

» Mikro- und Neurochirurgie

» Micro- and neuro surgery

» Chirurgie micro et neuro

» Cirugía micro y neuro

» Micro- e Neuro-Chirurgia



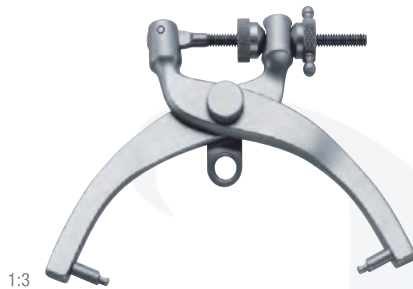
### Schädelhalter

#### **Cervical traction tongs**

*Pinces de traction crânienne*

*Pinzas de tracción cranial*

*Pinze per trazione craniale*



1:3

**CRUTCHFIELD**

13-101-000



1:3

13-102-000

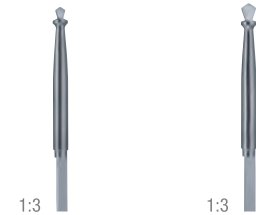


1:3

13-104-000

**grosses Modell, für Extension der Halswirbel – kein Vorbohren erforderlich – Dorne verstellbar**

large type, cervical traction tongs – pins adjustable no drilling to be done  
 modèle large, distracteur cervicale – poinçons ajustables pas de perçage nécessaire  
 modelo grande, distractor cervical – espigas ajustables sin necesidad de trepanar  
 modello grande, distrattore cervicale, pin ajustabili, non necessita di perforare, regolabili



1:3

1:3

	3.5 mm Ø	5.0 mm Ø
13-103-035	x	
13-103-050		x

**Satz à 2 Stück für 13-101-000 und 13-102-000**

Set of 2 pieces for 13-101-000 and 13-102-000

Jeu à 2 pièces pour 13-101-000 et pour 13-102-000

Juego con 2 piezas para 13-101-000 y para 13-102-000

Completo con 2 pezzi per 13-101-000 e per 13-102-000

13-105-000

**Ersatzdorn für 13-104-000**

Spare pin for 13-104-000  
 Goupille de rechange pour 13-104-000  
 Perno de cambio para 13-104-000  
 Punta di ricambio 13-104-000

1:2

13-106-190

**Gabelschlüssel, doppelendig zu 13-104-000**

Wrench, double-ended for 13-104-000  
 Clé de fixation, pour 13-104-000  
 Llave de tuercas, para 13-104-000  
 Chiave per 13-104-000

### Handbohrapparate

#### Hand drills

Perforateurs à main

Perforadores a mano

Perforatori a mano



1:3

#### HUDSON

270 mm – 10 3/4 "      13-108-000

#### Handbohrapparate alleine

Hand drills only

Perforateurs à main seul

Perforadores a mano sólo

Perforatori a mano solo

270 mm – 10 3/4 "      13-108-016

komplett mit 4 Bohrern (Fig. 1 – Fig. 4) und Verlängerungsstück  
complete with 4 twist drills (Fig. 1 – Fig. 4) and extension piece  
complet avec 4 mèches (Fig. 1 – Fig. 4) et pièce d'extension  
completa con 4 fresas (Fig. 1 – Fig. 4) y pieza de prolongación  
completo con 4 frese (Fig. 1 – Fig. 4) e pezzo di prolungazione



1:2

13-108-009

#### Verlängerungsstück

Extension piece

Pièce d'extension

Pieza de prolongación

Pezzo di prolungazione



1:2



1:2



1:2



1:2

Fig. 1	Fig. 2	Fig. 3	Fig. 4
9 mm Ø	14 mm Ø	16 mm Ø	22 mm Ø
13-108-001	13-108-002	13-108-003	13-108-004

#### CUSHING

14 mm Ø

13-108-005



1:2

#### MCKENZIE

13 mm Ø

13-109-070



1:2

instrumente zur Schädelöffnung  
**Instruments for cranial opening**

*Instruments pour l'ouverture du crâne*  
*Instrumentos para apertura craneana*  
*Strumenti per l'apertura del cranio*



**DE MARTEL** 1:2

330 mm – 13 "

13-112-330



**ADSON** 1:2

150 mm – 6 "

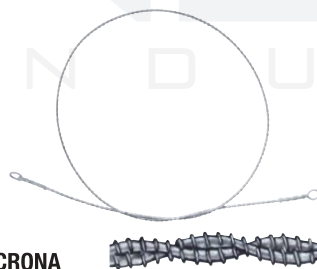
13-110-150



1:2  
**DE VILBISS**

210 mm – 8 ¼ "

13-111-210



**OLIVECRONA**

300 mm – 12 "

13-113-300

400 mm – 16 "

13-113-400

500 mm – 20 "

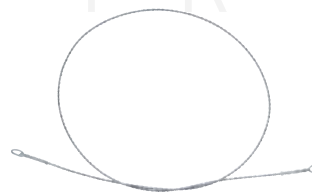
13-113-500

600 mm – 23 ½ "

13-113-600

700 mm – 27 ½ "

13-113-700



**GIGLI**

300 mm – 12 "

13-114-300

400 mm – 16 "

13-114-400

500 mm – 20 "

13-114-500

**6-teilig**

6 wires twisted

6 fils tordus

6 alambres torcidos

6 fili attorcigliati



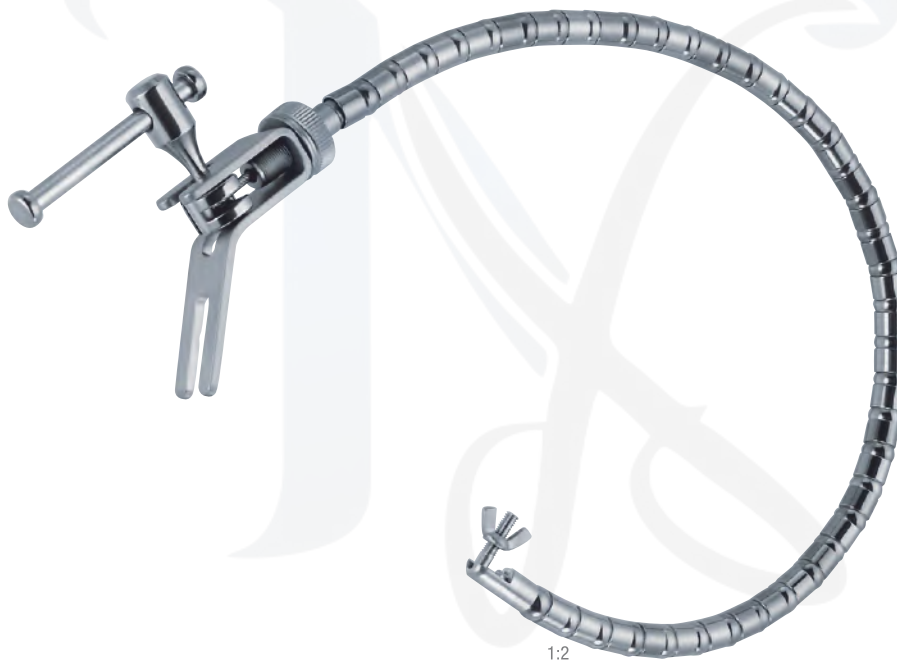
1:2

**GIGLI**

13-115-000

**Selbsthaltender hirnretraktor**  
**Self-retaining brain retractor**

*Retracteur cérébrale autostatique*  
*Separador cerebral autostático*  
*Retratore celebrale autostatico*



1:2

**Selbsthaltender Hirnretraktor, flexibel mit 1 Spannarm, komplett, bestehend aus: Fixierungsvorrichtung für 1 Spannarm, Spannarm und Spatelhalter für flache Spatel**

Brain retractor self-retaining, with 1 flexible arm, complete, consisting of: fixation base for 1 flexible arm, flexible arm only, support for flat brain spatulas

Retracteur cérébrale autostatique, flexible avec 1 tendeur, complét avec support pour 1 tendeur, tendeur et porte-spatule pour spatules plates  
 Separador cerebral autostático, 1 brazo flexible con soporte, completo con brazo y soporte para espátulas llanas

Retratore celebrale autostatico, flessibile  
 Completo, contiene: supporto di fissaggio per un braccio, 1 braccio flessibile con supporto di fissaggio per spatole piatte

13-117-000

**Selbsthaltender Hirnretraktor, flexibel mit 2 Spannarmen, komplett, bestehend aus: Fixierungsvorrichtung für 2 Spannarme, 2 Spannarme und 2 Spatelhalter für flache Spatel**

Brain retractor self-retaining, with 2 flexible arms, complete, consisting of: fixation base for 2 flexible arms, 2 flexible arms, 2 supports for flat brain spatulas

Retracteur cérébrale autostatique, flexible avec 2 tendeurs, complét avec supports pour 2 tendeurs, 2 tendeurs et 2 portes-spatule pour spatules plates  
 Separador cerebral autostatico, 2 brazos flexibles con soporte, completo con brazos y soporte para 2 spatulas llanas

Retratore celebrale autostatico, flessibile con 2 bracci completi, contiene: supporto di fissaggio per bracci per 2 spatole piatte

### Selbsthaltender hirnretraktor *Self-retaining brain retractor*

*Retracteur cérébrale autostatique*  
*Separador cerebral autostático*  
*Retrattore celebrale autostatico*



1:1

**Fixierungsvorrichtung allein, für 2 Spannarme**  
Fixation base only, holding 2 flexible arms  
Support seul pour 2 tendeurs  
Soporte sólo para 2 brazos de separador  
Supporto di fissaggio per 2 bracci, solo

13-118-050

**Fixierungsvorrichtung allein, für 1 Spannarm**  
Fixation base only, holding 1 flexible arm  
Support seul pour 1 tendeur  
Soporte sólo para 1 brazo de separador  
Supporto di fissaggio per 1 braccio, solo

13-118-090

**Spatelhalter allein, für Flachspatel**  
Support only, for flat brain spatulas  
Porte-spatule seul, pour spatules plates  
Soporte sólo, para espátulas planos  
Supporto solo, per fissaggio di spatole piate

13-118-100

**Spatelhalter allein, für Spatel mit Rundschaft von 4 mm und 5 mm Ø, zum Befestigen am Spannarm**  
Support only, for brain spatulas with round shaft of 4 mm and 5 mm Ø to fix on the flexible arm  
Porte-spatule seul pour la fixation des spatules de 4 mm et 5 mm Ø diam  
Soporte sólo para la fijación de espátulas de 4 mm y 5 mm Ø al brazo  
Supporto solo per spatole con asta tonda di Ø 4 mm e 5 mm

13-118-080

**Spannarm allein – zum Aufstecken auf Kupplungsköpfe und Fixierungsvorrichtungen**  
Flexible arm only – for attaching coupling heads and for fixation bases  
Tendeur flexible seul – pour le montage sur supports et accouplements  
Brazo flejible sólo para montar sobre soportes  
Braccio flessibile sólo – per il montaggio sul supporto di fissaggio

hirnspatel  
**Brain spatula**

*Spatules cérébrales*  
*Espátulas cerebrales*  
*Spatole cerebrali*



**CUSHING**

	180 mm – 7 "
7 mm x 9 mm	13-119-070
11 mm x 13 mm	13-119-110
15 mm x 18 mm	13-119-150
18 mm x 22 mm	13-119-180

**OLIVECRONA**

	180 mm – 7 "	180 mm – 7 "
7 mm x 9 mm	13-120-007	13-121-007
11 mm x 13 mm	13-120-011	13-121-011
15 mm x 18 mm	13-120-015	13-121-015
18 mm x 22 mm	13-120-018	13-121-018

**konvex**  
convex  
convexe  
convexa  
convessa

**konkav**  
concave  
concave  
cóncava  
concava

**HEIFETZ**

	200 mm – 8 "
x = 8 mm	13-122-080
x = 11 mm	13-122-110
x = 14 mm	13-122-140
x = 17 mm	13-122-170
x = 20 mm	13-122-200

**biegsam**  
malleable  
malléable  
maleable  
flessibile

### McKenzie instrumentarium

#### **McKenzie instruments**

*McKenzie instruments*  
*Instrumentos McKenzie*  
*Strumenti McKenzie*



#### **MCKENZIE**

150 mm – 6 "	13-123-150	13-124-150
190 mm – 7½ "	13-123-190	13-124-190

#### **Zangen zum Anlegen der Klammern**

Clip applying forceps  
 Pincés pour poser des agrafes  
 Pinzas para poner grapas  
 Pinze per mettere le agraffes



#### **MCKENZIE** 1:2

148 mm x 40 mm x 6 mm – 5¾ " x 1 ½ " x ½ "	13-125-000
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#### **Klammerblock für 20 Klammern**

Brain clip rack for 20 clips  
 Porte-agrafes pour 20 agrafes  
 Porta-grapas para 20 grapas  
 Supporto port'agraffes per 20 agraffes



1:1

13-126-100
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#### **100 Klammern im Plastikbehälter**

100 Brain clips in plastic box  
 100 agrafes dans un tube de plastique  
 100 grapas en tubo de plástico  
 100 agraffes nella scatola di plastica

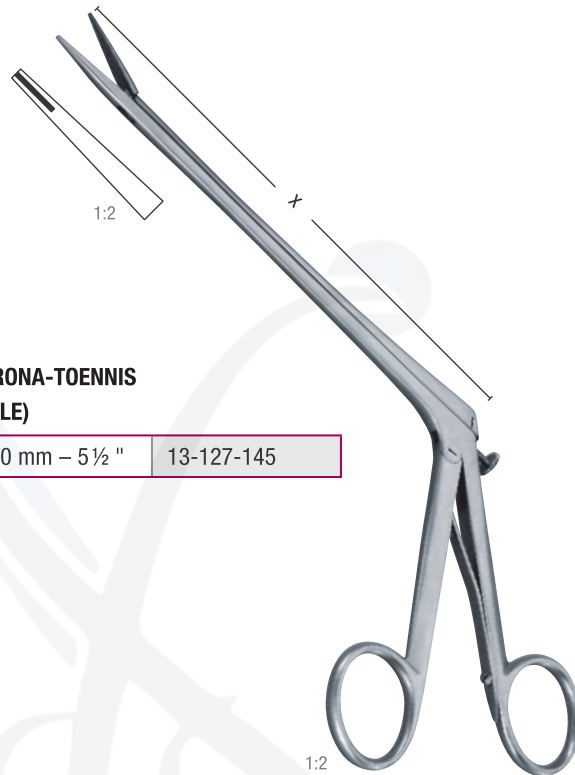


### Clips und anlegezangen *Clips and applying forceps*

*Clips et pinces à appliquer*

*Clips y aplicadores*

*Clips e pinze per mettere clips*



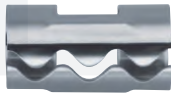
**OLIVECRONA-TOENNIS  
(SCOVILLE)**

x = 140 mm – 5½"    13-127-145



1:2  
**RANEY**

150 mm – 6"    13-128-000



1:1

13-129-000

**Kopfhautklammer „Raney“**  
Scalp clip "Raney"  
Agrafes pour le cuir chevelu «Raney»  
Grapa para cuero cabelludo "Raney"  
Agraiffe per il cuoio capelluto „Raney“



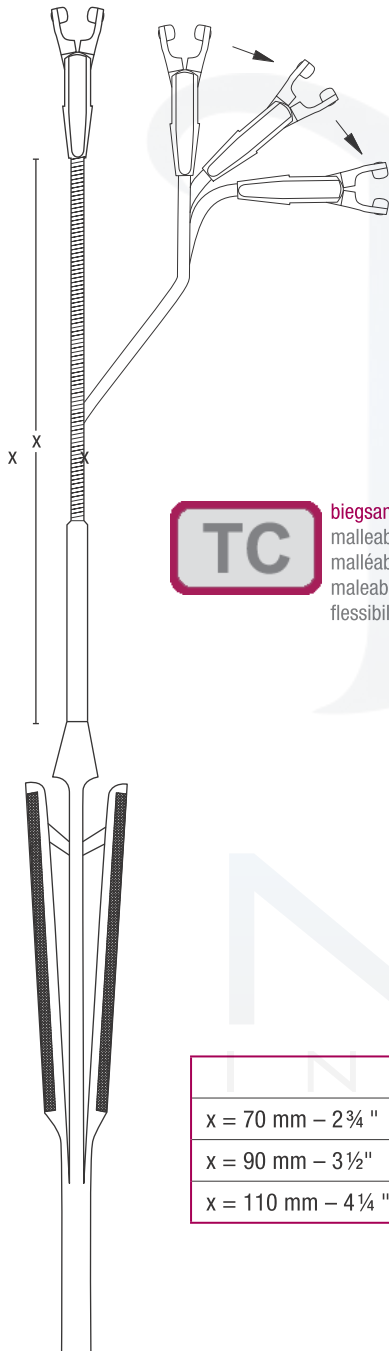
1:1

13-130-000

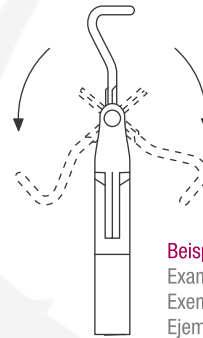
**Kopfhautklammer „Köln“ (Packung mit 10 Stück)**  
Scalp clip "Köln" (Package of 10 pieces)  
Agrafes pour le cuir chevelu «Köln» (Paquet de 10 pièces)  
Grapa para cuero cabelludo "Köln" (Paquetes de 10 piezas)  
Agraiffe per il cuoio capelluto „Köln“ (Confezione da 10 pezzi)

### Anlegezangen für Yasargil Clips Applying forceps for Yasargil clips

*Pince à poser pour des clips Yasargil*  
*Aplicadora para clips Yasargil*  
*Pinze per mettere clips Yasargil*



**TC** biegsam  
malleable  
malléable  
maleable  
flessibile



**Beispiel für Drehmechanismus**  
Example for rotation  
Exemple pour la rotation  
Ejemplo de rotación  
Esempio per la rotazione

	Mini	Standard
x = 70 mm – 2¾ "	13-131-002	13-132-002
x = 90 mm – 3½ "	13-131-004	13-132-004
x = 110 mm – 4¼ "	13-131-006	13-132-006

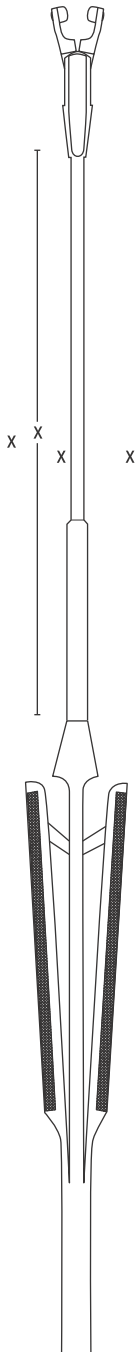
**nicht drehbar**  
non rotating  
non rotatif  
no rotatorio  
non rotativo

	Mini	Standard
13-131-020	13-131-020	13-132-020
13-131-022	13-131-022	13-132-022
13-131-024	13-131-024	13-132-024

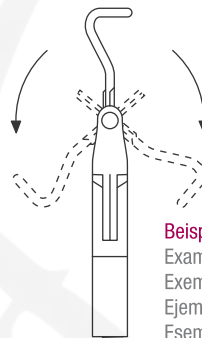
**drehbar**  
rotating  
rotatif  
rotatorio  
rotativo

### Anlegezangen für Yasargil Clips Applying forceps for Yasargil clips

*Pince à poser pour des clips Yasargil*  
*Aplicadora para clips Yasargil*  
*Pinze per mettere clips Yasargil*



**TC** starr  
rigid  
rigide  
rigido  
rigido



Beispiel für Drehmechanismus  
Example for rotation  
Exemple pour la rotation  
Ejemplo de rotación  
Esempio per la rotazione



	Mini	Standard
x = 70 mm – 2¾ "	13-133-002	13-134-002
x = 90 mm – 3½ "	13-133-004	13-134-004
x = 110 mm – 4¼ "	13-133-006	13-134-006

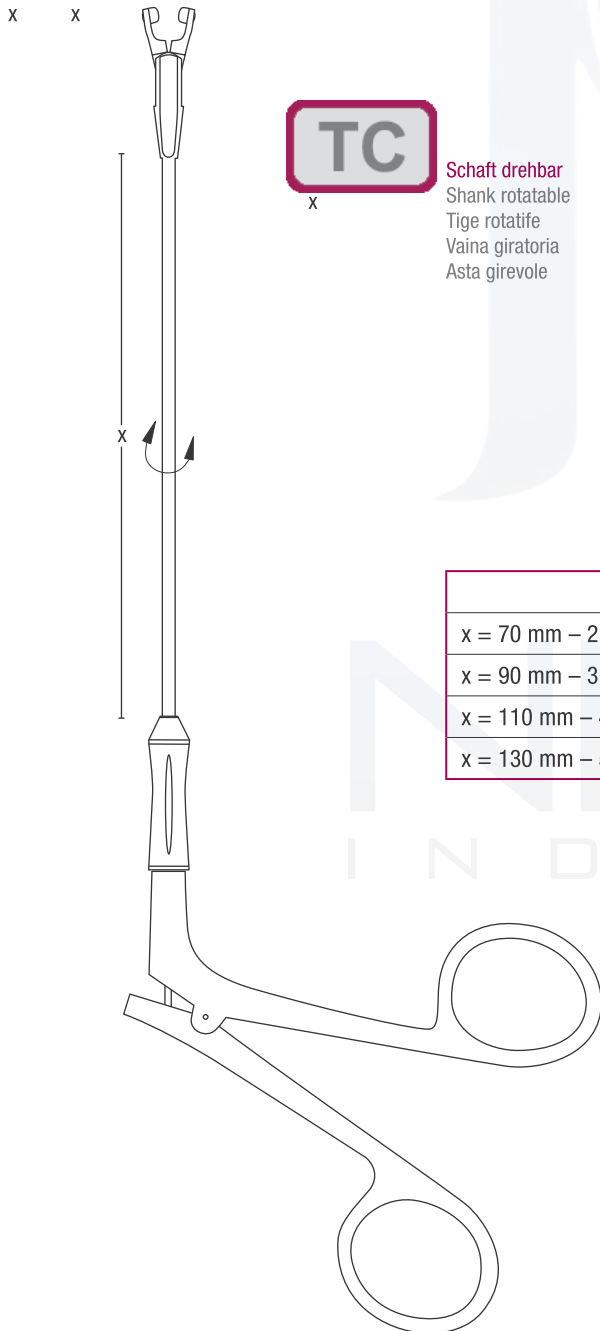
nicht drehbar  
non rotating  
non rotatif  
no rotatorio  
non rotativo

	Mini	Standard
13-133-020	13-133-020	13-134-020
13-133-022	13-133-022	13-134-022
13-133-024	13-133-024	13-134-024

drehbar  
rotating  
rotatif  
rotatorio  
rotativo

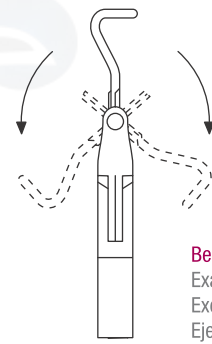
### Anlegezangen für Yasargil Clips Applying forceps for Yasargil clips

*Pince à poser pour des clips Yasargil*  
*Aplicadora para clips Yasargil*  
*Pinze per mettere clips Yasargil*



**TC**

**Schaft drehbar**  
Shank rotatable  
Tige rotatife  
Vaina giratoria  
Asta girevole



**Beispiel für Drehmechanismus**  
Example for rotation  
Exemple pour la rotation  
Ejemplo de rotación  
Esempio per la rotazione



	Mini	Standard
x = 70 mm – 2¾ "	13-135-270	13-136-270
x = 90 mm – 3½ "	13-135-290	13-136-290
x = 110 mm – 4¼ "	13-135-310	13-136-310
x = 130 mm – 5 "	13-135-330	13-136-330

**nicht drehbar**  
non rotating  
non rotatif  
no rotatorio  
non rotativo

Mini	Standard
13-135-070	13-136-070
13-135-090	13-136-090
13-135-110	13-136-110
13-135-130	13-136-130

**drehbar**  
rotating  
rotatif  
rotatorio  
rotativo

### Anlegezangen für Yasargil Clips *Applying forceps for Yasargil clips*

*Pince à poser pour des clips Yasargil*

*Aplicadora para clips Yasargil*

*Pinze per mettere clips Yasargil*



	Mini	Standard	Mini	Standard
17 mm – 6 ¾ "	13-137-170	13-138-170	13-137-370	13-138-370
21 mm – 8 ¼ "	13-137-210	13-138-210	13-137-410	13-138-410
23 mm – 9 "	13-137-230	13-138-230	13-137-430	13-138-430

**bayonett-förmig, mit Sperre**  
bayonett shaped, with ratchet  
en baionette, avec verrou  
forma bayoneta, con cierre  
forma baionetta, con cremagliera

**drehbar**  
rotating  
rotatif  
rotatorio  
rotativo



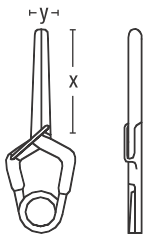
	Mini	Standard	Mini	Standard
18 mm – 7 "	13-139-180	340-774-180	13-139-280	340-774-280

**gerade, mit Sperre**  
straight, with ratchet  
droit, avec verrou  
recta, con cierre  
retta, con cremagliera

**drehbar**  
rotating  
rotatif  
rotatorio  
rotativo

### aneurysmen gefäßclips Aneurysm vessel clips

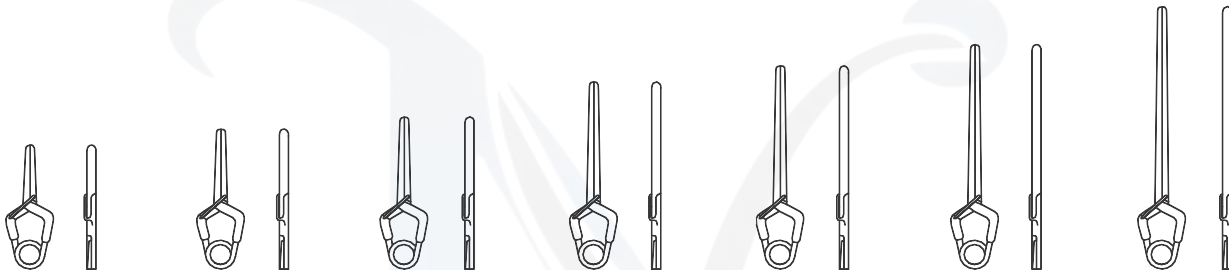
### Anévrisme clips Aneurisma clips Clips per aneurisma e vasi



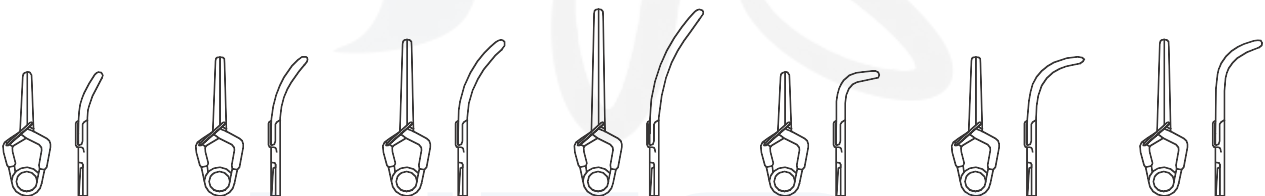
x	y	gms
<b>Maullänge</b> jaw length longueur du mors longitud de la boca lunghezza del morso	<b>max. Maulöffnung</b> max. jaw opening ouverture max. du mors apertura máx. de la boca apertura mass.	<b>Schließkraft</b> closing pressure force de fermeture fuerza de cierre pressione

#### YASARGIL-STANDARD

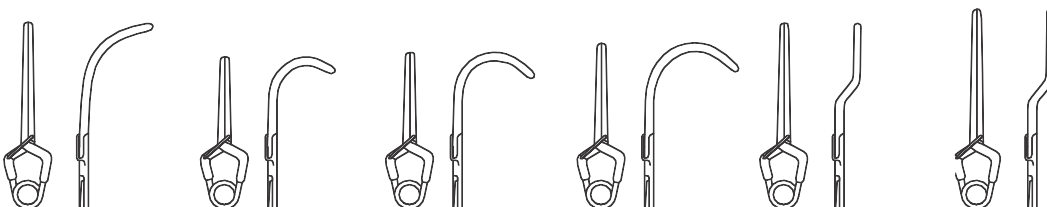
für **permanenten** Verschluss, aus hochwertigem Implantatstahl, antimagnetisch  
for **permanent** closure, in high quality implant steel, antimagnetic  
pour fermeture **permanente**, acier de haute qualité, anti-magnétique  
para oclusión **permanente**, acero de alta calidad, antimagnético  
per chiusura **permanente**, acciaio di alta qualità, antimagnetico



x = 7.0 mm	x = 9.0 mm	x = 11.0 mm	x = 15.0 mm	x = 17.0 mm	x = 20.0 mm	x = 25.0 mm
y = 6.2 mm	y = 7.0 mm	y = 7.8 mm	y = 9.2 mm	y = 10.6 mm	y = 11.4 mm	y = 13.3 mm
gms = 150	gms = 180	gms = 180	gms = 200	gms = 200	gms = 200	gms = 200
13-140-550	13-141-600	13-142-680	13-143-800	13-143-106	13-143-114	13-143-133
13-140-550T	13-141-600T	13-142-680T	13-143-800T	13-143-106T	13-143-114T	13-143-133T



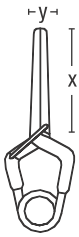
x = 7.0 mm	x = 9.0 mm	x = 11.0 mm	x = 15.0 mm	x = 7.0 mm	x = 9.0 mm	x = 11.0 mm
y = 6.0 mm	y = 6.8 mm	y = 7.5 mm	y = 8.7 mm	y = 5.5 mm	y = 6.1 mm	y = 6.5 mm
gms = 150	gms = 180	gms = 180	gms = 200	gms = 150	gms = 180	gms = 180
13-144-530	13-145-600	13-146-650	13-147-750	13-148-480	13-149-500	13-150-580
13-144-530T	13-145-600T	13-146-650T	13-147-750T	13-148-480T	13-149-500T	13-150-580T



x = 15.0 mm	x = 7.0 mm	x = 9.0 mm	x = 11.0 mm	x = 7.0 mm	x = 9.0 mm
y = 7.4 mm	y = 5.4 mm	y = 5.8 mm	y = 6.2 mm	y = 7.9 mm	y = 8.7 mm
gms = 200	gms = 180	gms = 180	gms = 180	gms = 200	gms = 200
13-151-650	13-151-054	13-151-058	13-151-062	13-152-680	13-153-750
13-151-650T	13-151-054T	13-151-058T	13-151-062T	13-152-680T	13-153-750T

### Aneurysmen Gefäßclips Aneurysm vessel clips

Anévrisme clips  
Aneurisma clips  
Clips per aneurisma e vasi



x	y	gms
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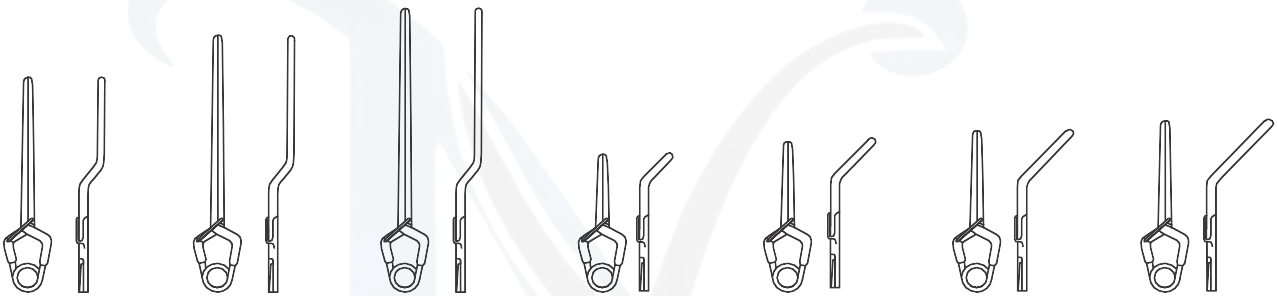
**Maullänge**  
jaw length  
longueur du mors  
longitud de la boca  
lunghezza del morso

**max. Maulöffnung**  
max. jaw opening  
ouverture max. du mors  
apertura máx. de la boca  
apertura mass.

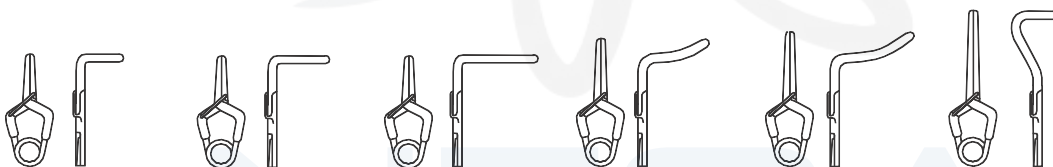
**Schließkraft**  
closing pressure  
force de fermeture  
fuerza de cierre  
pressione

#### YASARGIL-STANDARD

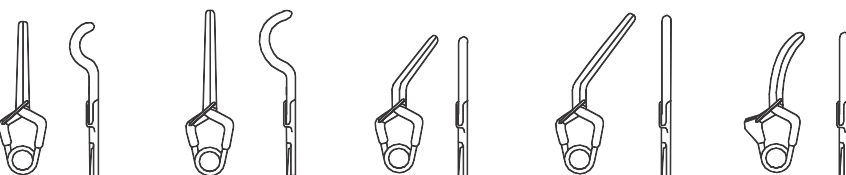
für **permanenten** Verschluss, aus hochwertigem Implantatstahl, antimagnetisch  
for **permanent** closure, in high quality implant steel, antimagnetic  
pour fermeture **permanente**, acier de haute qualité, anti-magnétique  
para oclusión **permanente**, acero de alta calidad, antimagnético  
per chiusura **permanente**, acciaio di alta qualità, antimagnetico



x = 12.0 mm	x = 17.0 mm	x = 20.0 mm	x = 5.0 mm	x = 7.0 mm	x = 9.0 mm	x = 11.0 mm
y = 10.2 mm	y = 11.9 mm	y = 13.0 mm	y = 6.2 mm	y = 6.5 mm	y = 7.8 mm	y = 8.4 mm
gms = 200	gms = 180	gms = 180	gms = 200	gms = 200	gms = 200	gms = 200
13-153-102	13-153-119	13-153-130	13-154-062	13-154-065	13-154-078	13-154-084
13-153-102T	13-153-119T	13-153-130T	13-154-062T	13-154-065T	13-154-078T	13-154-084T



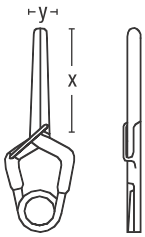
x = 5.0 mm	x = 7.0 mm	x = 10.0 mm	x = 8.0 mm	x = 10.0 mm	x = 5.0 mm
y = 5.6 mm	y = 5.6 mm	y = 5.6 mm	y = 5.4 mm	y = 5.6 mm	y = 7.2 mm
gms = 200	gms = 200	gms = 200	gms = 200	gms = 200	gms = 200
13-155-056	13-155-380	13-153-755	13-155-054	13-153-056	13-155-072
13-155-056T	13-155-380T	13-153-755T	13-155-054T	13-153-056T	13-155-072T



x = 9.0 mm	x = 11.0 mm	x = 7.0 mm	x = 11.0 mm	x = 9.0 mm
y = 7.2 mm	y = 8.2 mm	y = 5.7 mm	y = 8.0 mm	y = 7.0 mm
gms = 200	gms = 200	gms = 200	gms = 200	gms = 200
13-153-072	13-153-082	13-156-500	13-156-800	13-156-062
13-153-072T	13-153-082T	13-156-500T	13-156-800T	13-156-062T

### aneurysmen gefäßclips **Aneurysm vessel clips**

**Anévrisme clips**  
**Aneurisma clips**  
**Clips per aneurisma e vasi**



x	y	gms
---	---	-----

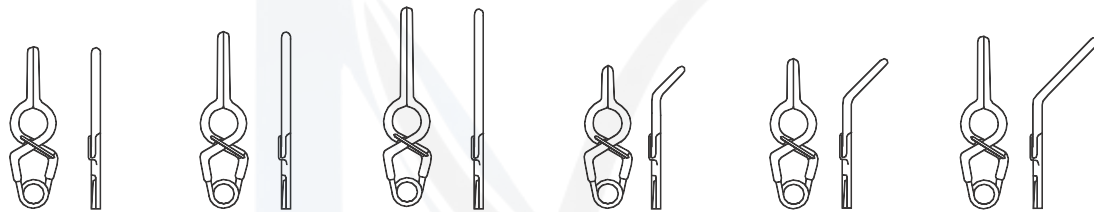
**Maullänge**  
jaw length  
longueur du mors  
longitud de la boca  
lunghezza del morso

**max. Maulöffnung**  
max. jaw opening  
ouverture max. du mors  
apertura máx. de la boca  
apertura mass.

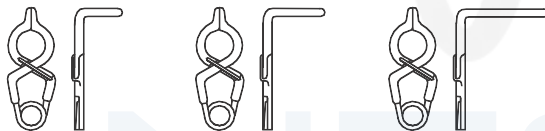
**Schließkraft**  
closing pressure  
force de fermeture  
fuerza de cierre  
pressione

#### YASARGIL-STANDARD

für **permanenten** Verschluss ,mit Fenster 3.5 mm,  
aus hochwertigem Implantastahl, antimagnetisch  
for **permanent** closure, with window 3.5 mm, in high  
quality implant steel, antignetic  
pour fermeture **permanente**, avec fenestra 3.5 mm ,  
acier de haute qualité, anti-magnétique  
para oclusión **permanente** ,finestrado de 3.5 mm,  
acero de alta calidad, antimagnético  
per chiusura **permanente** ,con finestra di 3.5 mm ,  
acciaio di alta qualità, antimagnetico



x = 7.0 mm	x = 9.0 mm	x = 12.0 mm	x = 5.0 mm	x = 7.0 mm	x = 11.0 mm
y = 7.4 mm	y = 8.4 mm	y = 9.6 mm	y = 5.8 mm	y = 6.5 mm	y = 7.2 mm
gms = 150	gms = 150	gms = 180	gms = 150	gms = 150	gms = 180
13-157-110	13-157-140	13-157-170	13-158-090	13-158-110	13-158-140
13-157-110T	13-157-140T	13-157-170T	13-158-090T	13-158-110T	13-158-140T

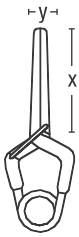


x = 5.0 mm	x = 7.0 mm	x = 11.0 mm
y = 4.9 mm	y = 4.9 mm	y = 4.9 mm
gms = 150	gms = 150	gms = 180
13-159-090	13-159-120	13-159-140
13-159-090T	13-159-120T	13-159-140T



### Aneurysmen Gefäßclips Aneurysm vessel clips

### Anévrisme clips Aneurisma clips Clips per aneurisma e vasi



x	y	gms
---	---	-----

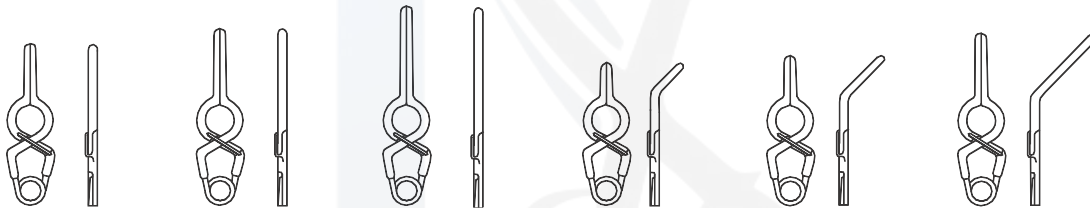
**Maullänge**  
jaw length  
longueur du mors  
longitud de la boca  
lunghezza del morso

**max. Maulöffnung**  
max. jaw opening  
ouverture max. du mors  
apertura máx. de la boca  
apertura mass.

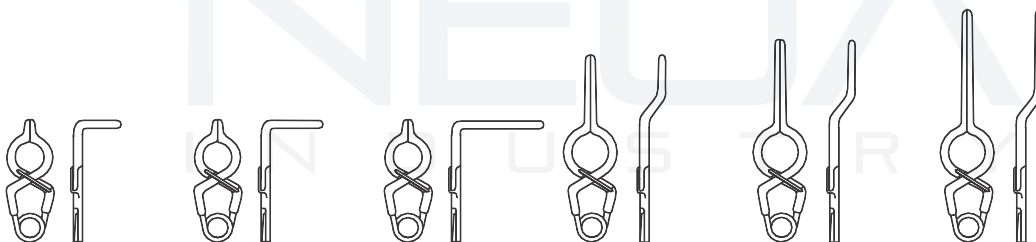
**Schließkraft**  
closing pressure  
force de fermeture  
fuerza de cierre  
pressione

#### YASARGIL-STANDARD

für **permanenten** Verschluss, mit Fenster 3.5 mm, aus hochwertigem Implantatstahl, antimagnetisch  
for **permanent** closure, with window 3.5 mm, in high quality implant steel, antimagnetic  
pour fermeture **permanente**, avec fenestra 3.5 mm, acier de haute qualité, anti-magnétique  
para oclusión **permanente**, finestrado de 3.5 mm, acero de alta calidad, antimagnético  
per chiusura **permanente**, con finestra di 3.5 mm, acciaio di alta qualità, antimagnetico



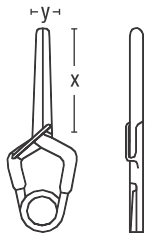
x = 7.0 mm	x = 9.0 mm	x = 12.0 mm	x = 5.0 mm	x = 7.0 mm	x = 11.0 mm
y = 7.9 mm	y = 9.1 mm	y = 10.3 mm	y = 6.5 mm	y = 7.2 mm	y = 7.8 mm
gms = 150	gms = 150	gms = 180	gms = 150	gms = 150	gms = 180
13-160-120	13-160-150	13-160-180	13-161-100	13-161-130	13-161-150
13-160-120T	13-160-150T	13-160-180T	13-161-100T	13-161-130T	13-161-150T



x = 5.0 mm	x = 7.0 mm	x = 11.0 mm	x = 5.0 mm	x = 7.0 mm	x = 11.0 mm
y = 5.5 mm	y = 5.5 mm	y = 5.5 mm	y = 7.9 mm	y = 8.8 mm	y = 10.0 mm
gms = 150	gms = 150	gms = 180	gms = 150	gms = 150	gms = 180
13-162-110	13-162-130	13-162-160	13-163-140	13-163-170	13-163-190
13-162-110T	13-162-130T	13-162-160T	13-163-140T	13-163-170T	13-163-190T

### aneurysmen gefäßclips *Aneurysm vessel clips*

### Anévrisme clips *Aneurisma clips* *Clips per aneurisma e vasi*



x	y	gms
---	---	-----

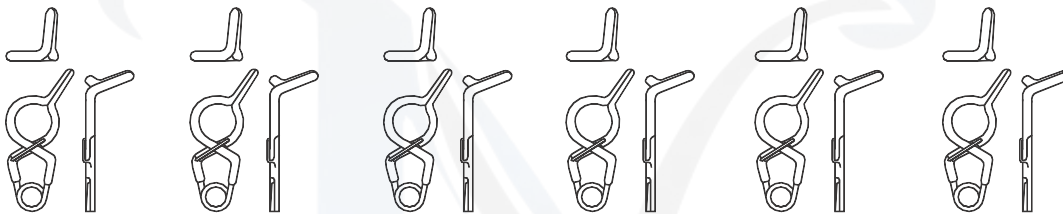
**Maullänge**  
jaw length  
longueur du mors  
longitud de la boca  
lunghezza del morso

**max. Maulöffnung**  
max. jaw opening  
ouverture max. du mors  
apertura máx. de la boca  
apertura mass.

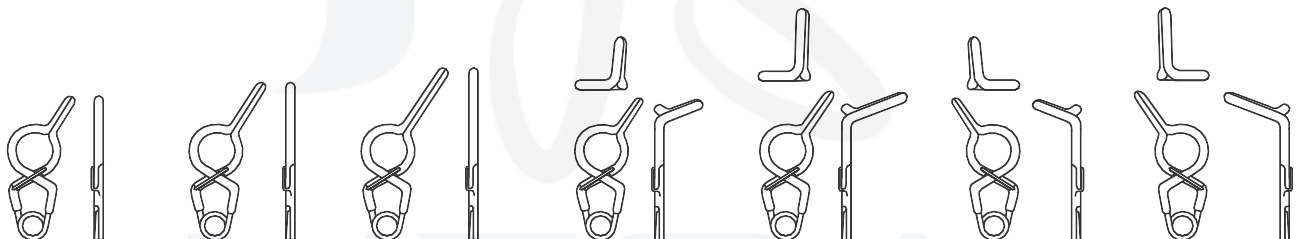
**Schließkraft**  
closing pressure  
force de fermeture  
fuerza de cierre  
pressione

#### YASARGIL-STANDARD

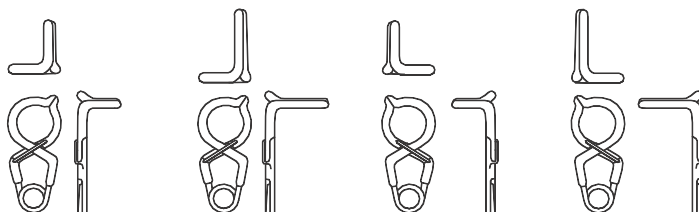
für **permanenten** Verschluss, mit Fenster 5.0 mm, aus hochwertigem Implantastahl, antimagnetisch  
for **permanent** closure, with window 5.0 mm, in high quality implant steel, antignitic  
pour fermeture **permanente**, avec fenestra 5.0 mm, acier de haute qualité, anti-magnétique  
para oclusión **permanente**, finestrado de 5.0 mm, acero de alta calidad, antimagnético  
per chiusura **permanente**, con finestra di 5.0 mm, acciaio di alta qualita, antimagnetico



x = 5.0 mm	x = 7.0 mm	x = 10.0 mm	x = 5.0 mm	x = 7.0 mm	x = 10.0 mm
y = 5.8 mm	y = 5.8 mm	y = 5.8 mm	y = 5.8 mm	y = 5.8 mm	y = 5.8 mm
gms = 150	gms = 150	gms = 150	gms = 150	gms = 150	gms = 150
13-164-058	13-165-058	13-166-058	13-167-058	13-168-058	13-169-058
13-164-058T	13-165-058T	13-166-058T	13-167-058T	13-168-058T	13-169-058T



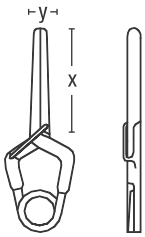
x = 5.0 mm	x = 7.0 mm	x = 10.0 mm	x = 5.0 mm	x = 7.0 mm	x = 5.0 mm	x = 7.0 mm
y = 7.0 mm	y = 7.8 mm	y = 8.8 mm	y = 5.8 mm	y = 6.2 mm	y = 5.8 mm	y = 6.2 mm
gms = 150	gms = 150	gms = 150	gms = 150	gms = 150	gms = 150	gms = 150
13-164-070	13-164-078	13-164-088	341-106-058	13-164-062	341-107-058	13-165-062
13-164-070T	13-164-078T	13-164-088T	341-106-058T	13-164-062T	341-107-058T	13-165-062T



x = 5.0 mm	x = 7.0 mm	x = 5.0 mm	x = 7.0 mm
y = 5.6 mm	y = 5.6 mm	y = 5.6 mm	y = 5.6 mm
gms = 150	gms = 150	gms = 150	gms = 150
13-164-056	13-165-056	13-166-056	13-167-056
13-164-056T	13-165-056T	13-166-056T	13-167-056T

### Aneurysmen Gefäßclips *Aneurysm vessel clips*

*Anévrisme clips*  
*Aneurisma clips*  
*Clips per aneurisma e vasi*



x	y	gms
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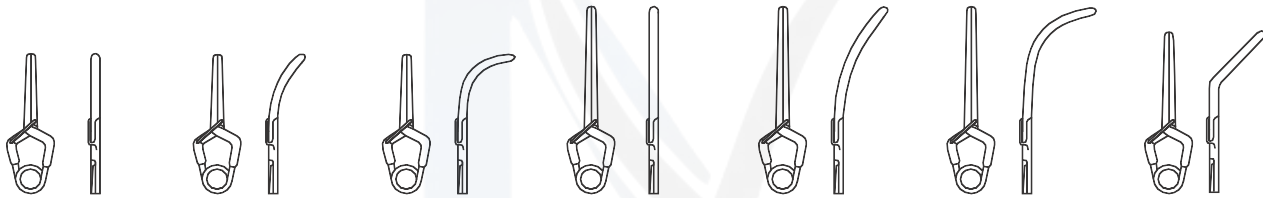
**Maullänge**  
jaw length  
longueur du mors  
longitud de la boca  
lunghezza del morso

**max. Maulöffnung**  
max. jaw opening  
ouverture max. du mors  
apertura máx. de la boca  
apertura mass.

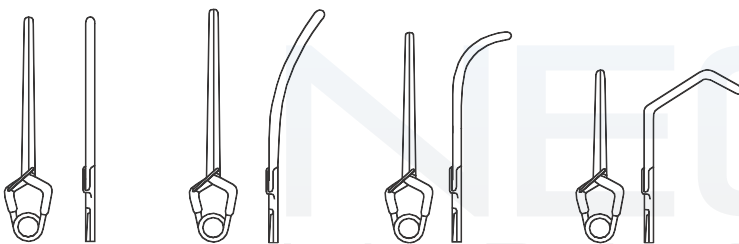
**Schließkraft**  
closing pressure  
force de fermeture  
fuerza de cierre  
pressione

#### YASARGIL-STANDARD

für **temporären** Verschluss, aus hochwertigem Implantatstahl, antimagnetisch  
for **temporary** closure, in high quality implant steel, antimagnetic  
pour fermeture **temporaire**, acier de haute qualité, anti-magnétique  
para oclusión **temporal**, acero de alta calidad, antimagnético  
per uso **temporaneo**, acciaio di alta qualità, antimagnetico



x = 9.0 mm	x = 9.0 mm	x = 9.0 mm	x = 15.0 mm	x = 15.0 mm	x = 15.0 mm	x = 9.0 mm
y = 7.0 mm	y = 6.8 mm	y = 6.1 mm	y = 9.2 mm	y = 8.7 mm	y = 7.4 mm	y = 6.2 mm
gms = 90	gms = 90	gms = 110	gms = 90	gms = 110	gms = 110	gms = 110
13-170-070	13-172-068	13-171-061	13-170-092	13-172-087	13-171-074	13-173-078
13-170-070T	13-172-068T	13-171-061T	13-170-092T	13-172-087T	13-171-074T	13-173-078T

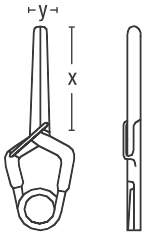


x = 20.0 mm	x = 20.0 mm	x = 17.0 mm	x = 13.0 mm
y = 11.4 mm	y = 11.0 mm	y = 9.9 mm	y = 7.5 mm
gms = 110	gms = 90	gms = 90	gms = 90
13-170-114	13-172-110	13-171-099	13-173-075
13-170-114T	13-172-110T	13-171-099T	13-173-075T

### Aneurysmen Gefäßclips

#### *Aneurysm vessel clips*

*Anévrisme clips*  
*Aneurisma clips*  
*Clips per aneurisma e vasi*



x	y	gms
<b>Maullänge</b> jaw length longueur du mors longitud de la boca lunghezza del morso	<b>max. Maulöffnung</b> max. jaw opening ouverture max. du mors apertura máx. de la boca apertura mass.	<b>Schließkraft</b> closing pressure force de fermeture fuerza de cierre pressione

#### YASARGIL-MINI

für **temporären** Verschluss, aus hochwertigem Implantatstahl, antimagnetisch  
 for **temporary** closure, in high quality implant steel, antimagnetic  
 pour fermeture **temporaire**, acier de haute qualité, anti-magnétique  
 para oclusión **temporal**, acero de alta calidad, antimagnético  
 per uso **temporaneo**, acciaio di alta qualità, antimagnetico



x = 3.0 mm	x = 5.0 mm	x = 4.0 mm	x = 7.0 mm	x = 7.0 mm	x = 5.0 mm
y = 3.3 mm	y = 4.0 mm	y = 3.8 mm	y = 4.6 mm	y = 4.4 mm	y = 4.0 mm
gms = 90	gms = 70	gms = 70	gms = 70	gms = 70	gms = 70
13-187-033	13-187-040	13-187-038	13-187-046	13-187-044	13-188-040
13-187-033T	13-187-040T	13-187-038T	13-187-046T	13-187-044T	13-188-040T

**Nervenhaken**  
***Nerve hooks***

*Crochets à nerfs*  
*Ganchos para nervios*  
*Uncini per nervi*



**SCOVILLE** 1:2

230 mm – 9 "
x = 8 mm
13-189-230

**HOLSHER** 1:2

240 mm – 9 ½ "
x = 7 mm
13-190-240

**SCOVILLE** 1:2

200 mm – 8 "
x = 7 mm
13-191-190

1:2

210 mm – 8 ¼ "
x = 7 mm
13-192-190

**Duramesser**  
***Dura knives***

*Bistouries pour duremère*  
*Bisturis para duramadre*  
*Bisturi per duramadre*



1:1



1:1



**TOENNIS**

150 mm – 6 "	190 mm – 7 ½ "
13-193-130	13-193-190



1:2

1:1



**HALLE**

200 mm – 8 "	13-194-200
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NEOA  
INDUSTRY

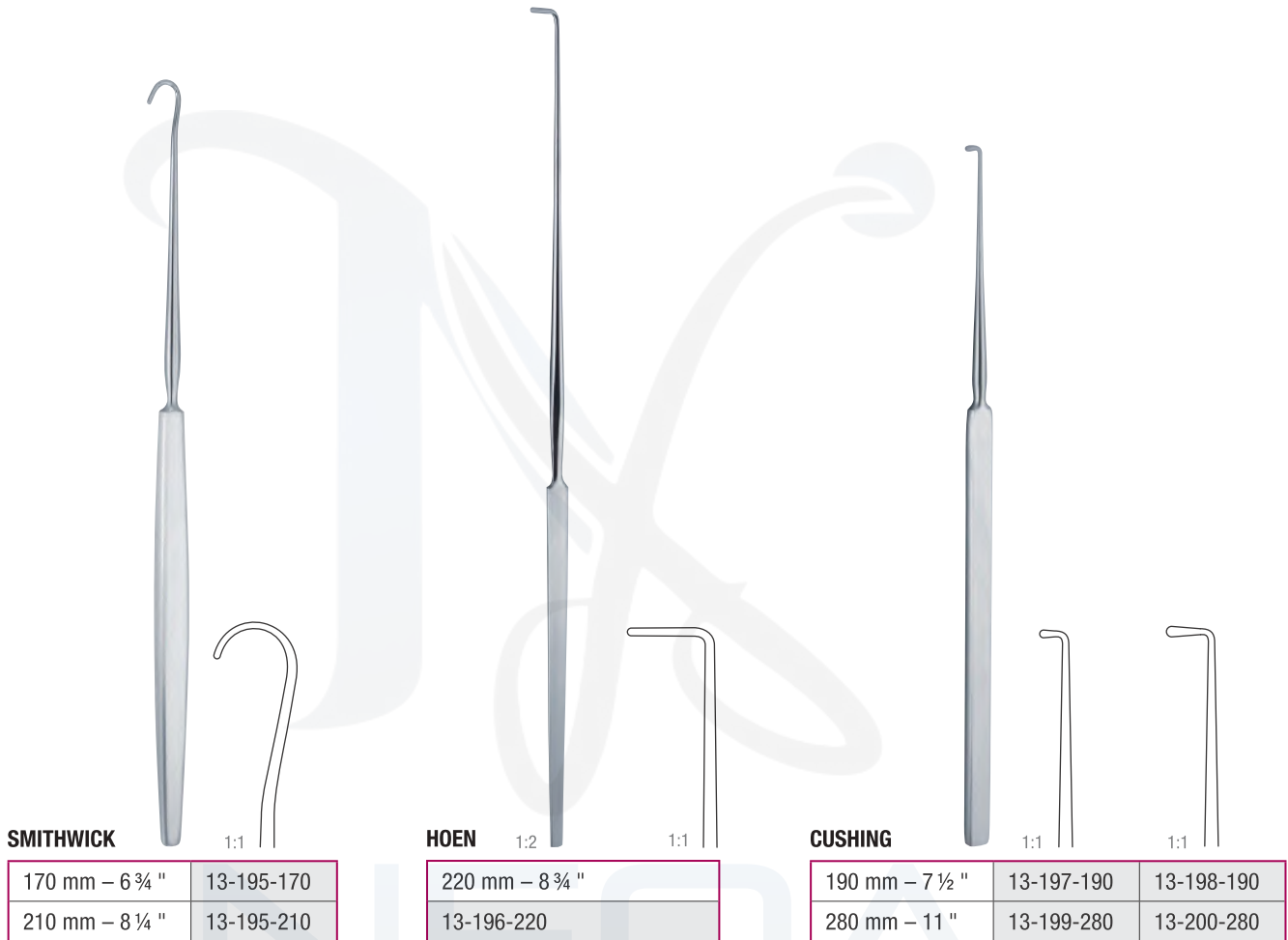
Nervenhaken – durahaken

**Nerve hooks – Dura hooks**

*Crochets à nerfs – Crochets pour duremère*

*Ganchos para nervios – Ganchos para duramadre*

*Uncini per nervi – Uncini per duramadre*



NEOA  
INDUSTRY

### Nervenhaken – Durahaken Nerve hooks – Dura hooks

*Crochets à nerfs – Crochets pour duremère*  
*Ganchos para nervios – Ganchos para duramadre*  
*Uncini per nervi – Uncini per duramadre*



**SACHS** 1:1  
185 mm – 7 ¼"  
13-201-180

**GRAHAM** 1:1  
165 mm – 6 ½"  
13-202-160

**FRAZIER** 1:1  
180 mm – 7"  
13-203-180

<b>CRILE</b> 1:1	Fig. 1	Fig. 2
	200 mm – 8"	200 mm – 8"
	13-204-200	13-205-200

**TOENNIS** 1:2  
150 mm – 6"  
13-206-150

<b>DANDY</b> 1:2	1:2	1:2	1:2
200 mm – 8"	13-207-200	13-208-200	13-209-200

<b>ADSON</b> 1:2	1:1	1:1
200 mm – 8"	13-210-200	13-211-200



### Nervenhaken – durahaken Nerve hooks – Dura hooks

*Crochets à nerfs – Crochets pour duremère*  
*Ganchos para nervios – Ganchos para duramadre*  
*Uncini per nervi – Uncini per duramadre*



#### LOVE

1:2

1:2

1:2

190 mm – 7 ½ "	13-212-000	13-212-045	13-212-090
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#### YASARGIL

310 mm – 12 ¼ "	13-213-010
410 mm – 16 ¼ "	13-213-020

**Galeahaken**  
Galea retractor  
Retracteur Galea  
Retractor de Galea  
Rettrotore di Galea



NEOA  
INDUSTRY



#### CUSHING

1:1

140 mm – 5 ½ "
13-214-140



#### FRAZIER

1:1

1:1

130 mm – 5 "	13-215-130	13-216-130
180 mm – 7 "	13-215-180	13-216-180

**spitz**  
sharp  
pointu  
agudo  
acuto

**stumpf**  
blunt  
mousse  
romos  
smusso



#### LAHEY

1:1

130 mm – 5 "
13-217-130

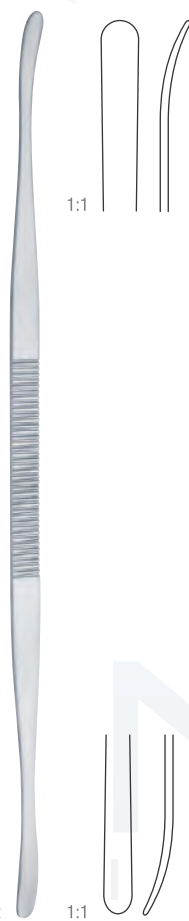
## Dura-Dissektoren

### *Dura dissectors*

*Décolleurs duremère*

*Disectores de duramadre*

*Dissetori per duramadre*



**TOENNIS**

250 mm – 9 ¾ "

13-218-250



**DAVIS**

245 mm – 9 ¾ "

13-219-245



220 mm – 8 ¾ "

13-220-220

dura-dissektoren

***Dura dissectors***

*Décolleurs duremère*

*Disectores de duramadre*

*Dissetori per duramadre*



### Dura-Dissektoren

#### *Dura dissectors*

#### *Décolleurs duremère*

#### *Disectores de duramadre*

#### *Dissetori per duramadre*



**PENFIELD**

Fig. 1	Fig. 2	Fig. 3	Fig. 4	Fig. 5
175 mm – 7 "	195 mm – 7 ¾ "	195 mm – 7 ¾ "	215 mm – 8 ½ "	185 mm – 7 ¼ "
13-226-010	13-226-020	13-226-030	13-226-040	13-226-050

### Neuro-Mikro-dissektoren *Neuro-micro dissectors*

*Neuro-micro dissecteurs*  
*Disectores para micro-neurocirugía*  
*Strumento per micro-neuro chirurgia*



#### YASARGIL



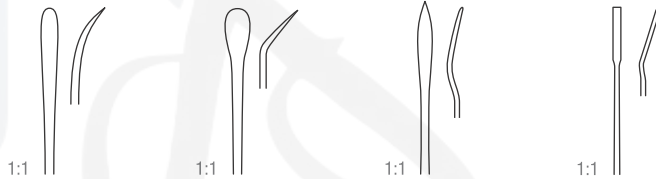
190 mm – 7 ½ "	13-227-070	13-227-080	13-227-090	13-227-100	13-227-050
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**gerade**  
straight  
droit  
recta  
rette

190 mm – 7 ½ "	13-228-050	13-228-030	13-228-040	13-229-190	13-228-020
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**bajonett**  
bayonet  
baionette  
bayoneta  
baionetta

#### YASARGIL

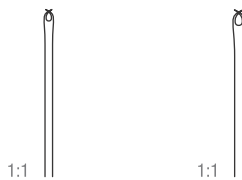


190 mm – 7 ½ "	13-227-060	13-227-040	13-227-030	13-227-010
----------------	------------	------------	------------	------------

**gerade**  
straight  
droit  
recta  
retta

190 mm – 7 ½ "	13-230-010	13-230-020	13-230-030	13-230-040
----------------	------------	------------	------------	------------

**bajonett**  
bayonet  
baionette  
bayoneta  
baionetta



190 mm – 7 ½ "	13-231-100	13-231-180
----------------	------------	------------






**gerade, mit Dreh-Fixierhaken**  
straight, with Twist-fixationhook  
droit, avec crochet de fixation  
recta, con gancho de fijación  
rette, con uncino di fissaggio „Twist“

Neuro-Mikro-Dissektoren  
**Neuro-micro dissectors**

*Neuro-micro dissecteurs*  
*Disectores para micro-neurocirugía*  
*Strumento per micro-neuro chirurgia*



1:1

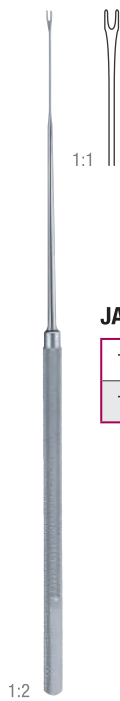
					
<b>KRAUS</b> 1:1	<b>YASARGIL</b> 1:1	<b>KOOS</b> 1:1	<b>KOOS</b> 1:1	<b>KOOS</b> 1:1	
190 mm – 7 ½ "	13-232-190	13-233-190	13-234-190	13-235-190	13-236-190

**bajonett**  
 bayonet  
 baionette  
 bayoneta  
 baionetta

NEOA  
 INDUSTRY

### Neuro-Mikro-dissektoren *Neuro-micro dissectors*

*Neuro-micro dissecteurs*  
*Disectores para micro-neurocirugía*  
*Strumento per micro-neuro chirurgia*



**JACOBSON**

190 mm – 7 ½ "
13-237-190



**KRAYEN  
BÜHL**

190 mm – 7 ½ "
----------------

**ohne Knopf**  
without knob  
sans boule  
sin bola  
senza bottone

**mit Knopf**  
with knob  
avec boule  
con bola  
con bottone



13-238-185
------------

13-239-185
------------

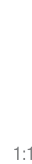
13-241-185
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13-242-185
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NEOA  
INDUSTRY



1:2



1:1



1:1



1:1

**JACOBSON**

**FISCH**

190 mm – 7 ½ "
----------------

13-243-010
------------

13-244-190
------------

13-243-020
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### Neuro-Dissektoren und Küretten

#### *Neuro dissectors and curettes*

#### *Neuro-dissecteurs et curettes*

#### *Disectores y curetas para neurocirugía*

#### *Scollatori per neuro-chirurgia*



**HARDY**

1:2

1:2

1:2

1:2

**HARDY**

1:1

1:2

1:1

1:2

250 mm – 9 ¾ "	13-245-020	13-246-020	13-246-030	13-245-010
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**bajonett, innen scharf**

bayonet, sharp inner edge  
 baionette, tranchant à l'interno  
 bayoneta, cortante al interno  
 baionetta, acuto all'interno

	4 mm Ø	6 mm Ø
270 mm – 10 ¾ "	13-247-040	13-247-060

**bajonett, biegsam**

bayonet, malleable  
 baionette, malléable  
 bayoneta, maleable  
 baionetta, flessibile



## Mikro-Federscheren

### ***Micro scissors***

*Micro ciseaux à ressorts*

*Micro tijeras con resorte*

*Forbici per microchirurgia*



### **VANNAS**

80 mm – 3 ¼ "

13-248-085

13-249-085

**Vannas-Schneide**  
 Vannas-blade  
 Lame de Vannas  
 Hoja de Vannas  
 Lama Vannas

INDUSTRY


### Mikro-Federscheren

#### **Micro scissors**

*Micro ciseaux à ressorts*

*Micro tijeras con resorte*

*Forbici per microchirurgia*



120 mm – 4 ¾"	13-250-120	13-251-110
<b>Schneide 10 mm, spitz</b> Blade 10 mm, sharp Lame 10 mm, pointu Hoja 10 mm, agudas Lama 10 mm, acuta	<b>gerade</b> straight droit recta retta	<b>gebogen</b> curved courbe curva curva

120 mm – 4 ¾"	13-252-120	13-253-120	05-229-120
<b>Vannas-Schneide</b> Vannas blade Lama de Vannas Hoja de Vannas Vannas-lama	<b>gerade</b> straight droit recta retta	<b>gebogen</b> curved courbe curva curva	<b>aufgewinkelt</b> angled up angulaire acodada angolata

120 mm – 4 ¾"	309-256-120
<b>BIEMER</b> <b>Venen-Schneide</b> Vein blade Lame pour vènes Hoja para venas Lama per vene	<b>gerade</b> straight droit recta retta

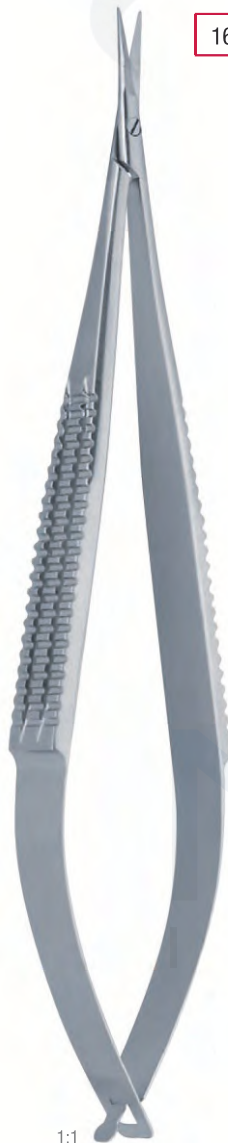
### Mikro-federscheren

#### **Micro scissors**

*Micro ciseaux à ressorts*

*Micro tijeras con resorte*

*Forbici per microchirurgia*



160 mm – 6 1/3 "

05-640-160

**gerade, kurze Schneide**  
curved, short blades  
courbes, lames courtes  
curva, hojas cortas  
curva, lama corta



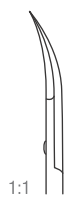
05-641-160

**gebogen, kurze Schneide**  
straight, long blades  
droites, lames longues  
recta, hojas largas  
retta, lama lunga



05-644-160

**gerade, lange Schneide**  
straight, long blades  
droites, lames longues  
recta, hojas largas  
retta, lama lunga



05-645-160

**gebogen, lange Schneide**  
curved, long blades  
courbes, lames longues  
curva, hojas largas  
curva, lama lunga



160 mm – 6 1/3 "

05-642-160

**gerade, gezahnt**  
straight, saw edge  
droites, dentelés  
recta, dentadas  
retta, dentata



05-643-160

**gebogen, gezahnt**  
curved, saw edge  
courbes, dentelés  
curva, dentadas  
curva, dentata



150 mm – 6 "

05-647-150

**kniegebogen, 45°**  
angled on flat, 45°  
angulaires, 45°  
acodada, 45°  
angolata, 45°

180 mm – 7 "

05-647-180

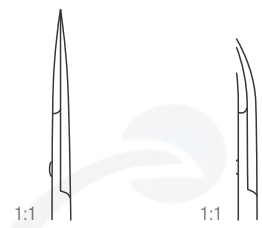
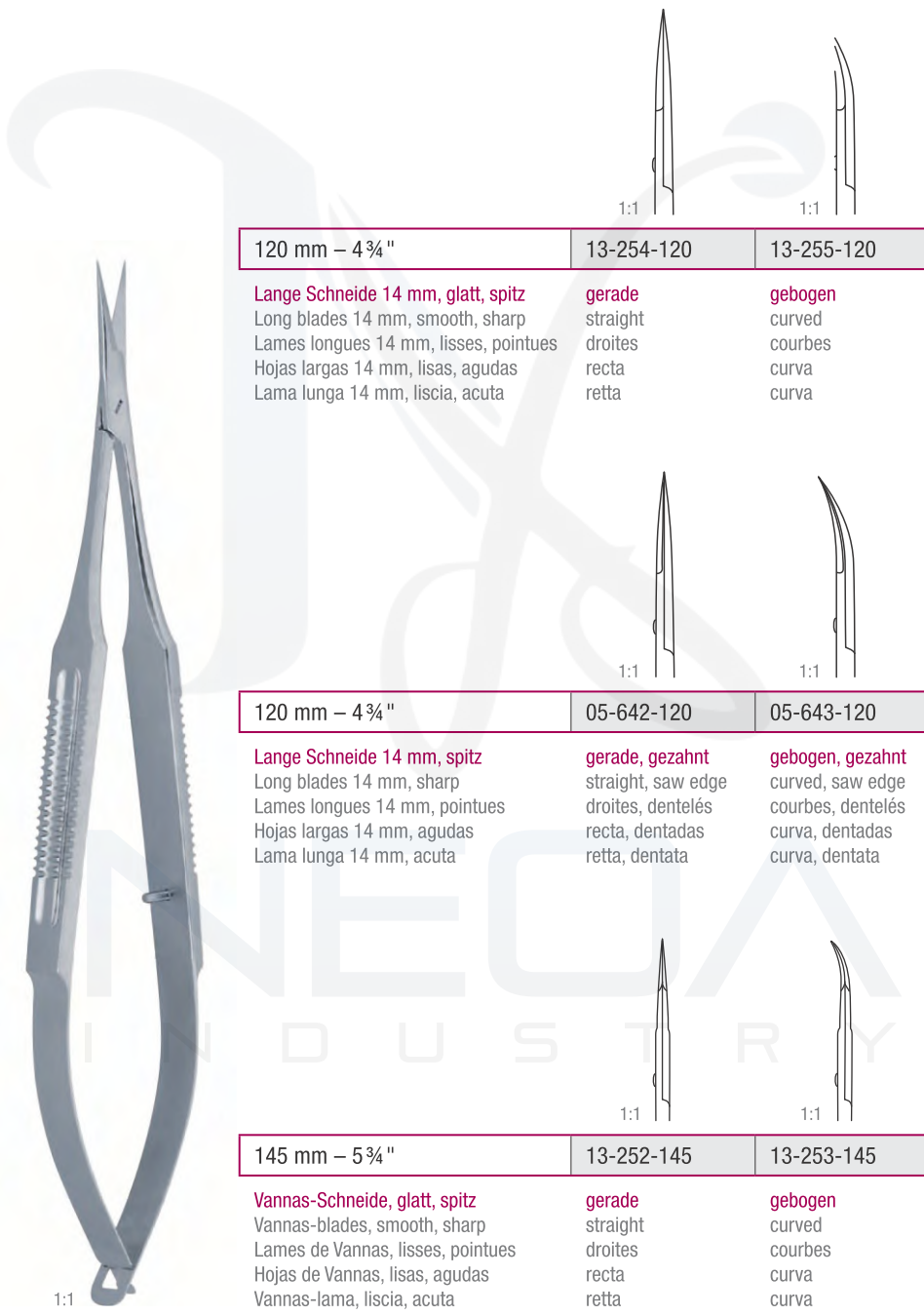
### Mikro-federscheren

#### **Micro scissors**

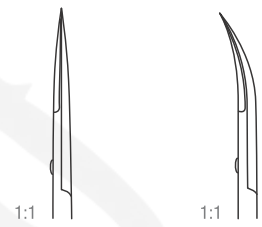
*Micro ciseaux à ressorts*

*Micro tijeras con resorte*

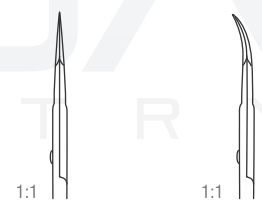
*Forbici per microchirurgia*



120 mm – 4 3/4"	13-254-120	13-255-120
<b>Lange Schneide 14 mm, glatt, spitz</b> Long blades 14 mm, smooth, sharp Lames longues 14 mm, lisses, pointues Hojas largas 14 mm, lisas, agudas Lama lunga 14 mm, liscia, acuta	<b>gerade</b> straight droites recta retta	<b>gebogen</b> curved courbes curva curva



120 mm – 4 3/4"	05-642-120	05-643-120
<b>Lange Schneide 14 mm, spitz</b> Long blades 14 mm, sharp Lames longues 14 mm, pointues Hojas largas 14 mm, agudas Lama lunga 14 mm, acuta	<b>gerade, gezahnt</b> straight, saw edge droites, dentelés recta, dentadas retta, dentata	<b>gebogen, gezahnt</b> curved, saw edge courbes, dentelés curva, dentadas curva, dentata



145 mm – 5 3/4"	13-252-145	13-253-145
<b>Vannas-Schneide, glatt, spitz</b> Vannas-blades, smooth, sharp Lames de Vannas, lisses, pointues Hojas de Vannas, lisas, agudas Vannas-lama, liscia, acuta	<b>gerade</b> straight droites recta retta	<b>gebogen</b> curved courbes curva curva

Mikro-federscheren

**Micro scissors**

*Micro ciseaux à ressorts*

*Micro tijeras con resorte*

*Forbici per microchirurgia*



1:1

**YASARGIL**

1:1

1:1

1:1

185 mm – 7 ¼"

13-254-185

13-255-185

13-256-190

**gerade**  
straight  
droit  
recta  
retta

**gebogen**  
curved  
courbe  
curva  
curva

**kniegebogen**  
angled on flat  
angulaires  
acodada  
angolata

NEOA  
INDUSTRY

### Mikro-federscheren

#### **Micro scissors**

*Micro ciseaux à ressorts*

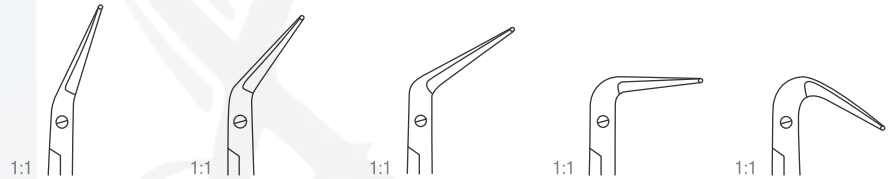
*Micro tijeras con resorte*

*Forbici per microchirurgia*



1:1

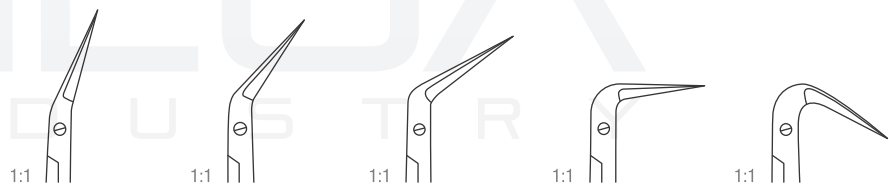
#### YASARGIL



	25°	45°	60°	90°	125°
170 mm – 6¾"	13-257-025	13-257-045	13-257-060	13-257-090	13-257-125

**mit Knopf**  
with ball  
avec bouton  
con botón  
con bottone

#### YASARGIL



	25°	45°	60°	90°	125°
170 mm – 6¾"	411-773-025	411-773-045	13-257-060	13-257-090	13-257-125

**ohne Knopf**  
without ball  
sans bouton  
sin botón  
senza bottone

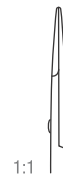
### Mikro-Präparierscheren

#### **Micro dissecting scissors**

*Micro ciseaux à dissection*

*Micro tijeras de disección*

*Forbici per micro chirurgia con manico rotondo*



145 mm – 5 3/4"	13-258-140	13-259-140	13-260-140	13-261-140
180 mm – 7"	13-258-180	13-259-180	13-260-180	13-261-180

**kurze Schneide 8 mm, glatt**  
short blades 8 mm, smooth  
lames courtes 8 mm, lisses  
hojas cortas 8 mm, lisos  
lama corta 8 mm, liscia

**gerade, spitz**  
straight, sharp  
droites, pointues  
rectas, agudas  
retta, acuta

**gebogen, spitz**  
curved, sharp  
courbes, pointues  
curvas, agudas  
curva, acuta

**gerade, stumpf**  
straight, blunt  
droites, mousses  
rectas, romas  
retta, smussa

**gebogen, stumpf**  
curved, blunt  
courbes, mousses  
curvas, romas  
curva, smussa



145 mm – 5 3/4"	13-258-140L	13-259-140L	13-260-140L	13-261-140L
180 mm – 7"	13-258-180L	13-259-180L	13-260-180L	13-261-180L

**lange Schneide 14 mm, glatt**  
long blades 14 mm, smooth  
lames longues 14 mm, lisses  
hojas largas 14 mm, lisos  
lama lunga 14 mm, liscia

**gerade, spitz**  
straight, sharp  
droites, pointues  
rectas, agudas  
retta, acuta

**gebogen, spitz**  
curved, sharp  
courbes, pointues  
curvas, agudas  
curva, acuta

**gerade, stumpf**  
straight, blunt  
droites, mousses  
rectas, romas  
retta, smussa

**gebogen, stumpf**  
curved, blunt  
courbes, mousses  
curvas, romas  
curva, smussa

Mikroscheren mit rundgriff

**Micro scissors with round handle**

*Micro ciseaux avec manche ronde*

*Micro tijeras con mango redondo*

*Forbici per micro chirurgia con manico rotondo*



**VANNAS**

1:1



1:1



	7 mm Ø	7 mm Ø
120 mm – 5"	13-262-120	13-263-120

**VANNAS**

1:1



1:1



	8 mm Ø	8 mm Ø
150 mm – 6"	13-262-150	13-263-150

**CASTROVIEJO**

1:1



1:1



	8 mm Ø	8 mm Ø
150 mm – 6"	13-264-150	13-265-150

INDUSTRY



### Mikroscheren mit rundgriff

**Micro scissors with round handle**

*Micro ciseaux avec manche ronde*

*Micro tijeras con mango redondo*

*Forbici per micro chirurgia con manico rotondo*



1:1



1:1



1:1



1:1



1:1



1:1



1:1

	180 mm – 7"	180 mm – 7"	180 mm – 7"	180 mm – 7"	180 mm – 7"	180 mm – 7"
10 mm Ø	13-266-180	13-267-180	13-268-180	13-269-180	13-270-180	13-271-180
	gerade, gezahnt straight, saw edge droites, dentelés recta, dentadas retta, dentata	gebogen, gezahnt curved, saw edge courbes, dentelés curva, dentadas curva, dentata	gerade, spitz straight, sharp droites, pointue recta, aguda retta, acuta	gebogen, spitz curved, sharp courbes, pointue curva, aguda curva, acuta	gerade, stumpf straight, blunt droites, mousse recta, roma retta, smussa	gebogen, stumpf curved, blunt courbes, mousse curva, roma curva, smussa

### Mikroscheren mit rundgriff

#### *Micro scissors with round handle*

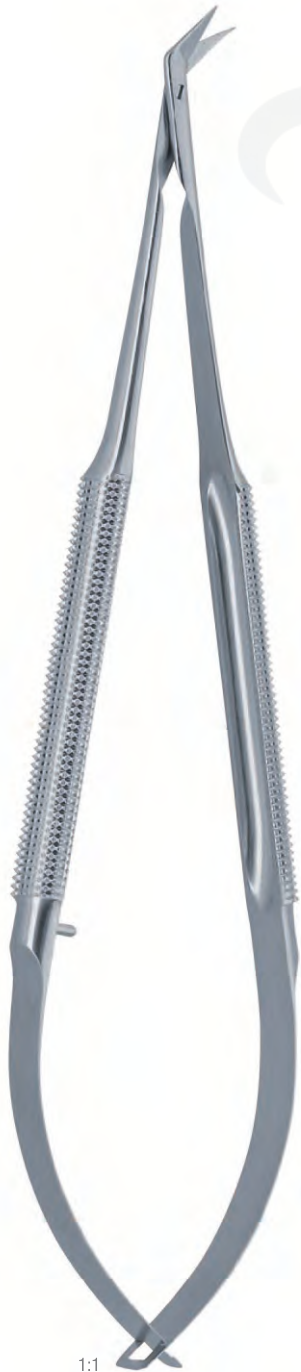
*Micro ciseaux avec manche ronde*

*Micro tijeras con mango redondo*

*Forbici per micro chirurgia con manico rotondo*



mit gedrehtem Schluss  
90° twisted  
tordus de 90°  
giradas de 90°  
girato 90°



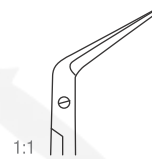
1:1



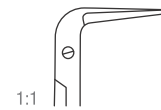
1:1



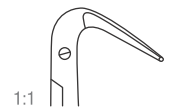
1:1



1:1



1:1



1:1

8 mm Ø	25°	45°	60°	90°	125°
180 mm – 7"	13-272-025	13-272-045	13-272-060	13-272-090	13-272-125

#### Schneide 10 mm, mit Knopf, spitz

Blade 10 mm, with ball, sharp

Lames 10 mm, avec bouton, pointues

Hojas 10 mm, con botón, agudas

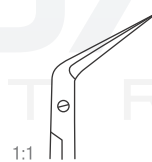
Lama 10 mm, con bottone, acuta



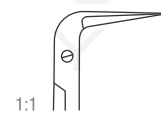
1:1



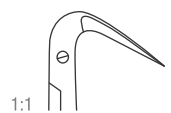
1:1



1:1



1:1



1:1

8 mm Ø	25°	45°	60°	90°	125°
180 mm – 7"	13-273-025	13-273-045	13-273-060	13-273-090	13-273-125

#### Schneide 10 mm, ohne Knopf, spitz

Blade 10 mm, without ball, sharp

Lames 10 mm, sans bouton, pointues

Hojas 10 mm, sin botón, agudas

Lama 10 mm, senza bottone, acuta

### Mikroscheren mit rundgriff

**Micro scissors with round handle**

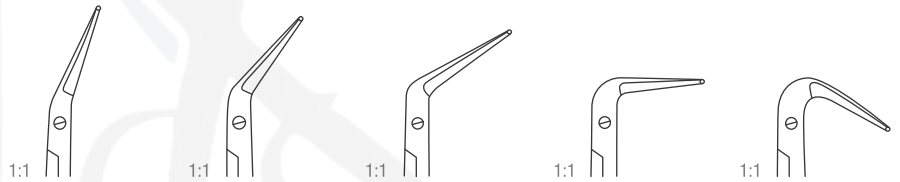
*Micro ciseaux avec manche ronde*

*Micro tijeras con mango redondo*

*Forbici per micro chirurgia con manico rotondo*



1:1



8 mm Ø	25°	45°	60°	90°	125°
180 mm – 7"	13-274-025	13-274-045	13-274-060	13-274-090	13-274-125

**mit Knopf**  
with ball  
avec bouton  
con botón  
con bottone



8 mm Ø	25°	45°	60°	90°	125°
180 mm – 7"	13-275-025	13-275-045	13-275-060	13-275-090	13-275-125

**ohne Knopf**  
without ball  
sans bouton  
sin botón  
senza bottone

Mikroscheren mit rundgriff

***Micro scissors with round handle***

*Micro ciseaux avec manche ronde*

*Micro tijeras con mango redondo*

*Forbici per micro chirurgia con manico rotondo*



1:1

1:1



1:1



	9 mm Ø	9 mm Ø
150 mm – 6"	13-276-150	13-277-150

### Mikro-Federscheren

#### **Micro scissors**

*Micro ciseaux à ressorts*

*Micro tijeras con resorte*

*Forbici per microchirurgia*



#### JACOBSON

1:1



1:1



1:1



160 mm – 6 ¼ "	13-278-155	13-279-155	13-280-160
180 mm – 7 "	13-278-185	13-279-185	13-280-190

**gerade**  
straight  
droites  
recta  
retta

**gebogen**  
curved  
courbes  
curva  
curva

**abgewinkelt, 45°**  
angled, 45°  
angulaires, 45°  
acodada, 45°  
angolata, 45°

1:1



1:1



160 mm – 6 ¼ "	13-281-155	13-282-155
180 mm – 7 "	13-281-185	13-282-185

**Vannas Schneide**  
Vannas blade  
Lame de Vannas  
Hoja de Vannas  
Lama Vannas

### Mikro-Federscheren

#### **Micro scissors**

*Micro ciseaux à ressorts*

*Micro tijeras con resorte*

*Forbici per microchirurgia*



#### **YASARGIL- MOD.**



180 mm – 7"	13-283-190	13-284-190
225 mm – 8¾"	13-278-225	13-279-225



220 mm – 8¾"	13-281-225	13-282-225
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#### **Vannas Schneide**

Vannas blade

Lame de Vannas

Hoja de Vannas

Lama Vannas

### Mikro-federscheren

#### **Micro scissors**

*Micro ciseaux à ressorts*

*Micro tijeras con resorte*

*Forbici per microchirurgia*



200 mm – 8"	13-285-001	13-285-002	13-285-003	13-285-004
225 mm – 8 ¾"	13-286-001	13-286-002	13-286-003	13-286-004

**Schneide glatt, spitz**  
Blade smooth, sharp  
Lames lisses, pointues  
Hojas lisas, agudas  
Lama liscia, acuta

**gerade**  
straight  
droites  
recta  
retta

**gebogen**  
curved  
courbes  
curva  
curva

**gerade, gezahnt**  
straight, saw edge  
droites, dentelés  
recta, dentadas  
retta, dentata

**gebogen, gezahnt**  
curved, saw edge  
courbes, dentelés  
curva, dentadas  
curva, dentata



200 mm – 8"	13-285-005	13-285-006
225 mm – 8 ¾"	13-286-005	13-286-006

**Vannas Schneide**  
Vannas blade  
Lame de Vannas  
Hoja de Vannas  
Lama Vannas

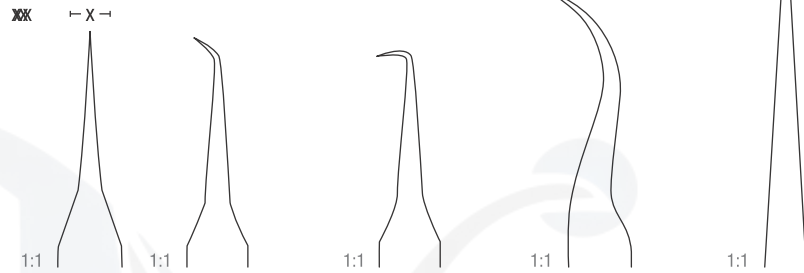


200 mm – 8"	13-285-007	13-285-008
225 mm – 8 ¾"	13-286-007	13-286-008

**Präparier-Schneide, stumpf**  
Dissector blade, blunt  
Lames de dissection, moussé  
Hojas de disección, roma  
Lama da dissezione, smussa

fixierpinzetten – gefäßdilatoren  
**Fixation forceps – Vascular dilators**

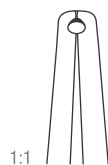
*Pinces à fixation – Dilatateurs vasculaires*  
*Pinzas de fijación – Dilatadores vasculares*  
*Pinze di fissaggio – Pinze per allargare i vasi*



**TYP**  
**JUWELIER**

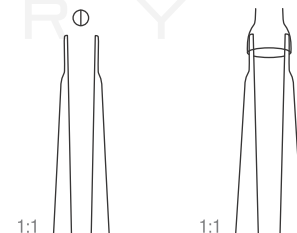
x = 0.2 mm	x = 0.3 mm	x = 0.3 mm	x = 0.2 mm	x = 0.3 mm
110 mm – 4 ¼"	110 mm – 4 ¼"	110 mm – 4 ¼"	120 mm – 4 ¾"	120 mm – 4 ¾"
13-287-004	13-287-045	13-287-090	13-287-005	13-287-001

<b>titan</b>	<b>titan</b>	<b>titan</b>
x = 0.2 mm	x = 0.3 mm	x = 0.3 mm
110 mm – 4 ¼"	110 mm – 4 ¼"	110 mm – 4 ¼"
13-288-004	13-288-045	13-288-090



**PIERSE**

120 mm – 4 ¾"	13-289-120
135 mm – 5 ¼"	13-289-135



	x = 0.2 mm	x = 0.3 mm
110 mm – 4 ¼"	13-290-007	13-290-008

**sehr fein**  
 very fine  
 très fin  
 muy fino  
 molto fino



## Mikro-Knüpppinzetten

### *Micro suture tying forceps*

*Pinces à fixation – Dilatateurs vasculaires*

*Pinzas de fijación – Dilatadores vasculares*

*Pinze di fissaggio – Pinze per allargare i vasi*



**LAZAR**

1:1



1:1



	0.5 mm	0.8 mm
155 mm – 6"	13-291-155	13-292-155



### Mikropinzetten

#### Micro forceps

#### Micro pincers

#### Micro pinzas

#### Pinze per microchirurgia



8 mm Ø	0.3 mm	0.3 mm	0.3 mm	0.3 mm
120 mm – 4 ¾"	13-293-120	13-294-120		
150 mm – 6"	13-296-150	13-295-150	13-296-150Z	13-295-150Z
180 mm – 7"	13-293-180	13-294-180	13-293-180Z	13-294-180Z
210 mm – 8 ¼"	13-296-210	13-295-210	13-296-210Z	13-295-210Z
230 mm – 9"	13-296-230	13-295-230	13-296-230Z	13-295-230Z

**Fadenplatte 6,0 mm x 0,3 mm, glatt**  
 Tying platform 6.0 mm x 0.3 mm, smooth  
 Plate-forme 6.0 mm x 0.3 mm, lisse  
 Plataforma 6.0 mm x 0.3 mm, lisa  
 Piano per sutura 6.0 mm x 0.3 mm, liscio

1 x 2                      1 x 2

	Titan	Titan	Titan	Titan
8 mm Ø	0.3 mm	0.3 mm	0.3 mm	0.3 mm
150 mm – 6"	13-296-150T	13-295-150T	13-296-150ZT	13-295-150ZT
180 mm – 7"	13-296-180T	13-295-180T	13-296-180ZT	13-295-180ZT
210 mm – 8 ¼"	13-296-210T	13-295-210T	13-296-210ZT	13-295-210ZT

**Fadenplatte 6,0 mm x 0,3 mm, glatt**  
 Tying platform 6.0 mm x 0.3 mm, smooth  
 Plate-forme 6.0 mm x 0.3 mm, lisse  
 Plataforma 6.0 mm x 0.3 mm, lisa  
 Piano per sutura 6.0 mm x 0.3 mm, liscio

1 x 2                      1 x 2



8 mm Ø	0.7 mm	0.7 mm	0.7 mm	0.7 mm
150 mm – 6"	13-297-150	13-298-150	13-299-150Z	13-300-150Z
180 mm – 7"	13-297-180	13-298-180	13-299-180Z	13-300-180Z
210 mm – 8 ¼"	13-297-210	13-298-210	13-299-210Z	13-300-210Z
230 mm – 9"	13-297-230	13-298-230	13-299-230Z	13-300-230Z

**Fadenplatte 6,0 mm x 0,7 mm, glatt**  
 Tying platform 6.0 mm x 0.7 mm, smooth  
 Plate-forme 6.0 mm x 0.7 mm, lisse  
 Plataforma 6.0 mm x 0.7 mm, lisa  
 Piano per sutura 6.0 mm x 0.7 mm, liscio

1 x 2                      1 x 2

	Titan	Titan	Titan	Titan
8 mm Ø	0.7 mm	0.7 mm	0.7 mm	0.7 mm
150 mm – 6"	13-297-150T	13-298-150T	13-299-150ZT	13-300-150ZT
180 mm – 7"	13-297-180T	13-298-180T	13-299-180ZT	13-300-180ZT
210 mm – 8 ¼"	13-297-210T	13-298-210T	13-299-210ZT	13-300-210ZT

**Fadenplatte 6,0 mm x 0,7 mm, glatt**  
 Tying platform 6.0 mm x 0.7 mm, smooth  
 Plate-forme 6.0 mm x 0.7 mm, lisse  
 Plataforma 6.0 mm x 0.7 mm, lisa  
 Piano per sutura 6.0 mm x 0.7 mm, liscio

1 x 2                      1 x 2



### Mikropinzetten

#### **Micro forceps**

#### *Micro pincers*

#### *Micro pinzas*

#### *Pinze per microchirurgia*



	Diamond Coated	Diamond Coated	Diamond Coated	Diamond Coated
8 mm Ø	0.3 mm	0.3 mm	0.3 mm	0.3 mm
150 mm – 6 "	13-296-150D	13-295-150D	13-296-150ZD	13-295-150ZD
180 mm – 7 "	13-293-180D	13-294-180D	13-293-180ZD	13-294-180ZD
210 mm – 8 ¼ "	13-296-210D	13-295-210D	13-296-210ZD	13-295-210ZD
230 mm – 9 "	13-296-230D	13-295-230D	13-296-230ZD	13-295-230ZD

**Fadenplatte 6,0 mm x 0,3 mm**

Tying platform 6.0 mm x 0.3 mm

Plate-forme 6.0 mm x 0.3 mm

Plataforma 6.0 mm x 0.3 mm

Piano per sutura 6.0 mm x 0.3 mm

1 x 2

1 x 2



	Diamond Coated	Diamond Coated	Diamond Coated	Diamond Coated
8 mm Ø	0.7 mm	0.7 mm	0.7 mm	0.7 mm
150 mm – 6 "	13-297-150D	13-298-150D	13-299-150ZD	13-300-150ZD
180 mm – 7 "	13-297-180D	13-298-180D	13-299-180ZD	13-300-180ZD
210 mm – 8 ¼ "	13-297-210D	13-298-210D	13-299-210ZD	13-300-210ZD
230 mm – 9 "	13-297-230D	13-298-230D	13-299-230ZD	13-300-230ZD

**Fadenplatte 6,0 mm x 0,7 mm**

Tying platform 6.0 mm x 0.7 mm

Plate-forme 6.0 mm x 0.7 mm

Plataforma 6.0 mm x 0.7 mm

Piano per sutura 6.0 mm x 0.7 mm

1 x 2

1 x 2

### Mikropinzetten

**Micro forceps**

*Micro pinces*

*Micro pinzas*

*Pinze per microchirurgia*



#### JACOBSON

160 mm – 6 ¼ "	13-301-160	13-302-160	13-303-160	13-304-160
185 mm – 7 ¼ "	13-301-185	13-302-185	13-303-185	13-304-185

**gerade, spitz**  
straight, sharp  
droites, pointues  
rectas, agudas  
retta, acuta

**gerade, stumpf**  
straight, blunt  
droites, mousses  
rectas, romas  
retta, smussa

**abgewinkelt, spitz**  
angled, sharp  
angulaire, pointue  
acodada, aguda  
angolata, acuta

**abgewinkelt, stumpf**  
angled, blunt  
angulaire, mousse  
acodada, roma  
angolata, smussa

	Diamond Coated	Diamond Coated	Diamond Coated	Diamond Coated
160 mm – 6 ¼ "	13-301-160D	13-302-160D	13-303-160D	13-304-160D
185 mm – 7 ¼ "	13-301-185D	13-302-185D	13-303-185D	13-304-185D

**gerade, spitz**  
straight, sharp  
droites, pointues  
rectas, agudas  
retta, acuta

**gerade, stumpf**  
straight, blunt  
droites, mousses  
rectas, romas  
retta, smussa

**abgewinkelt, spitz**  
angled, sharp  
angulaire, pointue  
acodada, aguda  
angolata, acuta

**abgewinkelt, stumpf**  
angled, blunt  
angulaire, mousse  
acodada, roma  
angolata, smussa

### Mikropinzetten

**Micro forceps**

*Micro pinces*

*Micro pinzas*

*Pinze per microchirurgia*



### YASARGIL

1:1



1:1



1:1



	225 mm – 8 ¾ "	225 mm – 8 ¾ "	225 mm – 8 ¾ "
3.0 mm	13-305-220	13-306-220	13-307-220
5.0 mm	13-308-220	13-309-220	13-310-220

**löffelförmig**  
 spoon form  
 forme de cuillère  
 forma de cuchara  
 forma di cucchiaio

**flach gezahnt**  
 plan toothed  
 dentelé  
 dentada  
 dentato

**kürettenförmig**  
 curette form  
 forme de curette  
 forma de cureta  
 forma di curetta

1:1

Mikropinzetten

**Micro forceps**

*Micro pinces*

*Micro pinzas*

*Pinze per microchirurgia*



**YASARGIL**

160 mm – 1 1/3 "	13-311-160	13-312-160
180 mm – 1 1/2 "	13-311-180	13-312-180
200 mm – 8 "	13-311-200	13-312-200
225 mm – 8 3/4 "	13-311-220	13-312-220
240 mm – 9 1/2 "	13-311-240	13-312-240

**gerade, spitz**  
 straight, sharp  
 droites, pointues  
 rectas, agudas  
 retta, acuta

**gerade, stumpf**  
 straight, blunt  
 droites, mousses  
 rectas, romas  
 retta, smussa

### Mikro-ringpinzetten Micro ring forceps

*Micro pinces avec anneaux*  
*Micro pinzas con anillos*  
*Micro pinze con anelli*



			Diamond coated	Diamond coated
9 mm Ø	1.0 x 0.5 mm	2.0 x 1.0 mm	1.0 x 0.5 mm	2.0 x 1.0 mm
150 mm – 6 "	13-313-150	13-313-151	13-313-150D	13-313-151D
180 mm – 7 "	13-313-180	13-313-181	13-313-180D	13-313-181D
210 mm – 8 ¼ "	13-313-210	13-313-211	13-313-210D	13-313-211D
230 mm – 9 "	13-313-230	13-313-231	13-313-230D	13-313-231D

glatt  
smooth  
lisse  
lisa  
liscia

glatt  
smooth  
lisse  
lisa  
liscia



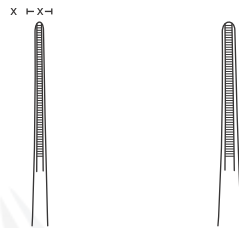
	Titan	Titan	Titan / diamond coated	Titan / diamond coated
9 mm Ø	1.0 x 0.5 mm	2.0 x 1.0 mm	1.0 x 0.5 mm	2.0 x 1.0 mm
150 mm – 6 "	13-313-150T	13-313-151T	13-313-150DT	13-313-151DT
180 mm – 7 "	13-313-180T	13-313-181T	13-313-180DT	13-313-181DT
210 mm – 8 ¼ "	13-313-210T	13-313-211T	13-313-210DT	13-313-211DT
230 mm – 9 "	13-313-230T	13-313-231T	13-313-230DT	13-313-231DT

glatt  
smooth  
lisse  
lisa  
liscia

glatt  
smooth  
lisse  
lisa  
liscia

### atraumatische Mikropinzetten *Atraumatic micro forceps*

*Micro pinces atraumatiques*  
*Micro pinzas atraumáticas*  
*Micro pinze atraumatiche*



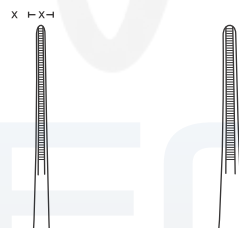
	Atrauma	Atrauma	Atrauma	Atrauma
	x = 1.2 mm	x = 1.8 mm	x = 1.2 mm	x = 1.8 mm
150 mm – 6 "	13-314-150	13-315-150	13-316-150	13-317-150
180 mm – 7 "	13-314-180	13-315-180	13-316-180	13-317-180
210 mm – 8 ¼ "	13-314-210	13-315-210	13-316-210	13-317-210
230 mm – 9 "	13-314-230	13-315-230	13-316-230	13-317-230

gerade  
straight  
droites  
recta  
retta

gerade  
straight  
droites  
recta  
retta

abgewinkelt  
angled  
angulaire  
acodada  
angolata

abgewinkelt  
angled  
angulaire  
acodada  
angolata



	Titan	Titan	Titan	Titan
	x = 1.2 mm	x = 1.8 mm	x = 1.2 mm	x = 1.8 mm
150 mm – 6 "	13-314-150T	13-315-150T	13-316-150T	13-317-150T
180 mm – 7 "	13-314-180T	13-315-180T	13-316-180T	13-317-180T
210 mm – 8 ¼ "	13-314-210T	13-315-210T	13-316-210T	13-317-210T
230 mm – 9 "	13-314-230T	13-315-230T	13-316-230T	13-317-230T

gerade  
straight  
droites  
recta  
retta

gerade  
straight  
droites  
recta  
retta

abgewinkelt  
angled  
angulaire  
acodada  
angolata

abgewinkelt  
angled  
angulaire  
acodada  
angolata



**Mikronadelhalter**  
**Micro needle holders**

*Micro porte aiguilles*  
*Micro porta agujas*  
*Micro porta aghi*



**CASTROVIEJO**

1:1



1:1



1:1



1:1



			Diamond Coated	Diamond Coated
x = 11.0 mm x 0.75 mm				
140 mm – 5½"	13-318-140	13-319-140	13-318-140D	13-319-140D

**ohne Sperre, feines Maul**  
without ratchet, fine jaws  
sans crémaillère, mors fine  
sin cremallera, boca fina  
senza cremagliera, morso fino

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curva

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curva

			Diamond Coated	Diamond Coated
x = 11.0 mm x 0.75 mm				
140 mm – 5½"	13-320-140	13-321-140	13-320-140D	13-321-140D

**mit Sperre, feines Maul**  
with ratchet, fine jaws  
avec crémaillère, mors fine  
con cremallera, boca fina  
con cremagliera, morso fino

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curva

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curva

### Mikronadelhalter Micro needle holders

Micro porte aiguilles  
Micro porta agujas  
Micro porta aghi



#### JACOBSON

			Diamond Coated	Diamond Coated
	x = 1 mm	x = 1 mm	x = 1 mm	x = 1 mm
185 mm – 7 1/3 "	13-322-185	13-323-185	13-322-185D	13-323-185D

ohne Sperre  
without ratchet  
sans crémaillère  
sin cremallera  
senza cremagliera

gerade  
straight  
droites  
recta  
retto

gebogen  
curved  
courbes  
curva  
curvo

gerade  
straight  
droites  
recta  
retto

gebogen  
curved  
courbes  
curva  
curvo

			Diamond Coated	Diamond Coated
	x = 1 mm	x = 1 mm	x = 1 mm	x = 1 mm
185 mm – 7 1/3 "	13-324-185	13-325-185	13-324-185D	13-325-185D

mit Sperre  
with ratchet  
avec crémaillère  
con cremallera  
con cremagliera

gerade  
straight  
droites  
recta  
retto

gebogen  
curved  
courbes  
curva  
curvo

gerade  
straight  
droites  
recta  
retto

gebogen  
curved  
courbes  
curva  
curvo



1:1



	TC	TC	TC	TC
	x = 1 mm	x = 1 mm	x = 1 mm	x = 1 mm
180 mm – 7 "	13-326-180	13-327-180	13-328-180	13-329-180

ohne Sperre  
without ratchet  
sans crémaillère  
sin cremallera  
senza cremagliera

gerade, glatt  
straight, smooth  
droit, lisse  
curva, lisa  
retto, liscio

gebogen, glatt  
curved, smooth  
courbe, lisse  
curva, lisa  
curvo, liscio

gerade, gerieft  
straight, serrated  
droit, strié  
recta, estriada  
retto, zigrinato

gebogen, gerieft  
curved, serrated  
courbe, strié  
curva, estriada  
curvo, zigrinato

	TC	TC	TC	TC
	x = 1 mm	x = 1 mm	x = 1 mm	x = 1 mm
180 mm – 7 "	13-330-180	13-331-180	13-332-180	13-333-180

mit Sperre  
with ratchet  
avec crémaillère  
con cremallera  
con cremagliera

gerade, glatt  
straight, smooth  
droit, lisse  
curva, lisa  
retto, liscio

gebogen, glatt  
curved, smooth  
courbe, lisse  
curva, lisa  
curvo, liscio

gerade, gerieft  
straight, serrated  
droit, strié  
recta, estriada  
retto, zigrinato

gebogen, gerieft  
curved, serrated  
courbe, strié  
curva, estriada  
curvo, zigrinato

### Mikronadelhalter Micro needle holders

Micro porte aiguilles  
Micro porta agujas  
Micro porta aghi



#### YASARGIL

1:1



1:1



1:1



1:1



			Diamond Coated	Diamond Coated
180 mm – 7"	13-334-180	13-335-180	13-334-180D	13-335-180D
200 mm – 8"	13-334-200	13-335-200	13-334-200D	13-335-200D

ohne Sperre  
without ratchet  
sans crémaillère  
sin cremallera  
senza cremagliera

gerade  
straight  
droites  
recta  
retto

gebogen  
curved  
courbes  
curva  
curva

gerade  
straight  
droites  
recta  
retto

gebogen  
curved  
courbes  
curva  
curvo

			Diamond Coated	Diamond Coated
180 mm – 7"	13-336-180	13-337-180	13-336-180D	13-337-180D
200 mm – 8"	13-336-200	13-337-200	13-336-200D	13-337-200D

mit Sperre  
with ratchet  
avec crémaillère  
con cremallera  
con cremagliera

gerade  
straight  
droites  
recta  
retto

gebogen  
curved  
courbes  
curva  
curva

gerade  
straight  
droites  
recta  
retto

gebogen  
curved  
courbes  
curva  
curvo

**Mikronadelhalter mit rundgriff**  
**Micro needle holders with round handle**  
**Micro porte aiguilles avec manche ronde**  
**Micro porta agujas con mango redondo**  
**Micro porta aghi con manico rotondo**



**YASARGIL**



			Diamond Coated	Diamond Coated
	x = 1 mm	x = 1 mm	x = 1 mm	x = 1 mm
210 mm – 8 ¼ "	13-338-210	13-339-210	13-338-210D	13-339-210D

**ohne Sperre**  
without ratchet  
sans crémaillère  
sin cremallera  
senza cremagliera

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curvo

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curvo

			Diamond Coated	Diamond Coated
	x = 1 mm	x = 1 mm	x = 1 mm	x = 1 mm
210 mm – 8 ¼ "	13-340-210	13-341-210	13-340-210D	13-341-210D

**mit Sperre**  
with ratchet  
avec crémaillère  
con cremallera  
con cremagliera

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curvo

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curvo



	TC	TC	TC	TC
	x = 1 mm	x = 1 mm	x = 1 mm	x = 1 mm
210 mm – 8 ¼ "	13-338-210TCG	13-339-210TCG	13-338-210TCS	13-339-210TCS

**ohne Sperre**  
without ratchet  
sans crémaillère  
sin cremallera  
senza cremagliera

**gerade, glatt**  
straight, smooth  
droit, lisse  
curva, lisa  
retto, liscio

**gebogen, glatt**  
curved, smooth  
courbe, lisse  
curva, lisa  
curvo, liscio

**gerade, gerieft**  
straight, serrated  
droit, strié  
recta, estriada  
retto, zigrinato

**gebogen, gerieft**  
curved, serrated  
courbe, strié  
curva, estriada  
curvo, zigrinato

	TC	TC	TC	TC
	x = 1 mm	x = 1 mm	x = 1 mm	x = 1 mm
210 mm – 8 ¼ "	13-340-210TCG	13-341-210TCG	13-340-210TCS	13-341-210TCS

**mit Sperre**  
with ratchet  
avec crémaillère  
con cremallera  
con cremagliera

**gerade, glatt**  
straight, smooth  
droit, lisse  
curva, lisa  
retto, liscio

**gebogen, glatt**  
curved, smooth  
courbe, lisse  
curva, lisa  
curvo, liscio

**gerade, gerieft**  
straight, serrated  
droit, strié  
recta, estriada  
retto, zigrinato

**gebogen, gerieft**  
curved, serrated  
courbe, strié  
curva, estriada  
curvo, zigrinato

1:1

### Mikronadelhalter mit rundgriff

#### *Micro needle holders with round handle*

#### *Micro porte aiguilles avec manche ronde*

#### *Micro porta agujas con mango redondo*

#### *Micro porta aghi con manico rotondo*



110 mm – 4 ¼ "	13-342-110	13-343-110
125 mm – 5 "	13-342-125	13-343-125
130 mm – 5 "	13-342-130	13-343-130
150 mm – 6 "	13-342-150	13-343-150
180 mm – 7 "	13-342-180	13-343-180

**ohne Sperre**  
without ratchet  
sans crémaillère  
sin cremallera  
senza cremagliera

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curva

110 mm – 4 ¼ "	13-344-110	13-345-110
125 mm – 5 "	13-344-125	13-345-125
130 mm – 5 "	13-344-130	13-345-130
150 mm – 6 "	13-344-150	13-345-150
180 mm – 7 "	13-344-180	13-345-180

**mit Sperre**  
with ratchet  
avec crémaillère  
con cremallera  
con cremagliera

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curva

Mikronadelhalter mit rundgriff

**Micro needle holders with round handle**

*Micro porte aiguilles avec manche ronde*

*Micro porta agujas con mango redondo*

*Micro porta aghi con manico rotondo*



1:1

### BARRAQUER

				Diamond Coated	Diamond Coated
140 mm – 5 ½"	8 mm Ø	13-346-140	13-347-140	13-346-140D	13-347-140D

**ohne Sperre, sehr feines Maul**  
without ratchet, extra delicate jaws  
sans crémaillère, mors très fine  
sin cremallera, boca muy fina  
senza cremagliera, morso molto fino

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curva

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbe  
curva  
curvo

				Diamond Coated	Diamond Coated
140 mm – 5 ½"	8 mm Ø	13-348-140	13-349-140	13-348-140D	13-349-140D

**mit Sperre, sehr feines Maul**  
with ratchet, extra delicate jaws  
avec crémaillère, mors très fine  
con cremallera, boca muy fina  
con cremagliera, morso molto fino

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curva

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curva

Mikronadelhalter  
***Micro needle holders***

*Micro porte aiguilles*  
*Micro porta agujas*  
*Micro porta aghi*



1:1

1:1

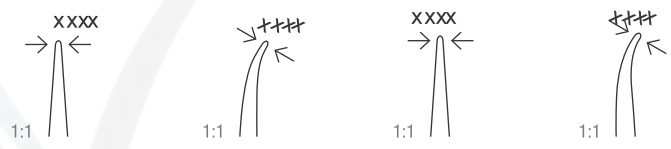
150 mm – 6"	9 mm Ø	13-350-150
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ohne Sperre, gebogen  
 without ratchet, curved  
 sans crémaillère, courbe  
 sin cremallera, curvo  
 senza cremagliera, curvo

### Mikronadelhalter mit gedrehtem Schluss

#### Micro needle holders, 90° twisted

Micro porte aiguilles, tordus de 90°  
 Micro porta agujas, giradas de 90°  
 Porta aghi per micro-neurochirurgia



	x = 0.4 mm	x = 0.4 mm	x = 0.9 mm	x = 0.9 mm
200 mm – 8"	13-351-200	13-352-200	13-353-200	13-354-200
225 mm – 8 ¾"	13-351-220	13-352-220	13-353-220	13-354-220
240 mm – 9 ½"	13-351-240	13-352-240	13-353-240	13-354-240

**ohne Sperre**  
 without ratchet  
 sans crémaillère  
 sin cremallera  
 senza cremagliera

**gerade**  
 straight  
 droites  
 recta  
 retto

**gebogen**  
 curved  
 courbes  
 curva  
 curva

**gerade**  
 straight  
 droites  
 recta  
 retto

**gebogen**  
 curved  
 courbes  
 curva  
 curva

	Diamond Coated	Diamond Coated	Diamond Coated	Diamond Coated
	x = 0.4 mm	x = 0.4 mm	x = 0.9 mm	x = 0.9 mm
200 mm – 8"	13-351-200D	13-352-200D	13-353-200D	13-354-200D
225 mm – 8 ¾"	13-351-220D	13-352-220D	13-353-220D	13-354-220D
240 mm – 9 ½"	13-351-240D	13-352-240D	13-353-240D	13-354-240D

**ohne Sperre, diamantiert**  
 without ratchet, diamond coated  
 sans crémaillère, diamanté  
 sin cremallera, diamantada  
 senza cremagliera, diamantato

**gerade**  
 straight  
 droites  
 recta  
 retto

**gebogen**  
 curved  
 courbes  
 curva  
 curva

**gerade**  
 straight  
 droites  
 recta  
 retto

**gebogen**  
 curved  
 courbes  
 curva  
 curva



**Diese Nadelhalter sind auch mit Sperre erhältlich.**  
 These needle holders are also available with ratchet.  
 Ces porte aiguilles sont également disponibles avec crémaillère.  
 Estas porta agujas también son disponibles con cremallera.  
 Questi port'aghi son fornibili anche con cremagliera.



### Mikronadelhalter *Micro needle holders*

*Micro porte aiguilles*  
*Micro porta agujas*  
*Micro porta aghi*



1:1

#### JACOBSON

1:1



1:1



1:1



1:1



			Diamond Coated	Diamond Coated
180 mm – 7"	13-355-185	13-356-185	13-355-185D	13-356-185D

**ohne Sperre**  
without ratchet  
sans crémaillère  
sin cremallera  
senza cremagliera

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curva

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curva

			Diamond Coated	Diamond Coated
180 mm – 7"	13-357-185	13-358-185	13-357-185D	13-358-185D

**mit Sperre**  
with ratchet  
avec crémaillère  
con cremallera  
con cremagliera

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curva

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curva



Diese Nadelhalter sind auch mit Sperre erhältlich.

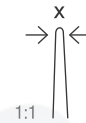
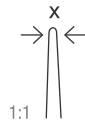
These needle holders are also available with ratchet.  
Ces porte aiguilles sont également disponibles avec crémaillère.  
Estas porta agujas también son disponibles con cremallera.  
Questi port'aghi son fornibili anche con cremagliera.

### Mikronadelhalter Micro needle holders

Micro porte aiguilles  
Micro porta agujas  
Micro porta aghi



1:1



			Diamond Coated	Diamond Coated
9 mm Ø	x = 1.0 mm	x = 1.0 mm	x = 1.0 mm	x = 1.0 mm
230 mm – 9"	13-359-001	13-359-002	13-359-003D	13-359-004D

**ohne Sperre**  
without ratchet  
sans crémaillère  
sin cremallera  
senza cremagliera

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curvo

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curvo

			Diamond Coated	Diamond Coated
9 mm Ø	x = 1.0 mm	x = 1.0 mm	x = 1.0 mm	x = 1.0 mm
230 mm – 9"	13-360-001	13-360-002	13-360-003D	13-360-004D

**mit Sperre**  
with ratchet  
avec crémaillère  
con cremallera  
con cremagliera

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curvo

**gerade**  
straight  
droites  
recta  
retto

**gebogen**  
curved  
courbes  
curva  
curvo



	TC	TC	TC	TC
9 mm Ø				
230 mm – 9"	13-361-001	13-361-002	13-361-003	13-361-004

**ohne Sperre**  
without ratchet  
sans crémaillère  
sin cremallera  
senza cremagliera

**gerade, glatt**  
straight, smooth  
droit, lisse  
curva, lisa  
retto, liscio

**gebogen, glatt**  
curved, smooth  
courbe, lisse  
curva, lisa  
curvo, liscio

**gerade, gerieft**  
straight, serrated  
droit, strié  
recta, estriada  
retto, zigrinato

**gebogen, gerieft**  
curved, serrated  
courbe, strié  
curva, estriada  
curvo, zigrinato

	TC	TC	TC	TC
9 mm Ø				
230 mm – 9"	13-362-001	13-362-002	13-362-003	13-362-004

**mit Sperre**  
with ratchet  
avec crémaillère  
con cremallera  
con cremagliera

**gerade, glatt**  
straight, smooth  
droit, lisse  
curva, lisa  
retto, liscio

**gebogen, glatt**  
curved, smooth  
courbe, lisse  
curva, lisa  
curvo, liscio

**gerade, gerieft**  
straight, serrated  
droit, strié  
recta, estriada  
retto, zigrinato

**gebogen, gerieft**  
curved, serrated  
courbe, strié  
curva, estriada  
curvo, zigrinato

**Mikronadelhalter**  
**Micro needle holders**

*Micro porte aiguilles*  
*Micro porta agujas*  
*Micro porta aghi*



	titan	titan
	0.8 mm x 0.8 mm	0.8 mm x 0.8 mm
185 mm – 7 ¼"	13-365-185	13-366-185

**mit Sperre**  
with ratchet  
avec crémaillère  
con cremallera  
con cremagliera



	titan	titan
	0.3 mm x 0.4 mm	0.3 mm x 0.4 mm
180 mm – 7"	13-363-180	13-364-180

**mit Sperre**  
with ratchet  
avec crémaillère  
con cremallera  
con cremagliera

**Mikronadelhalter**  
**Micro needle holders**

*Micro porte aiguilles*  
*Micro porta agujas*  
*Micro porta aghi*



	titan	titan
	0.5 mm x 0.8 mm	0.5 mm x 0.8 mm
200 mm – 8"	13-367-200	13-368-200

**mit Sperre**  
with ratchet  
avec crémaillère  
con cremallera  
con cremagliera



	titan	titan	titan	titan
	0.4 x 0.6 mm	0.4 x 0.6 mm	0.6 x 0.6 mm	0.6 x 0.6 mm
200 mm – 8"	13-369-200	13-370-200	13-371-200	13-372-200

**mit Sperre**  
with ratchet  
avec crémaillère  
con cremallera  
con cremagliera

**Mikronadelhalter**  
**Micro needle holders**

*Micro porte aiguilles*  
*Micro porta agujas*  
*Micro porta aghi*



1:1



225 mm – 8 ¾ "	13-373-225	13-374-225
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	<b>TC</b>	<b>TC</b>
225 mm – 8 ¾ "	13-375-225	13-361-225

	<b>Titan</b>	<b>Titan</b>
225 mm – 8 ¾ "	13-376-225	13-377-225

**ohne Sperre**  
without ratchet  
sans crémaillère  
sin cremallera  
senza cremagliera

	<b>Titan</b>	<b>Titan</b>
225 mm – 8 ¾ "	13-378-225	13-379-225
225 mm – 8 ¾ "	13-380-225	13-381-225

**mit Sperre**  
with ratchet  
avec crémaillère  
con cremallera  
con cremagliera

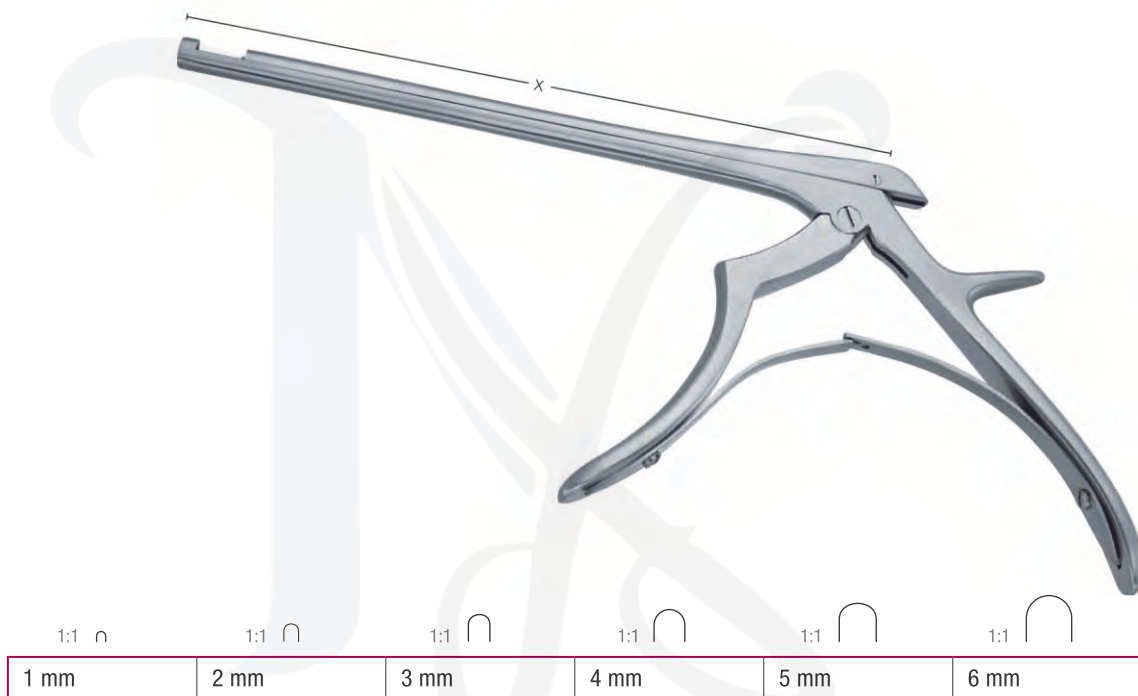
### laminektomiestanzen

#### **Laminectomy punches**

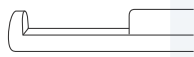
*Pinces emporte-pièces à laminectomie*

*Pinzas cortantes para laminectomía*

*Pinze taglianti per laminectomia*



#### FERRIS-SMITH-KERRISON



	x = 150mm – 6"	x = 180 mm – 7 "	x = 200 mm – 8 "	x = 230 mm – 9 "
1 mm	13-382-001	13-383-010	13-385-010	13-386-001
2 mm	13-382-002	13-384-002	13-385-020	13-386-002
3 mm	13-382-003	13-384-003	13-385-030	13-386-003
4 mm	13-382-004	13-383-040	13-385-040	13-386-004
5 mm	13-382-005	13-384-005	13-385-050	13-386-005
6 mm	13-382-006	13-383-060	13-385-060	13-386-006



1 mm	13-387-001	13-388-010	13-390-010	13-391-001
2 mm	13-387-002	13-389-002	13-390-020	13-391-002
3 mm	13-387-003	13-389-003	13-390-030	13-391-003
4 mm	13-387-004	13-388-040	13-390-040	13-391-004
5 mm	13-387-005	13-389-005	13-390-050	13-391-005
6 mm	13-387-006	13-388-060	13-390-060	13-391-006

### laminektomiestanzen

#### Laminectomy punches

*Pinces emporte-pièces à laminectomie*


*Pinzas cortantes para laminectomía*

*Pinze taglianti per laminectomia*




1 mm	2 mm	3 mm	4 mm	5 mm	6 mm
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#### FERRIS-SMITH-KERRISON

	x = 150mm - 6"	x = 180 mm - 7 "	x = 200 mm - 8 "	x = 230 mm - 9 "
1 mm	13-392-001	13-393-010	13-395-010	13-396-001
2 mm	13-392-002	13-394-002	13-395-020	13-396-002
3 mm	13-392-003	13-394-003	13-395-030	13-396-003
4 mm	13-392-004	13-393-040	13-395-040	13-396-004
5 mm	13-392-005	13-394-005	13-395-050	13-396-005
6 mm	13-392-006	13-393-060	13-395-060	13-396-006

	1 mm		13-397-010	13-398-010	
	2 mm		13-397-020	13-398-020	13-399-002
	3 mm		13-397-030	13-398-030	13-399-003
	4 mm		13-397-040	13-398-040	13-399-004
	5 mm		13-397-050	13-398-050	13-399-005
	6 mm		13-397-060	13-398-060	13-399-006

	1 mm		13-400-010		
	2 mm		13-400-020		
	3 mm		13-400-030		

	1 mm		13-401-010		
	2 mm		13-401-020		
	3 mm		13-401-030		



**Dünne Fußplatte**  
Thin footplate  
Plaque de coupe étroite  
Lámina de punción estrecha  
Battente sottile

zerlegbare laminectomiestanzen  
**Dismantable laminectomy punches**

*Pinces emporte-pièces démontables à laminectomie*  
*Pinzas cortantes desmontables para laminectomía*  
*Pinze taglianti smontabili per laminectomia*



### FERRIS-SMITH-KERRISON



	x = 180 mm – 7"	x = 200 mm – 8"	x = 230 mm – 9"
1 mm	13-383-010Z	13-385-010Z	13-386-001Z
2 mm	13-384-002Z	13-385-020Z	13-386-002Z
3 mm	13-384-003Z	13-385-030Z	13-386-003Z
4 mm	13-383-040Z	13-385-040Z	13-386-004Z
5 mm	13-384-005Z	13-385-050Z	13-386-005Z
6 mm	13-383-060Z	13-385-060Z	13-386-0026



1 mm	13-388-010Z	13-390-010Z	13-391-001Z
2 mm	13-389-002Z	13-390-020Z	13-391-002Z
3 mm	13-389-003Z	13-390-030Z	13-391-003Z
4 mm	13-388-040Z	13-390-040Z	13-391-004Z
5 mm	13-389-005Z	13-390-050Z	13-391-005Z
6 mm	13-388-060Z	13-390-060Z	13-391-006Z



zerlegbare laminektomiestanzen  
**Dismantable laminectomy punches**

*Pinces emporte-pièces démontables à laminectomie*  
*Pinzas cortantes desmontables para laminectomía*  
*Pinze taglianti smontabili per laminectomia*



1 mm	2 mm	3 mm	4 mm	5 mm	6 mm
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**FERRIS-SMITH-KERRISON**



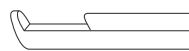
	x = 180 mm – 7 "	x = 200 mm – 8 "	x = 230 mm – 9 "
1 mm	13-393-010Z	13-395-010Z	13-396-001Z
2 mm	13-394-002Z	13-395-020Z	13-396-002Z
3 mm	13-394-003Z	13-395-030Z	13-396-003Z
4 mm	13-393-040Z	13-395-040Z	13-396-004Z
5 mm	13-394-005Z	13-395-050Z	13-396-005Z
6 mm	13-393-060Z	13-395-060Z	13-396-006Z



1 mm	13-397-010Z	13-398-010Z	
2 mm	13-397-020Z	13-398-020Z	13-399-002Z
3 mm	13-397-030Z	13-398-030Z	13-399-003Z
4 mm	13-397-040Z	13-398-040Z	13-399-004Z
5 mm	13-397-050Z	13-398-050Z	13-399-005Z
6 mm	13-397-060Z	13-398-060Z	13-399-006Z



1 mm	13-400-010Z		
2 mm	13-400-020Z		
3 mm	13-400-030Z		



1 mm	13-401-010Z		
2 mm	13-401-020Z		
3 mm	13-401-030Z		



**Dünne Fußplatte**  
 Thin footplate  
 Plaque de coupe étroite  
 Lámina de punción estrecha  
 Battente sottile

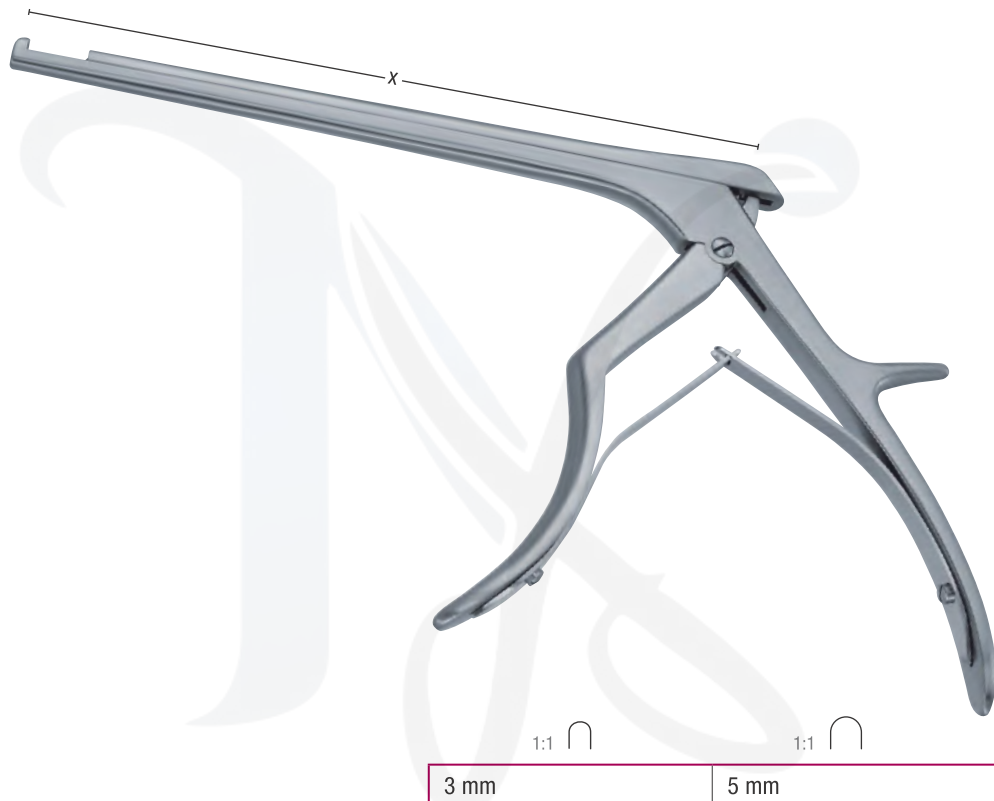
### Laminektomiestanzen

#### **Laminectomy punches**

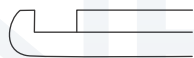
*Pinces emporte-pièces à laminectomie*

*Pinzas cortantes para laminectomía*

*Pinze taglianti per laminectomia*



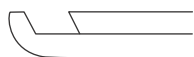
#### COLCLOUGH



	x = 150 mm – 6"	x = 200 mm – 8"
3 mm	13-402-150	13-402-200
5 mm	13-403-150	13-403-200



3 mm	13-404-150	13-404-200
5 mm	13-405-150	13-405-200



3 mm	13-406-150	13-406-200
5 mm	13-407-150	13-407-200

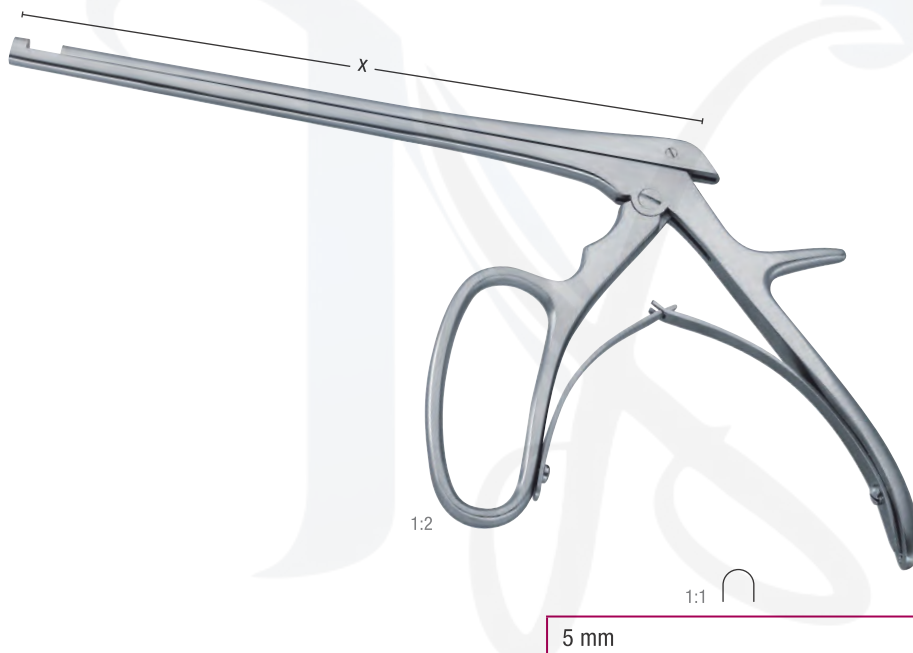
laminektomiestanzen

**Laminectomy punches**

*Pinces emporte-pièces à laminectomie*

*Pinzas cortantes para laminectomía*

*Pinze taglienti per laminectomia*



**FERRIS-SMITH-KERRISON**



	x = 180 mm – 7"
5 mm	13-408-050



5 mm	13-409-050
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### Laminektomiestanzen

#### **Laminectomy punches**

*Pinces emporte-pièces à laminectomie*

*Pinzas cortantes para laminectomía*

*Pinze taglianti per laminectomia*



1:1 

#### **CUSHING**

	2 mm x 10 mm	2 mm x 10 mm	2 mm x 10 mm
x = 130 mm – 5"	13-410-130	13-411-130	13-412-130
x = 180 mm – 7"	13-410-180	13-411-180	13-412-180
x = 220 mm – 8 ¾"	13-410-220	13-411-220	13-412-220

1:1 

#### **LOVE-GRUENWALD**

	3 mm x 10 mm	3 mm x 10 mm	3 mm x 10 mm
x = 130 mm – 5"	13-413-130	13-414-130	13-415-130
x = 150 mm – 6"	13-413-150	13-414-150	13-415-150
x = 180 mm – 7"	13-413-180	13-414-180	13-415-180

1:1 

#### **SPURLING**

	4 mm x 10 mm	4 mm x 10 mm	4 mm x 10 mm
x = 150 mm – 6"	13-416-150	13-417-150	13-418-150
x = 180 mm – 7"	13-416-180	13-417-180	13-418-180
x = 230 mm – 9"	13-416-230	13-417-230	13-418-230

1:1 

#### **CLOWARD**

	6 mm x 10 mm
x = 180 mm – 7"	13-419-180

### laminektomiestanzen

#### **Laminectomy punches**

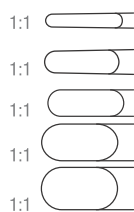
*Pinces emporte-pièces à laminectomie*

*Pinzas cortantes para laminectomía*

*Pinze taglianti per laminectomia*



#### FERRIS-SMITH



	x = 180 mm – 7"	x = 180 mm – 7"	x = 180 mm – 7"
2 mm x 10 mm	13-420-002	13-421-020	13-422-020
3 mm x 10 mm	13-420-003	13-421-030	13-422-030
4 mm x 10 mm	13-420-004	13-421-040	13-422-040
5 mm x 10 mm	13-420-005	13-421-050	13-422-050
6 mm x 10 mm	13-420-006	13-421-060	13-422-060



Andere Längen und Ausführungen sind auf Anfrage lieferbar.  
Other lengths and executions are available upon request.  
Autres longueurs et exécutions sont disponibles sur demande.  
Otras longitudes y dimensiones son disponibles según demanda.  
Altre lunghezze e modelli fornibili a richiesta.

### Laminektomiestanzen

#### **Laminectomy punches**

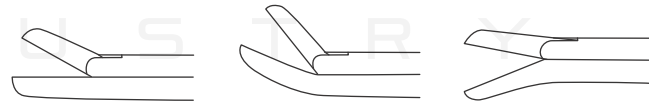
*Pinces emporte-pièces à laminectomie*

*Pinzas cortantes para laminectomía*

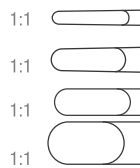
*Pinze taglianti per laminectomia*



NEOA  
INDUSTRY



#### CASPAR



	x = 155 mm – 6"	x = 155 mm – 6"	x = 155 mm – 6"
2 mm	13-423-020	13-424-020	13-425-020
3 mm	13-423-030	13-424-030	13-425-030
4 mm	13-423-040	13-424-040	13-425-040
5 mm	13-423-050		

### laminektomiestanzen **Laminectomy punches**

*Pinces emporte-pièces à laminectomie*  
*Pinzas cortantes para laminectomía*  
*Pinze taglianti per laminectomia*



#### OLDBERG

x = 180 mm – 7"	3.5 mm Ø	6.0 mm Ø
	13-426-035	13-426-065



#### SCHLESINGER

	2 mm x 10 mm	3 mm x 10 mm	4 mm x 10 mm
	x = 125 mm – 5"	x = 125 mm – 5"	x = 125 mm – 5"
190 mm – 7 ½"	13-427-020	13-427-030	13-427-040

**gezahnt**  
saw edge  
dentelé  
dentada  
dentata

### Laminektomiestanzen Laminectomy punches

*Pinces emporte-pièces à laminectomie*  
*Pinzas cortantes para laminectomía*  
*Pinze taglianti per laminectomia*



Maul gefenstert und gezahnt  
Jaw fenestrated and serrated  
Mors fenêtré et dentelé  
Boca con orificio y dentada  
Morso finestrato e dentellato



**CASPAR**

	x = 140 mm – 5 ½ "	x = 160 mm – 6 ¼ "	x = 185 mm – 7 ¼ "
2 mm x 12 mm	13-428-200	13-429-200	13-430-200
3 mm x 12 mm	13-428-300	13-429-300	13-430-300
4 mm x 14 mm	13-428-400	13-429-400	13-430-400
5 mm x 14 mm	13-428-500	13-429-500	13-430-500
6 mm x 16 mm	13-428-600	13-429-600	13-430-600



	x = 140 mm – 5 ½ "	x = 160 mm – 6 ¼ "	x = 185 mm – 7 ¼ "
2 mm x 12 mm	13-431-200	13-432-200	
2.5 mm x 12 mm	13-431-250	13-432-250	13-433-300
4 mm x 14 mm	13-431-400	13-432-400	13-433-400
5 mm x 14 mm	13-431-500	13-432-500	13-433-500



	x = 140 mm – 5 ½ "	x = 160 mm – 6 ¼ "	x = 185 mm – 7 ¼ "
2 mm x 12 mm	13-434-200	13-435-200	
3 mm x 12 mm	13-434-250	13-435-250	13-436-300
4 mm x 14 mm	13-434-400	13-435-400	13-436-400



### laminektomiestanzen

#### **Laminectomy punches**

*Pinces emporte-pièces à laminectomie*

*Pinzas cortantes para laminectomía*

*Pinze taglianti per laminectomia*



#### **WEIL- BLAKESLEY**



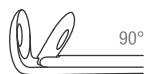
	Fig. 1	Fig. 2	Fig. 3	Fig. 4	Fig. 5
	a = 3.0 mm	a = 3.5 mm	a = 4.5 mm	a = 5.0 mm	a = 5.5 mm



x = 120 mm – 4 ¾ "	13-437-001	13-437-002	13-437-003	13-437-004	13-437-005
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x = 120 mm – 4 ¾ "	13-438-001	13-438-002	13-438-003	13-438-004	
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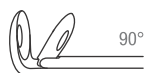


x = 120 mm – 4 ¾ "	13-439-001	13-439-002	13-439-003		
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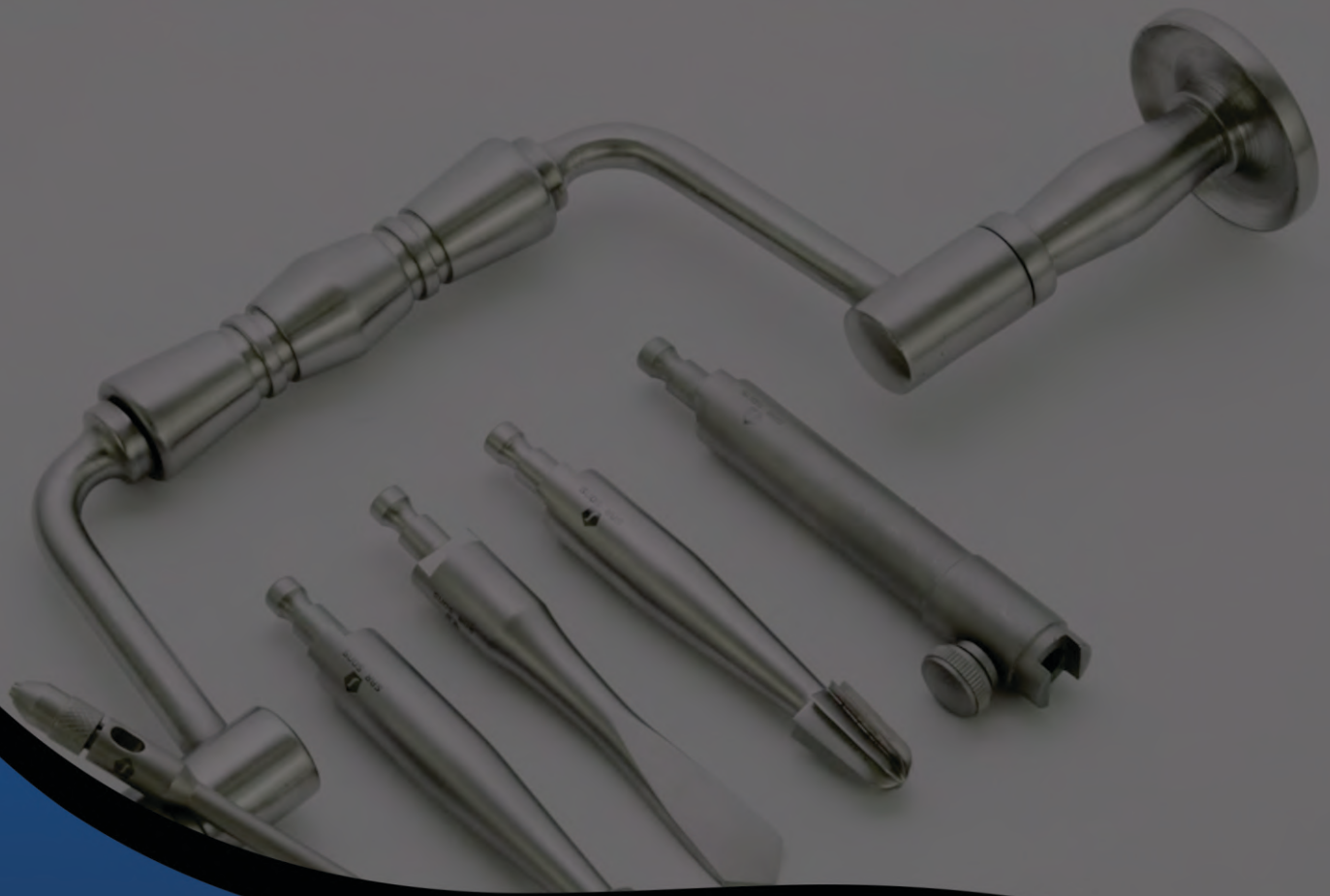
	Fig. 1	Fig. 2	Fig. 3	Fig. 4	Fig. 5
	a = 3.0 mm	a = 3.5 mm	a = 4.5 mm	a = 5.0 mm	a = 5.5 mm



x = 180 mm – 7 "	13-440-010	13-440-020	13-440-030	13-440-040	13-440-050
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x = 180 mm – 7 "	13-441-010	13-441-020	13-441-030	13-441-040	
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**USA Address:**

📍 5900 Balcones Drive # 16244  
Austin TX, USA 78731.  
☎ +1 (917) 773 3694  
📞 **uk:** +44 7871 836765  
✉ info@neoaindustry.com  
neoaindustry4@gmail.com  
🌐 www.neoaindustry.com

**Main Head Office:**

📍 Roars Road New Miana Pura  
West, Sialkot 51310 Pakistan.  
☎ +92 322 5587688  
📞 +92 322 5587688  
✉ info@neoaindustry.com  
neoaindustry4@gmail.com  
🌐 www.neoaindustry.com

