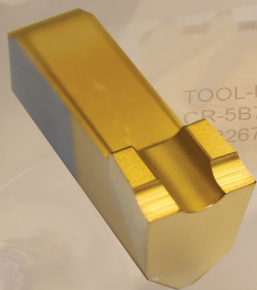




# TOOL-FLO



TOOL-FLO  
CR-5B75-4E  
TF2675 G50



TOOL-FLO  
CR-8R-3E  
TF19310 G50

TOOL-FLO  
CR-8R-3E  
TF19310 G50

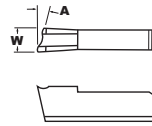
TOOL-FLO  
CR-8R-3E  
TF19310 G50

## CUT OFF

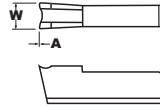
# FC SERIES CUT OFF



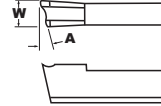
## INSERT FC



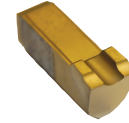
Left Hand  
Lead Angle



Neutral



Right Hand  
Lead Angle



	Uncoated	TiN Coated	AlTiN Coated
C36	●	●	●
GP26	●	●	●
GP530	●	●	●
AC26	●	●	●
AC3	●	●	●
AC530	●	●	●

■ Toolholders listed below

Description	EDP Code	Competitor Nomenclature	Insert Width	A	Hand
FC-094-N	FC094N	507-140	3/32 (.094)	0°	N
FC-094-L-4	FC094L4	507-144	3/32 (.094)	4°	L
FC-094-L-12	FC094L12	507-152	3/32 (.094)	12°	L
FC-094-R-4	FC094R4	507-143	3/32 (.094)	4°	R
FC-094-R-12	FC094R12	507-151	3/32 (.094)	12°	R
FC-094-R-18	FC094R18	507-161	3/32 (.094)	18°	R
FC-125-N	FC125N	507-117	1/8 (.125)	0°	N
FC-125-L-4	FC125L4	507-129	1/8 (.125)	4°	L
FC-125-L-12	FC125L12	507-154	1/8 (.125)	12°	L
FC-125-R-4	FC125R4	507-128	1/8 (.125)	4°	R
FC-125-R-12	FC125R12	507-146	1/8 (.125)	12°	R
FC-125-R-18	FC125R18	507-155	1/8 (.125)	18°	R
FC-187-N	FC187N	507-116	3/16 (.187)	0°	N
FC-187-L-4	FC187L4	507-125/507-127	3/16 (.187)	4°	L
FC-187-R-4	FC187R4	507-124/507-126	3/16 (.187)	4°	R
FC-187-R-12	FC187R12	507-176	3/16 (.187)	12°	R

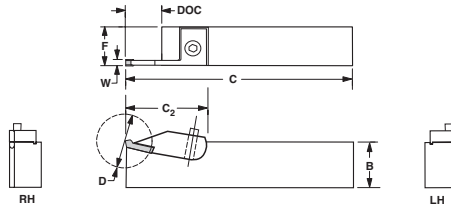
In an effort to improve our stock standard grade offering, there are periodic changes. Please see current price list for up-to-date grade offering.

● High performance choice in optimal conditions.  
▲ Recommended grade under general conditions.

### COMPETITOR'S GRADES

	M40	M50	M43
Steel (Low to moderate speeds)	●		
Steel (Moderate to high speeds)		●	
Stainless (Low to moderate speeds)		●	
Stainless (Moderate to high speeds)			●

## HOLDERS FCIVOR 1/2"

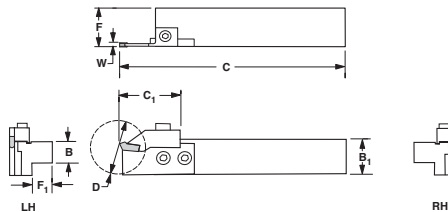


Most holders available with coolant port  
(ie: Add CP to end of description)

Description	EDP Code	Competitor Part No.	Max Dia. D	B	C	C2	F	Clamp Screw	CLAMP Description	D.O.C.	EDP Code	Competitor Part No.
FCIVOR-0500-094	9FCIR050094	206-175	1.063	.500	6.00	1.00	.500	SS65	CHR-FCI094	.531	9HCHRFCI094	435-152
FCIVOR-0500-125	9FCIR0500125	206-145	1.063	.500	6.00	1.00	.500	SS65	CHR-FCI125	.531	9HCHRFCI125	435-130

## HOLDERS FCVOR/L 1/2" & 3/4"

■ RH holders use RH components



Most holders available with coolant port  
(ie: Add CP to end of description)

Description	EDP Code	Competitor Nomenclature	D-Max	B	B1	C	C1	F	F1	Anvil Screw	Clamp Screw
FCVOR-080B	9FCR0800	206-179	1.625	.500	.750	4.50	1.38	1.00	.460	SS84M	SS91
FCVOL-080B	9FCL0800	206-180	1.625	.500	.750	4.50	1.38	1.00	.460	SS84M	SS91
FCVOR/L-1200B	9FCR/L1200	206-178	1.625	.750	.750	4.50	1.38	1.00	.460	SS84M	SS91

## COMPONENT PARTS AVR-FCS Anvils



Description	EDP Code	Competitor Part No.	Width	D.O.C.
AVR-FCS094	911FC094	333-101	3/32	.812
AVR-FCS125	911FC125	333-102	1/8	.812
AVL-FCS094	910FC094	333-103	3/32	.812
AVL-FCS125	910FC125	333-104	1/8	.812

## COMPONENT PARTS CHR-FCS Clamps



Description	EDP Code	Competitor Part No.	Width	D.O.C.
CHR-FCS094	9H1FCR094	435-154	3/32	.812
CHR-FCS125	9H1FCR125	435-155	1/8	.812
CHL-FCS094	9H1FCL094	435-156	3/32	.812
CHL-FCS125	9H1FCL125	435-157	1/8	.812





# FC SERIES CUT OFF

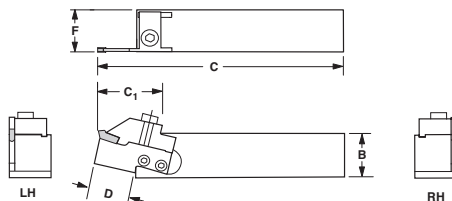
## HOLDERS

### FCVOR/L

1" & 1-1/4"

■ RH holders use RH components

Most holders available with coolant port  
(ie: Add CP to end of description)



Description	EDP Code	Competitor Nomenclature	D	B	C	C <sub>1</sub>	F	Anvil Screw	Clamp Screw
FCVOR-1600D	9FCR1600D	206-141	.812	1.000	6.00	1.50	1.25	SS82M	SS83
FCVOL-1600D	9FCL1600D	206-142	.812	1.000	6.00	1.50	1.25	SS82M	SS83
FCVOR-2000D	9FCR2000D	206-143	.812	1.250	6.00	1.50	1.50	SS82M	SS83
FCVOL-2000D	9FCL2000D	206-144	.812	1.250	6.00	1.50	1.50	SS82M	SS83

## COMPONENT PARTS

### AVR-FCL Anvils



Description	EDP Code	Competitor Part No.	Width	D.O.C.
AVR-FCL094	901FC094	331-117	3/32	.500
AVR-FCL125	901FC125	331-101	1/8	.800
AVR-FCL187	901FC187	331-103	3/16	.800
AVL-FCL094	900FC094	331-118	3/32	.500
AVL-FCL125	900FC125	331-102	1/8	.800
AVL-FCL187	900FC187	331-104	3/16	.800

## COMPONENT PARTS

### CHR-FCL Clamps



Description	EDP Code	Competitor Part No.	Width	D.O.C.
CHR-FCL094	9H0FCR094	435-142	3/32	.500
CHR-FCL125/187	9H0FCR125/187	435-128	1/8 & 3/16	.800
CHL-FCL094	9H0FCL094	435-143	3/32	.500
CHL-FCL125/187	9H0FCL125/187	435-129	1/8 & 3/16	.800

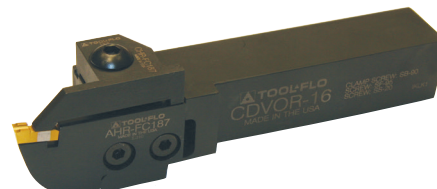
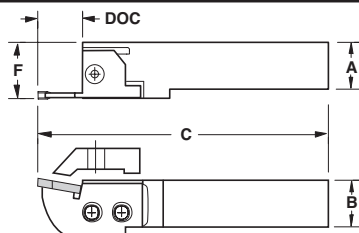
## HOLDERS

### CDVOR/L

1", 1-1/4", 1-1/2"

■ RH holders use RH components

Most holders available with coolant port  
(ie: Add CP to end of description)



Description	EDP Code	Insert Width	A	B	C	F	Clamp Screw	Anvil Screw
CDVOR-16	92401600	1.063	1.00	1.00	*	1.236	SB90	SF95
CDVOL-16	92301600	1.063	1.00	1.00	*	1.236	SB90	SF95
CDVOR-20	92402000	1.063	1.25	1.25	*	1.744	SB90	SF95
CDVOL-24	92402400	1.063	1.50	1.50	*	1.744	SB90	SF95

\*Determined by the anvil

## COMPONENT PARTS

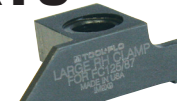
### AHR-FC Anvils



Description	EDP Code	D.O.C.
AHR-FC094	9150FC094	.500
AHR-FC125	9150FC125	1.000
AHR-FC187	9150FC187	1.000
AHL-FC094	9151FC094	.500
AHL-FC125	9151FC125	1.000
AHL-FC187	9151FC187	1.000

## COMPONENT PARTS

### CHR-FC Clamps



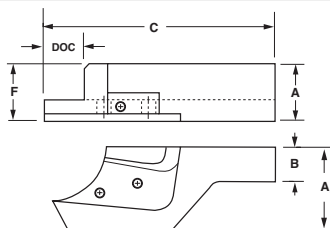
Description	EDP Code	D.O.C.
CHR-FC094	9HCHRFC094	.500
CHR-FC125	9HCHRFC125	1.000
CHR-FC187	9HCHRFC187	1.000
CHL-FC094	9HCHLFC094	.500
CHL-FC125	9HCHLFC125	1.000
CHL-FC187	9HCHLFC187	1.000

## HOLDERS

### FCEDVOR

1", 1-1/4"

■ RH holders use RH components listed on following page.



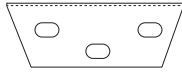
Description	EDP Code	Competitor Nomenclature	DOC	A	A <sub>1</sub>	B	F	C	Anvil Screw	Clamp Screw
FCEDVOR-1600D	9FCEDR1600D	206-116	1.500	1.769	2.224	1.000	1.76	6.000	S-352	S-628
FCEDVOL-1600D	9FCEDL1600D	206-119	1.500	1.769	2.224	1.000	1.76	6.000	S-352	S-628
FCEDVOR-2000D	9FCEDR2000D	206-121	1.500	1.899	2.224	1.250	1.89	6.000	S-352	S-628
FCEDVOL-2000D	9FCEDL2000D	206-124	1.500	1.899	2.224	1.250	1.89	6.000	S-352	S-628

# FC SERIES CUT OFF



## COMPONENT PARTS

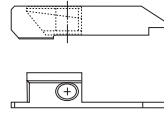
AVR/L-FCED Anvils



Description	EDP Code	D.O.C.
AVR/L-FCED125	902FCED125	1.500
AVR/L-FCED187	902FCED187	1.500

## COMPONENT PARTS

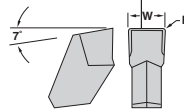
CHR/L-FCED Clamps



Description	EDP Code	D.O.C.
CHR-FCED125	9H2FCEDR125	1.500
CHL-FCED125	9H2FCEDL094	1.500
CHR-FCED187	9H2FCEDR187	1.500
CHL-FCED187	9H2FCEDL187	1.500

## NEUTRAL

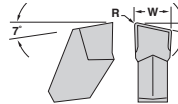
TFN



Description	EDP Code	Insert Width	A	R	C22	GP22	GP50	AC22	AC50
TFN-2	COTN200	2,0 (.078)	0°	0,2 (.008)					
TFN-2.4	COTN240	2,4 (.094)	0°	0,2 (.008)					
TFN-3	COTN300	3,0 (.118)	0°	0,2 (.008)					
TFN-4	COTN400	4,0 (.157)	0°	0,2 (.008)					
TFN-4.8	COTN480	4,8 (.187)	0°	0,3 (.012)					

## LEFT HAND

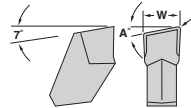
TFL



Description	EDP Code	Insert Width	A	R	C22	GP22	GP50	AC22	AC50
TFL-2.4	COTL240	2,0 (.078)	4°	0,2 (.008)					
TFL-2.8	COTL280	2,0 (.078)	8°	0,2 (.008)					
TFL-2-15	COTL215	2,0 (.078)	15°	0,2 (.008)					
TFL-2.4-4	COTL244	2,4 (.094)	4°	0,2 (.008)					
TFL-2.4-8	COTL248	2,4 (.094)	8°	0,2 (.008)					
TFL-2.4-15	COTL2415	2,4 (.078)	15°	0,2 (.008)					
TFL-3-4	COTL340	3,0 (.118)	4°	0,2 (.008)					
TFL-3-8	COTL380	3,0 (.118)	8°	0,2 (.008)					
TFL-3-15	COTL315	3,0 (.118)	15°	0,2 (.008)					
TFL-4-4	COTL440	4,0 (.157)	4°	0,2 (.008)					
TFL-4-8	COTL480	4,0 (.157)	8°	0,2 (.008)					
TFL-4-15	COTL415	4,0 (.157)	15°	0,2 (.008)					
TFL-4.8-4	COTL484	4,8 (.187)	4°	0,3 (.012)					
TFL-4.8-8	COTL488	4,8 (.187)	8°	0,3 (.012)					

## RIGHT HAND

TFR



Description	EDP Code	Insert Width	A	R	C22	GP22	GP50	AC22	AC50
TFR-2.4	COTR240	2,0 (.078)	4°	0,2 (.008)					
TFR-2.8	COTR280	2,0 (.078)	8°	0,2 (.008)					
TFR-2-15	COTR215	2,0 (.078)	15°	0,2 (.008)					
TFR-2.4-4	COTR244	2,4 (.094)	4°	0,2 (.008)					
TFR-2.4-8	COTR248	2,4 (.094)	8°	0,2 (.008)					
TFR-2.4-15	COTR2415	2,4 (.078)	15°	0,2 (.008)					
TFR-3-4	COTR340	3,0 (.118)	4°	0,2 (.008)					
TFR-3-8	COTR380	3,0 (.118)	8°	0,2 (.008)					
TFR-3-15	COTR315	3,0 (.118)	15°	0,2 (.008)					
TFR-4-4	COTR440	4,0 (.157)	4°	0,2 (.008)					
TFR-4-8	COTR480	4,0 (.157)	8°	0,2 (.008)					
TFR-4-15	COTR415	4,0 (.157)	15°	0,2 (.008)					
TFR-4.8-4	COTR484	4,8 (.187)	4°	0,3 (.012)					
TFR-4.8-8	COTR488	4,8 (.187)	8°	0,3 (.012)					

In an effort to improve our stock standard grade offering, there are periodic changes. Please see current price list for up-to-date grade offering.

- High performance choice in optimal conditions.
- ▲ Recommended grade under general conditions.

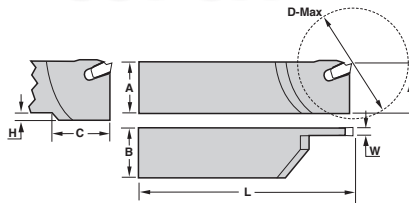
Cast Iron					
Non-Ferrous					
Stainless/High Temp					
Steel					●



## CUT OFF

### INTEGRAL SHANK TCOHR/L

■ Inserts: TFN, TFR, TFL

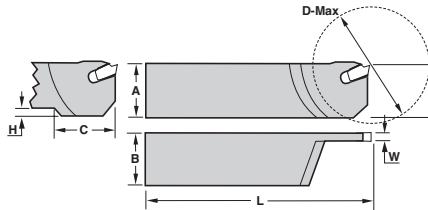


RH SHOWN

Description	EDP Code	Insert Width	D-Max	A	B	L	C	H
TCOHR 9.5-2	9824952	.071-.106	1.130	.375	.375	3.000	.700	.250
TCOHL 9.5-2	9823952	.071-.106	1.130	.375	.375	3.000	.700	.250
TCOHR 12.7-2	98241272	.071-.106	1.250	.500	.500	4.300	.750	.130
TCOHL 12.7-2	98231272	.071-.106	1.250	.500	.500	4.300	.750	.130
TCOHR 12.7-3	98241273	.106-.139	1.250	.500	.500	4.300	.750	.190
TCOHL 12.7-3	98231273	.106-.139	1.250	.500	.500	4.300	.750	.190
TCOHR 16-2	9824162	.071-.106	1.250	.625	.625	4.500	----	----
TCOHL 16-2	9823162	.071-.106	1.250	.625	.625	4.500	----	----
TCOHR 16-3	9824163	.106-.139	1.380	.625	.625	4.500	.750	.120
TCOHL 16-3	9823163	.106-.139	1.380	.625	.625	4.500	.750	.120
TCOHR 16-4	9824164	.138-.178	1.500	.625	.625	4.500	.810	.120
TCOHL 16-4	9823164	.138-.178	1.500	.625	.625	4.500	.810	.120
TCOHR 19-2	9824192	.071-.106	1.380	.750	.750	4.500	----	----
TCOHL 19-2	9823192	.071-.106	1.380	.750	.750	4.500	----	----
TCOHR 19-3	9824193	.106-.139	1.750	.750	.750	4.500	----	----
TCOHL 19-3	9823193	.106-.139	1.750	.750	.750	4.500	----	----
TCOHR 19-4	9824194	.138-.178	2.000	.750	.750	4.500	----	----
TCOHL 19-4	9823194	.138-.178	2.000	.750	.750	4.500	----	----

### INTEGRAL SHANK FOR AUTOMATICS TCOHR/L - (Metric)

■ Inserts: TFN, TFR, TFL

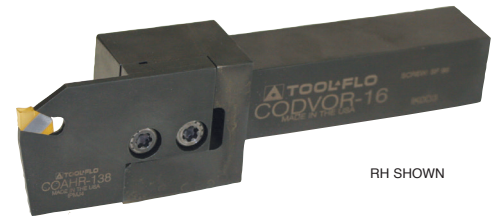
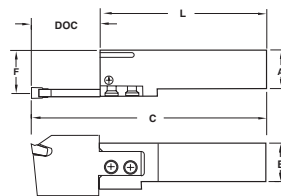


LH SHOWN

Description	EDP Code	Insert Width	D-Max	A	B	L	C	H
TCOHAR 10-2	9826102	1,8-2,7	30,0 (1.180)	10,0	10,0	120,0	17,0	6,1
TCOHAL 10-2	9825102	1,8-2,7	30,0 (1.180)	10,0	10,0	120,0	17,0	6,1
TCOHAR 12-2	9826122	1,8-2,7	30,0 (1.180)	12,0	12,0	140,0	17,0	4,1
TCOHAL 12-2	9825122	1,8-2,7	30,0 (1.180)	12,0	12,0	140,0	17,0	4,1
TCOHAR 14-2	9826142	1,8-2,7	35,1 (1.380)	14,0	14,0	140,0	20,0	2,0
TCOHAL 14-2	9825142	1,8-2,7	35,1 (1.380)	14,0	14,0	140,0	20,0	2,0
TCOHAR 16-2	9826162	1,8-2,7	36,1 (1.420)	16,0	16,0	140,0	-	-
TCOHAL 16-2	9825162	1,8-2,7	36,1 (1.420)	16,0	16,0	140,0	-	-

### COMPONENT HOLDER CODVOR/L

■ RH holders use RH components



RH SHOWN

Description	EDP Code	A	B	L	F	Anvil Screw
CODVOR-16	92451600	1	1	5.190	1.150	SF95
CODVOL-16	92441600	1	1	5.190	1.150	SF95
CODVOR-20	92452000	1-1/4	1-1/4	5.190	1.400	SF95
CODVOL-20	92442000	1-1/4	1-1/4	5.190	1.400	SF95
CODVOR-24	92452400	1-1/2	1-1/2	5.190	1.650	SF95
CODVOL-24	92442400	1-1/2	1-1/2	5.190	1.650	SF95

\*The "C" dimension is determined by the D.O.C. of the anvil.

### Metric

Description	EDP Code	A	B	L	F	Anvil Screw
CODVOR-25M	92462500	25,0	25,0	132,0	28,2	SF95
CODVOL-25M	92432500	25,0	25,0	132,0	28,2	SF95
CODVOR-32M	92463200	32,0	32,0	132,0	36,0	SF95
CODVOL-32M	92433200	32,0	32,0	132,0	36,0	SF95
CODVOR-40M	92464000	40,0	40,0	132,0	43,5	SF95
CODVOL-40M	92434000	40,0	40,0	132,0	43,5	SF95

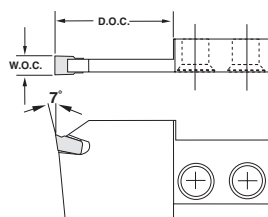
\*The "C" dimension is determined by the D.O.C. of the anvil.



# COMPONENTS


## CUT OFF ANVILS

### COAHR/L



RH SHOWN



Description	EDP Code	Insert	DOC	WOC	Extractor Wrench
COAHR-113	9246113	TFN/R/L-2,0 & 2,4	1.250	.071-.106	Extractor Wrench EDP Code: 9HEW1 
COAHL-113	9245113	TFN/R/L-2,0 & 2,4	1.250	.071-.106	
COAHR-138	9246138	TFN/R/L-3,0	1.375	.106-.139	
COAHL-138	9245138	TFN/R/L-3,0	1.375	.106-.139	
COAHR-248	9246248	TFN/R/L-4,0	1.500	.139-.178	
COAHL-248	9245248	TFN/R/L-4,0	1.500	.139-.178	
COAHR-258	9246258	TFN/R/L-4,8	1.750	.178-.217	
COAHL-258	9245258	TFN/R/L-4,8	1.750	.178-.217	

## Recommended SFM & IPR for Parting Applications

Workpiece Group	Uncoated	TiN PVD Coated		AlTiN PVD Coated		Feed/IPR
	C22	GP22	GP50	AT22	AT50	
Free Machining Carbon Steels	---	150-300	200-600	<b>200-400</b>	<b>400-800</b>	.003-.008
Plain Carbon Steels	---	150-300	200-600	<b>200-400</b>	<b>400-800</b>	.003-.008
Alloy Steels 190-330 HB	---	150-300	200-500	<b>200-350</b>	<b>400-800</b>	.003-.008
Alloy Steels 330-450 HB	---	150-300	200-450	<b>200-350</b>	<b>400-750</b>	.003-.008
Martensitic/Ferritic Stainless Steel 400 Series	---	150-300	200-500	<b>200-400</b>	<b>350-700</b>	.003-.008
Austenitic Stainless 300 Series	150-300	150-400	---	<b>300-600</b>	---	.002-.007
Gray Cast Iron 190-330 HB	100-350	150-400	---	<b>300-600</b>	---	.002-.007
Gray Cast Iron 330-450 HB	100-300	150-350	---	<b>200-550</b>	---	.002-.007
Alloy / Ductile Irons	---	150-300	200-500	<b>250-450</b>	<b>300-700</b>	.003-.008
Free Machining Aluminum Alloys	100-1500	150-2000	---	<b>600-2200</b>	---	.004-.008
High-Silicon Aluminum Alloys	---	---	---	---	---	---
Copper / Zinc / Brass	100-500	150-700	---	<b>300-900</b>	---	.004-.008
Non-Metallics	100-1000	150-1500	---	<b>350-1200</b>	---	.004-.008
High Temperature Alloys 200-260 HB	80-130	100-175	---	<b>80-200</b>	---	.002-.006
High Temperature Alloys 260-450 HB	50-100	80-150	---	<b>80-175</b>	---	.002-.006
Titanium Alloys (Ti 6Al-4V)	100-200	100-250	---	<b>80-300</b>	---	.002-.006

Bold print items denote the top choices for the materials listed, provided it can be machined within the SFM stated under the appropriate machining conditions. For the best performance in optimal machining conditions, select the grade that will provide you with the highest allowable SFM.