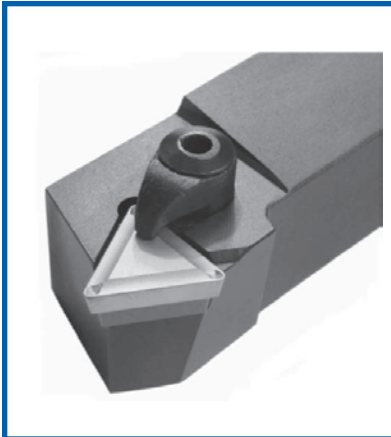
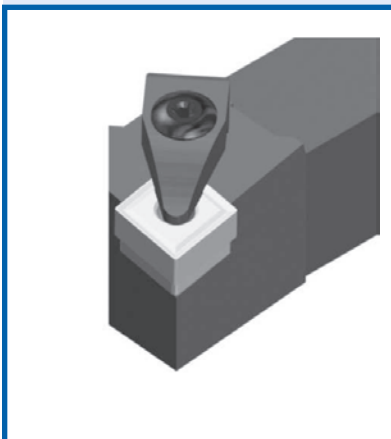




(C) Top Clamp

The classic positive insert clamping system is designed to hold flat positive inserts, both with additional or sintered chipbreaker.

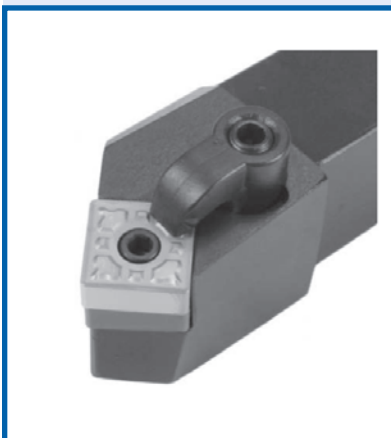
PG... 28



(D) Dimple Lock

The "D" clamping system avoids insert movement during high feed or heavily interrupted machining, due to its accurate indexing that holds the insert securely clamped.

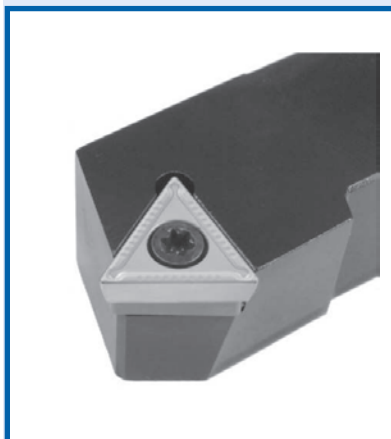
PG... 29



(M) Double Lock

The double lock system offers good rigidity in negative inserts clamping. It is the first choice for center hole negative ceramic and cermet inserts.

PG... 31



(S) Center Screw

Since the advent of the TORX screw, it has been possible to hold with complete safety positive inserts with center hole. Our range covers all the screw fixing permutations.

PG... 37

M	C	F	N	R	12	-	4	B
1	2	3	4	5	6		7	8

1) Holding Method

C	D	M	S
Top Clamp	Dimple Lock	Double Lock	Center Screw

2) Insert Shape

C	D	E
80°	55°	75°
K	R	S
55°		
T	V	W
	35°	80°

3) Tool Style

A	B	C	D
90°	75°	90°	45°
E	F	G	H
60°	90°	90°	107°30'
J	K	L	N
93°	75°	95°	63°
P	Q	R	S
62°30'	117°30'	75°	45°
T	V	X	Z
60°	72°30'	113°	100°

4) Insert Clearance Angle

B	C	N	P
5°	7°	0°	11°
5° Positive	7° Positive	0° Negative	11° Positive

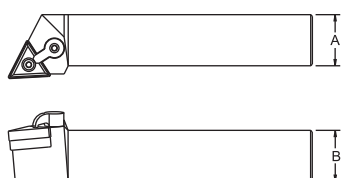
5) Hand of Tool

Right	Left	Neutral

6) Shank Size

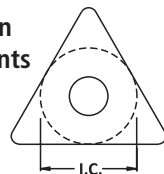
Square Shanks: (A) & (B) shown in 1/16" increments
Rectangular Shanks:

First Digit: (A) shown in 1/8" increments
Second Digit: (B) shown in 1/4" increments



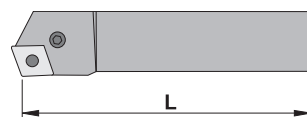
7) Insert I.C. Size

Insert I.C.
(I.C.) shown in
1/8" increments



8) Tool Length

B= 4.5 C= 5.0 D= 6.0 E= 7.0



Please Note: Cutter Designation

R/L - Please choose right or left hand designation.
Example ordering code: MCFNR 12-4B

Top Clamp Toolholders

CKJN 93° page 28 KNUX...	CTFP 90° page 28 TP..32	CTCO 90° page 28 TP..32.. TP..43..	CTEP 60° page 28 TP..22.. TP..32..	CTGP 90° page 28 TP..22.. TP..32..	CTCP 90° page 28 TP..32.. TP..43..
---	--	--	--	--	--

Dimple Lock Toolholders

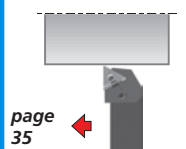
DCLN 95° page 29 CN.. 43.. CN.. 54.. CN.. 64..	DDJN 93° page 29 DN.. 43..	DSDN 45° page 29 SNM.. 43.. SNM.. 54.. SNM.. 64..	DSRN 75° page 29 SNM.. 43.. SNM.. 54.. SNM.. 64..	DSSN 45° page 30 SNM.. 43.. SNM.. 64..	DTGN 90° page 30 TNM.. 33.. TNM.. 43..
DTJN 93° page 30 TNM.. 33.. TNM.. 43..	DVJN 93° page 30 VN.. 33..	DWLN 95° page 30 WNMG 43..			

Double Lock Toolholders

MCFN 90° page 31 CN.. 43.. CN.. 54.. CN.. 64..	MCGN 90° page 31 CN.. 43.. CN.. 54.. CN.. 64..	MCKN 75° page 31 CN.. 43.. CN.. 54.. CN.. 64..	MCLN 95° page 31 CN.. 43.. CN.. 54.. CN.. 64..	MCMN 50° page 32 CN.. 43.. CN.. 54.. CN.. 64..	MCRN 75° page 32 CN.. 43.. CN.. 54.. CN.. 64..
MDJN 45° page 32 DN.. 33.. DN.. 43.. DN.. 54..	MDPN 62° 30' page 32 DN.. 43.. DN.. 54..	MDQN 117° 30' page 33 DN.. 43..	MRGN page 33 RNMG 32.. RNMG 64.. RNMG 43.. RNMG 86.. RNMG 54..	MSDN 45° page 33 SNM.. 32.. SNM.. 43.. SNM.. 54.. SNM.. 64..	MSKN 75° page 33 SNM.. 43.. SNM.. 54.. SNM.. 64..

Double Lock Toolholders *continued....*

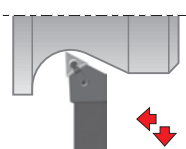
MTGN 90°



page 35

TNM. 22.. TNM. 54..
TNM. 33.. TNM. 66..
TNM. 43..

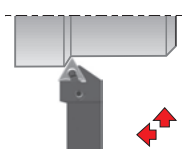
MTJN 93°



page 35

TNM. 33..
TNM. 43..
TNM. 54..
TNM. 66..

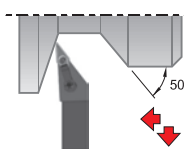
MTRN 75°



page 36

TNM. 33..
TNM. 43..
TNM. 54..

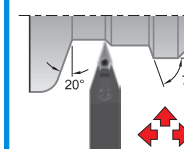
MVJN 93°



page 36

VN.. 33..
VN.. 43..

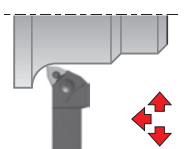
MVVN 72° 30'



page 36

VN.. 33..
VN.. 43..

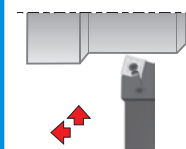
MWLN 95°



page 36

WNM. 33..
WNM. 43..

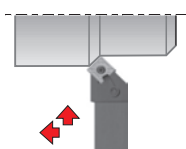
MSRN 75°



page 34

SN.. 43..
SN.. 54..
SN.. 64..

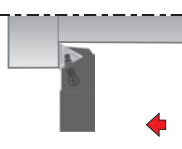
MSSN 45°



page 34

SN.. 43..
SN.. 54..
SN.. 64..

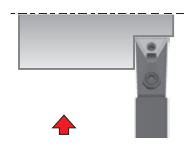
MTAN 90°



page 34

TNM. 22..
TNM. 33..
TNM. 43..
TNM. 54..

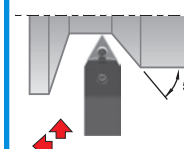
MTCN 90°



page 34

TNM. 33..
TNM. 43..

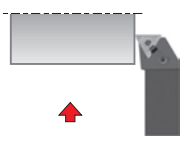
MTENN 60°



page 35

TNM. 22..
TNM. 33..
TNM. 43..
TNM. 54..

MTFN 90°

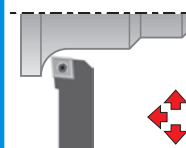


page 35

TNM. 33..
TNM. 43..
TNM. 54..

Center Screw Toolholders

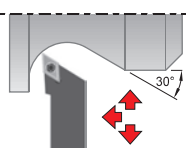
SCLC 95°



page 37

CC.. 21.5..
CC.. 32.5..
CC.. 43..

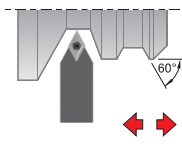
SDJC 93°



page 37

DC.. 21.5..
DC.. 32.5..

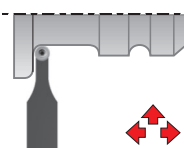
SDPC 62° 30'



page 37

DC.. 21.5..
DC.. 32.5..

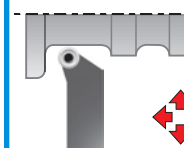
SRDC



page 37

RC.. 0803MO
RC.. 10T3MO
RC.. 1204MO

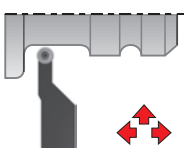
SRGC



page 37

RC.. 10T3MO
RC.. 1204MO

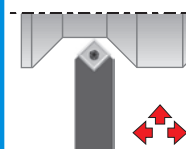
SRSC



page 38

RC.. 10T3MO
RC.. 1204MO

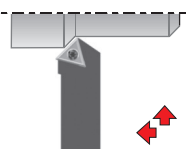
SSDC 45°



page 38

SC.. 32.5..
SC.. 43..

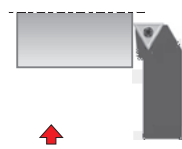
STDC 45°



page 38

TC.. 21.5..
TC.. 32.5..

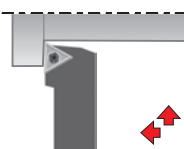
STFC 90°



page 38

TC.. 21.5..
TC.. 32.5..

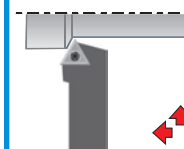
STGC 90°



page 38

TC.. 21.5..
TC.. 32.5..

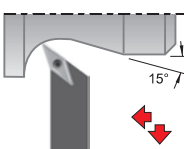
STTC 60°



page 38

TC.. 32.5..

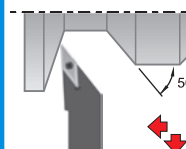
SVHC 107° 30'



page 39

VC.. 33..

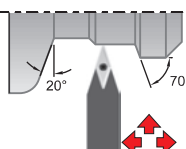
SVJC 93°



page 39

VC.. 33..

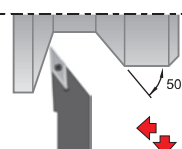
SVVC 72° 30'



page 39

VC.. 33..

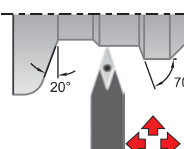
SVJB 93°



page 39

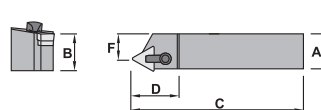
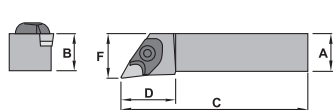
VB.. 33..

SVVB 72° 30'



page 39

VB.. 33..



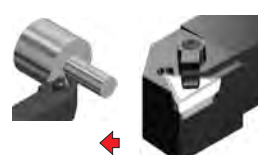
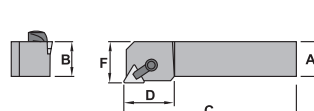
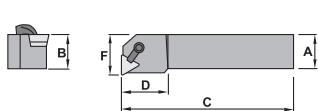
CKJN 93°

Designation	A	B	C	D	F
Insert: KNUX-1604_ Lead Angle: -3° Entering Angle: 93°					
CKJNR/L 12-3B	.750	.750	5.0	1.340	1.000
CKJNR/L 16-3D	1.000	1.000	6.0	1.340	1.250
CKJNR/L 20-3E	1.250	1.250	7.0	1.340	1.500
Spare Parts					
CKJNR 12-3.	C-2316 C-1614 W-35232 C-4295 C-4203 C-3226				
CKJNR 16-3. / 20-3.	C-2316 C-1614 W-35232 C-4295 C-4204 C-4012				
CKJNL 12-3.	C-2326 C-1614 W-35232 C-4295 C-4203 C-3236				
CKJNL 16-3. / 20-3.	C-2326 C-1614 W-35232 C-4295 C-4204 C-3236				

CTEP 60°

Designation	A	B	C	D	F
Insert: TP_-22_ Lead Angle: 30° Entering Angle: 60°					
CTEPR/L 08-2J	.500	.500	3.5	.875	.281
CTEPR/L 10-2B	.625	.625	4.5	.875	.406
Insert: TP_-32_ Lead Angle: 30° Entering Angle: 60°					
CTEPR/L 12-3B	.750	.750	4.5	1.250	.437
CTEPR/L 16-3D	1.000	1.000	6.0	1.250	.719
Spare Parts					
Insert: TP_-22_	CL-7	XNS-34	W-35222	--	--
Insert: TP_-32_	CL-20	XNS-47	W-35226	C-3116	C-4002
TP_-32_		XNS-48			

For Inserts please refer to page 15



CTFP 90°

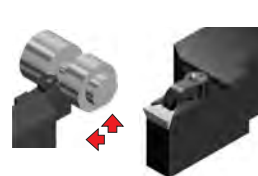
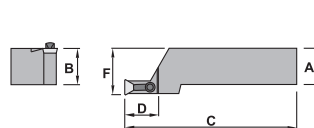
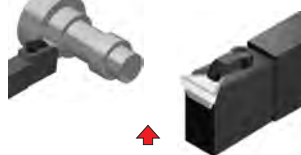
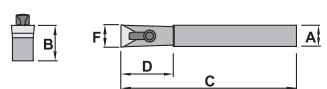
Designation	A	B	C	D	F
Insert: TP_-32_ Lead Angle: 0° Entering Angle: 90°					
CTFPR/L 10-3B	.625	.625	4.5	1.000	.875
CTFPR/L 12-3B	.750	.750	4.5	1.000	1.000
CTFPR/L 16-3D	1.000	1.000	6.0	1.000	1.250
Spare Parts					
Insert: TP_-32_	CL-20	XNS-47	W-35226	C-3116	C-4002
TP_-32_		XNS-48			

For Inserts please refer to page 15

CTGP 90°

Designation	A	B	C	D	F
Insert: TP_-22_ Lead Angle: 0° Entering Angle: 90°					
CTGPR/L 10-2B	.625	.625	4.5	1.062	.875
Insert: TP_-32_ Lead Angle: 0° Entering Angle: 90°					
CTGPR/L 10-3B	.625	.625	4.5	1.062	.875
CTGPR/L 12-3B	.750	.750	4.5	1.062	1.000
CTGPR/L 16-3D	1.000	1.000	6.0	1.250	1.250
Spare Parts					
Insert: TP_-22_	CL-7	XNS-34	W-35222	--	--
Insert: TP_-32_	CL-20	XNS-47	W-35226	C-3116	C-4002
TP_-32_		XNS-48			

For Inserts please refer to page 15



CTCO 90°

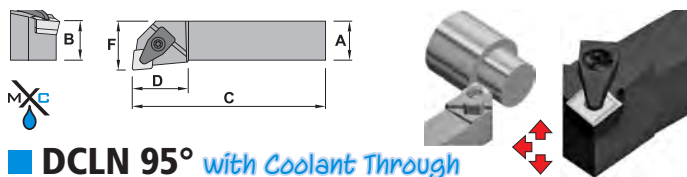
Designation	A	B	C	D	F
Insert: TP_-32_ Lead Angle: 0° Entering Angle: 90°					
CTCO N 08-3	.500	.500	3.5	1.016	.627
CTCO N 44-3	.500	1.000	8.0	1.016	.627
Insert: TP_-43_ Lead Angle: 0° Entering Angle: 90°					
CTCO N 12-4	.750	.750	4.5	1.375	.843
CTCO N 64-4	.750	1.000	8.0	1.375	.843
Spare Parts					
Insert: TP_-32_	CL-7	XNS-34	W-35226	C-3116	C-4002
TP_-32_		XNS-48			
Insert: TP_-43_	CL-22	XNS-47	W-35232	C-3400	C-4012

For Inserts please refer to page 15

CTCP 90°

Designation	A	B	C	D	F
Insert: TP_-32_ Lead Angle: 0° Entering Angle: 90°					
CTCPR/L 12-3B	.750	.750	4.5	1.125	1.000
Insert: TP_-43_ Lead Angle: 0° Entering Angle: 90°					
CTCPR/L 16-4D	1.000	1.000	6.0	1.375	1.250
CTCPR/L 20-4D	1.250	1.250	6.0	1.375	1.500
Spare Parts					
Insert: TP_-32_	CL-22	XNS-47	W-35226	C-3116	C-4002
Insert: TP_-43_	CL-12	XNS-510	W-35232	C-3400	C-4012

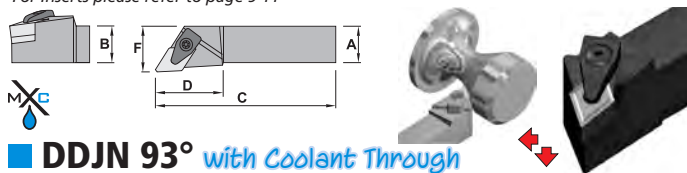
For Inserts please refer to page 15



DCLN 95° with Coolant Through

Designation	A	B	C	D	F
<i>Insert: CNM_-43_ Lead Angle: -5° Entering Angle: 95°</i>					
DCLNR/L 12-4BA	.750	.750	4.5	1.250	1.000
DCLNR/L 16-4DA	1.000	1.000	6.0	1.250	1.250
DCLNR/L 20-4DA	1.250	1.250	6.0	1.250	1.500
<i>Insert: CNM_-54_ Lead Angle: -5° Entering Angle: 95°</i>					
DCLNR/L 20-5DA	1.250	1.250	6.0	1.375	1.500
DCLNR/L 24-5EA	1.500	1.500	7.0	1.375	2.000
<i>Insert: CNM_-64_ Lead Angle: -5° Entering Angle: 95°</i>					
DCLNR/L 20-6DA	1.250	1.250	6.0	1.653	1.500
DCLNR/L 24-6EA	1.500	1.500	7.0	1.653	2.000
Spare Parts					
Insert: CNM_-43_	ICSN-432	C-1160	C-2312		
Insert: CNM_-54_	ICSN-533	C-1180	C-2318	C-1907	C-4295 W-35232
Insert: CNM_-64_	C-3619	C-1182	C-2319		

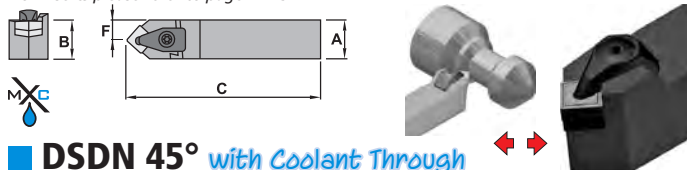
For Inserts please refer to page 9-11



DDJN 93° with Coolant Through

Designation	A	B	C	D	F
<i>Insert: DNM_-43_ Lead Angle: -3° Entering Angle: 93°</i>					
DDJNR/L 12-4BA	.750	.750	4.5	1.535	1.000
DDJNR/L 16-4DA	1.000	1.000	6.0	1.535	1.250
DDJNR/L 20-4DA	1.250	1.250	6.0	1.535	1.500
DDJNR/L 24-4EA	1.500	1.500	7.0	1.535	2.000
Spare Parts					
Insert: DNM_-43_	IDSN-432	C-1160	C-2312	C-1907	C-4295 W-35232

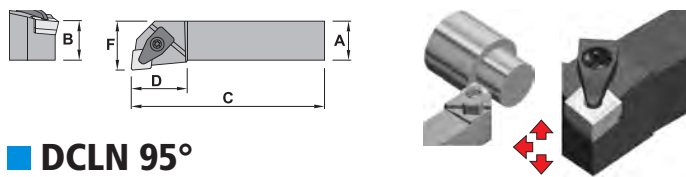
For Inserts please refer to page 11-13



DSDN 45° with Coolant Through

Designation	A	B	C	F
<i>Insert: SNM_-43_ Lead Angle: 45° Entering Angle: 45°</i>				
DSDNN 12-4BA	.750	.750	4.5	1.375
DSDNN 16-4DA	1.000	1.000	6.0	1.375
<i>Insert: SNM_-54_ Lead Angle: 45° Entering Angle: 45°</i>				
DSDNN 20-5DA	1.250	1.250	6.0	1.375
<i>Insert: SNM_-64_ Lead Angle: 45° Entering Angle: 45°</i>				
DSDNN 20-6DA	1.250	1.250	6.0	1.535
DSDNN 24-6EA	1.500	1.500	7.0	1.653
Spare Parts				
Insert: SNM_-43_	ISSN-432	C-1160	C-2312	
Insert: SNM_-54_	ISSN-533	C-1180	C-2318	C-1907 C-4295 W-35232
Insert: SNM_-64_	C-3519	C-1182	C-2319	

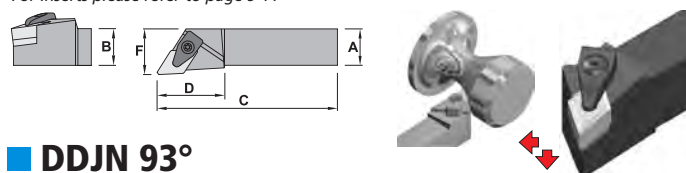
For Inserts please refer to page 13-14



DCLN 95°

Designation	A	B	C	D	F
<i>Insert: CNM_-43_ Lead Angle: -5° Entering Angle: 95°</i>					
DCLNR/L 12-4B	.750	.750	4.5	1.250	1.000
DCLNR/L 16-4D	1.000	1.000	6.0	1.250	1.250
DCLNR/L 20-4D	1.250	1.250	6.0	1.250	1.500
<i>Insert: CNM_-54_ Lead Angle: -5° Entering Angle: 95°</i>					
DCLNR/L 20-5D	1.250	1.250	6.0	1.375	1.500
DCLNR/L 24-5E	1.500	1.500	7.0	1.375	2.000
<i>Insert: CNM_-64_ Lead Angle: -5° Entering Angle: 95°</i>					
DCLNR/L 20-6D	1.250	1.250	6.0	1.653	1.500
DCLNR/L 24-6E	1.500	1.500	7.0	1.653	2.000
Spare Parts					
Insert: CNM_-43_	ICSN-432	C-1160	C-2312		
Insert: CNM_-54_	ICSN-533	C-1180	C-2318	C-1907	C-4295 W-35232
Insert: CNM_-64_	C-3619	C-1182	C-2319		

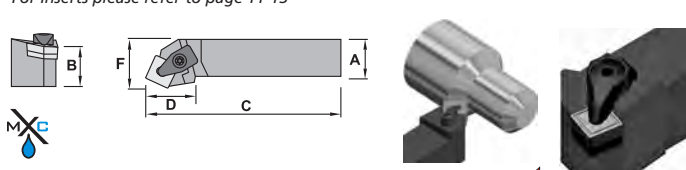
For Inserts please refer to page 9-11



DDJN 93°

Designation	A	B	C	D	F
<i>Insert: DNM_-43_ Lead Angle: -3° Entering Angle: 93°</i>					
DDJNR/L 12-4B	.750	.750	4.5	1.535	1.000
DDJNR/L 16-4D	1.000	1.000	6.0	1.535	1.250
DDJNR/L 20-4D	1.250	1.250	6.0	1.535	1.500
DDJNR/L 24-4E	1.500	1.500	7.0	1.535	2.000
Spare Parts					
Insert: DNM_-43_	IDSN-432	C-1160	C-2312	C-1907	C-4295 W-35232

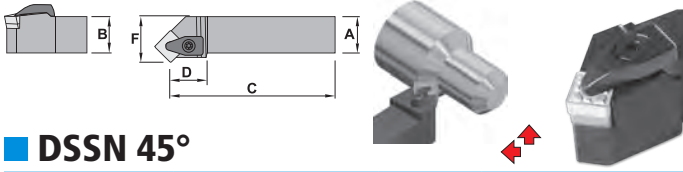
For Inserts please refer to page 11-13



DSRN 75° with Coolant Through

Designation	A	B	C	D	F
<i>Insert: SNM_-43_ Lead Angle: 15° Entering Angle: 75°</i>					
DSRNR/L 12-4BA	.750	.750	4.5	1.375	.880
DSRNR/L 16-4DA	1.000	1.000	6.0	1.375	1.130
<i>Insert: SNM_-54_ Lead Angle: 15° Entering Angle: 75°</i>					
DSRNR/L 20-5DA	1.250	1.250	6.0	1.375	1.353
<i>Insert: SNM_-64_ Lead Angle: 15° Entering Angle: 75°</i>					
DSRNR/L 20-6DA	1.250	1.250	6.0	1.375	1.321
Spare Parts					
Insert: SNM_-43_	ISSN-432	C-1160	C-2312		
Insert: SNM_-54_	ISSN-533	C-1180	C-2318	C-1907	C-4295 W-35232
Insert: SNM_-64_	C-3519	C-1182	C-2319		

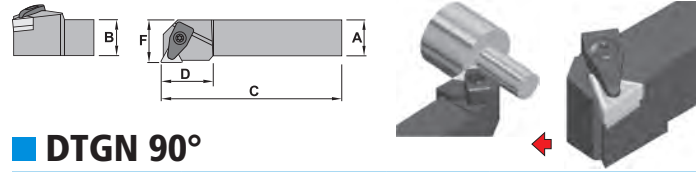
For Inserts please refer to page 13-14



DSSN 45°

Designation	A	B	C	D	F
<i>Insert: SNM_-43_ Lead Angle: 45° Entering Angle: 45°</i>					
DSSNR/L 12-4B	.750	.750	4.5	1.457	1.000
DSSNR/L 16-4D	1.000	1.000	6.0	1.457	1.250
DSSNR/L 20-4D	1.250	1.250	6.0	1.457	1.500
<i>Insert: SNM_-64_ Lead Angle: 45° Entering Angle: 45°</i>					
DSSNR/L 20-6D	1.250	1.250	6.0	1.772	1.500
DSSNR/L 24-6E	1.500	1.500	7.0	1.772	2.000
Spare Parts	     				
Insert: SNM_-43_	ISSN-432	C-1160	C-2312	C-1907	C-4295 W-35232
Insert: SNM_-64_	C-3519	C-1182	C-2319		

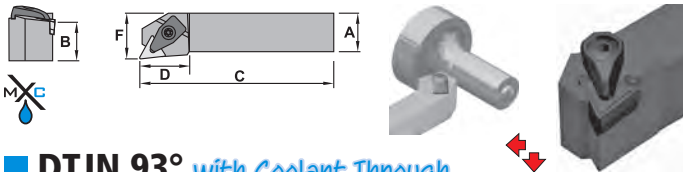
For Inserts please refer to page 13-14



DTGN 90°

Designation	A	B	C	D	F
<i>Insert: TNM_-33_ Lead Angle: 0° Entering Angle: 90°</i>					
DTGNR/L 12-3B	.750	.750	4.5	1.102	1.000
DTGNR/L 16-3D	1.000	1.000	6.0	1.102	1.250
<i>Insert: TNM_-43_ Lead Angle: 0° Entering Angle: 90°</i>					
DTGNR/L 16-4D	1.000	1.000	6.0	1.338	1.250
DTGNR/L 20-4D	1.250	1.250	6.0	1.338	1.500
Spare Parts	     				
Insert: TNM_-33_	ITSN-322	C-1150	C-2308	C-1915	C-4294 W-35225
Insert: TNM_-43_	ITSN-433	C-1160	C-2312	C-1907	C-4295 W-35232

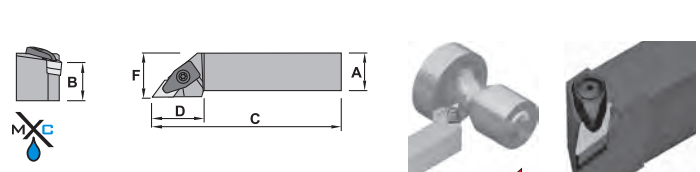
For Inserts please refer to page 15



DTJN 93° with Coolant Through

Designation	A	B	C	D	F
<i>Insert: TNM_-33_ Lead Angle: -3° Entering Angle: 93°</i>					
DTJNR/L 12-3BA	.750	.750	4.5	1.250	1.000
DTJNR/L 16-3DA	1.000	1.000	6.0	1.250	1.250
<i>Insert: TNM_-43_ Lead Angle: -3° Entering Angle: 93°</i>					
DTJNR/L 16-4DA	1.000	1.000	6.0	1.375	1.250
DTJNR/L 20-4DA	1.250	1.250	6.0	1.375	1.500
DTJNR/L 24-4EA	1.500	1.500	7.0	1.375	2.000
Spare Parts	     				
Insert: TNM_-33_	ITSN-322	C-1150	C-2308	C-1915	C-4294 W-35225
Insert: TNM_-43_	ITSN-433	C-1160	C-2312	C-1907	C-4295 W-35232

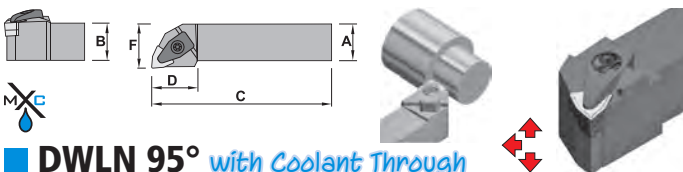
For Inserts please refer to page 15



DVJN 93° with Coolant Through

Designation	A	B	C	D	F
<i>Insert: VNM_-33_ Lead Angle: -3° Entering Angle: 93°</i>					
DVJNR/L 12-3BA	.750	.750	4.5	1.750	1.000
DVJNR/L 16-3DA	1.000	1.000	6.0	1.750	1.250
DVJNR/L 20-3DA	1.250	1.250	6.0	1.750	1.500
DVJNR/L 24-3EA	1.500	1.500	7.0	1.750	2.000
Spare Parts	     				
Insert: VNM_-33_	IVSN-322	C-1150	C-2308	C-1915	C-4294 W-35225

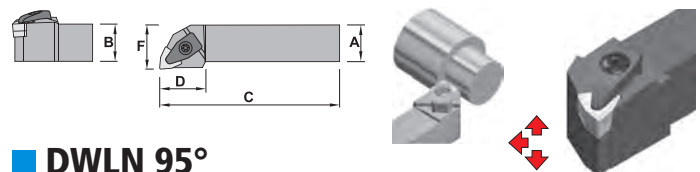
For Inserts please refer to page 16



DWLN 95° with Coolant Through

Designation	A	B	C	D	F
<i>Insert: WNM_-43_ Lead Angle: -5° Entering Angle: 95°</i>					
DWLNRL 12-4BA	.750	.750	4.5	1.250	1.000
DWLNRL 16-4DA	1.000	1.000	6.0	1.250	1.250
DWLNRL 20-4DA	1.250	1.250	6.0	1.250	1.500
DWLNRL 24-4EA	1.500	1.500	7.0	1.250	2.000
Spare Parts	     				
Insert: WNM_-43_	IWSN-432	C-1160	C-2312	C-1907	C-4295 W-35232

For Inserts please refer to page 16-17



DWLN 95°

Designation	A	B	C	D	F
<i>Insert: WNM_-43_ Lead Angle: -5° Entering Angle: 95°</i>					
DWLNRL 12-4B	.750	.750	4.5	1.250	1.000
DWLNRL 16-4D	1.000	1.000	6.0	1.250	1.250
DWLNRL 20-4D	1.250	1.250	6.0	1.250	1.500
DWLNRL 24-4E	1.500	1.500	7.0	1.250	2.000
Spare Parts	     				
Insert: WNM_-43_	IWSN-432	C-1160	C-2312	C-1907	C-4295 W-35232

For Inserts please refer to page 16-17

Spare Parts:



Shim



Shim Screw



Clamp



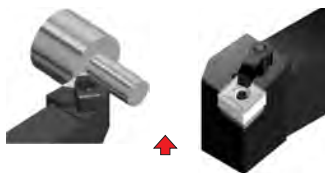
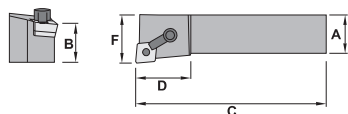
Clamp Screw



Spring



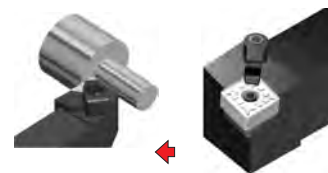
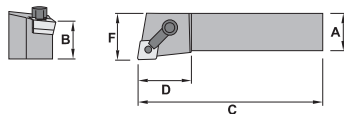
Key



MCFN 90°

Designation	A	B	C	D	F
<i>Insert: CNM_-43_ Lead Angle: 0° Entering Angle: 90°</i>					
MCFNR/L 12-4B	.750	.750	4.5	1.120	1.000
MCFNR/L 16-4D	1.000	1.000	6.0	1.120	1.250
MCFNR/L 20-4D	1.250	1.250	6.0	1.120	1.500
MCFNR/L 85-4D	1.000	1.250	6.0	1.120	1.250
<i>Insert: CNM_-54_ Lead Angle: 0° Entering Angle: 90°</i>					
MCFNR/L 16-5D	1.000	1.000	6.0	1.250	1.250
MCFNR/L 20-5D	1.250	1.250	6.0	1.250	1.500
MCFNR/L 24-5D	1.500	1.500	6.0	1.250	2.000
<i>Insert: CNM_-64_ Lead Angle: 0° Entering Angle: 90°</i>					
MCFNR/L 16-6D	1.000	1.000	6.0	1.310	1.250
MCFNR/L 20-6D	1.250	1.250	6.0	1.310	1.500
MCFNR/L 24-6D	1.500	1.500	6.0	1.310	2.000
Spare Parts					
Insert: CNM_-43_	ICSN-432	NL-46	W-35222	CL-20	XNS-48 W-35226
Insert: CNM_-54_	ICSN-533	NL-58	W-35226	CL-12	XNS-510 W-35232
Insert: CNM_-64_	ICSN-633	NL-68	W-35228	CL-12	XNS-510 W-35232

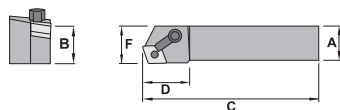
For Inserts please refer to page 9-11



MCGN 90°

Designation	A	B	C	D	F
<i>Insert: CNM_-43_ Lead Angle: 0° Entering Angle: 90°</i>					
MCGNR/L 12-4B	.750	.750	4.5	1.120	1.000
MCGNR/L 16-4D	1.000	1.000	6.0	1.120	1.250
MCGNR/L 20-4D	1.250	1.250	6.0	1.120	1.500
MCGNR/L 24-4D	1.500	1.500	6.0	1.250	2.000
<i>Insert: CNM_-54_ Lead Angle: 0° Entering Angle: 90°</i>					
MCGNR/L 16-5D	1.000	1.000	6.0	1.500	1.250
MCGNR/L 20-5D	1.250	1.250	6.0	1.500	1.500
MCGNR/L 24-5D	1.500	1.500	6.0	1.500	2.000
<i>Insert: CNM_-64_ Lead Angle: 0° Entering Angle: 90°</i>					
MCGNR/L 20-6D	1.250	1.250	6.0	1.650	1.500
MCGNR/L 24-6D	1.500	1.500	6.0	1.650	2.000
Spare Parts					
Insert: CNM_-43_	ICSN-432	NL-46	W-35222	CL-20	XNS-48 W-35226
Insert: CNM_-54_	ICSN-533	NL-58	W-35226	CL-12	XNS-510 W-35232
Insert: CNM_-64_	ICSN-633	NL-68	W-35228	CL-12	XNS-510 W-35232

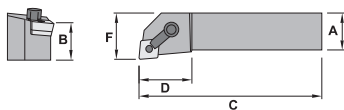
For Inserts please refer to page 9-11



MCKN 75°

Designation	A	B	C	D	F
<i>Insert: CNM_-43_ Lead Angle: 15° Entering Angle: 75°</i>					
MCKNR/L 12-4B	.750	.750	4.5	1.200	1.000
MCKNR/L 16-4D	1.000	1.000	6.0	1.200	1.250
MCKNR/L 20-4D	1.250	1.250	6.0	1.200	1.500
<i>Insert: CNM_-54_ Lead Angle: 15° Entering Angle: 75°</i>					
MCKNR/L 16-5D	1.000	1.000	6.0	1.350	1.250
MCKNR/L 20-5D	1.250	1.250	6.0	1.350	1.500
<i>Insert: CNM_-64_ Lead Angle: 15° Entering Angle: 75°</i>					
MCKNR/L 16-6D	1.000	1.000	6.0	1.470	1.250
MCKNR/L 20-6D	1.250	1.250	6.0	1.470	1.500
MCKNR/L 24-6D	1.500	1.500	6.0	1.470	2.000
Spare Parts					
Insert: CNM_-43_	ICSN-432	NL-46	W-35222	CL-20	XNS-48 W-35226
Insert: CNM_-54_	ICSN-533	NL-58	W-35226	CL-12	XNS-510 W-35232
Insert: CNM_-64_	ICSN-633	NL-68	W-35228	CL-12	XNS-510 W-35232

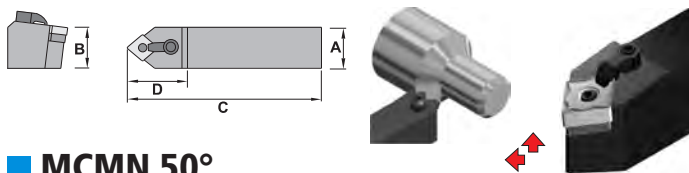
For Inserts please refer to page 9-11



MCLN 95°

Designation	A	B	C	D	F
<i>Insert: CNM_-43_ Lead Angle: -5° Entering Angle: 95°</i>					
MCLNR/L 12-4B	.750	.750	4.5	1.130	1.000
MCLNR/L 16-4D	1.000	1.000	6.0	1.130	1.250
MCLNR/L 20-4D	1.250	1.250	6.0	1.130	1.500
MCLNR/L 85-4D	1.000	1.250	6.0	1.130	1.250
<i>Insert: CNM_-54_ Lead Angle: -5° Entering Angle: 95°</i>					
MCLNR/L 16-5D	1.000	1.000	6.0	1.470	1.250
MCLNR/L 20-5D	1.250	1.250	6.0	1.470	1.500
MCLNR/L 24-5D	1.500	1.500	6.0	1.470	2.000
<i>Insert: CNM_-64_ Lead Angle: -5° Entering Angle: 95°</i>					
MCLNR/L 16-6D	1.000	1.000	6.0	1.510	1.250
MCLNR/L 20-6D	1.250	1.250	6.0	1.510	1.500
MCLNR/L 24-6D	1.500	1.500	6.0	1.510	2.000
MCLNR/L 24-6E	1.500	1.500	7.0	1.510	2.000
MCLNR/L 85-6D	1.000	1.250	6.0	1.510	1.250
MCLNR/L 86-6E	1.000	1.500	7.0	1.510	1.250
Spare Parts					
Insert: CNM_-43_	ICSN-432	NL-46	W-35222	CL-20	XNS-48 W-35226
Insert: CNM_-54_	ICSN-533	NL-58	W-35226	CL-12	XNS-510 W-35232
Insert: CNM_-64_	ICSN-633	NL-68	W-35228	CL-12	XNS-510 W-35232

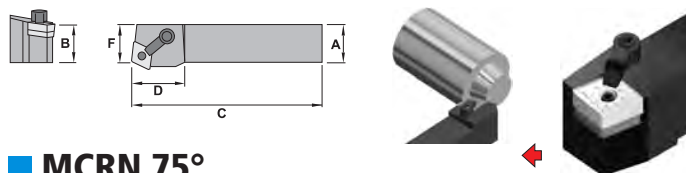
For Inserts please refer to page 9-11



MCMN 50°

Designation	A	B	C	D		
Insert: CNM_-43_		Lead Angle: 40°		Entering Angle: 50°		
MCMNN 12-4B	.750	.750	4.5	1.280		
MCMNN 16-4D	1.000	1.000	6.0	1.280		
MCMNN 20-4D	1.250	1.250	6.0	1.390		
MCMNN 85-4D	1.000	1.250	6.0	1.280		
Insert: CNM_-54_		Lead Angle: 40°		Entering Angle: 50°		
MCMNN 16-5D	1.000	1.000	6.0	1.750		
MCMNN 20-5D	1.250	1.250	6.0	1.610		
MCMNN 24-5D	1.500	1.500	6.0	1.610		
Insert: CNM_-64_		Lead Angle: 40°		Entering Angle: 50°		
MCMNN 24-6D	1.500	1.500	6.0	1.670		
Spare Parts						
Insert: CNM_-43_	ICSN-432	NL-46	W-35222	CL-20	XNS-48	W-35226
Insert: CNM_-54_	ICSN-533	NL-58	W-35226	CL-12	XNS-510	W-35232
Insert: CNM_-64_	ICSN-633	NL-68	W-35228	CL-12		

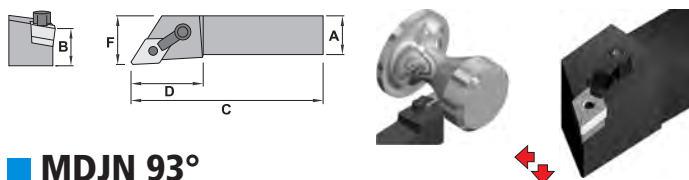
For Inserts please refer to page 9-11



MCRN 75°

Designation	A	B	C	D	F	
Insert: CNM_-43_Lead Angle: 15° Entering Angle: 75°						
MCRNR/L 12-4B	.750	.750	4.5	1.180	.878	
MCRNR/L 16-4D	1.000	1.000	6.0	1.180	1.128	
MCRNR/L 20-4D	1.250	1.250	6.0	1.180	1.318	
Insert: CNM_-54_Lead Angle: 15° Entering Angle: 75°						
MCRNR/L 16-5D	1.000	1.000	6.0	1.351	1.101	
MCRNR/L 20-5D	1.250	1.250	6.0	1.351	1.351	
Insert: CNM_-64_Lead Angle: 15° Entering Angle: 75°						
MCRNR/L 20-6D	1.250	1.250	6.0	1.351	1.318	
MCRNR/L 24-6D	1.500	1.500	6.0	1.351	1.818	
Spare Parts						
Insert: CNM_-43_	ICSN-432	NL-46	W-35222	CL-20	XNS-48	W-35226
Insert: CNM_-54_	ICSN-533	NL-58	W-35226	CL-12	XNS-510	W-35232
Insert: CNM_-64_	ICSN-633	NL-68	W-35228	CL-12		

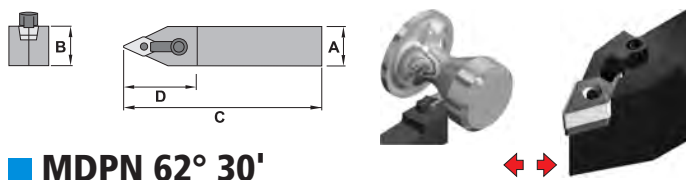
For Inserts please refer to page 9-11



MDJN 93°

Designation	A	B	C	D	F	
<i>Insert: DN_-33_ Lead Angle: -3° Entering Angle: 93°</i>						
MDJNR/L 8-3A	.500	.500	4.0	1.062	.625	
MDJNR/L 10-3B	.625	.625	4.5	1.250	.875	
<i>Insert: DN_-43_ Lead Angle: -3° Entering Angle: 93°</i>						
MDJNR/L 12-4B	.750	.750	4.5	1.500	1.000	
MDJNR/L 16-4D	1.000	1.000	6.0	1.500	1.250	
MDJNR/L 20-4D	1.250	1.250	6.0	1.500	1.500	
MDJNR/L 24-4D	1.500	1.500	6.0	1.500	2.000	
MDJNR/L 85-4D	1.000	1.250	6.0	1.500	1.250	
<i>Insert: DN_-54_ Lead Angle: -3° Entering Angle: 93°</i>						
MDJNR/L 16-5D	1.000	1.000	6.0	1.440	1.250	
MDJNR/L 20-5D	1.250	1.250	6.0	1.440	1.500	
MDJNR/L 24-5D	1.500	1.500	6.0	1.440	2.000	
MDJNR/L 85-5D	1.000	1.250	6.0	1.440	1.250	
Spare Parts						
Insert: DNM_-33_	--	NL-33L	W-35218	CL-7	XNS-36	W-35222
Insert: DNM_-43_	IDSN-432	NL-46	W-35222	CL-20	XNS-48	W-35226
Insert: DNM_-54_	IDSN-533	NL-58	W-35226	CL-12	XNS-510	W-35232

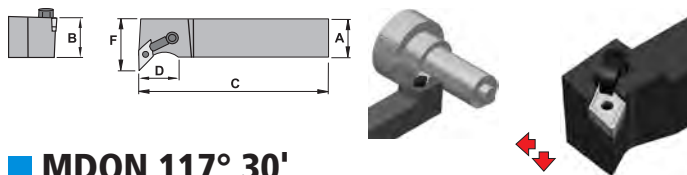
For Inserts please refer to page 11-13



MDPN 62° 30'

Designation	A	B	C	D		
<i>Insert: DN_-43_ Lead Angle: 27° 30' Entering Angle: 62° 30'</i>						
MDPNN 12-4B	.750	.750	4.5	1.620		
MDPNN 16-4D	1.000	1.000	6.0	1.620		
MDPNN 20-4D	1.250	1.250	6.0	1.620		
<i>Insert: DN_-54_ Lead Angle: 27° 30' Entering Angle: 62° 30'</i>						
MDPNN 16-5D	1.000	1.000	6.0	1.880		
MDPNN 20-5D	1.250	1.250	6.0	1.880		
MDPNN 24-5E	1.500	1.500	7.0	1.880		
MDPNN 85-5D	1.000	1.250	6.0	1.880		
MDPNN 86-5D	1.000	1.500	6.0	1.880		
Spare Parts						
Insert: ...12-4B DNM_- ...16-4D/ 43_- 20-4D	IDSN-432	NL-46	W-35222	CL-22 CL-20	XNS-48	W-35226
Insert: DNM_-54_	IDSN-533	NL-58	W-35226	CL-12	XNS-510	W-35232

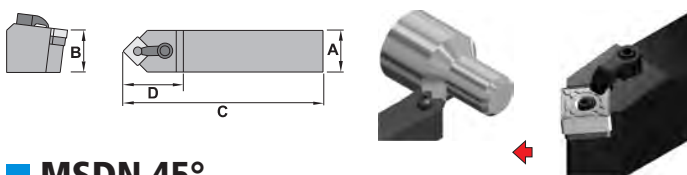
For Inserts please refer to page 11-13



MDQN 117° 30'

Designation	A	B	C	D	F
<i>Insert: DN_-43_ Lead Angle: -7° 30' Entering Angle: 117° 30'</i>					
MDQNR/L 12-4B	.750	.750	4.5	1.370	1.00
MDQNR/L 16-4D	1.000	1.000	6.0	1.370	1.25
MDQNR/L 20-4D	1.250	1.250	6.0	1.370	1.50
MDQNR/L 24-4E	1.500	1.500	7.0	1.370	2.00
Spare Parts					
Insert: DNM_-43_	IDSN-432	NL-46	W-35222	CL-20	XNS-48 W-35226

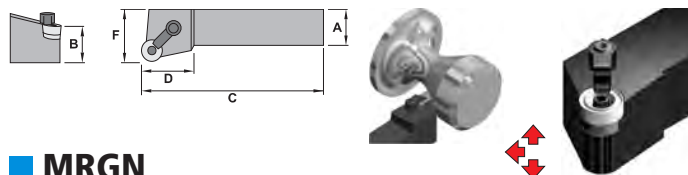
For Inserts please refer to page 11-13



MSDN 45°

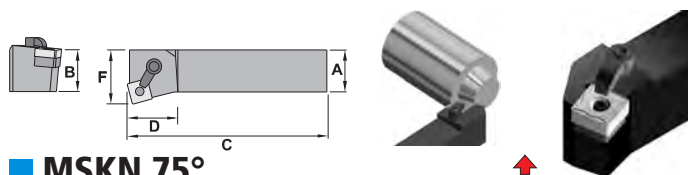
Designation	A	B	C	D	
Insert: SNM_-32_		Lead Angle: 45° Entering Angle: 45°			
MSDNN 8-3A	.500	.500	4.0	1.00	
MSDNN 10-3B	.625	.625	4.5	1.00	
Insert: SNM_-43_		Lead Angle: 45° Entering Angle: 45°			
MSDNN 12-4B	.750	.750	4.5	1.30	
MSDNN 16-4D	1.000	1.000	6.0	1.30	
MSDNN 85-4D	1.000	1.250	6.0	1.30	
Insert: SNM_-54_		Lead Angle: 45° Entering Angle: 45°			
MSDNN 16-5D	1.000	1.000	6.0	1.50	
MSDNN 20-5D	1.250	1.250	6.0	1.50	
MSDNN 85-5D	1.000	1.250	6.0	1.50	
Insert: SNM_-64_		Lead Angle: 45° Entering Angle: 45°			
MSDNN 16-6D	1.000	1.000	6.0	1.73	
MSDNN 20-6D	1.250	1.250	6.0	1.75	
MSDNN 24-6E	1.500	1.500	7.0	1.75	
MSDNN 85-6D	1.000	1.250	6.0	1.75	
Spare Parts					
Insert: SNM_-32_	ISSN-322	NL-34	W-35218	CL-6	XNS-36 W-35222
Insert: SNM_-43_	ISSN-432	NL-46	W-35222	CL-20	XNS-48 W-35226
Insert: SNM_-54_	ISSN-533	NL-58	W-35226	CL-12	XNS-510 W-35232
Insert: SNM_-64_	ISSN-633	NL-68	W-35228		

For Inserts please refer to page 13-14



MRGN

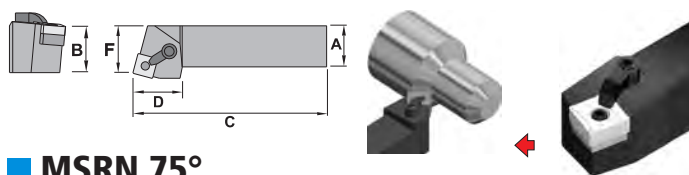
Designation	A	B	C	D	F
<i>Insert: RNMG-32 Lead Angle: 45° Entering Angle: 45°</i>					
MRGNR/L 12-3B	.750	.750	4.5	.81	1.000
<i>Insert: RNMG-43 Lead Angle: 45° Entering Angle: 45°</i>					
MRGNR/L 12-4B	.750	.750	4.5	1.06	1.000
MRGNR/L 16-4D	1.000	1.000	6.0	1.06	1.250
MRGNR/L 20-4D	1.250	1.250	6.0	1.06	1.500
MRGNR/L 85-4D	1.000	1.250	6.0	1.06	1.250
MRGNR/L 86-4D	1.000	1.500	6.0	1.06	1.250
<i>Insert: RNMG-54 Lead Angle: 45° Entering Angle: 45°</i>					
MRGNR/L 16-5D	1.000	1.000	6.0	1.25	1.250
MRGNR/L 20-5D	1.250	1.250	6.0	1.25	1.500
<i>Insert: RNMG-64 Lead Angle: 45° Entering Angle: 45°</i>					
MRGNR/L 16-6D	1.000	1.000	6.0	1.38	1.250
MRGNR/L 20-6D	1.250	1.250	6.0	1.38	1.500
MRGNR/L 24-6E	1.500	1.500	7.0	1.38	2.000
<i>Insert: RNMG-86 Lead Angle: 45° Entering Angle: 45°</i>					
MRGNR/L 24-8E	1.500	1.500	7.0	1.44	2.000
Spare Parts					
Insert: RNMG-32	--	NL-33	W-35218	CL-20	XNS-48 W-35226
Insert: RNMG-43	IRSN-43	NL-46	W-35222		
Insert: RNMG-54	IRSN-53	NL-58	W-35226	CL-12	XNS-510 W-35232
Insert: RNMG-64	IRSN-63	NL-68	W-35228		
Insert: RNMG-86	IRSN-84	NL-810	W-35232	CL-30	



MSKN 75°

Designation	A	B	C	D	F
<i>Insert: SNM_-43_ Lead Angle: 15° Entering Angle: 75°</i>					
MSKNR/L 12-4B	.750	.750	4.5	1.22	1.000
MSKNR/L 16-4D	1.000	1.000	6.0	1.22	1.250
<i>Insert: SNM_-54_ Lead Angle: 15° Entering Angle: 75°</i>					
MSKNR/L 16-5D	1.000	1.000	6.0	1.41	1.250
MSKNR/L 20-5D	1.250	1.250	6.0	1.41	1.500
MSKNR/L 85-5D	1.000	1.250	6.0	1.41	1.250
<i>Insert: SNM_-64_ Lead Angle: 15° Entering Angle: 75°</i>					
MSKNR/L 20-6D	1.250	1.250	6.0	1.50	1.500
MSKNR/L 24-6E	1.500	1.500	7.0	1.50	2.000
Spare Parts					
Insert: SNM_-43_	ISSN-432	NL-46	W-35222	CL-20	XNS-48 W-35226
Insert: SNM_-54_	ISSN-533	NL-58	W-35226	CL-12	XNS-510 W-35232
Insert: SNM_-64_	ISSN-633	NL-68	W-35228		

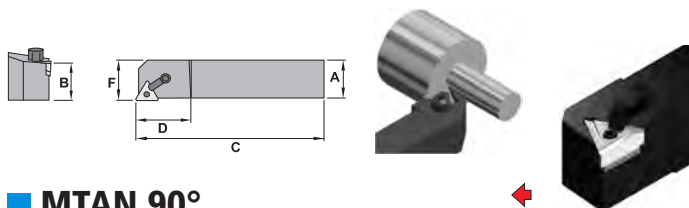
For Inserts please refer to page 13-14



MSRN 75°

Designation	A	B	C	D	F
Insert: SNM_-43_ Lead Angle: 15° Entering Angle: 75°					
MSRNR/L 12-4B	.750	.750	4.5	1.25	.880
MSRNR/L 16-4D	1.000	1.000	6.0	1.25	1.130
Insert: SNM_-54_ Lead Angle: 15° Entering Angle: 75°					
MSRNR/L 16-5D	1.000	1.000	6.0	1.50	1.103
MSRNR/L 20-5D	1.250	1.250	6.0	1.50	1.353
Insert: SNM_-64_ Lead Angle: 15° Entering Angle: 75°					
MSRNR/L 20-6D	1.250	1.250	6.0	1.59	1.321
MSRNR/L 24-6E	1.500	1.500	7.0	1.59	1.821
Spare Parts					
Insert: SNM_-43_	ISSN-432	NL-46	W-35222	CL-20	XNS-48 W-35226
Insert: SNM_-54_	ISSN-533	NL-58	W-35226	CL-12	XNS-510 W-35232
Insert: SNM_-64_	ISSN-633	NL-68	W-35228	CL-12	XNS-510 W-35232

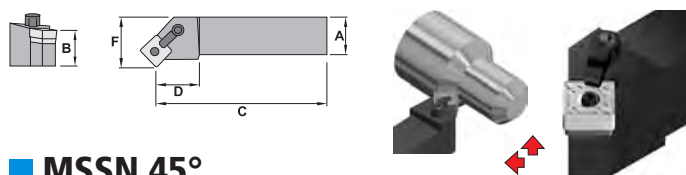
For Inserts please refer to page 13-14



MTAN 90°

Designation	A	B	C	D	F
Insert: TNM_-22_ Lead Angle: 0° Entering Angle: 90°					
MTANR/L 8-2A	.500	.500	4.0	.875	.500
Insert: TNM_-33_ Lead Angle: 0° Entering Angle: 90°					
MTANR/L 12-3B	.750	.750	4.5	1.06	.750
MTANR/L 16-3D	1.000	1.000	6.0	1.06	1.000
Insert: TNM_-43_ Lead Angle: 0° Entering Angle: 90°					
MTANR/L 16-4D	1.000	1.000	6.0	1.22	1.000
Insert: TNM_-54_ Lead Angle: 0° Entering Angle: 90°					
MTANR/L 20-5D	1.250	1.250	6.0	1.43	1.250
MTANR/L 24-5D	1.500	1.500	6.0	1.43	1.500
Spare Parts					
Insert: TNM_-22_	--	NL-23	W-35216	CL-7	XNS-34 W-35222
Insert: TNM_-33_	ITSN-322	NL-34L	W-35218	CL-20	XNS-48 W-35226
Insert: TNM_-43_	ITSN-433	NL-46	W-35222	CL-12	XNS-510 W-35232
Insert: TNM_-54_	ITSN-533	NL-58	W-35226	CL-12	XNS-510 W-35232

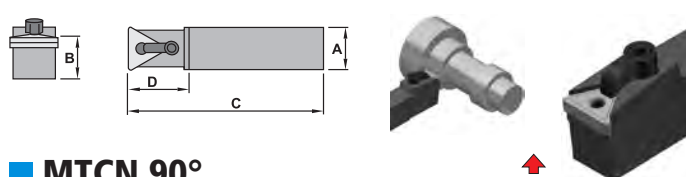
For Inserts please refer to page 15



MSSN 45°

Designation	A	B	C	D	F
Insert: SNM_-43_ Lead Angle: 45° Entering Angle: 45°					
MSSNR/L 12-4B	.750	.750	4.5	1.23	.675
MSSNR/L 16-4D	1.000	1.000	6.0	1.23	.925
Insert: SNM_-54_ Lead Angle: 45° Entering Angle: 45°					
MSSNR/L 16-5D	1.000	1.000	6.0	1.38	.847
MSSNR/L 20-5D	1.250	1.250	6.0	1.38	1.097
Insert: SNM_-64_ Lead Angle: 45° Entering Angle: 45°					
MSSNR/L 20-6D	1.250	1.250	6.0	1.47	1.011
MSSNR/L 24-6E	1.500	1.500	7.0	1.47	1.511
MSSNR/L 86-6E	1.000	1.500	7.0	1.47	.761
Spare Parts					
Insert: SNM_-43_	ISSN-432	NL-46	W-35222	CL-20	XNS-48 W-35226
Insert: SNM_-54_	ISSN-533	NL-58	W-35226	CL-12	XNS-510 W-35232
Insert: SNM_-64_	ISSN-633	NL-68	W-35228	CL-12	XNS-510 W-35232

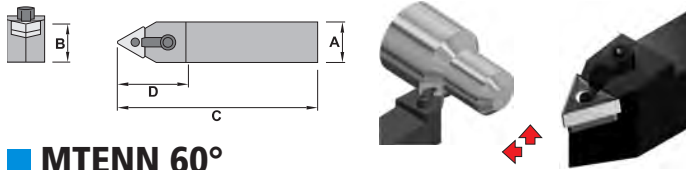
For Inserts please refer to page 13-14



MTCN 90°

Designation	A	B	C	D
Insert: TNM_-33_ Lead Angle: 0° Entering Angle: 90°				
MTCNN 44-3F	.500	1.000	8.0	1.000
Insert: TNM_-43_ Lead Angle: 0° Entering Angle: 90°				
MTCNN 12-4B	.750	.750	4.5	1.375
MTCNN 64-4F	.750	1.000	8.0	1.375
MTCNN 66-4F	.750	1.500	8.0	1.375
Spare Parts				
Insert: TNM_-33_	ITSN-322	NL-34L	W-35218	CL-20 XNS-48 W-35226
Insert: TNM_-43_	ITSN-433	NL-46	W-35222	CL-12 XNS-510 W-35232

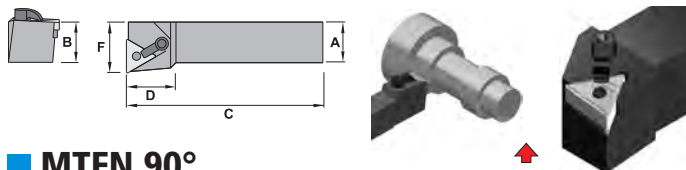
For Inserts please refer to page 15



MTENN 60°

Designation	A	B	C	D
<i>Insert: TNM_-22_ Lead Angle: 30° Entering Angle: 60°</i>				
MTENN 8-2A	.500	.500	4.0	1.000
<i>Insert: TNM_-33_ Lead Angle: 30° Entering Angle: 60°</i>				
MTENN 10-3B	.625	.625	4.5	1.125
MTENN 12-3B	.750	.750	4.5	1.300
MTENN 16-3D	1.000	1.000	6.0	1.300
<i>Insert: TNM_-43_ Lead Angle: 30° Entering Angle: 60°</i>				
MTENN 16-4D	1.000	1.000	6.0	1.500
<i>Insert: TNM_-54_ Lead Angle: 30° Entering Angle: 60°</i>				
MTENN 20-5D	1.250	1.250	6.0	1.732
<i>Insert: TNM_-66_ Lead Angle: 30° Entering Angle: 60°</i>				
MTENN 24-6E	1.500	1.500	7.0	2.086
Spare Parts				
Insert: TNM_-22_	--	NL-23L	W-35216	CL-7 XNS-34 W-35222
Insert: TNM_-10-3B	ITSN-322	NL-34L	W-35218	CL-6 XNS-36 W-35222
Insert: TNM_-12-3B/33_	ITSN-322	NL-34L	W-35218	CL-20 XNS-48 W-35226
Insert: TNM_-43_	ITSN-433	NL-46	W-35222	CL-20 XNS-48 W-35226
Insert: TNM_-54_	ITSN-533	NL-58	W-35226	CL-12 XNS-510 W-35232
Insert: TNM_-64_	ITSN-637	NL-68L	W-35228	

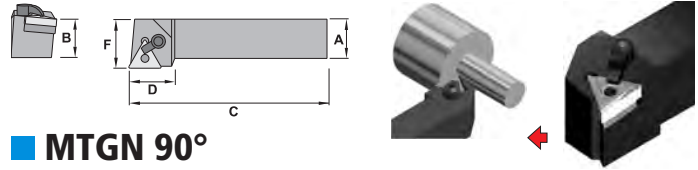
For Inserts please refer to page 15



MTFN 90°

Designation	A	B	C	D	F
<i>Insert: TNM_-33_ Lead Angle: 0° Entering Angle: 90°</i>					
MTFNR/L 12-3B	.750	.750	4.5	1.00	1.000
MTFNR/L 16-3D	1.000	1.000	6.0	1.00	1.250
<i>Insert: TNM_-43_ Lead Angle: 0° Entering Angle: 90°</i>					
MTFNR/L 16-4D	1.000	1.000	6.0	1.00	1.250
MTFNR/L 20-4D	1.250	1.250	6.0	1.00	1.500
MTFNR/L 85-4D	1.000	1.250	6.0	1.00	1.250
MTFNR/L 86-4D	1.000	1.500	6.0	1.00	1.250
<i>Insert: TNM_-54_ Lead Angle: 0° Entering Angle: 90°</i>					
MTFNR/L 16-5D	1.000	1.000	6.0	1.44	1.250
MTFNR/L 20-5D	1.250	1.250	6.0	1.44	1.500
MTFNR/L 24-5E	1.500	1.500	7.0	1.44	2.000
MTFNR/L 85-5D	1.000	1.250	6.0	1.44	1.250
MTFNR/L 86-5D	1.000	1.500	6.0	1.44	1.250
Spare Parts					
Insert: TNM_-33_	ITSN-322	NL-34L	W-35218	CL-20 XNS-48 W-35226	
Insert: TNM_-43_	ITSN-433	NL-46	W-35222		
Insert: TNM_-54_	ITSN-533	NL-58	W-35226	CL-12 XNS-510 W-35232	

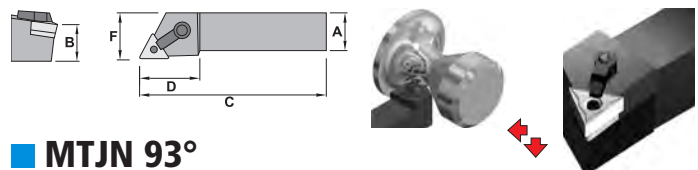
For Inserts please refer to page 15



MTGN 90°

Designation	A	B	C	D	F
<i>Insert: TNM_-22_ Lead Angle: 0° Entering Angle: 90°</i>					
MTGNNR/L 8-2A	.500	.500	4.0	.875	.625
<i>Insert: TNM_-33_ Lead Angle: 0° Entering Angle: 90°</i>					
MTGNNR/L 10-3B	.625	.625	4.5	1.000	.875
MTGNNR/L 12-3B	.750	.750	4.5	1.060	1.000
MTGNNR/L 16-3D	1.000	1.000	6.0	1.060	1.250
<i>Insert: TNM_-43_ Lead Angle: 0° Entering Angle: 90°</i>					
MTGNNR/L 16-4C	1.000	1.000	5.0	1.375	1.250
MTGNNR/L 16-4D	1.000	1.000	6.0	1.220	1.250
MTGNNR/L 20-4D	1.250	1.250	6.0	1.220	1.500
MTGNNR/L 85-4D	1.000	1.250	6.0	1.220	1.250
MTGNNR/L 86-4D	1.000	1.500	6.0	1.220	1.250
<i>Insert: TNM_-54_ Lead Angle: 0° Entering Angle: 90°</i>					
MTGNNR/L 16-5D	1.000	1.000	6.0	1.440	1.250
MTGNNR/L 20-5D	1.250	1.250	6.0	1.440	1.500
MTGNNR/L 24-5E	1.500	1.500	7.0	1.440	2.000
MTGNNR/L 85-5D	1.000	1.250	6.0	1.440	1.250
MTGNNR/L 86-5D	1.000	1.500	6.0	1.440	1.250
<i>Insert: TNM_-66_ Lead Angle: 0° Entering Angle: 90°</i>					
MTGNNR/L 24-6E	1.500	1.500	7.0	1.500	2.000
Spare Parts					
Insert: TNM_-22_	--	NL-23	W-35216	CL-7 XNS-34 W-35222	
Insert: TNM_-33_	ITSN-322	NL-34L	W-35218	CL-20 XNS-48 W-35226	
Insert: TNM_-43_	ITSN-433	NL-46	W-35222		
Insert: TNM_-54_	ITSN-533	NL-58	W-35226	CL-12 XNS-510 W-35232	
Insert: TNM_-66_	ITSN-637	NL-68L	W-35228		

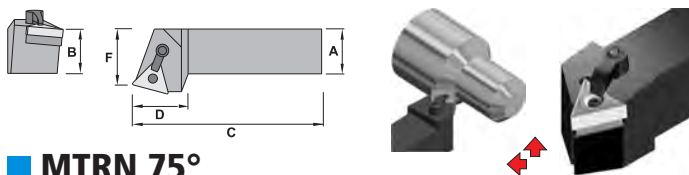
For Inserts please refer to page 15



MTJN 93°

Designation	A	B	C	D	F
<i>Insert: TNM_-33_ Lead Angle: -3° Entering Angle: 93°</i>					
MTJNLR/L 12-3B	.750	.750	4.5	1.030	1.000
MTJNLR/L 16-3D	1.000	1.000	6.0	1.030	1.250
<i>Insert: TNM_-43_ Lead Angle: -3° Entering Angle: 93°</i>					
MTJNLR/L 16-4D	1.000	1.000	6.0	1.250	1.250
MTJNLR/L 20-4D	1.250	1.250	6.0	1.250	1.500
<i>Insert: TNM_-54_ Lead Angle: -3° Entering Angle: 93°</i>					
MTJNLR/L 20-5D	1.250	1.250	6.0	1.440	1.500
<i>Insert: TNM_-66_ Lead Angle: -3° Entering Angle: 93°</i>					
MTJNLR/L 24-6E	1.500	1.500	7.0	1.625	2.000
Spare Parts					
Insert: TNM_-33_	ITSN-322	NL-34L	W-35218	CL-20 XNS-48 W-35226	
Insert: TNM_-43_	ITSN-433	NL-46	W-35222		
Insert: TNM_-54_	ITSN-533	NL-58	W-35226	CL-12 XNS-510 W-35232	
Insert: TNM_-66_	ITSN-637	NL-68L	W-35228		

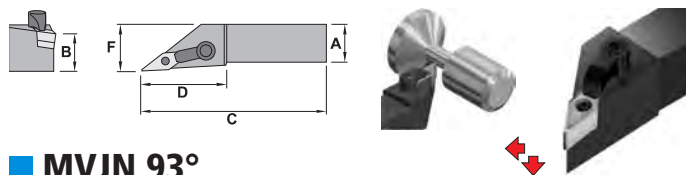
For Inserts please refer to page 15



MTRN 75°

Designation	A	B	C	D	F
Insert: TNM_-33_ Lead Angle: 15° Entering Angle: 75°					
MTRNR/L 12-3B	.750	.750	4.5	1.160	.855
MTRNR/L 16-3D	1.000	1.000	6.0	1.160	1.105
Insert: TNM_-43_ Lead Angle: 15° Entering Angle: 75°					
MTRNR/L 16-4D	1.000	1.000	6.0	1.380	1.048
MTRNR/L 20-4D	1.250	1.250	6.0	1.380	1.298
Insert: TNM_-54_ Lead Angle: 15° Entering Angle: 75°					
MTRNR/L 20-5D	1.250	1.250	6.0	1.560	1.252
MTRNR/L 24-5E	1.500	1.500	7.0	1.560	1.752
Spare Parts					
Insert: TNM_-33_	ITSN-322	NL-34L	W-35218	CL-20	XNS-48 W-35226
Insert: TNM_-43_	ITSN-433	NL-46	W-35222	CL-20	XNS-48 W-35226
Insert: TNM_-54_	ITSN-533	NL-58	W-35226	CL-12	XNS-510 W-35232

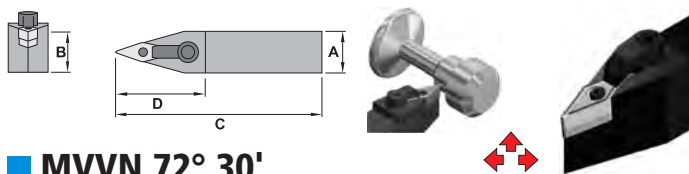
For Inserts please refer to page 15



MVJN 93°

Designation	A	B	C	D	F
Insert: VN_-33_ Lead Angle: -3° Entering Angle: 93°					
MVJNR/L 12-3B	.750	.750	4.5	1.620	1.000
MVJNR/L 16-3D	1.000	1.000	6.0	1.620	1.250
MVJNR/L 20-3D	1.250	1.250	6.0	1.620	1.500
Insert: VN_-43_ Lead Angle: -3° Entering Angle: 93°					
MVJNR/L 16-4D	1.000	1.000	6.0	1.880	1.250
MVJNR/L 20-4D	1.250	1.250	6.0	1.880	1.500
MVJNR/L 24-4E	1.500	1.500	7.0	1.880	2.000
MVJNR/L 85-4D	1.000	1.250	6.0	1.880	1.250
MVJNR/L 86-4D	1.000	1.500	6.0	1.880	1.250
Spare Parts					
Insert: VN_-33_	IVSN-322	NL-34L	W-35218	CL-22	XNS-48 W-35226
Insert: VN_-43_	IVSN-433	NL-46	W-35222	CL-30	XNS-510 W-35232

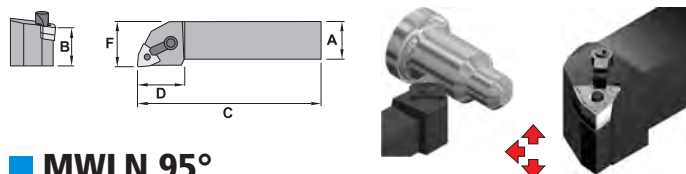
For Inserts please refer to page 16



MVVN 72° 30'

Designation	A	B	C	D
Insert: VN_-33_ Lead Angle: 17.5° Entering Angle: 72.5°				
MVVNN 12-3B	.750	.750	4.5	1.620
MVVNN 16-3D	1.000	1.000	6.0	1.620
MVVNN 20-3D	1.250	1.250	6.0	1.620
MVVNN 24-3E	1.500	1.500	7.0	1.620
Insert: VN_-43_ Lead Angle: 17.5° Entering Angle: 72.5°				
MVVNN 16-4D	1.000	1.000	6.0	2.060
MVVNN 20-4D	1.250	1.250	6.0	2.060
MVVNN 24-4E	1.500	1.500	7.0	2.060
Spare Parts				
Insert: VN_-33_	IVSN-322	NL-34L	W-35218	CL-22 XNS-48 W-35226
Insert: VN_-43_	IVSN-433	NL-46	W-35222	CL-30 XNS-510 W-35232

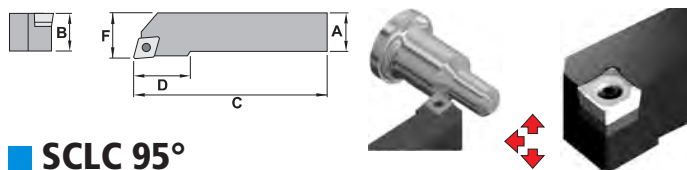
For Inserts please refer to page 16



MWLN 95°

Designation	A	B	C	D	F
Insert: WNM_-33_ Lead Angle: -5° Entering Angle: 95°					
MWLNRL 12-3B	.750	.750	4.5	1.000	1.000
MWLNRL 16-3D	1.000	1.000	6.0	1.000	1.250
Insert: WNM_-43_ Lead Angle: -5° Entering Angle: 95°					
MWLNRL 12-4B	.750	.750	4.5	1.070	1.000
MWLNRL 16-4D	1.000	1.000	6.0	1.070	1.250
MWLNRL 20-4D	1.250	1.250	6.0	1.070	1.500
MWLNRL 24-4E	1.500	1.500	7.0	1.070	2.000
Spare Parts					
Insert: WNMG-33_	IWSN-322	NL-34L	W-35218	CL-6	XNS-36 W-35222
Insert: WNMG-43_	IWSN-433	NL-46	W-35222	CL-20	XNS-48 W-35226

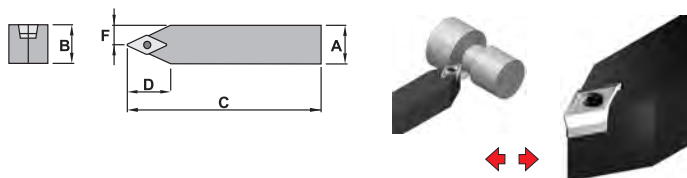
For Inserts please refer to page 16-17



SCLC 95°

Designation	A	B	C	D	F
<i>Insert: CC_-21.5 Lead Angle: -5° Entering Angle: 95°</i>					
SCLCR/L 6-2I	.375	.375	2.5	.390	.500
<i>Insert: CC_-32.5 Lead Angle: -5° Entering Angle: 95°</i>					
SCLCR/L 8-3J	.500	.500	3.5	.630	.625
SCLCR/L 10-3A	.625	.625	4.0	.630	.750
SCLCR/L 12-3B	.750	.750	4.5	.630	1.000
SCLCR/L 16-3D	1.000	1.000	6.0	.630	1.250
<i>Insert: CC_-43 Lead Angle: -5° Entering Angle: 95°</i>					
SCLCR/L 12-4B	.750	.750	4.5	1.000	1.000
SCLCR/L 16-4D	1.000	1.000	6.0	1.000	1.250
SCLCR/L 20-4D	1.250	1.250	6.0	1.000	1.500
Spare Parts					
Insert: CC_-21.5_	--	--	W-37016	C-1225	
Insert: .8-3J				C-1440	
Insert: CC_-10-3A	--	--	W-37032	C-1240	
32.5_					
Insert: CC_-16-3D					
Insert: CC_-43_	C-3614	C-1760	C-5517	C-1540	

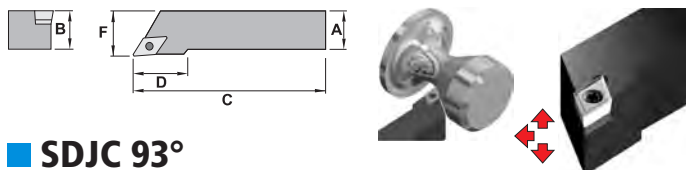
For Inserts please refer to page 9



SDPC 62° 30'

Designation	A	B	C	D	F
<i>Insert: DC_-21.5 Lead Angle: 27.5° Entering Angle: 62.5°</i>					
SDPCN 6-2I	.375	.375	2.5	.370	.197
SDPCN 8-2J	.500	.500	3.5	.492	.260
<i>Insert: DC_-32.5 Lead Angle: 27.5° Entering Angle: 62.5°</i>					
SDPCN 10-3A	.625	.625	4.0	.630	.323
SDPCN 12-3B	.750	.750	4.5	.744	.382
SDPCN 16-3D	1.000	1.000	6.0	.984	.520
Spare Parts					
Insert: DC_-21.5_	--	--	W-37016	C-1225	
Insert: DC_-32.5_	C-3714	C-1750	C-5516	C-1335	

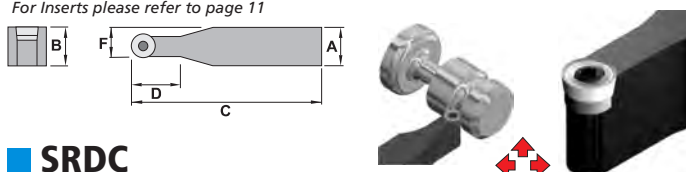
For Inserts please refer to page 11



SDJC 93°

Designation	A	B	C	D	F
<i>Insert: DC_-21.5 Lead Angle: -3° Entering Angle: 93°</i>					
SDJCR/L 6-2I	.375	.375	2.5	.590	.500
SDJCR/L 8-2J	.500	.500	3.5	.670	.625
SDJCR/L 10-2A	.625	.625	4.0	.670	.750
SDJCR/L 12-2B	.750	.750	4.5	.708	1.000
<i>Insert: DC_-32.5 Lead Angle: -3° Entering Angle: 93°</i>					
SDJCR/L 12-3B	.750	.750	4.5	1.000	1.000
SDJCR/L 16-3D	1.000	1.000	6.0	1.100	1.250
Spare Parts					
Insert: DC_-21.5_	--	--	W-37016	C-1225	
Insert: DC_-32.5_	C-3714	C-1750	C-5516	C-1335	

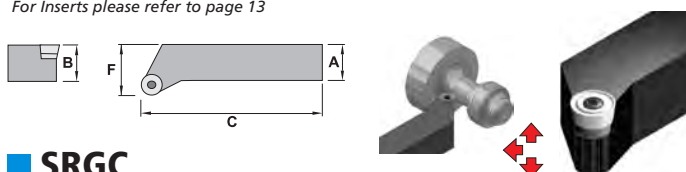
For Inserts please refer to page 11



SRDC

Designation	A	B	C	D	F
<i>Insert: RC_-0803MO Lead Angle: 45° Entering Angle: 45°</i>					
SRDCN 8-08J	.500	.500	3.5	.50	.407
<i>Insert: RC_-10T3MO Lead Angle: 45° Entering Angle: 45°</i>					
SRDCN 10-10A	.625	.625	4.0	.63	.510
SRDCN 12-10B	.750	.750	4.5	1.00	.570
<i>Insert: RC_-1204MO Lead Angle: 45° Entering Angle: 45°</i>					
SRDCN 16-12D	1.000	1.000	6.0	1.00	.756
SRDCN 20-12D	1.250	1.250	6.0	1.00	.861
Spare Parts					
Insert: RC_-0803	--	--	W-37022	C-1230	
Insert: RC_-10T3	C-3811				
Insert: RC_-1204	C-3814	C-1750	C-5516	C-1335	

For Inserts please refer to page 13

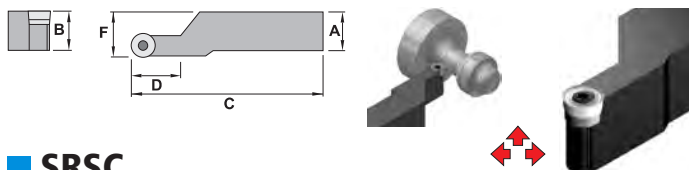


SRGC

Designation	A	B	C	F
<i>Insert: RC_-10T3MO Lead Angle: 45° Entering Angle: 45°</i>				
SRGCR/L 12-10B	.750	.750	4.5	1.000
SRGCR/L 16-10D	1.000	1.000	6.0	1.250
<i>Insert: RC_-1204MO Lead Angle: 45° Entering Angle: 45°</i>				
SRGCR/L 16-12D	1.000	1.000	6.0	1.250
SRGCR/L 85-12D	1.000	1.250	6.0	1.250
SRGCR/L 20-12D	1.250	1.250	6.0	1.500
Spare Parts				
Insert: RC_-10T3	C-3811			
Insert: RC_-1204	C-3814	C-1750	C-5516	C-1335

For Inserts please refer to page 13

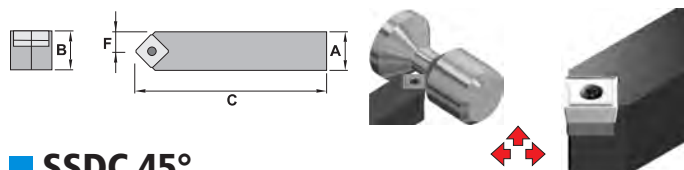
Spare Parts:	Shim	Shim Screw Bushing	Key	Insert Screw
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SRSC

Designation	A	B	C	D	F
Insert: RC_-10T3MO Lead Angle: 45° Entering Angle: 45°					
SRSCR/L 16-10D	1.000	1.000	6.0	.750	1.250
SRSCR/L 20-10D	1.250	1.250	6.0	.750	1.500
Insert: RC_-1204MO Lead Angle: 45° Entering Angle: 45°					
SRSCR/L 12-12B	.750	.750	4.5	.750	1.000
SRSCR/L 16-12D	1.000	1.000	6.0	1.000	1.250
SRSCR/L 20-12D	1.250	1.250	6.0	1.000	1.500
Spare Parts					
Insert: RC_-10T3	C-3811				
Insert: RC_-1204	C-3814	C-1750	C-5516	C-1335	

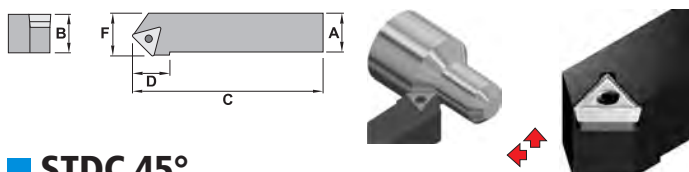
For Inserts please refer to page 13



SSDC 45°

Designation	A	B	C	F
Insert: SC_-32.5 Lead Angle: 45° Entering Angle: 45°				
SSDCN 8-3J	.500	.500	3.5	.263
SSDCN 10-3A	.625	.625	4.0	.325
Insert: SC_-43 Lead Angle: 45° Entering Angle: 45°				
SSDCN 12-4B	.750	.750	4.5	.388
Spare Parts				
Insert: SC_-32.5	--	--	W-37032	C-1240
Insert: SC_-43	C-3514	C-1760	C-5517	C-1540

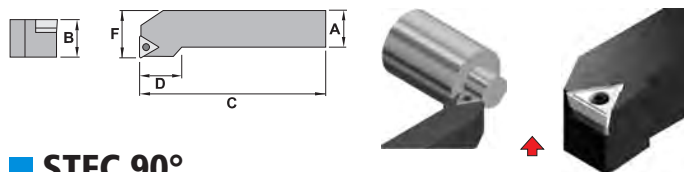
For Inserts please refer to page 13



STDC 45°

Designation	A	B	C	D	F
Insert: TC_-21.5 Lead Angle: 45° Entering Angle: 45°					
STDCR/L 6-2I	.375	.375	2.5	.410	.433
STDCR/L 8-2J	.500	.500	3.5	.570	.512
Insert: TC_-32.5 Lead Angle: 45° Entering Angle: 45°					
STDCR/L 10-3A	.625	.625	4.0	1.000	.669
STDCR/L 12-3B	.750	.750	4.5	1.000	.866
STDCR/L 16-3D	1.000	1.000	6.0	1.000	1.063
Spare Parts					
Insert: TC_-21.5_	--	--	W-37016	C-1225	
Insert: TC_-32.5_	C-3414	C-1750	C-5516	C-1335	

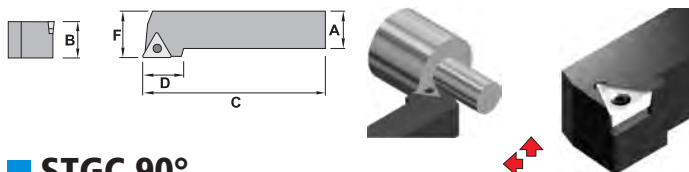
For Inserts please refer to page 14-15



STFC 90°

Designation	A	B	C	D	F
Insert: TC_-21.5 Lead Angle: 0° Entering Angle: 90°					
STFCR/L 6-2I	.375	.375	2.5	.400	.500
STFCR/L 8-2J	.500	.500	3.5	.689	.625
Insert: TC_-32.5 Lead Angle: 0° Entering Angle: 90°					
STFCR/L 10-3A	.625	.625	4.0	1.000	.750
STFCR/L 12-3B	.750	.750	4.5	1.000	1.000
STFCR/L 16-3D	1.000	1.000	6.0	1.000	1.250
Spare Parts					
Insert: TC_-21.5_	--	--	W-37016	C-1225	
Insert: TC_-32.5_	C-3414	C-1750	C-5516	C-1335	

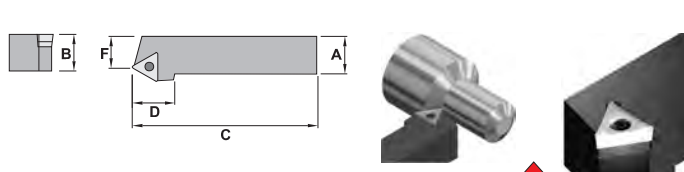
For Inserts please refer to page 14-15



STGC 90°

Designation	A	B	C	D	F
Insert: TC_-21.5 Lead Angle: 0° Entering Angle: 90°					
STGCR/L 6-2I	.375	.375	2.5	.500	.500
STGCR/L 8-2J	.500	.500	3.5	.560	.625
Insert: TC_-32.5 Lead Angle: 0° Entering Angle: 90°					
STGCR/L 10-3A	.625	.625	4.0	1.000	.750
STGCR/L 12-3B	.750	.750	4.5	1.000	1.000
STGCR/L 16-3D	1.000	1.000	6.0	1.000	1.250
Spare Parts					
Insert: TC_-21.5_	--	--	W-37016	C-1225	
Insert: TC_-32.5_	C-3414	C-1750	C-5516	C-1335	

For Inserts please refer to page 14-15

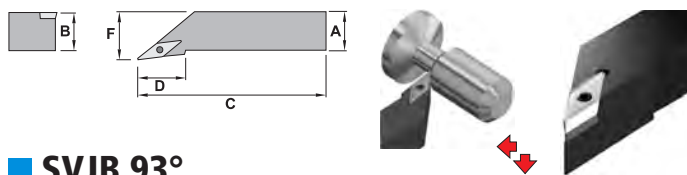


STTC 60°

Designation	A	B	C	D	F
Insert: TC_-32.5 Lead Angle: 30° Entering Angle: 60°					
STTCR/L 12-3B	.750	.750	4.5	1.000	.718
STTCR/L 16-3D	1.000	1.000	6.0	1.000	.860
Spare Parts					
Insert: TC_-32.5_	C-3414	C-1750	C-5516	C-1335	

For Inserts please refer to page 14-15

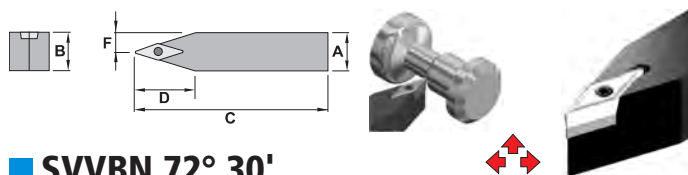
Spare Parts: Shim Shim Screw Bushing Key Insert Screw



SVJB 93°

Designation	A	B	C	D	F
Insert: VBMT-33_ Lead Angle: -3° Entering Angle: 93°					
SVJBR/L 12-3B	.750	.750	4.5	1.614	1.000
SVJBR/L 16-3D	1.000	1.000	6.0	1.614	1.250
Spare Parts					
Insert: VBMT-33_	C-3718	C-1750	C-5516	C-1335	

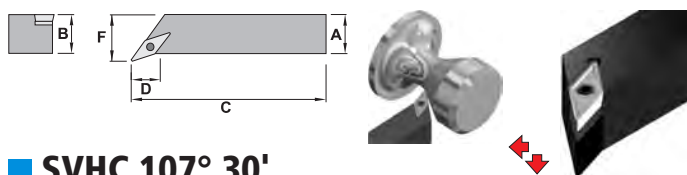
For Inserts please refer to page 15-16



SVVBN 72° 30'

Designation	A	B	C	D	F
Insert: VBMT-33_ Lead Angle: 17.5° Entering Angle: 72.5°					
SVVBN 12-3B	.750	.750	4.5	1.212	.398
SVVBN 16-3D	1.000	1.000	6.0	1.610	.523
Spare Parts					
Insert: VBMT-33_	C-3718	C-1750	C-5516	C-1335	

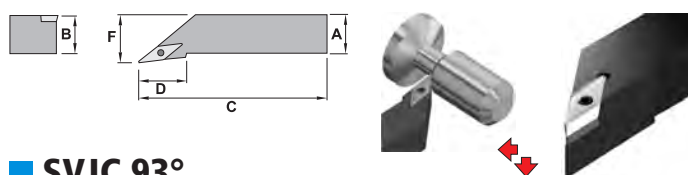
For Inserts please refer to page 15-16



SVHC 107° 30'

Designation	A	B	C	D	F
Insert: VC_-33_ Lead Angle: -17.5° Entering Angle: 107.5°					
SVHCR/L 12-3B	.750	.750	4.5	.740	1.000
SVHCR/L 16-3D	1.000	1.000	6.0	.756	1.250
Spare Parts					
Insert: VC_-33_	C-3718	C-1750	C-5516	C-1335	

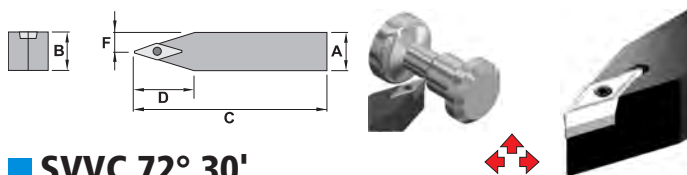
For Inserts please refer to page 15-16



SVJC 93°

Designation	A	B	C	D	F
Insert: VC_-33_ Lead Angle: -3° Entering Angle: 93°					
SVJCR/L 12-3B	.750	.750	4.5	1.614	1.000
SVJCR/L 16-3D	1.000	1.000	6.0	1.614	1.250
SVJCR/L 20-3D	1.250	1.250	6.0	1.614	1.500
Spare Parts					
Insert: VC_-33_	C-3718	C-1750	C-5516	C-1335	

For Inserts please refer to page 15-16

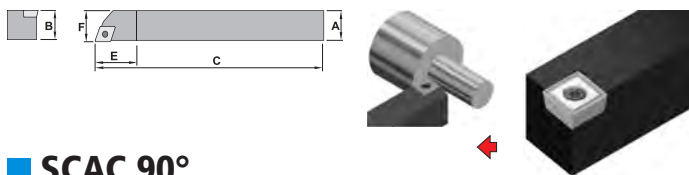


SVVC 72° 30'

Designation	A	B	C	D	F
Insert: VC_-33_ Lead Angle: 17.5° Entering Angle: 72.5°					
SVVCN 12-3B	.750	.750	4.5	1.212	.398
SVVCN 16-3D	1.000	1.000	6.0	1.610	.523
SVVCN 20-3D	1.250	1.250	6.0	2.008	.648
Spare Parts					
Insert: VC_-33_	C-3718	C-1750	C-5516	C-1335	

For Inserts please refer to page 15-16

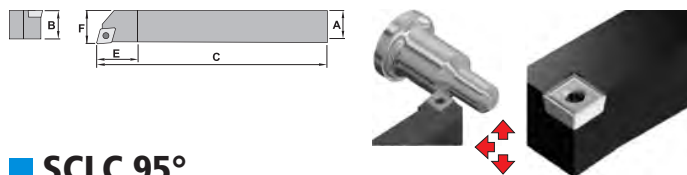
Spare Parts:				
	Shim	Shim Screw Bushing	Key	Insert Screw



SCAC 90°

Designation	A	B	C	E	F
Insert: CC_-21.5_ Lead Angle: 0° Entering Angle: 90°					
SCACR/L 04.5-2D	.281	.281	6.0	.440	.281
SCACR/L 05-2D	.312	.312	6.0	.440	.312
SCACR/L 06-2D	.375	.375	6.0	.440	.375
Insert: CC_-32.5_ Lead Angle: 0° Entering Angle: 90°					
SCACR/L 08-3D	.500	.500	6.0	.620	.500
SCACR/L 10-3D	.625	.625	6.0	.500	.625
Spare Parts					
Insert: CC_-21.5_	W-37019		C-1225		
Insert: CC_-32.5_	W-37032		C-1240		

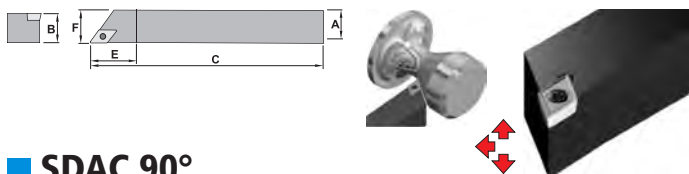
For Inserts please refer to page 9



SCLC 95°

Designation	A	B	C	E	F
Insert: CC_-21.5_ Lead Angle: -5° Entering Angle: 95°					
SCLCR/L 04.5-2D	.281	.281	6.0	.500	.281
SCLCR/L 05-2D	.312	.312	6.0	.500	.312
SCLCR/L 06-2D	.375	.375	6.0	.500	.375
Insert: CC_-32.5_ Lead Angle: -5° Entering Angle: 95°					
SCLCR/L 08-3D	.500	.500	6.0	.620	.500
SCLCR/L 10-3D	.625	.625	6.0	.787	.625
Spare Parts					
Insert: CC_-21.5_	W-37019		C-1225		
Insert: CC_-32.5_	W-37032		C-1240		

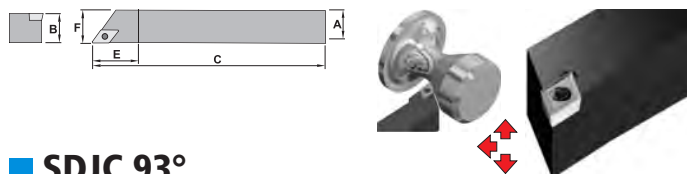
For Inserts please refer to page 9



SDAC 90°

Designation	A	B	C	E	F
Insert: DC_-21.5_ Lead Angle: 0° Entering Angle: 90°					
SDACR/L 06-2D	.375	.375	6.0	.625	.375
SDACR/L 08-2D	.500	.500	6.0	.625	.500
Insert: DC_-32.5_ Lead Angle: 0° Entering Angle: 90°					
SDACR/L 08-3D	.500	.500	6.0	.875	.500
SDACR/L 10-3D	.625	.625	6.0	.875	.625
Spare Parts					
Insert: DC_-21.5_	W-37019		C-1225		
Insert: DC_-32.5_	W-37032		C-1240		

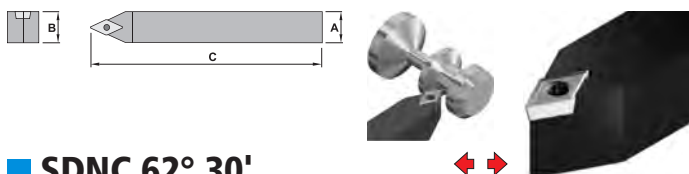
For Inserts please refer to page 11



SDJC 93°

Designation	A	B	C	E	F
Insert: DC_-21.5_ Lead Angle: -3° Entering Angle: 93°					
SDJCR/L 06-2D	.375	.375	6.0	.625	.375
SDJCR/L 08-2D	.500	.500	6.0	.625	.500
Insert: DC_-32.5_ Lead Angle: -3° Entering Angle: 93°					
SDJCR/L 08-3D	.500	.500	6.0	.750	.500
SDJCR/L 10-3D	.625	.625	6.0	.750	.625
Spare Parts					
Insert: DC_-21.5_	W-37019		C-1225		
Insert: DC_-32.5_	W-37032		C-1240		

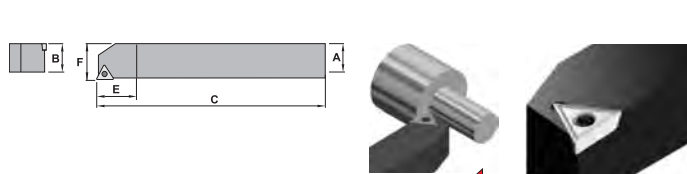
For Inserts please refer to page 11



SDNC 62° 30'

Designation	A	B	C
Insert: DC_-21.5_ Lead Angle: 27.5° Entering Angle: 62.5°			
SDNCN 06-2D	.375	.375	6.0
SDNCN 08-2D	.500	.500	6.0
Insert: DC_-32.5_ Lead Angle: 27.5° Entering Angle: 62.5°			
SDNCN 08-3D	.500	.500	6.0
SDNCN 10-3D	.625	.625	6.0
Spare Parts			
Insert: DC_-21.5_	W-37019		C-1225
Insert: DC_-32.5_	W-37032		C-1240

For Inserts please refer to page 11

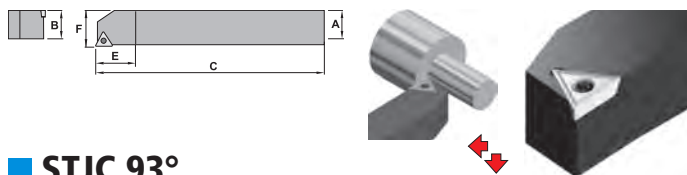


STAC 90°

Designation	A	B	C	E	F
Insert: TC_-21.5_ Lead Angle: 0° Entering Angle: 90°					
STACR/L 06-2D	.375	.375	6.0	.625	.375
STACR/L 08-2D	.500	.500	6.0	.625	.500
STACR/L 10-2D	.625	.625	6.0	.625	.625
Insert: TC_-32.5_ Lead Angle: 0° Entering Angle: 90°					
STACR/L 10-3D	.625	.625	6.0	.750	.625
Spare Parts					
Insert: TC_-21.5_	W-37019		C-1225		
Insert: TC_-32.5_	W-37032		C-1240		

For Inserts please refer to page 14-15

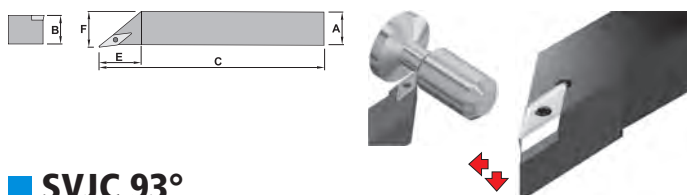
Spare Parts: Key Insert Screw



STJC 93°

Designation	A	B	C	E	F
Insert: TC_-21.5_		Lead Angle: -3°		Entering Angle: 93°	
STJCR/L 06-2D	.375	.375	6.0	.625	.375
STJCR/L 08-2D	.500	.500	6.0	.625	.500
STJCR/L 10-2D	.625	.625	6.0	.625	.625
Spare Parts					
Insert: TC_-21.5_	W-37019		C-1225		

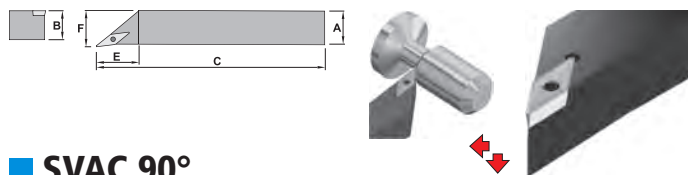
For Inserts please refer to page 14-15



SVJC 93°

Designation	A	B	C	E	F
Insert: VC_-22_		Lead Angle: -3°		Entering Angle: 93°	
SVJCR/L 06-2D	.375	.375	6.0	.940	.375
SVJCR/L 08-2D	.500	.500	6.0	.940	.500
Insert: VC_-33_		Lead Angle: -3°		Entering Angle: 93°	
SVJCR/L 10-3D	.625	.625	6.0	1.181	.625
Spare Parts					
Insert: VC_-22_	W-37019		C-1225		
Insert: VC_-33_	W-37032		C-1240		

For Inserts please refer to page 15-16



SVAC 90°

Designation	A	B	C	E	F
Insert: VC_-22_		Lead Angle: 0°		Entering Angle: 90°	
SVACR/L 06-2D	.375	.375	6.0	.875	.375
SVACR/L 08-2D	.500	.500	6.0	.875	.500
Insert: VC_-33_		Lead Angle: 0°		Entering Angle: 90°	
SVACR/L 10-3D	.625	.625	6.0	1.375	.625
Spare Parts					
Insert: VC_-22_	W-37019		C-1225		
Insert: VC_-33_	W-37032		C-1240		

For Inserts please refer to page 15-16

Precision Ground Small Radius Inserts for Swiss Machine Applications

Ground 35 & 55 degree inserts with radii starting at .003"

1/4 and 3/8 IC inserts in two chipbreaker configurations for high performance close tolerance work.

AS15F grade for long tool life in all steel and stainless steel materials as well as hi-temp alloys and titanium.

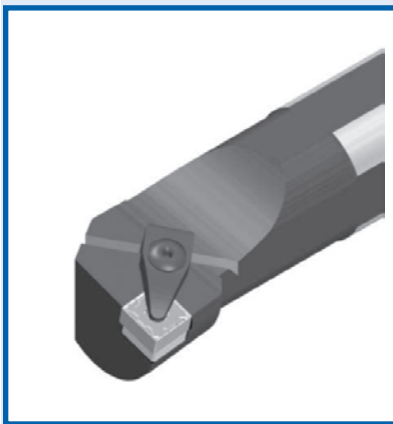




(C) Clamp Lock

The classic positive insert clamping system is designed to hold flat positive inserts, both with additional or sintered chipbreaker.

PG... 45



(D) Dimple Lock

The "D" clamping system avoids insert movement during high feed or heavily interrupted machining, due to its accurate indexing that holds the insert securely clamped.

PG... 45



(M) Double Lock

The double lock system offers good rigidity in negative insert clamping, it is the first choice for center hole negative carbide and ceramic inserts.

PG... 46



(S) Center Screw

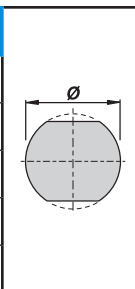
Since the advent of the TORX screw it has been possible to hold with complete safety positive inserts with center hole. Our range covers all the screw fixing permutations.

PG... 49

S	16	T	-	M	T	U	N	R	-	3
1	2	3		4	5	6	7	8		9

1) Bar Type	
A	Steel Shank with Internal Coolant
H	Anti-Vibration Shank (Heavy Metal)
J	Anti-Vibration Shank (Heavy Metal with Internal Coolant)
S	Steel Shank

2) Bar Diameter, Inch				
06	0.375	20	1.250	
08	0.500	24	1.500	
10	0.625	28	1.750	
12	0.750	32	2.000	
16	1.000	40	2.500	



3) Bar Length, Inch				
H	4.0	M	6.0	T 12.0
J	4.5	R	8.0	U 14.0
K	5.0	S	10.0	V 16.0

4) Holding Method			
C	D	M	S
Top Clamp	Dimple Lock	Double Lock	Center Screw

5) Insert Shape			
C	D	E	K
S	T	V	W

6) Bar Style		
F	K	L
Q	U	U-EX

8) Hand of Tool		
Left	Right	Neutral

7) Insert Clearance Angle			
B	C	N	P
5° Positive	7° Positive	0° Negative	11° Positive

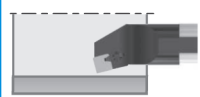
9) Insert I.C. Size
Insert I.C. (I.C.) shown in 1/8" increments

Please Note: Cutter Designation

R/L - Please choose right or left hand designation.
Example ordering code: S16T-DCLNR-4

Clamp Lock Boring Bars

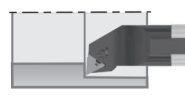
CSKP 75°



page 45

SP.. 43..
SP.. 63..

CTFP 90°

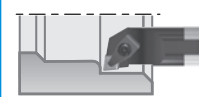


page 45

TP.. 32..
TP.. 43..

Dimple Lock Boring Bars

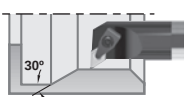
DCLN 95°



page 45

CN.. 43..

DDUN 93°



page 45

DN.. 43..

Double Lock Boring Bars

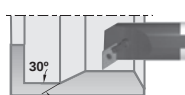
MCLN 95°



page 46

CN.. 43..
CN.. 54..
CN.. 64..

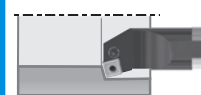
MDUN 93°



page 46

DN.. 43..
DN.. 54..

MSKN 75°



page 47

SNM.. 43..
SNM.. 54..
SNM.. 64..

MTUN 93°



page 47

TNM.. 33..
TNM.. 43..
TNM.. 54..

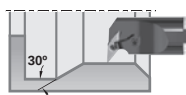
MTFN 90°



page 47

TNM.. 33..
TNM.. 43..

MVUN 93°



page 48

VN.. 33..
VN.. 43..

MWLN 95°

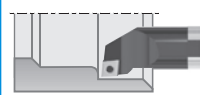


page 48

WNMG
43..

Center Screw Boring Bars

SCLC 95°



page 49

CC.. 21.5..
CC.. 32.5..
CC.. 43..

SDUC 93°



page 49

DC.. 21.5..
DC.. 32.5..

SDUC 93° -EX



page 49

DC.. 21.5..
DC.. 32.5..

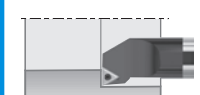
SSKC 75°



page 50

SC.. 32.5..

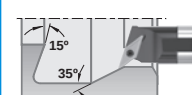
STFC 90°



page 50

TC.. 21.5..
TC.. 32.5..

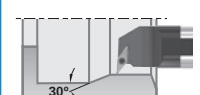
SVQC 107° 30'



page 50

VC.. 33..

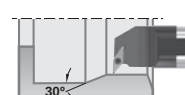
SVUC 93°



page 50

VC.. 22..
VC.. 33..

SVUB 93°



page 50

VB.. 33..

Sets

SET-SCLC-I 95°



page 51

CC.. 21.5..

SET-SDUC-I 93°



page 51

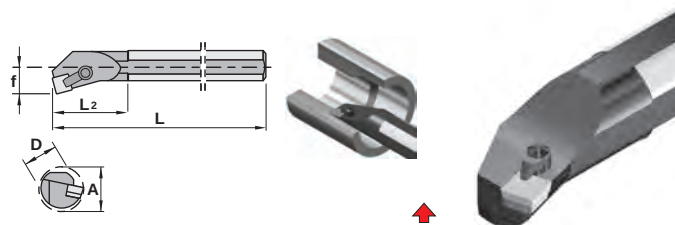
DC.. 21.5..

SET-SDQC-I 107° 30'



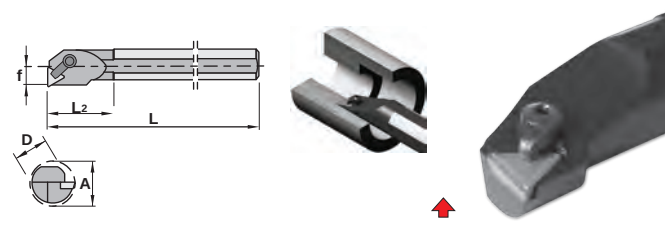
page 51

DC.. 21.5..



CSKP 75°

Designation	Min. Bore A	D	L	L ²	f
Insert: SP_-42_ Lead Angle: 15° Entering Angle: 75°					
S16T-CSKPR/L-4	1.180	1.000	12.0	2.50	0.640
S20U-CSKPR/L-4	1.154	1.250	14.0	3.00	0.765
S24U-CSKPR/L-4	1.800	1.500	14.0	3.00	0.890
S28U-CSKPR/L-4	2.040	1.750	14.0	4.00	1.015
Insert: SP_-63_ Lead Angle: 15° Entering Angle: 75°					
S24U-CSKPR/L-6	2.060	1.500	14.0	3.00	0.890
S28U-CSKPR/L-6	2.340	1.750	14.0	3.00	1.015
S32V-CSKPR/L-6	2.580	2.000	16.0	4.00	1.281
S40V-CSKPR/L-6	3.080	2.500	16.0	4.00	1.531
Spare Parts					
S16T	-	-		XNS-47	
SP_-42_					
S20U	C-3112	C-4002	CL-20	XNS-48	W-35226
S24U					
S28U					
SP_-63_					
S24U	C-3119	C-4012	CL-22	XNS-48	W-35232
S28U					
S32V					
S40V					

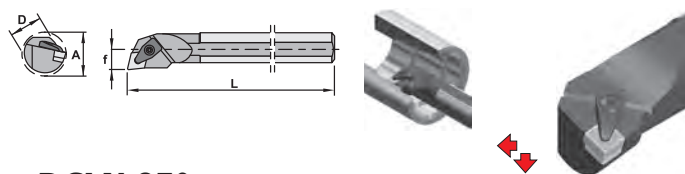


CTFP 90°

Designation	Min. Bore A	D	L	L ²	f
Insert: TP_-32_ Lead Angle: 0° Entering Angle: 90°					
S16T-CTFPR/L-3	1.220	1.000	12.0	2.50	.640
S20U-CTFPR/L-3	1.600	1.250	14.0	3.00	.765
S24U-CTFPR/L-3	1.840	1.500	14.0	3.00	.890
S28U-CTFPR/L-3	2.100	1.750	14.0	4.00	1.015
Insert: TP_-43_ Lead Angle: 0° Entering Angle: 90°					
S24U-CTFPR/L-4	2.120	1.500	14.0	3.00	.890
S28U-CTFPR/L-4	2.380	1.750	14.0	3.00	1.015
S32V-CTFPR/L-4	2.620	2.000	16.0	4.00	1.281
S40V-CTFPR/L-4	3.120	2.500	16.0	4.00	1.531
Spare Parts					
S16T	-	-		CL-7	XNS-34
TP_-32_					
S20U	C-3116	C-4002	CL-6	XNS-36	W-35222
S24U					
S28U					
TP_-43_					
S24U	C-3122	C-4012	CL-20	XNS-48	W-35226
S28U					
S32V					
S40V					

For Inserts please refer to page 15

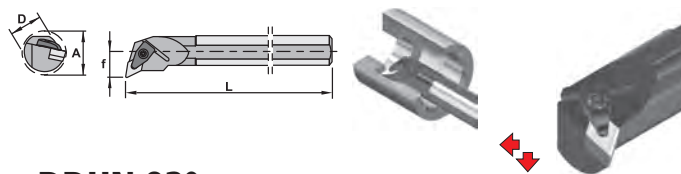
Dimple Lock Boring Bars



DCLN 95°

Designation	Min. Bore A	D	L	L ²	f
Insert: CNM_-43_ Lead Angle: -5° Entering Angle: 95°					
S16T-DCLNR/L-4	1.280	1.000	12.0	2.50	.640
S20U-DCLNR/L-4	1.530	1.250	14.0	3.00	.765
S24U-DCLNR/L-4	1.780	1.500	14.0	3.00	.890
Spare Parts					
Insert: CNM_-43_					
S16T...	C-3612	C-1765	C-2312	C-1907	C-4295
S20U... & S24U...	ICSN-432	C-1160			W-35232

For Inserts please refer to page 9-11

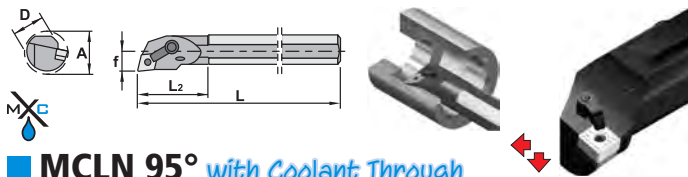


DDUN 93°

Designation	Min. Bore A	D	L	L ²	f
Insert: DNM_-43_ Lead Angle: -3° Entering Angle: 93°					
S20U-DDUNR/L-4	1.530	1.250	14.0	2.50	.765
S24U-DDUNR/L-4	1.780	1.500	14.0	3.00	.890
Spare Parts					
Insert: DNM_-43_					
S20U...	IDSN-432	C-1161	C-2312	C-1907	C-4295
S24U...	IDSN-432	C-1160			W-35232

For Inserts please refer to page 11-13

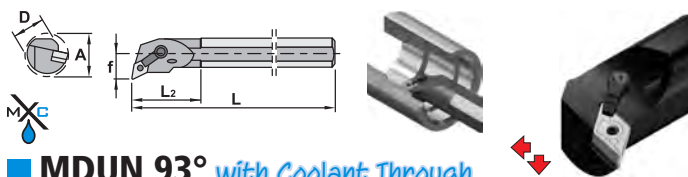
Spare Parts: Shim Shim Screw Clamp Clamp Screw Spring Key



MCLN 95° with Coolant Through

Designation	Min. Bore A	D	L	L ²	f
Insert: CNM_-43_ Lead Angle: -5° Entering Angle: 95°					
A16T-MCLNR/L-4	1.280	1.000	12.0	2.50	.640
A20U-MCLNR/L-4	1.530	1.250	14.0	3.00	.765
A24U-MCLNR/L-4	1.780	1.500	14.0	3.00	.890
A28U-MCLNR/L-4	2.030	1.750	14.0	4.00	1.015
Insert: CNM_-54_ Lead Angle: -5° Entering Angle: 95°					
A32V-MCLNR/L-5	2.562	2.000	16.0	4.00	1.281
Insert: CNM_-64_ Lead Angle: -5° Entering Angle: 95°					
A32V-MCLNR/L-6	2.562	2.000	16.0	4.00	1.281
Spare Parts					
Insert: A16T..	--	NL-44	W-35222	CL-20	XNS-47 W-35226
CNM_-43_- A20/24/28 U	ICSN-432	NL-46	W-35222	CL-20	XNS-48 W-35226
Insert: CNM_-54_	ICSN-533	NL-58	W-35226	CL-12	XNS-510 W-35232
Insert: CNM_-64_	ICSN-633	NL-68	W-35228		

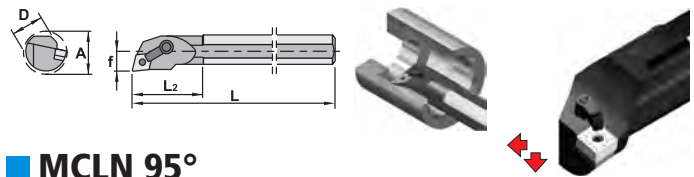
For Inserts please refer to page 9-11



MDUN 93° with Coolant Through

Designation	Min. Bore A	D	L	L ²	f
Insert: DN_-43_ Lead Angle: -3° Entering Angle: 93°					
A16T-MDUNR/L-4	1.750	1.000	12.0	2.50	.875
A20U-MDUNR/L-4	2.000	1.250	14.0	3.00	1.000
A24U-MDUNR/L-4	2.250	1.500	14.0	3.00	1.125
A32V-MDUNR/L-4	3.000	2.000	16.0	4.00	1.500
Spare Parts					
Insert: DN_-43_	--	NL-44	W-35222	CL-20	XNS-47 W-35226
A16T...	--	NL-44	W-35222	CL-20	XNS-47 W-35226
A20/24 U / 32 V	IDSN-432	NL-46	W-35222	CL-20	XNS-48 W-35226

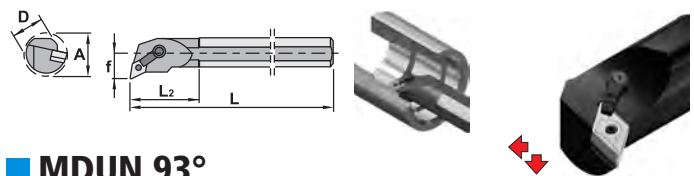
For Inserts please refer to page 11-13



MCLN 95°

Designation	Min. Bore A	D	L	L ²	f
Insert: CNM_-43_ Lead Angle: -5° Entering Angle: 95°					
S16T-MCLNR/L-4	1.280	1.000	12.0	2.50	.640
S20U-MCLNR/L-4	1.530	1.250	14.0	3.00	.765
S24U-MCLNR/L-4	1.780	1.500	14.0	3.00	.890
S28U-MCLNR/L-4	2.030	1.750	14.0	4.00	1.015
Insert: CNM_-54_ Lead Angle: -5° Entering Angle: 95°					
S32V-MCLNR/L-4	2.562	2.000	16.0	4.00	1.281
S40V-MCLNR/L-4	3.062	2.500	16.0	4.00	1.531
Insert: CNM_-64_ Lead Angle: -5° Entering Angle: 95°					
S32V-MCLNR/L-5	2.562	2.000	16.0	4.00	1.281
S40V-MCLNR/L-5	3.062	2.500	16.0	4.00	1.531
Spare Parts					
Insert: S16T..	--	NL-44	W-35222	CL-20	XNS-47 W-35226
CNM_-S20/24/28 U 43_ S32/40 V	ICSN-432	NL-46	W-35222	CL-20	XNS-48 W-35226
Insert: CNM_-54_	ICSN-533	NL-58	W-35226	CL-12	XNS-510 W-35232
Insert: CNM_-64_	ICSN-633	NL-68	W-35228		

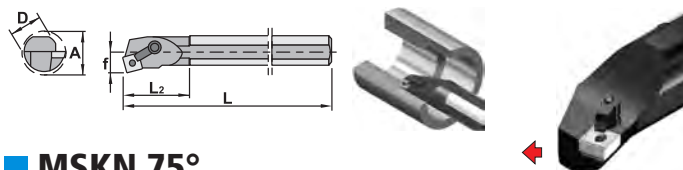
For Inserts please refer to page 9-11



MDUN 93°

Designation	Min. Bore A	D	L	L ²	f
Insert: DN_-43_ Lead Angle: -3° Entering Angle: 93°					
S16T-MDUNR/L-4	1.750	1.000	12.0	2.50	.875
S20U-MDUNR/L-4	2.000	1.250	14.0	3.00	1.000
S24U-MDUNR/L-4	2.250	1.500	14.0	3.00	1.125
S32V-MDUNR/L-4	3.000	2.000	16.0	4.00	1.500
Insert: DN_-54_ Lead Angle: -3° Entering Angle: 93°					
S32V-MDUNR/L-5	3.000	2.000	16.0	4.00	1.500
S40V-MDUNR/L-5	3.500	2.500	16.0	4.00	1.750
Spare Parts					
Insert: S16T...	--	NL-44	W-35222	CL-20	XNS-47 W-35226
DNM_-S20/24 U / 43_ 32 V	IDSN-432	NL-46	W-35222	CL-20	XNS-48 W-35226
Insert: DNM_-54_	IDSN-533	NL-58	W-35226	CL-12	XNS-510 W-35232

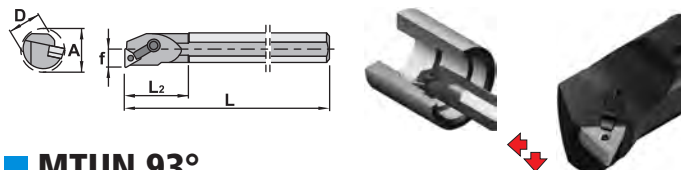
For Inserts please refer to page 11-13



MSKN 75°

Designation	Min. Bore A	D	L	L ²	f
Insert: SNM_-43_ Lead Angle: 15° Entering Angle: 75°					
S20U-MSKNR/L-4	1.530	1.250	14.0	3.00	.765
S24U-MSKNR/L-4	1.780	1.500	14.0	3.00	.890
Insert: SNM_-54_ Lead Angle: 15° Entering Angle: 75°					
S32V-MSKNR/L-5	2.562	2.000	16.0	4.00	1.281
Insert: SNM_-64_ Lead Angle: 15° Entering Angle: 75°					
S32V-MSKNR/L-6	2.562	2.000	16.0	4.00	1.281
S40V-MSKNR/L-6	3.062	2.500	16.0	4.00	1.531
Spare Parts					
Insert: SNM_-43_	ISSN-432	NL-46	W-35222	CL-20	XNS-48 W-35226
Insert: SNM_-54_	ISSN-533	NL-58	W-35226	CL-12	XNS-510 W-35232
Insert: SNM_-64_	ISSN-633	NL-68	W-35228		

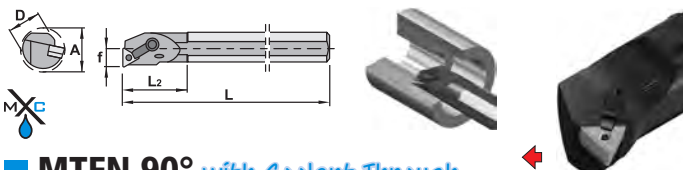
For Inserts please refer to page 13-14



MTUN 93°

Designation	Min. Bore A	D	L	L ²	f
Insert: TNM_-33_ Lead Angle: -3° Entering Angle: 93°					
S16T-MTUNR/L-3	1.280	1.000	12.0	2.50	.640
S20U-MTUNR/L-3	1.530	1.250	14.0	3.00	.765
Insert: TNM_-43_ Lead Angle: -3° Entering Angle: 93°					
S24U-MTUNR/L-4	1.780	1.500	14.0	3.00	.890
Spare Parts					
Insert: S16T...	--	NL-33L	W-35218	CL-20	XNS-47 W-35226
Insert: TNM_-33_ S20U...	ITSN-322	NL-34L			XNS-48 W-35226
Insert: TNM_-43_	ITSN-433	NL-46	W-35222	CL-20	XNS-48 W-35226

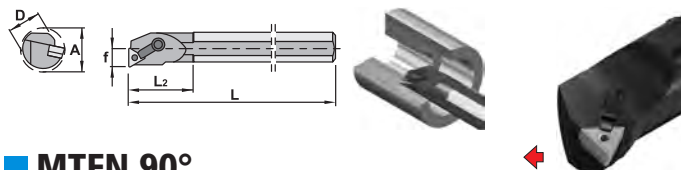
For Inserts please refer to page 15



MTFN 90° with Coolant Through

Designation	Min. Bore A	D	L	L ²	f
Insert: TNM_-33_ Lead Angle: 0° Entering Angle: 90°					
A16T-MTFNR/L-3	1.280	1.000	12.0	2.50	.640
A20U-MTFNR/L-3	1.530	1.250	14.0	3.00	.765
Insert: TNM_-43_ Lead Angle: 0° Entering Angle: 90°					
A24U-MTFNR/L-4	1.780	1.500	14.0	3.00	.890
A28U-MTFNR/L-4	2.030	1.750	14.0	4.00	1.015
A32V-MTFNR/L-4	2.562	2.000	16.0	4.00	1.281
Spare Parts					
Insert: A16T...	--	NL-33L	W-35218	CL-20	XNS-47 W-35226
Insert: TNM_-33_ A20U...	ITSN-322	NL-34L			XNS-48 W-35226
Insert: TNM_-43_	ITSN-433	NL-46	W-35222	CL-20	XNS-48 W-35226

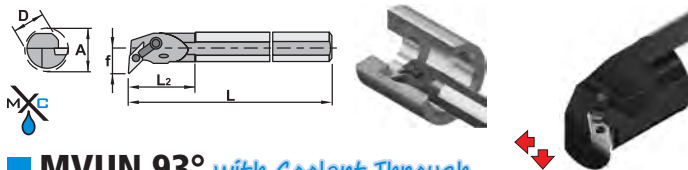
For Inserts please refer to page 15



MTFN 90°

Designation	Min. Bore A	D	L	L ²	f
Insert: TNM_-33_ Lead Angle: 0° Entering Angle: 90°					
S16T-MTFNR/L-3	1.280	1.000	12.0	2.50	.640
S20U-MTFNR/L-3	1.530	1.250	14.0	3.00	.765
S24U-MTFNR/L-3	1.780	1.500	14.0	3.00	.890
Insert: TNM_-43_ Lead Angle: 0° Entering Angle: 90°					
S20U-MTFNR/L-4	1.530	1.250	14.0	3.00	.765
S24U-MTFNR/L-4	1.780	1.500	14.0	3.00	.890
S28U-MTFNR/L-4	2.030	1.750	14.0	4.00	1.015
S32V-MTFNR/L-4	2.562	2.000	16.0	4.00	1.281
S40V-MTFNR/L-4	3.062	2.500	16.0	4.00	1.531
Insert: TNM_-54_ Lead Angle: 0° Entering Angle: 90°					
S32V-MTFNR/L-5	2.562	2.000	16.0	4.00	1.281
Spare Parts					
Insert: S16T...	--	NL-33L	W-35218	CL-20	XNS-47 W-35226
Insert: TNM_-33_ S20/24 U...	ITSN-322	NL-34L			XNS-48 W-35226
Insert: TNM_-43_	ITSN-433	NL-46	W-35222	CL-20	XNS-48 W-35226
Insert: TNM_-54_	ITSN-533	NL-58	W-35226	CL-12	XNS-510 W-35232

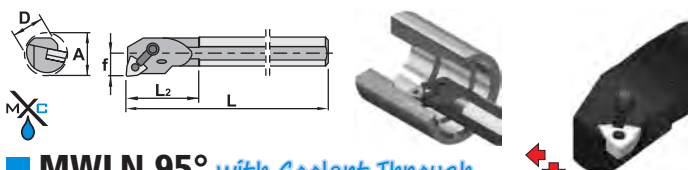
For Inserts please refer to page 15



MVUN 93° with Coolant Through

Designation	Min. Bore A	D	L	L ²	f
Insert: VN_-33_ Lead Angle: -3° Entering Angle: 93°					
A16T-MVUNR/L-3	2.000	1.000	12.0	2.50	1.000
A20U-MVUNR/L-3	2.250	1.250	14.0	3.00	1.125
A24U-MVUNR/L-3	2.500	1.500	14.0	3.00	1.250
Spare Parts					
Insert: VN_-33_					
A16T...	IVSN-322	NL-34L	W-35218	CL-22	XNS-47 W-35226
A20U... & A24U...	IVSN-322	NL-34L			XNS-48

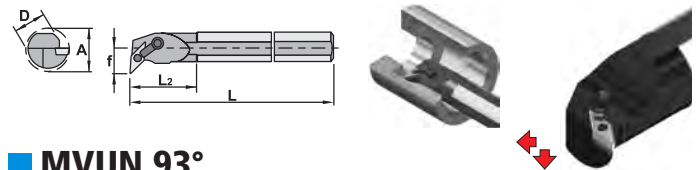
For Inserts please refer to page 16



MWLN 95° with Coolant Through

Designation	Min. Bore A	D	L	L ²	f
Insert: WNM_-43_ Lead Angle: -5° Entering Angle: 95°					
A16T-MWLNRL-4	1.280	1.000	12.0	2.50	.640
A20U-MWLNRL-4	1.530	1.250	14.0	3.00	.765
A24U-MWLNRL-4	1.780	1.500	14.0	3.00	.890
Spare Parts					
Insert: WNM_-43_					
A16T...	--	NL-44	W-35222	CL-20	XNS-47 W-35226
A20U... & A24U...	IWSN-433	NL-46			XNS-48

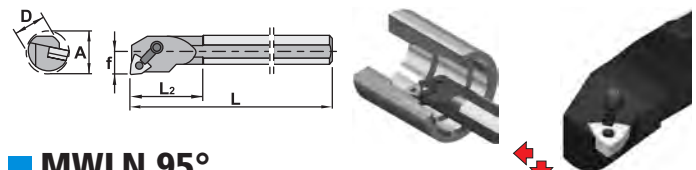
For Inserts please refer to page 16-17



MVUN 93°

Designation	Min. Bore A	D	L	L ²	f
Insert: VN_-33_ Lead Angle: -3° Entering Angle: 93°					
S16T-MVUNR/L-3	2.000	1.000	12.0	2.50	1.000
S20U-MVUNR/L-3	2.250	1.250	14.0	3.00	1.125
S24U-MVUNR/L-3	2.500	1.500	14.0	3.00	1.250
Insert: VN_-43_ Lead Angle: -3° Entering Angle: 93°					
S32V-MVUNR/L-4	3.250	2.000	16.0	4.00	1.500
S40V-MVUNR/L-4	3.750	2.500	16.0	4.00	1.750
Spare Parts					
Insert: S16T..					
VN_-33_ S20/24 U					
IVSN-322 NL-34L W-35218 CL-22 XNS-47 W-35226					
XNS-48					
Insert: VN_-43_					
IVSN-433 NL-46 W-35222 CL-12 XNS-510 W-35232					

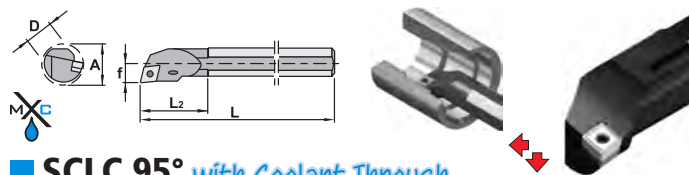
For Inserts please refer to page 16



MWLN 95°

Designation	Min. Bore A	D	L	L ²	f
Insert: WNM_-43_ Lead Angle: -5° Entering Angle: 95°					
S16T-MWLNRL-4	1.280	1.000	12.0	2.50	.640
S20U-MWLNRL-4	1.530	1.250	14.0	3.00	.765
S24U-MWLNRL-4	1.780	1.500	14.0	3.00	.890
Spare Parts					
Insert: WNM_-43_					
S16T...					
-- NL-44 W-35222 CL-20 XNS-47 W-35226					
S20U... & S24U...					
IWSN-433 NL-46 XNS-48					

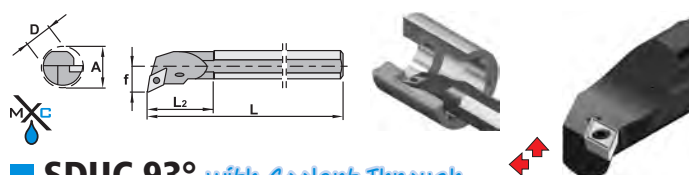
For Inserts please refer to page 16-17



SCLC 95° with Coolant Through

Designation	Min. Bore A	D	L	L ²	f
Insert: CC_-21.5_ Lead Angle: -5° Entering Angle: 95°					
A06M-SCLCR/L-2	.500	.375	6.0	.830	.250
A08M-SCLCR/L-2	.625	.500	6.0	.910	.312
A10R-SCLCR/L-2	.812	.625	8.0	1.060	.406
Insert: CC_-32.5_ Lead Angle: -5° Entering Angle: 95°					
A10R-SCLCR/L-3	.812	.625	8.0	1.060	.406
A12S-SCLCR/L-3	1.000	.750	10.0	1.580	.500
Spare Parts					
Insert: CC_-21.5_	--	--	W-37019	C-1425	
Insert: CC_-32.5_	--	--	W-37032	C-1440	

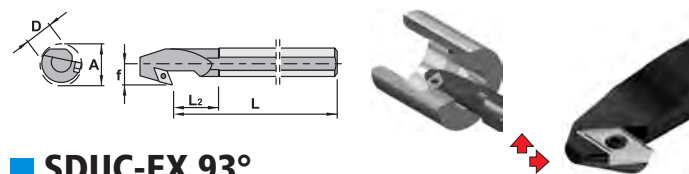
For Inserts please refer to page 9



SDUC 93° with Coolant Through

Designation	Min. Bore A	D	L	L ²	f
Insert: DC_-21.5_ Lead Angle: -3° Entering Angle: 93°					
A06M-SDUCR/L-2	.750	.375	6.0	.830	.375
A08M-SDUCR/L-2	.875	.500	6.0	.910	.438
A10R-SDUCR/L-2	1.000	.625	8.0	1.060	.500
Insert: DC_-32.5_ Lead Angle: -3° Entering Angle: 93°					
A12S-SDUCR/L-3	1.250	.750	10.0	1.580	.625
Spare Parts					
Insert: A06M...	--	--	W-37019	C-1425	
DC_-21.5_ A08M / A10R...	--	--	W-37032	C-1225	
Insert: DC_-32.5_	--	--	W-37032	C-1240	

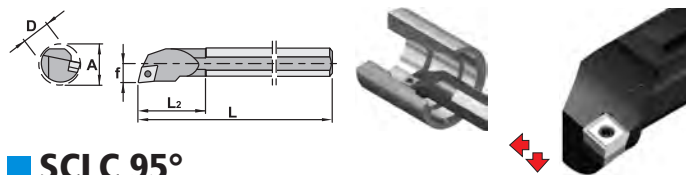
For Inserts please refer to page 11



SDUC-EX 93°

Designation	Min. Bore A	D	L	L ²	f
Insert: DC_-21.5_ Lead Angle: -3° Entering Angle: 93°					
S12S-SDUCR/L-2EX	1.250	.750	10.0	.760	.625
S16T-SDUCR/L-2DX	1.500	1.000	12.0	1.000	.750
Insert: DC_-32.5_ Lead Angle: -3° Entering Angle: 93°					
S20U-SDUCR/L-3X	1.750	1.250	14.0	1.270	.765
Spare Parts					
Insert: DC_-21.5_	--	--	W-37019	C-1225	
Insert: DC_-32.5_	C-3714	C-1750	C-5516	C-1335	

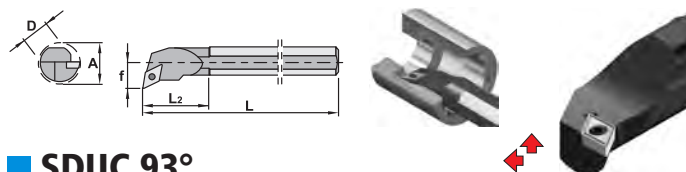
For Inserts please refer to page 11



SCLC 95°

Designation	Min. Bore A	D	L	L ²	f
Insert: CC_-21.5_ Lead Angle: -5° Entering Angle: 95°					
S06M-SCLCR/L-2	.500	.375	6.0	.830	.250
S08M-SCLCR/L-2	.625	.500	6.0	.910	.312
S10R-SCLCR/L-2	.812	.625	8.0	1.060	.406
Insert: CC_-32.5_ Lead Angle: -5° Entering Angle: 95°					
S10R-SCLCR/L-3	.812	.625	8.0	1.060	.406
S12S-SCLCR/L-3	1.000	.750	10.0	1.580	.500
S16T-SCLCR/L-3	1.280	1.000	12.0	1.810	.640
Insert: CC_-43_ Lead Angle: -5° Entering Angle: 95°					
S16T-SCLCR/L-4	1.280	1.000	12.0	3.000	.640
S20U-SCLCR/L-4	1.530	1.250	14.0	3.000	.765
S24V-SCLCR/L-4	1.780	1.500	15.75	3.000	.890
Spare Parts					
Insert: CC_-21.5_	--	--	W-37019	C-1425	
Insert: CC_-32.5_	--	--	W-37032	C-1440	
Insert: S16T...	--	--	W-37036	C-1250	
CC_-43_ S20/24 U...	C-3614	C-1760	C-5517	C-1540	

For Inserts please refer to page 9

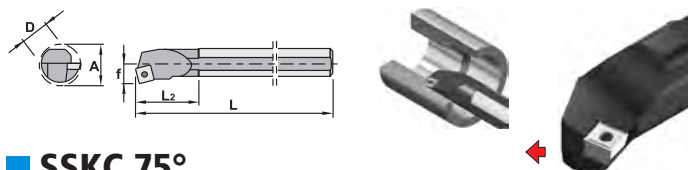


SDUC 93°

Designation	Min. Bore A	D	L	L ²	f
Insert: DC_-21.5_ Lead Angle: -3° Entering Angle: 93°					
S06M-SDUCR/L-2	.750	.375	6.0	.830	.375
S08M-SDUCR/L-2	.875	.500	6.0	.910	.438
S10R-SDUCR/L-2	1.000	.625	8.0	1.060	.500
Insert: DC_-32.5_ Lead Angle: -3° Entering Angle: 93°					
S12S-SDUCR/L-3	1.250	.750	10.0	1.580	.625
S16T-SDUCR/L-3	1.500	1.000	12.0	1.810	.750
S20U-SDUCR/L-3	1.750	1.250	14.0	1.890	.875
Spare Parts					
Insert: S06M...	--	--	W-37019	C-1425	
DC_-21.5_ S08M / S10R...	--	--	W-37032	C-1240	
Insert: S12S...	--	--	W-37032	C-1240	
DC_-32.5_ S16T...	--	--	W-37032	C-1240	
S20U...	C-3714	C-1750	C-5516	C-1335	

For Inserts please refer to page 11

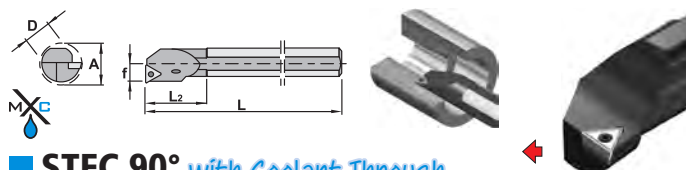
Spare Parts: Shim Bushing Key Shim Screw



SSKC 75°

Designation	Min. Bore A	D	L	L ²	f
Insert: SC_-32.5 Lead Angle: 15° Entering Angle: 75°					
S10R-SSKCR/L-3	.812	.625	8.0	1.060	.406
S12S-SSKCR/L-3	1.000	.750	10.0	1.580	.500
S16T-SSKCR/L-3	1.280	1.000	12.0	1.810	.640
Spare Parts					
Insert: SC_-32.5					
S10R...	W-37032			C-1440	
S12S... & S16T				C-1240	

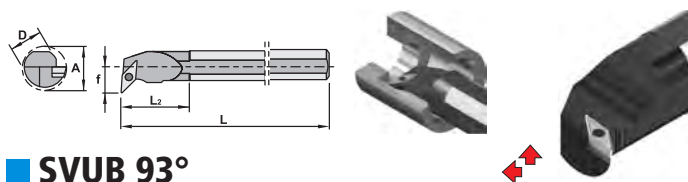
For Inserts please refer to page 13



STFC 90° with Coolant Through

Designation	Min. Bore A	D	L	L ²	f
Insert: TC_-21.5 Lead Angle: 0° Entering Angle: 90°					
A06M-STFCR/L-2	.500	.375	6.0	.850	.250
A08M-STFCR/L-2	.625	.500	6.0	.800	.312
A10R-STFCR/L-2	.812	.625	8.0	.960	.406
A12S-STFCR/L-2	1.000	.750	10.0	1.420	.500
Spare Parts					
Insert: TC_-21.5					
A06M... & A08M...	--	--	W-37019		C-1425
A10R... & A12S...				C-1225	

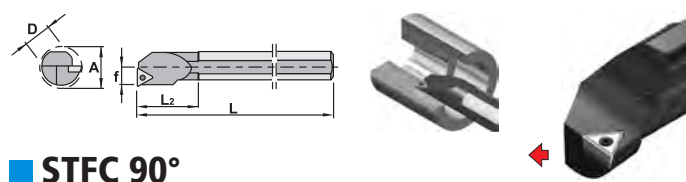
For Inserts please refer to page 14-15



SVUB 93°

Designation	Min. Bore A	D	L	L ²	f
Insert: VB_-33 Lead Angle: -3° Entering Angle: 93°					
S20U-SVUBR/L-3	2.000	1.250	14.0	3.000	1.000
S24V-SVUBR/L-3	2.250	1.500	15.75	3.000	1.125
S32W-SVUBR/L-3	2.750	2.000	17.75	4.000	1.375
Spare Parts					
Insert: VB_-33	C-3718	C-1750	C-5516	C-1335	

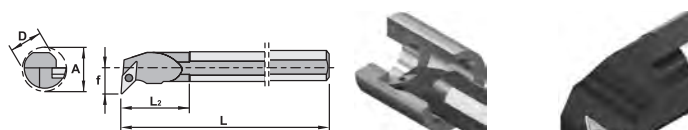
For Inserts please refer to page 15-16



STFC 90°

Designation	Min. Bore A	D	L	L ²	f
Insert: TC_-21.5 Lead Angle: 0° Entering Angle: 90°					
S06M-STFCR/L-2	.500	.375	6.0	.850	.250
S08M-STFCR/L-2	.625	.500	6.0	.800	.312
S10R-STFCR/L-2	.812	.625	8.0	.960	.406
S12S-STFCR/L-2	1.000	.750	10.0	1.420	.500
Insert: TC_-32.5 Lead Angle: 0° Entering Angle: 90°					
S16T-STFCR/L-3	1.280	1.000	12.0	1.930	.640
S20U-STFCR/L-3	1.530	1.250	14.0	1.970	.765
S24V-STFCR/L-3	1.780	1.500	15.75	2.360	.890
Spare Parts					
Insert: S06M... & S08M...	--	--	W-37019		C-1425
TC_-21.5 S10R... & S12S...	--	--	W-37019		C-1225
Insert: S16T...	--	--	W-37032		C-1240
TC_-32.5 S20U... & S24V...	C-3414	C-1750	C-5516	C-1335	

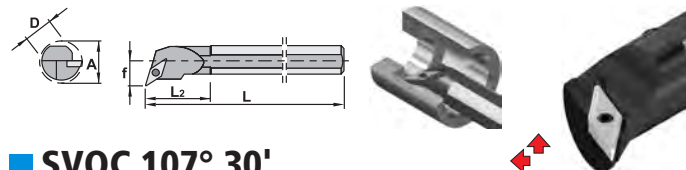
For Inserts please refer to page 14-15



SVUC 93°

Designation	Min. Bore A	D	L	L ²	f
Insert: VC_-22 Lead Angle: -3° Entering Angle: 93°					
S10R-SVUCR/L-2	.867	.625	8.0	1.060	.500
S12S-SVUCR/L-2	1.060	.750	10.0	1.580	.625
S16T-SVUCR/L-2	1.300	1.000	12.0	1.810	.750
Insert: VC_-33 Lead Angle: -3° Entering Angle: 93°					
S20U-SVUCR/L-3	2.000	1.250	14.0	3.000	1.000
S24V-SVUCR/L-3	2.250	1.500	15.75	3.000	1.125
S32W-SVUCR/L-3	2.750	2.000	17.75	4.000	1.375
Spare Parts					
Insert: VC_-22	--	--	W-37019		C-1225
Insert: VC_-33	C-3718	C-1750	C-5516	C-1335	

For Inserts please refer to page 15-16

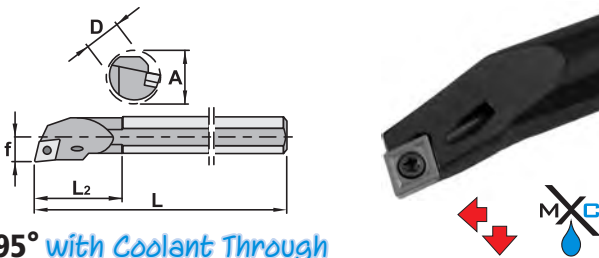


SVQC 107° 30'

Designation	Min. Bore A	D	L	L ²	f
Insert: VC_-33 Lead Angle: -17.5° Entering Angle: 107.5°					
S16T-SVQCR/L-3	1.375	1.000	12.0	.91	.750
S20U-SVQCR/L-3	1.625	1.250	14.0	1.06	.875
S24V-SVQCR/L-3	2.000	1.500	15.75	1.37	1.063
Spare Parts					
Insert: VC_-33					
S16T...	--	--	W-37032		C-1240
S20U... & S24V	C-3718	C-1750	C-5516	C-1335	

For Inserts please refer to page 15-16

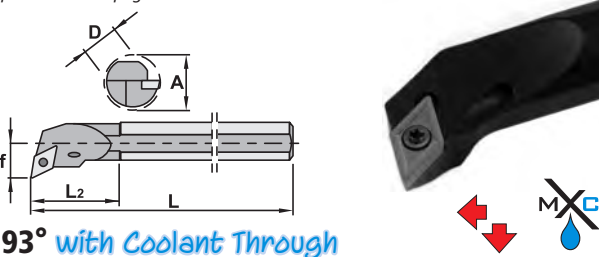
TV Carb Boring Bar Sets



SCLC 95° with Coolant Through

Designation	Min. Bore A	D	L	L2	f
Insert: CC..-21.5-		Lead Angle: -5°		Entering Angle: 95°	
A05H-SCLCR/L-2	.310	.313	4.0	.98	.171
A06J-SCLCR/L-2	.470	.375	4.5	1.25	.234
A08K-SCLCR/L-2	.550	.500	5.0	1.49	.281
A10M-SCLCR/L-2	.700	.625	6.0	1.96	.359
Spare Parts					
Insert: A05H... & A06J...				C-1425	
CC..-21.5- A08K... & A10M...		W-37019		C-1225	

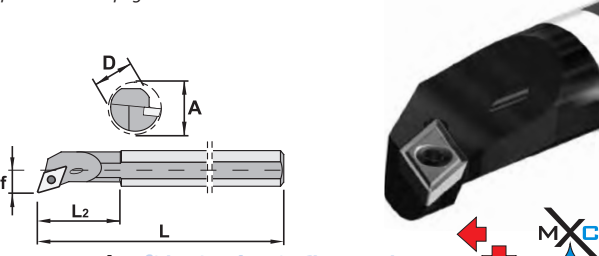
For Inserts please refer to page 9



SDUC 93° with Coolant Through

Designation	Min. Bore A	D	L	L2	f
Insert: DC..-21.5.		Lead Angle: -3°		Entering Angle: 93°	
A06J-SDUCR/L-2	.470	.375	4.5	1.25	.266
A08K-SDUCR/L-2	.550	.500	5.0	1.49	.368
A10M-SDUCR/L-2	.700	.625	6.0	1.96	.433
Spare Parts					
Insert: A06J...				C-1425	
DC..-21.5- A08K... & A10M...		W-37019		C-1225	

For Inserts please refer to page 11



SDQC 107° 30' with Coolant Through

Designation	Min. Bore A	D	L	L2	f
Insert: DC..-21.5		Lead Angle: -17.5°		Entering Angle: 107.5°	
A06J-SDQCR/L-2	.470	.375	4.5	1.25	.266
A08K-SDQCR/L-2	.550	.500	5.0	1.49	.368
A10M-SDQCR/L-2	.700	.625	6.0	1.96	.433
Spare Parts					
Insert: A06J...				C-1425	
DC..-21.5- A08K... & A10M...		W-37019		C-1225	

For Inserts please refer to page 11

SET-SCLCR/L-I

- Shank Diameter Range: 5/16" - 5/8"
- Minimum Bore Diameter: .310"
- With coolant through
- Profiling boring bar for semi-finishing and finishing operations
- Kit Contains:
 - 1-A05H-SCLCR/L-2
 - 1-A06J-SCLCR/L-2
 - 1-A08K-SCLCR/L-2
 - 1-A10M-SCLCR/L-2



SET-SDUCR/L-I

- Shank Diameter Range: 3/8" - 5/8"
- Minimum Bore Diameter: .470"
- With coolant through
- Profiling and copying boring bar for semi-finishing and finishing operations
- Kit Contains:
 - 1-A06J-SDUCR/L-2
 - 1-A08K-SDUCR/L-2
 - 1-A10M-SDUCR/L-2



SET-SDQCR/L-I

- Shank Diameter Range: 3/8" - 5/8"
- Minimum Bore Diameter: .470"
- With coolant through
- Profiling and copying boring bar for semi-finishing and finishing operations
- Kit Contains:
 - 1-A06J-SDQCR/L-2
 - 1-A08K-SDQCR/L-2
 - 1-A10M-SDQCR/L-2

