

**Formtools and pilots**

**Formstähle und Führungsborne**

**Outils de façon et pilotes**

**Skärstål och styrspindlar**

**Utensili e pilote**

**Cuchillas y pilotos**



## Summary

	Page
Introduction	3
Formtools and lettering of Formtools	4
Order Form for Mira Formtools	5
DRC-, DT-Tool-heads and types of formtools	7
Pilots	8
Formtool list	9 - 14
Formtools 45°	15 - 25
Formtools 30°	26 - 30
Formtools 20°	31
Formtools 35° and 38°	32
Formtools for corrections and counterbores	33 - 34

## Inhaltsverzeichnis

	Seiten
Einleitung	3
Formstähle und Beschriftung der Formstähle	4
Bestellformular für Mira-Formstähle	5
DRC-, DT-Drehköpfe und Formstahl-Typen	7
Führungsborne	8
Formstahlliste	9 - 14
Formstähle 45°	15 - 25
Formstähle 30°	26 - 30
Formstähle 20°	31
Formstähle 35° und 38°	32
Formstähle für Korrekturen und Ringsitze	33 - 34

## Table des matières

	Page
Introduction	3
Outils de façon et inscription des outils de façon	4
Bulletin de commande pour outils Mira	5
Têtes porte-outils, type DRC, DT et modèles d'outils	7
Pilots	8
List des outils de façon	9 - 14
Outils de façon 45°	15 - 25
Outils de façon 30°	26 - 30
Outils de façon 20°	31
Outils de façon 35° et 38°	32
Outils de façon pour dégagements et l'usinage de logements	33 - 34



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Thanks to their profiled carbide tip, **mira** formtools allow a quick processing of the entire valve seat profile in one working cycle. **mira** offers you the largest range of formtools in various shapes, with seat widths from 0.5 to 8.0 mm and seat angles of 45 ° and 30 °, in two qualities ("normal" and "X" for extremely hard valve seats) and with 4 different holder types.

All formtools which are available from stock are listed in this catalogue.

The respective drawings of formtools are shown on pages 15 - 34, assorted by seat angle and seat width.

**mira** can also offer special priced custom made formtools on request. Orders for special formtools may be placed by filling-in the order form included in this catalogue. You will find the required information in the corresponding vehicle manual. Any missing information must be established from the appropriate cylinder head or are available with the general dealer.

To determine the size of holder, please consider the valve seat diameter and the different types of tool-heads (refer to the following pages).

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**mira** Formstähle ermöglichen dank ihrer profilierten Hartmetallschneide eine schnelle Bearbeitung des gesamten Ventilsitzprofils in einem Arbeitsgang. **mira** bietet Ihnen das grösste Sortiment an Formstählen in verschiedenen Formen, mit Sitzbreiten von 0.5 - 8.0 mm, Sitzwinkeln von 45 ° und 30 ° und zwei Qualitäten ("normal" und "X" für besonders harte Ventilsitze) sowie mit 4 verschiedenen Haltertypen.

Alle ab Lager erhältlichen Formstähle sind in diesem Katalog aufgelistet.

Die entsprechenden Formstahl-Zeichnungen finden Sie auf den Seiten 15 - 34, sortiert nach Sitzwinkel und Sitzbreite.

Nebst diesen Formstählen sind auf Anfrage auch Spezialformstähle erhältlich, welche zu einem Spezialpreis hergestellt werden. Für Bestellungen von Spezialanfertigungen füllen Sie bitte das Bestellformular in diesem Katalog aus. Die benötigten Daten finden Sie im Handbuch des entsprechenden Fahrzeuges. Fehlende Angaben sind bei Ihrem Generalimporteur erhältlich oder müssen am Zylinderkopf ausgemessen werden.

Für die Bestimmung des Halter-Typs sind der Ventilsitzdurchmesser sowie die verschiedenen Drehkopftypen zu berücksichtigen (s. folgende Seiten).

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*Grâce à leur lame profilée en métal dur, les outils de façonnage **mira** permettent l'usinage rapide des sièges de soupape, en une seule passe. **mira** vous propose un immense assortiment d'outils de façonnage de diverses formes, avec des largeurs de siège de 0,5 à 8,0 mm et des angles de siège de 45 ° ou 30 °, en deux qualités (normale et X, pour les sièges de soupape particulièrement durs), et avec 4 divers types de support.*

*Tous les outils de façonnage disponibles sur stock sont énumérés dans le présent catalogue.*

*Vous trouverez les dessins correspondants aux pages 15 à 34, classés selon les angles et les largeurs de siège.*

*Outre les outils ci-dessus, des outils de façonnage spéciaux, fabriqués à des prix eux aussi spéciaux, sont disponibles sur demande. Pour la commande de versions spéciales, nous vous prions de remplir le formulaire inclus dans ce catalogue. Vous trouverez les données nécessaires dans le manuel de véhicule correspondant. Les données manquantes seront disponibles auprès de votre importateur général, ou bien vous devrez les mesurer sur la culasse.*

*Pour déterminer le type de support, il faudra tenir compte de diamètre des sièges de soupape ainsi que des divers types de têtes tournantes (v. les pages suivantes).*

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**Formtools**  
**Formstähle**  
**Outils de façon**  
**Skärstål**  
**Utensili ad angolazione multipla**  
**Cuchillas de mandrinado moldeada**

$\alpha$   
 Seat angle  
 Sitzwinkel  
 Angle du siège  
 Sätesvinkel  
 Angolo di sede  
 Ángulo del asiento

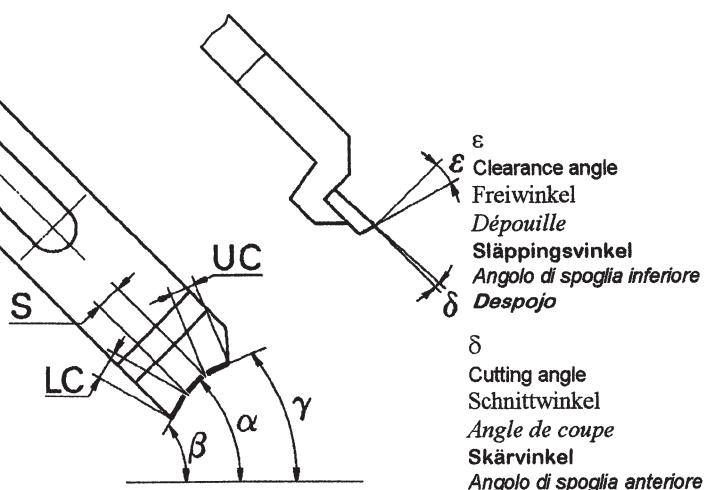
$\beta$   
 Lower correction angle  
 Unterer Korrekturwinkel  
 Angle du dégagement inférieur  
 Inre korrektionsvinkel  
 Angolo di correzione inferiore  
 Angulo de la corrección inferior

$\gamma$   
 Upper correction angle  
 Oberer Korrekturwinkel  
 Angle du dégagement supérieur  
 Ytter korrektionsvinkel  
 Angolo di correzione superiore  
 Ángulo de la corrección superior

**S**  
 Seat width  
 Sitzbreite  
 Largeur du siège  
 Sätesbredd  
 Larghezza di sede  
 Largura del asiento

**LC**  
 Lower correction length  
 Untere Korrekturlänge  
 Largeur du dégagement inférieure  
 Inre korrektionsbredd  
 Larghezza di correzione inferiore  
 Largura de la corrección inferior

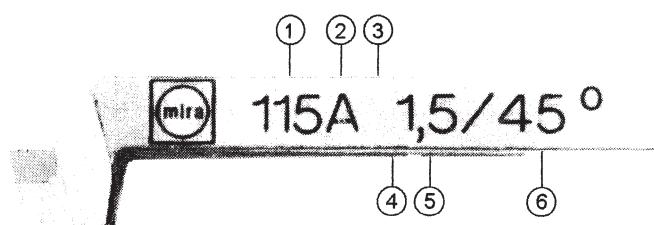
**UC**  
 Upper correction length  
 Obere Korrekturlänge  
 Largeur du dégagement supérieure  
 Ytter korrektionsbredd  
 Larghezza della correzione superiore  
 Largura de la corrección superior



$\epsilon$   
 Clearance angle  
 Freiwinkel  
 Dépouille  
 Släppningsvinkel  
 Angolo di spoglia inferiore  
 Despojo

$\delta$   
 Cutting angle  
 Schnittwinkel  
 Angle de coupe  
 Skärvinkel  
 Angolo di spoglia anteriore  
 Ángulo de corte

**Lettering of Formtools**  
**Beschriftung der Formstähle**  
**Inscription des outils de façon**  
**Märkning av skärstål**  
**Dicitura degli utensili ad angolazione multipla**  
**Denominación de las cuchillas de mandrinado moldeadas**



① Formtool No.	Formstahlnummer	Nombre d'outil	Skärstälnummer	Número dell'utensile	Número de la cuchilla
② Formtool model A - normal diameters B - bigger diameters C - only little diameters D - only D3 tool-head for biggest diameters	Formstahl-Typ	Modèle de l'outil	Skärstälstyp	Tipo d'utensile	Modelo de la cuchilla
③ Carbide tool bit - no indication, normale qualit - X indication, special quality	Hartmetall	Métal dur	Hårdmetall	Metallo duro	Metal duro
④ Cutting angle - no indication =3° - /11° indication, for little Ø	Schnittwinkel	Angle de coupe	Skärvinkel	Angolo di spoglia anteriore	Ángulo de corte
⑤ Seat width in mm	Sitzbreite in mm	Largeur du siège en mm	Sätesbredd i mm	Larghezza di sede in mm	Largura del asiento in mm
⑥ Seat angle in °	Sitzwinkel in °	Angle du siège en °	Sätesvinkel i °	Angolo di sede in °	Ángulo del asiento in °



## Order Form for Mira Formtools

## Bestellformular für Mira-Formstähle

## Bulletin de commande pour outils Mira

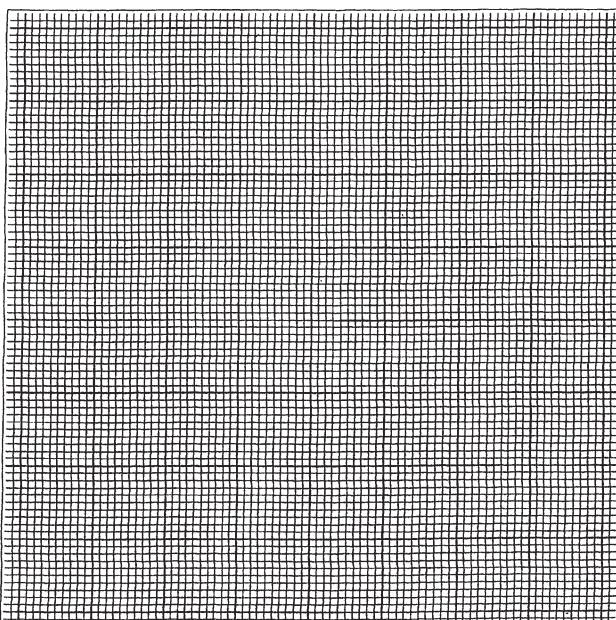
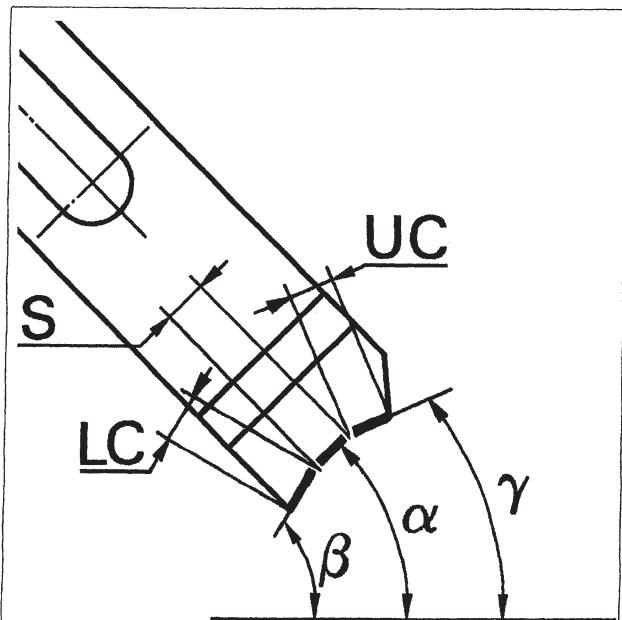
Local dealer: \_\_\_\_\_ Name: \_\_\_\_\_ Date of purchase: \_\_\_\_\_

### Information needed about the Vehicle:

Mark: \_\_\_\_\_ Vehicle brand: \_\_\_\_\_ Year: \_\_\_\_\_  
Engine type: \_\_\_\_\_ Fuel/Diesel: \_\_\_\_\_ Volume (ccm): \_\_\_\_\_

### Information needed about the cylinderhead:

	Inlet Valve:	Outlet Valve:
Seat width in mm	s = _____	s = _____
Seat angle in °	α = _____	α = _____
Upper correction length in mm	UC = _____	UC = _____
Upper correction angle in °	γ = _____	γ = _____
Lower correction length in mm	LC = _____	LC = _____
Lower correction angle in °	β = _____	β = _____
Valveguide	Ø = _____	Ø = _____
Carbide tool bit (normal or X)	N <input type="checkbox"/> X <input type="checkbox"/>	N <input type="checkbox"/> X <input type="checkbox"/>
Holder type (valve-Ø)	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>



Please fill in this form completely, this assures a prompt delivery without delays because of further information needed in production and also helps us to update our formtool list. If the requested formtool is very different from the one above, please fill in a drawing or add a copy of the manual.

Manufacturer and worldwide distributor:

MINELLI CORPORATION  
8330 Pfäffikon/ZH  
Switzerland  
Phone: +41/1/950 17 20 Fax: +41/1/950 11 32





**Tool-heads**  
**Drehköpfe**  
**Têtes porte-outils**  
**Skärhuvuden**  
**Teste porta-utensili**  
**Cabezas de mandrinadores**

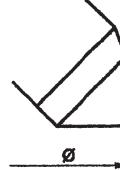
**Types of Formtools**  
**Formstahl-Typen**  
**Modèles d'outils**  
**Skärstålmodeller**  
**Tipi d'utensili**  
**Modeles de cuchilla**

Spindle size  
Drehkopf-Grösse  
Modèle de broche  
Storlek skärhuvud  
Modello testa porta-utensili  
Talla del cabezal mandrinador

Formtool model  
Formstahl-Typ  
Modèle de l'outil  
Skärståltyp  
Tipo d'utensile  
Modelo de la cuchilla

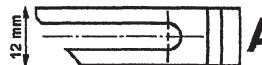
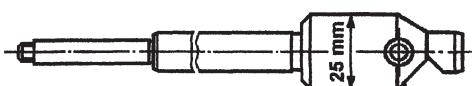
Processing-Ø (formtool 115)  
Bearbeitungs-Ø (Formstahl 115)  
Ø d'usinage (outil 115)  
Bearbetnings Ø (skärstål 115)  
Ø di lavorazione (utensile 115)  
Ø de labra (cuchilla 115)

Processing-Ø ring seating tool 390  
Bearbeitungs-Ø Ringsitzstahl 390  
Ø d'usinage pour un acier 390  
Bearbetnings Ø Stål för ringsäten 390  
Ø di lavorazione per un acciaio 390  
Ø de labra por un acero 390



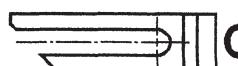
## **DRC05/DT05**

suitable for FDM, FDMH pilots



**20** to/bis/à **35**

**23** to/bis/à **38**

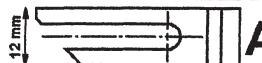
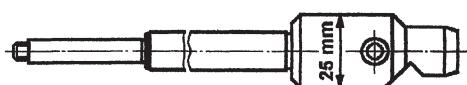


**16** to/bis/à **30**

**21** to/bis/à **34**

## **DRC1/DT1**

suitable for FD pilots



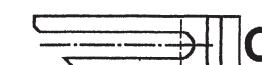
**23** to/bis/à **36**

**28** to/bis/à **38**



**31** to/bis/à **45**

**34** to/bis/à **48**



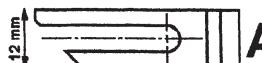
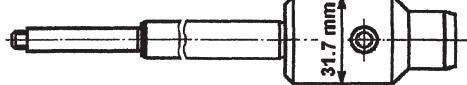
**21** to/bis/à **33**

**25** to/bis/à **35**

**DSD Ø35-45**

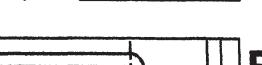
## **DRC2/DT2**

suitable for FD pilots



**37** to/bis/à **42**

**42** to/bis/à **48**



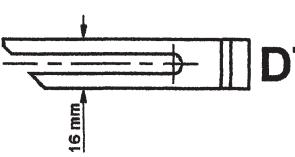
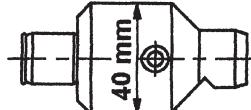
**38** to/bis/à **55**

**42** to/bis/à **58**

**DSD Ø45-55**

## **DT3**

suitable for FD pilots



**35** to/bis/à **75**

**DSD Ø55-75**



Pilots  
Führungsborne  
*Pilotes*  
Styrspindlar  
*Piloti*  
*Pilotos*

## Plug-in pilot

suitable for DRC-, DT-tool-head models



**FD**       $\emptyset$  5.87 - 9.20

D=  $\emptyset$  9.52

L= 100

**FD**       $\emptyset$  9.30 - 16.00

D=  $\emptyset$  9.52

L= 138

**FDM**       $\emptyset$  3.49 - 6.02

D=  $\emptyset$  6.00

L= 60

**FDMH**      sintered carbide type  
only available on request

mira formtool list  
mira Formstahlliste

Specification		Seatwidth	Seatangle	Cutting angle	Lower correction	1. Upper correction	2. Upper correction	Page	
Bezeichnung		Sitzbreite	Sitzwinkel	Schnittwinkel	Untere Korrektur	1. Obere Korrektur	2. Obere Korrektur	Seite	
		s	∠	∠	∠	L	∠	L	
	105C	0.5/45°	0.5	45°30'	3°	60°	3.5	25° 1.5	16
	107C	0.7/45°	0.7	45°30'	3°	60°	3.5	25° 1.5	16
	108A	0.8/45°	0.8	45°30'	3°	60°	3.5	25° 1.5	16
	108B	0.8/45°	0.8	45°30'	3°	60°	3.5	25° 1.5	16
	108C	0.8/45°	0.8	45°30'	3°	60°	3.5	25° 1.5	16
T	108CX	0.8/45°	0.8	45°30'	3°	60°	3.5	25° 1.5	16
	110A	1.0/45°	1.0	45°30'	3°	60°	3.5	25° 1.5	16
T	110AX	1.0/45°	1.0	45°30'	3°	60°	3.5	25° 1.5	16
	110B	1.0/45°	1.0	45°30'	3°	60°	3.5	25° 1.5	16
T	110BX	1.0/45°	1.0	45°30'	3°	60°	3.5	25° 1.5	16
	110C	1.0/45°	1.0	45°30'	3°	60°	3.5	25° 1.5	16
T	110CX	1.0/45°	1.0	45°30'	3°	60°	3.5	25° 1.5	16
	115A	1.5/45°	1.5	45°30'	3°	60°	3.5	25° 1.5	15
T	115AX	1.5/45°	1.5	45°30'	3°	60°	3.5	25° 1.5	16
	115B	1.5/45°	1.5	45°30'	3°	60°	3.5	25° 1.5	16
T	115BX	1.5/45°	1.5	45°30'	3°	60°	3.5	25° 1.5	16
	115C	1.5/45°	1.5	45°30'	3°	60°	3.5	25° 1.5	16
T	115CX	1.5/45°	1.5	45°30'	3°	60°	3.5	25° 1.5	16
	115D	1.5/45°	1.5	45°30'	3°	60°	3.5	25° 1.5	16
	120A	2.0/45°	2.0	45°30'	3°	60°	3.5	25° 1.5	15
T	120AX	2.0/45°	2.0	45°30'	3°	60°	3.5	25° 1.5	16
	120B	2.0/45°	2.0	45°30'	3°	60°	3.5	25° 1.5	16
T	120BX	2.0/45°	2.0	45°30'	3°	60°	3.5	25° 1.5	16
	120D	2.0/45°	2.0	45°30'	3°	60°	3.5	25° 1.5	16
	125A	2.5/45°	2.5	45°30'	3°	60°	3.5	25° 1.5	16
	125B	2.5/45°	2.5	45°30'	3°	60°	3.5	25° 1.5	16
T	125BX	2.5/45°	2.5	45°30'	3°	60°	3.5	25° 1.5	16
	125D	2.5/45°	2.5	45°30'	3°	60°	3.5	25° 1.5	16
	130B	3.0/45°	3.0	45°30'	3°	60°	3.5	25° 1.5	16
T	130BX	3.0/45°	3.0	45°30'	3°	60°	3.5	25° 1.5	16
	135B	3.5/45°	3.5	45°30'	3°	60°	3.5	25° 1.5	16
	135D	3.5/45°	3.5	45°30'	3°	60°	3.5	25° 1.5	16
	140B	4.0/45°	4.0	45°30'	3°	60°	3.5	25° 1.5	16
	208C	0.8/30°	0.8	30°30'	3°	60°	3.5	15° 1.5	27
	210A	1.0/30°	1.0	30°30'	3°	60°	3.5	15° 1.5	27
T	210AX	1.0/30°	1.0	30°30'	3°	60°	3.5	15° 1.5	27
	210B	1.0/30°	1.0	30°30'	3°	60°	3.5	15° 1.5	27
T	210BX	1.0/30°	1.0	30°30'	3°	60°	3.5	15° 1.5	27
	210C	1.0/30°	1.0	30°30'	3°	60°	3.5	15° 1.5	27
	212B	1.2/30°	1.2	30°30'	3°	60°	3.5	15° 1.5	27
	215A	1.5/30°	1.5	30°30'	3°	60°	3.5	15° 1.5	26
T	215AX	1.5/30°	1.5	30°30'	3°	60°	3.5	15° 1.5	27
	215B	1.5/30°	1.5	30°30'	3°	60°	3.5	15° 1.5	27
T	215BX	1.5/30°	1.5	30°30'	3°	60°	3.5	15° 1.5	27
	215C	1.5/30°	1.5	30°30'	3°	60°	3.5	15° 1.5	27
	220A	2.0/30°	2.0	30°30'	3°	60°	3.5	15° 1.5	26
T	220AX	2.0/30°	2.0	30°30'	3°	60°	3.5	15° 1.5	27
	220B	2.0/30°	2.0	30°30'	3°	60°	3.5	15° 1.5	27
T	220BX	2.0/30°	2.0	30°30'	3°	60°	3.5	15° 1.5	27
	220D	2.0/30°	2.0	30°30'	3°	60°	3.5	15° 1.5	27
	225B	2.5/30°	2.5	30°30'	3°	60°	3.5	15° 1.5	26
T	225BX	2.5/30°	2.5	30°30'	3°	60°	3.5	15° 1.5	27
	225D	2.5/30°	2.5	30°30'	3°	60°	3.5	15° 1.5	27
	230B	3.0/30°	3.0	30°30'	3°	60°	3.5	15° 1.5	27
T	230BX	3.0/30°	3.0	30°30'	3°	60°	3.5	15° 1.5	27
	230D	3.0/30°	3.0	30°30'	3°	60°	3.5	15° 1.5	27

mira formtool list  
mira Formstahlliste

Specification		Seatwidth	Seatangle	Cutting angle	Lower correction		1. Upper correction		2. Upper correction		Page
Bezeichnung		Sitzbreite	Sitzwinkel	Schnittwinkel	Untere Korrektur	1. Obere Korrektur	2. Obere Korrektur			Seite	
		s	∠	∠	∠	L	∠	L	∠	L	
	235B	3.5/30°	3.5	30°30'	3°	60°	3.5	15°	1.5		27
	240B	4.0/30°	4.0	30°30'	3°	60°	3.5	15°	1.5		27
	301A	45°	9.0	45°30'	3°						33
T	301AX	45°	9.0	45°30'	3°						33
	301B	45°	9.0	45°30'	3°						33
T	301BX	45°	9.0	45°30'	3°						33
	301C	45°	9.0	45°30'	3°						33
	301D	45°	13.0	45°30'	3°						33
	302A	30°	9.0	30°30'	3°						33
T	302AX	30°	9.0	30°30'	3°						33
	302B	30°	9.0	30°30'	3°						33
T	302BX	30°	9.0	30°30'	3°						33
	302C	30°	9.0	30°30'	3°						33
	302D	30°	9.0	30°30'	3°						33
	303B	35°	10.0	35°30'	3°						33
	304B	45°	12.0	45°30'	3°						33
T	304BX	45°	12.0	45°30'	3°						33
	305B	30°	12.0	30°30'	3°						33
T	305BX	30°	12.0	30°30'	3°						33
	306A	20°	7.5	20°30'	3°						33
	306B	20°	7.5	20°30'	3°						33
T	306BX	20°	7.5	20°30'	3°						33
	306D	20°	7.5	20°30'	3°						33
	351A	75°			3°	75°	14.0				33
	351B	75°			3°	75°	14.0				33
T	351BX	75°			3°	75°	14.0				33
	351C	75°			3°	75°	14.0				33
T	351CX	75°			3°	75°	14.0				33
	352A	15°			3°			15°	9.5		34
	352B	15°			3°			15°	9.5		34
T	352BX	15°			3°			15°	9.5		34
	352D	15°			3°			15°	9.5		34
	353A	75°			3°	75°	7.0				33
	353B	75°			3°	75°	7.0				33
	354B	15°			3°			15°	4.0	R7.0	34
	355B	38°			3°			38°	6.5	R5.4	34
	357B	39°			3°			39°	2.0	R6.5	34
	358B				3°	R27.5					33
	360B	25°			3°			25°	9.5		34
	362A	60°			3°	60°	11.0				33
	362B	60°			3°	60°	11.0				33
	363B	80°			3°						34
	365A	85°			3°	85°	12.0				33
	365B	85°			3°	85°	12.0				33
	390A		8.0	0°0'	3°						34
	390AP		8.0	0°0'	3°						34
T	390AX		8.0	0°0'	3°						34
	390B		8.0	0°0'	3°						34
	390BP		8.0	0°0'	3°						34
T	390BX		8.0	0°0'	3°						34
	390C		8.0	0°0'	3°						34
	390CP		8.0	0°0'	3°						34
T	390CX		8.0	0°0'	3°						34
	390D		8.0	0°0'	3°						34
	4001A	1.0/45°	1.0	45°30'	3°	60°	3.5	0°	1.5		17
	4002A	1.5/45°	1.5	45°30'	3°	60°	3.5	0°	1.5		21

mira formtool list  
mira Formstahlliste

Specification		Seatwidth	Seatangle	Cutting angle	Lower correction		1. Upper correction		2. Upper correction		Page	
Bezeichnung		Sitzbreite	Sitzwinkel	Schnittwinkel	Untere Korrektur		1. Obere Korrektur		2. Obere Korrektur		Seite	
		s	∠	∠	∠	L	∠	L	∠	L		
	4003A	2.0/45°	2.0	45°30'	3°	60°	3.5	0°	1.5		23	
	4003B	2.0/45°	2.0	45°30'	3°	60°	3.5	0°	1.5		23	
	4004A	1.0/45°	1.0	45°30'	3°	60°	3.5	30°	1.5		17	
	4004B	1.0/45°	1.0	45°30'	3°	60°	3.5	30°	1.5		17	
	4005A	1.5/45°	1.5	45°30'	3°	55°	3.5	30°	1.5		21	
T	4005AX	1.5/45°	1.5	45°30'	3°	55°	3.5	30°	1.5		21	
	4005B	1.5/45°	1.5	45°30'	3°	55°	3.5	30°	1.5		21	
T	4005BX	1.5/45°	1.5	45°30'	3°	55°	3.5	30°	1.5		21	
	4006A	2.0/45°	2.0	45°30'	3°	55°	3.5	30°	1.5		23	
T	4006AX	2.0/45°	2.0	45°30'	3°	55°	3.5	30°	1.5		23	
	4006B	2.0/45°	2.0	45°30'	3°	55°	3.5	30°	1.5		23	
T	4006BX	2.0/45°	2.0	45°30'	3°	55°	3.5	30°	1.5		23	
	4009A	6.0/45°	6.0	45°30'	3°	60°	3.5				25	
	4010B	2.8/45°	2.8	45°30'	3°	60°	3.5	0°	0.3	45°	5.5	24
	4011B	4.2/45°	4.2	45°30'	3°	60°	2.5	0°	0.7	45°	5.0	25
	4012B	2.0/45°	2.0	45°30'	3°	60°	2.5	0°	0.7	60°	7.0	23
	4015B	3.0/45°	3.0	45°30'	3°	60°	3.5	R0.6			24	
	4016B	3.5/45°	3.5	45°30'	3°	60°	3.5	R0.6			25	
	4018B	1.5/45°	1.5	45°30'	3°	70°	4.0	0°	0.4	45°	7.0	21
	4020A	1.5/45°	1.5	45°30'	3°	65°	3.5	R2.0			21	
	4021A	1.7/45°	1.7	45°30'	3°	65°	3.5	R2.0			22	
	4022B	1.7/45°	1.7	45°30'	3°	60°	5.0	0°	0.8		22	
	4023B	5.0/45°	5.0	45°30'	3°	60°	4.5				25	
	4025B	2.0/45°	2.0	45°30'	3°	65°	3.5	38°	2.6	R1.5	23	
T	4025BX	2.0/45°	2.0	45°30'	3°	65°	3.5	38°	2.6	R1.5	23	
	4027B	2.0/45°	2.0	45°30'	3°	60°	6.0	0°	1.0	60°	2.5	23
	4028B	3.0/45°	3.0	45°30'	3°	60°	6.0	0°	1.0	60°	2.5	24
	4029A	1.0/45°	1.0	45°30'	3°	R12		15°	2.0			17
	4029B	1.0/45°	1.0	45°30'	3°	R12		15°	2.0			17
	4030B	1.3/45°	1.3	45°30'	3°	65°	3.5	38°	2.5	R1.5	20	
T	4030BX	1.3/45°	1.3	45°30'	3°	65°	3.5	38°	2.6	R1.5	20	
	4030C	1.3/45°	1.3	45°30'	3°	65°	3.5	38°	2.6	R1.5	20	
	4032A	1.0/45°	1.0	45°30'	3°	75°	7.0	15°	2.3	R0.7	17	
	4033B	1.5/45°	1.5	45°30'	3°	60°	3.0	30°	3.2		21	
	4034B	2.0/45°	2.0	45°30'	3°	72.5°	4.5	0°	1.1	62°	5.0	23
	4036A	1.2/45°	1.2	45°30'	3°	60°	5.0	15°	2.0			19
	4036B	1.2/45°	1.2	45°30'	3°	60°	5.0	15°	2.0			19
T	4036BX	1.2/45°	1.2	45°30'	3°	60°	5.0	15°	2.0			19
	4037A	1.0/45°	1.0	45°30'	3°	53°	3.5	35°	1.5			18
T	4037AX	1.0/45°	1.0	45°30'	3°	53°	3.5	35°	1.5			18
	4037B	1.0/45°	1.0	45°30'	3°	53°	3.5	35°	1.5			18
T	4037BX	1.0/45°	1.0	45°30'	3°	53°	3.5	35°	1.5			18
T	4037CX	1.0/45°	1.0	45°30'	3°	53°	3.5	35°	1.5			18
	4038A	1.5/45°	1.5	45°30'	3°	53°	3.5	35°	1.5			21
T	4038AX	1.5/45°	1.5	45°30'	3°	53°	3.5	35°	1.5			21
	4038B	1.5/45°	1.5	45°30'	3°	53°	3.5	35°	1.5			21
T	4038BX	1.5/45°	1.5	45°30'	3°	53°	3.5	35°	1.5			21
	4038C	1.5/45°	1.5	45°30'	3°	53°	3.5	35°	1.5			21
	4039B	2.0/45°	2.0	45°30'	3°	53°	3.5	35°	1.5			23
T	4039BX	2.0/45°	2.0	45°30'	3°	53°	3.5	35°	1.5			23
	4040B	2.5/45°	2.5	45°30'	3°	53°	3.5	35°	1.5			24
	4041B	1.0/45°	1.0	45°30'	3°	82°	R5.0	30°	1.7	R2.5		18
	4042B	1.0/45°	1.0	45°30'	3°	65°	5.5	32°	2.5			18
	4043B	1.0/45°	1.0	45°30'	3°	R12	3.0	35°	2.0	R1.0		18
T	4043BX	1.0/45°	1.0	45°30'	3°	R12	3.0	35°	2.0	R1.0		18
	4045B	1.0/45°	1.0	45°30'	3°	R5.0	2.5	40°	2.0			18

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mira Formstahlliste

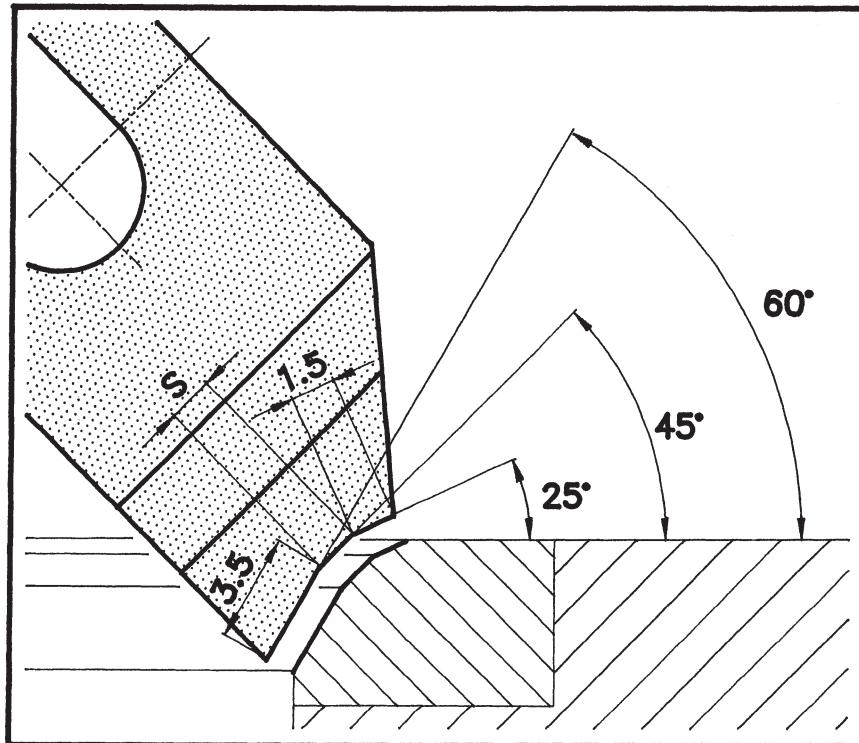
Specification		Seatwidth	Seatangle	Cutting angle	Lower correction		1. Upper correction		2. Upper correction		Page
Bezeichnung		Sitzbreite	Sitzwinkel	Schnittwinkel	Untere Korrektur		1. Obere Korrektur	2. Obere Korrektur		Seite	
		s	∠	∠	∠	L	∠	L	∠	L	
	4046B	1.0/45°	1.0	45°30'	3°	R5.0	4.0	40°	2.0		18
	4047B	1.0/45°	1.0	45°30'	3°	R12		40°	2.0		18
	4048B	1.0/45°	1.0	45°30'	3°	R12	3.5	40°	2.0		18
	4050B	1.0/45°	1.0	45°30'	3°	74°	7.0	35°	2.0		18
	4052B	1.5/45°	1.5	45°30'	3°	60°	3.5	R6.0			21
	4053B	1.5/45°	1.5	45°30'	3°	53°	3.5	37°	1.7		21
	4058B	1.5/45°	1.5	45°30'	3°	60°	3.5	0°	0.7	60°	6.5
	4060A	1.4/45°	1.4	45°30'	3°	75°	3.5	32.5°	1.0	R5.0	20
	4060B	1.4/45°	1.4	45°30'	3°	75°	3.5	32.5°	1.0	R5.0	20
	4061A	1.4/45°	1.4	45°30'	3°	75°	3.5	32.5°	1.5	R6.0	R2.0
	4063A	1.0/45°	1.0	45°30'	3°	R6.0		R4.7			18
	4063B	1.0/45°	1.0	45°30'	3°	R6.0		R4.7			18
	4064A	0.8/45°	0.8	45°30'	3°	60°	4.5	32.5°	1.0	R5.0	17
	4064B	0.8/45°	0.8	45°30'	3°	60°	4.5	32.5°	1.0	R5.0	17
	4065B	1.2/45°	1.2	45°30'	3°	65°	4.5	35°	1.5	R0.9	19
	4072B	7.0/45°	7.0	45°30'	3°	60°	4.0				25
T	4072BX	7.0/45°	7.0	45°30'	3°	60°	4.0				25
	4074A	1.5/45°	1.5	45°30'	3°	R12		15°	2.0		21
	4074B	1.5/45°	1.5	45°30'	3°	R12		15°	2.0		21
	4076B	1.3/45°	1.3	45°30'	3°	R6.6	4.5	37.5°	2.0		20
	4077B	1.3/45°	1.3	45°30'	3°	55°	2.5	40°	2.5		20
	4080B	2.0/45°	2.0	45°30'	3°	60°	3.5	0°	0.3	45°	6.5
T	4081BX	2.0/45°	2.0	45°30'	3°	55°	3.5	30°	4.0		23
	4086B	1.0/45°	1.0	45°30'	3°	65°	4.0	R6.0			18
	4086C	1.0/45°	1.0	45°30'	3°	65°	4.0	R6.0			18
	4087B	1.2/45°	1.2	45°30'	3°	65°	4.0	R6.0			19
	4090C	1.3/45°	1.3	45°30'	3°	65°	4.0	R6.3			20
	4091A	3.0/45°	3.0	45°30'	3°	75°	8.0				24
	4092B	4.0/45°	4.0	45°30'	3°	R10					25
	4093B	3.0/45°	3.0	45°30'	3°	60°	3.5	30°	1.5		24
	4094B	1.2/45°	1.2	45°30'	3°	70°	7.5	20°	1.1		19
	4095B	1.0/45°	1.0	45°30'	3°	R4.0	4.5	20°	2.0	R2.0	18
	4096B	2.3/45°	2.3	45°30'	3°	70°	6.0	0°	1.5		24
	4098B	1.5/45°	1.5	45°30'	3°	R12		40°	2.0		22
	4099B	1.3/45°	1.3	45°0'	3°	60°	3.5	30°	2.0		20
	4100B	1.4/45°	1.4	45°0'	3°	60°	4.0	35°	2.5		21
	4101B	1.2/45°	1.2	45°0'	3°	60°	3.5	35°	2.0		19
	4102B	1.1/45°	1.1	45°0'	3°	60°	3.5	38°	2.5		19
	4104B	1.5/45°	1.5	45°30'	3°	R12	3.0	35°	2.0	R1.0	22
	4105B	2.0/45°	2.0	45°30'	3°	R12	3.0	35°	2.0	R1.0	23
T	4107BX	2.5/45°	2.5	45°30'	3°	75°	4.0	15°	3.0	R0.4	24
	4109A	1.5/45°	1.5	45°30'	3°	70°	5.0	0°	0.9		22
	4110A	2.0/45°	2.0	45°30'	3°	70°	5.0	0°	0.7		23
	4111A	2.0/45°	2.0	45°30'	3°	70°	5.0	0°	1.2		23
	4112A	1.5/45°	1.5	45°30'	3°	70°	5.0	0°	1.1		22
	4120B	1.2/45°	1.2	45°30'	3°	70°	4.5	30°	2.0		20
	4121A	2.0/45°	2.0	45°30'	3°	75°	7.0	15°	2.3	R0.7	24
T	4122BX	1.5/45°	1.5	45°30'	3°	75°	6.0	15°	3.5		22
	4129B	1.5/45°	1.5	45°30'	3°	75°	5.0	15°	1.5		22
	4130A	2.0/45°	2.0	45°30'	3°	75°	5.0	15°	1.5		24
	4130B	2.0/45°	2.0	45°30'	3°	75°	5.0	15°	1.5		24
	4131C	1.1/45°	1.1	45°30'	3°	65°	4.0		1.5	R6.3	19
	4132C	1.2/45°	1.2	45°30'	3°	65°	4.0		1.5	R6.3	20
	4135B	1.0/45°	1.0	45°30'	3°	82°	7.0	20°	1.0		19
	4136B	R1.5			3°	82°	7.0	15°	1.0	R0.8	25
	4138B	1.5/45°	1.5	45°30'	3°	R5	4.0	30°	3.0	R1.0	22

mira formtool list  
mira Formstahlliste

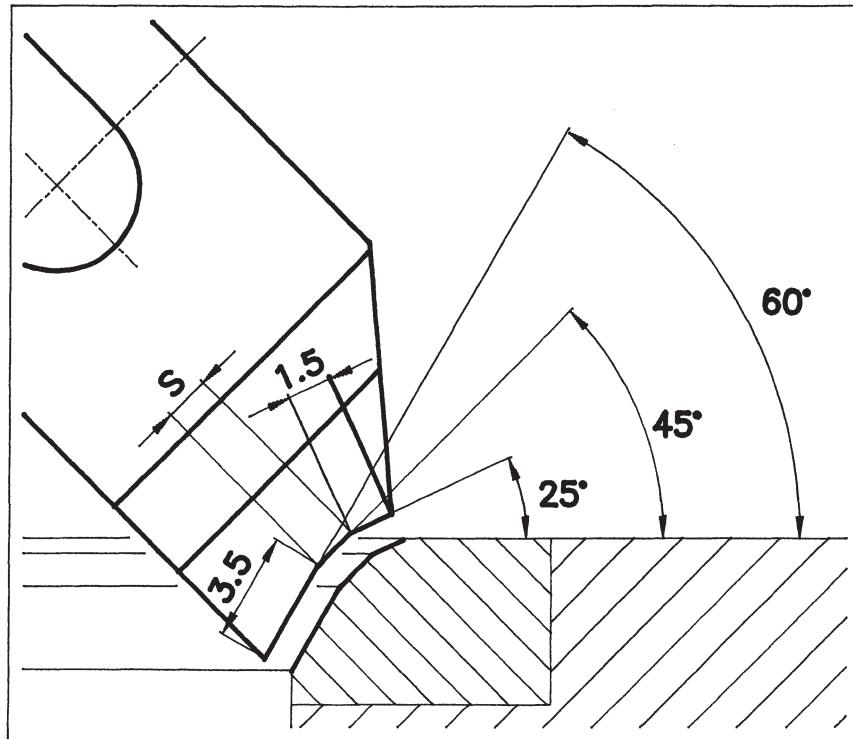
Specification		Seatwidth	Seatangle	Cutting angle	Lower correction	1. Upper correction	2. Upper correction	Page				
Bezeichnung		Sitzbreite	Sitzwinkel	Schnittwinkel	Untere Korrektur	1. Obere Korrektur	2. Obere Korrektur	Seite				
		s	∠	∠	∠	L	∠	L				
T	4139BX	3.0/45°	3.0	45°30'	3°	65°	3.5	38°	2.6	R1.5		25
	4140B	1.7/45°	1.7	45°30'	3°	60°	5.0	30°	1.5			22
	4141B	0.8/45°	0.8	45°30'	3°	R3.4	4.5	R2.6		45°	0.7	17
	4142B	0.8/45°	0.8	45°30'	3°	R3.5	4.5	R1.0		R5.4		17
	4143B	0.8/45°	0.8	45°30'	3°	R5.5	6.0	R2.2		45°	0.7	17
	4144A	1.0/45°	1.0	45°30'	3°	60°	7.0	30°	4.0			19
	4144B	1.0/45°	1.0	45°30'	3°	60°	7.0	30°	4.0			19
	4146A	0.5/45°	0.5	45°30'	3°	75°	4.5	30°	4.0	R0.7		17
	4147A	1.3/45°	1.3	45°30'	3°	75°	4.0	30°	2.0			20
	4148A	1.3/45°	1.3	45°30'	3°	75°	3.5	15°	1.0			20
	4150B	3.5/45°	3.5	45°0'	3°	65°	7.0	5°	2.0			25
	4157B	1.3/45°	1.3	45°30'	3°	R12		30°	2.5			20
	4158B	4.5/45°	4.5	45°30'	3°			0°	0.7	45°	7.0	25
	4159B	5.5/45°	5.5	45°30'	3°			0°	0.5	45°	6.0	25
	4182A	0.8/45°	0.8	45°30'	3°	65°	5.5	32°	2.5			17
	4187A	2.0/45°	2.0	45°30'	3°	70°	3.5	30°	1.5			24
	4188A	2.4/45°	2.4	45°30'	3°	70°	3.5	30°	1.5			24
	4203A	1.4/45°	1.4	45°30'	3°	70°	3.3	30°	2.5	R0.5		21
T	4229CX	0.85/45°	0.8	45°0'	3°	R9.5	1.0	30°	2.0	R3.0		17
	4231A	0.8/45°	0.8	45°0'	3°	60°	3.5	30°	1.5			17
	4231C	0.8/45°	0.8	45°0'	3°	60°	3.5	30°	1.5			17
	4232A	1.0/45°	1.0	45°0'	3°	60°	3.5	30°	1.5			19
T	4232CX	1.0/45°	1.0	45°0'	3°	60°	3.5	30°	1.5			19
	4243A	1.5/45°	1.5	45°0'	3°	67°	3.5	30°	1.5			22
	4248A	1.0/45°	1.0	45°30'	3°	R3.0	3.0	25°	1.0	R2.0		19
	4254A	1.5/45°	1.5	45°30'	3°	65°	3.5	38°	2.6	R1.5		22
	4268A	1.0/45°	1.0	45°30'	3°	65°	3.5	38°	2.6	R1.5		19
	4502B	2.0/30°	2.0	30°30'	3°	74°	4.0	15°	1.5			28
	4503B	2.0/35°	2.0	35°30'	3°	60°	3.5	15°	1.5			32
	4504B	1.5/30°	1.5	30°30'	3°	60°	3.5	0°	2.0			28
T	4505BX	2.6/38°	2.6	38°30'	3°	60°	3.5	15°	1.5			32
	4506B	3.5/30°	3.5	30°30'	3°	60°	3.5	R0.6				29
	4507B	3.2/35°	3.2	35°30'	3°	75°	5.5	0°	1.0			32
	4508B	1.7/35°	1.7	35°30'	3°	60°	5.0	0°	1.0			32
T	4509BX	2.0/30°	2.0	30°30'	3°	65°	3.5	23°	1.5	R1.5		28
	4510B	1.0/30°	1.0	30°30'	3°	R12		15°	2.0			28
T	4512BX	2.5/30°	2.5	30°30'	3°	75°	4.0	15°	3.5			29
	4514B	1.0/30°	1.0	30°30'	3°	52°	3.5	23°	1.5			28
	4515A	1.5/30°	1.5	30°30'	3°	52°	3.5	23°	1.5			28
T	4515AX	1.5/30°	1.5	30°30'	3°	52°	3.5	23°	1.5			28
	4515B	1.5/30°	1.5	30°30'	3°	52°	3.5	23°	1.5			28
T	4515BX	1.5/30°	1.5	30°30'	3°	52°	3.5	23°	1.5			28
	4516B	2.0/30°	2.0	30°30'	3°	52°	3.5	23°	1.5			28
T	4516BX	2.0/30°	2.0	30°30'	3°	52°	3.5	23°	1.5			28
	4517B	2.5/30°	2.5	30°30'	3°	52°	3.5	23°	1.5			29
	4518A	1.2/30°	1.2	30°30'	3°	55°	3.5	10°	1.7			28
	4519B	3.0/30°	3.0	30°30'	3°	60°	3.5	0°	1.0	R1.7		29
	4520B	0.75/30°	0.75	30°30'	3°	R9.2	3.5	20°	1.5	R0.9		28
	4523B	2.5/20°	2.5	20°30'	3°	60°	4.0	0°	1.8			31
	4524B	2.0/20°	2.0	20°30'	3°	60°	4.0	0°	1.8			31
	4525B	2.0/30°	2.0	30°30'	3°	60°	4.5	15°	0.8			29
T	4526BX	2.0/30°	2.0	30°30'	3°	60°	5.0	15°	3.5			29
	4529B	1.5/35°	1.5	35°30'	3°	60°	3.5	15°	1.5			32
T	4530BX	1.2/30°	1.2	30°30'	3°	75°	4.0	15°	2.0			28
	4531B	7.0/30°	7.0	30°30'	3°			15°	2.5			29
	4535B	5.0/30°	5.0	30°30'	3°	60°	4.0					29

mira formtool list  
mira Formstahlliste

Specification		Seatwidth	Seatangle	Cutting angle	Lower correction	1. Upper correction	2. Upper correction	Page				
Bezeichnung		Sitzbreite	Sitzwinkel	Schnittwinkel	Untere Korrektur	1. Obere Korrektur	2. Obere Korrektur	Seite				
	s	∠	∠	∠	L	∠	L	∠	L			
T	4535BX	5.0/30°	5.0	30°30'	3°	60°	4.0			29		
	4538B	2.0/30°	2.0	30°30'	3°	70°	3.0	0°	0.5	30°	7.5	29
	4539B	2.8/30°	2.8	30°30'	3°	60°	3.5	0°	0.6	30°	6.0	29
	4542B	2.0/35°	2.0	35°30'	3°	70°	3.2	7°	1.0			32
T	4543BX	1.5/30°	1.5	30°30'	3°	75°	4.0	15°	3.5			28
	4544B	3.25/20°	3.25	20°30'	3°	60°	6.2					31
T	4544BX	3.25/20°	3.25	20°30'	3°	60°	6.2					31
	4544D	3.25/20°	3.25	20°30'	3°	60°	6.2					31
	4547B	1.5/30°	1.5	30°30'	3°	75°	5.0	15°	1.5			28
T	4549BX	3.0/30°	3.0	30°30'	3°	65°	3.5	23°	1.5	R1.5		29
T	4552BX	3.0/20°	3.0	20°30'	3°	60°	3.5	15°	1.5			31
	4557B	4.5/30°	4.5	30°30'	3°			0°	0.4	45°	7.3	29
	4558B	2.0/37.5°	2.0	37.5°	3°	60°	3.5	15°	1.5			32
	4567B	9.0/30°	9.0	30°30'	3°			0°	0.5			30



mira reference	Seat width	Seat angle
115A 1.5/45°	1.5	45°30'
120A 2.0/45°	2.0	45°30'
125B 2.5/45°	2.5	45°30'



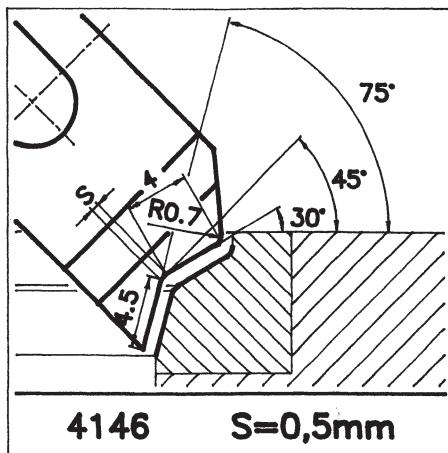
mira reference	Seat width	Seat angle
105C	0.5/45°	0.5    45°30'
107C	0.7/45°	0.7    45°30'
108A	0.8/45°	0.8    45°30'
108B	0.8/45°	0.8    45°30'
108C	0.8/45°	0.8    45°30'
T 108CX	0.8/45°	0.8    45°30'
110A	1.0/45°	1.0    45°30'
T 110AX	1.0/45°	1.0    45°30'
110B	1.0/45°	1.0    45°30'
T 110BX	1.0/45°	1.0    45°30'
110C	1.0/45°	1.0    45°30'
T 110CX	1.0/45°	1.0    45°30'
T 115AX	1.5/45°	1.5    45°30'
115B	1.5/45°	1.5    45°30'
T 115BX	1.5/45°	1.5    45°30'
115C	1.5/45°	1.5    45°30'
T 115CX	1.5/45°	1.5    45°30'
115D	1.5/45°	1.5    45°30'

mira reference	Seat width	Seat angle
T 120AX	2.0/45°	2.0    45°30'
120B	2.0/45°	2.0    45°30'
T 120BX	2.0/45°	2.0    45°30'
120D	2.0/45°	2.0    45°30'
125A	2.5/45°	2.5    45°30'
T 125BX	2.5/45°	2.5    45°30'
125D	2.5/45°	2.5    45°30'
130B	3.0/45°	3.0    45°30'
T 130BX	3.0/45°	3.0    45°30'
135B	3.5/45°	3.5    45°30'
135D	3.5/45°	3.5    45°30'
140B	4.0/45°	4.0    45°30'

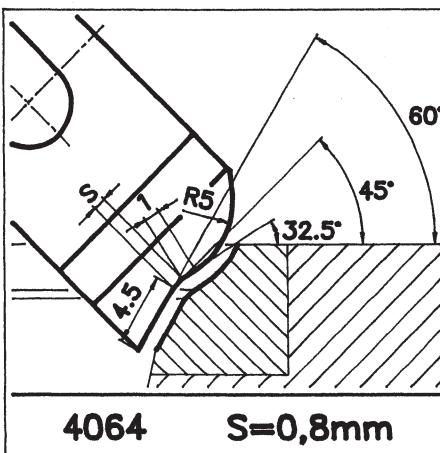


**Formtools**  
**Formstähle**  
**Outils de façon**  
**Skärstål**  
**Utensili ad angolazione multipla**  
**Cuchillas de mandrinado moldeada**

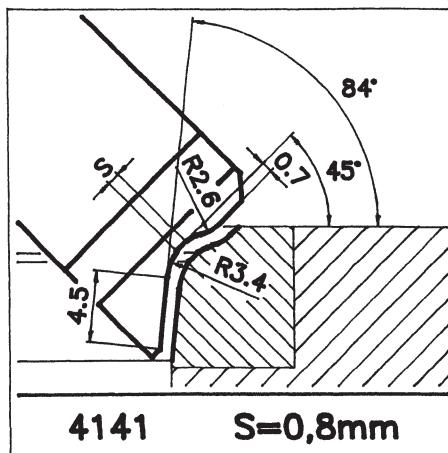
**45°**



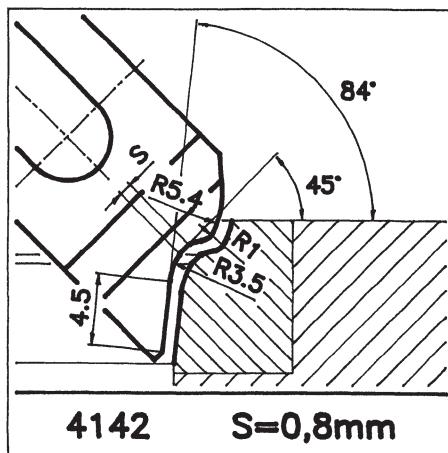
**4146      S=0,5mm**



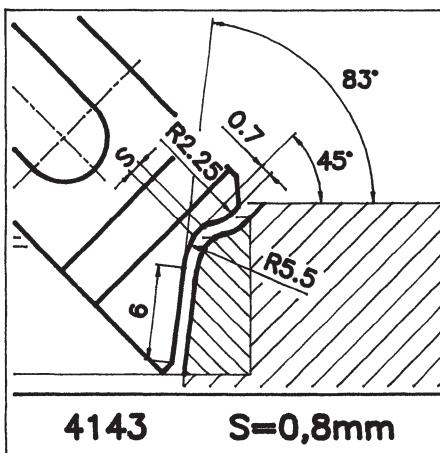
**4064      S=0,8mm**



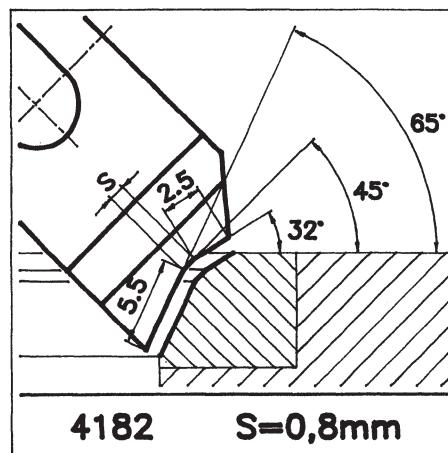
**4141      S=0,8mm**



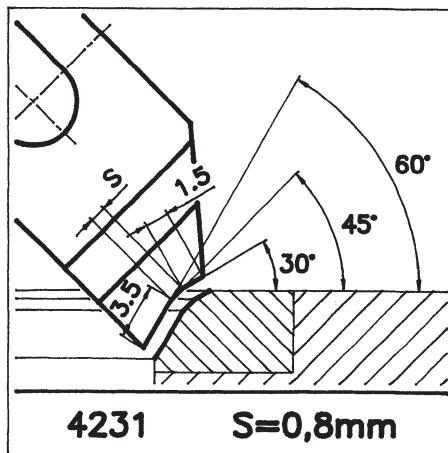
**4142      S=0,8mm**



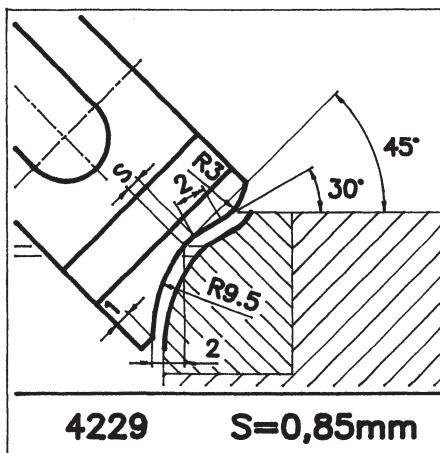
**4143      S=0,8mm**



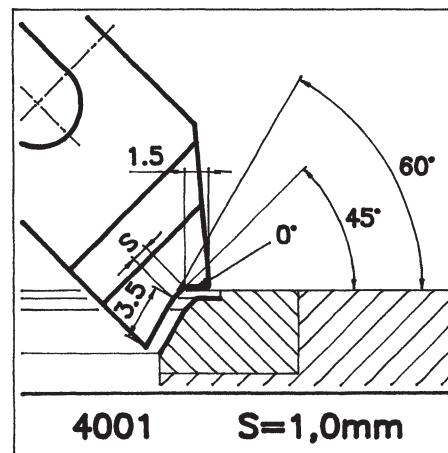
**4182      S=0,8mm**



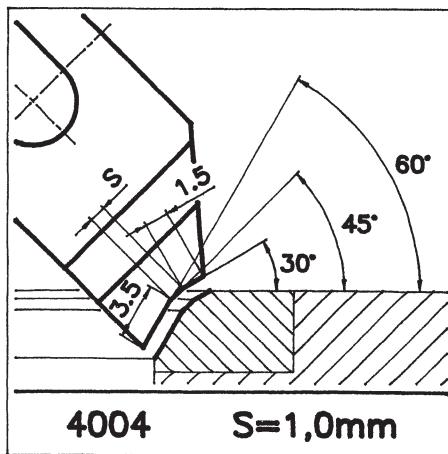
**4231      S=0,8mm**



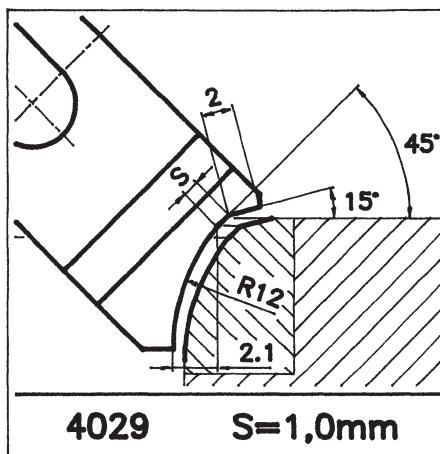
**4229      S=0,85mm**



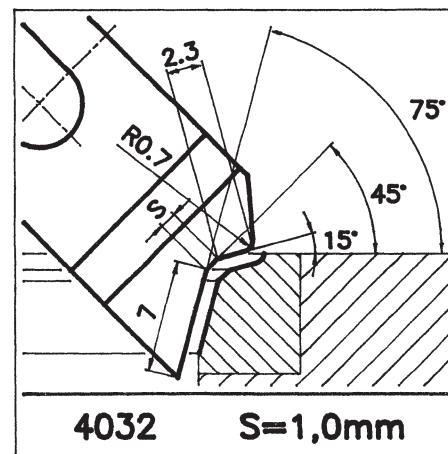
**4001      S=1,0mm**



**4004      S=1,0mm**



**4029      S=1,0mm**

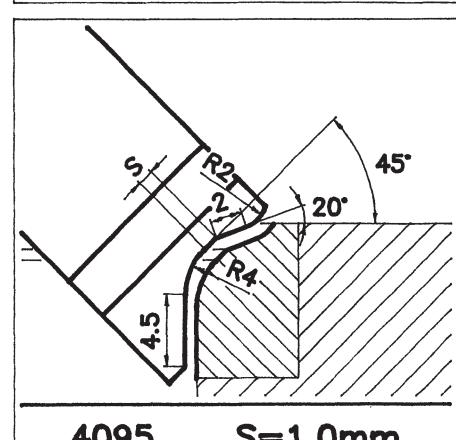
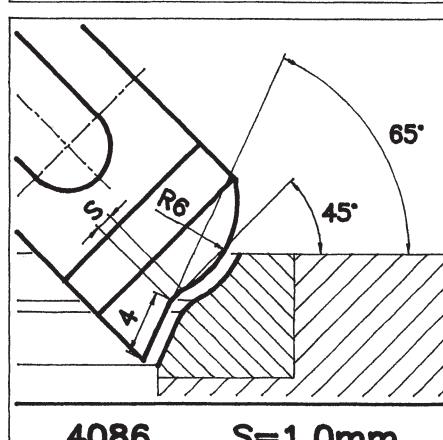
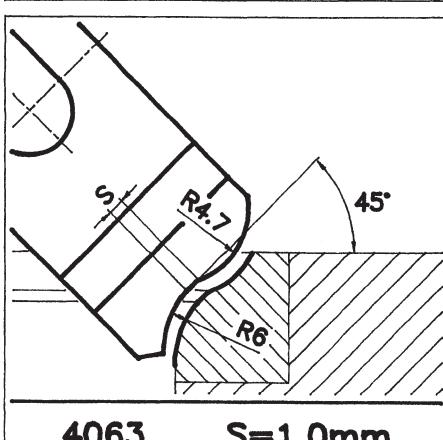
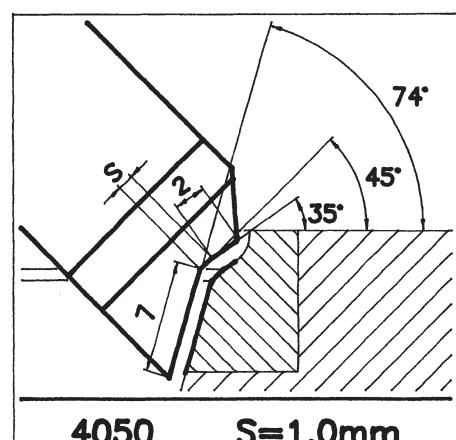
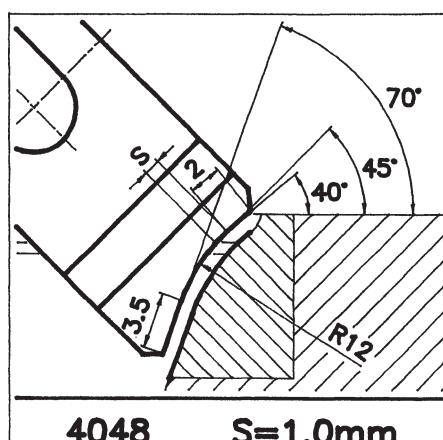
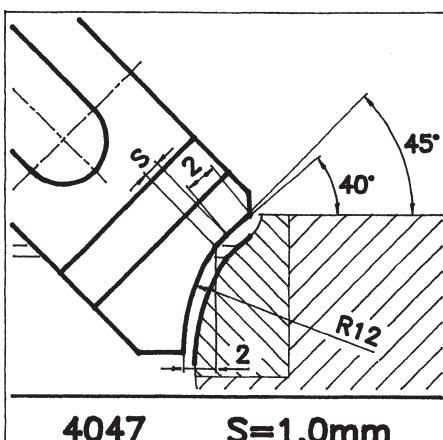
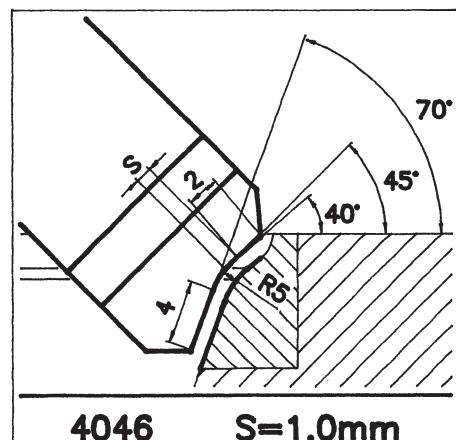
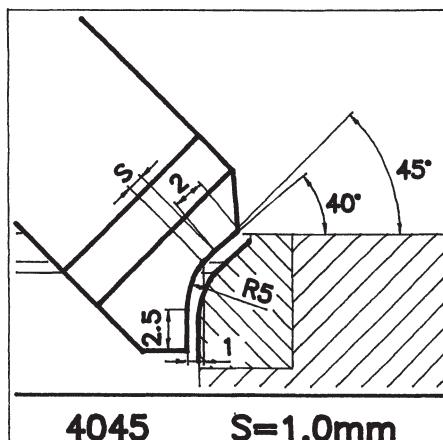
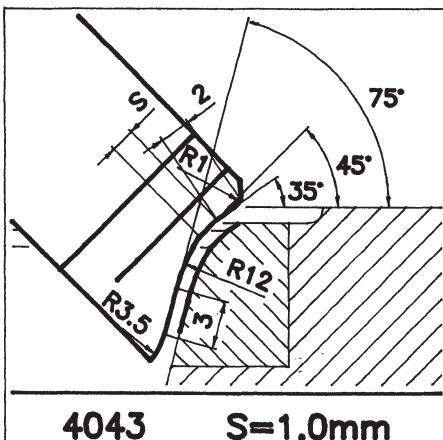
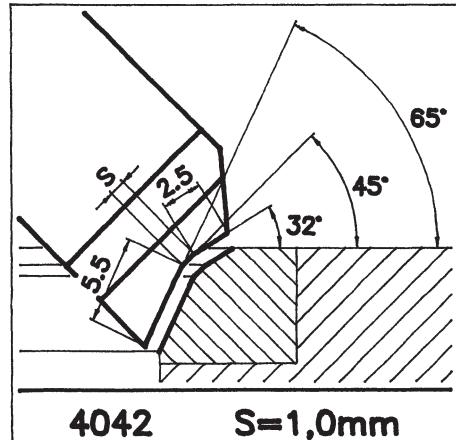
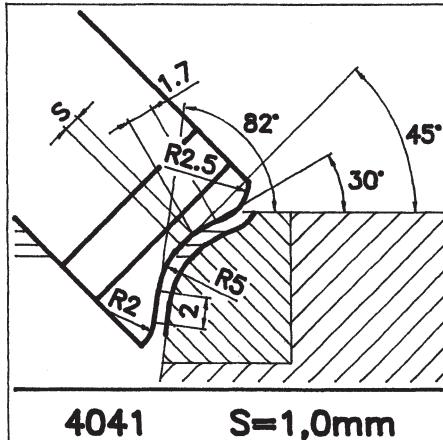
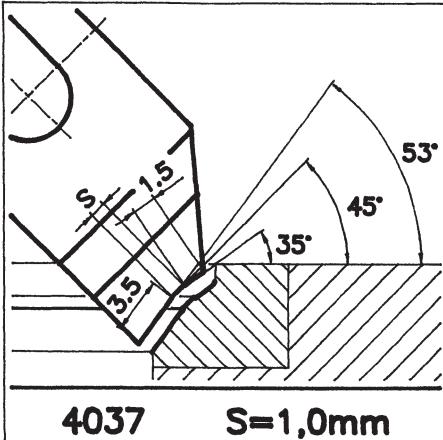


**4032      S=1,0mm**



Formtools  
Formstähle  
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*Utensili ad angolazione multipla*  
*Cuchillas de mandrinado moldeada*

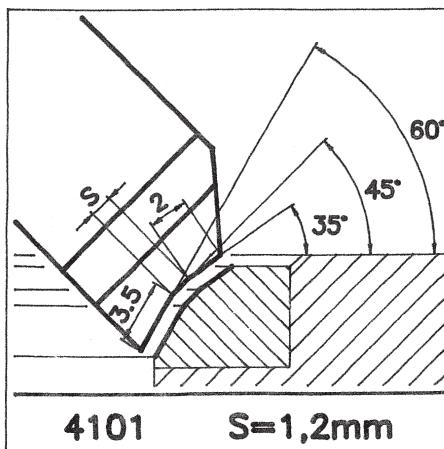
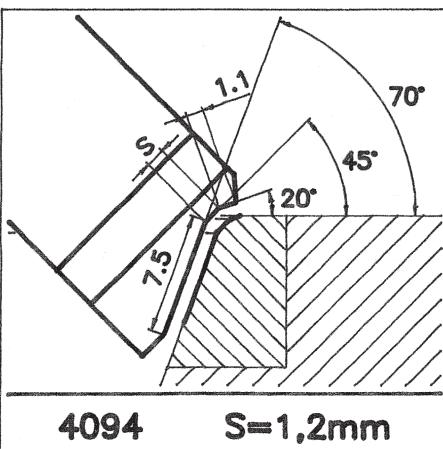
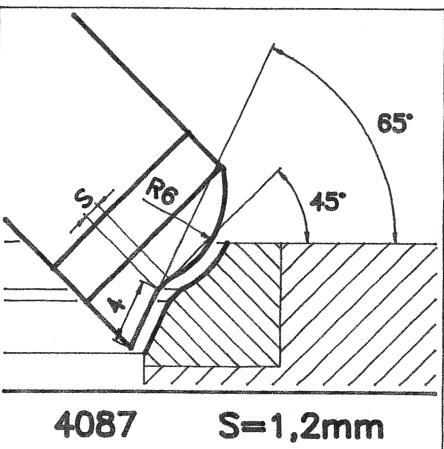
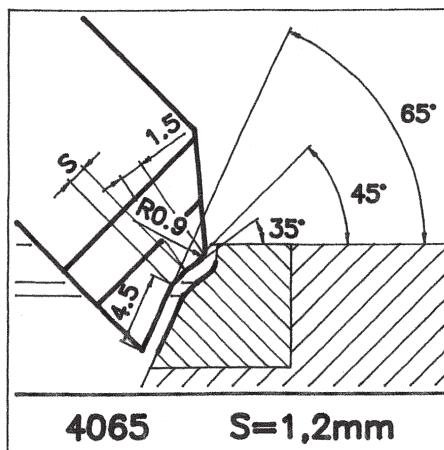
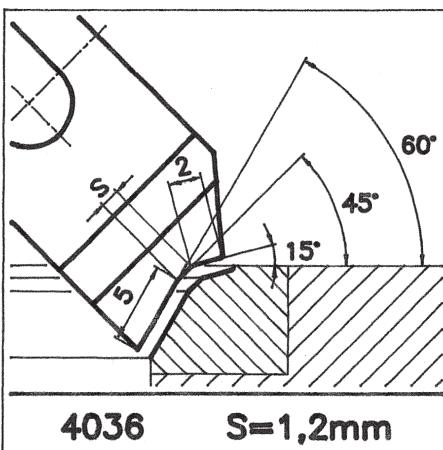
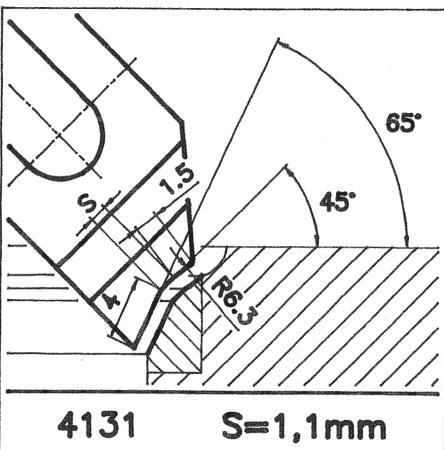
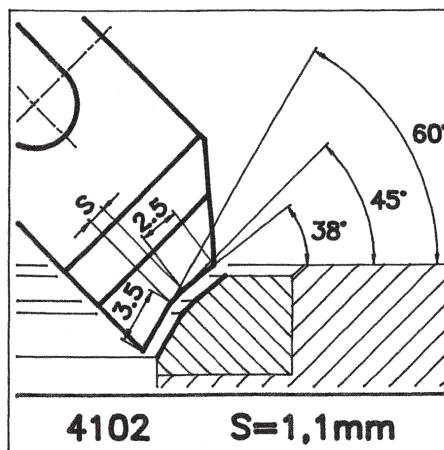
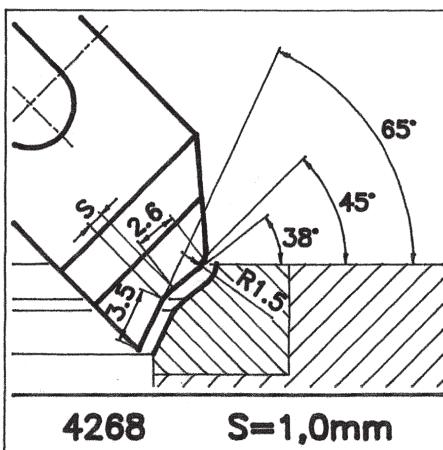
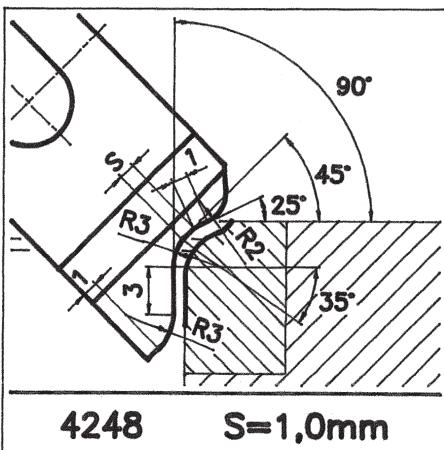
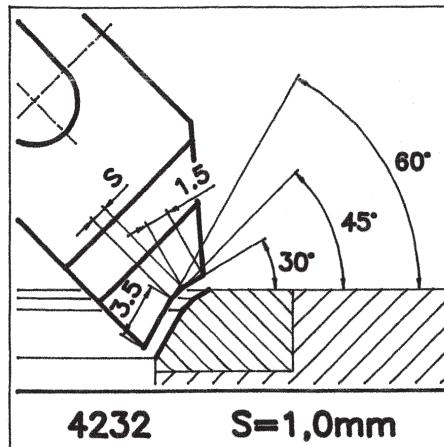
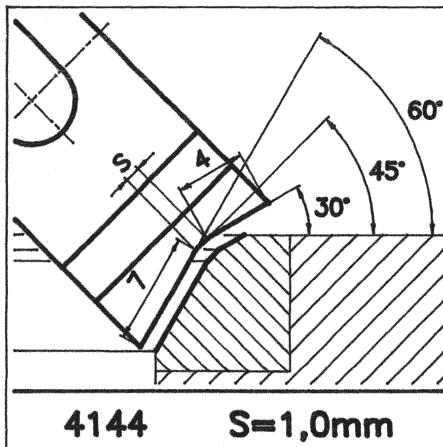
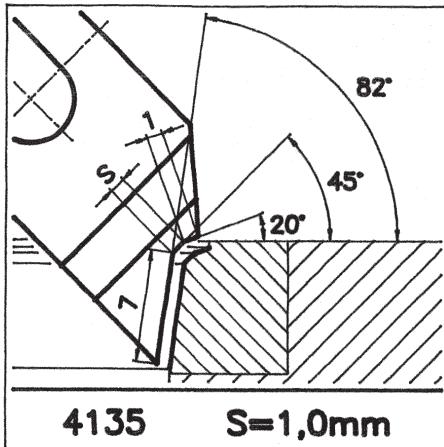
45°



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Formtools  
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Skärstål  
*Utensili ad angolazione multipla*  
*Cuchillas de mandrinado moldeada*

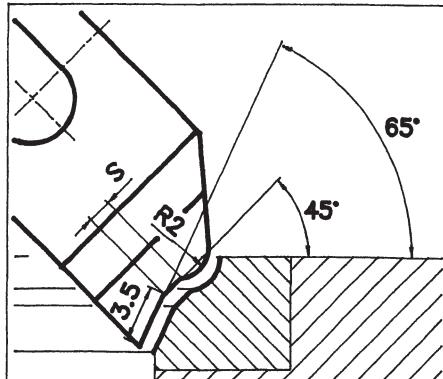
45°



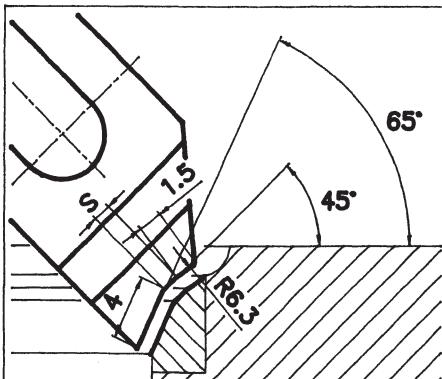
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**Skärstål**  
*Utensili ad angolazione multipla*  
*Cuchillas de mandrinado moldeada*

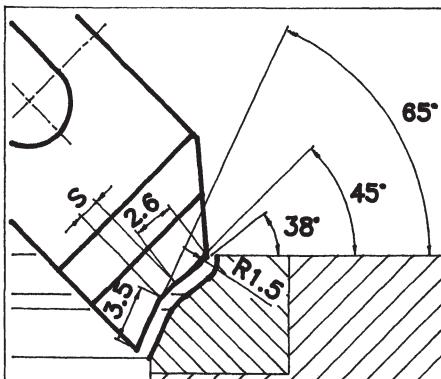
45°



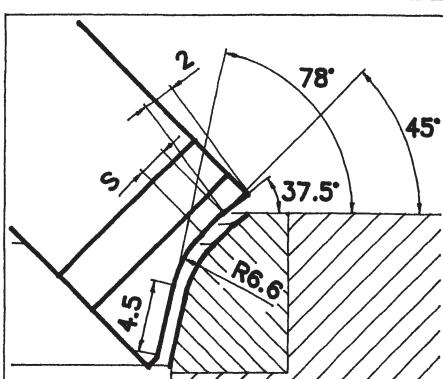
4020 S=1,5mm



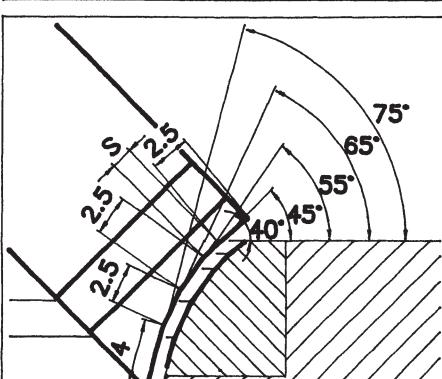
4132 S=1,2mm



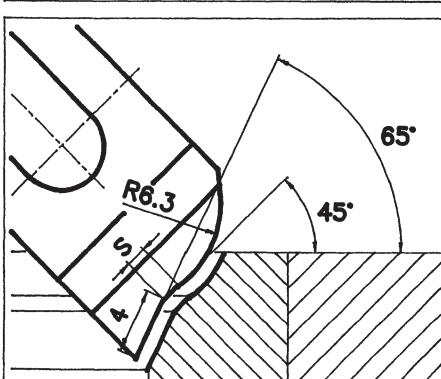
4030 S=1,3mm



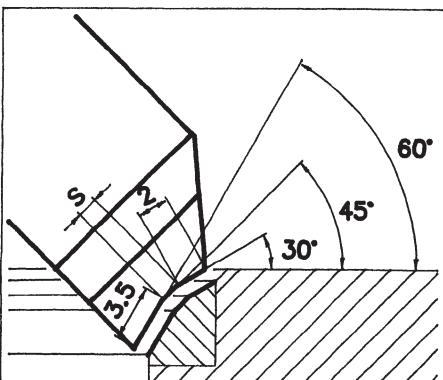
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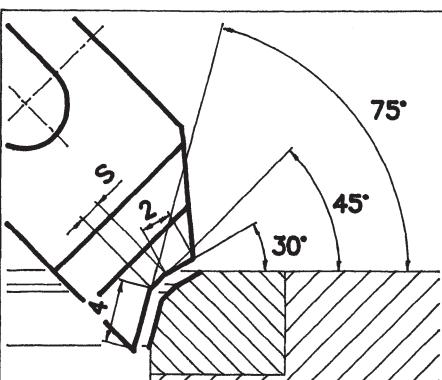
4077 S=1,3mm



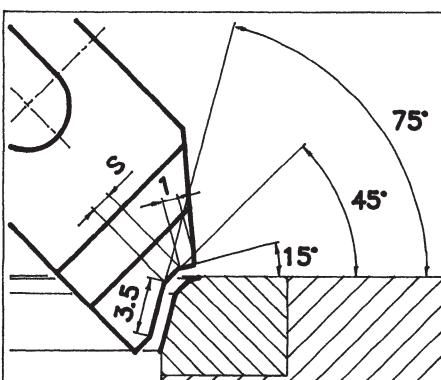
4090 S=1,3mm



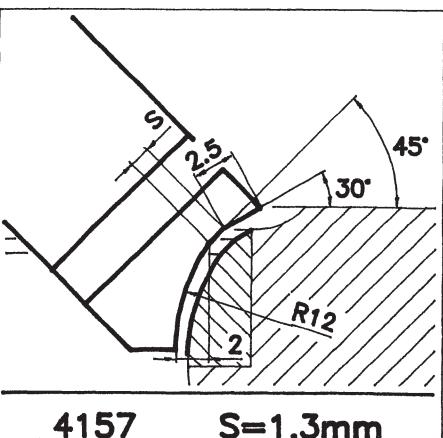
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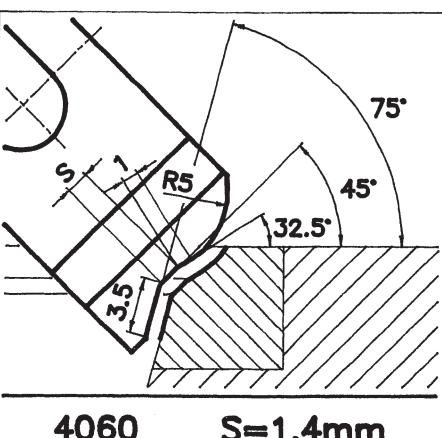
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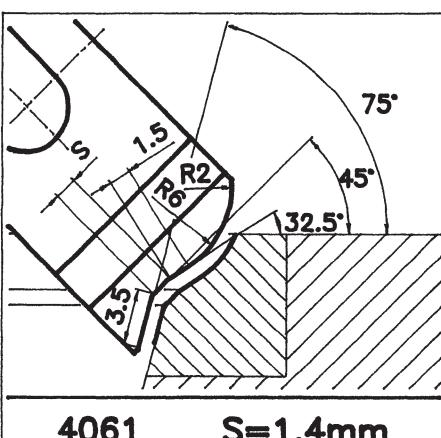
4148 S=1,3mm



4157 S=1,3mm



4060 S=1,4mm

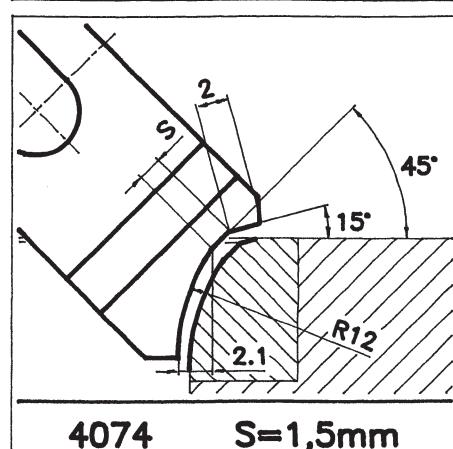
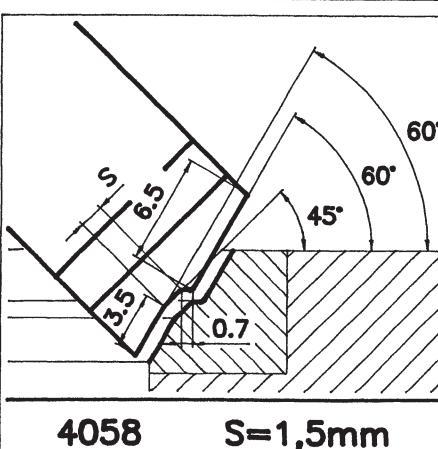
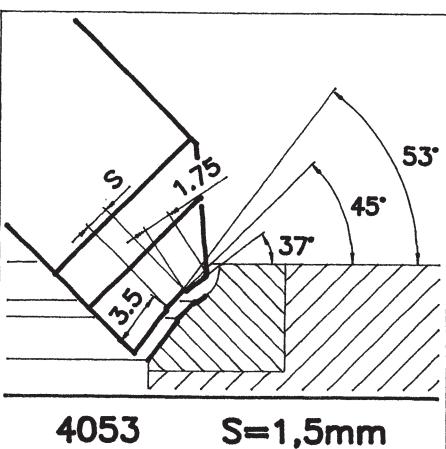
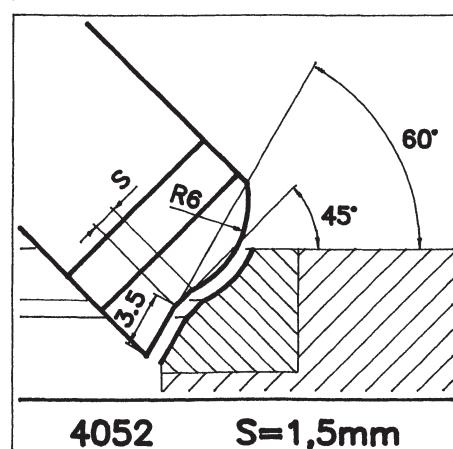
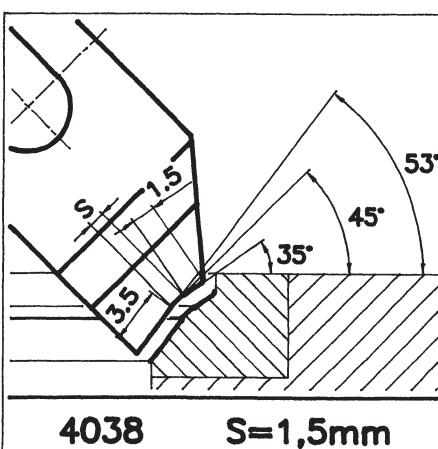
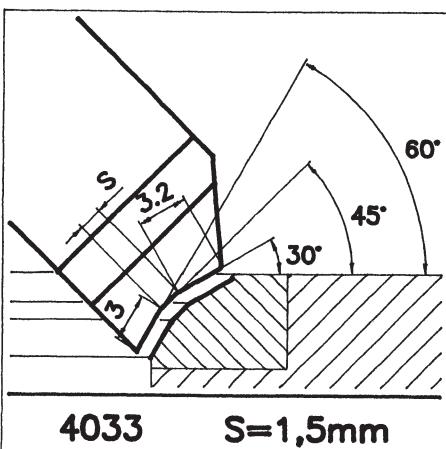
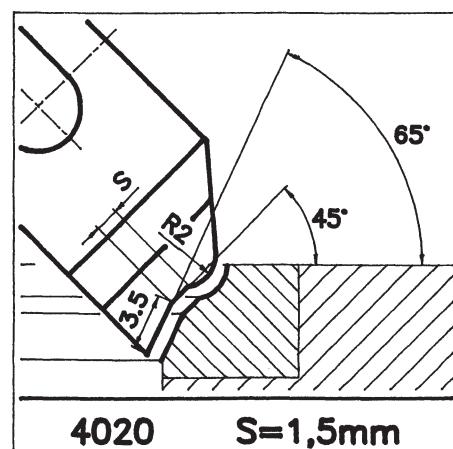
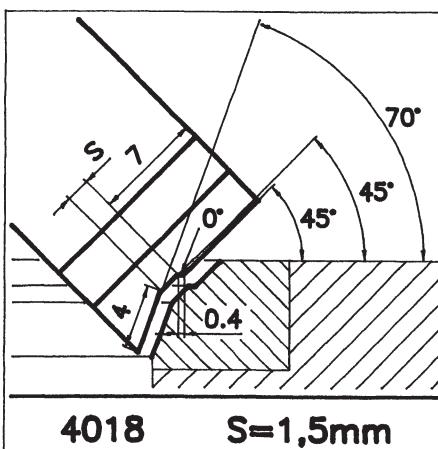
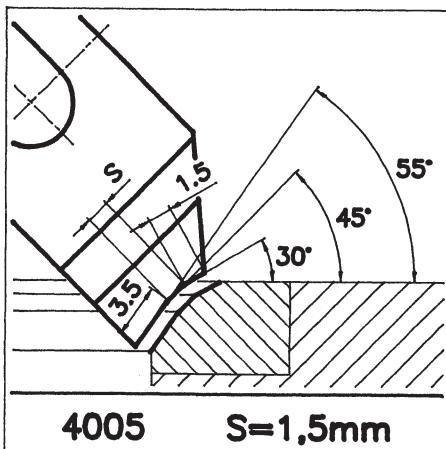
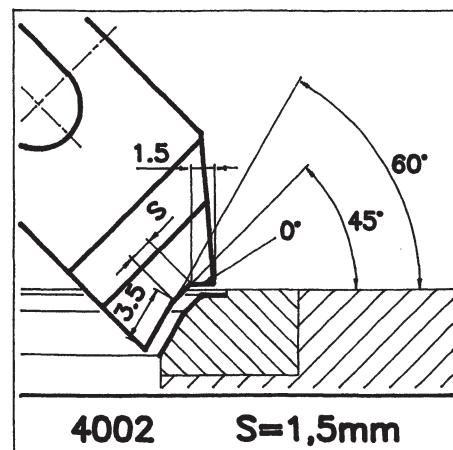
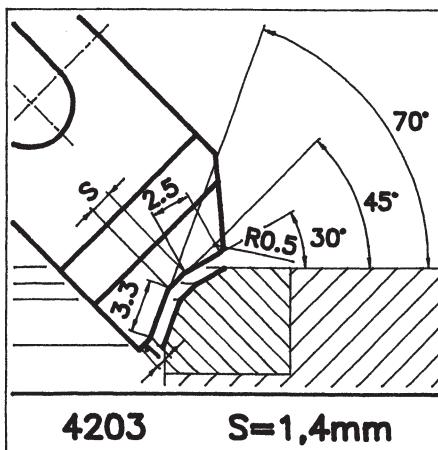
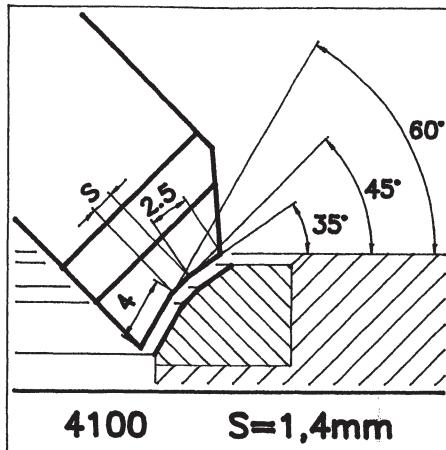


4061 S=1,4mm

**MIRA®**

Formtools  
Formstähle  
Outils de façonnage  
Skärstål  
*Utensili ad angolazione multipla*  
*Cuchillas de mandrinado moldeada*

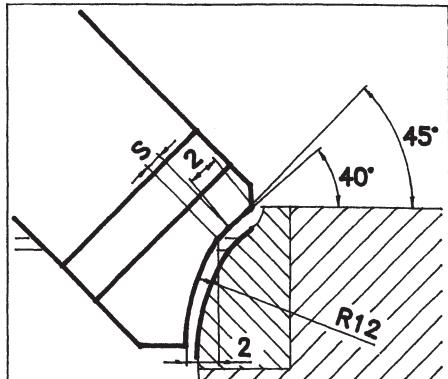
45°



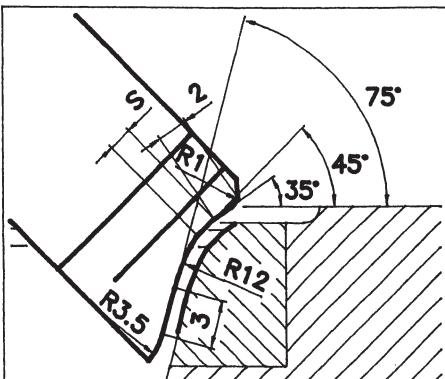
**MIRA®**

Formtools  
Formstähle  
*Outils de façon*  
Skärstål  
*Utensili ad angolazione multipla*  
*Cuchillas de mandrinado moldeada*

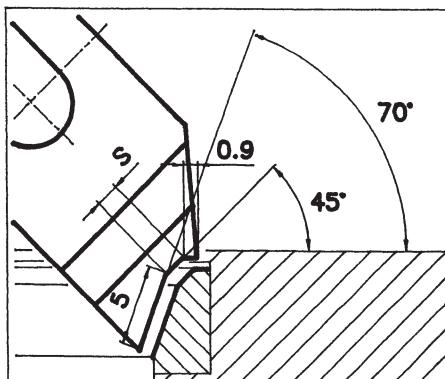
45°



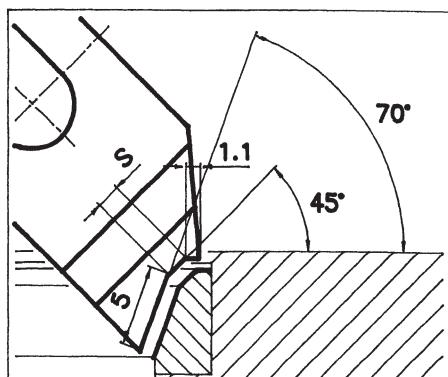
4098 S=1,5mm



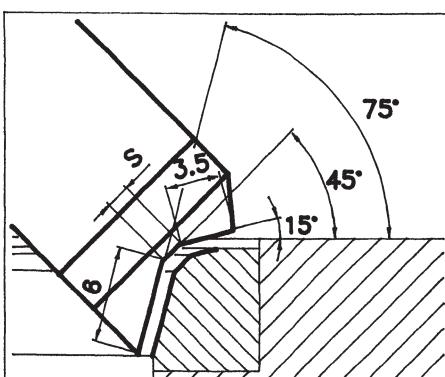
4104 S=1,5mm



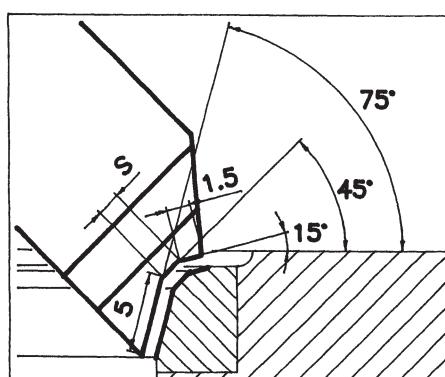
4109 S=1,5mm



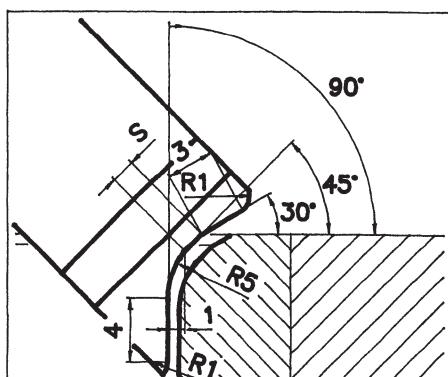
4112 S=1,5mm



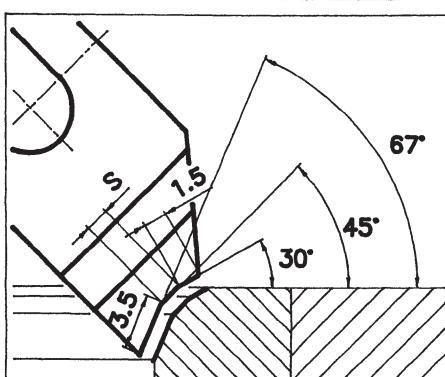
4122 S=1,5mm



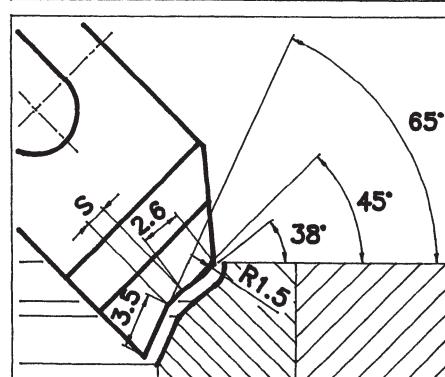
4129 S=1,5mm



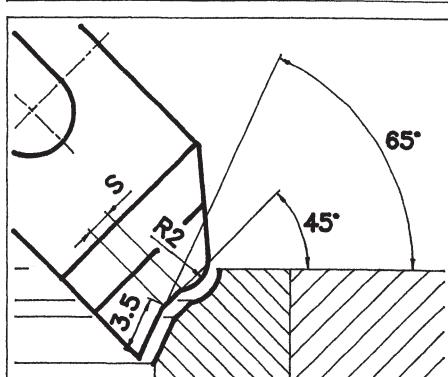
4138 S=1,5mm



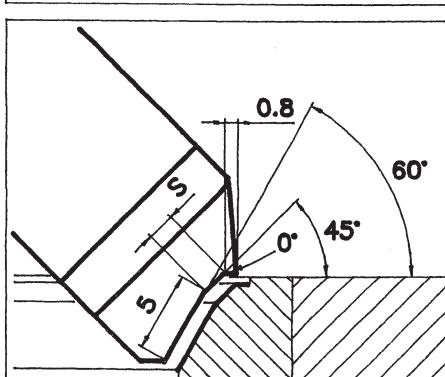
4243 S=1,5mm



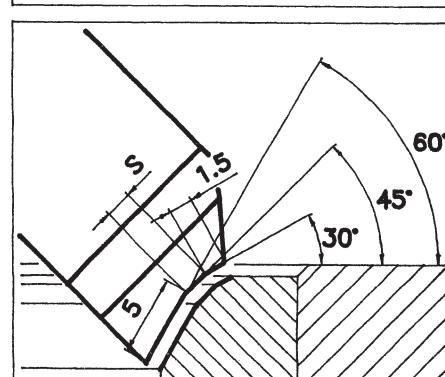
4254 S=1,5mm



4021 S=1,7mm



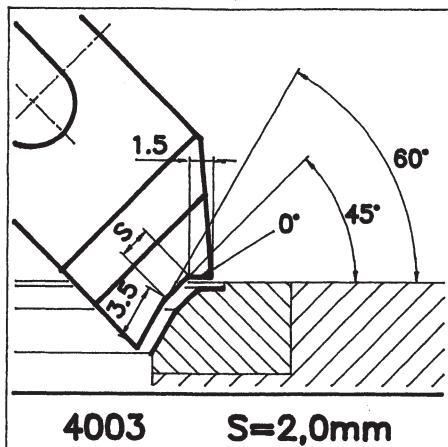
4022 S=1,7mm



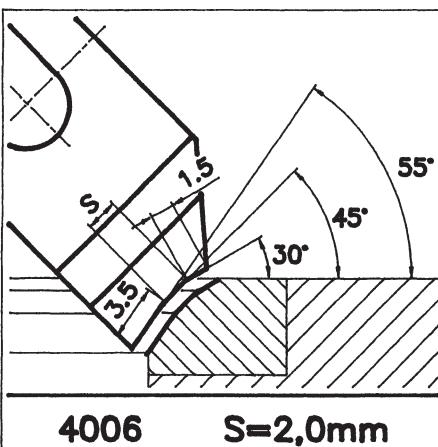
4140 S=1,7mm

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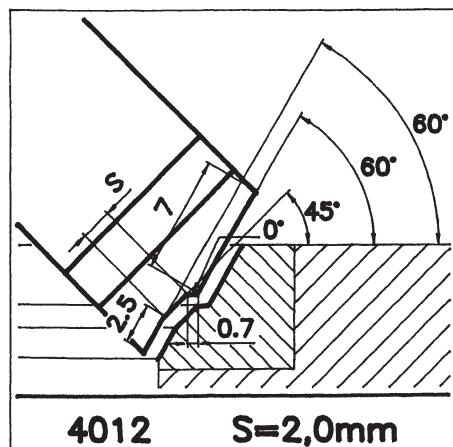
**Formtools**  
**Formstähle**  
**Outils de façon**  
**Skärstål**  
**Utensili ad angolazione multipla**  
**Cuchillas de mandrinado moldeada**

**45°**

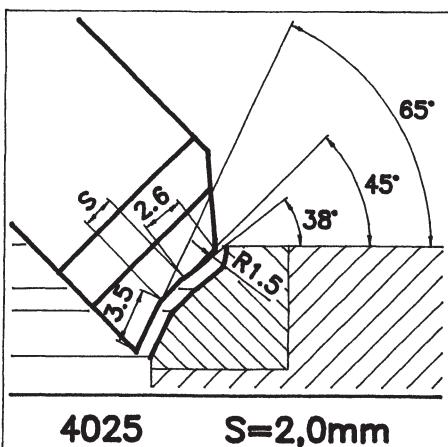
4003 S=2,0mm



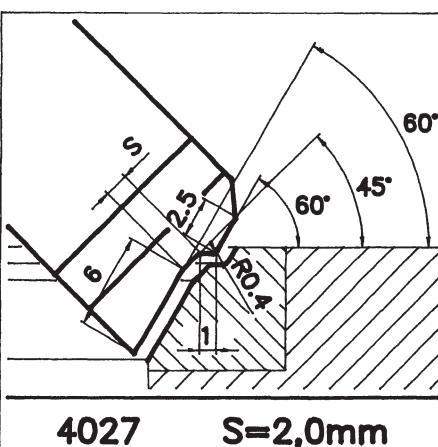
4006 S=2,0mm



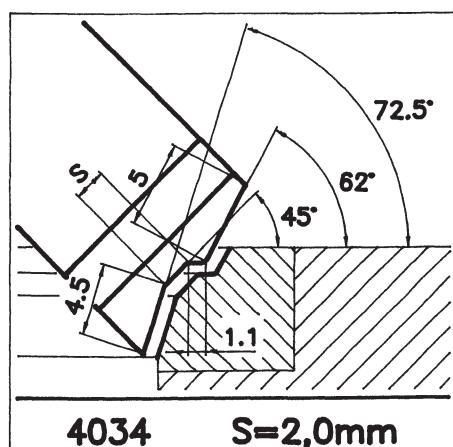
4012 S=2,0mm



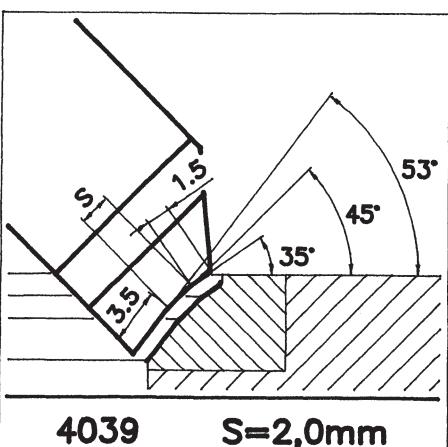
4025 S=2,0mm



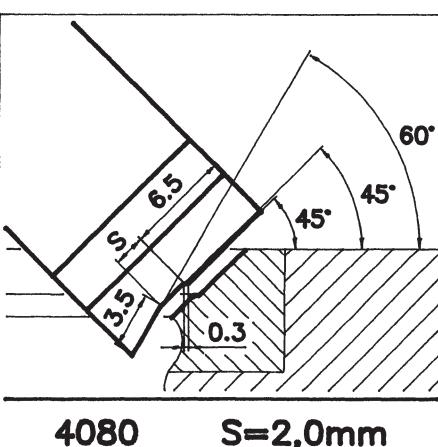
4027 S=2,0mm



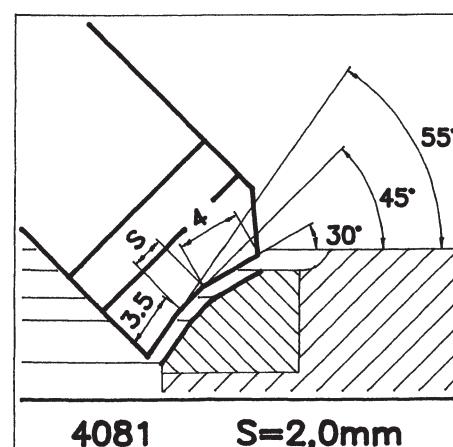
4034 S=2,0mm



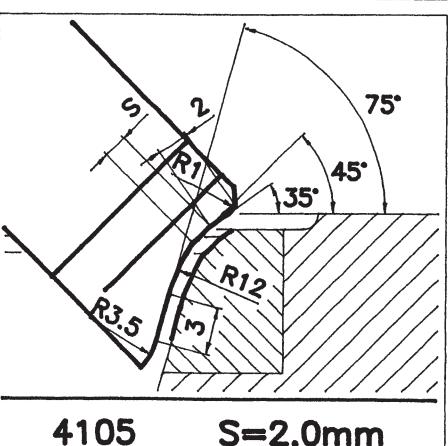
4039 S=2,0mm



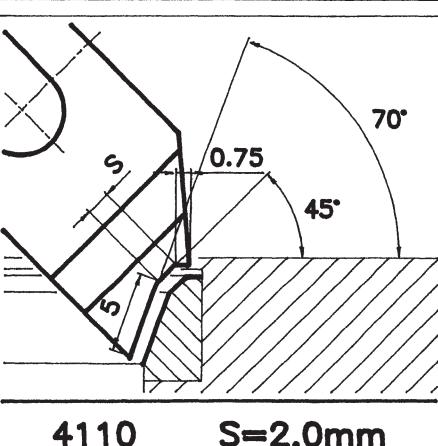
4080 S=2,0mm



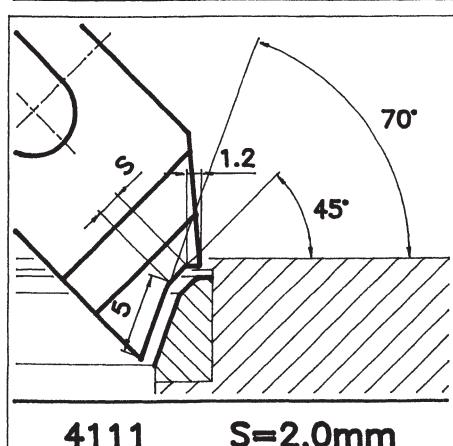
4081 S=2,0mm



4105 S=2,0mm



4110 S=2,0mm

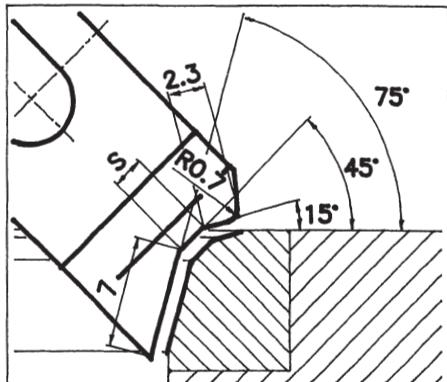


4111 S=2,0mm

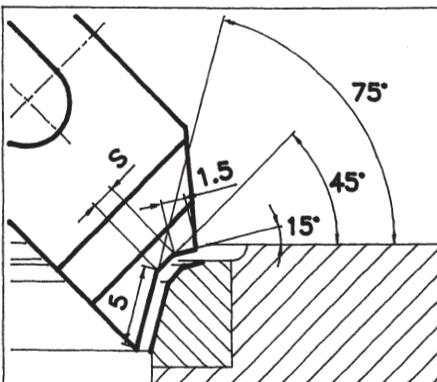
**MIRA®**

Formtools  
Formstähle  
*Outils de façon*  
Skärstål  
*Utensili ad angolazione multipla*  
*Cuchillas de mandrinado moldeada*

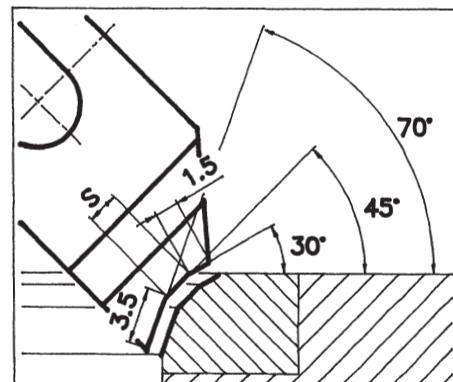
45°



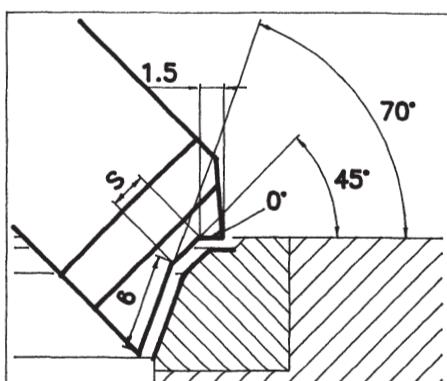
4121 S=2,0mm



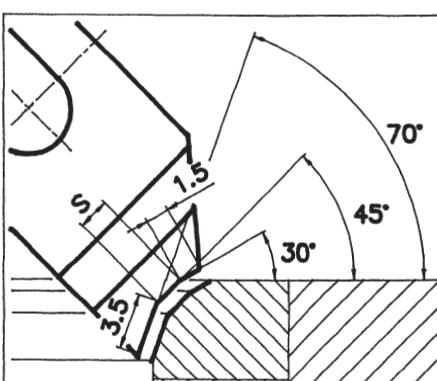
4130 S=2,0mm



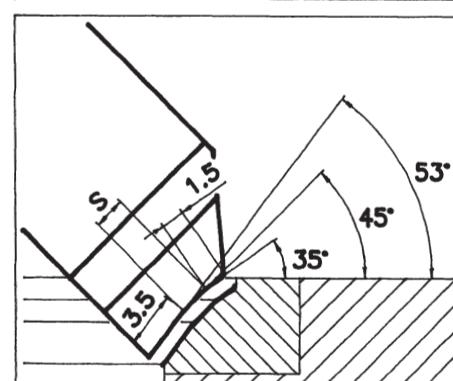
4187 S=2,0mm



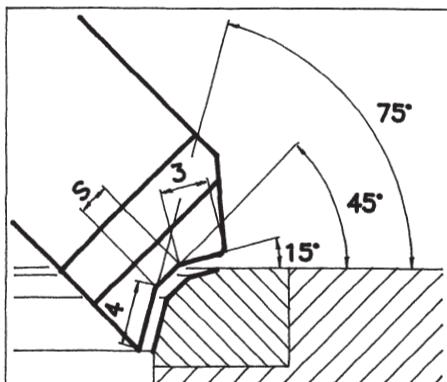
4096 S=2,3mm



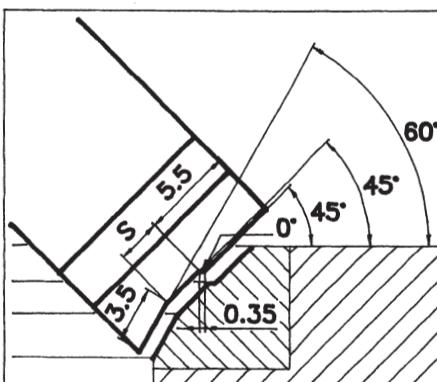
4188 S=2,4mm



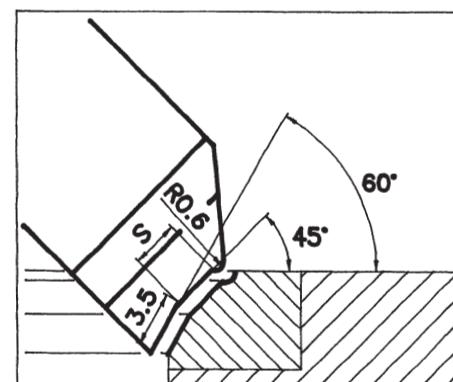
4040 S=2,5mm



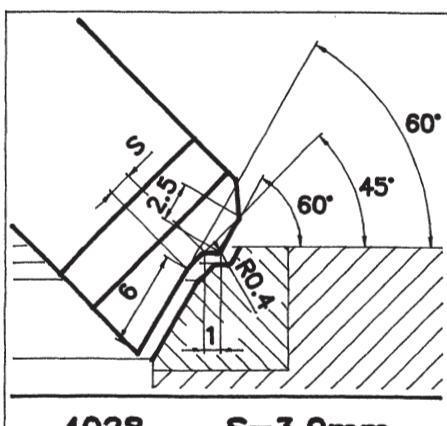
4107 S=2,5mm



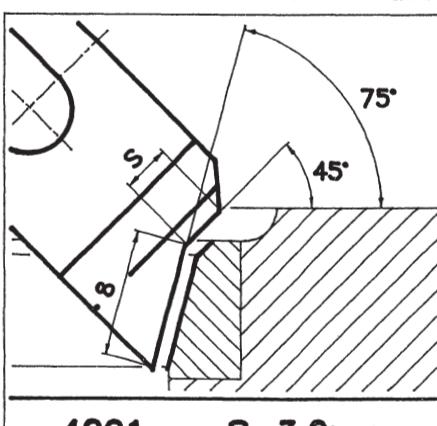
4010 S=2,8mm



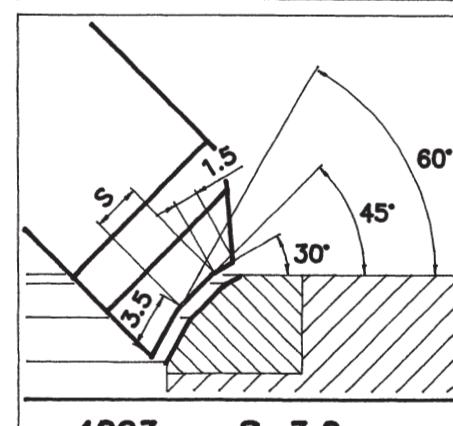
4015 S=3,0mm



4028 S=3,0mm



4091 S=3,0mm

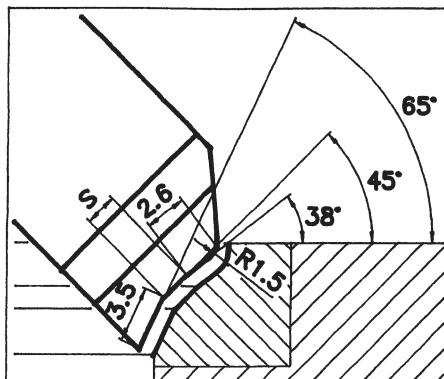


4093 S=3,0mm

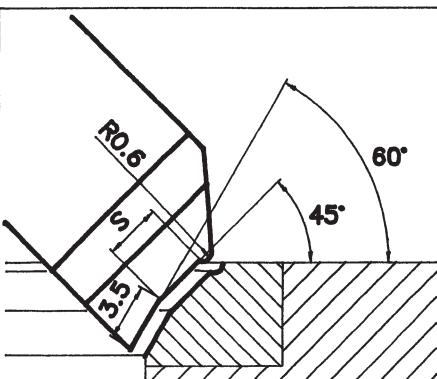
**MIRA®**

**Formtools**  
**Formstähle**  
**Outils de façon**  
**Skärstål**  
**Utensili ad angolazione multipla**  
**Cuchillas de mandrinado moldeada**

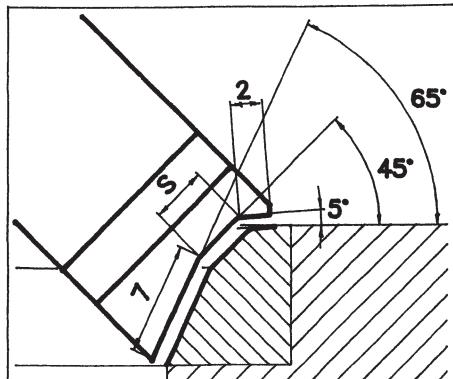
45°



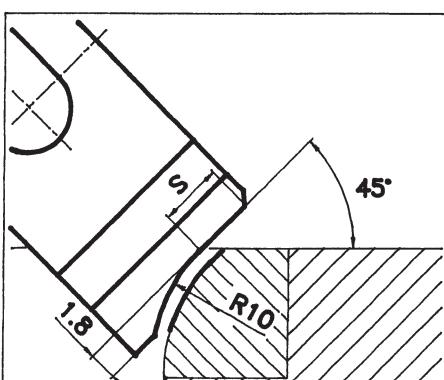
4139 S=3,0mm



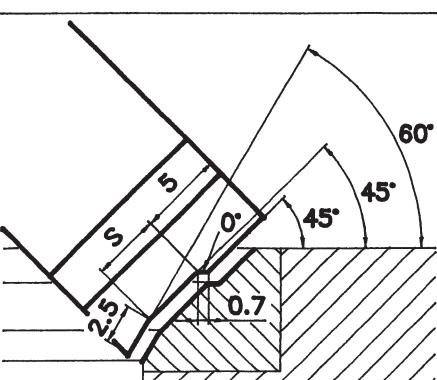
4016 S=3,5mm



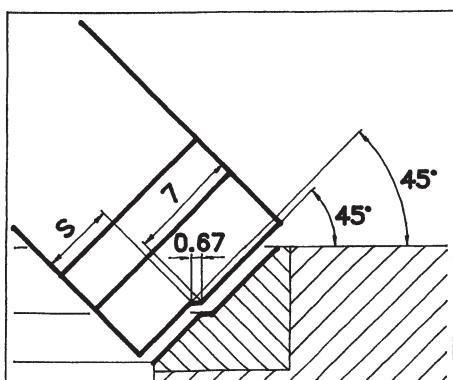
4150 S=3,5mm



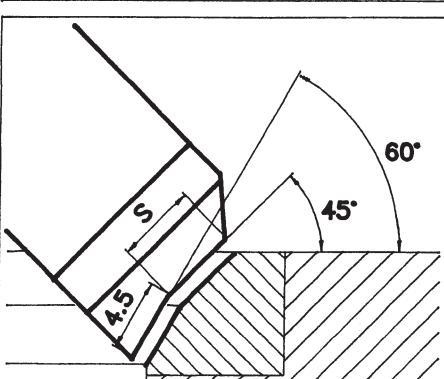
4092 S=4,0mm



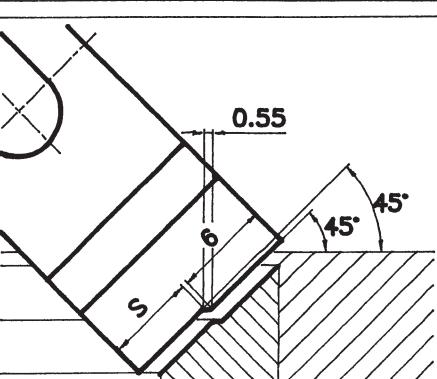
4011 S=4,2mm



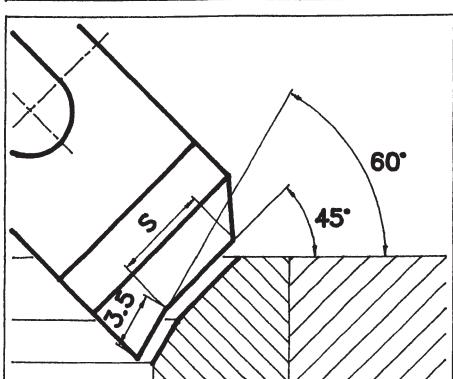
4158 S=4,5mm



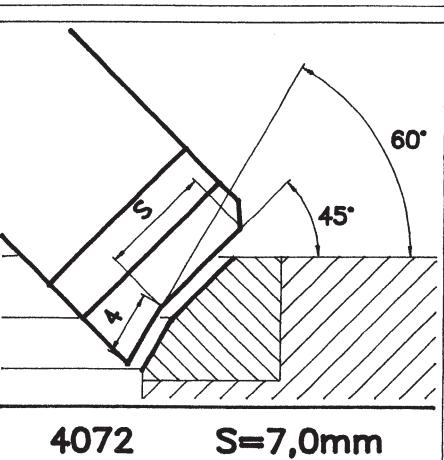
4023 S=5,0mm



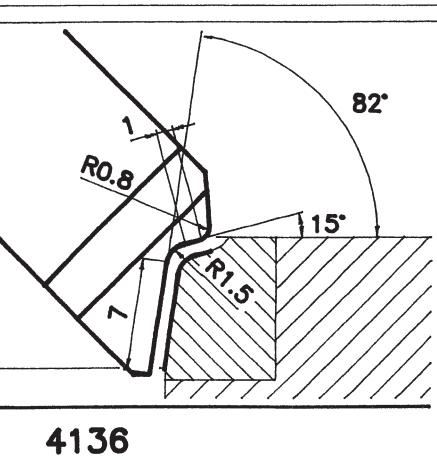
4159 S=5,5mm



4009 S=6,0mm



4072 S=7,0mm

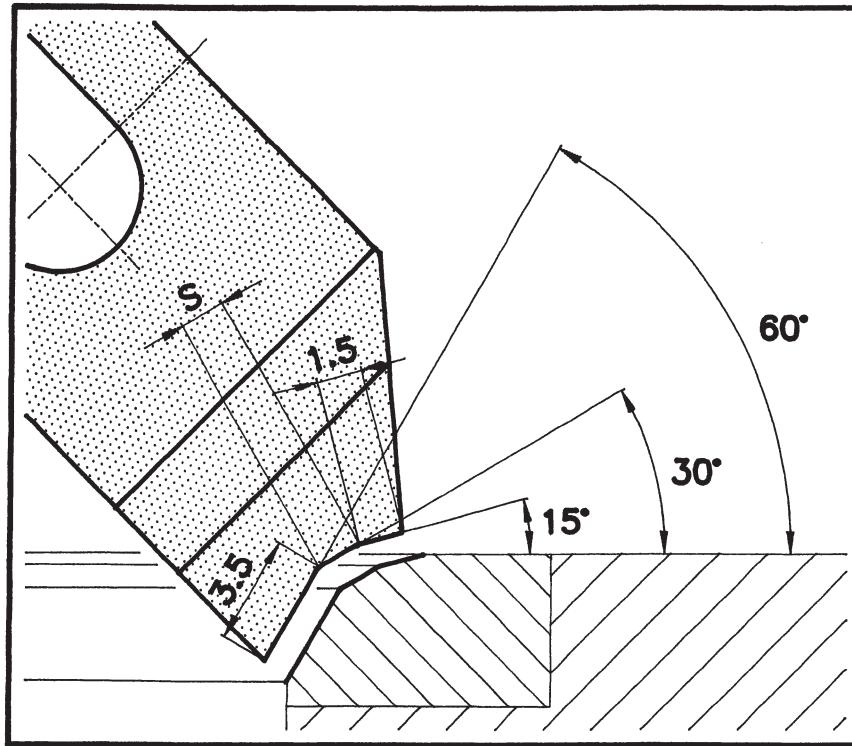


4136

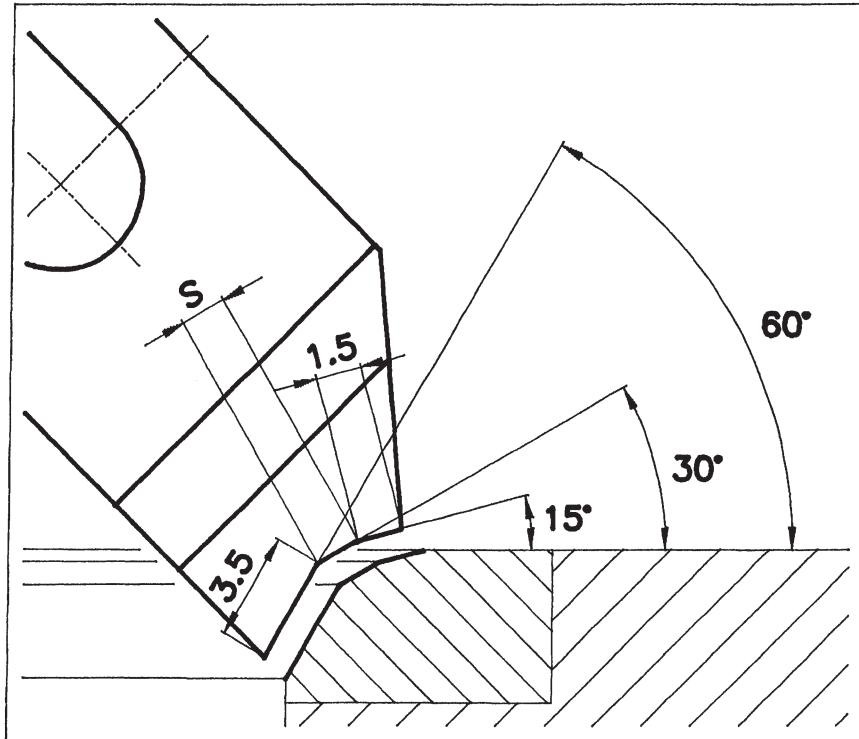
**MIRA®**

Standard formtools  
Standard-Formstähle  
*Outils de façon standard*  
Standard skärstål  
*Utensili ad angolazione multipla standard*  
*Cuchillas de mandrinado moldeada standard*

30°



mira reference	Seat width	Seat angle
215A 1.5/30°	1.5	30°30'
220A 2.0/30°	2.0	30°30'
225B 2.5/30°	2.5	30°30'



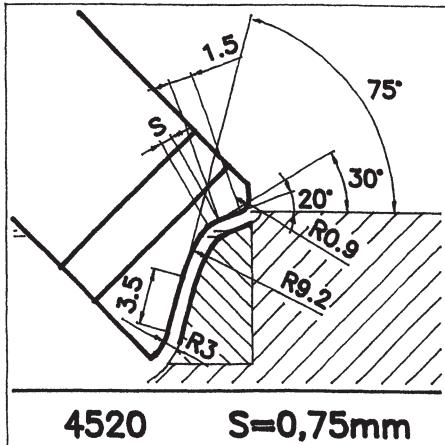
mira reference	Seat width	Seat angle
208C	0.8/30°	0.8    30°30'
210A	1.0/30°	1.0    30°30'
T 210AX	1.0/30°	1.0    30°30'
210B	1.0/30°	1.0    30°30'
T 210BX	1.0/30°	1.0    30°30'
210C	1.0/30°	1.0    30°30'
212B	1.2/30°	1.2    30°30'
T 215AX	1.5/30°	1.5    30°30'
215B	1.5/30°	1.5    30°30'
T 215BX	1.5/30°	1.5    30°30'
215C	1.5/30°	1.5    30°30'

mira reference	Seat width	Seat angle
T 220AX	2.0/30°	2.0    30°30'
220B	2.0/30°	2.0    30°30'
T 220BX	2.0/30°	2.0    30°30'
220D	2.0/30°	2.0    30°30'
T 225BX	2.5/30°	2.5    30°30'
225D	2.5/30°	2.5    30°30'
230B	3.0/30°	3.0    30°30'
T 230BX	3.0/30°	3.0    30°30'
230D	3.0/30°	3.0    30°30'
235B	3.5/30°	3.5    30°30'
240B	4.0/30°	4.0    30°30'

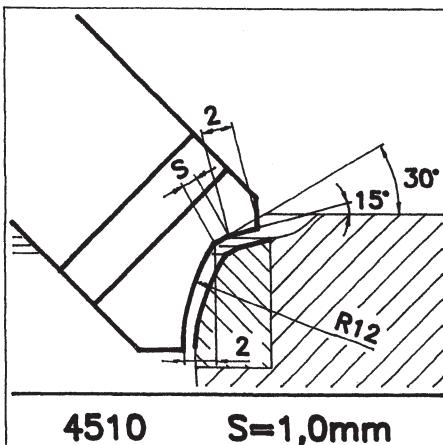
**MIRA®**

Formtools  
Formstähle  
Outils de façon  
Skärstål  
Utensili ad angolazione multipla  
Cuchillas de mandrinado moldeada

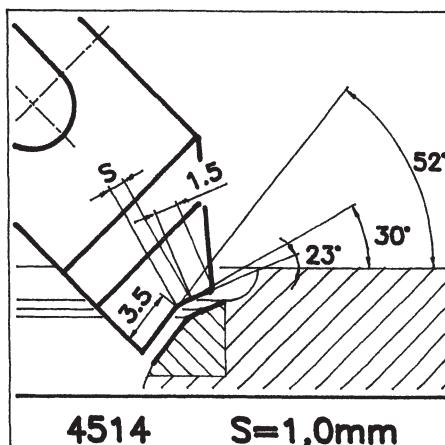
30°



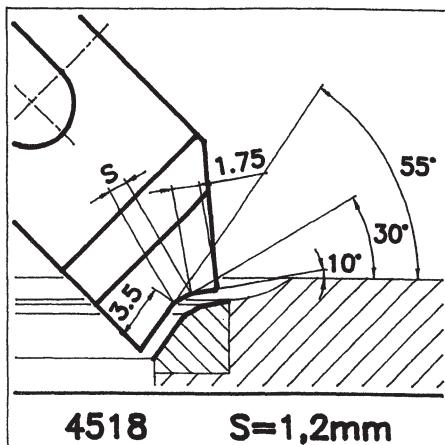
4520 S=0,75mm



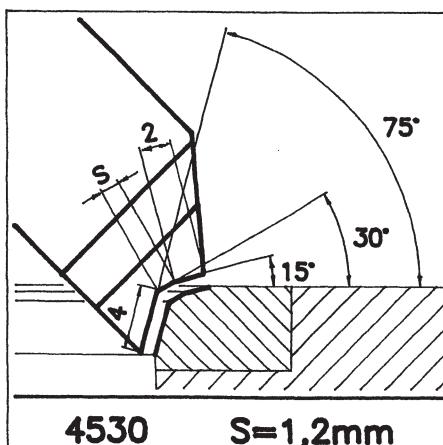
4510 S=1,0mm



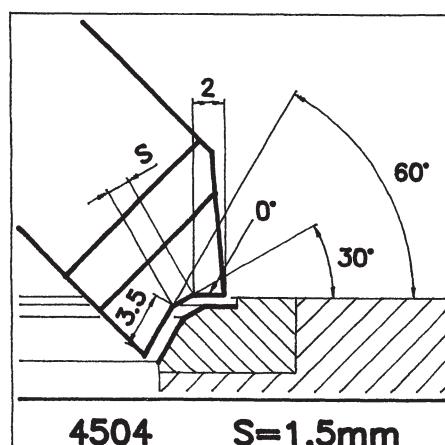
4514 S=1,0mm



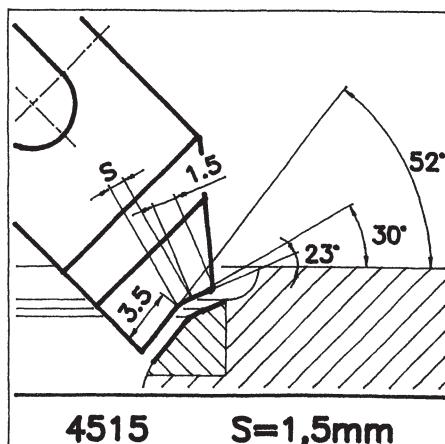
4518 S=1,2mm



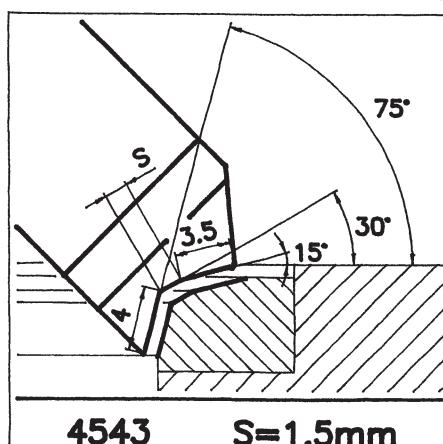
4530 S=1,2mm



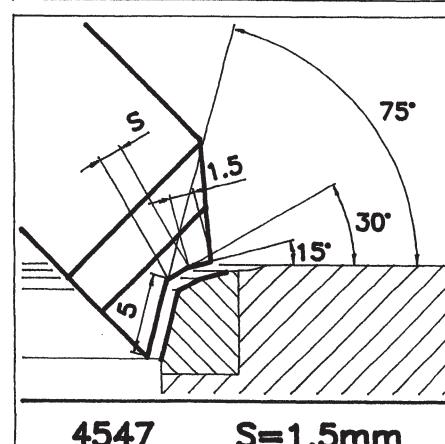
4504 S=1,5mm



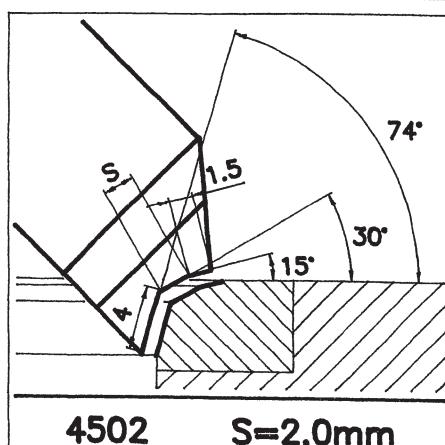
4515 S=1,5mm



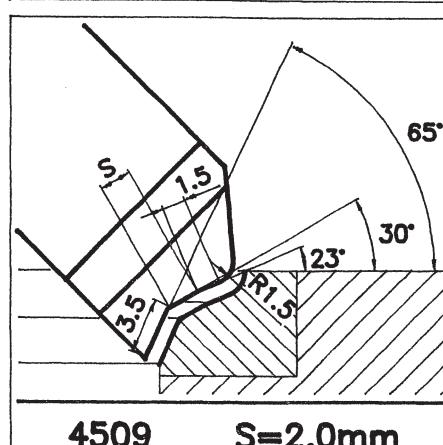
4543 S=1,5mm



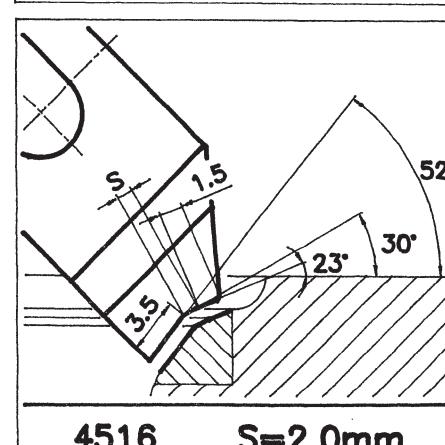
4547 S=1,5mm



4502 S=2,0mm



4509 S=2,0mm

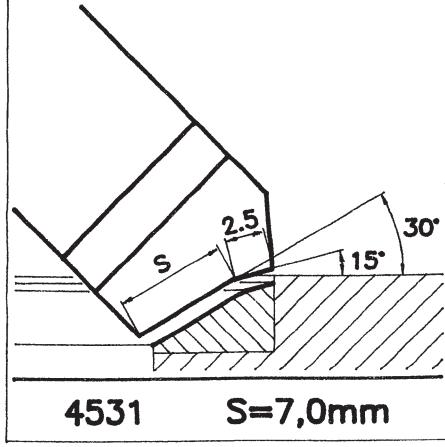
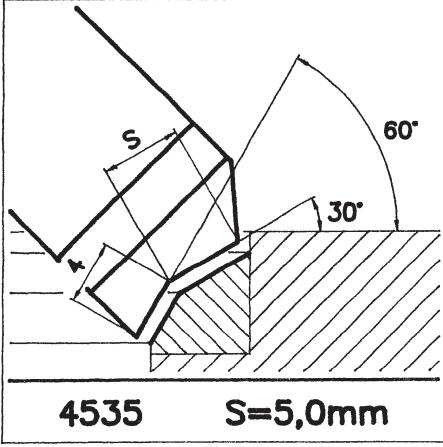
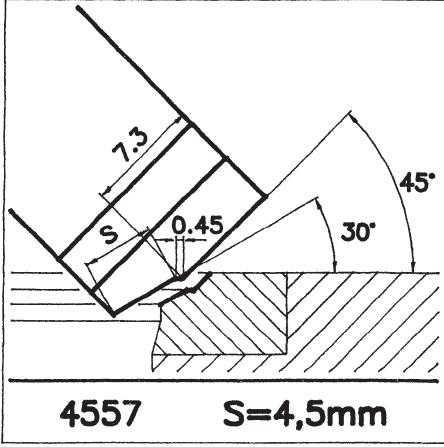
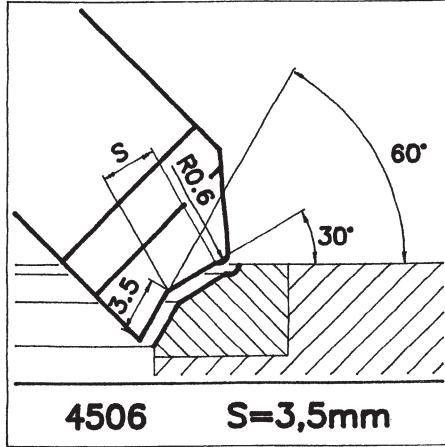
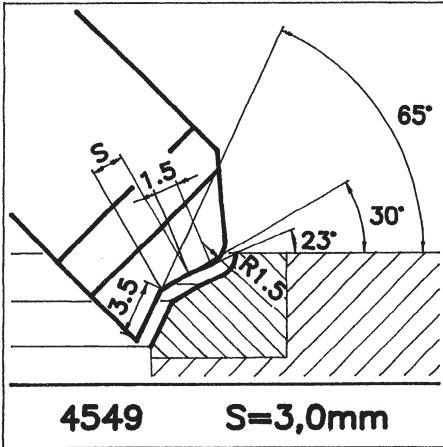
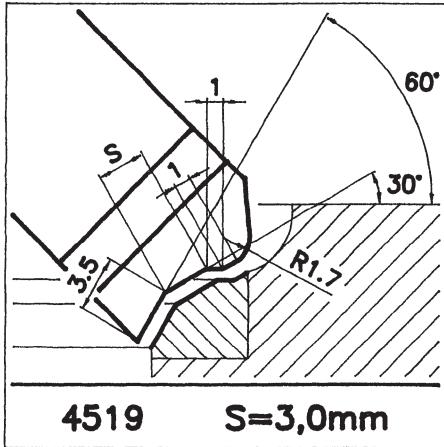
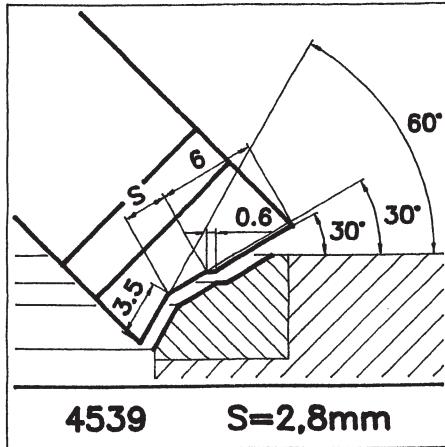
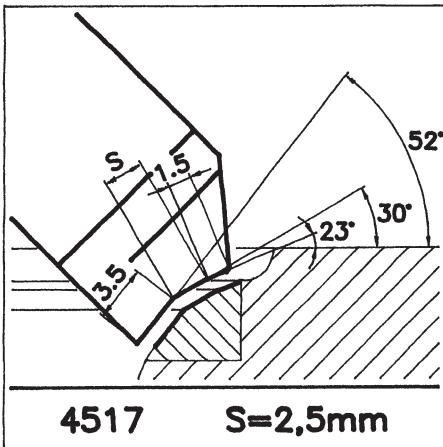
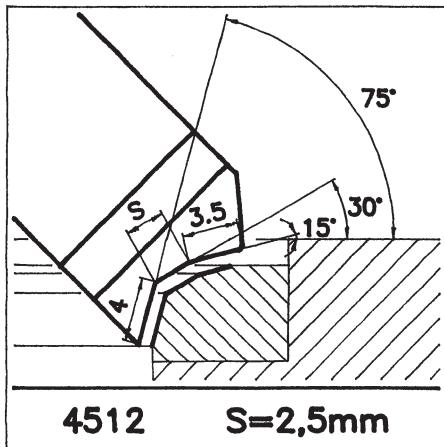
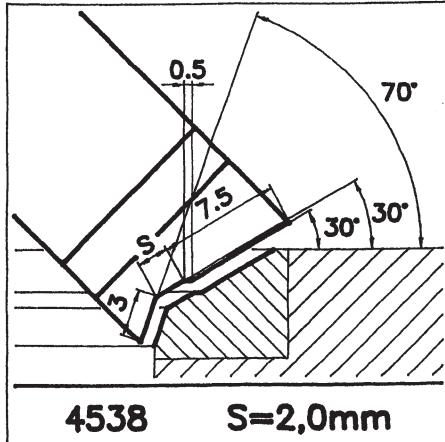
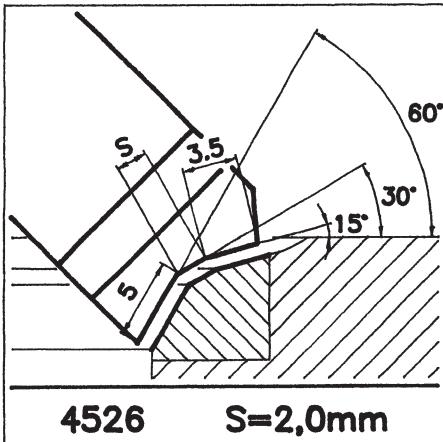
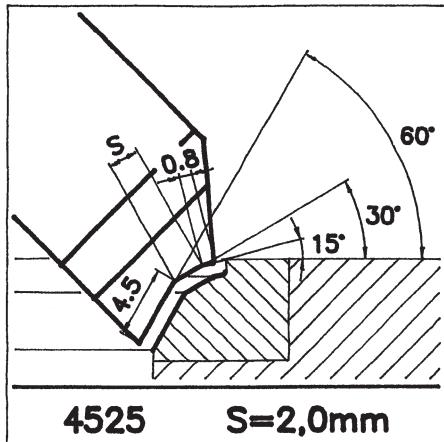


4516 S=2,0mm

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**Skärstål**  
**Utensili ad angolazione multipla**  
**Cuchillas de mandrinado moldeada**

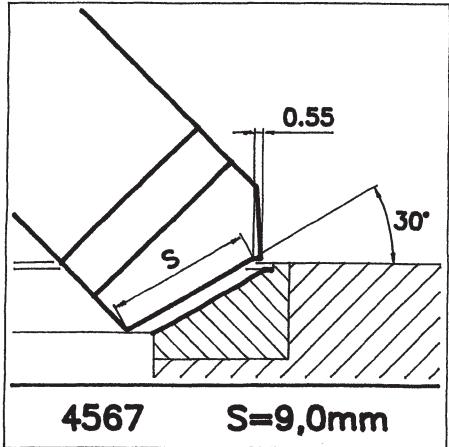
30°



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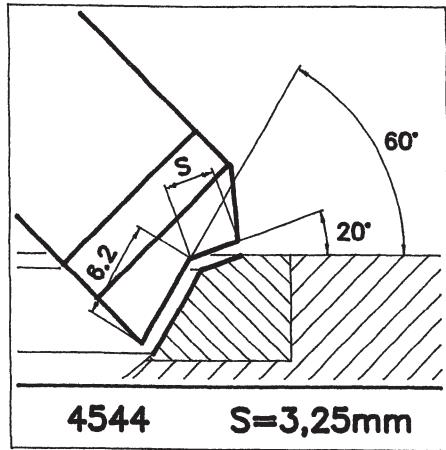
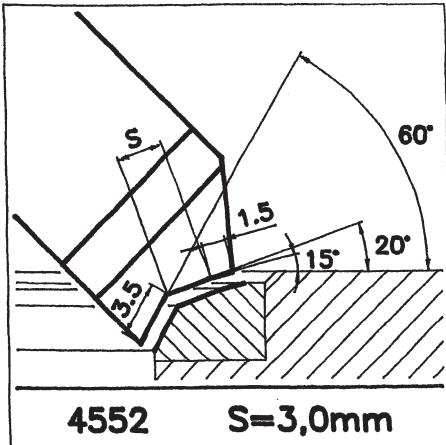
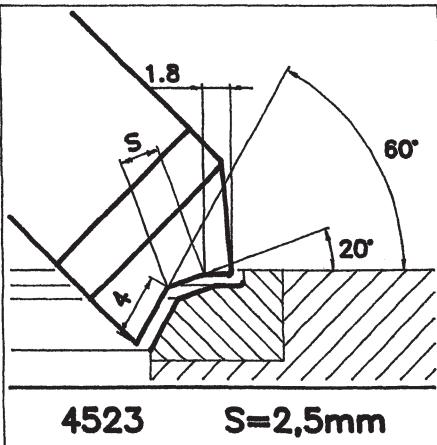
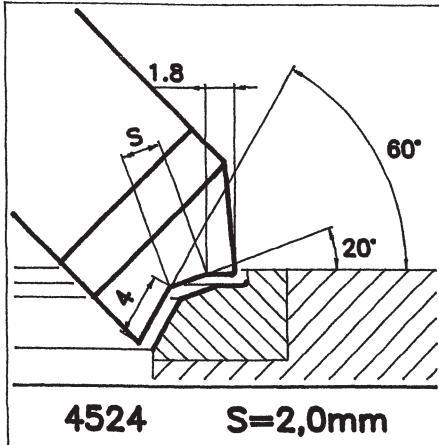
**30°**



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*Cuchillas de mandrinado moldeada*

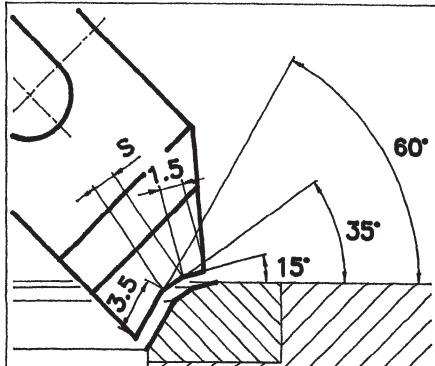
20°



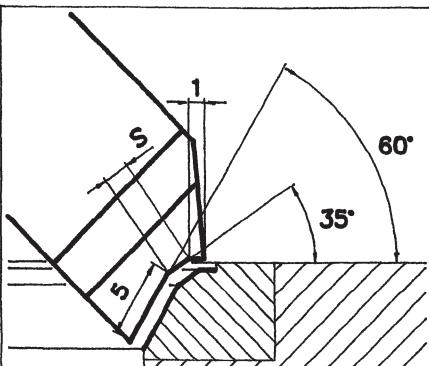
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*Utensili ad angolazione multipla*  
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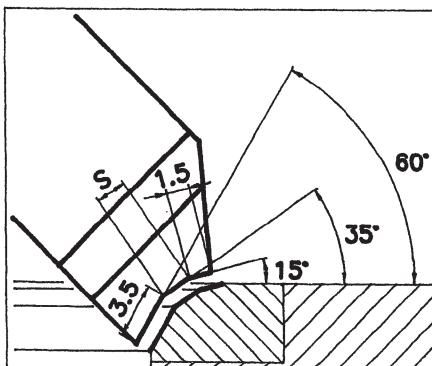
35°  
38°



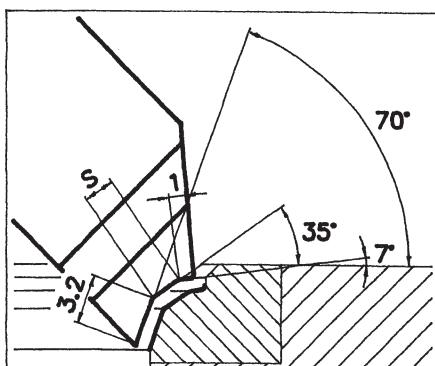
4529 S=1,5mm



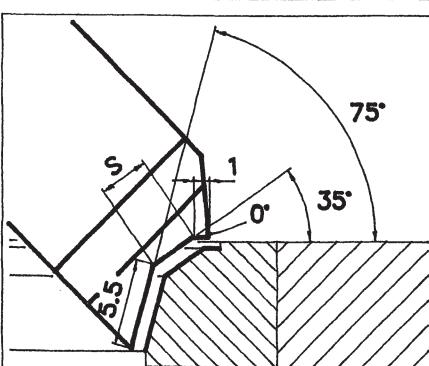
4508 S=1,7mm



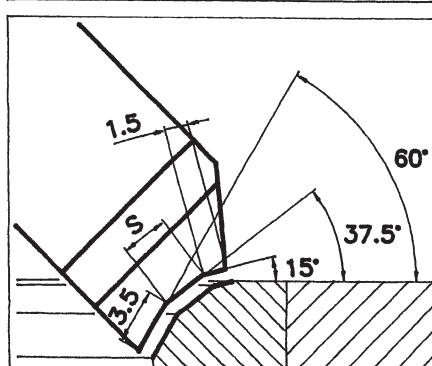
4503 S=2,0mm



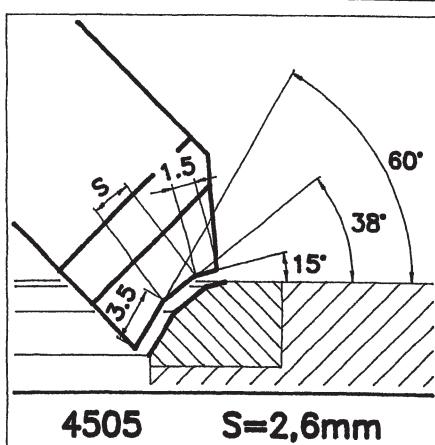
4542 S=2,0mm



4507 S=3,2mm



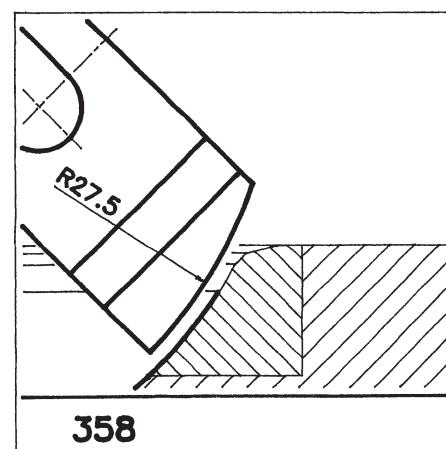
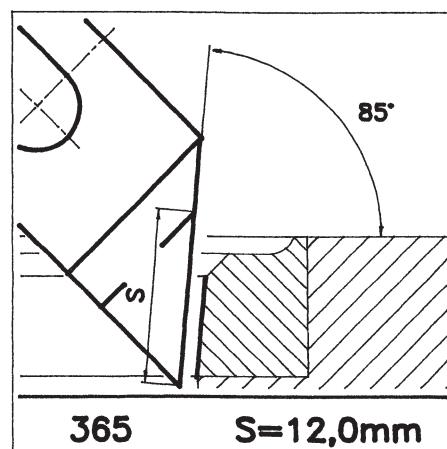
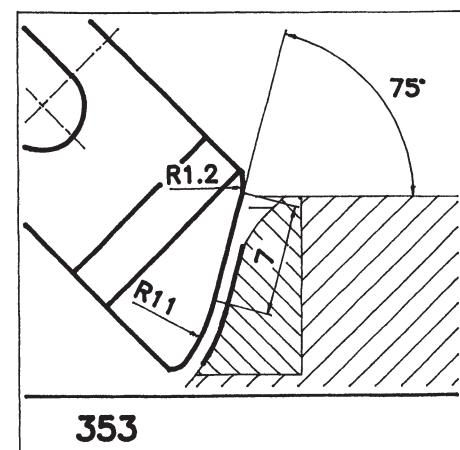
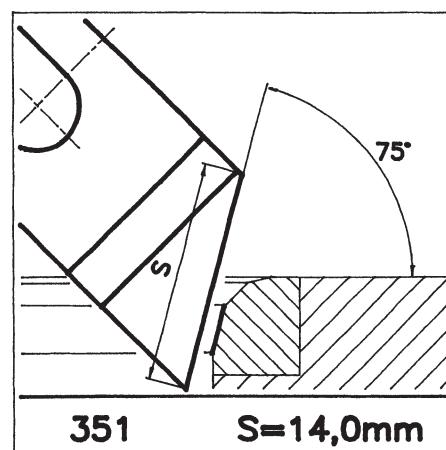
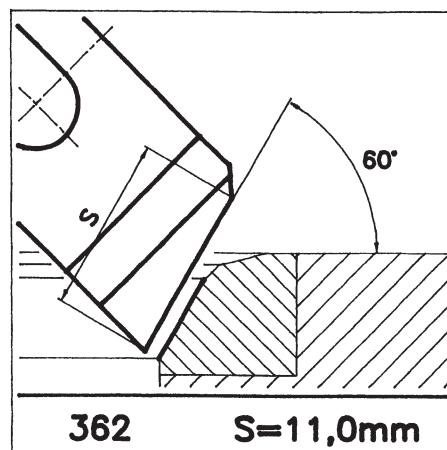
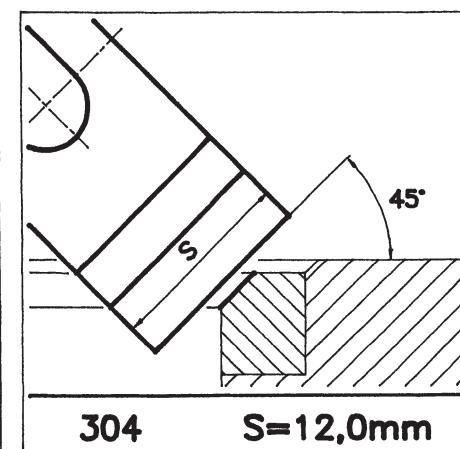
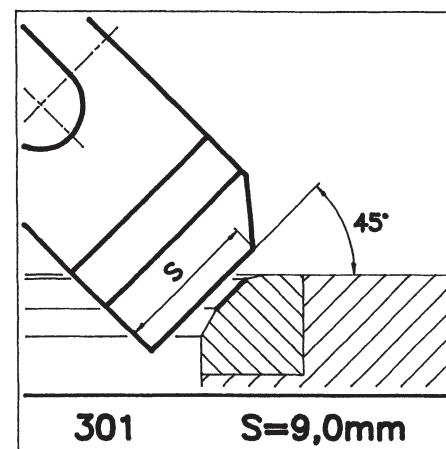
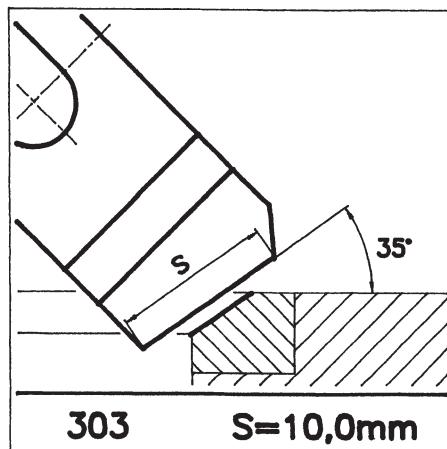
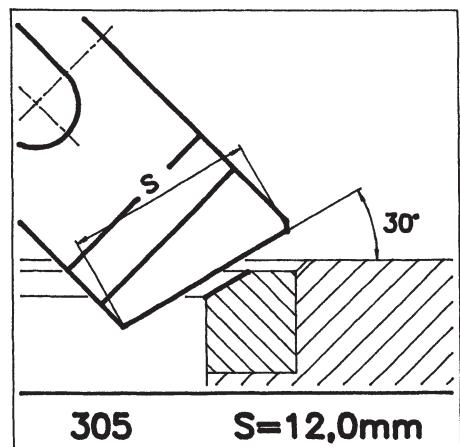
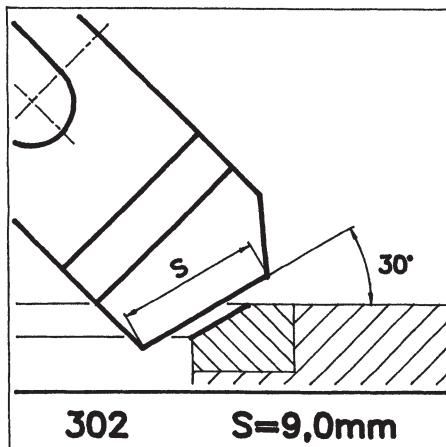
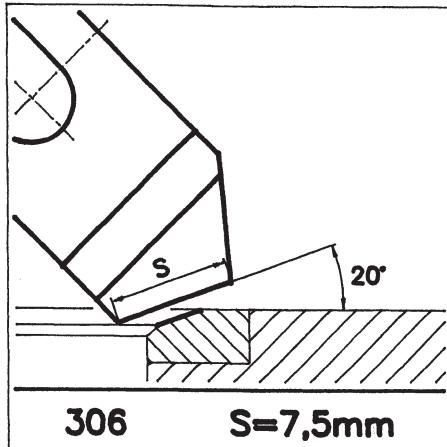
4558 S=2,0mm



4505 S=2,6mm

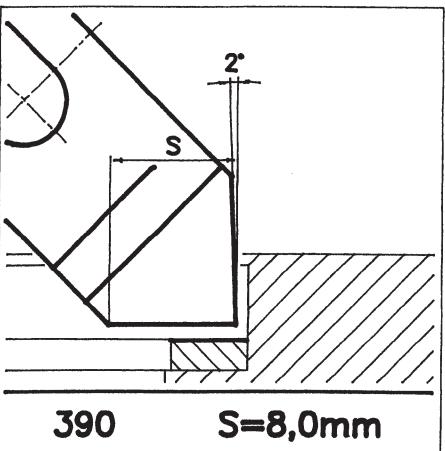
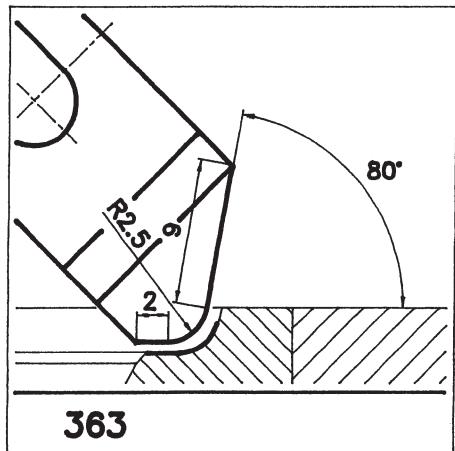
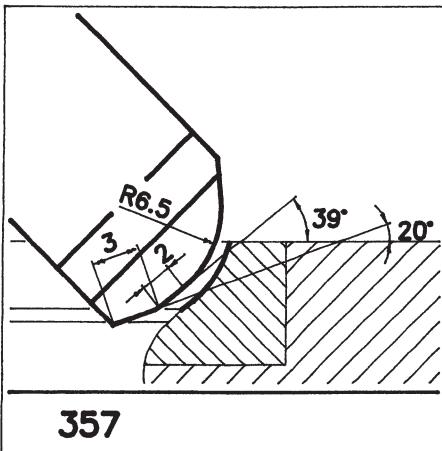
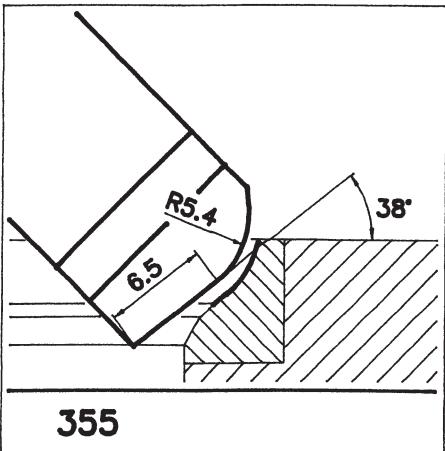
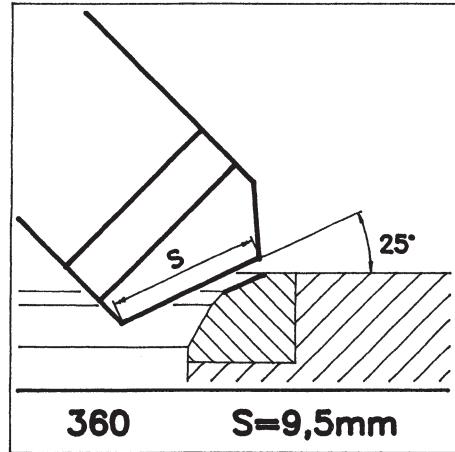
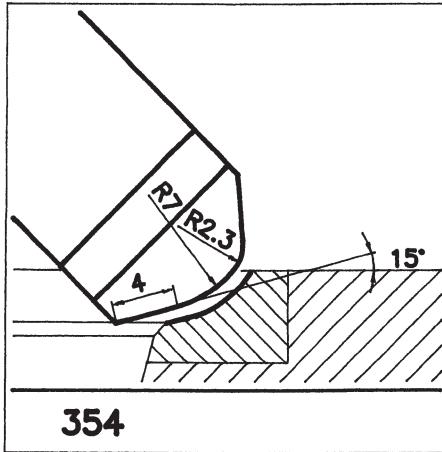
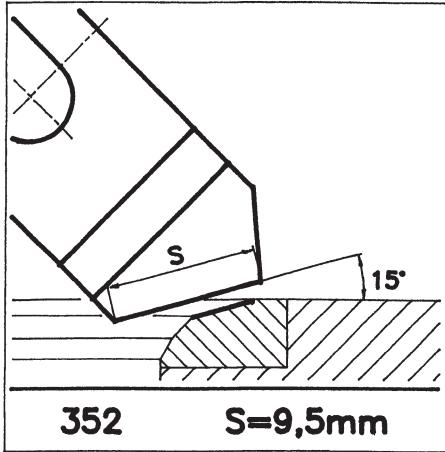


**Formtools for corrections**  
**Formstähle für Korrekturen**  
**Outils de façon pour dégagements**  
**Skärstål för reducering**  
**Utensili ad angolazione multipla per correzioni**  
**Buriles para correcciones**





Formtools for corrections and counterbores  
Formstähle für Korrekturen und Ringsitze  
*Outils de façon pour dégagements et l'usinage de logements*  
Skärstål för reducering och ringsäten  
*Utensili ad angolazione multipla per correzioni e per anelli*  
*Buriles para correcciones y anillos de asiento*





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Manufacturer and worldwide distributor:

**MINELLI CORPORATION**  
8330 Pfäffikon/ZH  
Switzerland  
Phone: +41 44 952 35 35  
Fax: +41 44 952 35 60

Your local dealer: