Phone: +49 6224 143-0
Fax: +49 6224 143-268
Internet: http://www.LeicaBiosystems.com

Assembly contracted to Leica Microsystems Ltd. Shanghai.

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ВЯРНО С ОРИГИНАЛА
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1.1 Symbols in the text and their meanings

Warnings
appear in a gray box and are marked by a warning triangle ⚠.

Notes,
i.e. important user information appears in a gray box and is marked by an information symbol i.

(5) **Numbers in parentheses refer to item numbers in illustrations.**

RUN/ STOP **Function keys which must be pressed on the control panel are shown in the text in bold capital letters.**

Manufacturer

Date of Manufacture

This product fulfills the requirements of the Council's Directive 98/79/EC concerning in vitro diagnostics (IVD) medical devices.

IVD In vitro diagnostics (IVD) medical device

Observe the Instructions for Use

REF Order No.

SN Serial number

It allows maximum 3 stacks layers.

Symbol for labeling electrical and electronic equipment in accordance with Section 7 of the German Electrical and Electronic Equipment Act (ElektroG). ElektroG is the law on the bringing into circulation, return and environmentally compatible disposal of electrical and electronic equipment.

The CSA test mark means that a product has been tested and fulfills the applicable safety and/or performance standards, including the relevant standards defined or administered by the American National Standards Institute (ANSI), Underwriters Laboratories (UL), the Canadian Standards Association (CSA), the National Sanitation Foundation International (NSF) and others.

Environmental protection symbol of the China RoHS directive. The number in the symbol indicates the "Environment-friendly Use Period" of the product. The symbol is used if a substance restricted in China is used in excess of the maximum permitted limit.

The package contents are fragile and must be handled with care.

The package must be kept in a dry environment.

Indicates the correct upright position of the package.

Indicates the temperature range permitted for transporting the package.
Minimum -29 °C, Maximum +50 °C

Indicates the temperature range permitted for storing the package.
Minimum +5 °C, Maximum +50 °C

Indicates the humidity range permitted for storing and transporting the package.
Minimum 10 % r.H., Maximum 85 % r.H

Tip-n-Tell indicator to monitor whether the shipment has been transported and stored in upright position according to your requirements. With a pitch of 60° or more, the blue quartz sand flows into the arrow-shaped indicator window and sticks there permanently. Improper handling of the shipment is immediately detectable and can be proven definitively.

In the Shockwatch system, a precision glass tube shows shocks or impacts that are above a specified intensity through red coloration. Exceeding a defined acceleration (g value) destroys the surface tension of the liquid in the interior of the tube. This causes the indicator tube to change color.

Indicates the item can be recycled where correct facilities exist.

1.2 Qualification of personnel

- The Leica RM2265 may be operated by trained laboratory personnel only.
- All laboratory personnel designated to operate the Leica instrument must read these Instructions for Use carefully and must be familiar with all technical features of the instrument before attempting to operate it.

1.3 Intended use of instrument

The Leica RM2265 is a fully automatic, motorized rotary microtome with a separate control panel for creating thin sections of specimens of varying hardness for use in routine and research laboratories in the fields of biology, medicine and industry.

It is designed for cutting both soft paraffin and harder specimens, as long as they are suitable for being cut manually or automatically.

The Leica RM2265 is also suitable for IVD (in vitro diagnostics).

Any other use of the instrument will be considered as improper use!

1.4 Instrument type

All information provided in these Instructions for Use applies only to the instrument type indicated on the title page.

An identification label with the serial number is fastened to the left side of the instrument (this figure is only symbolic).

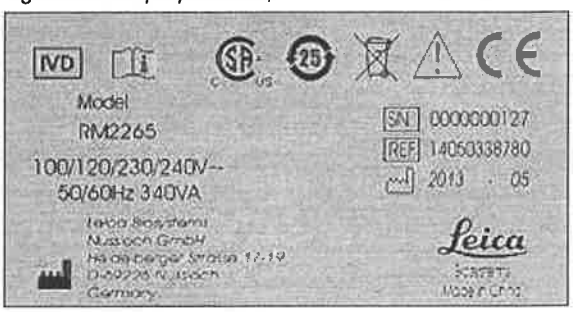

Fig. 1

The safety and caution notes in this chapter must be observed at all times.
Be sure to read these notes even if you are already familiar with the operation and use of other Leica products.

2.1 Safety notes

These Instructions for Use include important information related to the operating safety and maintenance of the instrument.
The Instructions for Use are an important part of the product, and must be read carefully prior to startup and use and must always be kept near the instrument.

These Instructions for Use must be appropriately supplemented as required by the existing regulations on accident prevention and environmental safety in the operator's country.

This instrument has been built and tested in accordance with the safety regulations for electrical measuring, control, regulating and laboratory devices.

To maintain this condition and ensure safe operation, the user must observe all notes and warnings contained in these Instructions for Use.

For current information about applicable standards, please refer to the CE declaration of conformity on our Internet site:

www.LeicaBiosystems.com

The protective devices located on the instrument and the accessories must not be removed or modified. Only service personnel qualified by Leica may repair the instrument and access the instrument's internal components.

2.2 Warnings

The safety devices installed in this instrument by the manufacturer only constitute the basis for accident prevention. Operating the instrument safely is, above all, the responsibility of the owner, as well as the designated personnel who operate, service or clean the instrument.
To ensure trouble-free operation of the instrument, make sure to comply with the following instructions and warnings.

Warnings – Safety notes on the instrument itself

- Safety notes on the instrument itself, which are marked with a warning triangle, indicate that the correct operating instructions (as defined in these Instructions for Use) must be followed when operating or replacing the item marked.
- Failure to adhere to these instructions may result in an accident, personal injury, damage to the instrument or accessory equipment.

Warnings – Transport and installation

- Once unpacked, the instrument may be transported only in an upright position.
- Never lift the instrument by the handwheels or the cassette clamp. Always remove the section waste tray before transporting the instrument.
- Caution! The voltage selector has been preset at the factory.
- Before connecting the instrument to the line voltage, please check that this setting complies with the local power requirements of your laboratory.
- The mains cable inlet is closed with an adhesive tape that indicates the actual voltage setting of the instrument upon arrival. Severe damage can be caused to the instrument if the voltage selector is set to an incorrect voltage!
- When adjusting the voltage selector setting, the instrument must be disconnected from the mains.
- The instrument must be connected to mains only with one of the supplied power cords and only to grounded sockets. Do not interfere with the grounding function by using an extension cord without a ground wire.
- The instrument is ready for operation only if a dummy plug or foot switch (optional) is connected. If you hear a beeping sound (continuous) after switching on the instrument, check that the control panels are connected correctly.
- The instrument may not be operated in hazardous locations.
- Extreme temperature fluctuations between storage facility and setup site as well as high humidity may cause condensation to form. If this is the case, wait at least two hours before switching on the instrument. Failure to comply with this may cause damage to the instrument.
- Protective devices on both instrument and accessories must neither be removed nor modified.

Personal safety precautions

- When working with microtomes, personal safety precautions must always be taken. It is mandatory to wear work safety shoes, safety gloves, a mask and safety goggles.

Safety instructions – working with the instrument

- Take care when handling microtome knives and disposable blades. The cutting edge is extremely sharp and can cause serious injuries!
- Always remove the knife / blade before detaching the knife holder from the instrument. Always put the knives back into the knife case when not in use!
- Never place a knife anywhere with the cutting edge facing upwards and never try to catch a falling knife!
- Always clamp the specimen block BEFORE clamping the knife or blade.
- Lock the handwheel and cover the knife edge with the knife guard prior to any manipulation of knife or specimen clamp, prior to changing the specimen block and during all work breaks!
- ALWAYS turn the handwheel clockwise; otherwise, the brake will not work properly.
- Always take appropriate safety precautions when sectioning brittle specimens! Specimens may splinter!
- Ensure that liquids do not enter the interior of the instrument during work!
- Do not attempt to clamp, approach or orient the specimen during the retraction phase.
- If a block is oriented during retraction, the block will advance by the retraction value PLUS the selected section thickness before the next section. This may cause damage to both specimen and knife!
- The handle of the handwheel must always be centered while in motorized sectioning mode. Do not touch the handwheel while it is running – there is a danger of injury from the handwheel lock.
- Prior to sectioning, check that the specimen is securely clamped in the specimen clamp – failure to observe this poses the risk of damaging the specimen.

Hazards – servicing and cleaning

- Only authorized and qualified service personnel may access the internal components of the instrument for service and repair!
- Before each cleaning, switch off the instrument, disconnect the power plug, remove the knife holder completely and clean it separately.
- Always remove the blade before detaching the knife holder from the instrument.
- Lock the handwheel before each cleaning!
- Do not use any solvents containing acetone or xylene for cleaning!
- Ensure that liquids do not enter the interior of the instrument during cleaning!
- Do not turn the instrument on before it is completely dry!
- When using detergents please comply with the safety precautions of the manufacturer.
- Turn the instrument off with the power switch and disconnect the power plug before replacing the fuses! Only use fuses of the same specification! For fuse specifications, refer to Chapter 3.3 – "Technical Data".

2.3 Integrated safety devices

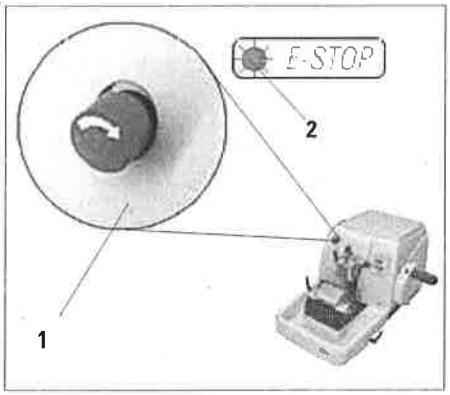

Fig. 2

Emergency-stop function

The emergency-stop function is activated with the red **EMERGENCY STOP** switch (**1**) on the upper left of the front of the microtome. The sectioning motor stops immediately when the **EMERGENCY STOP** switch is pressed. The red LED in the **E-STOP** field (**2**) on the control panel of the instrument lights up, indicating that the emergency stop function has been activated.
To deactivate this function, turn the **EMERGENCY STOP** switch in the direction of the arrow.

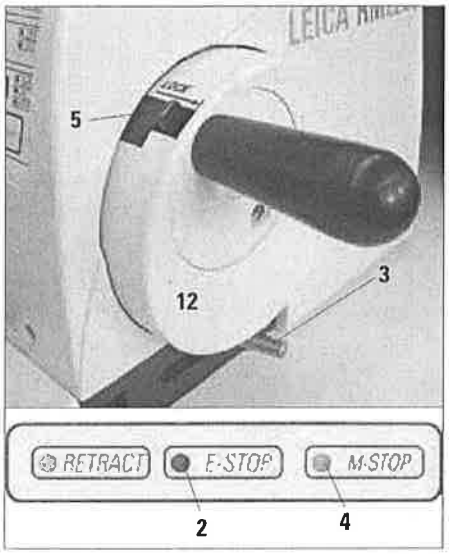

Fig. 3

Handwheel lock (manual operation only)

- To lock the handwheel, push the lever (**5**) outwards and continue to turn the handwheel slowly until it locks exactly in the 12 o'clock position. The LED (**4**) in the **LOCK** display lights up.

Caution!
Never operate the lever (5) during motorized sectioning.

Handwheel brake

Using the lever (**3**) on the right side of the microtome base plate, the handwheel can be braked in any position.

- To lock the handwheel, pull the lever forward forcefully.
- To unlock the handwheel brake, push the locking lever (**3**) back to its original position.

Important!
The LED (4) in the M-STOP field indicates only that the instrument cannot be started. It does not provide any indication that the handwheel brake is active.
The lever (3) must be pulled completely forward with force so that the handwheel brake is applied. The handwheel is securely locked only when the lever (5) is in the 12 o'clock position.

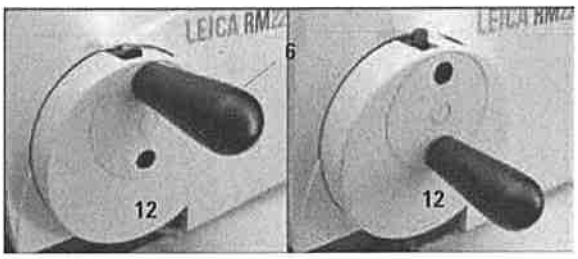

Fig. 4

Centering the handle

For safety reasons, the handle of the handwheel must always be centered while in motorized sectioning mode.

- Activate the handwheel lock.
- To center the handwheel, lightly pull the handle (**6**) outwards and swivel it into the center of the handwheel (**12**) (Fig. 4).
- The handle will then lock automatically when released.

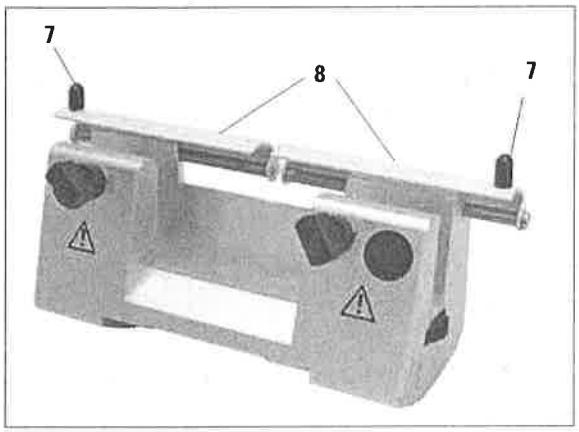

Fig. 5

Knife guard on the knife holder

Each knife holder is equipped with a tightly mounted knife guard (**8, 9**). This makes it possible to cover completely the cutting edge in every knife or blade position.

Knife holder N/NZ

The knife guard (**8**) of the knife holder N/NZ can be easily positioned via the two handles (**7**) (Fig. 5).
To cover the knife edge, push both cover strips of the knife guard to the center.

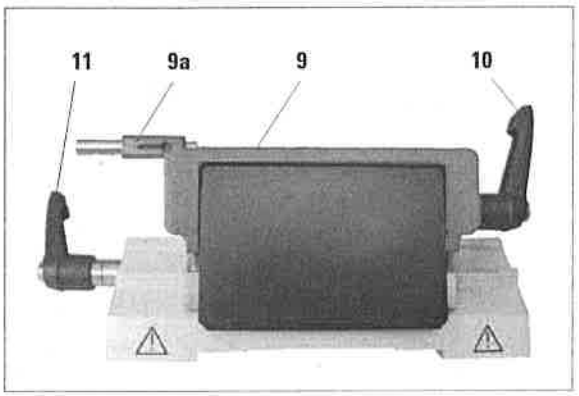

Fig. 6

Knife holder E

The knife guard on knife holder E consists of a red foldaway handle with ejector (**9a**). To cover the cutting edge, fold the knife guard handle (**9**) upwards as illustrated in Fig. 6.

For the new knife holder E, the two clamping levers (10, 11) must always remain in the position shown. Clamping lever for the blade (10) at the right, clamping lever for the lateral displacement (11) at the left.

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3.1 Overview – instrument components

Leica RM2265

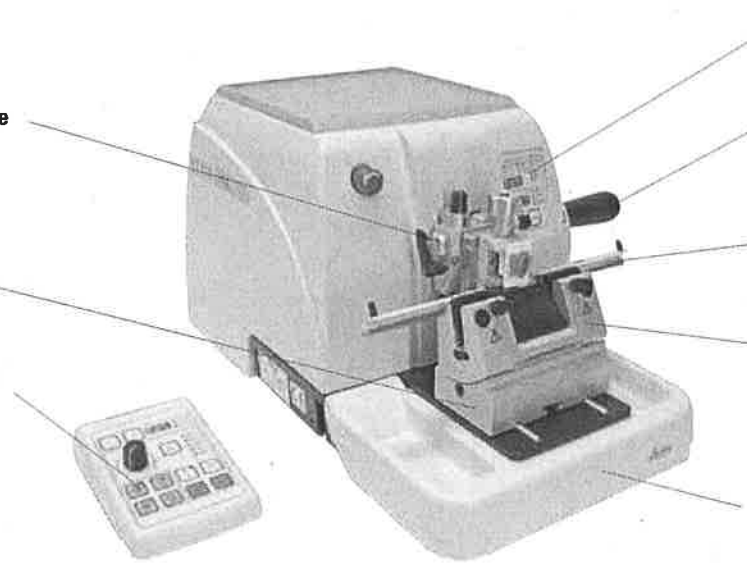

Fig. 7

ВЯРНО С ОРИГИНАЛА

Rear side of instrument

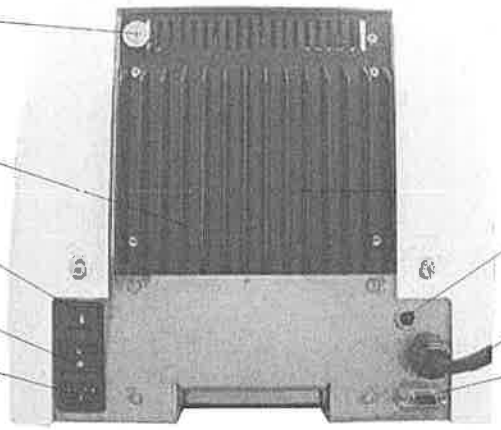

Fig. 8

3.2 Instrument specifications

The Leica RM2265 is a motorized rotary microtome.

- The specimen feed system with zero-backlash and maintenance-free cross roller guides and the stepper motor operated coarse feed system are located in a dust-proof plastic housing.
- The instrument is equipped with a safety handwheel with a handle that can be centered, as well as a mechanical handwheel lock.
- All controls and LEDs are centralized in a separate control panel.
  All control elements are logically arranged in functional groups and easily identifiable.
- The specimen retraction can be turned off. In manual operation the retraction can be adjusted. In motorized operation the retraction value varies with the selected sectioning speed. An LED illuminates while the sample is in retraction.
- The electric coarse feed operates at two speeds. In the sectioning mode, the coarse feed buttons have a STEP function.
- Four motorized sectioning modes (**CONT**, **SINGLE**, **STEP** and **PROG**) are available as well as one manual sectioning mode, the rocking mode (**ROCK**).
  In rocking mode, it is enough to move the handwheel a short distance back and forth in order to create a section.

3.3 Technical Data

General

Approvals:	The instrument-specific marks are located on the rear panel of the instrument next to the nameplate.
Nominal supply voltages:	100 / 120 / 230 / 240 V AC ±10 %
Nominal frequency:	50/60 Hz
Maximum power consumption:	340 VA
Protection class [1]:	I
Power fuses:	2 x T 3.15 A UL listed
Pollution degree [1]:	2
Overvoltage category [1]:	II
Maximum heat emission:	340 J/s
Operating temperature range:	+10 °C to +35 °C
Temperature range during storage:	+5 °C to +50 °C
Relative humidity:	max. 80 % non-condensing
Storage humidity:	min. 10 % r.H., max. 85 % r.H.

[1] according to IEC-1010, UL 3101, EN 61010

Dimensions and weight

Basic instrument

Width (including handwheel):	413 mm
Width (excluding handwheel):	300 mm
Depth (including waste tray):	563 mm (small) / 618 mm (large)
Height (total):	305 mm (with tray on the hood)
Working height (knife blade):	100 mm (measured from the base plate)
Working height (knife blade):	168 mm (measured from the table)
Weight (without accessories):	approx. 37 kg

Control panel

Width:	121 mm
Depth:	166 mm
Height:	50 mm
Height (in inclined position):	81 mm
Weight (net):	approx. 0.660 kg

Microtome

Sectioning thickness setting:		
Section thickness setting range:	0.25 - 100 µm	
Setting values:	0.25 µm - 0.5 µm	in 0.25 µm increments
	0.50 - 5.0 µm	in 0.5 µm increments
	5.0 - 20.0 µm	in 1.0 µm increments
	20.0 - 60.0 µm	in 5.0 µm increments
	60.0 - 100.0 µm	in 10.0 µm increments
Trimming section thickness setting range:	1 - 600 µm	
Setting values:	1.0 - 10.0 µm	in 1.0 µm increments,
	10.0 - 20.0 µm	in 2.0 µm increments,
	20.0 - 50.0 µm	in 5.0 µm increments,
	50.0 - 100.0 µm	in 10.0 µm increments,
	100.0 - 600.0 µm	in 50.0 µm increments.
Specimen feed:	24 mm ±1 mm, feed motion via step motor	
Vertical stroke:	70 mm	
Maximum sectioning area w/o retraction:	65 mm without specimen orientation	
Maximum sectioning area with retraction:	60 mm	
Specimen retraction:		
in manual sectioning mode:	5 - 100 µm in 5 µm increments; can be turned off	
in motorized sectioning mode:	Varies with the sectioning speed; can be turned off	
Electric coarse feed:	300 µm/s and 800 µm/s	
Sectioning speed:	0 - 420 mm/s	±10 %
Return speed	approx. 120 - 420 mm/s	±10 %
Repositioning of knife holder base		
North-south:	± 24 mm	
Lateral displacement function via blade holder CE clamping top:		
East-West:	3 positions or ± 23 mm	
Maximum specimen size (L x H x W):	50 x 60 x 40 mm	
Specimen orientation		
Horizontal:	± 8°	
Vertical:	± 8°	

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4.1 Installation site requirements

- Stable, vibration-free laboratory bench with horizontal, even stage plate; practically vibration-free floor.
- No other instruments nearby which might cause vibrations.
- Room temperature consistently between + 10 °C and + 35 °C.
- Obstruction-free access to the handwheel.

Never operate the instrument in rooms with an explosion hazard.

4.2 Standard delivery

The Leica RM2265 standard delivery includes:

1 Leica RM2265 basic instrument, without orientation 14 0503 38780
1 handwheel, complete 14 0502 37734
1 external control panel 14 0503 38781
1 section waste tray 14 0503 39060
1 dummy plug 14 0443 30420
1 tool set - consisting of: 14 0502 37965
1 Allen key with handle, size 5 ..... 14 0194 04760
1 Allen key with handle, size 4 ..... 14 0194 04782
1 Allen key size 3 ..... 14 0222 04138
1 screwdriver 3x50, 186 long 14 0170 11568
1 bottle (50 ml) of oil for drives, type 405 ..... 14 0336 06086
2 micro-fuses 3.15 AT 14 6000 04805
1 "Leica" brush with magnet 14 0183 40426
1 dust protective cover 14 0212 30350
1 Instructions for Use printed (German/English, with Language CD 14 0503 80200) 14 0503 80001

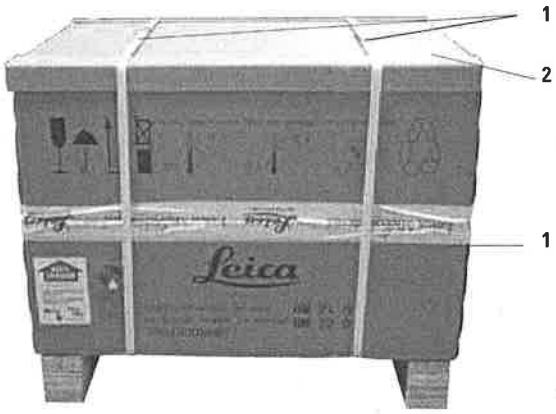
The country specific power cord needs to be ordered separately. Please find a list of all power cords available for your device on our website www.LeicaBiosystems.com within the product section.

The accessories are included at the top of the package (item 2 in Fig. 9). Check the delivery carefully against the packing list, delivery note and your order.
Should you find any discrepancies, please contact your Leica sales office without delay.

4.3 Unpacking and installation

Fig. 9

When the instrument is delivered, check the tilt indicators on the packaging. If the arrowhead is blue, the shipment was transported laying flat, was tilted at too great an angle or fell over during transport.
Note this on the shipping documents and check the shipment for possible damage.



- Remove the packing strap and the adhesive tape (**1**).
- Remove the carton lid (**2**).
- Take the accessory carton (optional accessories) (**3**) and the cartons (**4**) from the standard scope of delivery.

The transport carton and included retaining elements should be kept in case a return shipment is necessary later.

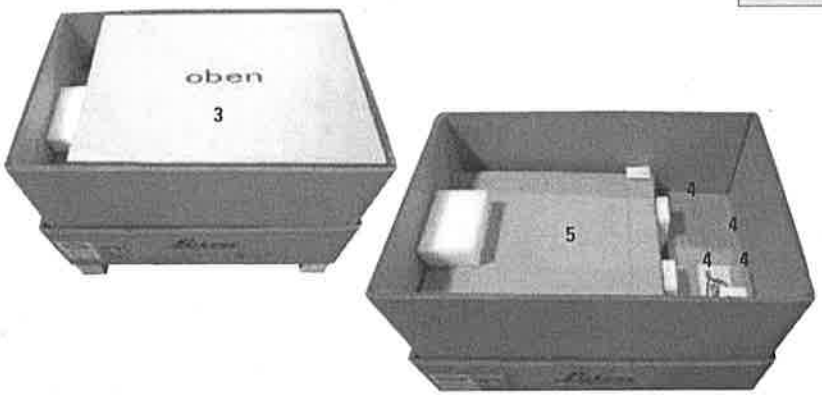


Fig. 10

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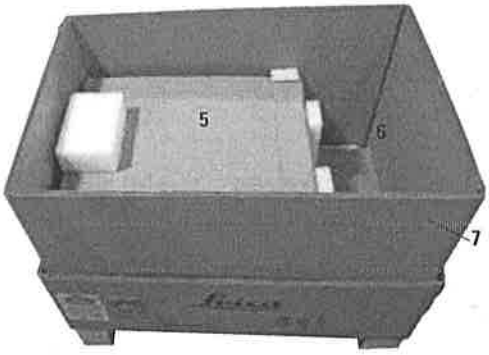
4.3 Unpacking and installation (cont.)



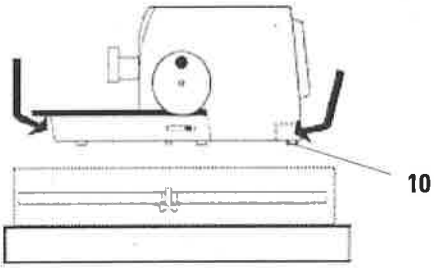


Fig. 10a

- Take out the fixing module (**5**). To do so, hold it by the top edge of the module and in the recessed grip (**6**) and pull it out by pulling upwards.
- Remove the outer carton wall (7).
- Lift the instrument* (**8**) by holding it by the base plate at the front and under the instrument on the back and lift it out of the formed cushion (**9**).

Never hold the instrument for transport by the handwheel or the rotary knob for section thickness adjustment.

- (*= the instrument illustration is provided as an example only.)

- Place the instrument on a stable laboratory table.

  The two sliding elements (**10**) located on the rear of the base plate make it easier to move the instrument on the table.
- To move the instrument, hold it by the front of the base plate, lift it up gently and slide it on its slides.

Observe the correct resting angle to the table to avoid pinching your fingers.

4.4 Assembling the handwheel

The handwheel has to be assembled before attempting to use the instrument. The necessary parts and tools can be found in the toolkit.

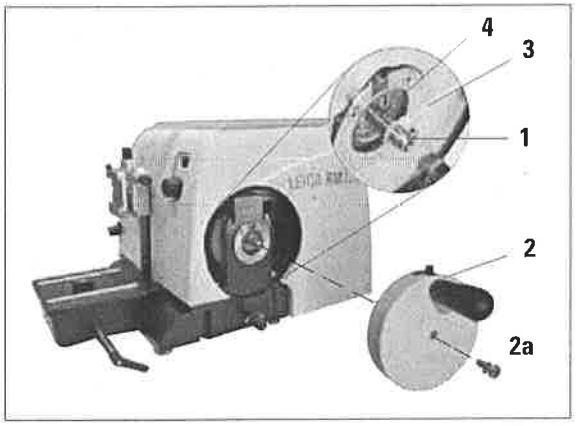


Fig. 11

The feather key (**4**) is loosely placed in the handwheel shaft (**1**) and fixed in place with a cable tie during transport.

- Remove the cable tie (**3**).
  Caution!
  Make sure not to lose the feather key!
- Place the handwheel (**2**) on the handwheel shaft (**1**) as shown.
- Tighten the screw (**2a**) located in the center hole of the handwheel with an Allen key size 4.
- Remove the cover foil from the self-adhesive cover disk and fix the cover disk on the handwheel.

4.5 Electrical connections

The instrument MUST be connected to a grounded power socket. Use only the power cable provided that matches the power supply (outlets) of the country of use. Do not use an extension cable without a ground wire!

Checking the voltage

The Leica RM2265 can be connected to various electrical power grids (depending on voltage and frequency) and, for this reason, is always delivered with a set of various power cables.

New instruments are factory-set to 230 volts. This is documented by a yellow label (**230 VOLT**) on the rear of the instrument, which covers the power switch and power socket.

Before connecting the instrument to the power supply, be absolutely certain to check that the voltage selector is set to the voltage in use in your area!
Severe damage can be caused to the instrument if the voltage selector is set to an incorrect voltage!
Never change the setting of the voltage selector while the instrument is connected to the power supply.

Checking the voltage (continued)

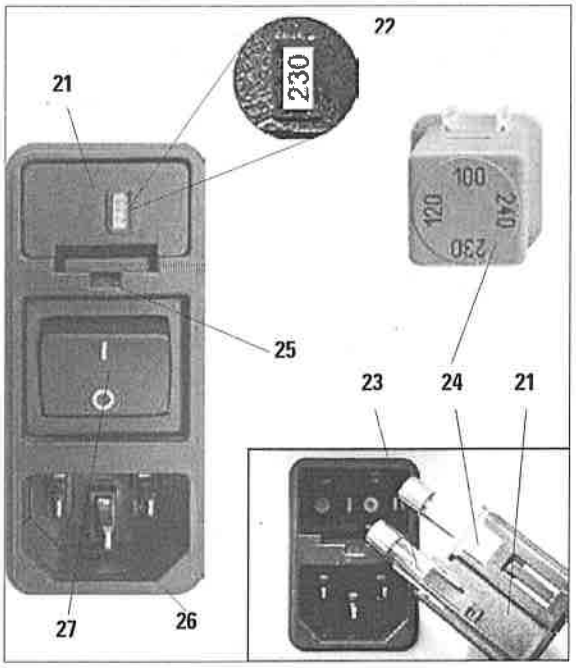


Fig. 12

The voltage selector is located above the main power switch, on the left-rear side of the instrument (Fig. 12). The voltage setting is displayed in the viewing window (**22**).

- Insert a small screwdriver into the cutout (**25**) and carefully pry out the insert.
- Remove the voltage selector housing (**21**) together with the fuses (**23**).

  Remove the voltage selector block (**24**) (white) and insert it again such that the correct local voltage is displayed in the viewing window (**22**).
- Reinsert the voltage selector housing with the block and fuses and push it in until it engages (audible click).

Connecting the power supply

- Before connecting the power cable, make sure that the power switch (**27**) on the rear of the instrument is switched to "**O**" = **OFF**.
- Various country-specific power cables are provided with the instrument. Make sure that the power cable used has the correct plug for the power socket.
- Insert the connector of the power cable into the connection socket (**26**) and plug the power plug into the power socket.

Exposure to extreme temperature changes and high air humidity may cause condensation to form inside the instrument.
After transporting, wait at least 2 hours to allow the instrument to adopt the ambient temperature before turning it on!
Failure to comply with this may cause damage to the instrument.

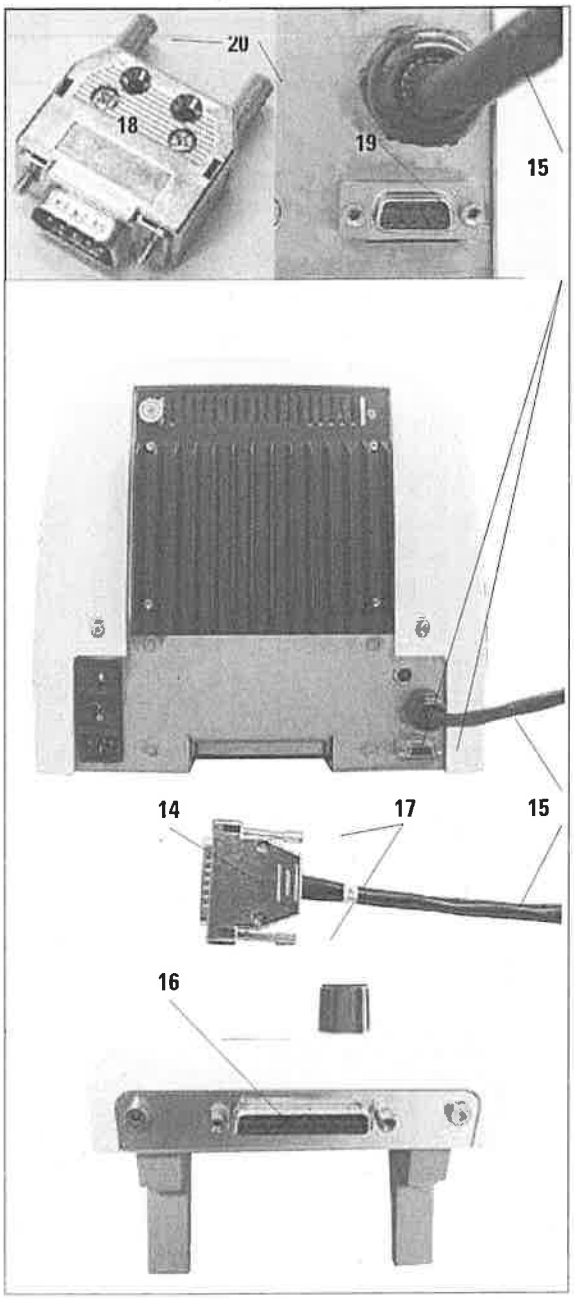


Fig. 13

Connecting the dummy plug

- Insert the dummy plug provided (**18**) into the connecting jack (**19**) on the rear of the instrument and fasten it by tightening the screws (**20**).

Connecting the foot switch (optional accessory)

- If a foot switch is to be used with the instrument, attach it in the same way as the dummy plug.

Caution!
If neither the dummy plug nor the foot switch is connected, the instrument is not ready for operation.
In this case, the E-STOP LED on the instrument is illuminated.

Connecting the control panel

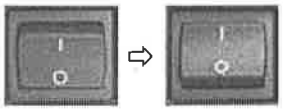
The connecting cable (**15**) of the control panel is fixed to the microtome. It may not be disconnected.

- Insert the plug (**14**) of the connecting cable (**15**) into the connecting jack (**16**) on the rear of the control panel.
- To fasten the plug, tighten the two screws (**17**).

4.6 Switching on the instrument

When turning the instrument on with the mains switch, do not press any of the buttons of the control panel or the foot switch (optional accessory)!

Turn the instrument on with the power switch at the rear.



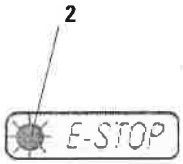
This is followed by a beep.
The instrument initializes.

The software version (shown here only as an example) is displayed in the 4-digit display. This display disappears after 2 seconds and "**0000**" is displayed.

After the microtome is switched on, the display fields and LEDs of all activated functions are lit up on the instrument's control panel and display field.

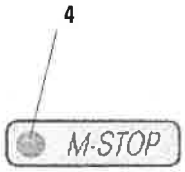
The three-digit LED display indicates the last value set for the section thickness or trimming thickness, depending on which setting was last activated. This is indicated simultaneously on the control panel and microtome.

The LED of the active mode (here the section thickness) is illuminated in green.



When the red LED in the **E-STOP** field (**2**) on the control panel of the instrument is illuminated, either

- the emergency-stop function has been activated (the EMERGENCY STOP button is pressed or the foot switch depressed).
- the dummy plug (or the optional foot switch) is not correctly connected to the jack, or not connected at all.



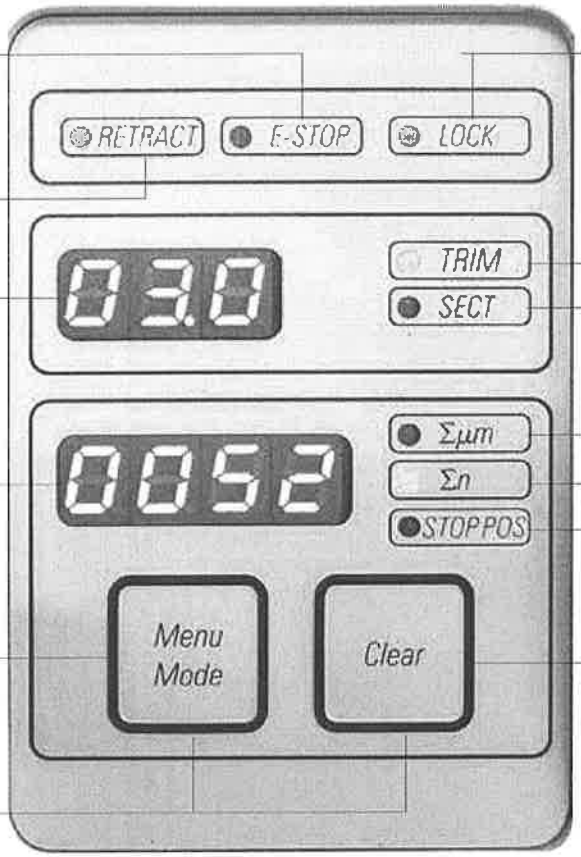
If the yellow LED in the **M-STOP** field (**4**) of the control panel is lit, the mechanical handwheel lock or the handwheel brake (Item 3 in Fig. 3) is activated.

The instrument cannot be used as long as the LED is lit.

5.1 Operating elements and their functions

The operating functions of the microtome are divided between a control panel and a display unit on the microtome.
A control panel on the instrument displays the current operating mode as well as various settings.
All operating functions are centrally located in the separate control panel. All keys and displays are logically arranged in functional groups and easily identifiable.

5.1.1 Instrument control panel



E-STOP LED
Lights up when emergency stop function is activated.

RETRACT LED
Lights up during specimen retraction.

Three-digit display for displaying section thickness/trimming section thickness.

Four-digit display of the section counter

MENU MODE button
Switches between section thickness sum and section counter.

MENU MODE + CLEAR pressed simultaneously switches to the setting of the retraction value.

M-STOP LED
Lights up when handwheel locking mechanism is activated.

Green LED
Lights up when trimming mode is activated.

Green LED
Lights up when sectioning mode is activated.

Green LED
Section thickness sum, Display shows the sum of all sections in µm.

Green LED
Section counter displays the number of all sections.

Green LED
The vertical stop position of the object head (Up or Lo) is shown in the display

CLEAR button
Resets the display (section counter or section thickness sum) to 0

Fig. 14

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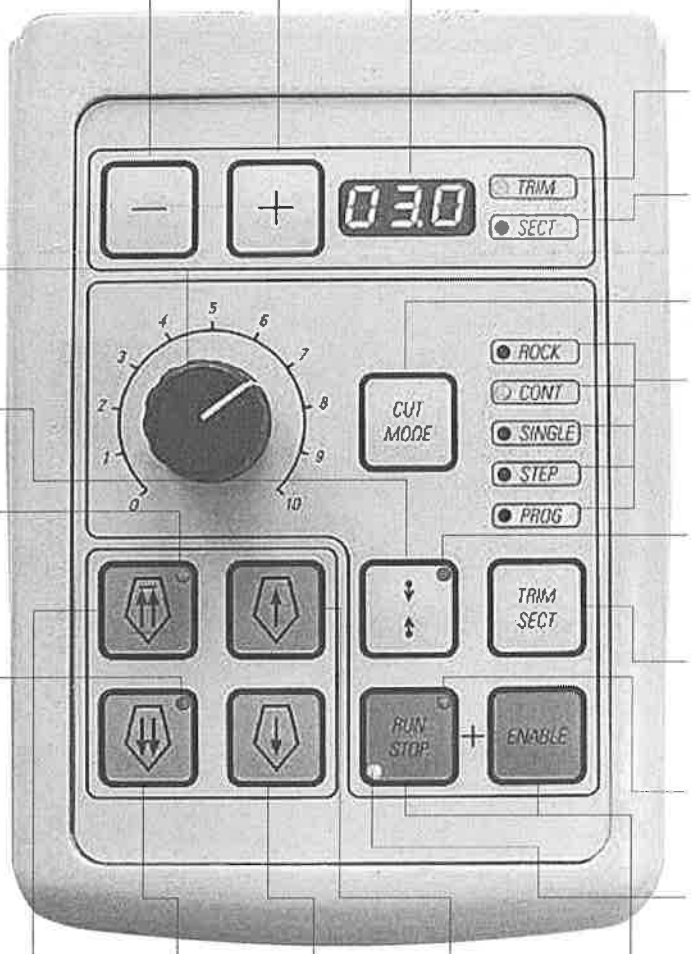
5.1.2 Control panel



Buttons for setting the section thickness/ trimming section thickness

Three-digit display for section thickness/ trimming section thickness.

Green LED Lights up when trimming mode is active.

Green LED Lights up when sectioning mode is activated

Rotary knob For setting the sectioning speed

CUT MODE button - selection of operating mode

Green LEDs For displaying the active operating mode

Button Set sectioning window

Yellow LED - Flashes during coarse feed backwards; lights up when rear end position is reached.

Green LED Flashes until second sectioning window edge is set

TRIM/SECT button For switching between sectioning mode and trimming mode

Yellow LED - Flashes during coarse feed forwards; lights up when front end position is reached.

Yellow LED Illuminated if the motor is switched on.

Green LED Illuminated if the motor is switched off or stops at the next stop position.

Buttons RUN STOP and ENABLE start and stop motorized sectioning.

Coarse feed buttons

Trimming mode:	Backward fast coarse feed	Forward fast coarse feed	Forward slow coarse feed	Backward slow coarse feed
Sectioning mode:	Multiple step backward	Multiple step forwards	Single step forwards	Single step backward

Fig. 15

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5.1.3 Display and control elements

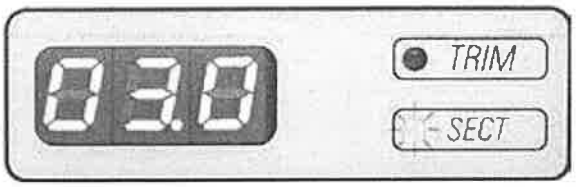
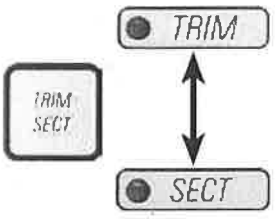


Fig. 16

Three-digit display

This display is located both on the instrument and on the control panel.
If the **SECT** LED is lit up, the display shows the section thickness setting in µm.
If the **TRIM** LED is lit up, the display shows the trimming section thickness setting in µm.

Selecting the sectioning and trimming mode



To switch between sectioning mode and trimming mode, press the **TRIM SECT** button. Whenever the button is pressed, the display toggles between **SECT** and **TRIM**.
In the **SECT** display, the sectioning thickness in the range from 0.25 to 100.0 µm is shown, and in the **TRIM** display, the trimming section thickness between 1.0 and 600 µm is displayed.

Setting the section thickness/trimming section thickness

Adjust these settings using the [+] - [-] keys on the control panel.

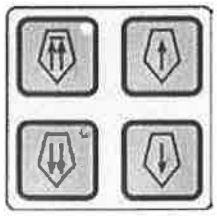
Section thickness setting range: 0.25 - 100 µm
Setting values: 0.25 µm

from	0.5 µm - 5.0 µm	in	0.5 µm increments
from	5.0 µm - 20.0 µm	in	1.0 µm increments
from	20.0 µm - 60.0 µm	in	5.0 µm increments
from	60.0 µm - 100.0 µm	in	10.0 µm increments

Setting range for trimming section thick ness: 1 - 600 µm

Setting values: from	1.0 µm - 10.0 µm	in	1.0 µm increments,
from	10.0 µm - 20.0 µm	in	2.0 µm increments,
from	20.0 µm - 50.0 µm	in	5.0 µm increments,
from	50.0 µm - 100.0 µm	in	10.0 µm increments,
from	100.0 µm - 600.0 µm	in	50.0 µm increments,

Coarse feed functions



The electric coarse feed at two speeds is used for a rapid movement of the specimen towards and away from the knife. With the double-arrow buttons, the coarse feed operates at 800 µm/s; with buttons with one arrow, it is 300 µm/s. In sectioning mode, the coarse drive can be used in (**STEP** mode) or with continuous feed. The instrument is delivered with continuous feed (standard configuration).

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Sectioning mode

Button functions in STEP mode

Multiple step backward

Single step backward

Multiple step forward

Single step forward

In sectioning mode the user can select between STEP function (step-by-step specimen feed) and continuous specimen feed.

When continuous feed is selected, the coarse feed buttons have the same functions as in trimming mode. The **STEP** function is useful for careful step-by-step approximation of the specimen towards the blade.

How to activate the **STEP** function:

- Switch the instrument on while holding the [+] button on the control panel. (Likewise, to deactivate switch the instrument on while pressing the [−] button.) While the instrument is initializing, hold the [+] button until the software version number is no longer displayed (ensure that version number 2.1 was displayed).

This feature is only available in sectioning mode in version 2.1 or higher. For software versions older than 2.1, contact Leica Technical Service.

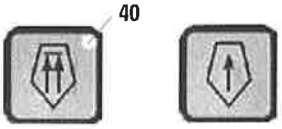
- Press **TRIM/SECT** button and select sectioning mode (LED **SECT** lit).
- When pressing the button (with an arrow) for slow-speed coarse feed, a defined, incremental feed takes place (**STEP**) at the value indicated on the display in the respective direction (simple step).
- By short activation of a double-arrow coarse feed button, a single step is also effected in the appropriate direction.
- Longer activation of the double-arrow coarse feed button effects a repeated feed motion for as long as the button is pressed.

Trimming mode

In the trimming mode, the coarse feed buttons operate a continuous movement as long as the button is held down. The double-arrow button for rapid coarse feed backward movements has a lock-in function.

Backwards coarse feed

40



Forward coarse feed

41

Do not put your fingers between the specimen clamp and microtome to prevent pinching them.

- To start the rapid backwards movement (away from the blade), press the key.

  After the button is pressed, the specimen head is moved to the rear end position.
- To stop the movement, press any of the four coarse feed buttons.
- The yellow LED (**40**) in the button flashes while the specimen head is in motion, and remains lit continuously when the rear end position is reached.

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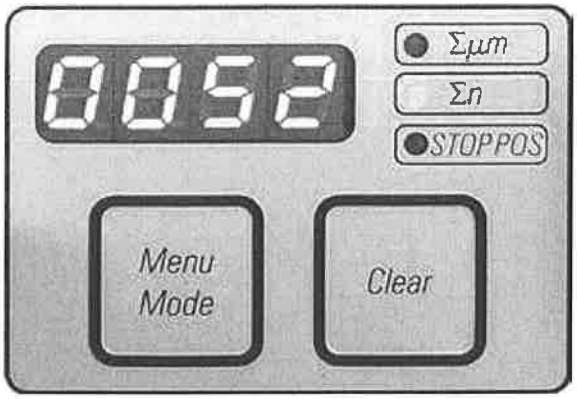
- Press the ◊ button to start the slow backwards movement. The travel continues as long as the button is held depressed.
- Press the appropriate button to start a rapid or slow forward movement. The travel continues as long as the button is held depressed.
- During the forwards movement, the yellow LED (**41**) in the button flashes. When the front end position is reached, an acoustic signal is heard and the LED stops flashing and remains lit.



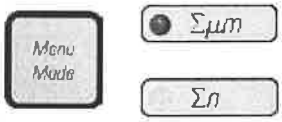
Four-digit display on the instrument

The four-digit display is adjustable.

When the Σ **µm** LED is lit, the display shows the sum of the section thicknesses in µm for all sections completed since the instrument was switched on. (Section thickness sum)

When the Σ **n** LED is lit, the display shows the number of all previously completed sections.

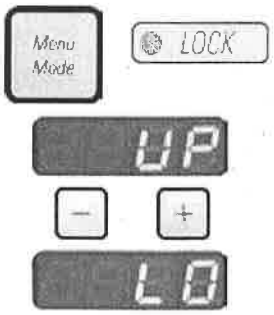
Fig. 17



- To change the display mode, push **MENU MODE** until the LED of the desired mode is illuminated.
- Press **CLEAR** to reset section thickness sum or section number.
- This will only reset the currently displayed value.

Caution! When the instrument is switched off using the main power switch, the values (section thickness sum and section number) are erased from memory.

Setting the vertical stop position



The lower return point of the object head can be set as a stopping position.

- Push the **MENU MODE** button until the **STOP POS** LED is illuminated. The set stop position of the object head is indicated in the display. The default setting is the upper position (**UP**).
- Using the ⊞ and ⊟ buttons on the control panel, you can switch between the upper and lower (**UP**, **LO**) stop positions.

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Specimen retraction

To prevent damage to the blade and specimen, the specimen is moved away from the blade during the return motion to the upper home position.

In motorized sectioning mode, the retraction depends on the setting of the sectioning speed.

In manual mode, the retraction value can be selected in 5 µm increments between 5 and 100 µm. Specimen retraction is set to 10 µm at the factory.

The specimen retraction can also be deactivated for the manual and motorized operation if required.

The selected setting is maintained when the instrument is turned off.

Configuring the retraction settings

- To call up the retraction settings, press the **MENU MODE** and **CLEAR** buttons simultaneously.

- The current set value is displayed as a **three-digit number** in the four-digit display (e.g. "**025**" = 25 µm).

- Select the desired retraction value.
  The retraction value can be adjusted in increments of 5 µm to a maximum of 100 µm using the [+] - [-] buttons on the control panel.

- To exit the retraction settings, press **MENU MODE**.
  A retraction movement takes place by the newly selected value after each section.

- While the specimen is in retraction, the yellow LED on the **RETRACT** display (**4**) lights up.

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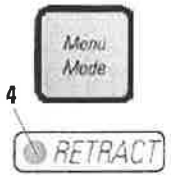
Switching off the specimen retraction

- To call up the retraction settings, press **MENU MODE** and **CLEAR** simultaneously.

- To switch off retraction, press the ⊟ button on the control panel until the display indicates "**OFF**".

- To exit the retraction settings, press **MENU MODE**.
  When retraction is switched off, the specimen is not retracted.



The yellow LED (**4**) of the **RETRACT** indicator does not light up.

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Setting the sectioning speed

- The sectioning speed can be set continuously (in the range of 0 - 420 mm/s) using the rotary knob.
  The speed selector has a scale graduation from 1 to 10. The graduation is provided for reference purposes and does not indicate a particular speed.

The set sectioning speed is only active within the boundaries of the sectioning area. A higher speed is used outside the sectioning area.

Sectioning window setting

The sectioning window function allows to optimally adapt the size of the sectioning area to the actual size of the specimen.
The selected sectioning window setting is maintained when the instrument is turned off.

- Turn the handwheel to position the lower edge of the sample approximately 3 mm above the cutting edge.
- Press the "**SET SECTIONING WINDOW**" button. This defines the first window border.
- The green LED (**43**) in the button flashes after the first window border is defined.

- Pass the specimen through to the upper border of the cutting edge and press the "**SET SECTIONING WINDOW**" button again.
- After the second window border is defined, the green LED in the button goes out. This indicates that both values were accepted.

To set a sectioning window, you must always enter a pair of values. The sequence of entry (upper or lower) is optional.

Canceling a defined sectioning window

- To cancel a defined sectioning window before the start, press the "**SET SECTIONING WINDOW**" button once. This sets the sectioning area to the maximum size (corresponding to the entire sectioning area).

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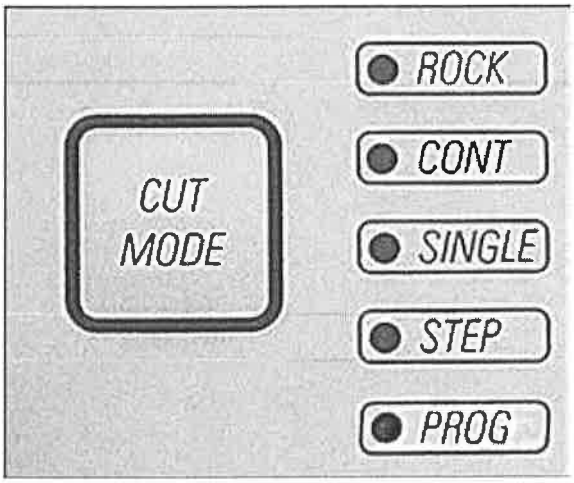


Fig. 18

Sectioning modes

The microtome can be used both in manual and motorized operation.
You can choose between five settings:
ROCK in manual mode as well as
CONT, **SINGLE, STEP** and **PROG** in motorized mode.

For safety reasons, when the instrument is first switched on, none of the operating modes is active.

Mode selection

- For selecting the mode, press the **CUT MODE** button on the control panel until the green LED of the desired operating mode is displayed.

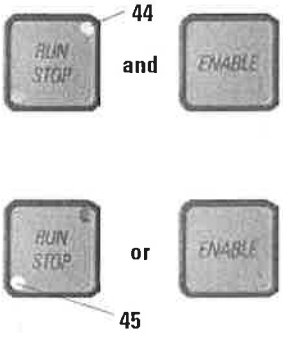
Manual sectioning mode

- Select **ROCK** operating mode.
- Turn the handwheel a short distance forwards and backwards for sectioning (rocking mode).

Each change in the sense of rotation will be electronically detected and automatically converted into an advance or retraction movement of the specimen.

In the manual sectioning mode, it is possible to use either the conventional method of completing a full handwheel rotation or to work in the rocking mode ("Rock").

Start and stop motorized sectioning



- To start motorized sectioning, press the **RUN/STOP** and **ENABLE** buttons simultaneously after selecting the desired operating mode.
- While the cutting motor is running, the yellow LED in the **RUN/STOP** key lights up.
- To stop motorized sectioning, press **RUN/STOP** or **ENABLE**.

If both the green and the yellow LEDs in the **RUN/STOP** button are lit up, the cutting motor is still running; however it will stop in the next programmed end position of the vertical stroke.

Motorized sectioning

In motorized operation, you can choose between four operating modes:

CONT = continuous stroke
SINGLE = single stroke
STEP = step stroke
PROG = program mode

CONT (continuous stroke) operating mode

- Select **CONT** operating mode.

After beginning the sectioning process, sectioning continues until the process is stopped by pressing **RUN/STOP** or **ENABLE**.
The specimen then stops in the next programmed end position of the vertical stroke, depending on which stop position is active.

SINGLE (single stroke) operating mode

- Select **SINGLE** operating mode.

After starting sectioning, a single sectioning stroke is completed.
The specimen then stops automatically in the programmed end position of the vertical stroke.

In motorized sectioning mode, the sectioning process can be started and stopped with the foot switch (optional accessory) instead of the RUN/STOP and ENABLE buttons.
For additional information, refer to Chapter 5, Operation, "Foot switch".

STEP (step stroke) operating mode

- Select **STEP** (step stroke) operating mode.

After starting the sectioning process, the specimen is moved as long as the keys are held depressed (or as long as the foot pedal is pressed).

If the buttons or the foot switch are released, the specimen stops automatically.

and

PROG – program mode

The RM2265 allows you to define a program for each mode (trimming, sectioning).

For both programs, the number of sections can be preset from 1 to 100. The cutting drive performs exactly as in **CONT** operating mode.

- Using the **CUT MODE** button, select the **PROG** operating mode. In the four-digit display on the instrument, the section program mode is indicated by a **"P"** followed by the number of preset sections, while the LEDs for the section counter, section thickness sum and stop position go out.

Entering a program

- Use **TRIM/SECT** to select the desired mode.
- You can enter the desired programmed section number using the [+] - [-] buttons on the control panel. Pressing the [+] button increases the section number by 1, and pressing the [-] button decreases the section number by 1. The number appears immediately in the four-digit display of the instrument.
  The maximum section number which can be programmed is 100.

Executing a program

and

- Select the program mode using **CUT MODE** and select the cutting mode (trimming, sectioning) using **TRIM/SECT**. The number of sections for the program is shown in the display.
- To start the program, push **RUN/STOP** and **ENABLE** simultaneously.

If you interrupt a section program without first exiting PROG operating mode, the program is continued at the position at which it was stopped.

If you stop the section program prematurely and exit PROG sectioning mode (e.g. to change the section thickness), the current reading of the program counter is lost.

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Indication of remaining horizontal feed

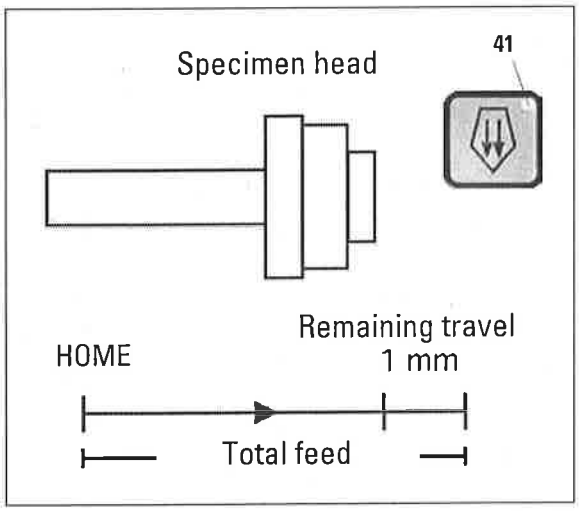

Fig. 19

The visible and audible remaining feed indication feature informs the user during trimming and sectioning when a remaining feed of approximately 1 mm is available before the front limit is reached.

The yellow LED (**41**) in the **COARSE FEED** button lights up from the beginning of the remaining feed. In addition, an acoustic signal is heard for approx. 2 seconds.

The sectioning process is interrupted and the object head stops in the upper end position.

From this point on, a remaining feed of approx. 1 mm is available.

In the remaining feed area, no more object feeding to the knife is possible using the coarse feed buttons.

and

- Restart motorized sectioning.
  The yellow LED (**41**) in the **COARSE FEED** button lights up.
- When the front end position is reached, the sectioning process stops automatically.
- Upon restart, no more feed motion takes place.

or

- You can continue to work on the specimen by pressing the corresponding coarse feed button in the rear end position (**HOME**) and continuing with sectioning.

To do so, you must press TRIM/SECT to switch to trimming mode, as otherwise, you cannot use the coarse feed.
If the specimen head is already in the remaining feed range when the instrument is switched on, an additional acoustic signal is heard after the software version is displayed.

- You can continue to work on the specimen by moving it back a short distance using the coarse feed buttons (set trimming mode!).
- The **STEP** function is disabled in the remaining feed range.

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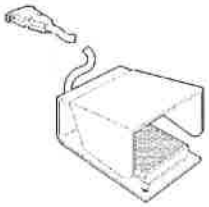
Foot switch (optional accessory)



The foot switch can be used to control the motorized sectioning process. It also has a function that is similar to the emergency stop function.

Caution!
In addition to the foot switch, all control panel functions and all buttons on the instrument continue to be active.

- Using the **CUT MODE** button, select the desired operating mode, **CONT**, **SINGLE** or **STEP**, on the control panel (Fig. 18).

CONT (continuous stroke) operating mode

- Press the foot switch once briefly to start motorized sectioning.

If the foot switch remains pressed for longer than half a second, the specimen stops in the next upper end position.

- Press the foot switch again to stop it.
  The specimen then stops in the next programmed end position of the vertical stroke, depending on which stop position is active.

SINGLE (single stroke) operating mode

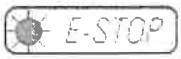
- Press the foot switch once briefly to start motorized sectioning. After each section, the specimen stops automatically in the end position, depending on which stop position is active (up or lo).

STEP (step stroke) operating mode

- Press down the foot switch once to start the sectioning process. The specimen is now moved for as long as the foot switch is depressed.
- If the foot switch is released, the specimen remains stationary in the position that it has reached.

How to activate the emergency stop function

- Press the foot switch strongly to activate the emergency stop function. Sectioning stops immediately.
  The red LED in the **E-STOP** field on the instrument (Fig. 14) is lit up as long as the foot switch remains depressed.



- To continue, restart the sectioning process using the foot switch. The operating mode remains unchanged.

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Directional specimen holder fixture

In the quick clamping device of the directional specimen holder fixture, all specimen clamps available as optional accessories can be used (implemented).

The specimen orientation allows for simple position correction of the specimen surface when the specimen is clamped into place.

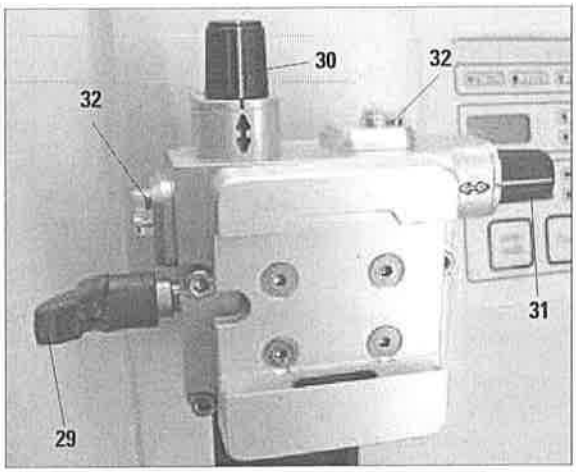

Fig. 20

Display of the zero position

For better display of the zero position, the orientation has two red indicators (**32**).

When both indicators are visible and both setscrews (30, 31) are in zero position at the same time (click stop, white marking on "↕"), the specimen is in zero position.

When the large standard specimen clamp (50 x 55 mm) is used, the specimen orientation of ± 8° in north-south direction is no longer possible.
The usable angle is only about ± 4° in this case.

The directional specimen holder fixture may be exchanged for a non-directional fixture (optional accessory).

Orienting the specimen

Specimen blocks must NOT be oriented during the retraction phase!
If a block is oriented during retraction, the block will advance by the retraction value PLUS the selected section thickness before the next section.
This may cause damage to both specimen and knife!

- Raise the specimen head to the upper end position and activate the handwheel lock.
- To release the clamp, turn the eccentric lever (**29**) forwards.
- Turn setscrew (**30**) to orient the specimen in north-south direction. Turn setscrew (**31**) to orient the specimen in east-west direction.

  Each complete turn of the screw inclines the specimen by 2°. A total of 4 complete turns = ± 8° are possible in every direction. The accuracy is approximately ±0.5°.

  For ease of estimation, there is a white mark on the handle and a click stop that is noticeable during turning.
- To lock the current orientation, turn the eccentric lever (**29**) backwards.

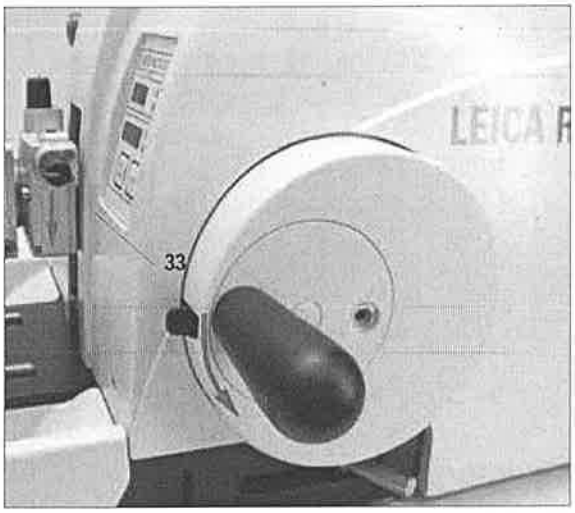

Fig. 21

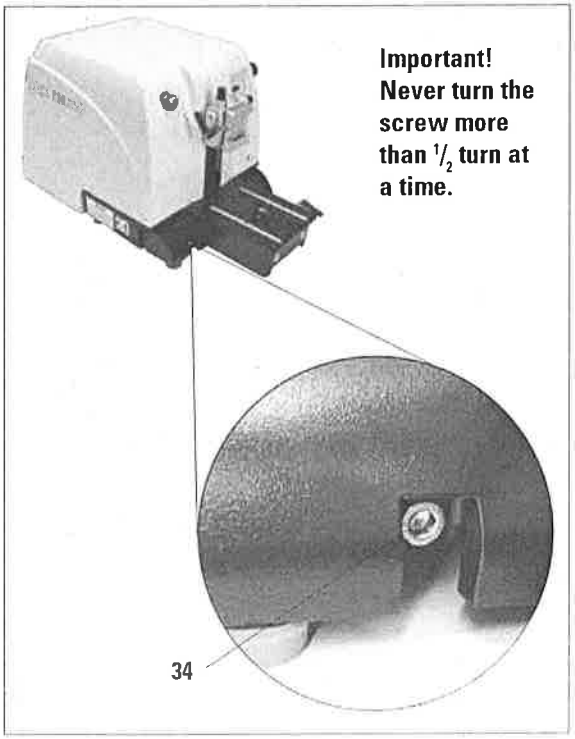

Fig. 22

Fine adjustment of the force balance

If another accessory of a different weight is mounted on the specimen head (**33**), you must check whether it is necessary to readjust the force balance.

Checking the correct setting:

- Attach the new accessory and clamp the specimen.
- Set the specimen head to half the height of the vertical travel range by turning the handwheel (Fig. 21).

If the specimen head remains in this exact position, the setting is correct.
If the specimen head moves, i.e. it is raised or lowered, fine adjustment is necessary.

Failure to adjust the force balance may result in injury while working.

The force balance is adjusted using the screw (**34**), which can be accessed by removing the section waste tray on the bottom of the base plate of the microtome. Use the Allen key provided, No. 5 (with handle) for the adjustment.

- If the specimen head moves **downwards**, turn the screw approx. 1/2 turn **clockwise**.
- If the specimen head moves **upwards**, turn the screw (**34**) approx. 1/2 turn **counterclockwise**.
- Continue this procedure until the specimen head no longer moves once released.

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5.2 Inserting the knife holder

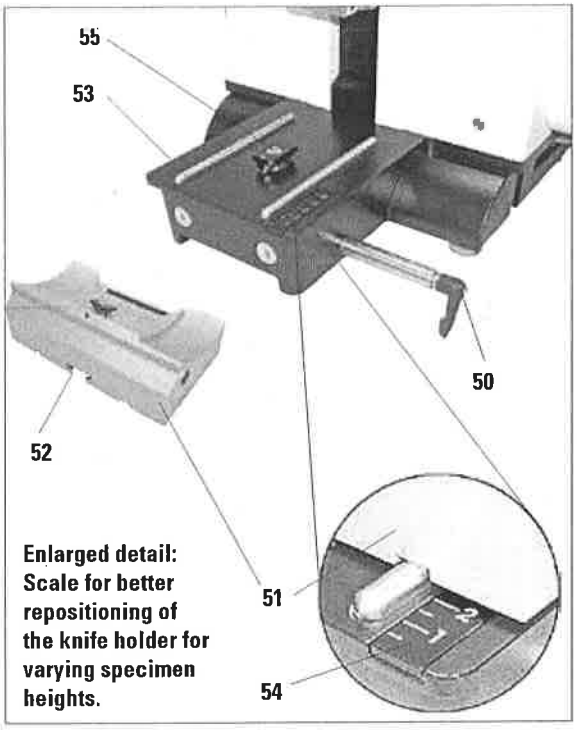


Fig. 23

Setting up the knife holder base

- Release the clamping lever (**50**) by rotating it counterclockwise.
- Insert the knife holder base (**51**) using the notch (**52**) on the bottom into the T-piece (**55**) of the microtome base plate (**53**).
- To secure the knife holder base, turn the clamping lever (**50**) clockwise.

The knife holder base (**51**) can be moved back and forth on the microtome base plate. This allows bringing the knife holder to optimal sectioning position in relation to the specimen.

There is a scale (**54**) on the right side of the microtome base plate. This enables faster and better positioning of the knife holder at the specimen if various combinations of standard specimens and specimen holders are used. The rear edge of the knife holder base (**51**) functions as the scale reference.

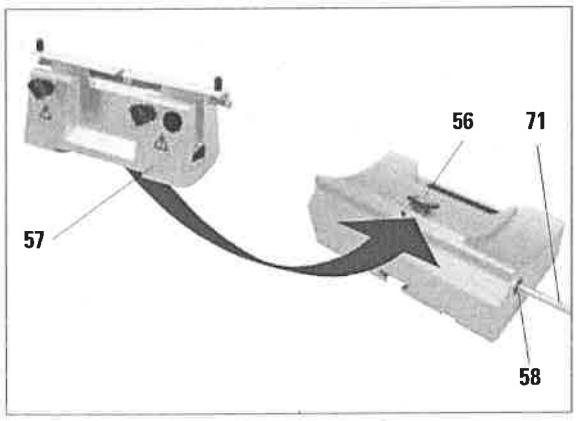


Fig. 24

Inserting the knife holder

- Undo the screw (**58**) with an Allen key, size 4 (included in the delivery).
- Place the knife holder (**57**) with the underside groove onto the T-piece (**56**) of the knife holder base (**51**).
- To clamp, retighten the screw (**58**).

5.3 Inserting the standard clamp

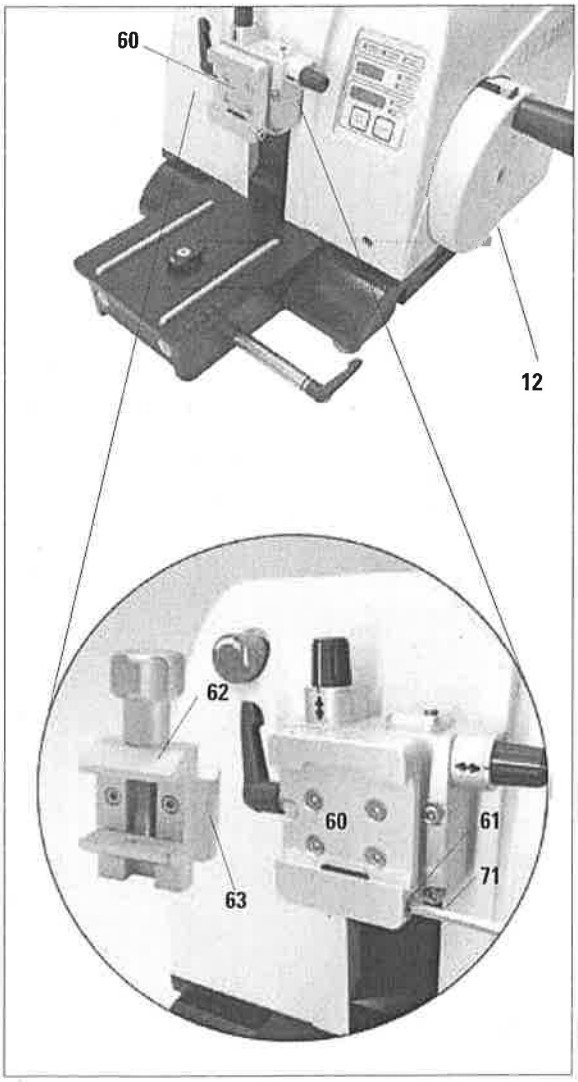


Fig. 25

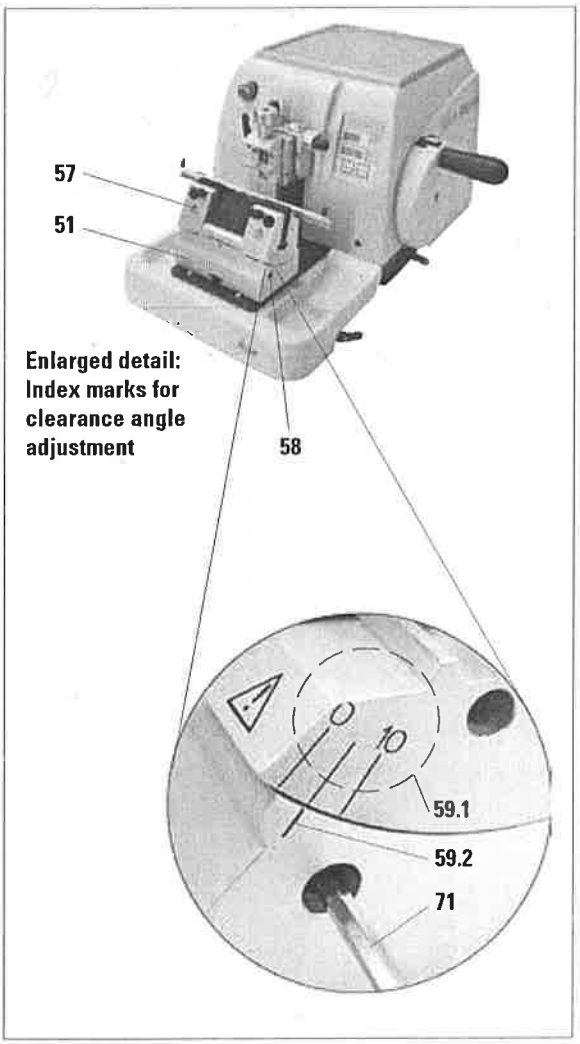
There are two versions of the specimen holder fixture, one with and one without specimen orientation, which are interchangeable.
The specimen orientation allows for simple position correction of the specimen surface when the specimen is clamped into place.

You can use the specimen holder fixture (**60**) to hold all available accessory specimen clamps (for additional information, refer to Chapter 6 "Optional Accessories").

To do so, proceed as follows:

- Move the specimen holder fixture (**60**) to the upper end position by turning the handwheel (**12**) and engage the handwheel lock.
- To release the clamping system, turn the screw (**61**) counterclockwise using an Allen key size 4 (**71**).
- Push the guide (**63**) of the standard clamp (**62**) from the left into the specimen holder fixture (**60**) as far as it will go.
- To clamp the specimen clamp, tighten the screw (**61**) in a clockwise direction using an Allen key size 4 (**71**).

5.4 Adjusting the clearance angle



Enlarged detail: Index marks for clearance angle adjustment

Fig. 26

- The index marks (0°, 5° and 10°) for adjustment of the clearance angle (**59.1**) are located on the right side of the knife holder (**57**).
- There is also an index mark (**59.2**) on the right side of the knife holder base (**51**) which serves as a reference point when adjusting the clearance angle.
- Loosen the screw (**58**) using an Allen key No. 4 (**71**) until the knife holder (**57**) can be moved.
- Move the knife holder until the index mark of the desired clearance angle coincides with the reference line on the knife holder base.

  Example:
  The enlarged detail illustration shows a clearance angle setting of 5°.

The recommended clearance angle setting for knife holder E is approx. 5°.

- Hold down the knife holder in this position and retighten the screw (**58**) for clamping.

5.5 Clamping the specimen

**Always clamp the specimen block BEFORE clamping the knife or the blade.
Lock the handwheel and cover the knife edge with the knife guard prior to any manipulation of knife or specimen, prior to changing the specimen block and during all work breaks!**

- Rotate the handwheel until the specimen clamp is in the uppermost position.
- Activate the handwheel lock by allowing the handwheel handle to lock in place and then activate the brake.
- Insert a specimen into the specimen clamp.

A detailed description for inserting the specimen into various specimen clamps and specimen holders is provided in Chapter 6 "Optional Accessories".

5.6 Clamping the knife / disposable blade

Take care when handling microtome knives and disposable blades. The cutting edge is extremely sharp and can cause serious injuries!

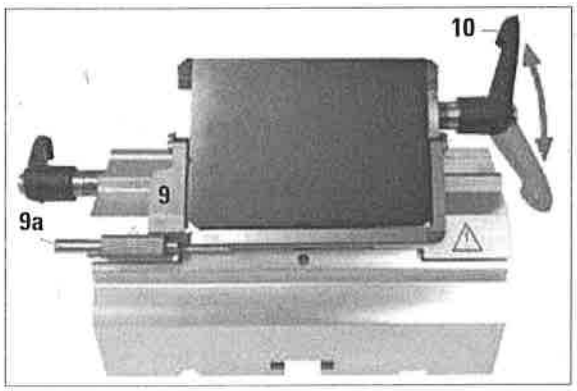


Fig. 27

- Fold knife guard (**9**) downward.
- To insert the blade, flip the right clamping lever (**10**) forward and down.

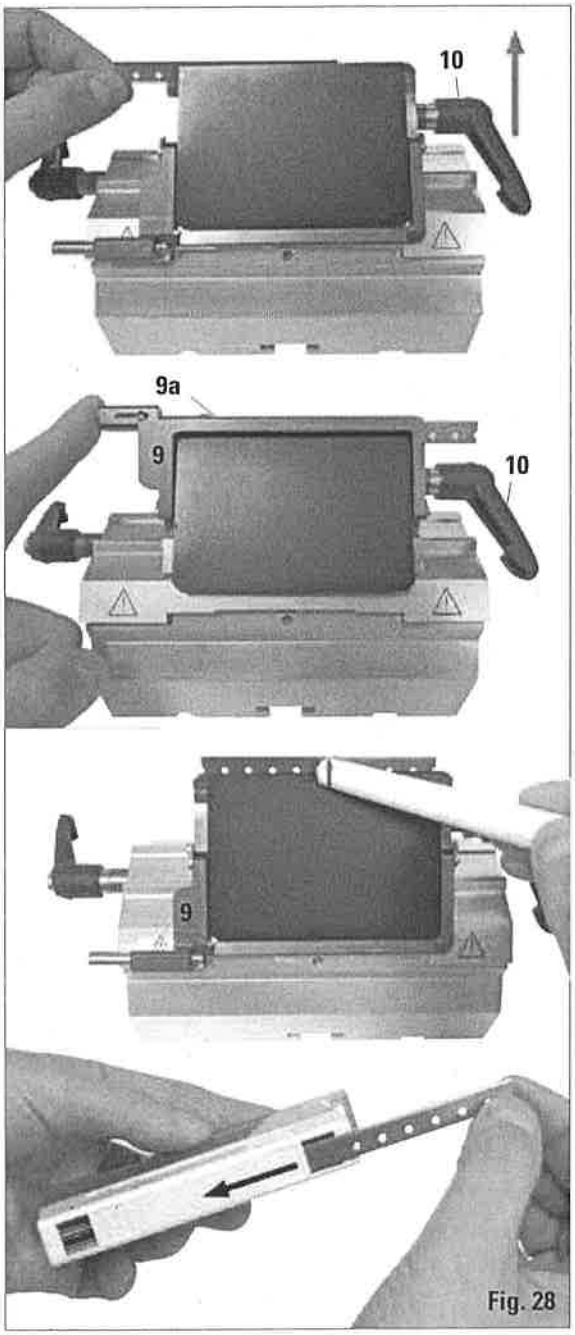


Fig. 28

- Carefully push in the blade from above or from the side. Make sure that the blade is clamped in the center and, most importantly, parallel to the upper edge of the pressure plate.
- To clamp the blade, rotate clamping lever (**10**) clockwise back upwards.

- To remove the blade, fold the clamping lever (**10**) downwards counterclockwise.

The ejector (**9a**) ensures safe blade changing.

Use the blade ejector to eject the blade!

- Another option for removing the blade is to use the brush with magnet.

  To do so, fold the clamping lever (**10**) downwards counterclockwise. Likewise, fold the knife guard (**9**) downward. Guide the brush with magnet to the blade and lift it upwards and out.

Once the blade has been removed from the blade holder, it is disposed of into the dispenser container (underside, see image).

5.7 Trimming the specimen

5.7.1 Trimming in manual operation

- Use the **TRIM/SECT** key to select the trim mode.
- Set the desired trim section thickness.
- Deactivate the handwheel lock and release the brake.
- In **TRIM** mode, use the coarse feed buttons to move the specimen against the knife/blade.
- Trim the specimen by turning the handwheel
  or
- Using the **CUT MODE** key, select the **ROCK** operating mode and cut the specimen with forward and backward motions of the handwheel.
- Terminate trimming when the desired sectioning surface and depth have been reached.

During fast manual trimming, do not put your fingers between the specimen and knife. The handwheel continues turning after it is released and can cause injuries.

5.7.2 Trimming in motorized operation

The handle of the handwheel must always be centered while in motorized sectioning mode.

- Use the **TRIM/SECT** key to select the trim mode.
- Set the desired trim section thickness.
- If necessary, set the sectioning window.

Always set the sectioning speed according to the hardness of the specimen! For hard specimens, always select a slow speed.

- Using the rotary knob, set the appropriate sectioning speed.
- Using the **CUT MODE** button, select the **CONT** operating mode (continuous stoke).
- Deactivate the handwheel lock and release the brake.
- Start motorized sectioning and trim the sample.
- Terminate trimming when the desired sectioning surface and depth have been reached.

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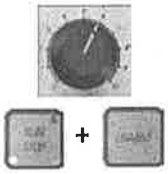
5.8 Sectioning

Always use a different area of the cutting edge for trimming and sectioning. To do so, laterally displace the blade or knife in the knife holder.
When using the knife holder E with lateral displacement, it is sufficient to move the knife holder sideways.

- Center the handle of the handwheel.
- Use the **TRIM/SECT** key to select the sectioning mode.
- Adjust the appropriate sectioning thickness or verify the selected value.
- Depending on the operation planned, use the **CUT MODE** key to select one of the motorized sectioning modes, **CONT**, **SINGLE** or **STEP**.

Always turn the handwheel evenly in clockwise direction; otherwise, the brake will not work properly.

Always set the sectioning speed according to the hardness of the specimen! For hard specimens, always select a slow speed.



- Check the sectioning speed setting and set an appropriate speed.
- Start motorized sectioning.
- Pick up the sections and mount them on microscope slides.

5.9 Changing the specimen or interrupting sectioning

Lock the handwheel and cover the knife edge with the knife guard prior to any manipulation of knife or specimen head, as well as prior to changing the specimen block and during all work breaks!

- Raise the specimen to the upper end position and activate the mechanical handwheel lock.
- Cover the sectioning edge with the knife guard.
- Remove the specimen from the specimen clamp and mount a new sample to continue.

- Before cutting into a new specimen, move the specimen head back to the rear end position.

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6.1 Assembly for fixture for specimen clamps

Depending upon the purchase order, the basic instrument is delivered with the directional or rigid fixture for specimen clamps which must be assembled first. All specimen clamps available as accessories can be used in both fixtures for specimen clamps.
Before assembling the fixture for specimen clamps, activate the mechanical handwheel lock!

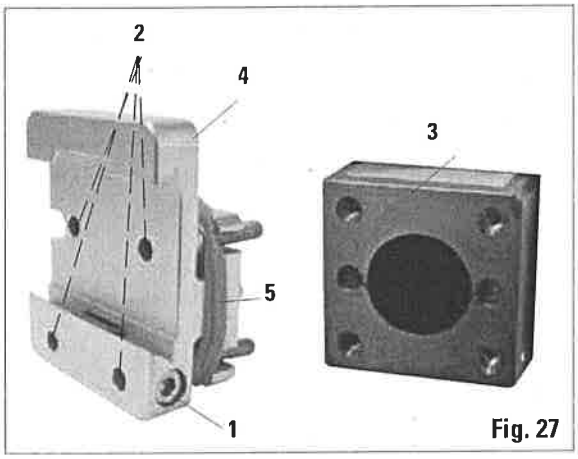

Fig. 27

6.1.1 Rigid fixture for specimen clamps

- Screw the rigid fixture for specimen clamps (**4**) onto the specimen head (**3**):
  Remove the screw (**1**), place the specimen holder fixture (**4**) onto the specimen head (**3**) from the front and tighten the screws (**2**) with an Allen key No. 3.
  Next, insert the screw (**1**) from the side and briefly tighten it with an Allen key No. 4.

Remove the rubber ring only after attaching the specimen head!

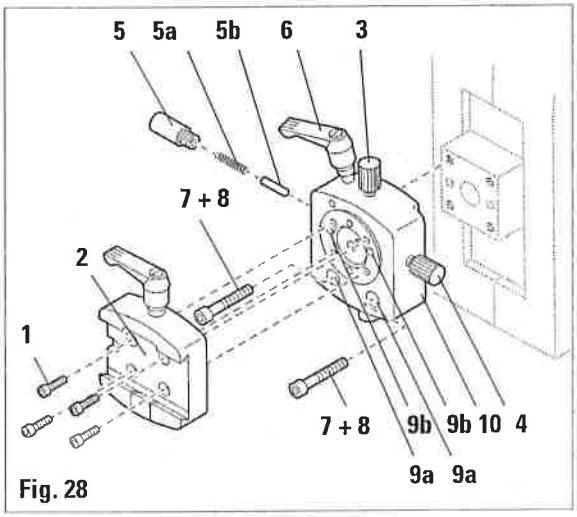

Fig. 28

- Finally, place the dovetail holder (**2**) and fasten by screwing in the 4 screws (**1**) using an Allen key No. 3.

6.1.2 Directional fixture for specimen clamps

- Loosen the eccentric bolt (**6**) by turning it counterclockwise.
- Completely unscrew the thrust piece (**5**) with a flat-tip screwdriver and pull it out with spring (**5a**) and pin (**5b**).
- Completely unscrew the setscrews (**3**) and (**4**).
- Attach the directional fixture for specimen clamps as shown.
- Insert the screws (**7+8**) in the bore (2 screws (**8**) are accessible through the bore (**9a**) and evenly screw them in using an Allen key No. 3.
- Insert the spring (**5a**) and pin (**5b**) with the flatter side into the thrust piece (**5**). Completely screw in the thrust piece with a flat-tip screwdriver.
- Completely screw in the setscrews (**3+4**).

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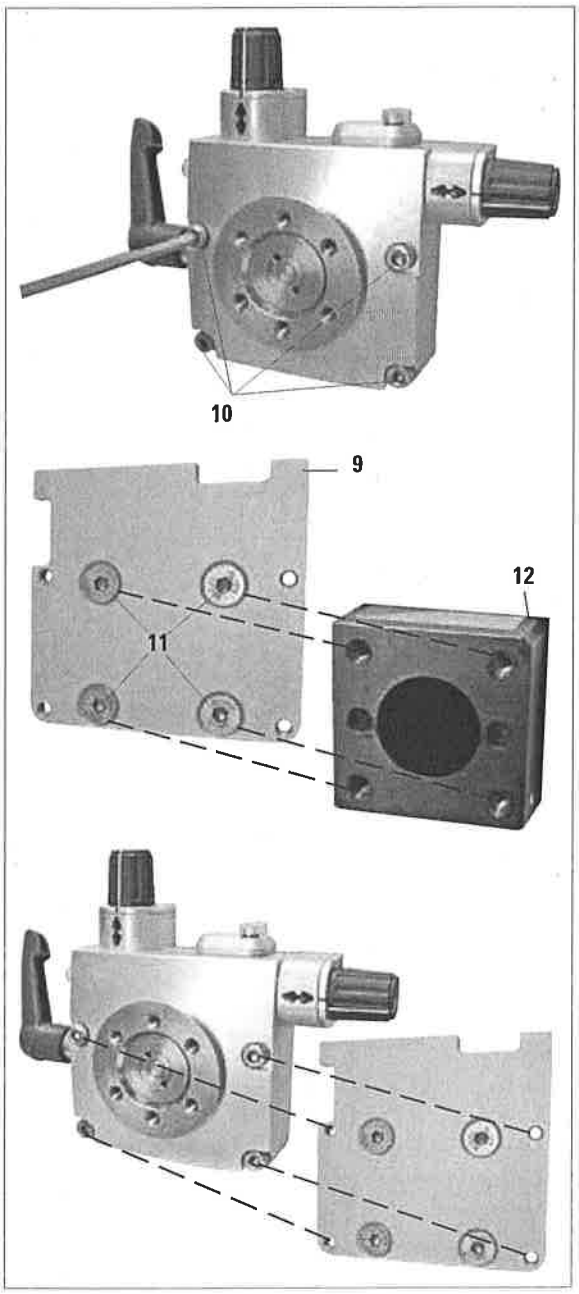

Fig. 29

6.1.3 Fine-directional fixture for specimen clamps

- Before the fine-directional fixture for specimen clamps can be mounted, loosen 4 screws (**10**) (Allen key No. 3) and carefully remove the fixture for specimen clamps from the baseplate (**9**).

- Using the 4 supplied screws (**11**) and the Allen key No. 3, fasten the baseplate to the specimen head (**12**).

- Now, screw the fine-directional fixture for specimen clamps with the 4 screws (**10**) and the Allen key No. 3 onto the specimen head.

If the fine-directional fixture for specimen clamps is not used, retain the baseplate and 4 screws (11) together with the fine-directional fixture for specimen clamps!

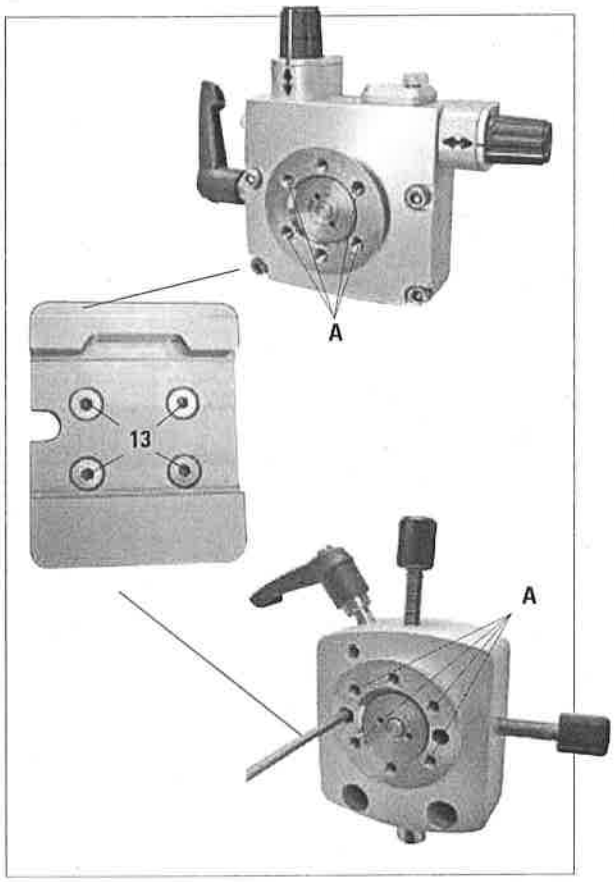

Fig. 30

6.1.4 Quick clamping system

It is used as a specimen holder for use with the fine-directional specimen holder fixture with zero point indicators or the directional specimen holder fixture.

- Screw the 4 screws (**13**) into bore **A** with an Allen key size 2.5 and tighten them.

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6.1.5 Super mega-cassette clamp

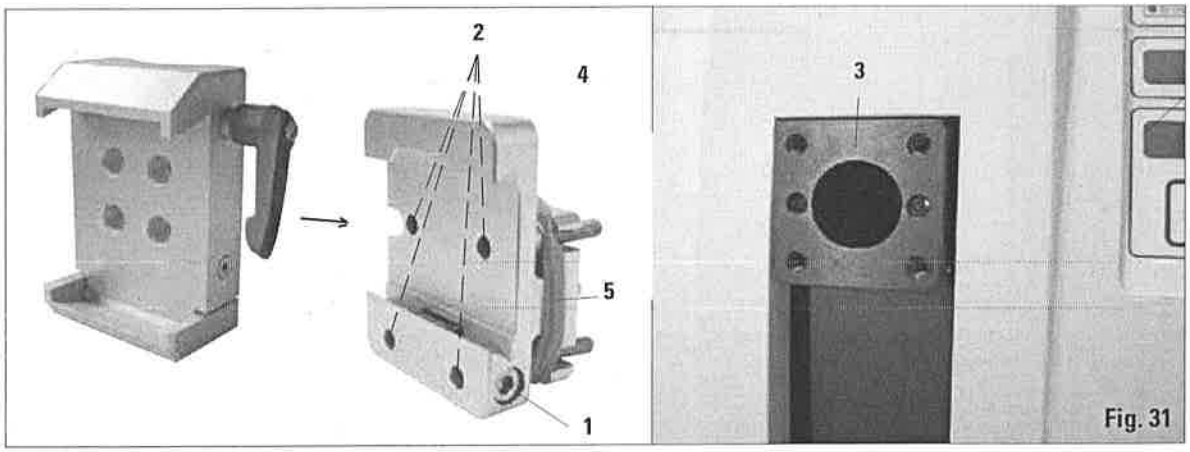

Fig. 31

Assembly of the super mega-cassette clamp

The super mega cassette clamp should preferably be used with the rigid fixture for specimen clamps.
To do so, proceed as follows:

Remove the rubber ring (5) only after having attached the cassette clamp on the specimen head!

- Screw the rigid fixture for specimen clamps (**4**) onto the specimen head (**3**):
  Remove the screw (**1**), place the specimen holder fixture (**4**) onto the specimen head (**3**) from the front and tighten the screws (**2**) with an Allen key No. 3.
  Next, insert the screw (**1**) from the side and briefly tighten it with an Allen key No. 4.
- Insert the super mega-cassette clamp from the side on the left into the dovetail guide of the rigid fixture for specimen clamps and tighten screw (**1**).

If the directional fixture for specimen clamps is used with the rigid knife holder base, the orientation must be in position "0" and the cover for backlighting illumination must be detached. (Danger of collision if not observed!)
NEVER use the super mega-cassette clamp with backlighting illumination!

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6.2 Specimen clamps and holders

All specimen clamps available as accessories can be integrated into either the directional or non-directional specimen holder fixture.

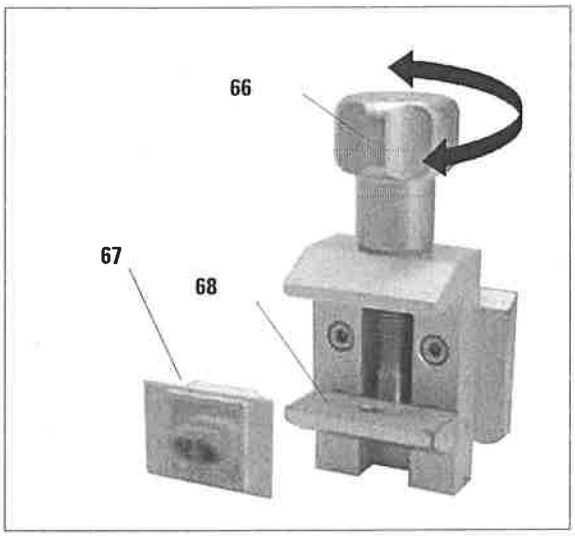

Fig. 32

6.2.1 Standard specimen clamp

The standard specimen clamp is available in two sizes: 40 x 40 mm and 50 x 55 mm.
They are designed for direct clamping of rectangular blocks. In addition, they accommodate the foil clamps.

- Turn the knurled screw (**66**) counterclockwise to move the movable jaw (**68**) downward.
- Mount the specimen (**67**) as required.
- Turn the knurled screw (**66**) clockwise to move the movable jaw upward against the fixed jaw to securely clamp the sample.

When clamping cassettes, make sure that they are not clamped too tightly, since the cassette bodies can bend and result in sections that are too thick or thin, or the entire specimen may fall out and become damaged.

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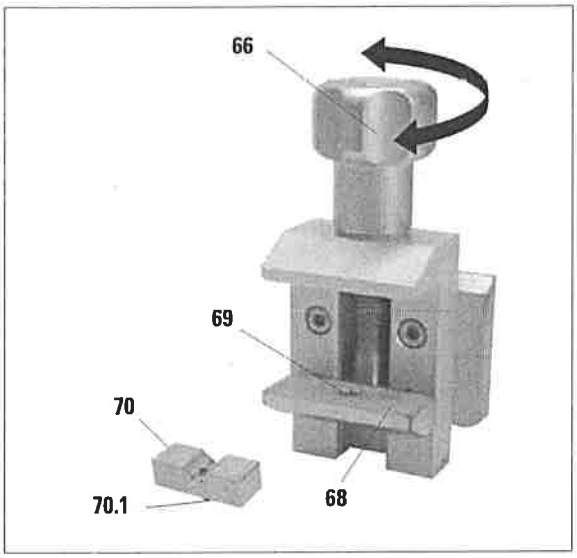

Fig. 33

6.2.2 Vee insert

The vee insert (**70**) is mounted in the hole provided in the lower movable jaw of the standard specimen clamp.
This makes it possible to clamp round specimens in the standard specimen clamp.

- Turn the knurled screw (**66**) counterclockwise to move the movable jaw (**68**) downward.
- Insert the pin (**70.1**) of the vee insert (**70**) in the hole (**69**) of the lower jaw (**68**).
- Mount the specimen as required.
- Turn the knurled screw (**66**) clockwise to move the movable jaw with the vee insert upward against the fixed jaw to securely clamp the sample.

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6.2.3 Foil clamp type 1

The foil clamp type 1 is appropriate both for clamping very small and thin foil pieces and flat, angular specimens. It is mounted in the standard specimen clamp.

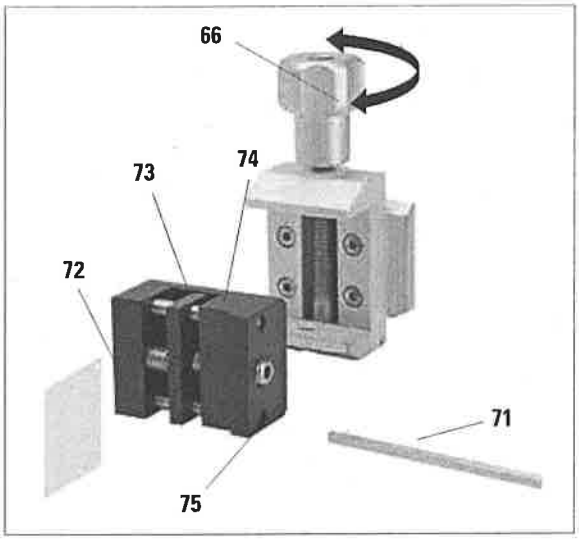


Fig. 34

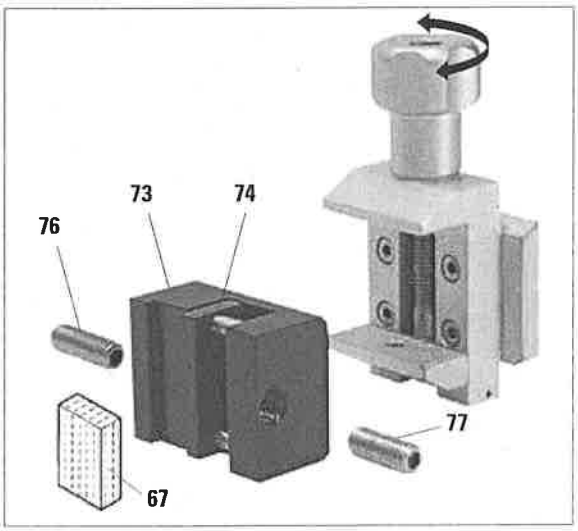


Fig. 35

Clamping of foil pieces

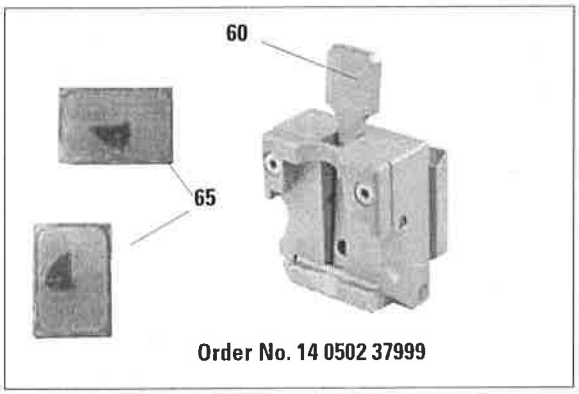
- Move the movable jaw (**74**) to the right as required by turning the setscrew with an Allen key No. 4 (**71**).
- Place the foil (**72**) between the movable jaw (**74**) and the fixed jaw (**73**).
- To clamp the foil, screw the movable jaw (**74**) against the fixed jaw (**73**) by using the Allen key.
- Insert the foil clamp (**75**) in the standard specimen clamp as shown.
- Turn the knurled screw (**66**) clockwise to clamp the foil clamp in the standard specimen clamp.

Clamping of flat, angular specimens

To clamp angular specimens, replace the long setscrew (**76**) with the short setscrew (**77**) provided with the foil clamp.

- Unscrew the long setscrew (**76**) to the left with an Allen key No. 4 (**71**).
- Screw the short setscrew (**77**) in the hole.
- Place the sample (**67**) between the movable jaw (**74**) and the fixed jaw (**73**).
- To clamp the sample, screw the movable jaw (**74**) by turning the setscrew (**77**) against the fixed jaw (**73**).
- Insert the foil clamp in the standard specimen clamp as shown.
- Turn the knurled screw (**66**) clockwise to clamp the foil clamp in the standard specimen clamp.

6.2.4 Universal cassette clamp



Order No. 14 0502 37999

Fig. 36

Prior to sectioning, laboratory personnel MUST check that the cassette is seated securely in the universal cassette clamp.

- Push the lever (**60**) forwards.
- Mount the cassette (**65**) horizontally or vertically as required.
- To clamp the cassette, release the lever (**60**).

Leica / Surgipath cassettes with minimum dimensions of 39.8 x 28 mm and maximum dimensions of 40.9 x 28.8 mm may be clamped in the universal cassette clamp (UCC) horizontally as well as vertically.

When using other – particularly thin-walled – cassettes, the cassette may become deformed or other problems may arise with the clamping system. If the user tries clamping the cassette and realizes that it is not securely clamped into place, an alternative tensioning clamp must be used.

When using cassettes whose lid is molded on, make sure that the broken edge left by removing the lid does not prevent the specimen from being securely clamped – if necessary, the specimen must be clamped horizontally.

Before clamping the cassette into the universal cassette clamp, remove excess wax on the outside of the cassette to ensure that the cassette clamps in securely.

Wax deposits on the outside of the cassette can make the universal cassette clamp dirty. The dirt prevents the cassette from clamping in securely and can lead to sections being too thick or thin, chattering within the section and, in the worst-case scenario, damage to the specimen. Prior to sectioning, the user has to verify that the specimen is clamped securely and, if necessary, remove wax deposits from the universal cassette clamp according to the specifications in Chapter 8.1 "Cleaning and maintenance – Universal cassette clamp".

6.2.5 Holder for round specimens

The holder for round specimens is designed to accommodate cylindrical specimens. Inserts for specimens of 6, 15 and 25 mm diameter are available.

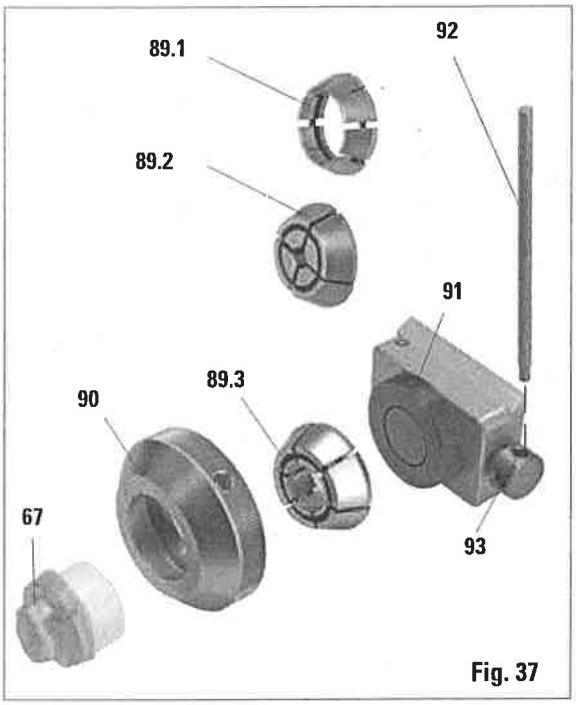


Fig. 37

- To mount the required insert (**89.1-3**) turn the clamping ring (**90**) counterclockwise and remove.
- Place the required insert into the tension ring (**90**) and screw the tension ring onto the thread (**91**) by turning it clockwise.
- Mount the specimen (**67**) and clamp it by turning the clamping ring (**90**) clockwise.
- To orient the inserted specimen, insert the pin (**92**) into the bore (**93**) and rotate it counterclockwise to release the clamp. You can now rotate the specimen so that the side you want faces upwards.
- To lock it in the position you have chosen, tighten the pin (**92**) by turning it clockwise.

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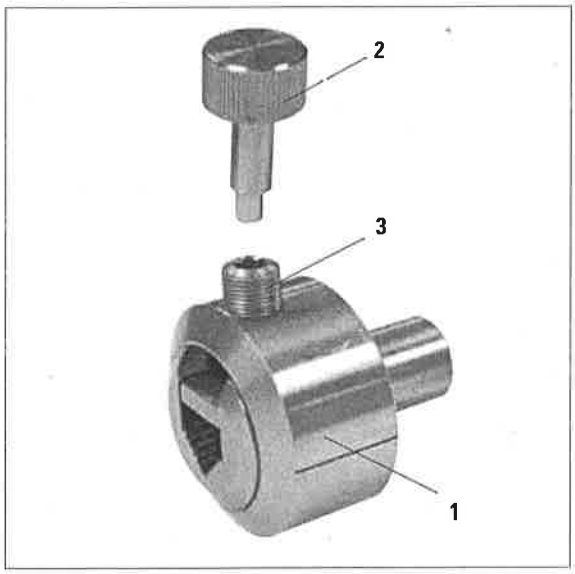

Fig. 38

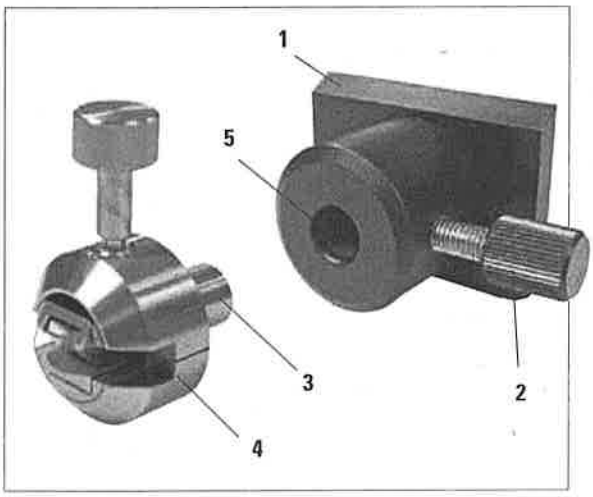

Fig. 39

6.2.6 Specimen holders

The specimen holders are especially intended for small specimens. They are available in two models: as an EM flat specimen holder (Fig. 41, **4**) and an EM universal specimen holder (Fig. 40, **1**).

You can insert either specimen holder into the segment arc or the specimen holder fixture.

Clamping the specimens

- Insert the special key (**2**) into the clamping screw (**3**) of the specimen holder and open the clamping chucks of the specimen holder by turning the special wrench.
- Insert the specimen.
- Clamp the specimen by turning the special wrench.

6.2.7 Specimen holder fixture

The specimen holder fixture (**1**) is inserted into the dovetail fixture in the same way as a specimen clamp.

- Open the knurled screw (**2**) by turning it counterclockwise.
- Insert the pin (**3**) of the specimen holder (**4**) into the hole (**5**).
- Turn the knurled screw (**2**) clockwise to clamp the specimen holder.

If the backlighting illumination is used, ensure that the clamping screw is pointing up.

6.3 Knife holder base and knife holder

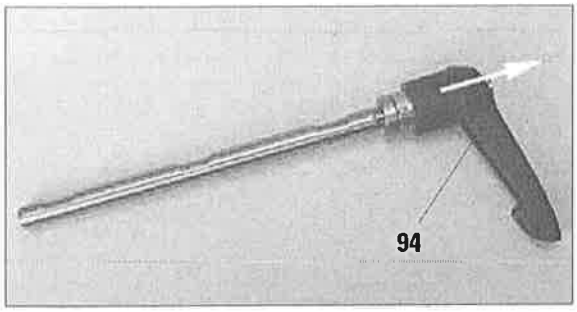

Fig. 40

The plastic handles of all clamping levers on the instrument and knife holders can be moved to the position that is most convenient for each user.

Pull the grip (**94**) out of the lever, hold it in this position, and rotate it to the desired position. It will then lock automatically when released.

6.3.1 Knife holder base, without lateral displacement feature

Fig. 41

Repositioning the knife holder base

The one-piece knife holder base (rigid) (**51**) can be moved forwards and backwards on the microtome base plate.

This vertical displacement allows bringing the knife holder into the optimal cutting position in relation to the specimen.

- To release, rotate the clamping lever (**50**) on the right side of the microtome base plate counterclockwise.
- Reposition the knife holder together with the knife holder base forward or backward as appropriate.
- Secure the clamping mechanism by rotating the lever (**50**) clockwise.

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6.3.2 Knife holder E/E-TC

The knife holder E-TC is designed for the Leica TC-65 tungsten carbide blades.

Prior to inserting the blade, both knife holder and knife holder base must have been installed on the instrument!

Knife holder E-TC

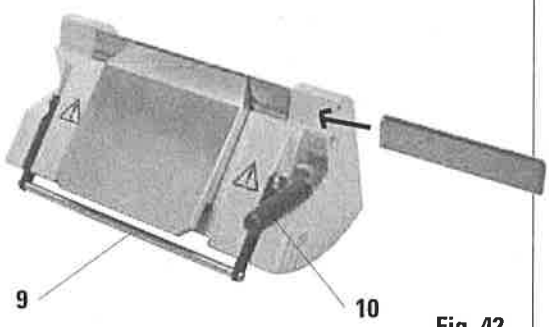

Fig. 42

Inserting the blade, knife holder E and E-TC

- Fold knife guard (**9**) downward.
- To insert the blade, flip the right clamping lever (**10**) forward and down.
- Carefully insert the blade from the side. Make sure that the blade is clamped parallel to the upper edge of the pressure plate.
- To clamp the blade, rotate clamping lever (**10**) back upwards.

The knife holder E is designed for conventional disposable blades from all current manufacturers. It is available in two models: one for low-profile blades and one for high-profile blades. The knife holder has a lateral movement, so that the entire width of the blade can be used. It is also equipped with a blade ejector (9a).

Knife holder E

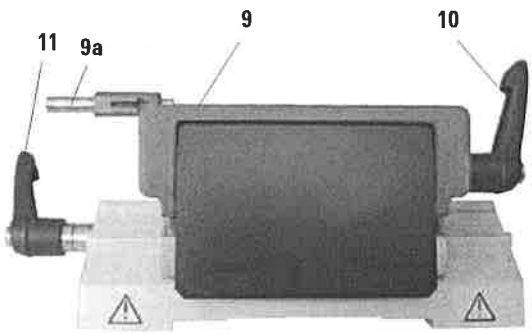

Fig. 43

The clamping levers on the knife holder are not interchangeable. The two clamping levers (10, 11) must remain in the position shown at all times, as otherwise isolated malfunctions of the knife holder can occur.
Clamping lever for the blade (10) at the right, clamping lever for the lateral displacement (11) at the left.

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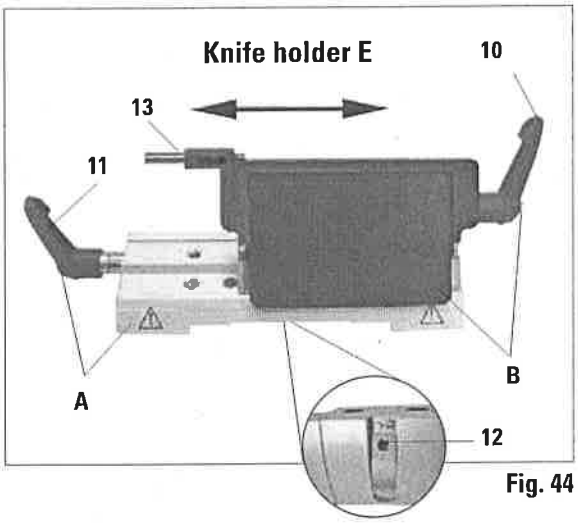

Fig. 44

Lateral displacement (only for knife holder E)
The lateral displacement feature of the knife holder base enables the use of the entire length of the blade, eliminating the need for readjusting the knife holder. The knife holder E consists of a segment arch **A** (with lever (**11**)) and the clamp mount **B** (with lever (**10**) and ejector (**13**)).
The extreme left and right positions as well as the middle position are each marked with a click stop.

- To release the clamp, rotate the lever (**11**) on the left side of the knife holder forwards.
- Move the knife holder sideways.
- To clamp, rotate the lever (**11**) back.

Note on the knife holder E:

The knife holder E is an important precision component, the quality and precise adjustment of which have a lasting effect on the entire function of the microtome. In case of malfunctions or damages to the clamp mount, it is always required to replace the clamp mount, including the pertinent clamping lever.
Leica Biosystems offers special prices for new clamp mounts in case of damages to the clamp mount after the warranty has expired.
In this way, perfect function of the device can be ensured over the course of many years.

Setting of the clamping system of the clamp mount on the segment arch

To ensure a proper sectioning result, clamp mount **B** must be securely clamped onto segment arch **A**.
The clamping is carried out using an eccentric at the lever (**11**). The clamping force is adjusted with the setscrew (**12**) on the underside of the segment arch. The setting of the clamping is carried out so that the clamping lever can be rotated to the stop with constantly increasing resistance.

Adjust the clamping with a 2.5 mm Allen key at the setscrew (**12**) so that the lever initially "slips" when the lever is activated. Continue turning the grubscrew (**12**) a little bit (approx.$^1/_4$ turn to the left or right), then check that the lever no longer "bars", but also does not jam "heavily".
(The language CD features a short video film for this purpose.)

Knife holder E with a water trough for low-profile blade

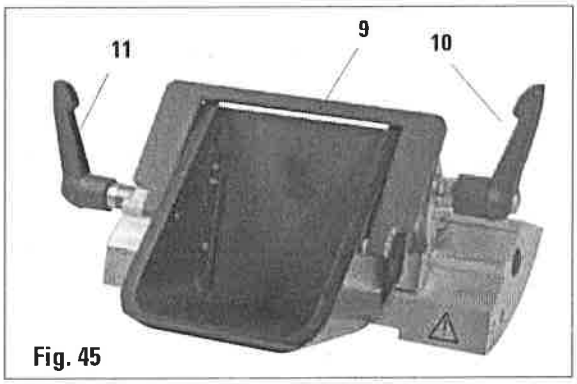

Fig. 45

The knife holder E with a water trough is for low-profile blades.

The knife guard on knife holder E consists of a red foldaway handle (**9**). To cover the cutting edge, fold the knife guard handle (**9**) upwards as illustrated in the figure.

The clamping levers on the knife holder are not interchangeable. The two clamping levers (10 and 11) must remain in the position shown at all times, as otherwise isolated malfunctions of the knife holder can occur.
Clamping lever for the blade (10) at the right, clamping lever for the lateral displacement (11) at the left.

Use

Floating thin paraffin sections (for example, for subsequent immunostaining procedures) on the surface of the water. Flat paraffin sections can be removed from the surface of the water using glass slides.

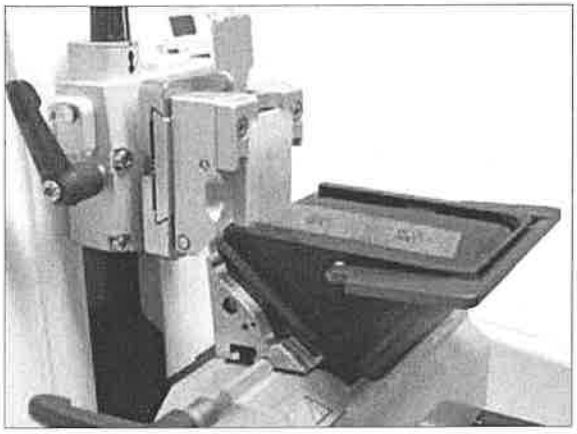
Fig. 46

The vessel is filled with water up to the blade. After trimming, remove the section waste from the tray and create the sections to be prepared. The sections floating on the surface of the water can be removed using the glass slide.

6.3.3 Knife holder N/NZ

The knife holders N and NZ are appropriate for standard steel and tungsten carbide knives, profile c and d, up to 16 cm long. The integrated height adjustment feature allows you to also use knives that have been resharpened numerous times.

Mounting the knife support bar

- Push knife guard (**8**) to the center.
- Set the knife support bar (**46**) onto the height adjustment screws (not visible) in the position shown. The flat ends of the height adjustment screws must be located in the slots at each end of the knife support bar.

Prior to inserting the knife, both knife holder and knife holder base must have been installed on the instrument!

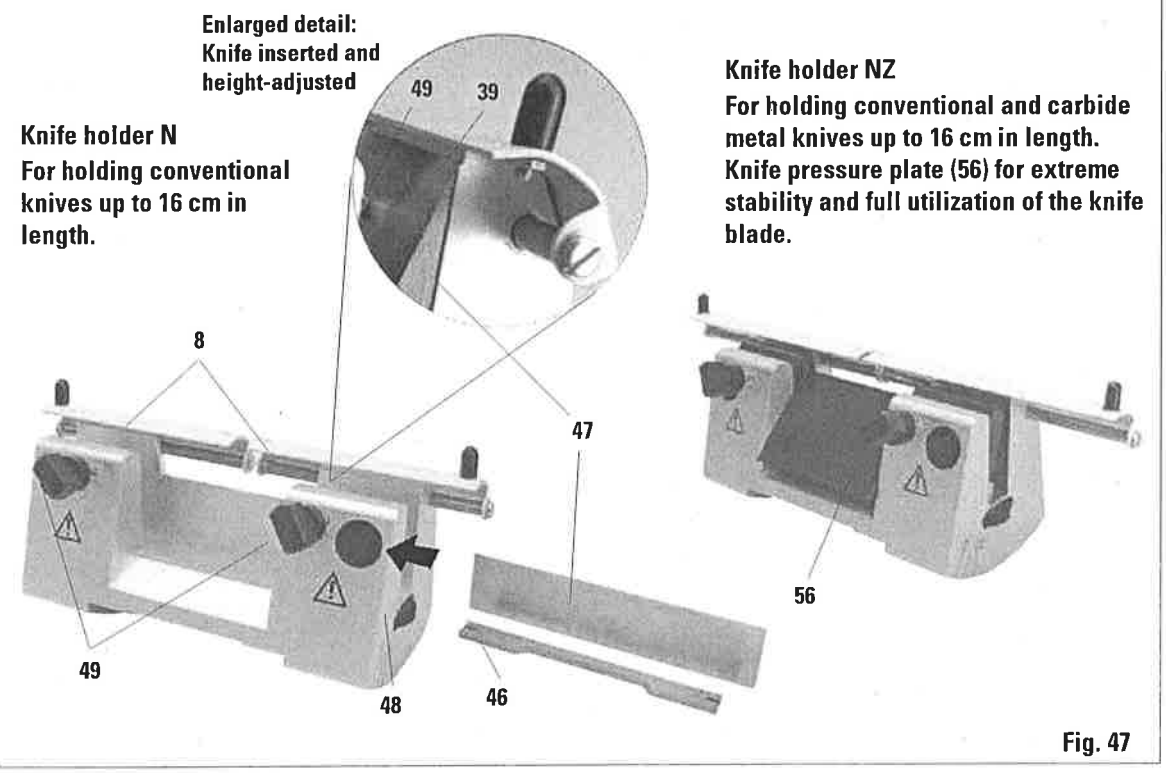

Fig. 47

Inserting the knife

- Rotate the knurled nuts (**48**) on the right and left of the knife holder forward in opposite directions, lowering the knife support bar to the lowest possible position, thus ensuring that the knife edge will not be damaged when inserting the knife.
- Unscrew the clamping screws (**49**) as far out as possible (rotate counterclockwise).
- Hold the knife (**47**) at the knife base and carefully insert it in the holder from the side as shown with the cutting edge facing upward.

Knife height adjustment

When adjusting the clearance angle, the knife edge should be positioned as exactly as possible in the actual center of rotation of the knife holder. The lay-on edge (**39**) of the rear clamping chucks serves as a reference position for correct knife height adjustment. The knife edge should be parallel with the locating edges.

- Rotate the knurled nuts (**48**) uniformly and backwards until the knife blade is parallel to the lay-on edge (**39**) (see detailed illustration) of the rear clamping chucks.
- To clamp the knife (**47**) evenly screw the two knife clamping screws (**49**) inward (rotate clockwise).

Lateral repositioning of the knife

- Push knife guard (**8**) to the center.
- Loosen the clamping screws (**49**) by turning them counterclockwise.
- Push the knife (**47**) to the left or right as required.
- To clamp the knife (**47**), always tighten the clamping screw (**49**) first which is located on the side to which the knife has been repositioned by turning it clockwise.

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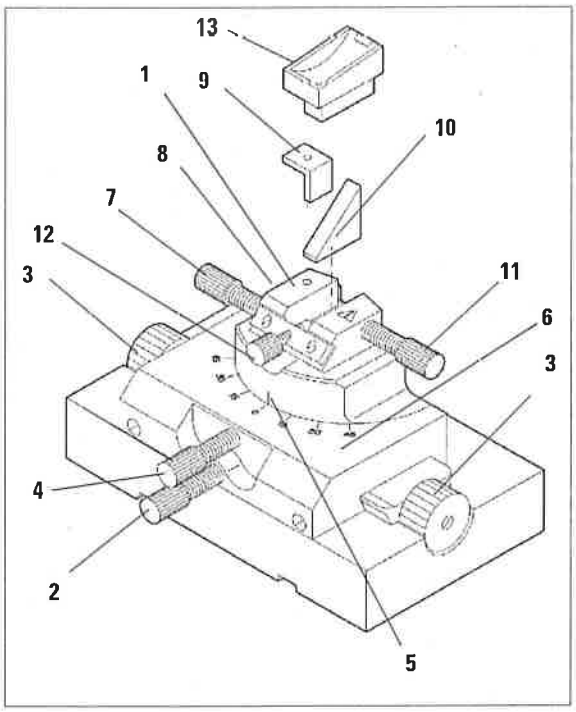

Fig. 48

Rotating the upper part by 45°

- Loosen the screw (**4**).
- Set the index mark (**5**) of the upper part to the desired value on the scale (**6**).
- Retighten the screw (**4**).

Adjusting the clearance angle

- Loosen the screw (**7**).
- Using the clearance angle scale to the left of the insert (**8**, not visible here), move the insert (**1**) to the desired value.
- Retighten the screw (**7**).

6.3.4 Knife holder GD

The knife holder GD is designed for glass and diamond knives. It is delivered with its own base and thus cannot be used with the universal knife holder base.

The knife holder GD is attached to the baseplate and clamped like the universal knife holder base. Several adjustments options are provided for this knife holder. The entire insert (**1**) can be removed and exchanged for other inserts.

East/west movement

- Loosen the screw (**2**).
- To move the upper part towards the right, turn the rotary knobs (**3**) clockwise; to move it towards the left, turn them counterclockwise.
- Retighten the screw (**2**).

Insert for triangular glass knives

The insert for triangular glass knives (**10**) is designed for glass knives with a width from 6 to 12 mm. The angle insert (**9**) is used in combination with 6 mm wide knives.

- Loosen the screw (**11**).
- Insert the angle insert (**9**) as shown.
- Insert the glass knife (**10**) as shown and clamp it with the screw (**11**).
- To stabilize the knife when sectioning, gently tighten the screw (**12**).

Inserting diamond knives

The insert (**1**) can also be used for diamond knives with a water bath (**13**).

- Loosen the screw (**11**).
- Insert the diamond knife (**13**) as shown and clamp it with the screw (**11**).
- Gently tighten the screw (**12**).

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6.4 Blades/knives

6.4.1 Disposable blades

Fig. 49

Disposable blades - low profile (819)

80 x 8 x 0.25 mm

01 package of 50 pcs. 14 0358 38925

10 packages of 50 pcs. 14 0358 38382

Fig. 50

Disposable blades - high-profile (818)

80 x 14 x 0.35 mm

01 package of 50 pcs. 14 0358 38926

10 packages of 50 pcs. 14 0358 38383

6.4.2 Knife

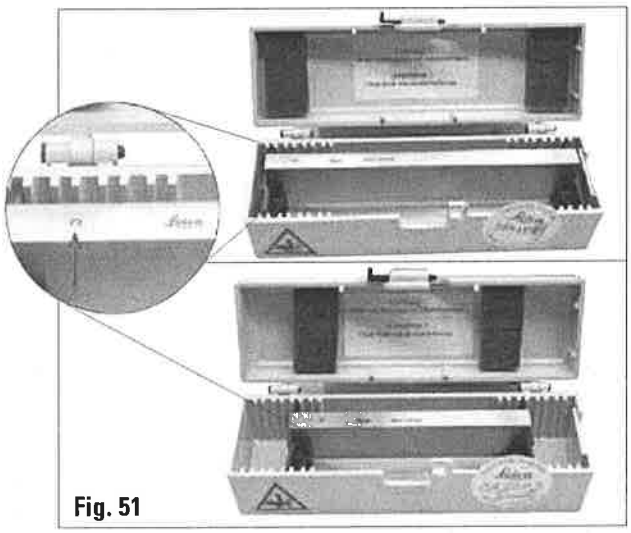

Fig. 51

Knife 16 cm - profile c - steel

Knife, 16 cm long, profile c (ground on both sides, for paraffin and frozen sections)

Note: Knife case 14 0213 11140 included

Order No. 14 0216 07100

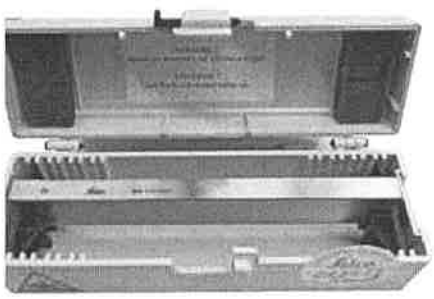

Fig. 52

Knife 16 cm, profile d - steel

Knife, 16 cm long, profile d
Note: Knife case 14 0213 11140 included
Order No. 14 0216 07132

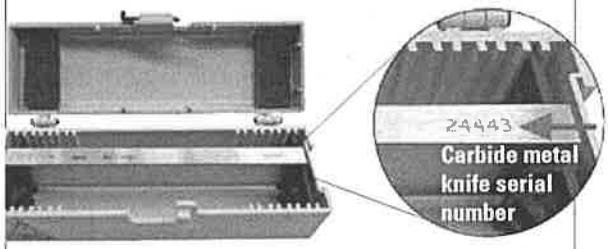

Fig. 53

Knife, 16 cm, profile d, tungsten carbide

Knife, 16 cm long, tungsten carbide, profile d
Note: Knife case 14 0213 11140 included
Order No. 14 0216 04813

Knife 16 cm, profile c, tungsten carbide

Knife, 16 cm, tungsten carbide, profile c
Note: Knife case 14 0213 11140 included
Order No. 14 0216 04206

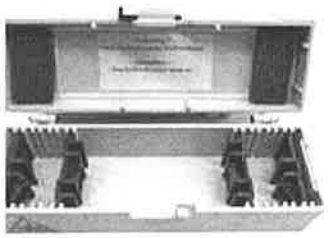

Fig. 54

Knife case

Variable knife case (plastic),
for 1 or 2 knives: 10 - 16 cm long
(Carbide metal or SM2500 knife: only for 1 knife!)
Order No. 14 0213 11140

6.5 Section waste tray

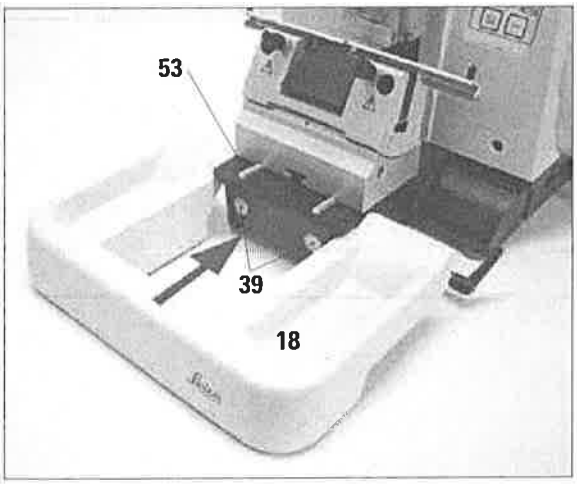

Fig. 55

- Push the section waste tray (**18**) from the front to the microtome base plate (**53**) until it is held in place by the two magnets (**39**) (on the front of the microtome base plate).
  To remove the section waste tray, lift it slightly and pull it off towards the back.

6.6 Backlighting

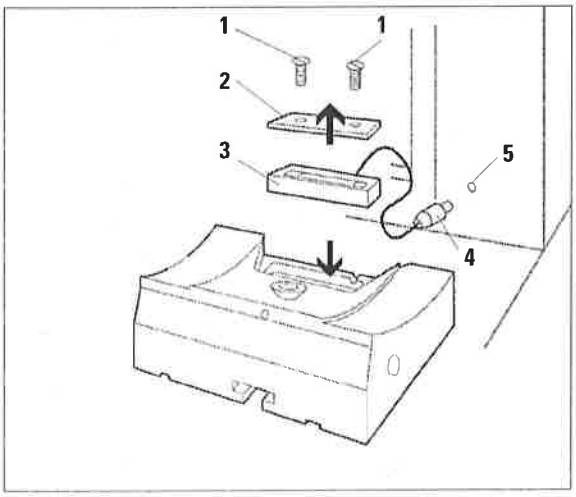

Fig. 56

The backlighting is inserted into the front of the one-piece knife holder base.

- Remove the two screws (**1**) using a slotted screwdriver and then remove the cover plate (**2**).
- Insert the backlighting (**3**) in the recess at the rear of the knife holder base.
- Connect the plug (**4**) of the backlighting to the socket (**5**) on the microtome.

The backlighting illuminates once the microtome is turned on with the power switch.

NEVER use the backlighting illumination with the super mega-cassette clamp!

6.7 Freezer pack

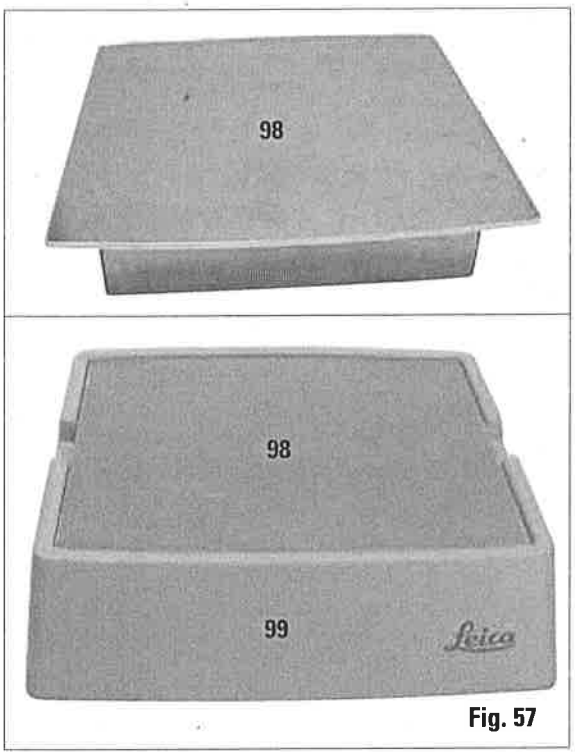

Fig. 57

The freezer pack consists of the freezer plate (**98**) and the insulation jacket (**99**). It is for cooling (or keeping cold) paraffin specimens. Up to 35 standard cassettes can be cooled at the same time. The specimens require approx. 20 min. for being cooled from room temperature (approx. 20 °C) to "sectioning temperature".
The cooling performance depends on the ambient temperature and the volume of the specimens being cooled.
The insulation jacket can be placed on the hood of the microtome in the same manner as the tray, or it can be placed next to the instrument.

- Remove the freezer plate from the insulation jacket and place it in a deep freezer, ideally overnight (but for at least six hours) at approx. -23 °C.
- Reassemble the freezer plate and insulation jacket and place them on the bench or the instrument.

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6.8 Universal microscope carrier

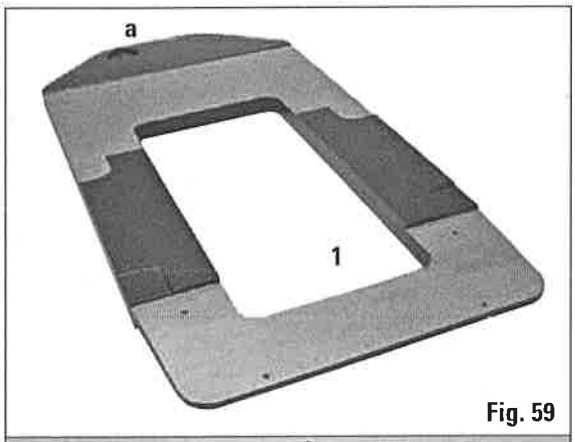

Fig. 59

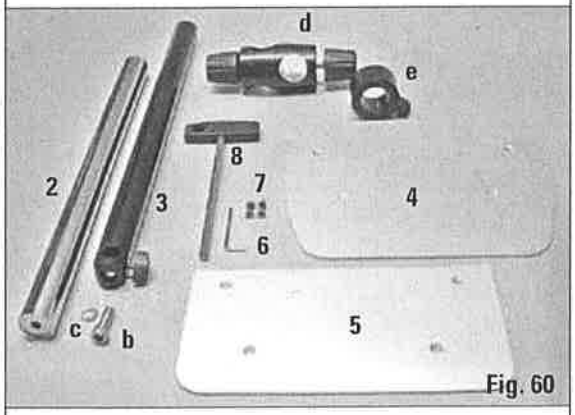

Fig. 60

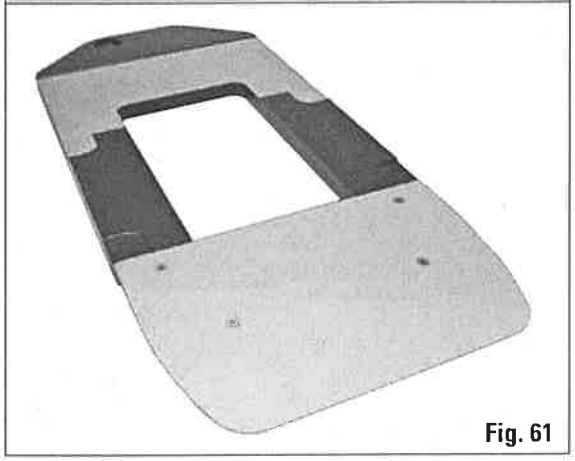

Fig. 61

Unpack all accessories in the package and check for completeness.

1 - Baseplate with drilling (a)
2 - Vertical column with size 8 cap screw (b) and lock washer (c)
3 - Horizontal arm with cross-member (d) and support ring (e)
4 - Support plate, large (for RM2235, RM2245 and RM2255)
5 - Support plate, small (for RM2265)
6 - Allen key, size 3
7 - 4 countersunk screws to install support plate
8 - Allen key, size 8

Assembling the universal microscope carrier

1. **Attach baseplate**

- Select the large (**5**) or small (**4**) support plate, depending on the microtome to be used.
- Attach the support plate to the baseplate with the included 4 countersunk screws (**7**) using the Allen key No. 3 (**6**).

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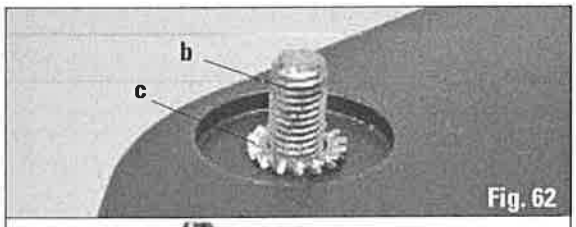


Fig. 62

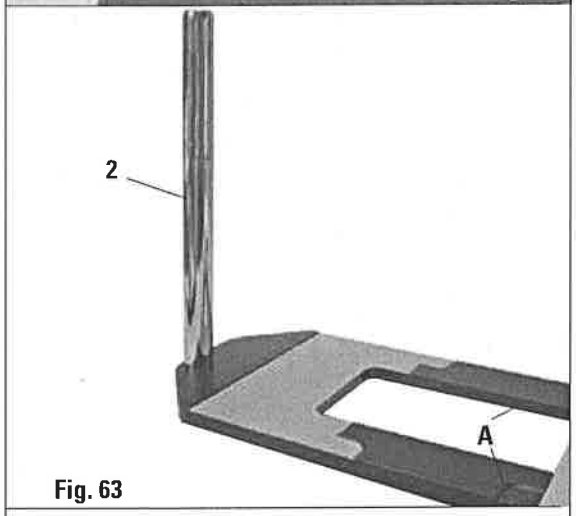


Fig. 63

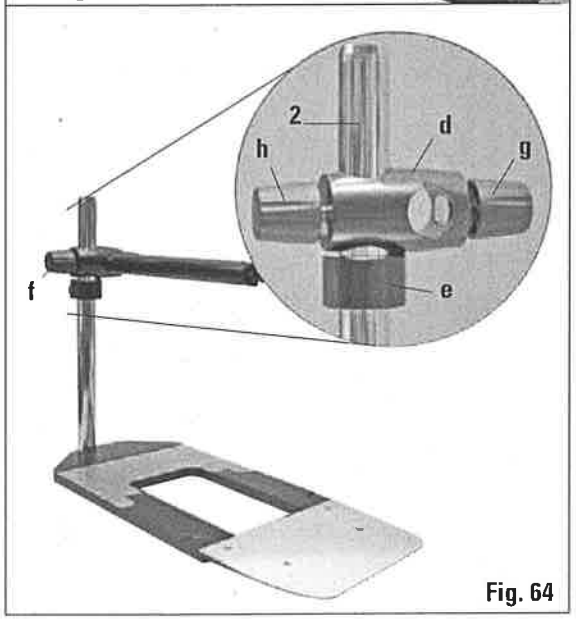


Fig. 64

2. Attach vertical column

- Insert the cap screw (**b**) into the hole of the baseplate from below. Place the lock washer (**c**) on the cap screw from above.
- Thread the silver vertical column (**2**) onto the baseplate from above and tighten with the Allen key size 8.

The lock washer must be positioned between the baseplate and vertical column to prevent unintentional turning of the column.

Extreme danger of tipping! After installing the vertical column, immediately place the microtome onto the baseplate so that the front feet of the microtome are positioned in the shallow recesses (A).

3. Attach horizontal arm

- Slide the support ring (**e**) onto the vertical column and position it so that the lock nut (**f**) is facing to the back. Tighten the lock nut.
- Slide the cross-member (**d**) onto the column. Ensure that the lock screw (**g**) is facing to the right of the baseplate. The horizontal arm must be centered over the microscope.
- Slide the horizontal arm (**3**), flat side facing the lock screw (**g**), into the cross-member (**d**) and tighten.

For more information on connecting and using the microscope, magnifying lens or cold-light source, please see the appropriate Instructions for Use.

6.9 Magnifying lens

Fig. 65

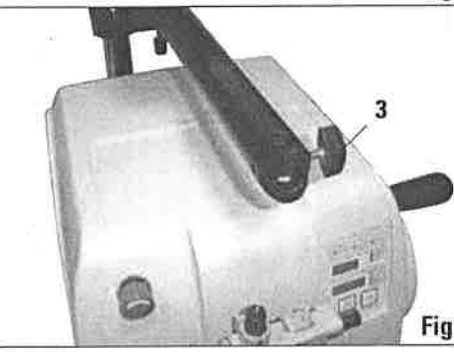


Fig. 66

Fig. 67

The magnifying lens provides a 2x magnification and can be used with all Leica 2200 series rotary microtomes.

- Open the screw (**3**) on the horizontal arm of the microscope carrier in a counterclockwise direction.
- Insert the silver connection piece (**1**) as far as it will go. Tighten the screw (**3**).
- The adapter (**2**) allows a fiber-optic light guide to be installed.

- The instrument illustrations in Fig. 70 and Fig. 71 are an example only.

- Adjust the position of the magnifying lens to the specimen being processed.

  The magnifying lens can be swiveled completely to the side if necessary.

Always protect the magnifier glass from exposure to direct sunlight! Exposure to sunlight may cause a burning glass effect. Danger of fire!

- Use the provided protective cap (**4**) to cover the magnifying lens.

6.10 Cold light source

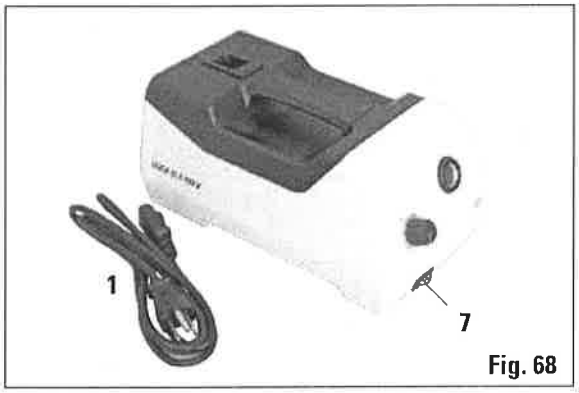


Fig. 68

6.11 Fiber-optic light guide

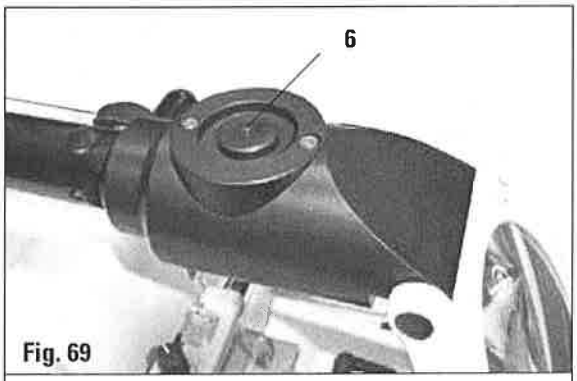


Fig. 69

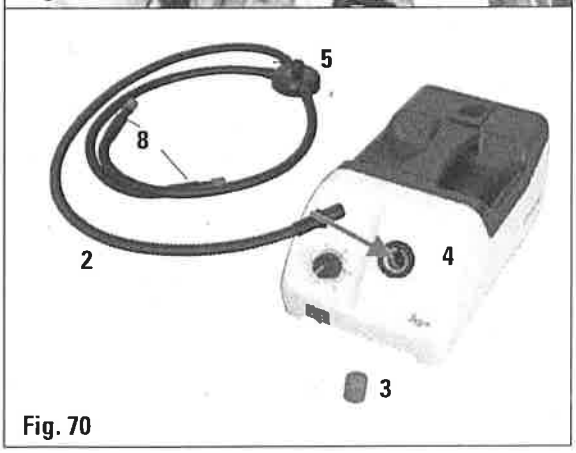


Fig. 70

The cold light source may be operated at the power supply voltage specified on the identification label (on the underside of the instrument) only.

- Connect the power cable (**1**) to the connecting jack on the rear of the device.
- Plug the power plug into the power socket.

Before use, carefully read the separately provided Instructions for Use!

- Attach the fiber-optic light guide (**2**) to the adapter of the magnifying lens and secure it in place in the bore (**6**) using the screw (**5**).
- Pull off the protective cap (**3**) from the end of the fiber-optic light guide and keep it in a safe place.
- Insert this end into the opening provided (**4**) until it engages with a slight click.
- Switch on the Cold light source using the power switch (**7**).
- Remove the protective caps (**8**) and align the light guide with the specimen.

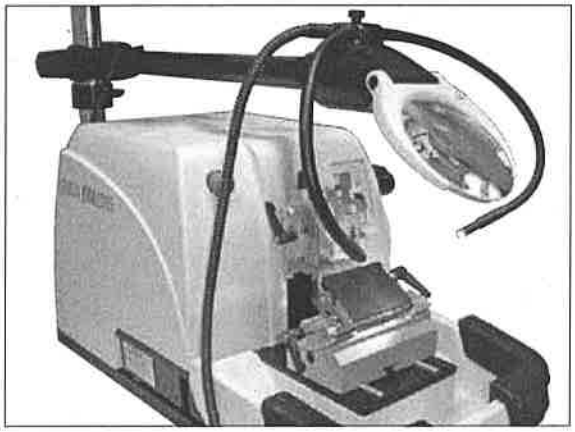


Fig 71, Leica rotary microtome with installed optional accessories: Magnifier and fiber-optic light guide

6.12 Ordering information

Fixture for specimen clamps, rigid, silver	14 0502 38160
Fixture for specimen clamps, directional, silver	14 0502 38949
Fixture for specimen clamps, directional, with 2 zero point indicators, silver	14 0502 37717
Quick clamping system, complete	14 0502 37718
Knife holder-base rigid, silver	14 0502 37962
Knife holder N RM2200, silver	14 0502 37993
Knife holder NZ RM2200, silver	14 0502 37994
Knife holder E low profile RM2200, silver, with ejector	14 0502 40508
Knife holder E high profile RM2200, silver, with ejector	14 0502 40509
Knife holder E, with a water trough for low-profile blades RM2200	14 0502 38961
Knife holder E-TC RM2200 silver	14 0502 37997
Knife holder GD RM2200, silver, for glass and diamond knife	14 0502 39052
Low-profile disposable blades, Type 819 (80x8x0.25 mm), 1x50	14 0358 38925
High-profile disposable blades, Type 818 (80x14x0.35 mm) 1x50	14 0358 38926
Knife 16 cm profile C, steel	14 0216 07100
Knife 16 cm profile D, steel	14 0216 07132
Knife 16 cm, TC-edge, profile D	14 0216 04813
Knife 16 cm, TC-edge, profile C	14 0216 04206
Knife holder case (plastic), variable width 10-16 cm	14 0213 11140
Standard specimen clamp with adapter 40x40, silver	14 0502 37998
Standard specimen clamp with adapter 50x55, silver	14 0502 38005
V-insert for Standard specimen clamp, silver	14 0502 38000
Universal cassette clamp with adapter (silver)	14 0502 37999
Megaclamp assembly RM2200, silver	14 0502 38967
Foil clamp - type 1, black	14 0402 09307
Round specimen holder with adapter and 3 clamping rings, silver	14 0502 38002
Segment arch, with adapter, indirect	14 0502 29969
Segment arch, with adapter, direct	14 0502 40314
EM specimen holder fixture, black	14 0502 29968
EM univ. specimen holder	14 0356 10868

FM flat specimen holder	14 0355 10405
Special wrench f. EM holder	14 0356 10869
Backlighting assembly	14 0502 38719
Foot switch	14 0502 38257
Cooling device assembly	14 0502 38325
Section waste tray	14 0502 37931
Section waste tray RM2265	14 0503 39060
Universal microscope carrier	14 0502 40580
Magnifying lens assembly	14 0502 42790
Cold light sources	
Leica CLS 100X, 100-120 V/50-60 Hz	14 0502 30214
Leica CLS 100X, 230 V/50-60 Hz	14 0502 30215
Leica CLS 100X, 240 V/50-60 Hz	14 0502 30216
Fiber-optic light guide	14 0502 30028
"Leica" brush w/magnet	14 0183 40426

7.1 Instrument malfunctions

Certain instrument malfunctions appear on the 3-digit LED display or are indicated through illuminated LED's on the control panel.

7.1.1 Error reports

If the message "**E 1**" follows the software version indication after switching on the instrument, a loss of parameters has occurred.

- Press any key.

All parameters are then set back to the default values.

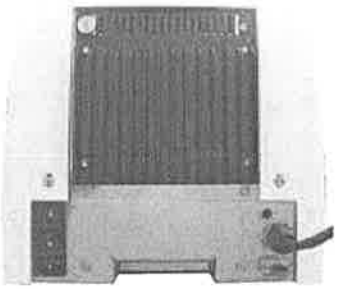
- Now all settings must be checked to see if the values are still correct. The values may have to be reentered.

You can continue with your normal working routine.

7.1.2 Malfunctions, possible causes and troubleshooting

The following is a list of the most common problems which can arise while working with the instrument, along with possible causes and troubleshooting procedures.
If the malfunction cannot be remedied with any of the options listed in the table, or the problem occurs repeatedly, inform Leica Service Support immediately.

Problem	Possible cause	Corrective action
• **No display; no reaction to buttons pressed after the instrument is switched on.**	1. The power cable is not connected correctly.	1. Check the connection of the power cable.
	2. Power fuses are defective.	2. Replace the power fuses. (see Chapter 8.2.1)
	3. The cable of the control panel is not connected correctly.	3. Check the connection of the cable to the control panel.
	4. The voltage selection switch is set incorrectly.	4. Check the voltage setting and correct it if necessary (see Chapter 4.5)

Problem	Possible cause	Corrective action
• **The cutting motor cannot be started.**  Fig. 72	1. The **EMERGENCY STOP** button is pressed or the foot switch is depressed. 2. The handwheel lock is activated. 3. The motor was temporarily overloaded and was switched off via the automatic fuse. 4. The foot switch or dummy plug is not connected or not connected correctly.	1. Unlock the **EMERGENCY STOP** button and select the operating mode; release the foot switch. 2. Release the handwheel lock. 3. Switch off the instrument and wait 30 seconds. Push the button of the automatic fuse (**28**) on the rear of the instrument. Switch the instrument back on. 4. Connect the foot switch or dummy plug and ensure that it is connected correctly.
• **Feed motion no longer occurs. The cutting motor cannot be started.**	1. The end of the residual path has been reached. 2. The specimen was already within the residual path when the instrument was switched on.	1. Select the trim mode by pressing **TRIM/SECT**. Then retract the specimen using the coarse feed button. 2. Follow the procedure in Item 1.
• **The coarse feed buttons can be used to move the object in a backwards direction only.**	1. The motorized sectioning process is still in progress.	1. End motorized sectioning by pressing the foot switch or the **RUN/STOP** or **ENABLE** button.
• **The specimen in the residual path area cannot be returned using the coarse feed buttons.**	1. The **STEP** mode is still active (LED in **SECT** button lights up).	1. Press the **TRIM/SECT** button to switch to trimming mode. Return the specimen using the coarse feed button.
• **Cutting motor switches off prematurely in CONT (continuous stroke) operating mode.**	1. Foot switch was held down too long when starting the sectioning process. 2. The **RUN/STOP** and **ENABLE** buttons of the control panel were not released simultaneously after starting.	1. Only press the foot switch briefly to start the sectioning process. 2. Release both buttons simultaneously.
• **HOME and STOP are lit up simultaneously.**	1. The end position detection is defective.	1. Contact Leica after-sales service.

Problem	Possible cause	Corrective action
7.2 Possible faults		
1. Thick/thin sections The sections alternate between being thick and thin, or there is chattering in the sections, or the specimen is torn out of the embedding. In extreme cases, there are no sections whatsoever.	• Blade, knife holder or orientation is not clamped properly.	• Reclamp the blade, knife holder or orientation.
	• The specimen is not clamped properly.	• Check that the cassette is securely clamped in the universal cassette clamp. • If the universal cassette clamp is soiled by wax, clean the UCC (refer to Chapter 8.1 - "Cleaning and Maintenance - Universal cassette clamp"). • When using cassettes whose lid is molded on, check that the broken edge allows the cassette to be clamped securely; if necessary, remove burrs or clamp the cassette into the universal cassette clamp horizontally instead of vertically. • If the cassette dimensions are within the specified tolerances and the cassette still cannot be securely clamped into place, it may be that the universal cassette clamp is configured incorrectly or is defective. In this case, have Technical Service inspect and reconfigure the universal cassette clamp.

Problem	Possible cause	Corrective action
		• When using cassettes, particularly thin-walled cassettes, from a company other than Leica or Surgipath, the cassette may become deformed or other clamping problems may arise. If while trying to clamp the cassette you realize that it is not securely clamped into place, an alternative tensioning clamp must be used.
	• The blade is dull.	• Laterally displace the knife holder or insert a new blade.
	• The pressure plate is damaged or incorrectly adjusted.	• Insert a new pressure plate or use a new knife holder.
	• Clearance angle of the knife/ blade too small.	• Methodically experiment with larger clearance angle settings until you have found the optimum angle.
2. Section compression The sections are very compressed, show folds or are squeezed together.	• The blade is dull.	• Use another area of the blade or a new blade.
	• The specimen is too warm.	• Cool the specimen before sectioning.
	• The sectioning speed is too fast.	• Reduce the sectioning speed.
3. "Stripes" in sections For knife holder E	• There is an accumulation of paraffin on the rear pressure plate of the knife holder.	• Remove paraffin from this area on a regular basis.

Problem	Possible cause	Corrective action
4. Noises during sectioning The knife "sings" when sectioning hard specimens. The sections show scratches or chatter marks.	• The sectioning speed is too fast. • The clearance angle is too wide. • Insufficient clamping of specimen clamp and/or knife holder.	• Select a slower sectioning speed. • Methodically reduce the clearance angle setting until you have found the optimum angle. • Check all screw and clamp connections on the specimen holder system and the knife holder. If necessary, tighten the levers and screws.
5. High blade consumption	• Too great of a sectioning force was applied.	• Adjust the sectioning speed and/or section thickness when sectioning. Select a thinner section.

8.1 Cleaning the instrument

Before each cleaning, carry out the following preparatory steps: Always remove the knife / blade before detaching the knife holder from the instrument.
Always put the knives back into the knife case when not in use!
Never place a knife anywhere with the cutting edge facing upwards and never try to catch a falling knife!

When using cleaning agents, observe the manufacturer's safety instructions and the laboratory regulations valid in the country of use.
When cleaning the outer surfaces, do not use xylene, scouring powders or solvents containing acetone or xylene. Acetone or xylene will damage the finished surfaces!
Ensure that liquids do not enter the interior of the instrument during cleaning!

- Raise the specimen clamp to the upper end position and activate the handwheel lock.
- Switch the unit off and unplug it.
- Remove the blade from the knife holder and insert it in the receptacle at the bottom of the dispenser, or remove the knife from the knife holder and put it back in the knife case.
- Remove knife holder base and knife holder for cleaning.

Never place blade or knife holders with/ without base close to the edge of the table to prevent them from falling down.

- Remove the specimen from the specimen clamp.
- Remove section waste with a dry brush.
- Remove specimen clamp and clean separately.

Instrument and outside surfaces

If necessary, the varnished outside surfaces of the control panels can be cleaned with a mild commercial household cleaner or soap water and then be wiped with a moist cloth.
To remove paraffin residue, xylene substitutes, paraffin oil, or paraffin removers such as "Para Gard" (Polysciences) can be used.
The instrument must be completely dry before it can be used again.

Cleaning the knife

Always wipe the knife from the back of the knife to the cutting edge. NEVER wipe in the opposite direction - risk of injury!

Clean using an alcohol-based solution or acetone.

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Knife holder E

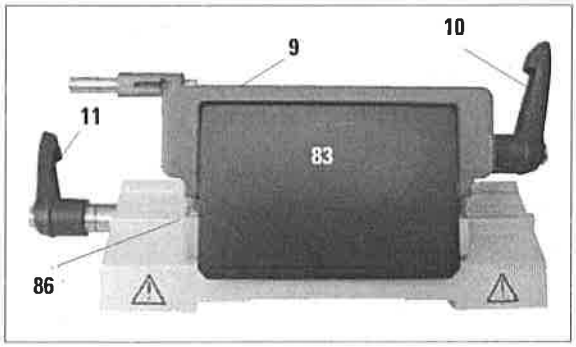


Fig. 73

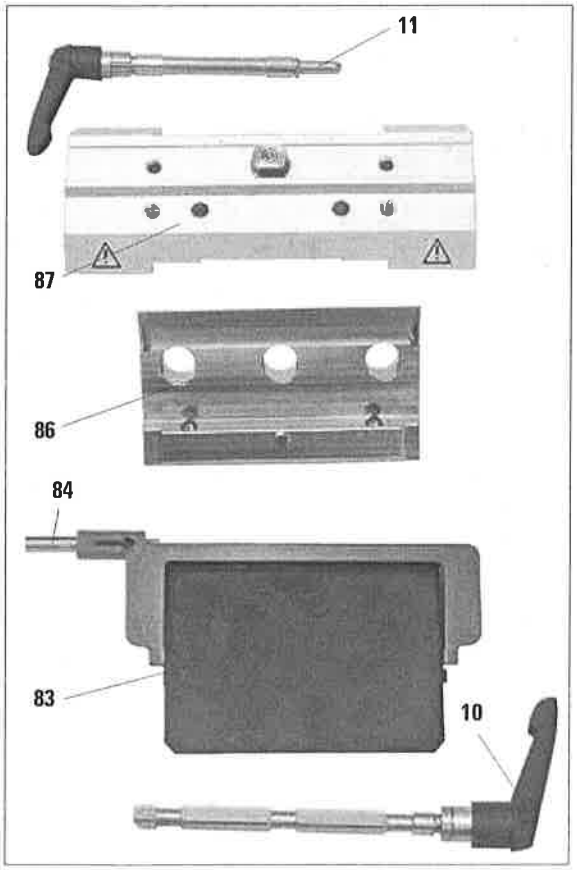


Fig. 74

Take the knife holder apart for cleaning. To do so, proceed as follows:

- Fold the knife guard (**9**) and ejector (**84**) downward.
- Rotate the clamping lever (**11**) of the lateral displacement forwards and pull it out sideways.
- Push the knife holder base plate (**86**) with the pressure plate (**83**) until it can be removed from the segment arch (**87**).
- Rotate the blade clamping lever (**10**) downward and pull it out sideways.
- Remove pressure plate (**83**).
- Clean all parts of the knife holder.

If several knife holders are cleaned at the same time, the parts must NOT be mixed up! Failure to adhere to this may result in sectioning problems!

For cleaning and removal of paraffin, do not use xylene or cleaning fluids containing alcohol (e.g. glass cleaner).

- Lay the removed parts on an absorbent cloth into the drying chamber (up to a max. of 65 °C) and let the paraffin contamination run off.
- Dry knife holder and reassemble.

There is a burn hazard when removing the parts from the drying chamber (65 °C). Wearing safety gloves is recommended!

- After cleaning the moving parts of the knife holder, apply a thin coat of drive part oil to them (see also Chap. 8.2.3).
- When installing the pressure plate (**83**), ensure that the upper edge is parallel to and level with the rear edge of the knife holder base (**86**)(see also Fig. 42).

Universal cassette clamp

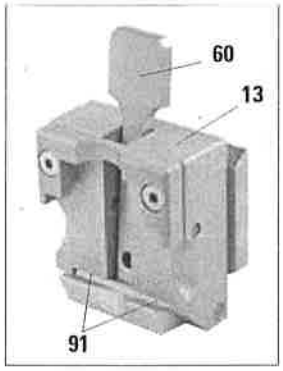


Fig. 75

- Detach cassette clamp (**13**) for a thorough cleaning, removing all paraffin residues.
- For cleaning, do not use xylene. Use xylene substitutes or paraffin removers such as "Para Gard."
- The cassette clamp (**13**) can also be placed in an oven heated to a maximum of 65 °C, until the liquid wax escapes.
- Remove paraffin residues with a dry cloth.
- After such a cleaning procedure in an oven, always be sure to lubricate the spiral springs (**91**) of the tension lever (**60**) and move it back and forth several times.

8.2 Maintenance

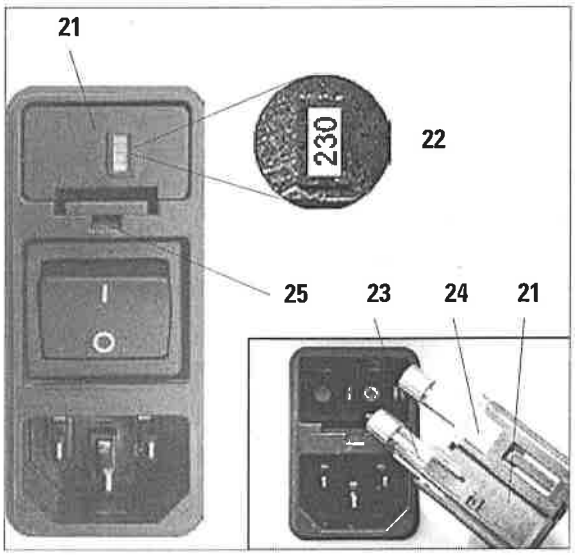


Fig. 76

8.2.1 Replacing fuses

Switch the unit off and unplug it. Use only the supplied replacement fuses. Both fuses must have the same rating (check the imprint!).

- Insert a small screwdriver into the cutout (**25**) and carefully pry out the insert.
- Remove the voltage selector housing (**21**) together with the fuses (**23**).
- Remove the fuses. While doing so, leave the voltage selector switch block (**24**) in the housing.
- Replace defective fuses and reinstall the voltage selector into the instrument.
- Check that the correct voltage value is displayed in the viewing window (**22**).

8.2.2 Maintenance instructions

Only authorized and qualified service personnel may access the internal components of the instrument for service and repair!

The instrument is basically maintenance-free.

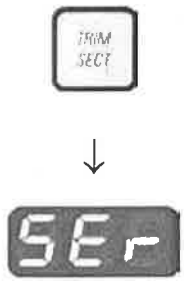
To ensure trouble-free operation of the instrument over a long period of time, the following is recommended by Leica:

1. Thoroughly clean the instrument on a daily basis.
2. Enter into a service contract at the latest at the end of the warranty period. For more information, please contact your local Leica technical service center.
3. Have the instrument inspected on a regular basis by a qualified service technician authorized by Leica.

   The intervals depend on how heavily the instrument is used.

We recommend the following inspection intervals depending on the general workload of the instrument as defined in the two categories listed in the table:

	Category I	Category II
Number of sections per day:	> 8,000 sections per day	< 8,000 sections per day
Workload (hours per day):	> 5 hours per day	≤ 5 hours per day
Sectioning speed:	Predominantly high sectioning speed	Slow to medium sectioning speed
Specimen material:	Working with soft and hard specimens	Predominantly soft specimen material
Maintenance:	Every 12 months	Every 24 months



Note for inspection

- When the instrument reaches approx. 2 million performed strokes, the code **SEr** always appears for approx. 3 seconds in the three-digit display when the **TRIM/SECT** button is pressed
  (switching between trimming and sectioning mode).
  This is a reminder that the instrument must be inspected by an authorized Leica service technician, regardless of how heavily the instrument has been used.

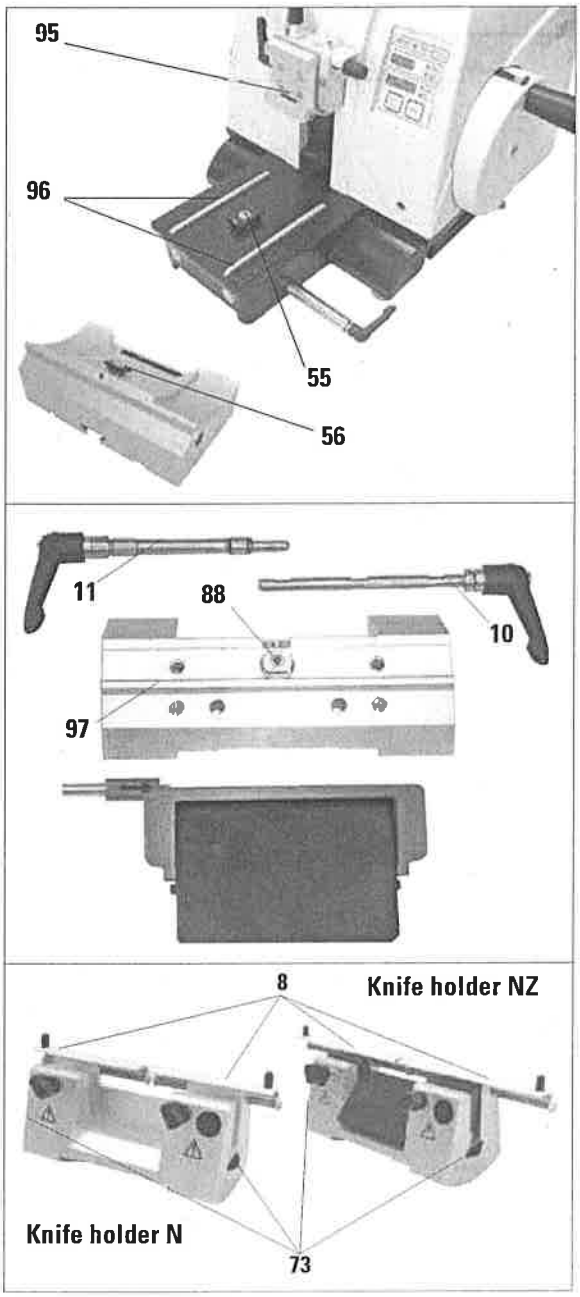


Fig. 81

8.2.3 Lubricating the instrument

Once a month, lubricate the following parts with the included drive parts oil No. 405 (1-2 drops are enough).

Instrument and specimen holder:

- The clamping key (**95**) of the quick clamping system.
- The T-piece (**55**) on the microtome base plate.
- Guide rails (**96**) for the knife holder base on the microtome base plate.
- The T-piece on the knife holder base (**56**).

Knife holder E:

- Clamping lever (**11**) for the lateral displacement.
- T-piece (**88**) and guide (**97**) of the knife holder for the lateral displacement.
- Clamping lever (**10**) for the blade.

Knife holders N and NZ:

- Sliding surfaces of the finger guard (**8**).
- Knurled nuts (**73**) for measuring height adjustment.

Warranty

Leica Biosystems Nussloch GmbH guarantees that the contractual product delivered has been subjected to a comprehensive quality control procedure based on the Leica in-house testing standards, and that the product is faultless and complies with all technical specifications and/or agreed characteristics warranted.

The scope of the warranty is based on the content of the concluded agreement. The warranty terms of your Leica sales organization or the organization from which you have purchased the contractual product shall apply exclusively.

Service Information

If you are in need of technical customer support or spare parts, please contact your Leica representative or the Leica dealer where you purchased the instrument.

Please provide the following information:

- Model name and serial number of the instrument.
- Location of the instrument and name of a contact person.
- Reason for the service call.
- Delivery date.

Decommissioning and Disposal

The instrument or parts of the instrument must be disposed of according to existing applicable, local regulations.
Special attention should be paid to the lithium cell of the electronic circuit board!

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10. Decontamination Certificate

Dear Customer,

Any product that is to be returned to Leica Biosystems or serviced on site, must be cleaned and decontaminated in the appropriate manner. Since it is not possible to decontaminate for prion diseases, such as CJD, BSE, CWD etc., equipment exposed to specimens containing prion diseases cannot be returned to Leica Biosystems for repair. On-site repair of prion contaminated equipment will only be conducted after the Field Service Engineer has been educated in the risks, instructed in the policies and procedures of the institution, and provided with personal protective equipment. Please fill out this confirmation carefully and enclose a copy with the instrument. Attach the confirmation to the outside of the flight case or hand it directly to the service technician.

Packages will not be opened, nor servicing commenced until the Company or service engineer have received a satisfactory certificate. Should returned goods be considered a hazard by the Company, they will be returned immediately to the customer at his/her expense. **Note:** Microtome knives must be in boxes.

Mandatory information: Fields marked with * are mandatory. Depending on whether the instrument is contaminated, please also complete either section A or section B.

Nameplate information

Model (see nameplate)*

SN (see nameplate)*

REF (see nameplate)*

Tick Box A if applicable. Otherwise please complete all parts of B, providing further information as requested or appropriate.

A

☐ **Yes**

This equipment has not been in contact with unfixed biological samples.

B

1 This equipment has been exposed internally or externally to hazardous materials as indicated below:

Yes	No		Please provide further detail here:
☐	☐	Blood, body fluids, pathological samples	
☐	☐	Other biohazards	
☐	☐	Chemicals/substances hazardous to health	
☐	☐	Other hazards	
☐	☐	Radioactivity	

2 This equipment has been cleaned and decontaminated:

Yes ☐ **No** ☐

If yes, give details of the method: **Please provide further detail here:**

If no**, please indicate why not:

** Such equipment must not be returned without the written agreement of Leica Biosystems.

3 The equipment has been prepared to ensure safe handling/transportation. Whenever possible, please use the original transportation case/box.

Yes ☐ **No** ☐

Important - to avoid refusal of shipment:
Place one copy in the unit prior to packaging, or hand it over to the service engineer. Customer assumes all responsibility for the immediate return shipment of articles sent to Leica without proper decontamination documentation.
If you have any further questions, please call your local Leica organization.
Leica Internal Use: If applicable, note corresponding Job and RAN-/RGA-Number:

Job Sheet No.: _____ BU Return Authorization Number: _____ SU Return Goods Authorization: _____

Signature/Date*

Name*

Position*

eMail

Institute*

Department*

Address*

Phone* **Fax**

Leica Biosystems Nussloch GmbH
Heidelberger Str. 17-19
69226 Nussloch, Germany

Phone: ++49 (0) 6224 143 0
Fax: ++49 (0) 6224 143 268
www.LeicaBiosystems.com

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www.LeicaBiosystems.com

Leica
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Leica Biosystems Nussloch GmbH
Heidelberger Straße 17-19
D- 69226 Nussloch
Phone: +49 - (0) 62 24 - 143 0
Fax: +49 - (0) 62 24 - 143 268
Web: www.LeicaBiosystems.com

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Leica
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TOTAL SECTIONING SOLUTIONS

Outstanding Sectioning Performance =
A sharp blade + a precise instrument + a skilled operator

Leica Biosystems' microtomes, blades and accessories help you create outstanding sections.

Use the sectioning solution that suits your laboratory.

Microtomes

- Sliding Microtmes
- Rotary Microtomes
- Vibrating Blade Microtomes

Blades

- Surgipath DB80 LS
- Surgipath DB80 LX
- Surgipath DB80 HS
- High Profile Disposable Blade 818
- Low Profile Disposable Blade 819

HISTOLOGY INSTRUMENTS AND CONSUMABLES

For a complete solution, Leica Biosystems can assist your laboratory with a complete range of histology instruments and matching consumables.

LEICA BIOSYSTEMS

Leica Biosystems is a global leader in workflow solutions bringing histopathology laboratories and researchers the highest quality, most comprehensive product range in anatomical pathology. With complete histology systems featuring innovative automation, Novocastra™ reagents and Surgipath® consumables, Leica Biosystems offers the ideal product for each histology step and high-productivity workflow solutions for the entire laboratory.

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Leica Biosystems brings together products, quality and support. Offering a complete solution that helps you advance work ows, enhance diagnostic clarity and deliver what really matters – better patient care.

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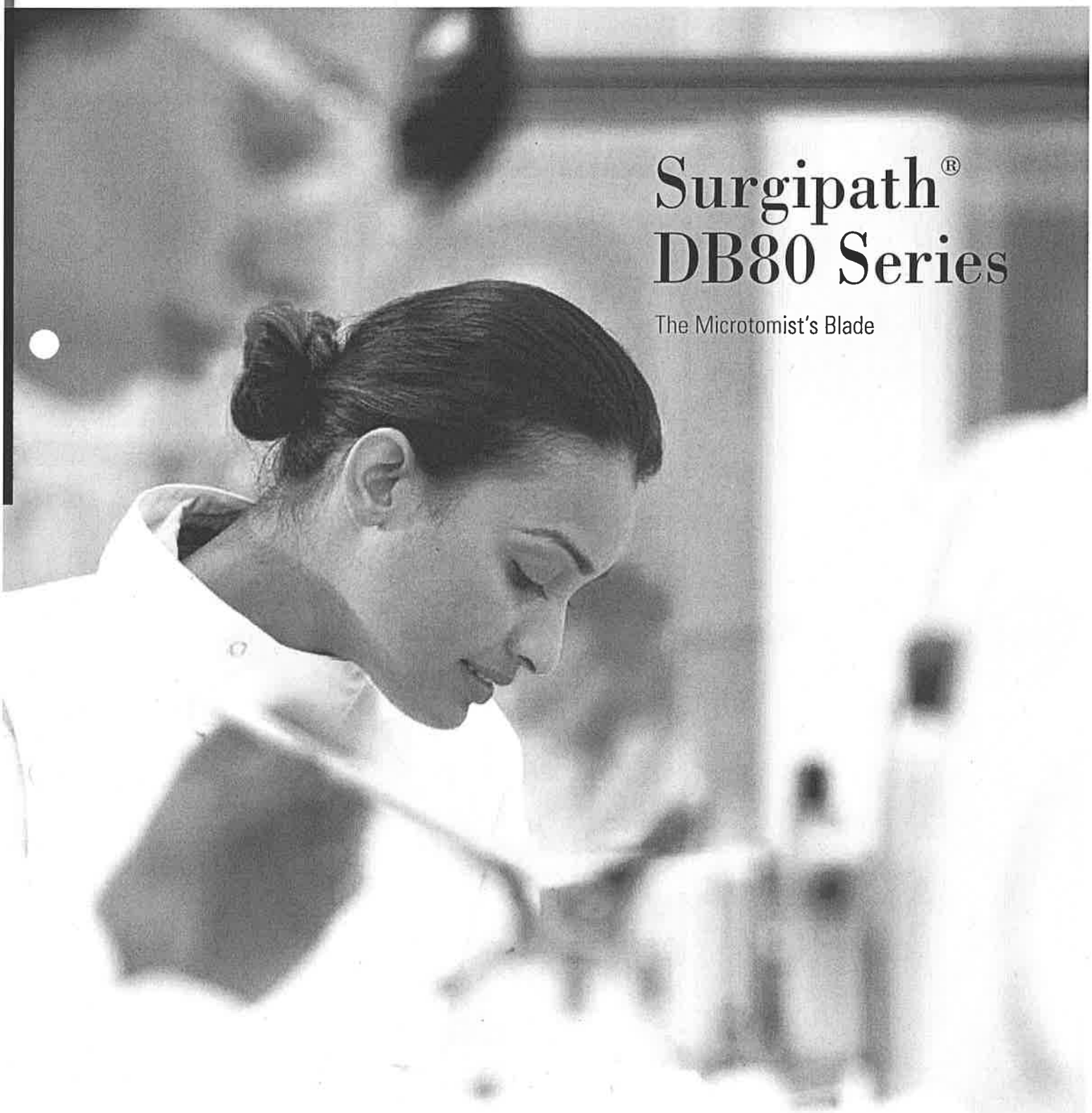

Surgipath® DB80 Series

The Microtomist's Blade

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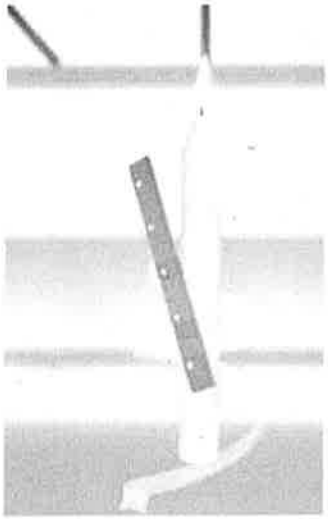

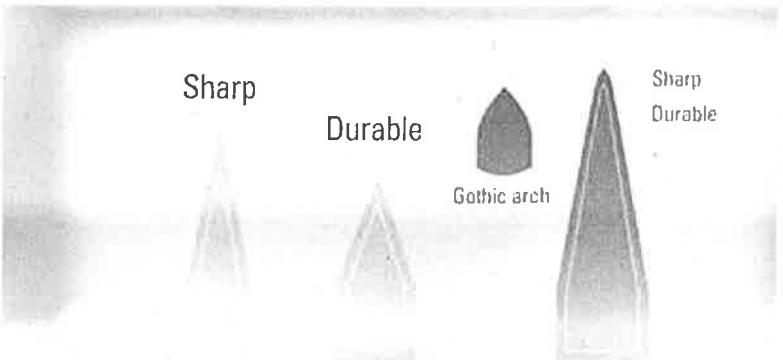

Standard blades Surgipath DB80

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Quality

Quality means everything to us, because we know quality means everything to you.

So when you are dedicated to cutting quality sections, you'll appreciate a blade that performs to your standards. That's why the Surgipath® DB80 blades have the optimal geometry and high-grade materials – so that you can continually cut high-quality sections that meet your expectations.

DB80 LS	DB80 LX	DB80 HS
Premium low profile disposable microtome blade for routine specimens and biopsies.	Premium low profile disposable microtome blade for routine specimens, biopsies and dense tissues.	Premium high profile disposable microtome blade for routine specimens and biopsies.
Length: 80 mm Width: 8 mm Angle: 35°	Length: 80 mm Width: 8 mm Angle: 35°	Length: 80 mm Width: 14 mm Angle: 35°
Catalog number, package size: 14035843488, 1 x 50 14035843489, 10 x 50	Catalog number, package size: 14035843496, 1 x 50 14035843497, 10 x 50	Catalog number, package size: 14035843490, 1 x 50 14035843491, 10 x 50

The Gothic Arch and the finely honed edge creates sharpness, minimal compression, easy ribboning and the longevity that makes sectioning economical.

ВЕРНО С ОРИГИНАЛОМ
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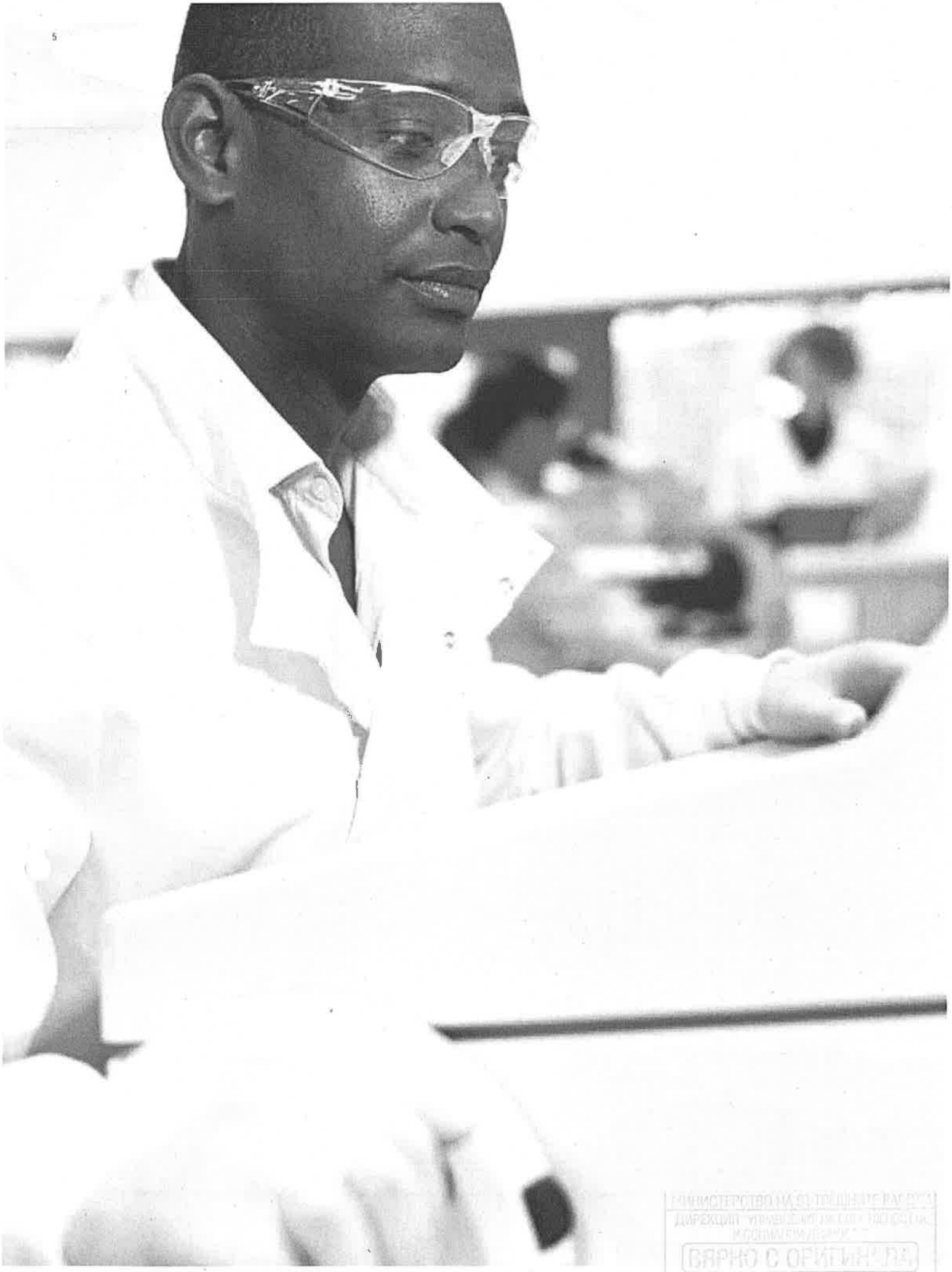

МИНИСТЕРСТВО НА ОТБРАНАТА НА РС
ДИРЕКЦИЯ „УПРАВЛЕНИЕ НА ДЕЙНОСТТА ПО ОТБРАНА
И СИГУРНОСТ НА ДЪРЖАВАТА"
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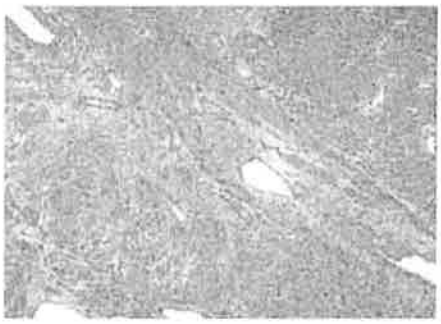
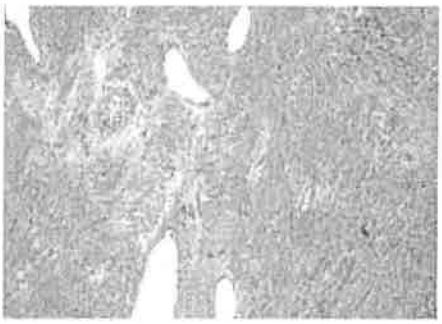
Consistency

Each step of the histology process is critical. Perfect sections are the basis for perfect staining and accurate diagnosis. The Surgipath® DB80 delivers you the same quality from edge-to-edge and blade-to-blade every time.

A consistent chromium layer and uniform honing along the entire length of the blade provides you with consistent performance.

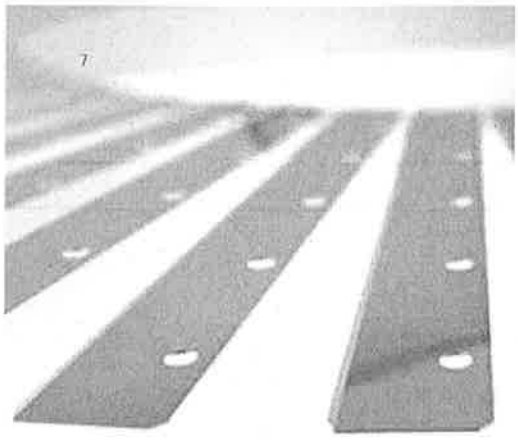


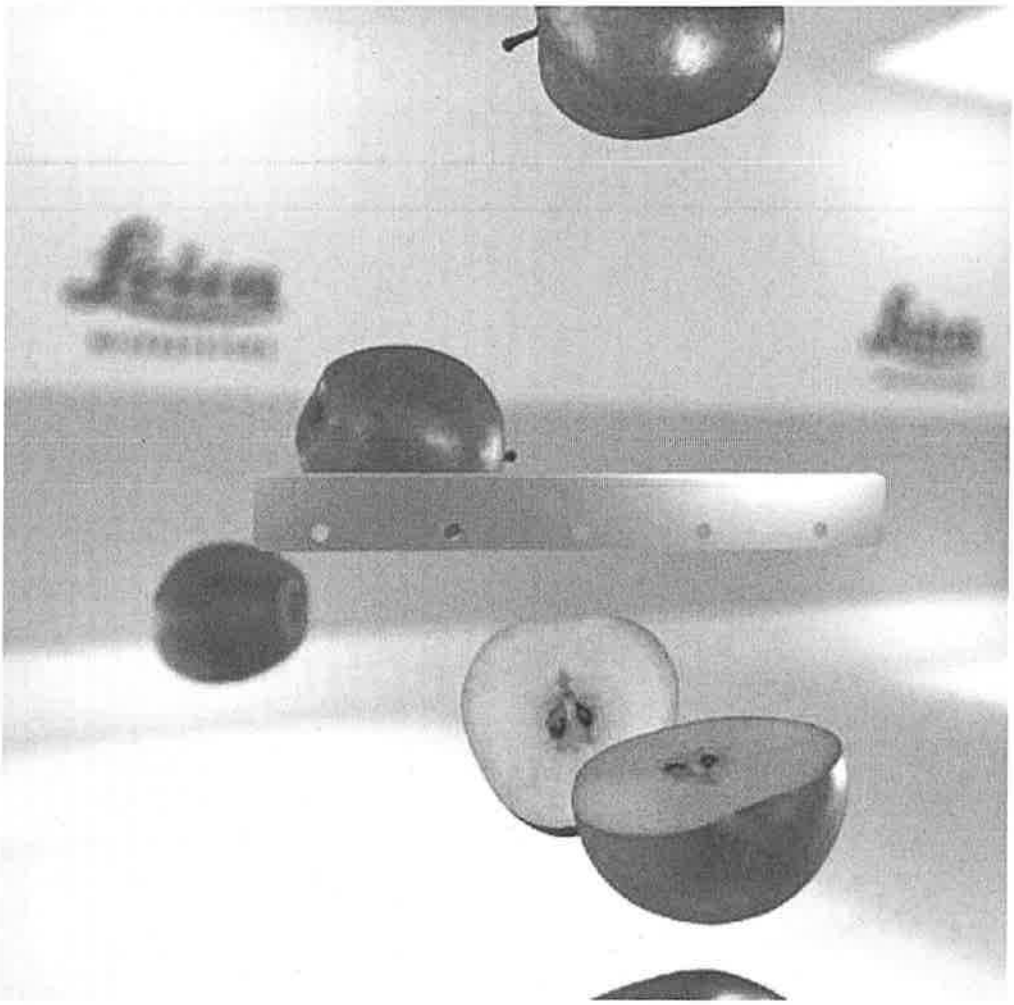
1st block with the Surgipath DB80 LX

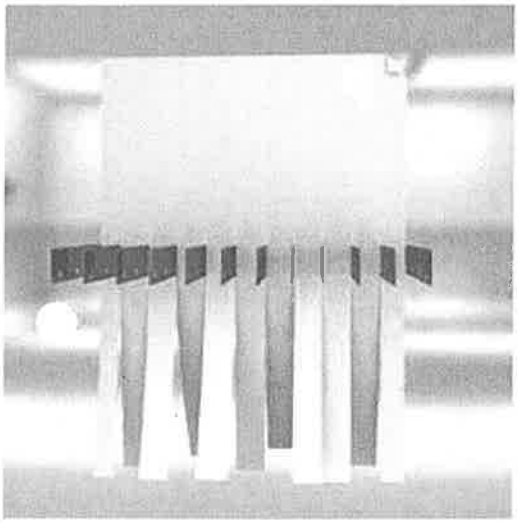


25th block with the Surgipath DB80 LX

The Surgipath® DB80 series gives microtomists a technical edge. With one of the world's most advanced blades you will find it easier to produce the uniform sections that accurate patient diagnosis relies on.







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Reliability

When you reach for a blade, you need to know it will work reliably with your microtome. With Leica Biosystems' long history of microtome development, you can enjoy the confidence of knowing that each Surgipath® DB80 blade was created by microtomists, for microtomists.

EXPERIENCE THAT COUNTS

For over 150 years, quality has been at the heart of every Leica product and service. It's how we help you deliver the consistent quality that pathologists demand. You can count on our expertise to help find the histology solution that is right for you.

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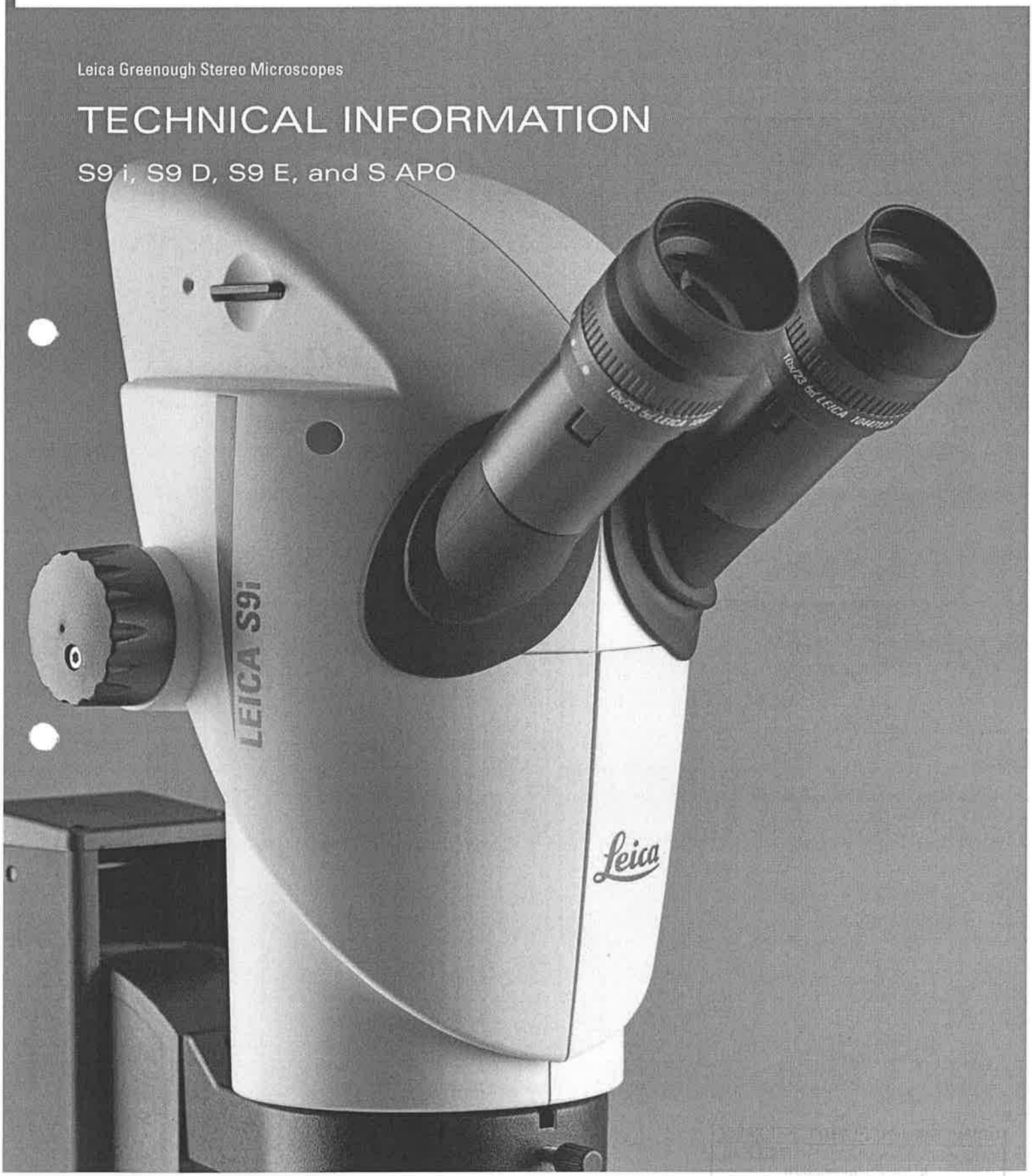
From Eye to Insight

Leica
MICROSYSTEMS

Leica Greenough Stereo Microscopes

TECHNICAL INFORMATION

S9 i, S9 D, S9 E, and S APO



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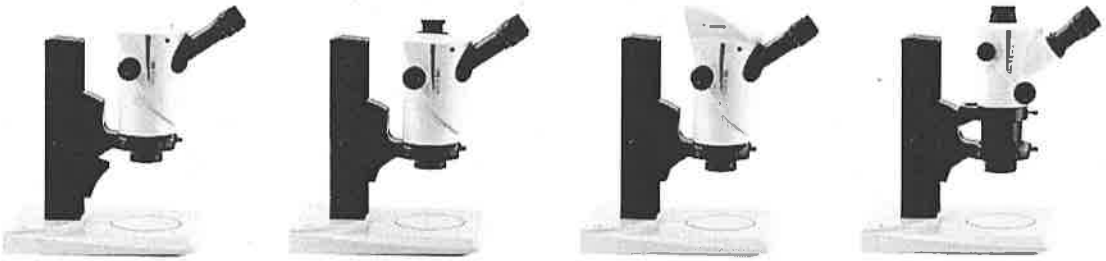
PERFORMANCE CHARACTERISTICS



	S9 E	S9 D	S9 i	S APO
Optical system, lead-free	10° Greenough using best-corrected central part of the objective; complete apochromatically corrected microscope system			12° Greenough using best-corrected central part of the objective
Zoom	9:1, apochromatic			8:1, apochromatic
Viewing angle	35°			38°
ESD protection	Antistatic			
Specific surface resistivity	2×10^{11} Ω/square, discharge time <2 seconds from 1,000 V to 100 V			
Magnification range (basic outfit)	6.1×–55×			10×–80×
Maximum resolution	500 lp/mm			600 lp/mm
Maximum numerical aperture	0.167			0.2
Working distance (basic outfit)	122 mm			75 mm
Object field diameter	37.7 mm			23 mm
Adjustable zoom limits	Click-stops 10×, 20×, 30×, 40×, and 50×			2
Video/photo outlet, switchable	–	50 % video 50 % visual, permanent	–	100 % visual or 100 % video/photo and 100 % visual in the left eyepiece
tegrated camera	–		10 MP resolution Live image up to 35 fps (1,024 × 768 pixels) Sensor size 6.44 mm × 4.6 mm, 1/2.3" CMOS Pixel size 1.67 µm × 1.67 µm	–
Standard objectives, lead-free	Apochromats 0.5×, 0.63×, 0.75×, 1.6×, 2.0×			Apochromats 0.63×, 1.6×, 2.0×
Ergonomic eyepieces, fixed and adjustable, with cups	10×/23, 16×/16, 20×/12			–
Ergonomic eyepieces for eyeglass wearers, adjustable, with eyecups	10×/23, 16×/15, 25×/9.5, 40×/6			
Interpupillary distance	50–76 mm			

ВЗРНО С ОРИГИНАЛА

ACCESSORIES

Stands, illuminators	
Incident light stands	Antistatic and terminator (dissipating)
Focusing drives	Coarse, fine, inclinable for OEM applications (bonders), adjustable ease of movement
Focusing range	135 mm
Microscope carrier	Optics carrier rotatable through 360°
Swingarm stands	• ESD swingarm stand • Standard swingarm stand with easy-to-move horizontal arm (ball bearing) • Large swingarm stand with easy-glide horizontal arm and crank for comfortable height positioning
Flexarm	For installing the mount on the work table
Incident light stand LED2000	Stand with integrated incident light LED illumination (ring-shaped and curved)
Transmitted light stands	Leica TL3000 Ergo: Bright field and dark field on one side – TL4000 BFDF: Bright and circular dark field – TL4000 RC / RCI: Bright field, single-sided dark field, Rottermann Contrast – TL5000 Ergo: Bright field two-sided dark field, Rottermann Contrast
Transmitted light stand LED2500	Stand with integrated incident light LED illumination (ring-shaped and curved) and uniform transmitted light illumination
Stages	Gliding stage, cup stage, polarizer
Illuminators	• Leica LED3000 RL ring illuminator • Leica LED3000 NVI nearly vertical illumination • Leica LED3000 SLI spotlight illuminator • Leica LED3000 MCI Multi Contrast Illumination • Leica LED3000 BLI backlight illumination • Leica LED3000 DI diffuse illumination • Leica KL300 LED cold-light source for coupling to the stand • Various fiber-optic light guides • Accessories for coaxial, vertical and transmitted light • Leica LED1000 (ring, spot and transmitted light insert)

Accessories	
Measurement reticules	For length measurement and counting
Vertical/oblique observation (S9 models)	All-round 45° side view of the specimen
Objective protective-glass	Protects against dirt and damage
Cameras (for S APO and S9 D)	Leica offers a variety of cameras, such as the MC, DFC, and DMC camera lines
Software	LAS X 3.0 and higher (Windows 7, Windows 10) LAS 4.9 and higher (Windows 7, Windows 8 / 8.1) LAS Acquire 3.3 and higher (MAC OS X) LAS EZ 3.3 and higher (Windows 7, Windows 8 / 8.1, Windows 10)
Video (S9 D/S APO)	Various video objectives and adapters for commercial CCD cameras

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OPTICAL DATA S9 i, S9 D, AND S9 E

				with additional objectives									
				0.5×		0.63×		0.75×		1.6×		2.0×	
Working distance		122 mm		200 mm		155 mm		130 mm		55 mm		35 mm	
Eyepieces	Zoom positions	Total Mag.	Object field (mm)	Total Mag.	Object field (mm)	Total Mag.	Object field (mm)	Total Mag.	Object field (mm)	Total Mag.	Object field (mm)	Total Mag.	Object field (mm)
10×/23 10 447 130 10 447 131 10 447 136 10 447 137	0.61	6.1	37.7	3.0	75.4	3.9	59.8	4.6	50.3	9.8	23.6	12.2	18.9
	0.8	8.0	28.8	4.0	57.5	5.0	45.6	6.0	38.3	12.8	18.0	16.0	14.4
	1.0	10.0	23.0	5.0	46.0	6.3	36.5	7.5	30.7	16.0	14.4	20.0	11.5
	1.25	12.5	18.4	6.3	36.8	7.9	29.2	9.4	24.5	20.0	11.5	25.0	9.2
	1.6	16.0	14.4	8.0	28.8	10.1	22.8	12.0	19.2	25.6	9.0	32.0	7.2
	2.0	20.0	11.5	10.0	23.0	12.6	18.3	15.0	15.3	32.0	7.2	40.0	5.8
	2.5	25.0	9.2	12.5	18.4	15.8	14.6	18.8	12.3	40.0	5.8	50.0	4.6
	3.0	30.0	7.7	15.0	15.3	18.9	12.2	22.5	10.2	48.0	4.8	60.0	3.8
	4.0	40.0	5.8	20.0	11.5	25.2	9.1	30.0	7.7	64.0	3.6	80.0	2.9
	5.0	50.0	4.6	25.0	9.2	31.5	7.3	37.5	6.1	80.0	2.9	100.0	2.3
	5.5	55.0	4.2	27.5	8.4	34.7	6.7	41.3	5.6	88.0	2.6	110.0	2.1
16×/16 10 447 132 10 447 133	0.61	9.8	26.2	4.9	52.5	6.2	41.6	7.3	35.0	15.6	16.4	19.5	13.1
	0.8	12.8	20.0	6.4	40.0	8.0	31.7	9.6	26.7	20.5	12.5	25.6	10.0
	1.0	16.0	16.0	8.0	32.0	10.1	25.4	12.0	21.3	25.6	10.0	32.0	8.0
	1.25	20.0	12.8	10.0	25.6	12.6	20.3	15.0	17.1	32.0	8.0	40.0	6.4
	1.6	25.6	10.0	12.8	20.0	16.1	15.9	19.2	13.3	41.0	6.3	51.2	5.0
	2.0	32.0	8.0	16.0	16.0	20.2	12.7	24.0	10.7	51.2	5.0	64.0	4.0
	2.5	40.0	6.4	20.0	12.8	25.2	10.2	30.0	8.5	64.0	4.0	80.0	3.2
	3.0	48.0	5.3	24.0	10.7	30.2	8.5	36.0	7.1	76.8	3.3	96.0	2.7
	4.0	64.0	4.0	32.0	8.0	40.3	6.4	48.0	5.3	102.0	2.5	128.0	2.0
	5.0	80.0	3.2	40.0	6.4	50.4	5.0	60.0	4.3	128.0	2.0	160.0	1.6
	5.5	88.0	3.0	44.0	5.8	55.4	4.6	66.0	3.9	141.0	1.8	176.0	1.5
16×/15 B 10 447 138 10 447 139	0.61	9.8	24.6	4.9	49.2	6.2	39.0	7.3	32.8	15.6	15.4	12.2	12.3
	0.8	12.8	18.8	6.4	37.5	8.0	29.8	9.6	25.0	20.5	11.7	16.0	9.4
	1.0	16.0	15.0	8.0	30.0	10.1	23.8	12.0	20.0	25.6	9.4	20.0	7.5
	1.25	20.0	12.0	10.0	24.0	12.6	19.0	15.0	16.0	32.0	7.5	25.0	6.0
	1.6	25.6	9.4	12.8	18.8	16.1	14.9	19.2	12.5	41.0	5.9	32.0	4.7
	2.0	32.0	7.5	16.0	15.0	20.2	11.9	24.0	10.0	51.2	4.7	40.0	3.8
	2.5	40.0	6.0	20.0	12.0	25.2	9.5	30.0	8.0	64.0	3.8	50.0	3.0
	3.0	48.0	5.0	24.0	10.0	30.2	7.9	36.0	6.7	76.8	3.1	60.0	2.5
	4.0	64.0	3.8	32.0	7.5	40.3	6.0	48.0	5.0	102.0	2.3	80.0	1.9
	5.0	80.0	3.0	40.0	6.0	50.4	4.8	60.0	4.0	128.0	1.9	100.0	1.5
	5.5	88.0	2.7	44.0	5.5	55.4	4.3	66.0	3.6	141.0	1.7	110.0	1.4
20×/12 10 447 134 10 447 135	0.61	12.2	19.7	6.1	39.3	7.7	31.2	9.2	26.2	19.5	12.3	24.4	9.8
	0.8	16.0	15.0	8.0	30.0	10.1	23.8	12.0	20.0	25.6	9.4	32.0	7.5
	1.0	20.0	12.0	10.0	24.0	12.6	19.0	15.0	16.0	32.0	7.5	40.0	6.0
	1.25	25.0	9.6	12.5	19.2	15.8	15.2	18.8	12.8	40.0	6.0	50.0	4.8
	1.6	32.0	7.5	16.0	15.0	20.2	11.9	24.0	10.0	51.2	4.7	64.0	3.8
	2.0	40.0	6.0	20.0	12.0	25.2	9.5	30.0	8.0	64.0	3.8	80.0	3.0
	2.5	50.0	4.8	25.0	9.6	31.5	7.6	37.5	6.4	80.0	3.0	100.0	2.4
	3.0	60.0	4.0	30.0	8.0	37.8	6.4	45.0	5.3	96.0	2.5	120.0	2.0
	4.0	80.0	3.0	40.0	6.0	50.4	4.8	60.0	4.0	128.0	1.9	160.0	1.5
	5.0	100.0	2.4	50.0	4.8	63.0	3.8	75.0	3.2	160.0	1.5	200.0	1.2
	5.5	110.0	2.2	55.0	4.4	69.3	3.5	82.5	2.9	176.0	1.4	220.0	1.1
25×/9.5 B 10 450 025	0.61	15.3	15.6	7.6	31.1	9.6	24.7	11.4	20.8	24.4	9.7	30.5	7.8
	0.8	20.0	11.9	10.0	23.8	12.6	18.8	15.0	15.8	32.0	7.4	40.0	5.9
	1.0	25.0	9.5	12.5	19.0	15.8	15.1	18.8	12.7	40.0	5.9	50.0	4.8
	1.25	31.3	7.6	15.6	15.2	19.7	12.1	23.4	10.1	50.0	4.8	62.5	3.8
	1.6	40.0	6.0	20.0	11.9	25.2	9.4	30.0	7.9	64.0	3.7	80.0	3.0
	2.0	50.0	4.8	25.0	9.5	31.5	7.5	37.5	6.3	80.0	3.0	100.0	2.4
	2.5	62.5	3.8	31.3	7.6	39.4	6.0	46.9	5.1	100.0	2.4	125.0	1.9
	3.0	75.0	3.2	37.5	6.3	47.3	5.0	56.3	4.2	120.0	2.0	150.0	1.6
	4.0	100.0	2.4	50.0	4.8	63.0	3.8	75.0	3.2	160.0	1.5	200.0	1.2
	5.0	125.0	1.9	62.5	3.8	78.8	3.0	93.8	2.5	200.0	1.2	250.0	1.0
	5.5	138.0	1.7	68.8	3.5	86.6	2.7	103.0	2.3	220.0	1.1	275.0	0.9
40×/6 B 10 450 026	0.61	24.4	9.9	12.2	19.7	15.4	15.6	18.3	13.1	39.0	6.2	48.8	4.9
	0.8	32.0	7.5	16.0	15.0	20.2	11.9	24.0	10.0	51.2	4.7	64.0	3.8
	1.0	40.0	6.0	20.0	12.0	25.2	9.5	30.0	8.0	64.0	3.8	80.0	3.0
	1.25	50.0	4.8	25.0	9.6	31.5	7.6	37.5	6.4	80.0	3.0	100.0	2.4
	1.6	64.0	3.8	32.0	7.5	40.3	6.0	48.0	5.0	102.0	2.3	128.0	1.9
	2.0	80.0	3.0	40.0	6.0	50.4	4.8	60.0	4.0	128.0	1.9	160.0	1.5
	2.5	100.0	2.4	50.0	4.8	63.0	3.8	75.0	3.2	160.0	1.5	200.0	1.2
	3.0	120.0	2.0	60.0	4.0	75.6	3.2	90.0	2.7	192.0	1.3	240.0	1.0
	4.0	160.0	1.5	80.0	3.0	101.0	2.4	120.0	2.0	256.0	0.9	320.0	0.8
	5.0	200.0	1.2	100.0	2.4	126.0	1.9	150.0	1.6	320.0	0.8	400.0	0.6
	5.5	220.0	1.1	110.0	2.2	139.0	1.7	165.0	1.5	352.0	0.7	440.0	0.6

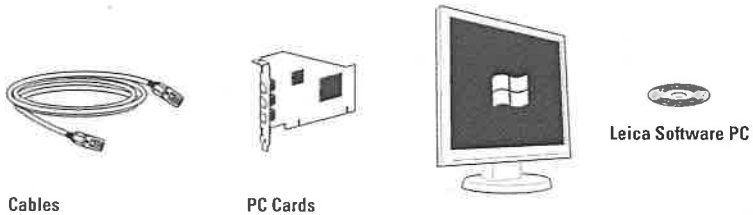
ДЕЛО С ОРИГИНАТА
20 г.

OPTICAL DATA S APO

				Apochromat						Achromat	
				0.63×		1.6×		2.0×		0.32×	
Working distance		75 mm		101 mm		37 mm		25 mm		200 mm	
Eyepieces	Zoom positions	Total Mag.	Object field (mm)	Total Mag.	Object field (mm)	Total Mag.	Object field (mm)	Total Mag.	Object field (mm)	Total Mag.	Object field (mm)
	1.0	10.0	23.0	6.3	36.5	16.0	14.4	20.0	11.5	3.2	71.9
	1.25	12.5	18.4	7.9	29.1	20.0	11.5	25.0	9.2	4.0	57.5
10×/23	1.6	16.0	14.4	10.1	22.8	25.6	9.0	32.0	7.2	5.1	45.1
10 447 130	2.0	20.0	11.5	12.6	18.3	32.0	7.2	40.0	5.8	6.4	35.9
10 447 131	2.5	25.0	9.2	15.8	14.6	40.0	5.8	50.0	4.6	8.0	28.8
10 447 136	3.2	32.0	7.2	20.2	11.4	51.2	4.5	64.0	3.6	10.2	22.5
10 447 137	4.0	40.0	5.8	25.2	9.1	64.0	3.6	80.0	2.9	12.8	18.0
	5.0	50.0	4.6	31.5	7.3	80.0	2.9	100.0	2.3	16.0	14.4
	6.3	63.0	3.7	39.7	5.8	100.8	2.3	126.0	1.8	20.2	11.4
	8.0	80.0	2.9	50.4	4.6	128.0	1.8	160.0	1.4	25.6	9.0
	1.0	16.0	16.0	10.1	25.3	25.6	10.0	32.0	8.0	5.1	43.9
	1.25	20.0	12.8	12.6	20.3	32.0	8.0	40.0	6.4	6.4	35.0
	1.6	25.6	10.0	16.1	15.9	41.0	6.2	51.2	5.0	8.2	27.3
16×/16	2.0	32.0	8.0	20.2	12.7	51.2	5.0	64.0	4.0	10.2	22.0
10 447 132	2.5	40.0	6.4	25.2	10.2	64.0	4.0	80.0	3.2	12.8	17.5
10 447 133	3.2	51.2	5.0	32.3	7.9	81.9	3.1	102.4	2.5	16.4	13.7
	4.0	64.0	4.0	40.3	6.4	102.4	2.5	128.0	2.0	20.5	10.9
	5.0	80.0	3.2	50.4	5.1	128.0	2.0	160.0	1.6	25.6	8.8
	6.3	100.8	2.5	63.5	4.0	161.3	1.6	201.6	1.3	32.3	6.9
	8.0	128.0	2.0	80.6	3.2	204.8	1.3	256.0	1.0	41.0	5.5
	1.0	16.0	15.0	10.1	23.7	25.6	9.4	32.0	7.5	5.1	41.2
	1.25	20.0	12.0	12.6	19.0	32.0	7.5	40.0	6.0	6.4	32.8
	1.6	25.6	9.4	16.1	14.9	41.0	5.8	51.2	4.7	8.2	25.6
16×/15 B	2.0	32.0	7.5	20.2	11.9	51.2	4.7	64.0	3.8	10.2	20.6
10 447 138	2.5	40.0	6.0	25.2	9.6	64.0	3.8	80.0	3.0	12.8	16.4
10 447 139	3.2	51.2	4.7	32.3	7.4	81.9	2.9	102.4	2.3	16.4	12.8
	4.0	64.0	3.8	40.3	6.0	102.4	2.3	128.0	1.9	20.5	10.2
	5.0	80.0	3.0	50.4	4.8	128.0	1.9	160.0	1.5	25.6	8.3
	6.3	100.8	2.3	63.5	3.8	161.3	1.5	201.6	1.2	32.3	6.5
	8.0	128.0	1.9	80.6	3.0	204.8	1.2	256.0	0.9	41.0	5.2
	1.0	20.0	12.0	12.6	19.0	32.0	7.5	40.0	6.0	6.4	37.5
	1.25	25.0	9.6	15.8	15.2	40.0	6.0	50.0	4.8	8.0	30.0
	1.6	32.0	7.5	20.2	11.9	51.2	4.7	64.0	3.8	10.2	23.5
20×/12	2.0	40.0	6.0	25.2	9.5	64.0	3.8	80.0	3.0	12.8	18.8
10 447 134	2.5	50.0	4.8	31.5	7.6	80.0	3.0	100.0	2.4	16.0	15.0
10 447 135	3.2	64.0	3.8	40.3	6.0	102.4	2.3	128.0	1.9	20.5	11.7
	4.0	80.0	3.0	50.4	4.8	128.0	1.9	160.0	1.5	25.6	9.4
	5.0	100.0	2.4	63.0	3.8	160.0	1.5	200.0	1.2	32.0	7.5
	6.3	126.0	1.9	79.4	3.0	201.6	1.2	252.0	1.0	40.3	6.0
	8.0	160.0	1.5	100.8	2.4	256.0	0.9	320.0	0.8	51.2	4.7
	1.0	25.0	9.5	15.8	15.0	40.0	5.9	50.0	4.8	8.0	29.7
	1.25	31.3	7.6	19.7	12.1	50.0	4.8	62.5	3.8	10.0	23.8
	1.6	40.0	5.9	25.2	9.4	64.0	3.7	80.0	3.0	12.8	18.6
	2.0	50.0	4.8	31.5	7.5	80.0	3.0	100.0	2.4	16.0	14.8
25×/9.5 B	2.5	62.5	3.8	39.4	6.0	100.0	2.4	125.0	1.9	20.0	11.9
10 450 025	3.2	80.0	3.0	50.4	4.7	128.0	1.9	160.0	1.5	25.6	9.3
	4.0	100.0	2.4	63.0	3.8	160.0	1.5	200.0	1.2	32.0	7.4
	5.0	125.0	1.9	78.8	3.0	200.0	1.2	250.0	1.0	40.0	5.9
	6.3	157.5	1.5	99.2	2.4	252.0	0.9	315.0	0.8	50.4	4.7
	8.0	200.0	1.2	126.0	1.9	320.0	0.7	400.0	0.6	64.0	3.7
	1.0	40.0	6.0	25.2	9.5	64.0	3.8	80.0	3.0	12.8	18.8
	1.25	50.0	4.8	31.5	7.6	80.0	3.0	100.0	2.4	16.0	15.0
	1.6	64.0	3.8	40.3	6.0	102.4	2.3	128.0	1.9	20.5	11.7
	2.0	80.0	3.0	50.4	4.8	128.0	1.9	160.0	1.5	25.6	9.4
40×/6 B	2.5	100.0	2.4	63.0	3.8	160.0	1.5	200.0	1.2	32.0	7.5
10 450 026	3.2	128.0	1.9	80.6	3.0	204.8	1.2	256.0	0.9	41.0	5.9
	4.0	160.0	1.5	100.8	2.4	256.0	0.9	320.0	0.8	51.2	4.7
	5.0	200.0	1.2	126.0	1.9	320.0	0.8	400.0	0.6	64.0	3.8
	6.3	252.0	1.0	158.8	1.5	403.2	0.6	504.0	0.5	80.6	3.0
	8.0	320.0	0.8	201.6	1.2	512.0	0.5	640.0	0.4	102.4	2.3

МИНИСТЕРСТВО НА ЗДРАВЕОПАЗВАНЕТО
ДИРЕКЦИЯ „МЕДИЦИНСКИ ИЗДЕЛИЯ"
ВЯРНО С ОРИГИНАЛА
20... г. /...

ASSEMBLY DIAGRAM FOR S SERIES



Cables
11 600 269, FW-b-b
11 600 254, FW-a-b
12 730 211, HDMI-cable
12 730 530, USB3-cable

PC Cards
12 730 446, FW-b, notebook kit
12 730 447, FW-b, PCI express
12 730 495, USB3, PCI express

Leica Software PC

MC170 HD
12 730 465
MC190 HD
12 730 520

DMC4500
12 730 411
DMC2900
12 730 466
DFC295
12 730 469

DFC3000 G
11 547 005
DFC450 C
12 730 412
DFC495
12 730 471

DFC7000 T
11 547 106
DFC365 FX
11 547 004

DFC550
12 730 455

D-SLR

10 447 319

10 445 928
0.32×

10 450 528
0.5×

10 447 367
0.63×

10 446 307
0.8×

HC
11 541 510 1.0×
11 541 543 0.7×
11 541 544 0.55×
10 450 622 0.4×

10 446 175
2.5×

Delta
11 541 006 1.0×
11 541 007 0.63×
11 541 016 0.5×

10 450 317
1.0×

10 445 930
1.0×

10 447 436
1.6×

①

Connection to main diagram next page

Name	MPixel	Sensor	Size	Pixel-Size	Cooling	Interface	C-Mount*
MC170 HD	5	CMOS-c	1/2.3"	2.35 µm	No	USB2+HD	0.4×-0.5×
MC190 HD	10	CMOS-c	1/2.3"	1.67 µm	No	USB2+HD	0.4×-0.5×
DMC2900	3	CMOS-c	1/2"	3.2 µm	No	USB3	0.5×
DFC295	3	CMOS-c	1/2"	3.2 µm	No	FWb	0.5×
DFC7000T	2.8	CCD-c	2/3"	4.54 µm	Yes	USB3	0.63×
DMC4500	5	CCD-c	2/3"	3.4 µm	No	USB3	0.63×
DFC450 C	5	CCD-c	2/3"	3.4 µm	Yes	FWb+Sync	0.5×
DFC495	8	CCD-c	2/3"	2.7 µm	Yes	FWb+Sync	0.63×
DFC550	12.5	CCD-c	2/3"	6.45 µm	Yes	FWb+Sync	0.63×
DFC3000 G	1.3	CCD-m	1/3"	3.75 µm	No	USB3+Sync	0.35×-0.4×
DFC365 FX	1.4	CCD-m	2/3"	6.45 µm	Yes	FWb+Sync	0.7×

-c: color / -m: monochrome / * recommended

ARTICLE DESCRIPTIONS

Digital camera systems

12 730 465 Leica MC170 HD camera kit
12 730 520 Leica MC190 HD camera kit
12 730 517 Leica DMC4500 camera kit
12 730 466 Leica DMC2900 camera kit
12 730 469 Leica DFC295 camera kit
12 730 412 Leica DFC450 C camera kit
12 730 471 Leica DFC495 camera kit
12 730 455 Leica DFC550 camera kit

11 547 005 Leica DFC3000 G camera kit
11 547 004 Leica DFC365 FX camera kit
11 547 106 Leica DFC7000T camera kit

Digitale camera system accessories

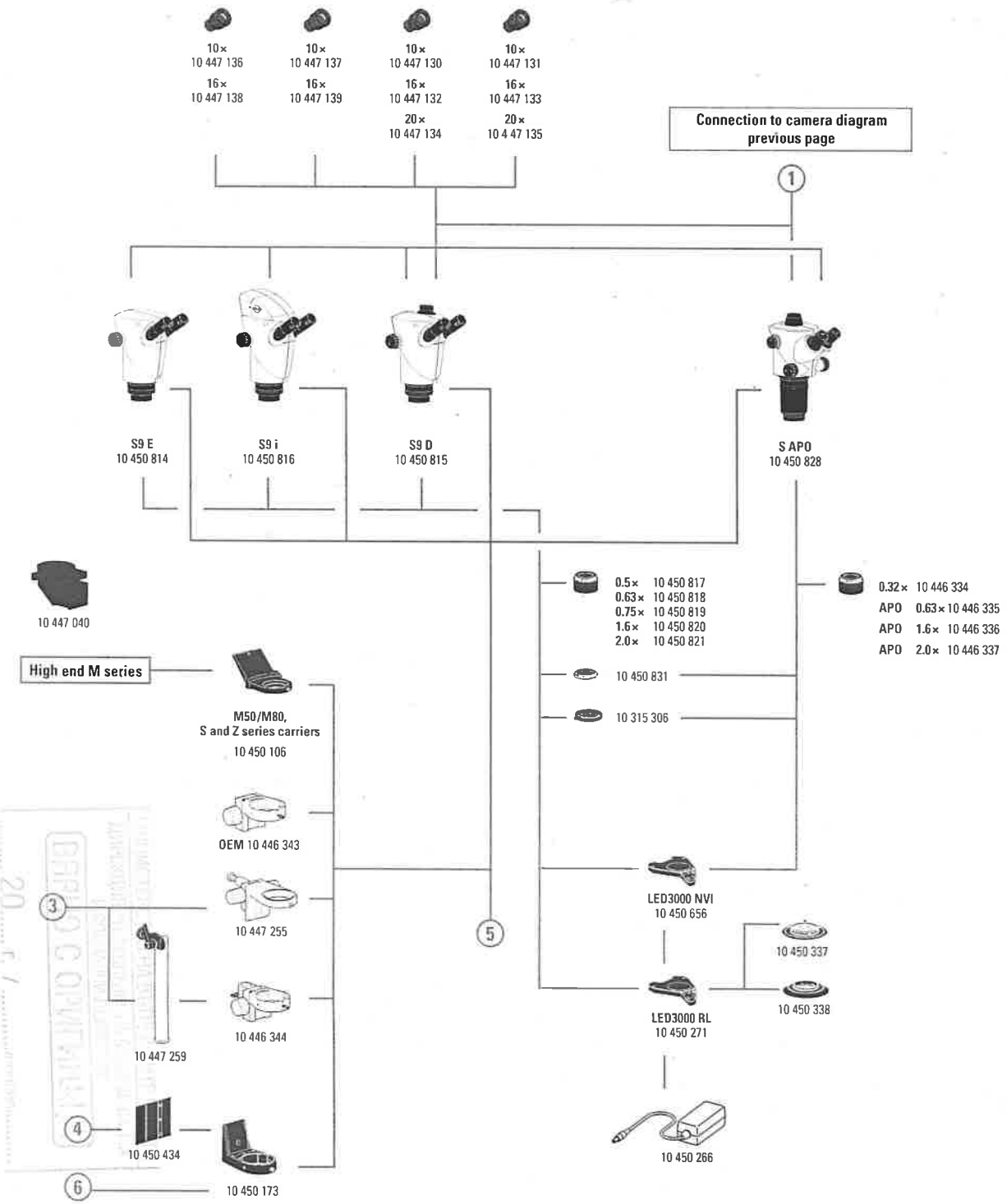
11 600 269 FireWire cable, FW-b-b, 2.5 m, 9-pin to 9-pin
11 600 254 FireWire cable, FW-a-b, 2.5 m, 6-pin to 9-pin
12 730 211 HDMI-cable, 3 m, HDMI 2× Standard-A
12 730 530 USB3-cable, 2.5 m Standard-A to Micro-B
12 730 446 FW-b, Notebook Kit (includes PCcard Express, power suppy: 100–240 V, 24 W, adapter FW-b-a)
12 730 447 FW-b, PCI express card
12 730 495 USB3, PCI express card

Phototubes and C-mounts

10 447 319 Adapter T2, Canon EOS
10 445 928 0.32× video objektive with C-mount for 1/3" digital cameras
10 450 528 0.5× video objektive with C-mount for 1/2" digital cameras
10 447 367 0.63× video objektive with C-mount for 2/3" digital cameras
10 446 307 0.8× video objektive with C-mount for 2/3" digital cameras
10 446 175 2.5× DSLR tube with T2 thread (24×36 mm sensor)
10 450 317 1.0× C-mount adapter for HC
10 445 930 1.0× video-/photo objektive
10 447 436 1.6× DSLR tube with T2 thread (APS-C sensor)

Eyepieces, eyecups included

10 447 136 10×/23B eyepiece for eyeglasses, fixed
10 447 137 10×/23B eyepiece for eyeglasses, adjustable*
10 447 138 16×/15B eyepiece for eyeglasses, fixed
10 447 139 16×/15B eyepiece for eyeglasses, adjustable*
10 447 130 10×/23 eyepiece, fixed
10 447 131 10×/23 eyepiece, adjustable*
10 447 132 16×/16 eyepiece, fixed
10 447 133 16×/16 eyepiece, adjustable*
10 447 134 20×/12 eyepiece, fixed
10 447 135 20×/12 eyepiece, adjustable*
* accept reticles



Stereo Microscopes

10 450 814 Leica S9 E 0.61× – 5.5×
10 450 816 Leica S9 i 0.61× – 5.5× with integrated camera
10 450 815 Leica S9 D 0.61× – 5.5× with trinoc tube
10 450 828 Leica S APO 1.0× – 8.0×

Spare parts

10 447 149 Eyecups, pair for eyepieces
10 447 150 Eyecups, one pair for eyepiece for eyeglasses
10 447 326 Zoom knobs, pair, S APO size

S9 E, S9 D, S9 i, S APO objectives, and optical accessories

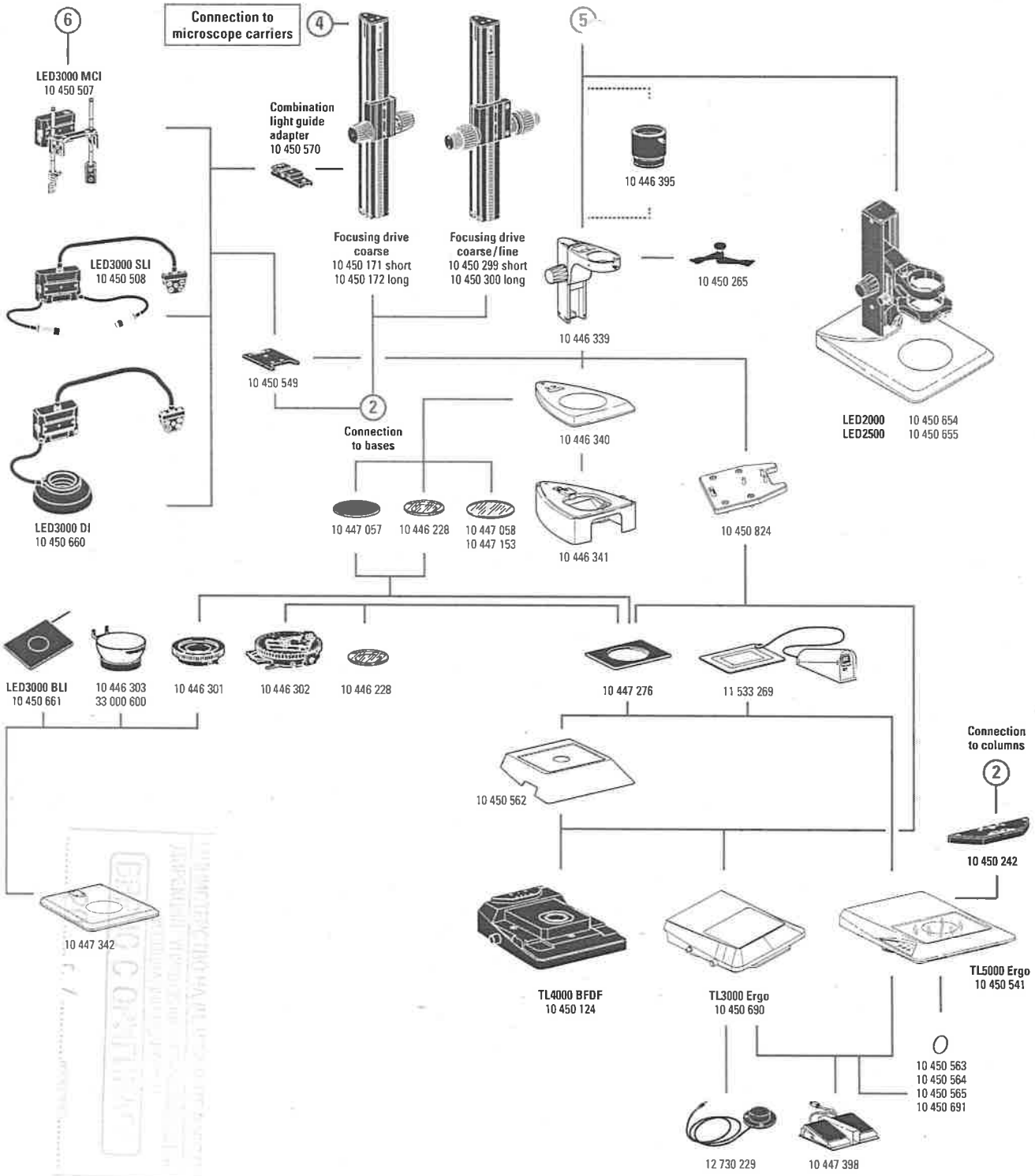
10 450 817 Objective 0.5× S9 series, WD 200 mm
10 450 818 Objective 0.63× S9 series, WD 150 mm
10 450 819 Objective 0.75× S9 series, WD 130 mm
10 450 820 Objective 1.6× S9 series, WD 50 mm
10 450 821 Objective 2.0× S9 series, WD 35 mm
10 450 831 Lens shield for S9 E, S9 D, and S APO
10 315 306 Analyzer in rotating mount, ∅ 58 mm

S APO objectives

10 446 334 Objective 0.32×, WD 200 mm
10 446 335 Apochromatic objective 0.63×, WD 100 mm
10 446 336 Apochromatic objective 1.6×, WD 37 mm
10 446 337 Apochromatic objective 2.0×, WD 25 mm

Illuminators

10 450 271 LED3000 RL – ring illuminator, ∅ 58 mm objectives, 24 power LEDs, 5,600 K color temperature, optimized LED auxiliary lens, selectable segments, optimized for 60–150 mm working distance
10 450 337 Polarization set for Leica LED3000 RL
10 450 338 Diffuser for Leica LED3000 RL
10 450 656 LED3000 NVI – vertical illumination for M50/M80 for using objectives with major diameter 58 mm
10 450 501 RLA 58/66 ring light adapter for LED3000 RL and LED3000 NVI to objectives with ∅ 66 mm
10 450 508 LED3000 SLI, spotlight illumination, double-armed gooseneck 300 mm long, 2 power LEDs, 5,600 K color temperature, control unit on separate gooseneck, incl. diffuser pair
10 450 507 LED3000 MCI, multi-contrast illumination with 4 power LEDs, 5,700 K color temperature, selectable scenes
10 450 660 LED3000 DI, diffuse illumination
10 450 661 LED3000 BLI, backlight illumination
10 450 549 Adapter for LED3000 MCI & LED3000 SLI; For installation between the focusing column and baseplate
10 450 570 Combination light guide-adapter to focusing columns of the routine M series, for LED3000 SLI and LED3000 MCI
10 450 266 Power supply unit for LED3000/LED5000



ARTICLE DESCRIPTIONS

Focusing columns/arms/carriers and accessories

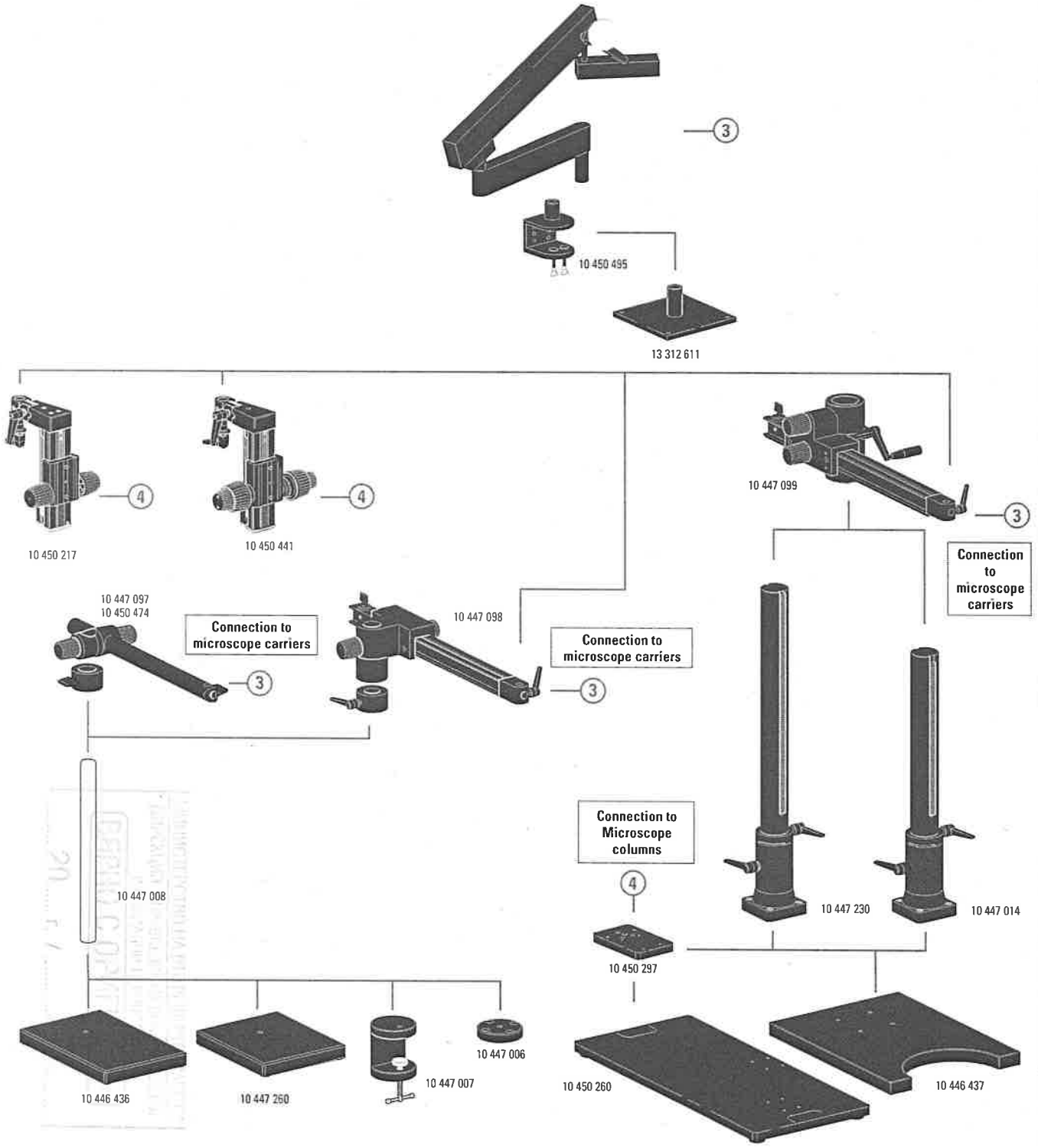
10 446 343	Focusing arm
10 450 106	Microscope carrier for M50/M80, S and Z series
10 447 255	Focusing arm, inclinable for OEM and swingarm stands
10 446 344	Focusing arm for 25 mm column
10 447 259	Carrier rod 25 mm, inclinable
10 450 299	Coarse/fine focusing drive with profile column 300 mm
10 450 300	Coarse/fine focusing drive with profile column 500 mm
10 450 265	Articulated arm; M5/M6
10 450 570	Combination light guide adapter for installation on the focusing column
10 446 339	Focusing column
10 450 434	Spacer for routine columns on high-performance bases
10 446 395	5 cm extension for 0.5× objective for S9

Bases and accessories

10 446 340	Base for S series
10 446 341	Sub-base for transmitted light
10 447 342	Incident light base with insert
10 450 654	LED2000 – Incident light base with LED illumination
10 450 655	LED2500 – Incident light and transmitted light base with LED illumination
10 450 690	TL3000 Ergo transmitted light base
10 450 124	TL4000 BFDF transmitted light base
10 450 541	TL5000 Ergo transmitted light base with integrated LED illumination
10 447 269	Standard stage for transmitted light bases TL3000 BFDF, TL4000 RC and TL4000 RCI
10 450 563	Milk glass filter for TL5000 Ergo
10 450 564	Green filter for TL5000 Ergo
10 450 565	Polarization filter for TL5000 Ergo
10 450 691	Halogen Conversion Filter
10 450 242	Standard adapter plate between column and transmitted light base
10 447 443	Leica USB mouse, freely programmable, five-button mouse for connection to TL4000 RCI or PC
10 447 398	Foot pedal
10 450 824	S series column adapter for TL bases
12 730 229	Hand or foot switch with 2 m cable

Stages

10 446 301	Gliding stage, 120 mm
10 446 303	Cup stage, 120 mm interface, Ø100 mm
33 000 600	Cup stage, Ø 120 mm, surface Ø 150 mm, revolving
10 447 058	Glass stage plate
10 447 153	Glass stage plate, matte
10 447 057	Stage plate b/w
11 533 269	Leica MATS TPX TL heating stage insert with control unit for TL bases
10 447 276	Adapter for stages with Ø120 mm



Polarization

10 446 228	Glass stage plate with polarizer
10 315 306	Analyzer in rotating mount, ∅ 58 mm

Measuring

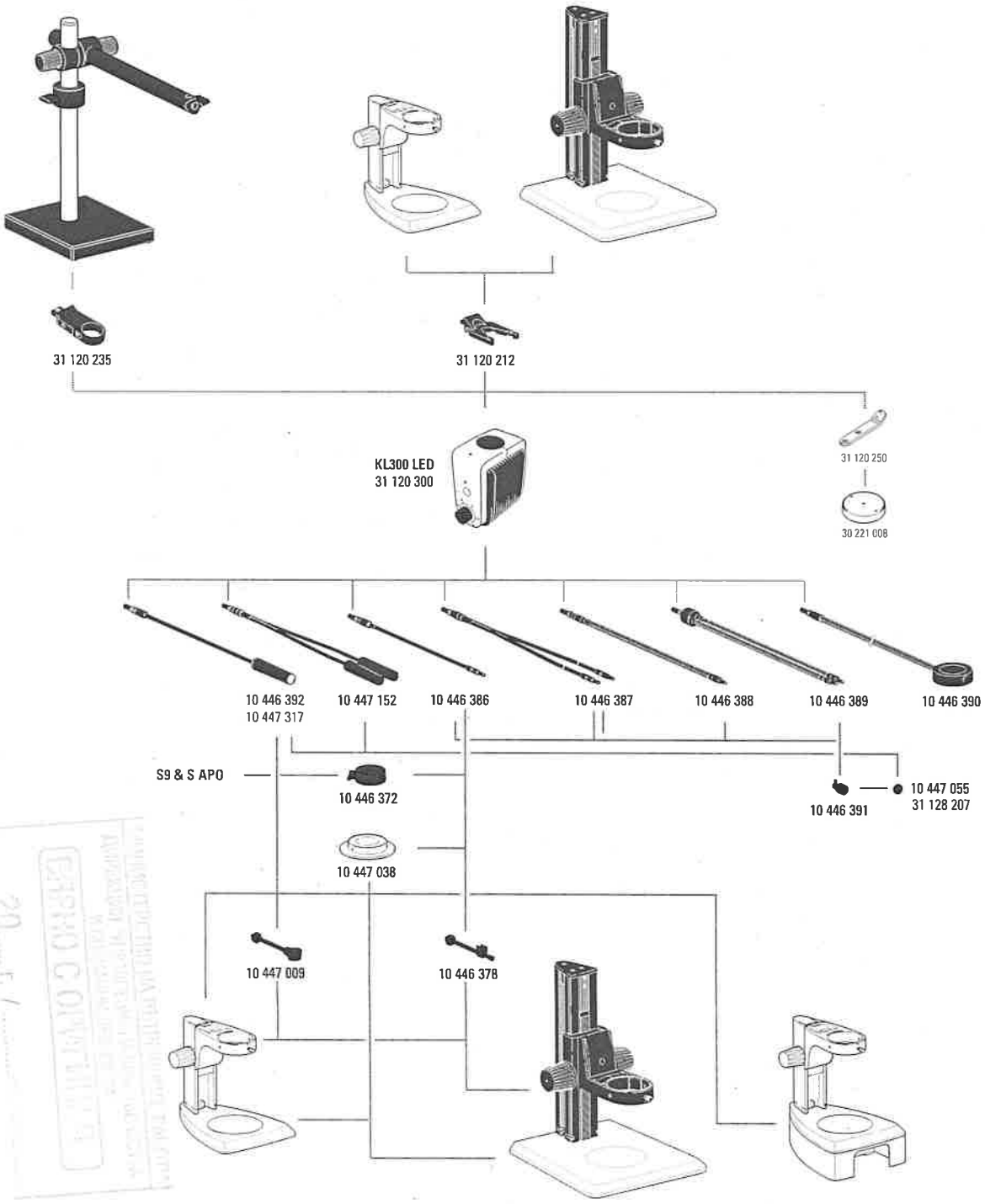
10 446 447	Reticle 10 mm/0.1 mm
10 446 448	Reticle 5 mm/0.1 mm
10 446 449	Reticule 5 mm/0.05 mm
10 447 000	Graticule, 100 scale intervals/0.002"
10 447 001	Graticule, 100 scale intervals/0.001"
10 447 002	Graticule, 150 scale intervals/0.0005"
10 446 450	Crosshair graticule
10 310 345	Stage micrometer, 50 mm scale with 0.1 mm and 0.01 mm graduation
10 447 037	Stage micrometer 1", 0.001" graduation

Flexarm stands

10 450 495	Flexarm stand with table clamp
13 312 611	Table holder for flexarm stand

Swingarm stands

10 447 260	Base plate, small
10 446 436	Base plate, medium
10 447 008	Vertical column 470/35 mm
10 447 097	Horizontal arm ESD, 500 mm
10 450 474	Horizontal arm ESD, 290 mm
10 447 098	Horizontal arm, standard
10 447 006	Flange
10 447 007	Stage clamp
10 446 437	Base plate, large
10 447 014	Vertical column 560/57 mm
10 447 230	Vertical column 800/57 mm
10 447 099	Horizontal arm, large
10 450 217	Focusing drive with inclinable column
10 450 441	Focusing drive coarse/fine with inclinable column
10 450 260	Universal plate XL for specimens up to 300 × 300 mm
10 450 297	Adapter for universal plate 10 450 260 for all swingarm columns



ARTICLE DESCRIPTIONS

Leica KL300 LED illumination

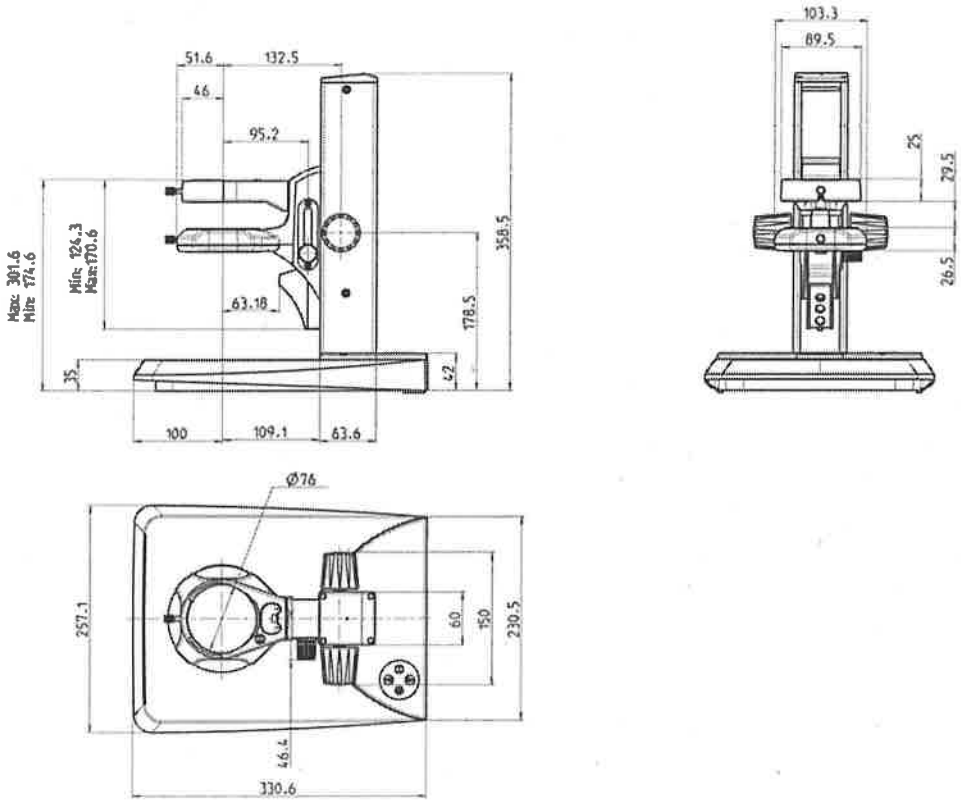
31 120 300	KL300 LED cold-light LED source with power supply unit
31 120 212	KL300 LED adapter for focusing column
31 120 235	KL300 LED adapter for swingarm stand
31 120 250	KL300 LED, adapter for baseplate 30 221 008
30 221 008	Base plate for KL300 LED

10 446 392	Universal light guide, 600 mm
10 447 317	Universal light guide, 1 000 mm
10 447 152	Universal light guide, 2-arm, 600 mm
10 446 386	Flexible light guide, 1-arm, 550 mm
10 446 387	Flexible light guide, 2-arm, 750 mm
10 446 388	Gooseneck light guide 1-arm, 500 mm
10 446 389	Gooseneck light guide 2-arm, 500 mm
10 446 390	6-point ring illuminator, internal diameter 58 mm, 750 mm
10 447 038	Transmitted light stage
10 446 391	Auxiliary focusing lens
10 447 055	Daylight filter for auxiliary focus
31 128 207	Warm light filter for focus lens
10 446 378	Arm for flexible light guide
10 447 009	Arm for universal light guide
10 446 372	Vertical illumination

Spare parts for Leica L2

10 447 056	Halogen lamp 8 V/20 W, L2
10 447 015	Leica L2 transformer, 90 – 250 V (not shown)

DIMENSIONS LED2000 / LED2500

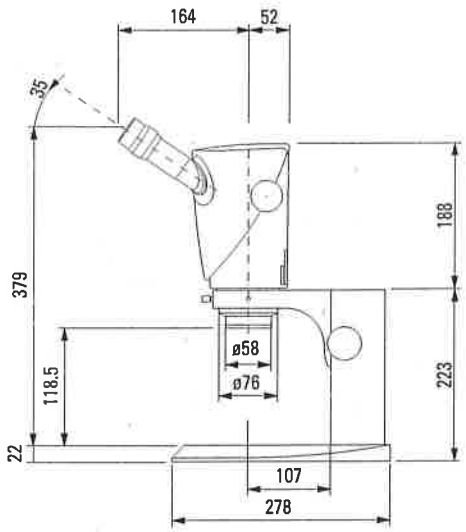


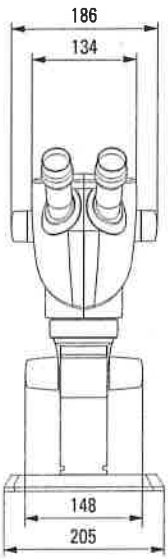
Dimensions in mm

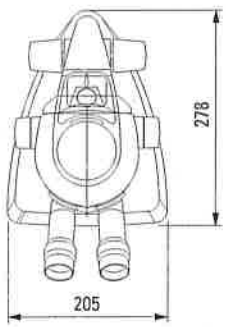
МИНИСТЕРСТВО НА ВЪТРЕШНИТЕ РАБОТИ
ДИРЕКЦИЯ "УПРАВЛЕНИЕ НА ОБЩИЕ ИЗДАТЕЛЯ И СЕРИЙНИ ПЕЧАТИ"
ВЯРНО С ОРИГИНАЛА
20 г. /

DIMENSIONS S9 E

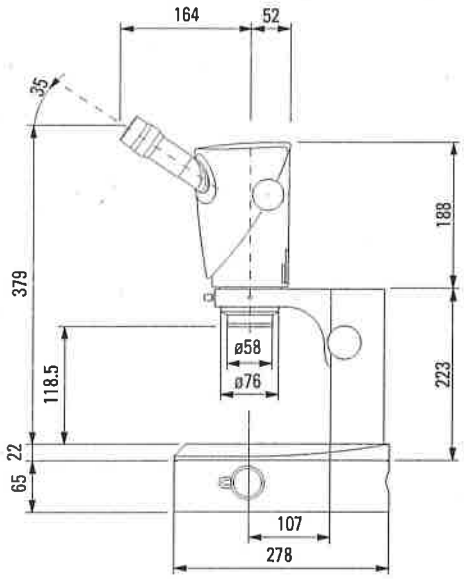
with incident light stand

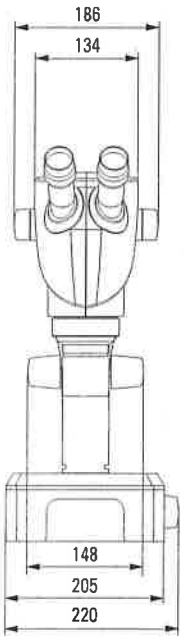


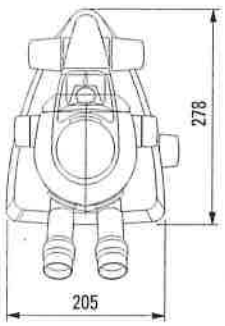




with transmitted light stand





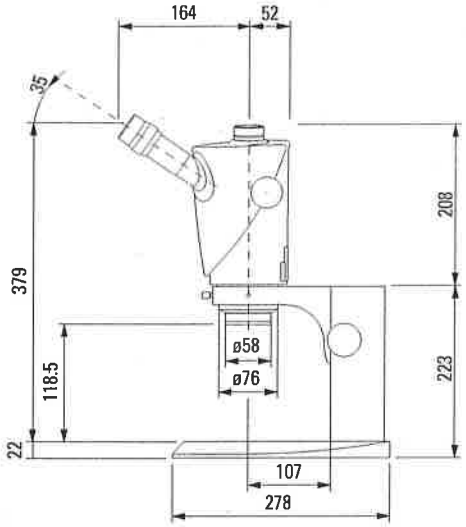


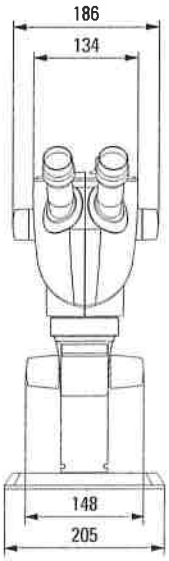
Dimensions in mm

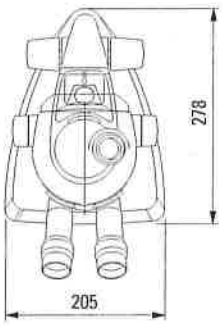
ВЯРНО С ОРИГИНАЛА
20..... г. /

DIMENSIONS S9 D

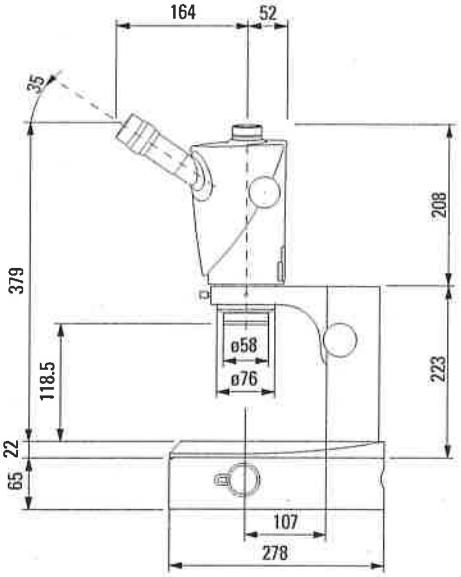
with incident light stand

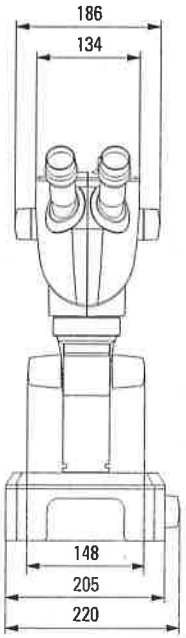


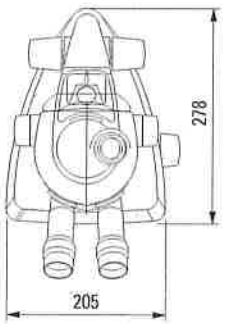




with transmitted light stand





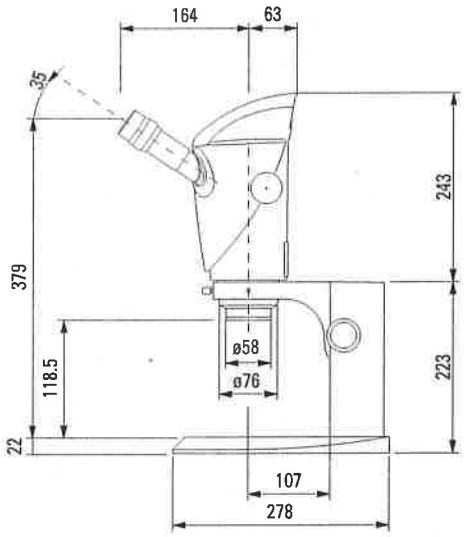


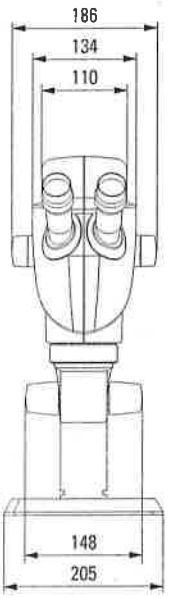
Dimensions in mm

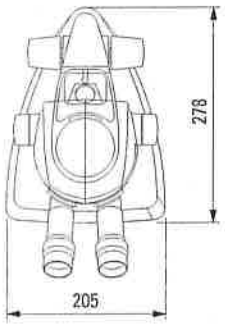
ВЯРНО С ОРИГИНАЛА
..... 20..... г. / .....

DIMENSIONS S9 i

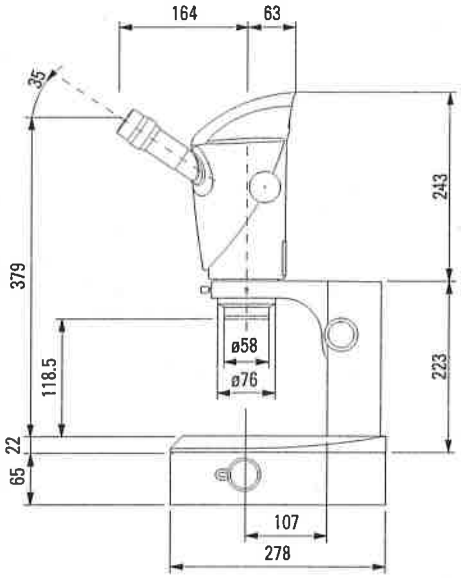
with incident light stand

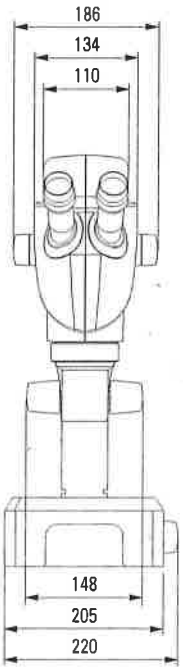


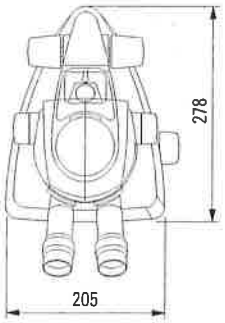




with transmitted light stand





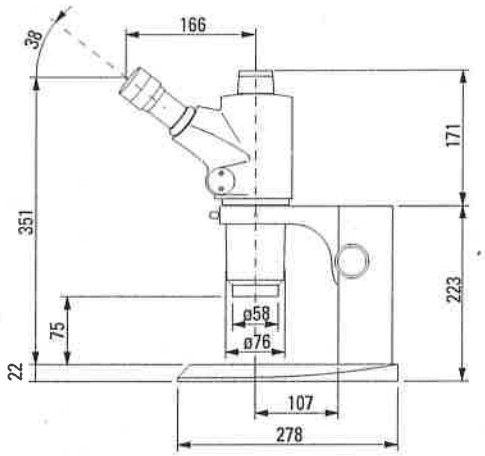


Dimensions in mm

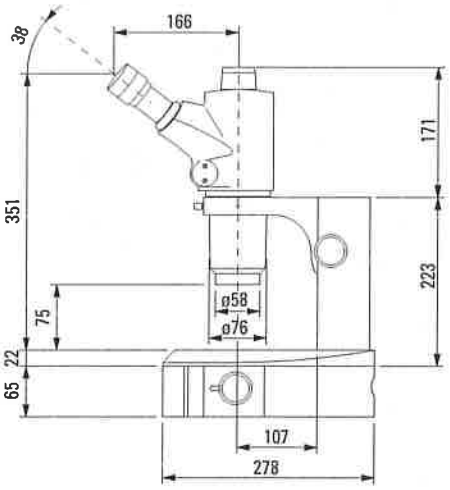
МИНИСТЕРСТВО НА РЕГИОНАЛНОТО РАЗВИТИЕ
ВЯРНО С ОРИГИНАЛА
20 г.

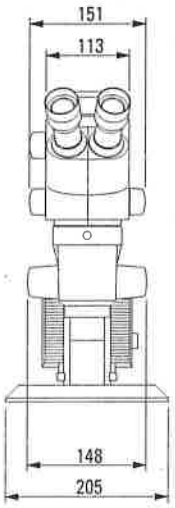
DIMENSIONS S APO

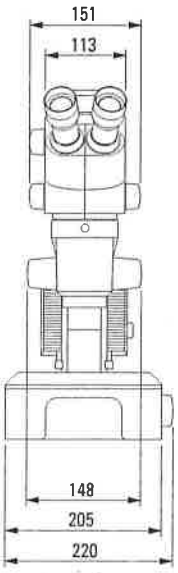
with incident light stand

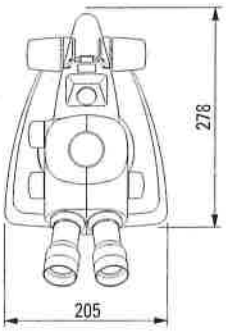


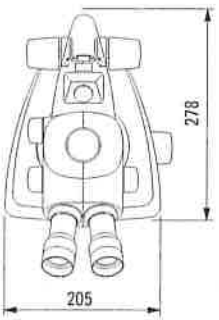
with transmitted light stand











Dimensions in mm

ВЯРНО С ОРИГИНАЛА
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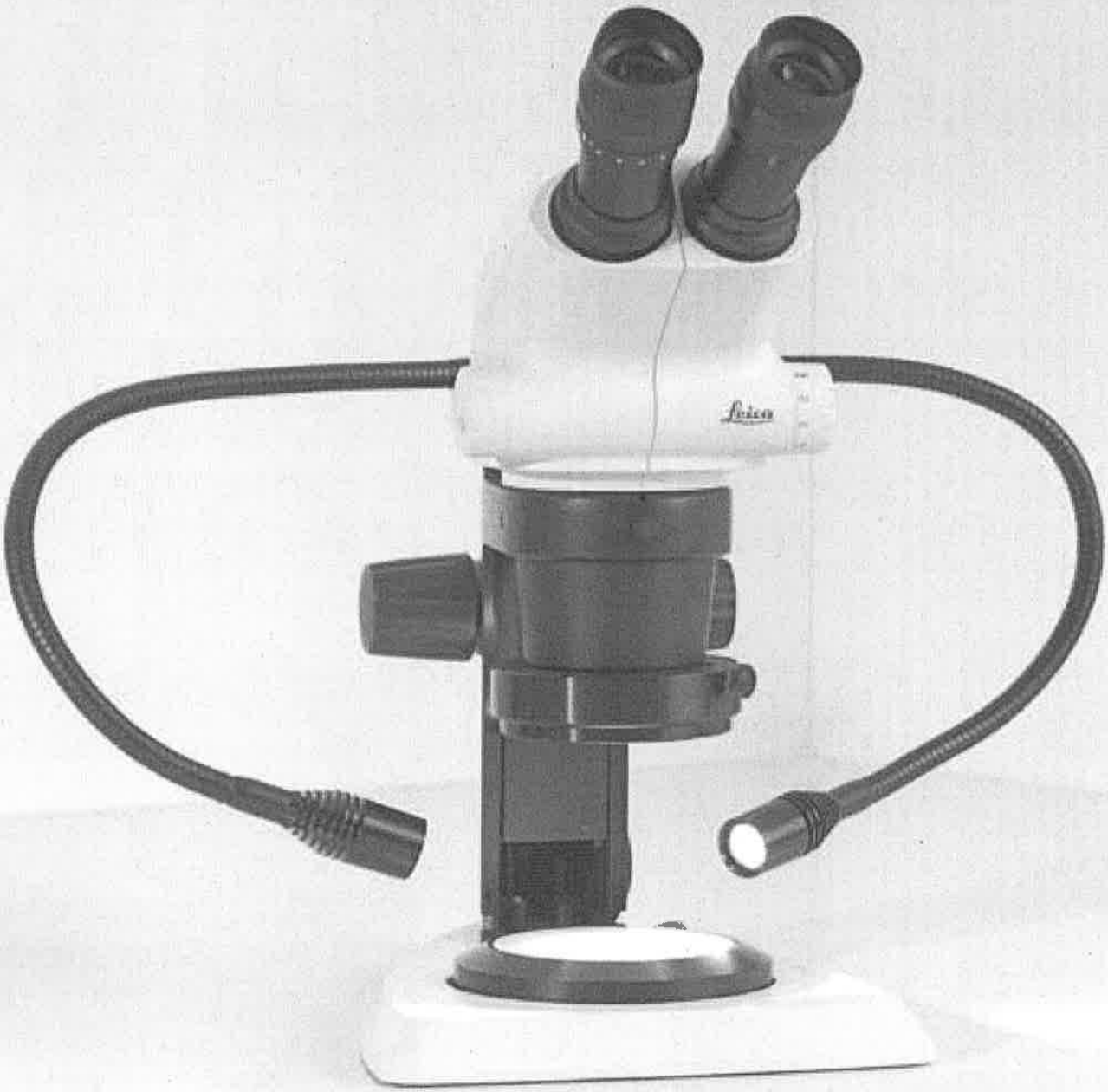
Living up to Life

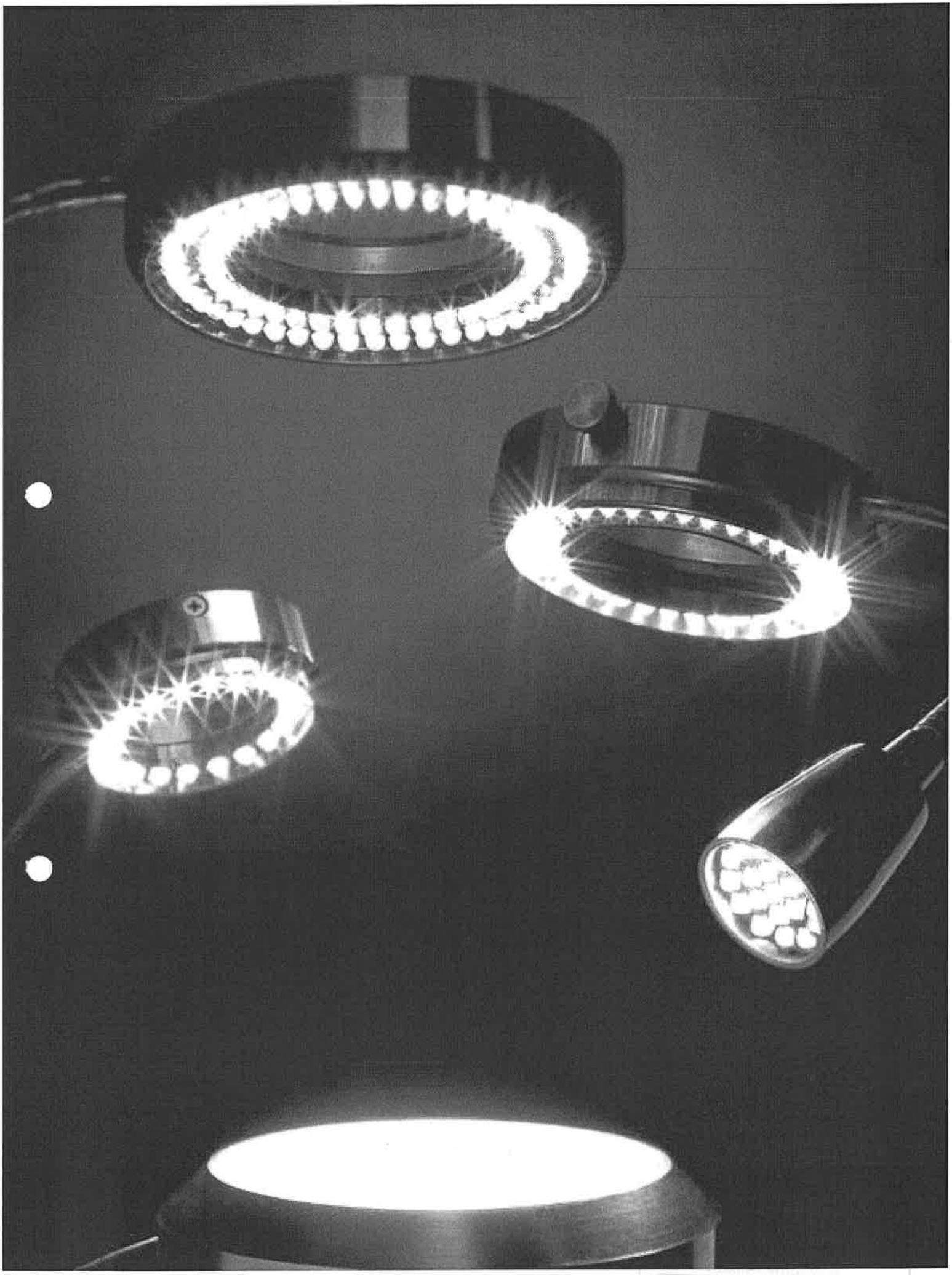
Leica
MICROSYSTEMS

Leica LED 1000

Modular LED Lighting System



МИНИСТЕРСТВО НА ВЪТРЕШНИТЕ РАБОТИ
ДИРЕКЦИЯ ПОРАВЛЯНИЕ НА СОБСТВЕНОСТТА
И СОЦИАЛНИ ДЕЙНОСТИ
ВЯРНО С ОРИГИНАЛА
20 г. /



ВЕРНО С ОРИГИНАЛА
20 г. /

Modular LED lighting system

Our comprehensive modular system for microscopy provides light sources for almost every task, and it is compatible with all standard Leica Microsystems stereo microscopes. Particular importance is attached to combining intelligent solutions with high product quality in order to ensure a good price/performance ratio.

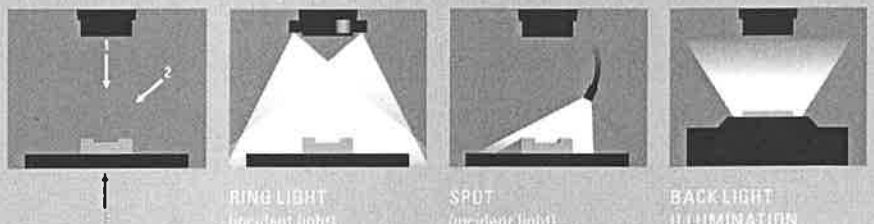
LED ILLUMINATION V. FIBRE OPTICS

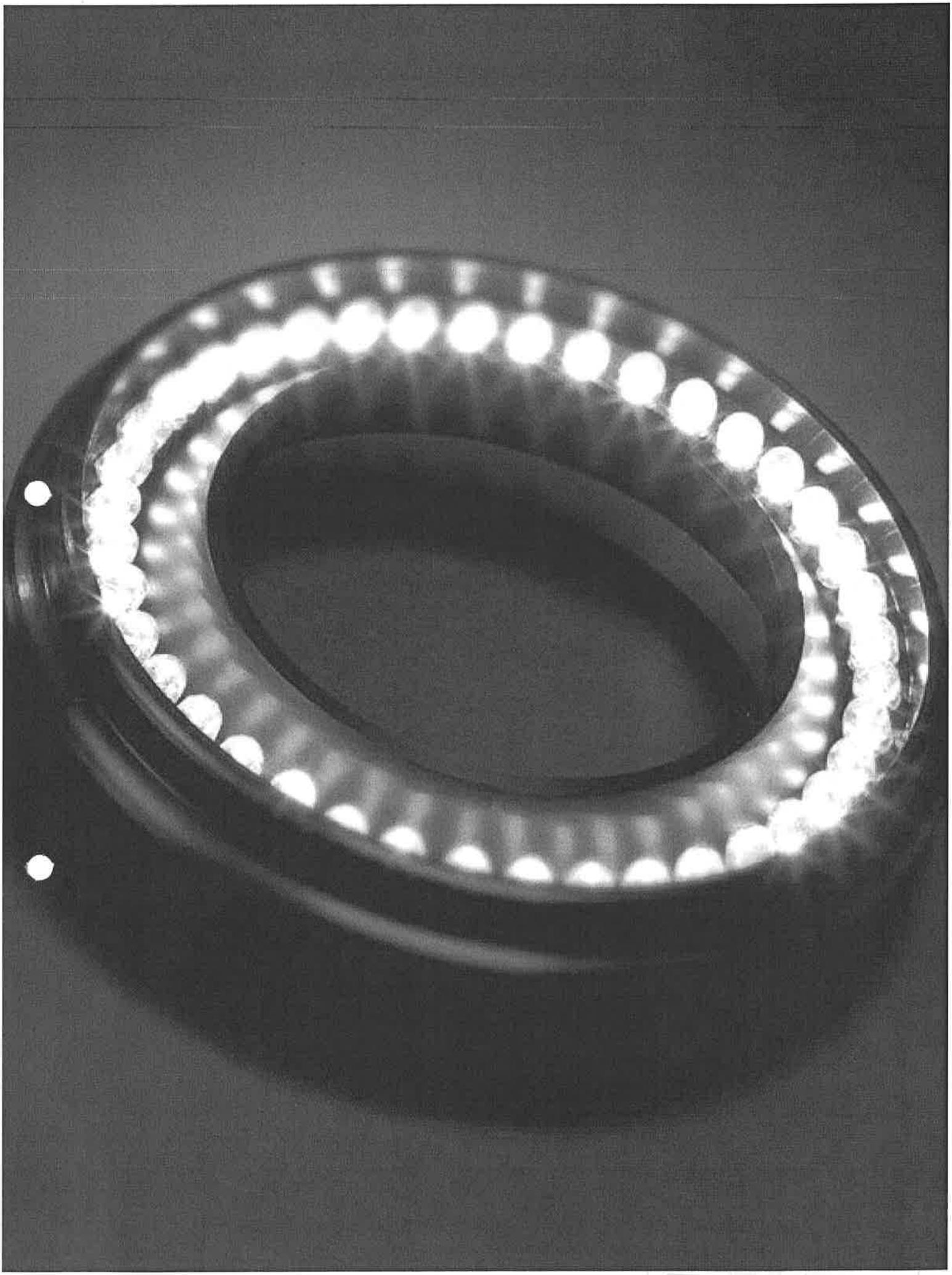
One advantage of LED ring lights, compared to fibre-optic lighting systems, is the option to switch parts of the ring light on or off and to rotate selected segments.
This allows homogeneous illumination as well as directed lighting. In addition, the resulting shadows offer excellent contrasting options for surface structures.

The following product properties are further advantages compared to fibre optics:

› daylight quality (5 000 K)
› long service life
› no noise, no vibrations
› homogeneous, shadow-free illumination.

The type and direction of lighting are crucial for good results. To achieve the desired optical image contrast, three approaches are followed: incident light (with ring light [1] or spots [2] for the greatest light intensity with maximum flexibility and the widest range of lighting systems), and back light [3].





ВЯРНО С ОРИГИНАЛА
20 г.

LED ring lights

LED RING LIGHT 38/20

This LED ring light (20 LEDs), with an inside diameter of 38 mm, is ideal for objectives in video systems and image processing. The ring light 38/20 can be combined with both the standard control unit and the segment control unit. When used with the segment control unit, different lighting scenarios can be created.
Working distance: 50–100 mm.

LED RING LIGHT 66/40

This slender-build LED ring light (40 LEDs) with an outside diameter of only 94 mm permits extraordinarily bright homogeneous object illumination. It can be used with microscopes with an objective diameter of 66 mm (and if adapters are used, with other diameters as well) and can be combined with both the standard control unit and the segment control unit (for segment lighting, see page 10).
Working distance: 55–120 mm.

LED RING LIGHT 66/80

This LED ring light has 80 LEDs, and its output is comparable to a 150 W halogen light source with a fibre-optic light guide. It is combined with the segment control unit, with which it is possible to select, illuminate and rotate individual segments, for the best possible identification of contrasts on different surface structures.
Working distance: 35–120 mm or 120–300 mm.

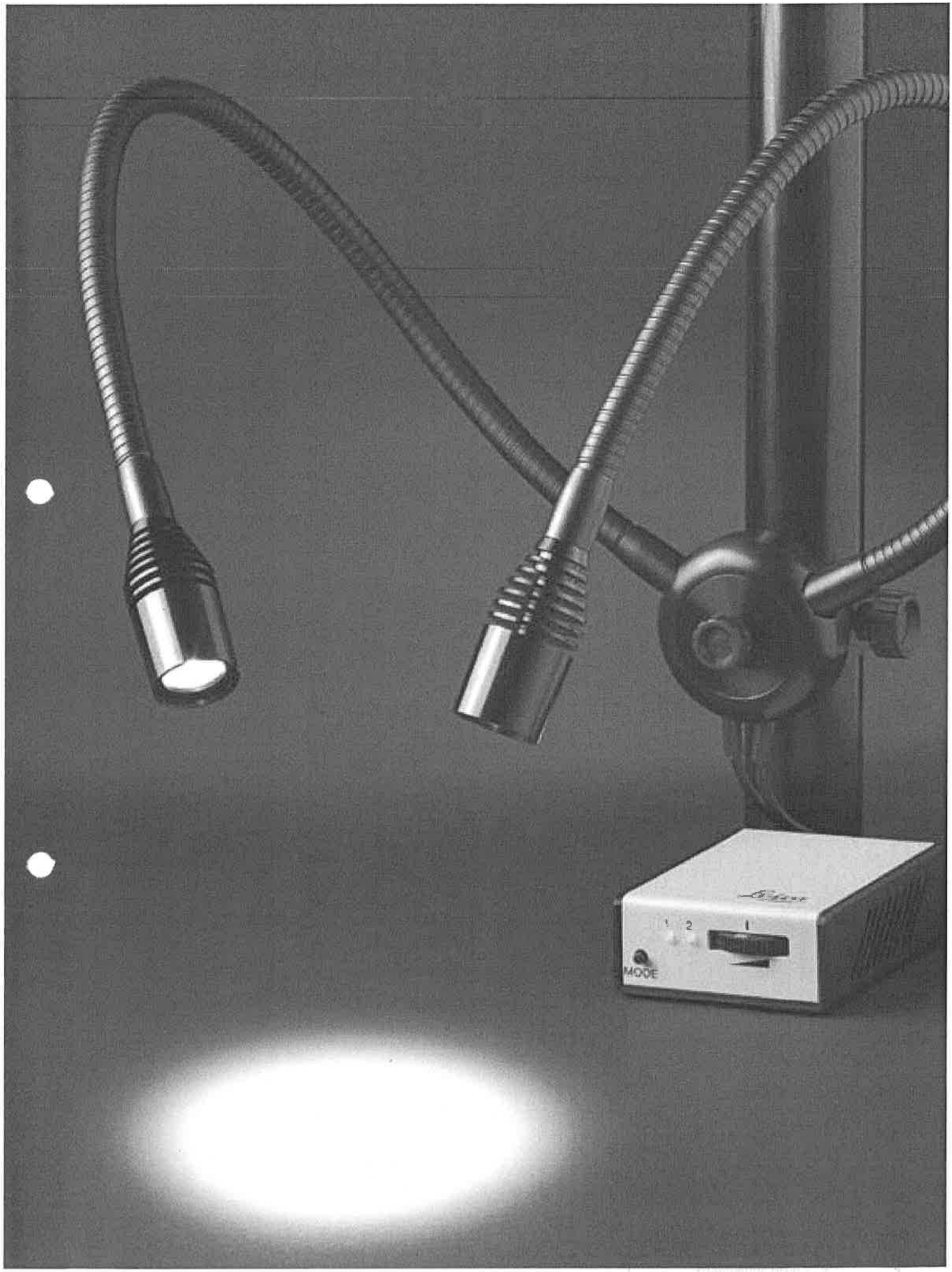
ACCESSORIES

The accessories for LED ring lights 66/40 and 66/80 include polarisation filter sets consisting of an analyser and a polariser. The polariser is attached to the outside of the ring light, and the analyser is integrated into the ring light.

Polarising filter set for suppressing undesired reflections, for ring lights 66/40 and 66/80.

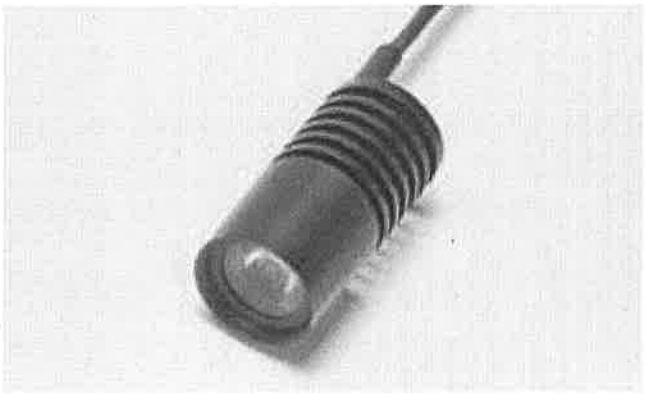
Diffuser for light scattering, for ring lights 66/40 and 66/80.

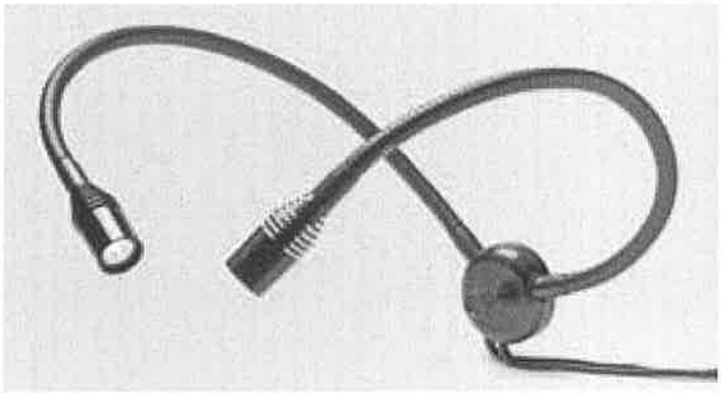
Adapters for attaching the LED ring lights to various microscope objectives (see Accessories, page 13).



ВЯРНО С ОРИГИНАЛА
20 г.

LED Hi-Power spots





LED HI-POWER SPOT

This compact spot light source is needed for all microscopy applications in which a smaller area (15 mm) is to be illuminated. Its extremely bright light is transmitted directly to the object. Another highly useful feature of the LED Hi-Power spot is its colour temperature of either 5 900 K (+/–5%) or 4 000 K. Its light output is comparable to a 150 W halogen light source with a fibre-optic light guide.
One or two Hi-Power spots can be connected with the Hi-Power control unit. If two spots are used, either one or both spots can be activated alternately or simultaneously.

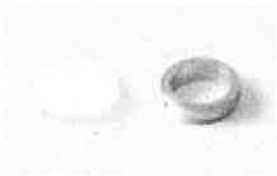
LED HI-POWER SPOT, 2-ARMED

This spot is used for direct attachment to microscope stands. As it is mounted on the stand, it is perfect for use in small spaces, and it is compatible with the compact Hi-Power control unit.

› cable fed into the flexible arms
› neutral white light, 5 900 K (+/–5%)
› homogeneous illumination
› high-quality flexible arms
› stable mounting on microscope stand.

ACCESSORIES

Diffuser for light scattering.



Spot holders: available lengths 85, 200 and 300 mm.

Adapters for attaching the 2-armed spot to round columns and various stands (see Accessories, page 13).

Polarising filter for suppressing undesired reflections.

Base plate for attaching spot holders on which LED spot lights can be mounted.

БИБЛИОТЕКА
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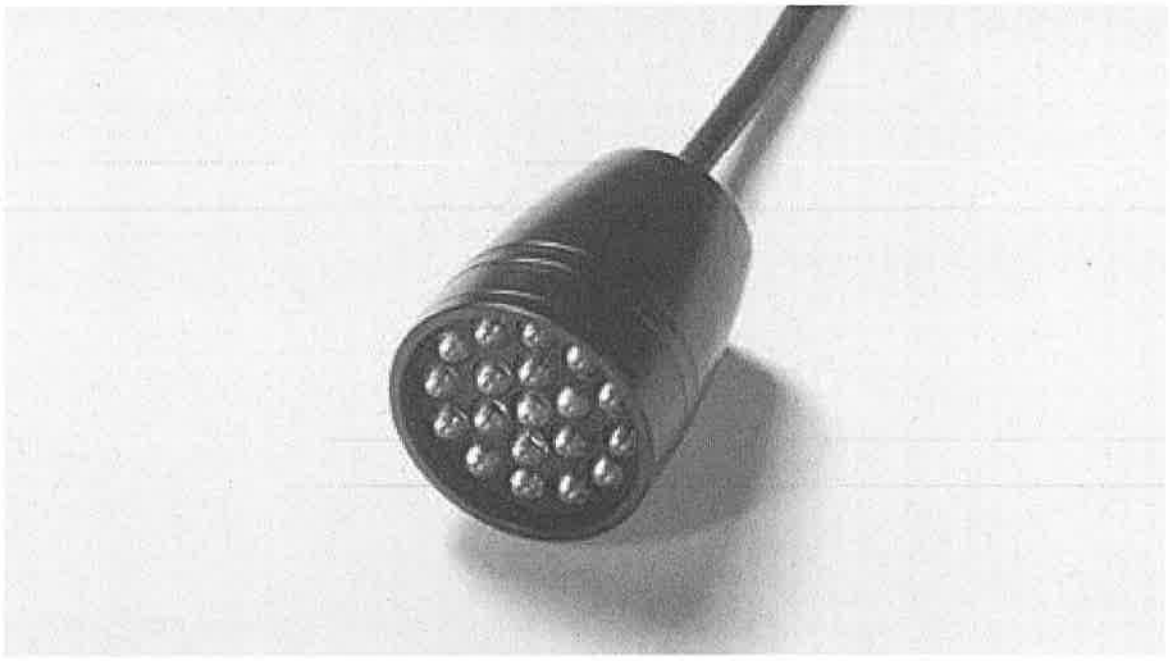


LED spot

LED SPOT 19

This LED spot (19 LEDs) has a spot holder for direct attachment to the microscope and, with the spot holder and the base plate, it can be positioned anywhere.
Two LED spots can be simultaneously attached to, and operated by, one control unit.

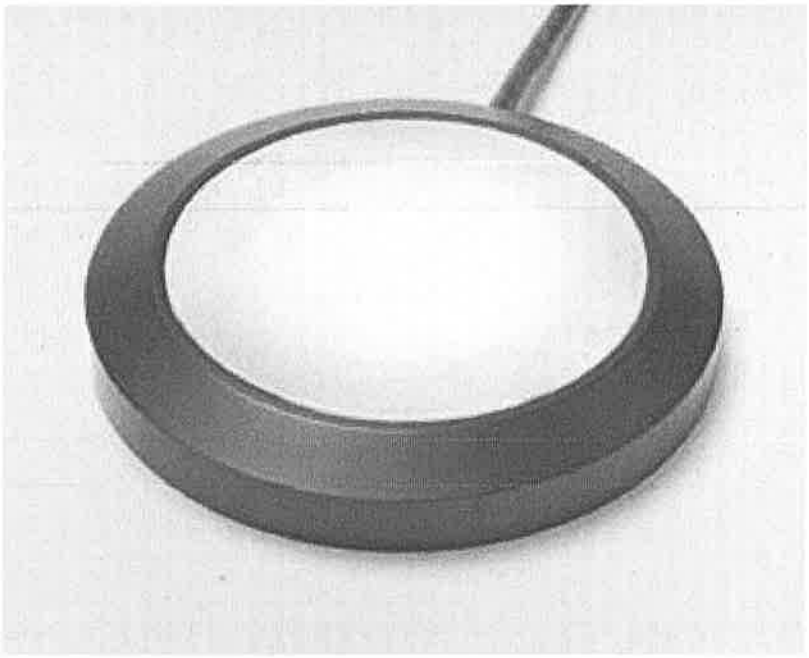
ACCESSORIES

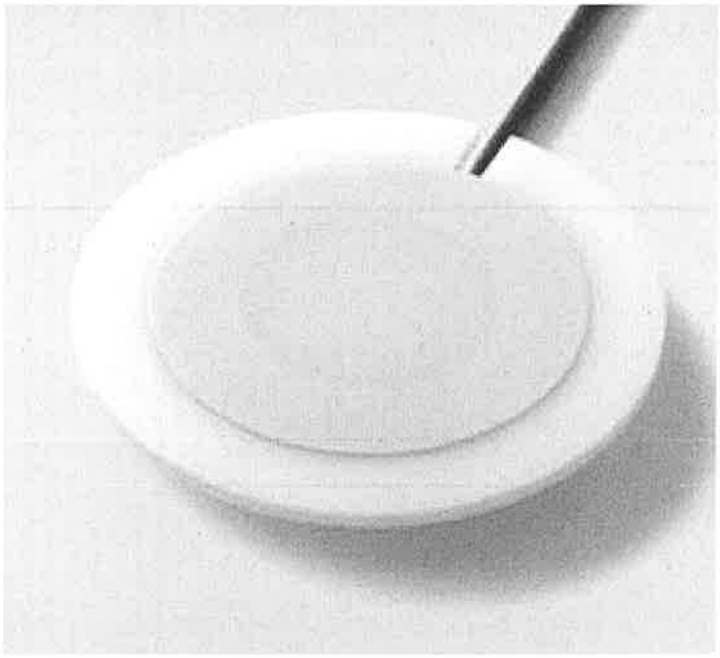
Spot holders: available lengths 85, 200 and 300 mm.

Colour filters are available in blue, green, yellow and red.

Base plate for attaching spot holders on which LED spot lights can be mounted.

20 г.





LED back lights

UNIVERSAL LED BACK LIGHT

This back light (40 LEDs) can be attached to the work surface of a stereo microscope and provides illumination in daylight quality, ensuring perfect uniform illumination with low-build LEDs of a long service life.
The control unit permits infinitely variable brightness control of the back light.

LED BACK LIGHT, RECESSED

This LED back light can be used with the bases of the Leica Microsystems M and S series, and ensures extraordinarily bright, homogeneous illumination at a colour temperature of 5 500 K.
The standard control unit permits infinitely variable brightness control of the back light.

ВЕРНО С ОРИГИНАЛА
20 г.

Control units

STANDARD CONTROL UNIT

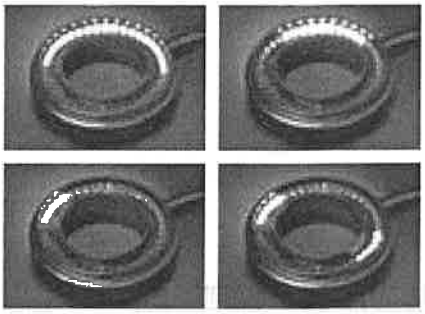
This compact control unit includes an on/off switch, infinitely variable brightness control, as well as two socket connections for LED lighting units.

SEGMENT CONTROL UNIT

The segment control unit now has a button for segment selection, which is displayed by four LEDs:

› separate buttons for left/right rotation of the segment
› auto-rotation
› rotation in 45° or 90° steps (segment size: semi, quarter or one-eighth circles)
› infinitely adjustable dimmer
› no flickering with cameras due to direct-current excitation
› permits operation of two light heads
› wide-range power supply 100–240 V, ESD socket.

Segment control: Button for segment selection.



ДИРЕКЦИЯ
ВЯРНО С ОРИГИНАЛА
20 г. /

HI-POWER CONTROL UNIT

The Hi-Power control unit can be connected with up to two Hi-Power spots. Either only one spot is activated or both spots can be used alternately or simultaneously (with the selected setting shown on the display). This control unit permits infinitely variable brightness control.

COMBI CONTROL UNIT

This control unit can be connected with up to two Hi-Power spots plus one LED component (e.g. a ring light) with a maximum of 40 LEDs.
The LED combination control unit can be operated in normal or storage mode. In normal mode, any desired position can be entered, while in the storage mode, the selected positions are stored for use at a later time.

20.... г.

Components

LIGHT SOURCE	LED RING LIGHT 66/40 (30 210 002)	LED RING LIGHT 66/80 (30 230 005/35–120 mm, 30 230 006/120–300 mm)	LED RING LIGHT 38/20 (30 230 001)
Diodes	40 white LEDs	80 white LEDs	20 white LEDs
Colour temperature	5 000 K	5 000 K	5 000 K
Dimensions	outside: Ø 94 mm x 25 mm inside: Ø 66 mm	outside: Ø 112 mm x 27 mm inside: Ø 66 mm	outside: Ø 60 mm x 22 mm inside: Ø 38 mm
Attachment	circumference clamping with spring and screw		
Working distance	55–120 mm from ring light	35–120 mm or 120–300 mm from ring light	50–100 mm from ring light

LIGHT SOURCE	LED HI-POWER SPOT (30 220 003/5 900 K, 30 220 006/4 000 K)	LED HI-POWER SPOT, 2-ARMED (30 220 007)	LED SPOT 19 (30 220 001)
Diodes	1 x Hi-Power LED	2 x Hi-Power LED	19 white LEDs
Colour temperature	5 900 K (+/–5%) / 4 000 K	5 900 K (+/–5%)	5 000 K
Dimensions	Ø 25 mm x 51 mm	Ø 34 mm x 45 mm	Ø 35 mm x 45 mm
Connections/attachment	M6 thread for spot holder	via incident light adapter	via spot holder

LIGHT SOURCE	LED BACK LIGHT, UNIVERSAL (30 240 003)	LED BACK LIGHT, RECESSED (30 240 004)
Diodes	40 white LEDs	40 white LEDs
Colour temperature	5 500 K	5 500 K
Dimensions	Ø 120 mm x 19 mm	
Illuminated area	Ø 55 mm	Ø 55 mm

CONTROL UNIT	STANDARD (30 210 001)	SEGMENT (40 LEDs) (30 210 015)
Power supply	24 V DC ± 5%, hollow pin 5.5 x 2.1 mm, 250 mA	24 V DC ± 5%, hollow pin 5.5 x 2.1 mm, 250 mA
Dimensions (D x W x H)	95.5 x 64 x 29 mm	95.5 x 64 x 29 mm
Connections	2 x 3.5 mm jack sockets (stereo)	2 x 3.5 jack sockets (stereo) and 1 x mini DIN
On/off switch	•	
Buttons for segment rotation	–	2 (incl. auto-rotation)
Potentiometer wheel	approx. 1–25 mA, with index marks	
ESD connection	4 mm banana plug	
Ambient temperature	10–40 °C	
Rel. humidity	30–70%	
Conformity mark	CE	

CONTROL UNIT	HI-POWER (30 210 014) max. 2 Hi-Power spots	COMBI (30 210 013) max. 2 Hi-Power spots + 1 ring light/back light
Power supply	5 V DC ± 5%, hollow pin 5.5 x 2.5 mm, 1.2 A	24 V DC ± 5%, hollow pin 5.5 x 2.1 mm, 0.75 A
Dimensions (D x W x H)	95.5 x 64 x 29 mm	126 x 52 x 45 mm
Connections	2 x 3.5 mm jack sockets (stereo)	2 x 3.5 jack sockets (stereo) and 1 x mini DIN
ESD connection	4 mm banana plug	4 mm banana plug
Operation	potentiometer, buttons for Port 1, Port 2, on/off with LED display	potentiometer, 3 buttons with LED display

ДАРНО С ОРИГИНАЛ
20..... г. /

Accessories

RING LIGHT	
Adapters	
66/58	30 123 107
MS5/MZ6 (achromat 1.0x/0.8x/0.63x/0.32x)	30 123 101
MS5/MZ6 (achromat 1.5x)	30 123 102
MS5/MZ6 (achromat 2.0x)	30 123 103
M420 (macro lens/apo zoom)	30 123 104
M5A (lens 2.0x/1.5x/0.5x)	30 123 105
Diffusers	
for ring light 66/40	30 231 008
for ring light 66/80	30 231 011
Polarising filter sets	
analyser and polariser 66/40	30 121 111
analyser and polariser 66/80	30 231 006
Extension cable	30 231 005

HI-POWER SPOT / HI-POWER SPOT, 2-ARMED	
Diffuser	30 221 019
Polariser	30 221 013
Spot holders	
L = 85 mm	30 221 009
L = 200 mm	30 221 010
L = 300 mm	30 221 011
Base plate with M5 thread	30 221 008
Adapters (for 2-armed spot)	
for S stand	30 221 014
for attaching to round columns Ø 25, 30, 32, 35 mm	30 221 015
for column 104 50 171	30 143 004
for routine M series	10 450 570
for combination light guide	10 450 205

SPOT 19	
Filters	
blue	30 221 001
green	30 221 002
yellow	30 221 003
red	30 221 004
Spot holders	
L = 85 mm	30 221 005
L = 200 mm	30 221 006
L = 300 mm	30 221 007
Base plate with M5 thread	30 221 008

ВЕРНО С ОРИГИНАЛОМ
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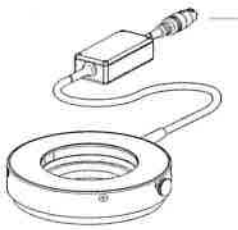
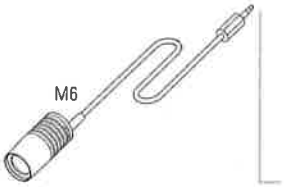
System overview

LIGHT SOURCE	LED RING LIGHT 38/20 30 230 001	LED RING LIGHT 66/40 30 210 002	LED RING LIGHT 66/80 30 230 005 / 35–120 mm 30 230 006 / 120–300 mm	LED HI-POWER SPOT 30 220 003 / 5 900 K 30 220 006 / 4 000 K





CONTROL UNITS

Standard (30 210 001) incl. desktop power supply (30 211 021)

Segment (30 210 015) incl. desktop power supply (30 211 021)

Combi (30 210 013) incl. desktop power supply (30 211 021)

Segment (30 210 015) incl. desktop power supply (30 211 021)

Hi-Power (30 210 014) incl. plug-in power supply (30 211 012)

Combi (30 210 013) incl. desktop power supply (30 211 021)

ACCESSORIES

Diffuser 66/40 (30 231 008)

Polarising filter set for 66/40 (30 121 111)

Adapters *(see p. 13)*

Diffuser 66/80 (30 231 011)

Polarising filter set for 66/80 (30 231 006)

Adapters *(see p. 13)*

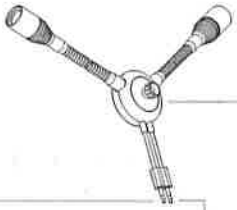
Spot holders M5/M6:
85 mm (30 221 009)
200 mm (30 221 010)
300 mm (30 221 011)

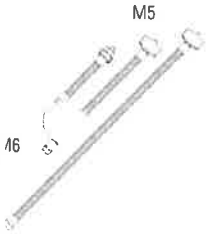
Base plate M5 (30 221 008)

Diffuser (30 221 019)

Polarising filter (30 221 013) *(no illustration)*

LED HI-POWER SPOT, 2-ARMED
30 220 007



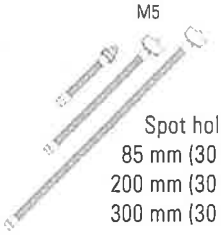


(2-armed only:)
Adapters *(see p. 13)*

LED SPOT 19
30 220 001

Standard (30 210 001)
incl. desktop power supply (30 211 021)

Segment (30 210 015)
incl. desktop power supply (30 211 021)



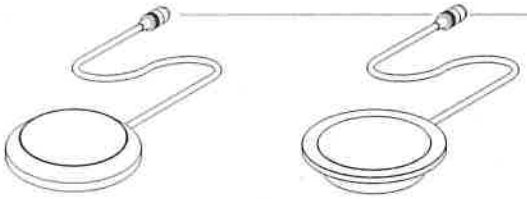
Spot holders M5:
85 mm (30 221 005)
200 mm (30 221 006)
300 mm (30 221 007)

Base plate M5 (30 221 008)

Colour filters *(see p. 13)*:
blue
green
yellow
red

LED BACK LIGHT UNIVERSAL
30 240 003

LED BACK LIGHT RECESSED
30 240 004



Standard (30 210 001)
incl. desktop power supply (30 211 021)

Segment (30 210 015)
incl. desktop power supply (30 211 021)

Combi (30 210 013)
incl. desktop power supply (30 211 021)

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МИНИСТЕРСТВО НА ВЪТРЕШНИТЕ РАБОТИ
ДЪРЖАВЕН ИЗПИТ
ВЕРНО С ОРИГИНАЛА
20 ... г. /

Образец № 6Ж

ЦЕНОВО ПРЕДЛОЖЕНИЕ

за участие в обществена поръчка с предмет **„Закупуване на аналитична техника за изследвания в областта на природните науки" по обособена позиция № 7 -** „Доставка на ротационен микротом с държач на проби и стерео микроскоп"

от: **„Медицинска Техника Инженеринг" ООД**

/наименование на участника/

Във връзка с обявената процедура за възлагане на обществена поръчка с горепосочения предмет Ви представяме нашето ценово предложение, както следва:

	Услуга/стока	Количество/брой	ЕД. ЦЕНА БЕЗ ДДС	ОБЩА ЦЕНА БЕЗ ДДС
1.	Ротационен микротом с държач за проби и стерео микроскоп	1	47 480.00	47 480.00
			Обща стойност без ДДС:	47 480.00

Общата стойност за изпълнение на поръчката е **47 480.00** (четиридесет и седем хиляди четиристотин и осемдесет) лв. без ДДС.

При несъответствие между сумата, изписана с цифри, и тази, изписана с думи, важи сумата, изписана с думи.

1. Предлаганата цена включва цената за доставка франко мястото на изпълнение на поръчката, инсталация, въвеждане в експлоатация, поддръжка в рамките на гаранционния срок описан в техническата спецификация Приложение № 1Ж, включително резервни части, модули и възли, необходими за отстраняване на повреди и провеждане на обучение на 2 (двама) служители.
2. Разходите за мита, акцизи, труд и транспорт да са включени в цената.
3. Ценовото предложение включва всички разходи по изпълнение на поръчката.

Забележка: .....

чл. 2, ал. 2 от ЗЗЛД

Дата: 30.11.2017г.

ПОДПИС и ПЕЧАТ: .....
Галина Ценова /име и фамилия/
Пълномощник на „МТИ" ООД
/длъжност на представляващия участника/