

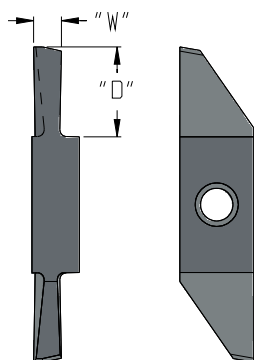


STICK TOOL INSERTS



FRONT TURN - BACK TURN - PLUNGE & TURN INSERTS

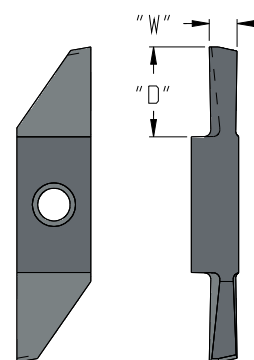
SFTR INSERTS



FRONT TURN

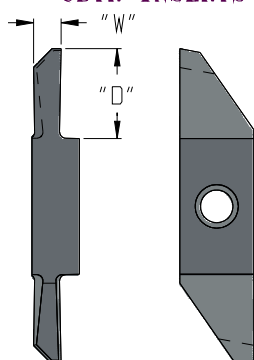
R.H. INSERTS	L.H. INSERTS	"W"	"D"
SFTR-031	SFTL-031	.031	.093
SFTR-047	SFTL-047	.047	.125
SFTR-063	SFTL-063	.063	.250
SFTR-078	SFTL-078	.078	.275
SFTR-094	SFTL-094	.094	.300
SFTR-125	SFTL-125	.125	.320

SFTL INSERTS



SEE PAGES "LEFT AND RIGHT HAND TURNING" FOR EXAMPLES OF USES AND FEED DIRECTION FOR INSERTS ON THIS PAGE

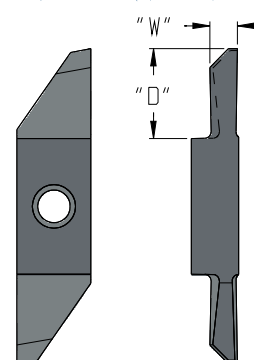
CBTR INSERTS



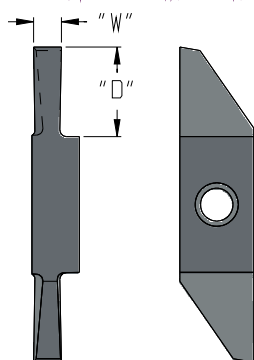
BACK TURN

R.H. INSERTS	L.H. INSERTS	"W"	"D"
CBTR-031	CBTL-031	.031	.093
CBTR-047	CBTL-047	.047	.125
CBTR-063	CBTL-063	.063	.250
CBTR-078	CBTL-078	.078	.275
CBTR-094	CBTL-094	.094	.300
CBTR-125	CBTL-125	.125	.320

CBTL INSERTS



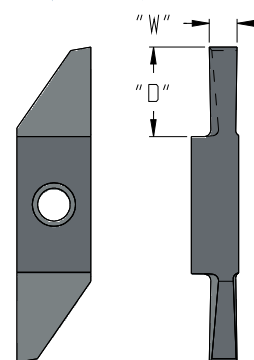
CWPR INSERTS



PLUNGE & TURN

R.H. INSERTS	L.H. INSERTS	"W"	"D"
CWPR-031	CWPL-031	.031	.093
CWPR-047	CWPL-047	.047	.125
CWPR-063	CWPL-063	.063	.250
CWPR-078	CWPL-078	.078	.275
CWPR-094	CWPL-094	.094	.300
CWPR-125	CWPL-125	.125	.320

CWPL INSERTS



USE SWAL OR SWAR HOLDERS ON PAGE 26

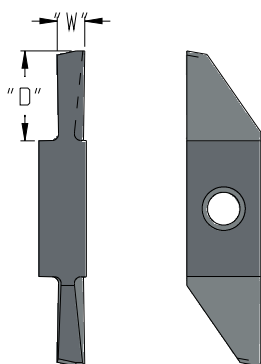


STICK TOOL INSERTS



FRONT TURN - BACK TURN - PLUNGE & TURN INSERTS

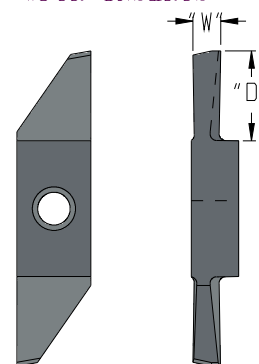
WFTL INSERTS



FRONT TURN

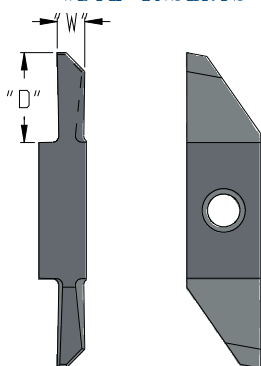
L.H. INSERTS	R.H. INSERTS	"W"	"D"
WFTL-031	WFTR-031	.031	.093
WFTL-047	WFTR-047	.047	.125
WFTL-063	WFTR-063	.063	.250
WFTL-078	WFTR-078	.078	.275
WFTL-094	WFTR-094	.094	.300
WFTL-125	WFTR-125	.125	.320

WFTR INSERTS



SEE PAGES "LEFT AND RIGHT HAND TURNING" FOR EXAMPLES OF USES AND FEED DIRECTION FOR INSERTS ON THIS PAGE

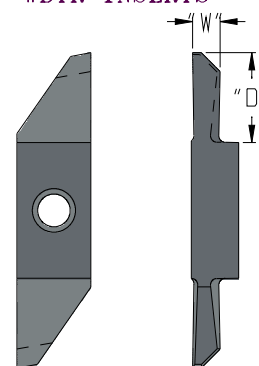
WBTL INSERTS



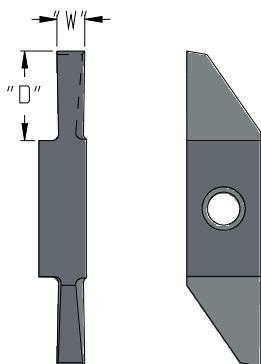
BACK TURN

L.H. INSERTS	R.H. INSERTS	"W"	"D"
WBTL-031	WBTR-031	.031	.093
WBTL-047	WBTR-047	.047	.125
WBTL-063	WBTR-063	.063	.250
WBTL-078	WBTR-078	.078	.275
WBTL-094	WBTR-094	.094	.300
WBTL-125	WBTR-125	.125	.320

WBTR INSERTS



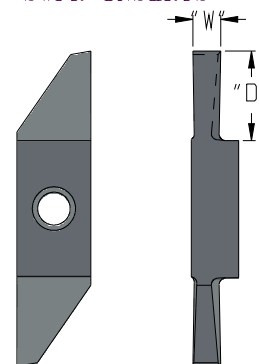
SWPL INSERTS



PLUNGE & TURN

L.H. INSERTS	R.H. INSERTS	"W"	"D"
SWPL-031	SWPR-031	.031	.093
SWPL-047	SWPR-047	.047	.125
SWPL-063	SWPR-063	.063	.250
SWPL-078	SWPR-078	.078	.275
SWPL-094	SWPR-094	.094	.300
SWPL-125	SWPR-125	.125	.320

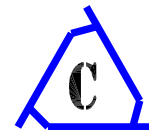
SWPR INSERTS



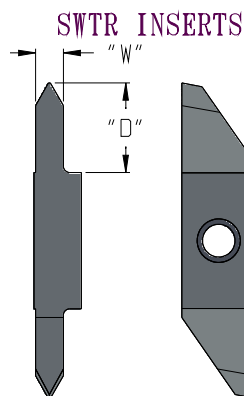
USE SWAL OR SWAR HOLDERS ON PAGE 26



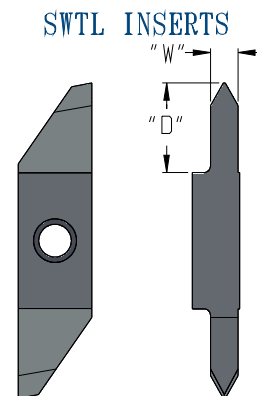
STICK TOOL INSERTS



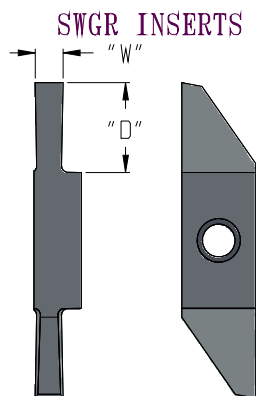
THREADING - GROOVING - CUT - OFF INSERTS



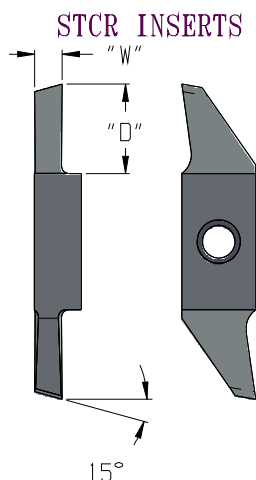
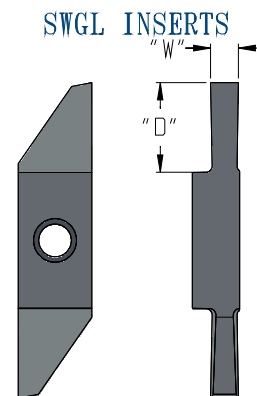
THREADING			
R.H. INSERTS	L.H. INSERTS	"W"	"D"
SWTR-031	SWTL-031	.031	.093
SWTR-047	SWTL-047	.047	.125
SWTR-063	SWTL-063	.063	.250
SWTR-078	SWTL-078	.078	.275
SWTR-094	SWTL-094	.094	.300
SWTR-125	SWTL-125	.125	.320



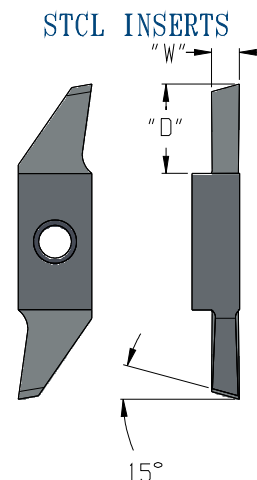
SEE PAGES "LEFT AND RIGHT HAND TURNING" FOR EXAMPLES OF USES AND FEED DIRECTION FOR INSERTS ON THIS PAGE



GROOVING			
R.H. INSERTS	L.H. INSERTS	"W"	"D"
SWGR-031	SWGL-031	.031	.093
SWGR-047	SWGL-047	.047	.125
SWGR-063	SWGL-063	.063	.250
SWGR-078	SWGL-078	.078	.275
SWGR-094	SWGL-094	.094	.300
SWGR-125	SWGL-125	.125	.320



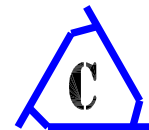
CUT - OFF			
R.H. INSERTS	L.H. INSERTS	"W"	"D"
STCR-031	STCL-031	.031	.093
STCR-047	STCL-047	.047	.125
STCR-063	STCL-063	.063	.250
STCR-078	STCL-078	.078	.275
STCR-094	STCL-094	.094	.300
STCR-125	STCL-125	.125	.320



USE SWAL OR SWAR HOLDERS ON PAGE 26

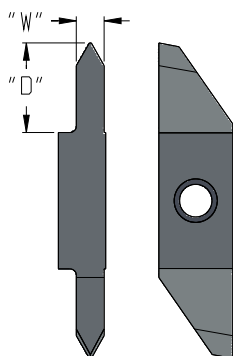


STICK TOOL INSERTS



THREADING - GROOVING - CUT - OFF INSERTS

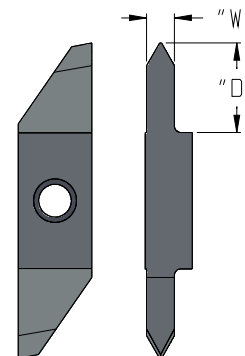
SWTL INSERTS



THREADING

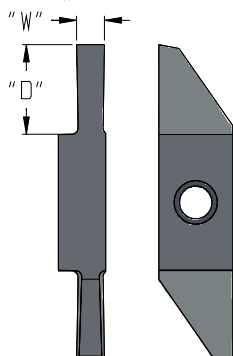
L.H. INSERTS	R.H. INSERTS	"W"	"D"
SWTL-031	SWTR-031	.031	.093
SWTL-047	SWTR-047	.047	.125
SWTL-063	SWTR-063	.063	.250
SWTL-078	SWTR-078	.078	.275
SWTL-094	SWTR-094	.094	.300
SWTL-125	SWTR-125	.125	.320

SWTR INSERTS



SEE PAGES "LEFT AND RIGHT HAND TURNING" FOR EXAMPLES OF USES AND FEED DIRECTION FOR INSERTS ON THIS PAGE

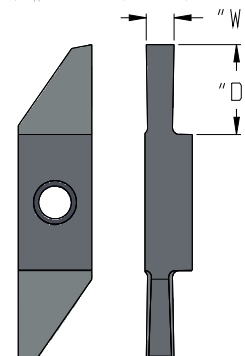
SWGL INSERTS



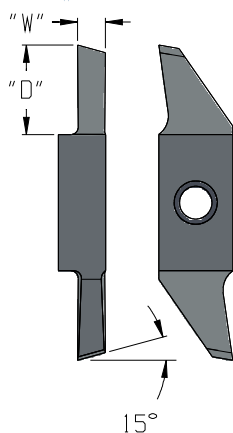
GROOVING

L.H. INSERTS	R.H. INSERTS	"W"	"D"
SWGL-031	SWGR-031	.031	.093
SWGL-047	SWGR-047	.047	.125
SWGL-063	SWGR-063	.063	.250
SWGL-078	SWGR-078	.078	.275
SWGL-094	SWGR-094	.094	.300
SWGL-125	SWGR-125	.125	.320

SWGR INSERTS



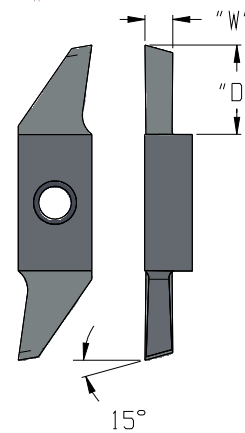
SWCL INSERTS



CUT - OFF

L.H. INSERTS	R.H. INSERTS	"W"	"D"
SWCL-031	SWCR-031	.031	.093
SWCL-047	SWCR-047	.047	.125
SWCL-063	SWCR-063	.063	.250
SWCL-078	SWCR-078	.078	.275
SWCL-094	SWCR-094	.094	.300
SWCL-125	SWCR-125	.125	.320

SWCR INSERTS

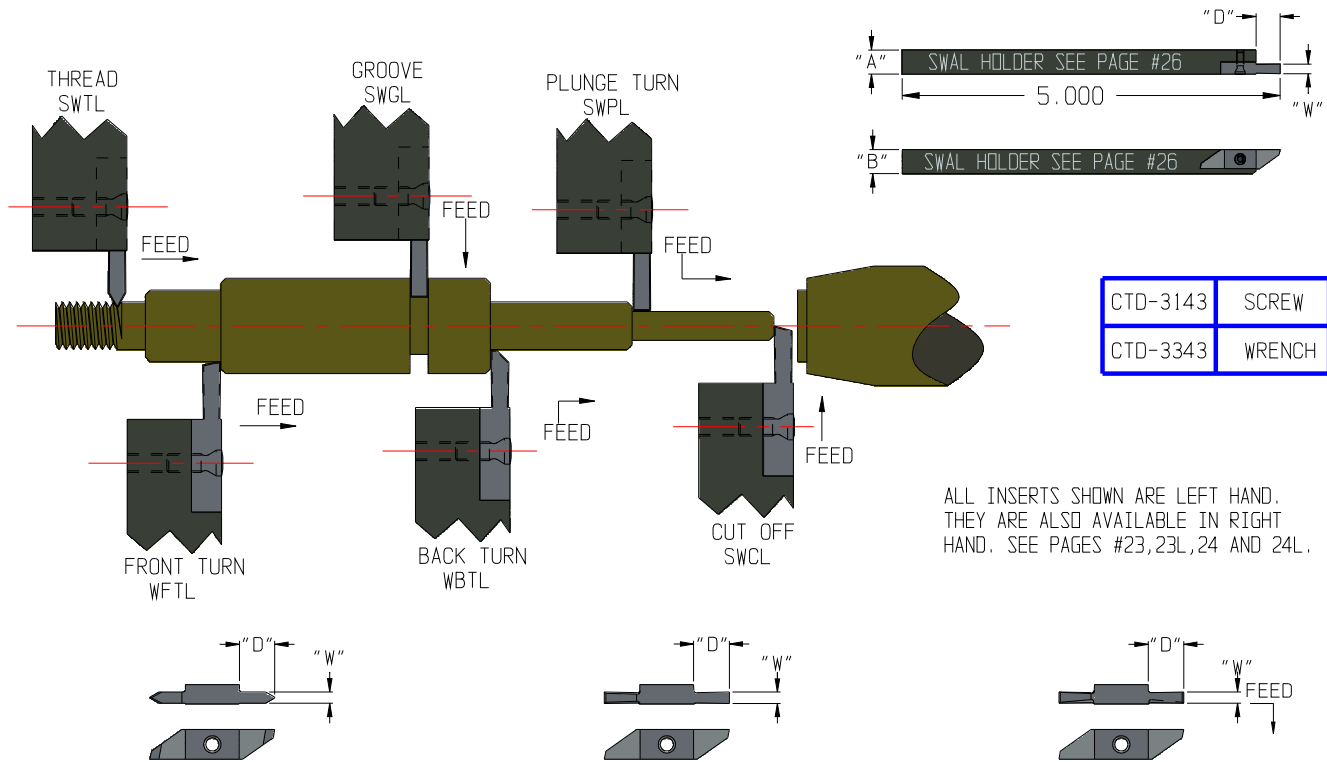


USE SWAL OR SWAR HOLDERS ON PAGE 26

LEFT HAND TURNING



STICK TOOL INSERTS



CTD-3143	SCREW
CTD-3343	WRENCH

ALL INSERTS SHOWN ARE LEFT HAND. THEY ARE ALSO AVAILABLE IN RIGHT HAND. SEE PAGES #23,23L,24 AND 24L.

THREADING (SWTL)

L.H. INSERTS	"W"	"D"
SWTL-031	.031	.093
SWTL-047	.047	.125
SWTL-063	.063	.250
SWTL-078	.078	.275
SWTL-094	.094	.300
SWTL-125	.125	.320

GROOVE (SWGL)

L.H. INSERTS	"W"	"D"
SWGL-031	.031	.093
SWGL-047	.047	.125
SWGL-063	.063	.250
SWGL-078	.078	.275
SWGL-094	.094	.300
SWGL-125	.125	.320

PLUNGE & TURN (SWPL)

L.H. INSERTS	"W"	"D"
SWPL-031	.031	.093
SWPL-047	.047	.125
SWPL-063	.063	.250
SWPL-078	.078	.275
SWPL-094	.094	.300
SWPL-125	.125	.320

FRONT TURN (WFTL)

L.H. INSERTS	"W"	"D"
WFTL-031	.031	.093
WFTL-047	.047	.125
WFTL-063	.063	.250
WFTL-078	.078	.275
WFTL-094	.094	.300
WFTL-125	.125	.320

BACK TURN (WBTL)

L.H. INSERTS	"W"	"D"
WBTL-031	.031	.093
WBTL-047	.047	.125
WBTL-063	.063	.250
WBTL-078	.078	.275
WBTL-094	.094	.300
WBTL-125	.125	.320

CUT-OFF (SWCL)

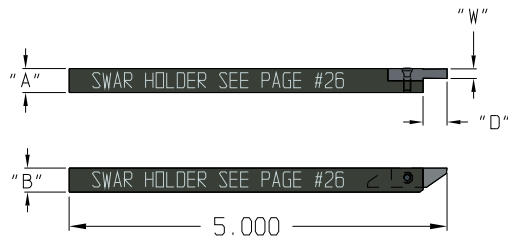
L.H. INSERTS	"W"	"D"
SWCL-031	.031	.093
SWCL-047	.047	.125
SWCL-063	.063	.250
SWCL-078	.078	.275
SWCL-094	.094	.300
SWCL-125	.125	.320

LEFT HAND TURNING

RIGHT HAND TURNING

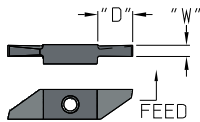
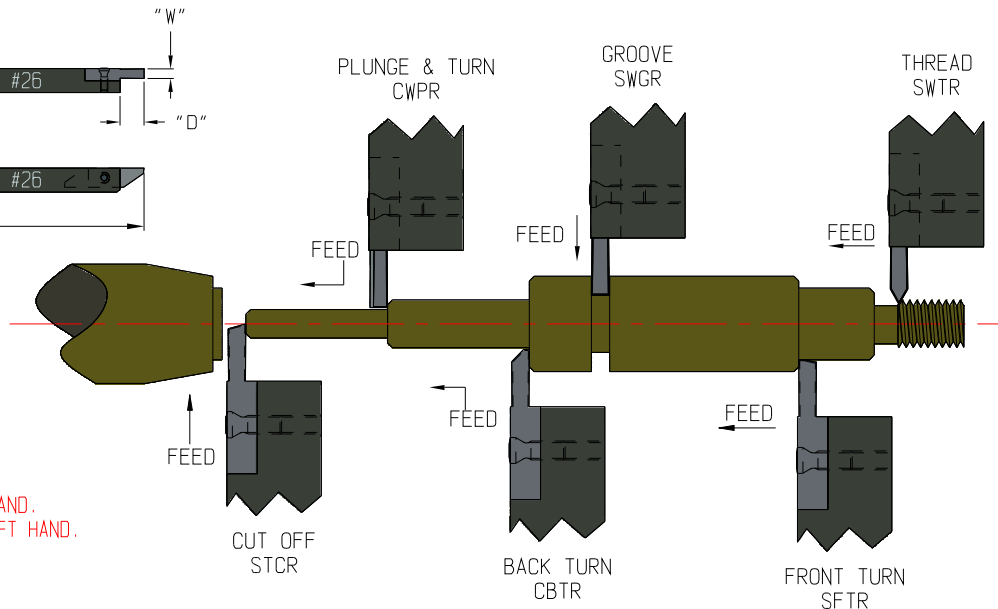


STICK TOOL INSERTS

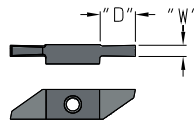


CTD-3143	SCREW
CTD-3343	WRENCH

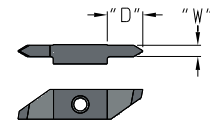
ALL INSERTS SHOWN ARE RIGHT HAND.
THEY ARE ALSO AVAILABLE IN LEFT HAND.
SEE PAGES #23,23L,24 AND 24L.



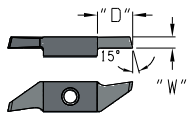
PLUNGE & TURN (CWPR)		
R.H. INSERTS	"W"	"D"
CWPR-031	.031	.093
CWPR-047	.047	.125
CWPR-063	.063	.250
CWPR-078	.078	.275
CWPR-094	.094	.300
CWPR-125	.125	.320



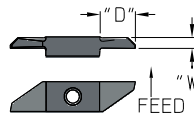
GROOVE (SWGR)		
R.H. INSERTS	"W"	"D"
SWGR-031	.031	.093
SWGR-047	.047	.125
SWGR-063	.063	.250
SWGR-078	.078	.275
SWGR-094	.094	.300
SWGR-125	.125	.320



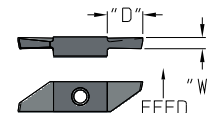
THREADING (SWTR)		
R.H. INSERTS	"W"	"D"
SWTR-031	.031	.093
SWTR-047	.047	.125
SWTR-063	.063	.250
SWTR-078	.078	.275
SWTR-094	.094	.300
SWTR-125	.125	.320



CUT-OFF (STCR)		
R.H. INSERTS	"W"	"D"
STCR-031	.031	.093
STCR-047	.047	.125
STCR-063	.063	.250
STCR-078	.078	.275
STCR-094	.094	.300
STCR-125	.125	.320



BACK TURN (CBTR)		
R.H. INSERTS	"W"	"D"
CBTR-031	.031	.093
CBTR-047	.047	.125
CBTR-063	.063	.250
CBTR-078	.078	.275
CBTR-094	.094	.300
CBTR-125	.125	.320

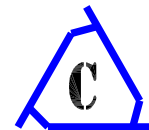


FRONT TURN (SFTR)		
R.H. INSERTS	"W"	"D"
SFTR-031	.031	.093
SFTR-047	.047	.125
SFTR-063	.063	.250
SFTR-078	.078	.275
SFTR-094	.094	.300
SFTR-125	.125	.320

RIGHT HAND TURNING



STICK TOOL INSERTS



HOLLOW GROUND STICK TOOL CUT - OFF INSERTS

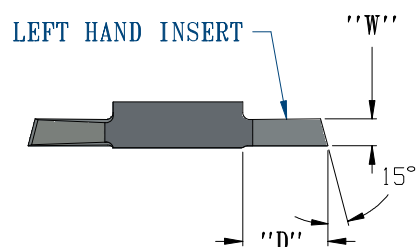
PATENT No. 8,734,064 B2

TESTED & PROVEN TO BE LONGER LASTING AND PROVIDE A SUPERIOR FINISH

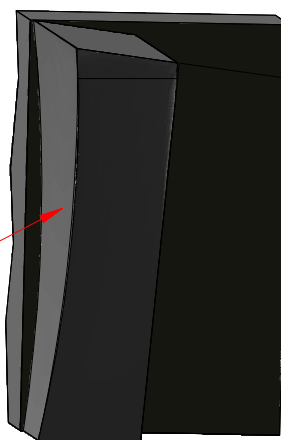
SNGI-STYLE CUT - OFF INSERTS

L.H. INSERTS	R.H. INSERTS	"W"	"D"
SNGI-031-L	SNGI-031-R	.031	.093
SNGI-047-L	SNGI-047-R	.047	.125
SNGI-063-L	SNGI-063-R	.063	.250
SNGI-078-L	SNGI-078-R	.078	.275
SNGI-094-L	SNGI-094-R	.094	.300
SNGI-125-L	SNGI-125-R	.125	.320

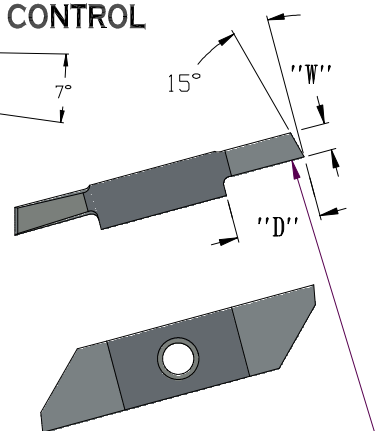
THE ABOVE INSERTS ARE USED IN SWAL/SWAR-STYLE TOOLHOLDERS ON PAGE 26



HOLLOW GRIND
PROVEN TO PRODUCE
A BETTER FINISH
AND MORE PARTS
PER EDGE



CHIP CONTROL



RIGHT HAND INSERT

ONGI-STYLE CUT - OFF INSERTS

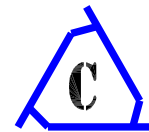
L.H. INSERTS	R.H. INSERTS	"W"	"D"
ONGI-063-L	ONGI-063-R	.063	.400
ONGI-078-L	ONGI-078-R	.078	.400
ONGI-094-L	ONGI-094-R	.094	.400
ONGI-125-L	ONGI-125-R	.125	.400

ONGI INSERTS
HAVE A DEEPER
DEPTH OF CUT

THE ABOVE INSERTS ARE USED IN NGHL/NGHR-STYLE TOOLHOLDERS ON PAGE 26



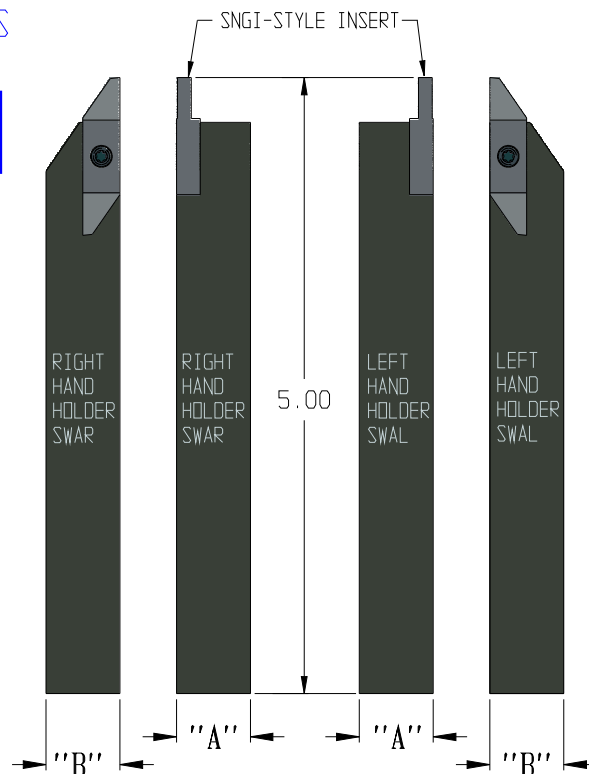
INSERTED STICK TOOL TOOLHOLDERS



TOOLING FOR CNC & SWISS TYPE MACHINES

SEE PAGES 23,23L,24,24L AND 25 FOR INSERTS

R.H. TOOLHOLDERS	L.H. TOOLHOLDERS	"A"	"B"	SCREW	WRENCH
SWAR-10	SWAL-10	.312	.312	CTD-3143	CTD-3343
SWAR-12	SWAL-12	.375	.375		
SWAR-14	SWAL-14	.437	.437		
SWAR-16	SWAL-16	.500	.500		
SWAR-20	SWAL-20	.625	.625		
SWAR-24	SWAL-24	.750	.750		
SWAR-8MM	SWAL-8MM	8MM	8MM		
SWAR-10MM	SWAL-10MM	10MM	10MM		
SWAR-12MM	SWAL-12MM	12MM	12MM		
SWAR-14MM	SWAL-14MM	14MM	14MM		
SWAR-16MM	SWAL-16MM	16MM	16MM		
SWAR-20MM	SWAL-20MM	20MM	20MM		
SWAR-24MM	SWAL-24MM	24MM	24MM		



"FOR DEEPER CUTS"

SEE PAGE 25 FOR INSERTS

R.H. TOOLHOLDERS	L.H. TOOLHOLDERS	"A"	"B"	SCREW	WRENCH
NGHR-16	NGHL-16	.500	.500	CTD-4110	CTD-4112
NGHR-20	NGHL-20	.625	.625		
NGHR-24	NGHL-24	.750	.750		
NGHR-32	NGHL-32	1.000	1.000		
NGHR-12MM	NGHL-12MM	12MM	12MM		
NGHR-14MM	NGHL-14MM	14MM	14MM		
NGHR-16MM	NGHL-16MM	16MM	16MM		
NGHR-20MM	NGHL-20MM	20MM	20MM		
NGHR-24MM	NGHL-24MM	24MM	24MM		

