Needle information

- B. Braun high performance surgical needles
- B. Braun top needle range

CV pass needle generation

- B. Braun needle types
- B. Braun needle nomenclature
- B. Braun needles

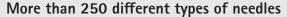
B. Braun high performance surgical needles

Quality and high performance

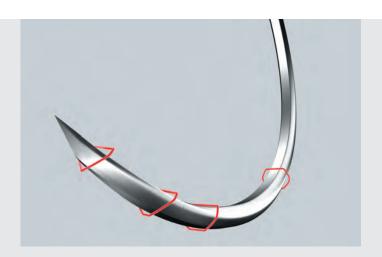
 B. Braun needles have gained recognition over the years for their quality and high performance.

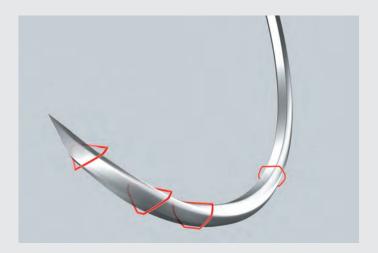
Constant development

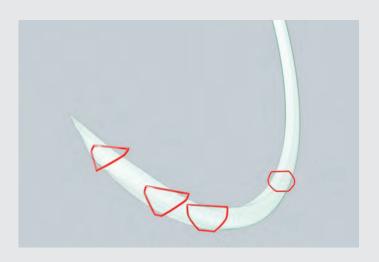
 B. Braun has state of the art technology and is committed to constant research and development in order to improve needles to the need of all surgical disciplines.



 B. Braun has over 250 different types of needles to meet the needs of the surgical procedure as well as the surgeon's personal preferences.







B. Braun top needle range







Easyslide and CV pass needles are the result of both extensive research in metallurgical technology and clinical experience.

This has resulted in needles that are made of high quality stainless steel alloy.

Bending resistance

with high performing needles

- Special steel confers superior strength
- Outstanding bending and breaking resistance



specific needle tip design

- Continuous penetration performance pass after pass
- Engineered surface treatment that improves needle penetration





The B. Braun latest generation of precision point cutting needles for plastic surgery.

The dream for plastic surgery

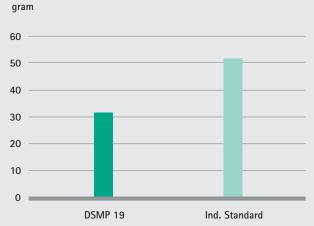
Excellent penetration performance and guaranteed bending resistance.

Specific needle tip and geometry design

- Thin tip for easiest and smoothest pass
- Excellent durability and needle point integrity
- Incorporates flattened body for an excellent stability in the needle holder

Penetration

Average penetration force after 10 stitches



Source: Internal laboratory tests

CV pass needle generation

Excellence in cardiovascular surgery

The new needle generation for CV surgery

- Specifically developed to meet the high standards required during cardiovascular surgery
- CV pass needles are manufactured employing top quality stainless steel alloy (300 stainless steel series)





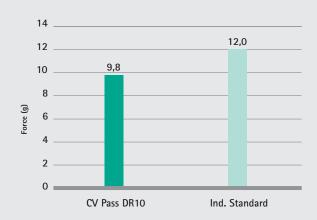
Specific needle body design

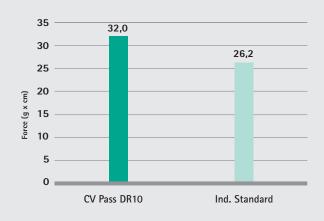
An innovative semi-square body with round edges provides CV pass needles with:

- Superior resistance to bending and breakage
- Optimal penetration even after multiple stitches
- Atraumatic passage through tissues
- Excellent stability in the needle holder
- Improved needle visibility with CV pass easyblack



Penetration and bending performance for 3/8 circle round body 10 mm taper point needle USP 7/0



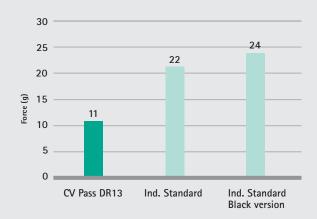


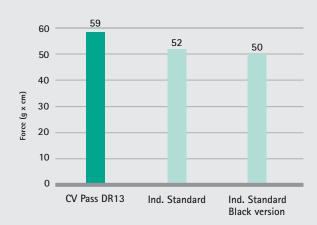
PenetrationAverage penetration force after 10 stitches

Source: Internal laboratory tests

BendingMaximum force applied to bend the needle

Penetration and bending performance for 3/8 circle round body 13 mm taper point needle USP 6/0





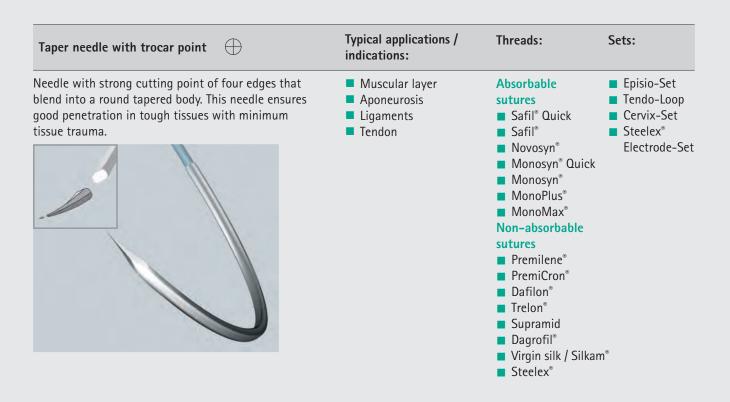
PenetrationAverage penetration force after 10 stitches

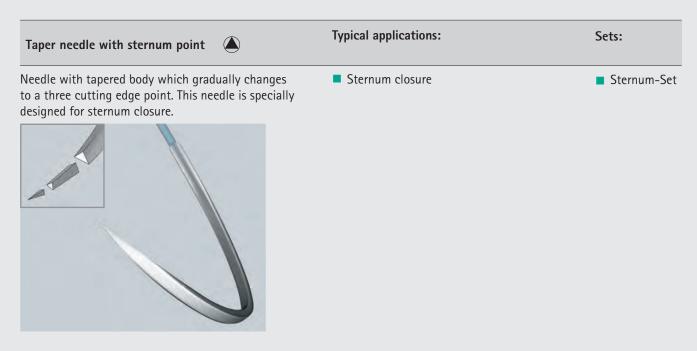
Source: Internal laboratory tests

BendingMaximum force applied to bend the needle

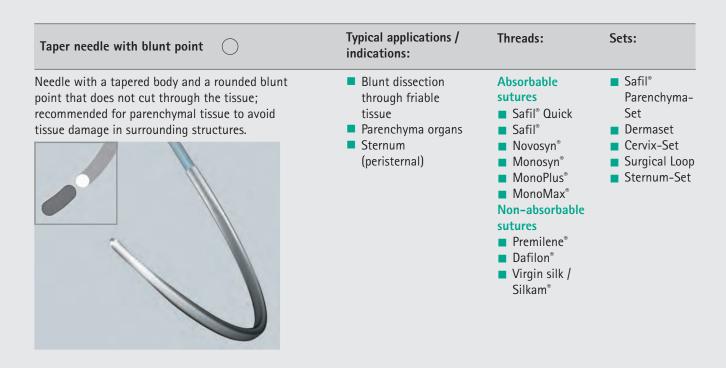
B. Braun needle types

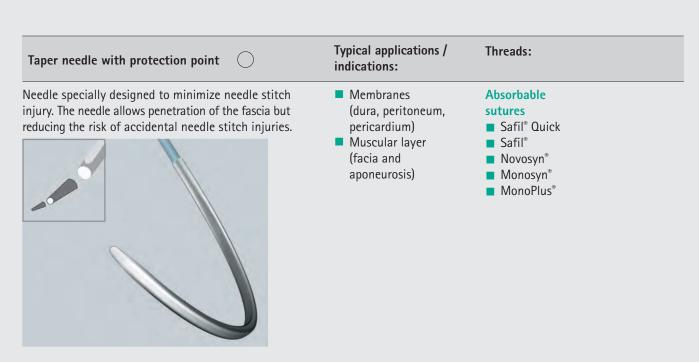
Typical applications / Threads: Sets: Taper needle indications: The taper needle is designed to permit easy penetration Gastrointestinal **Absorbable** ■ Episio-Set of the tissue. The body of the needle is flattened to Steelex® tract sutures prevent the needle from rotating in the needle holder. Urologic tract Safil® Quick Electrode-Set This needle is designed for soft tissues. CV pass needle Reproductive organs Safil[®] with square needle body instead of flattened needle (male and female) Novosyn® body for increased bending strength. This needle is CV system (heart Monosyn® Quick specially designed for cardiovascular indications. structures and vessels Monosyn® MonoPlus® without atheroma) Respiratory system MonoMax® Non-absorbable Endocrine surgery Hepatobiliary surgery sutures Membranes Premilene® PremiCron® (dura, peritoneum, pericardium) Dafilon® Muscular layer ■ Trelon® Cellular Supramid subcutaneous Dagrofil® Virgin Silk / Silkam® Microsurgery Steelex® (vessels, nerves) Oral mucosa Linatrix® Typical applications / Threads: Taper needle with short cutting point indications: The round bodied needle with a short cutting point CV system **Absorbable** improves penetration through calcified vessels and (heart structures sutures tough tissue. CV pass needle with square needle ■ Safil® Quick and vessels with body instead of flattened needle body for increased atheroma) Safil* bending strength. This needle is specially designed Muscular layer Novosyn® for cardiovascular indications. **Aponeurosis** Monosyn® Ligaments MonoPlus® Tendon MonoMax® Non-absorbable sutures Premilene® PremiCron® Dafilon® Supramid ■ Sternum-Set

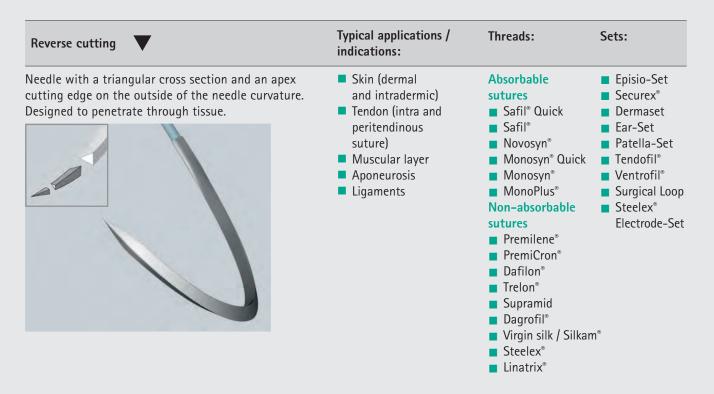


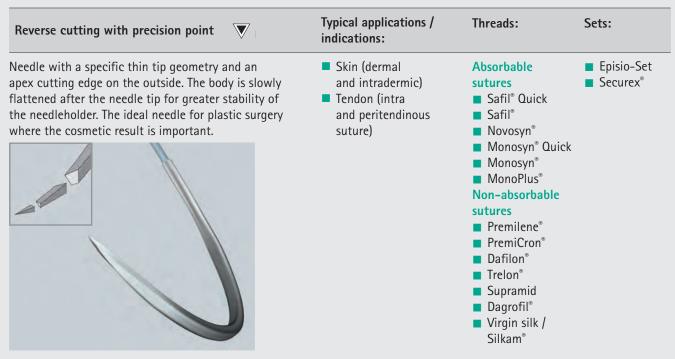


B. Braun needle types

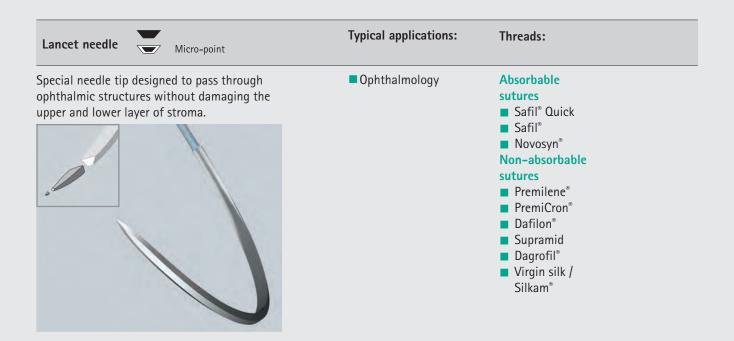








B. Braun needle types

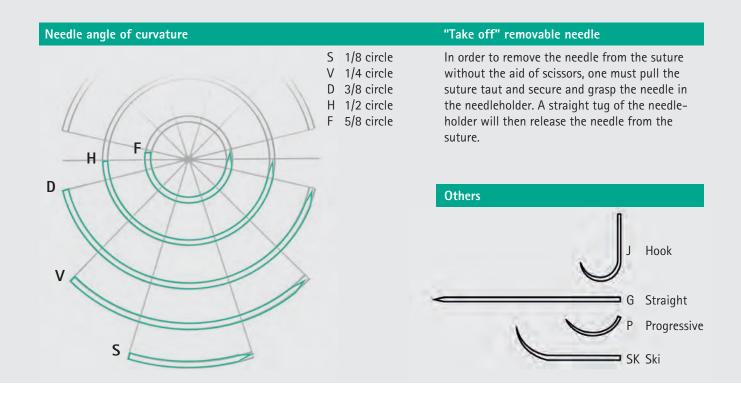


B. Braun needle nomenclature

To identify the different types of needles, B. Braun uses the following nomenclature:

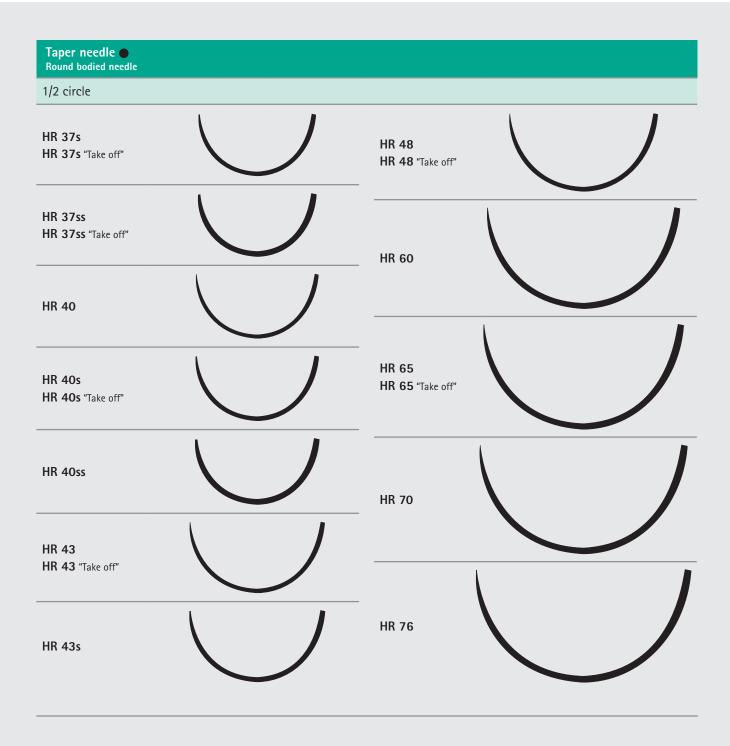
	Α		В		С	12		D
	Needle angle of curvature		Body type		Point type	Needle length		Wire size
S	1/8 circle	R	round body	T	trocar point		f	thin
٧	1/4 circle	S	cutting needle	N	blunt point	This refers to the distance between		bodied needle
D	3/8 circle	L	lancet needle	S	sternum point			
Н	1/2 circle			С	short cutting point	the needle point		
F	5/8 circle			М	micro-point	and the needle end,	SS	extra heavy bodied needle
G	straight			MP	precision point	measured along		
Р	progressive curved			m	micro needle	the length of the needle in mm	V	break-off needle
J	hook			mV	micro vascular			
SK	ski needle			B protection point			b	black needle
Exan	nple:							
	Н		R		С	26		

HRC $26 \rightarrow 1/2$ circle round bodied needle with short cutting point, 26 mm long.

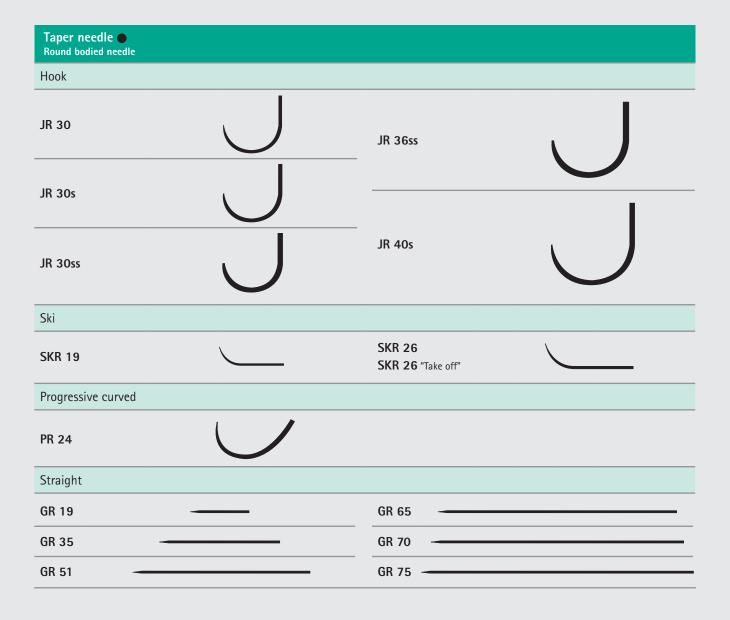


Taper needle (mi Micro vascular needl			edle) •						
3/8 circle									
	angle	length mm	diameter microns			angle	length mm	diameter microns	
DRmV 6b CV Pass	135°	6,4	140μ	$\overline{}$	DRmV 10b Pass	135°	9,3	200μ	$\overline{}$
DRmV 8b CV Pass	135°	7,9	140μ	$\overline{}$	DRmV 13b Pass				$\overline{}$
Progressive curved									
	angle	length mm	diameter microns			angle	length mm	diameter microns	
PRmV 8b CV Pass	85° / 101°	7,9	200μ	$\overline{}$	PRmV 10b Pass	95° / 90°	9,3	200μ	\cup
Taper needle (mi Micro-needle taper p		e) •							
1/2 circle									
	angle	length mm	diameter microns			angle	length mm	diameter microns	
HRm 4	180°	4,0	70μ	\cup	HRm 8	180°	7,8	140μ	\bigcup
HRm 6	180°	6,5	200μ	\cup					
3/8 circle									
	angle	length mm	diameter microns			angle	length mm	diameter microns	
DRm 3	135°	3,8	50μ	\smile	DRm 6	135°	6,4	140μ	\smile
DRm 4	135°	4,0	70μ	\cup	DRm 8	135°	7,9	140μ	\sim
DRm 4s	135°	4,0	140μ	$\overline{}$	DRm 10b CV Pass	135°	9,3	200μ	$\overline{}$
DRm 5	135°	5,0	100μ	$\overline{}$					
Progressive curved									
	angle	length mm	diameter microns			angle	length mm	diameter microns	
PRm 4	95° / 100°	4,0	70μ	\cup	PRm 6	100° / 95°	6,4	140μ	\vee
PRm 5	100° / 90°	5,0	100μ	$\overline{}$					

Taper needle Round bodied needle			
1/2 circle			
HR 6	\cup	HR 22ss	\ /
HR 8	\cup	HR 22ss "Take off"	
HR 10f	\cup	HR 23	
HR 10	\bigcup		
HR 13f	\bigcup	HR 26f	
HR 13 HR 13 "Take off"		HR 26	\ /
		HR 26 "Take off"	
HR 13b CPass			
HR 13ss	\cup	HR 26b	
HR 17f		HR 26s	\ /
HR 17	\ /	HR 26s "Take off"	
HR 17 "Take off"		— HR 26ss	
HR 17b Pass		HR 26ss "Take off"	
HR 17s	\bigcup	— HR 27 —	
HR 18		LID oo	
LID 00		— HR 30 HR 30 "Take off"	
HR 20 HR 20 "Take off"			
HR 20b ♥Pass	$\overline{}$	HR 30s HR 30s "Take off"	
HR 22	\ /		1 1
HR 22 "Take off"		HR 30ss HR 30ss "Take off"	
HR 22b Ress			
		— HR 37	
HR 22s		HR 37 "Take off"	
HR 22s "Take off"			

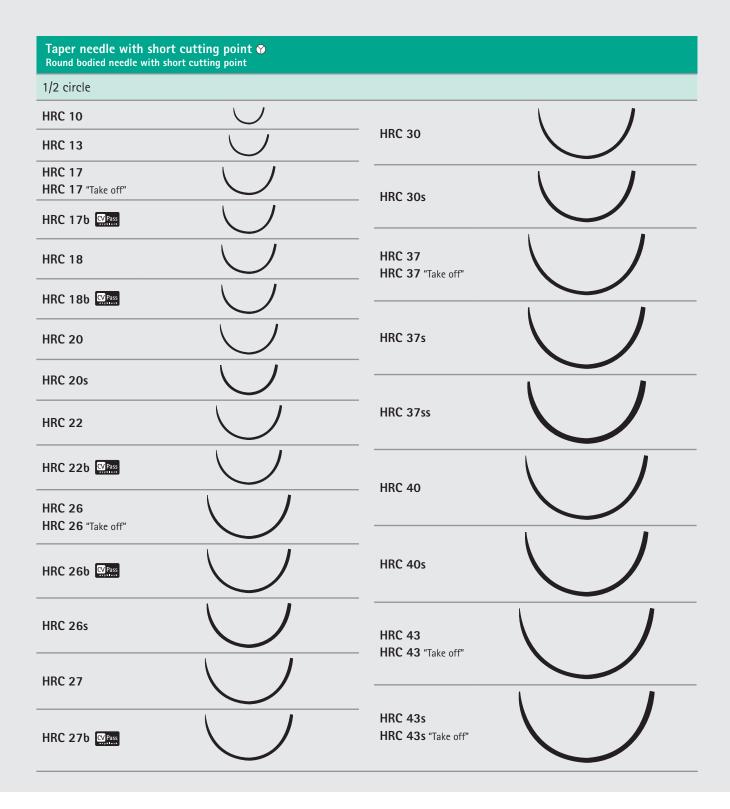


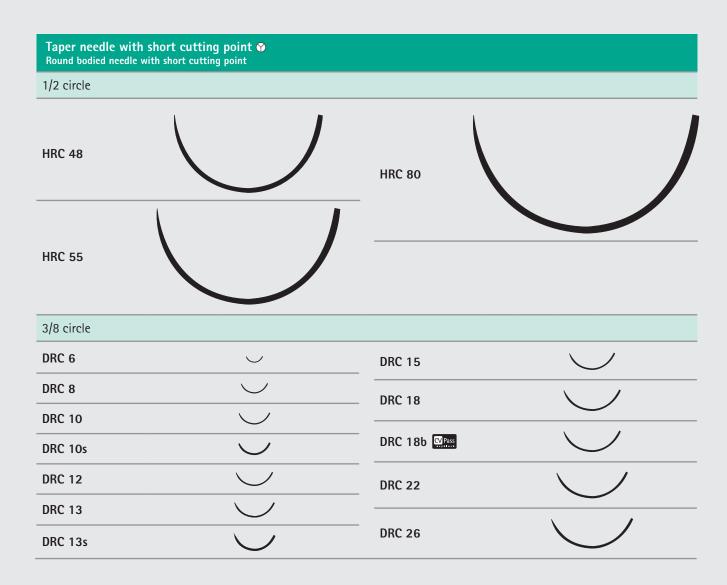
Taper needle Round bodied needle		
3/8 circle		
DR 6	\smile	DR 18
DR 6s	\smile	— DR 18b ☑ ♣
DR 8f	$\overline{}$	
DR 8	$\overline{}$	DR 22
DR 10f	$\overline{}$	DR 26
DR 10	\smile	
DR 10s	$\overline{}$	DR 32
DR 12		
DR 13	$\overline{}$	DR 39
DR 13s	$\overline{}$	DR 48
DR 15		DR 48 "Take off"
5/8 circle		
FR 10	\cup	FR 36
FR 13	\cup	
FR 17	\cup	FR 40
FR 22	\bigcup	
FR 26	\bigcup	FR 110
FR 26s	\bigcup	

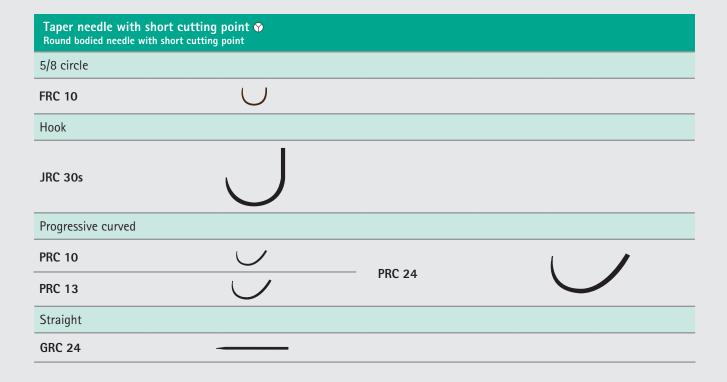


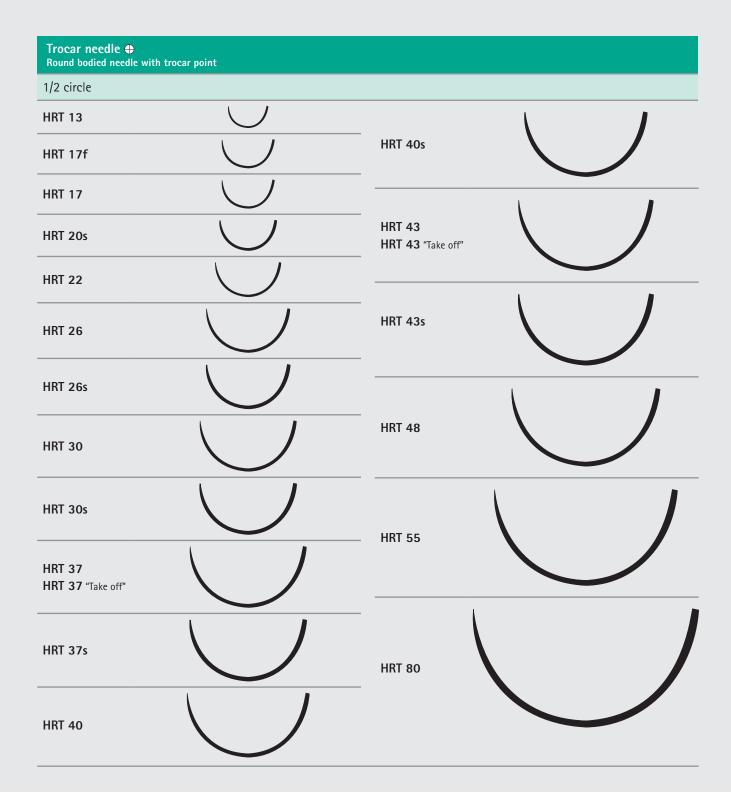
Taper needle with Round bodied micro va				
3/8 circle				
	angle	length mm	diameter microns	
DRCmV 10b Pass	135°	9,3	200μ	$\overline{}$
Progressive curved				
	angle	length mm	diameter microns	
PRCmV 10b CVPass	95° / 90°	9,3	200μ	

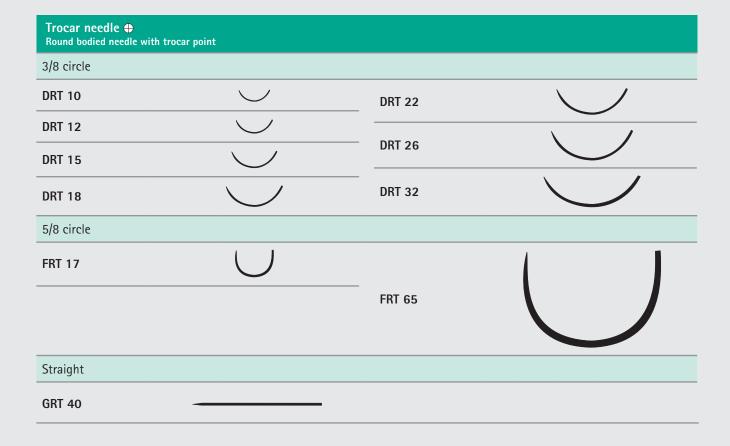
Taper needle with Round bodied micro n				ro) 🔮					
3/8 circle									
	angle	length mm	diameter microns			angle	length mm	diameter microns	
DRCm 3	135°	3,5	100μ	\cup	DRCm 6	135°	6,4	140μ	$\overline{}$
DRCm 4	135°	4,2	140μ	\smile	DRCm 8	135°	7,9	140μ	$\overline{}$
DRCm 5	135°	5,0	100μ	\smile	DRCm 10b CV Pass	135°	9,3	200μ	$\overline{}$
Progressive curved									
	angle	length mm	diameter microns			angle	length mm	diameter microns	
PRCm 4	95° / 110°	4,0	70μ	$\overline{}$	PRCm 6	100° / 95°	6,4	140μ	
PRCm 5	100° / 95°	5,1	100μ	\cup	PRCm 10b Pass	95° / 90°	9,3	200μ	

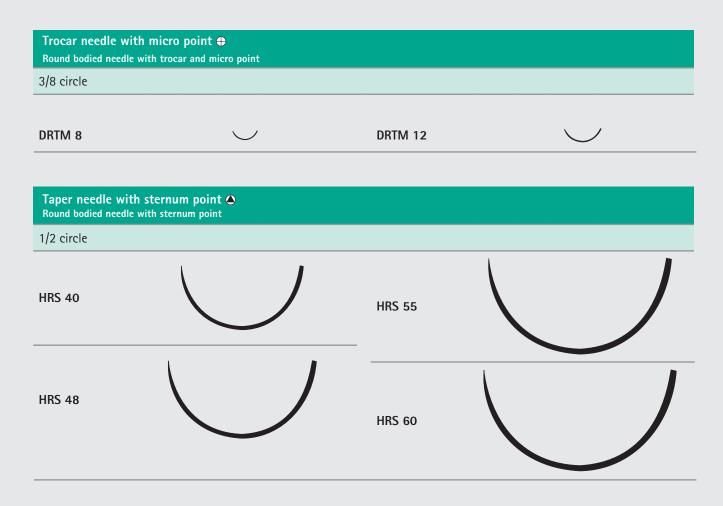


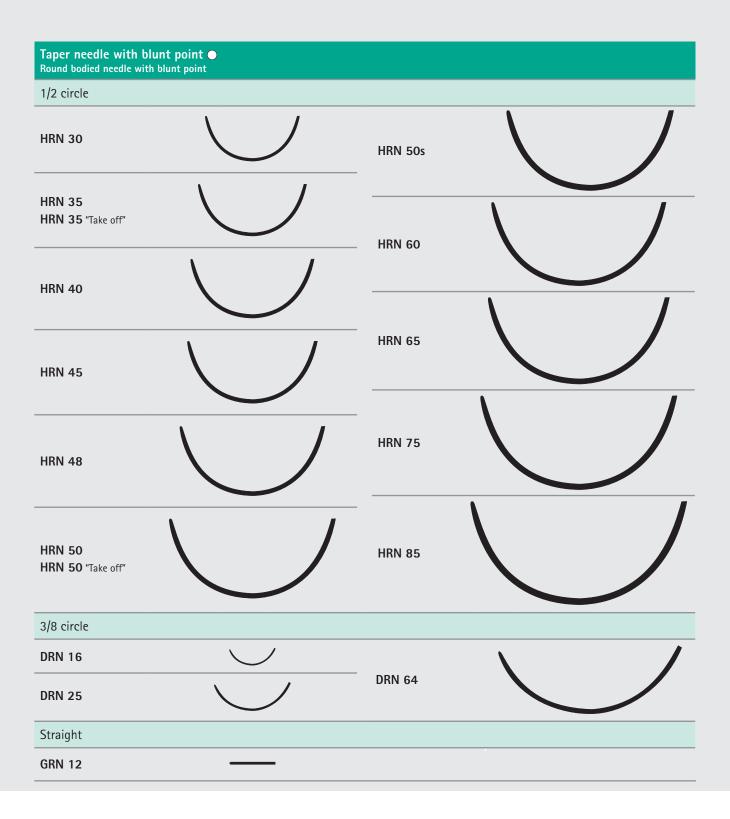


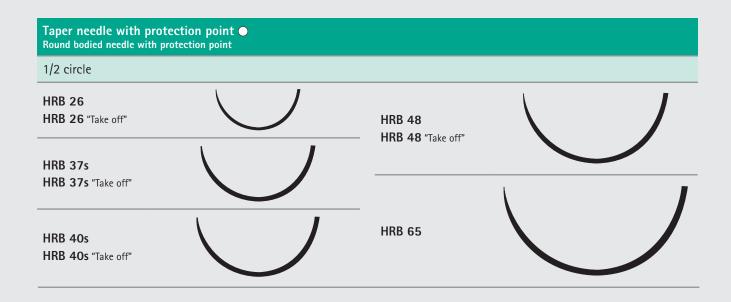


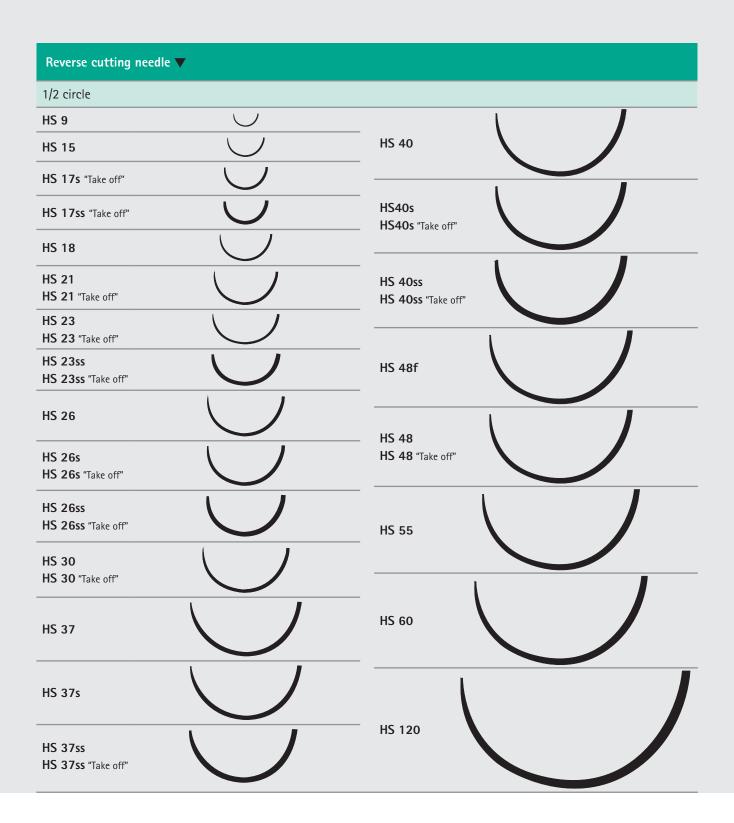












Reverse cutting needle	e ▼			
3/8 circle				
DS 9	\sim	DS 45	\ /	
DS 12	\smile			
DS 16f		DS 48		
DS 16				
DS 19f		DS 60		
DS 19		DS 76		
DS 24 DS 24 "Take off"				
DS 30 DS 30 "Take off"		DS 90		
DS 35				
DS 39		DS 100		
5/8 circle				
FS 25	\bigcup			



Reverse cutting needle	with precision point ▼		
1/2 circle			
HSMP 7	U	HSMP 18	
HSMP 9	\cup		
HSMP 12	\cup	HSMP 23	
HSMP 15	\bigcup		
3/8 circle			
DSMP 6	\smile	DSMP 19	
DSMP 7	$\overline{}$	DSMP 24	
DSMP 9	\smile		
DSMP 11	$\overline{}$	DSMP 24s	
DSMP 13	$\overline{}$	DSMP 30	
DSMP 15	\sim	DSMP 35	
DSMP 16			
DSMP 16s	\vee	DSMP 39	
Progressive curved			
PSMP 16			

Lancet needle (m Micro-lancet needle	icro) 🔻								
1/2 circle									
	angle	length mm	diameter microns			angle	length mm	diameter microns	
HLm 6	160°	5,6	150μ	\cup	HLm 8	175°	8,0	200μ	\cup
HLm 6s	175°	6,0	200μ	\cup					
3/8 circle									
	angle	length mm	diameter microns			angle	length mm	diameter microns	
DLm 4	135°	4,0	125μ	\smile	DLm 6	140°	6,1	150μ	\sim
DLm 5	140°	4,9	150μ	$\overline{}$	DLm 6s	137°	6,6	200μ	$\overline{}$
1/4 circle									
	angle	length mm	diameter microns						
VLm 6s	97°	6,6	200μ	\sim					
1/8 circle									
	angle	length mm	diameter microns						
SLm 6	44°	6,2	150μ	$\overline{}$					
Progressive curved									
	angle	length mm	diameter microns						
PLm 5	90° / 55°	4,8	150μ	\cup					
Straight									
	angle	length mm	diameter microns						
GLm 16	-	16,0	150μ						

Lancet needle with mid	cro point ♥		
1/2 circle			
HLM 6	\cup	HLM 8	\cup
1/4 circle			
VLM 6	\smile	VLM 10	\smile
VLM 8	$\overline{}$		