

# PRODUCT NEWS

PN-E-023



Chamfering Cutter  
for High Hardened Materials

## SFSV type

●  $\phi 1 - \phi 12$



NEW PRODUCT

SFSV has 12 types



Solid chamfering tool  
for machining high hardened materials (70HRC).  
V-grooving and centering as well as  
machining of materials other than  
high hardness materials are possible.

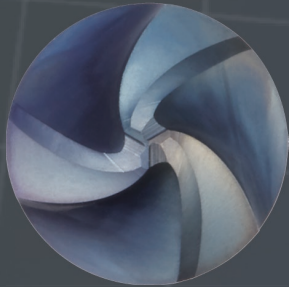


3 blades, strong torsion

## Features



### Feature 1 Special edge geometry for Hardened material (UP TO 70HRC)



3 Flutes



#### C chamfering (hole) -- SFSV3120S12



Good surface

Work : SKD11(60HRC)  
Machine : Vertical MC

- Tool dia. :  $\phi 12$  (SFSV3120S12)
- Conditions :  
n=650min<sup>-1</sup>, Vf=98mm/min
- $\phi 10 \rightarrow$  Chamfering
- Chamfering C1
- Coolant : air (external)

センター加工

#### Centering -- SFSV3120S12



Good! Depth=2.4mm(0.2D) Step=0.6mm

Work : SKD11(60HRC)  
Machine : Vertical MC

- Tool dia. :  $\phi 12$  (SFSV3120S12)
- Conditions :  
n=2,600min<sup>-1</sup>, Vf=26mm/min
- Depth : 2.4mm(Step=0.6mm)
- Coolant : air (external)

### Feature 2 Adopts DH1 Coating

	DH coating	DV coating	DZ coating (TiAlN)
Hardness (Hv)	3,500~3,700	3,300~3,500	2,800~2,900
Oxidation temperature (°C)	1,100~1,200	1,000~1,100	700~800
Coefficient of friction	0.5	0.65	0.6

■ SFSV type

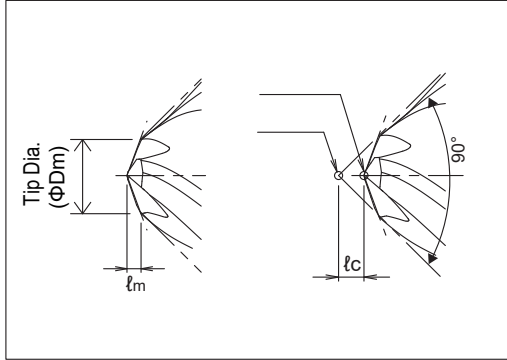


Fig.1

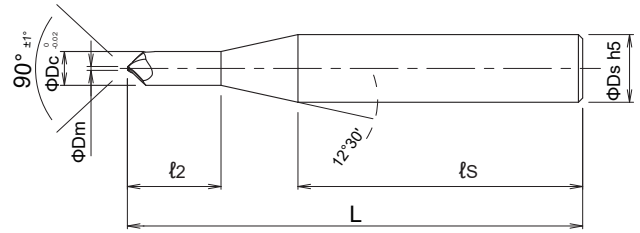
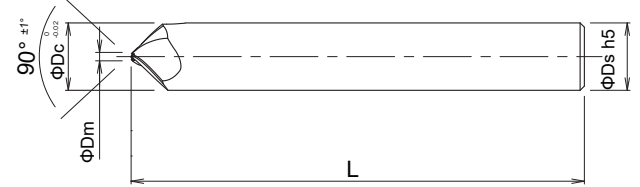


Fig.2



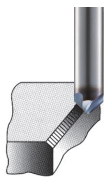
Cat.No.	Stock	Grade	No. of Flutes	Dimensions(mm)								Fig.
				$\phi D_c$	$\phi D_m$	L	$l_2$	$l_s$	$l_m$	$l_c$	$\phi D_s$	
SFSV3010S04	●	DH110	3	1	0.2	50	3.0	40.2	0.036	0.064	4	1
SFSV3020S06	●			2	0.4	50	4.5	35.5	0.073	0.127	6	1
SFSV3030S06	●			3	0.6	60	8.0	45.2	0.109	0.191	6	1
SFSV3040S06	●			4	0.8	70	10.5	55.0	0.146	0.254	6	1
SFSV3050S06	●			5	1.0	80	12.5	65.2	0.182	0.318	6	1
SFSV3060S06	●			6	1.2	90	-	-	0.218	0.382	6	2
SFSV3080S08	●			8	1.5	100	-	-	0.273	0.477	8	2
SFSV3100S10	●			10	1.8	100	-	-	0.328	0.572	10	2
SFSV3120S12	●			12	2.1	110	-	-	0.382	0.668	12	2



TECHNICAL INFORMATION

Recommended cutting conditions

● C Chamfering



Work materials	Carbon (S50C, SS400) ~250HB				Mold Steel (NAK80) 38~43HRC				Hardened Steel (SKD11) ~60HRC			
	C=0.2D				C=0.2D				C=0.2D			
Depth of cut	C=0.2D				C=0.2D				C=0.2D			
Tool dia. $\phi D_c$ (mm)	Vc (min)	n (min <sup>-1</sup> )	f (mm/rev)	Vf (mm/min)	Vc (min)	n (min <sup>-1</sup> )	f (mm/rev)	Vf (mm/min)	Vc (min)	n (min <sup>-1</sup> )	f (mm/rev)	Vf (mm/min)
1	50	16,000	0.06	960	50	16,000	0.06	960	30	9,600	0.02	580
2	50	8,000	0.06	480	50	8,000	0.06	480	30	4,800	0.02	290
3	150	16,000	0.18	2,880	150	16,000	0.18	2,880	70	7,400	0.02	440
4	150	12,000	0.18	2,200	150	12,000	0.18	2,200	70	5,600	0.02	340
5	150	9,500	0.18	1,720	150	9,500	0.18	1,720	80	5,000	0.03	450
6	150	8,000	0.18	1,440	150	8,000	0.18	1,440	80	4,200	0.03	380
8	225	9,000	0.3	2,700	225	9,000	0.3	2,700	100	4,000	0.05	600
10	225	7,200	0.3	2,160	225	7,200	0.3	2,160	100	3,200	0.05	480
12	225	6,000	0.3	1,800	225	6,000	0.3	1,800	100	2,600	0.05	390

● : Standard stock items

□ : Stock in Japan

◎ : Soon to be stocked

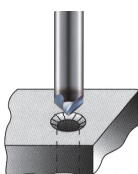
# Recommended cutting conditions

## Centering



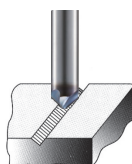
Work materials	Carbon (S50C, SS400) ~250HB				Mold Steel (NAK80) 38~43HRC				Hardened Steel (SKD11) ~60HRC			
Depth of cut	ap≤0.1D				ap≤0.1D				ap≤0.1D			
Tool dia. φDc (mm)	Vc (min)	n (min <sup>-1</sup> )	f (mm/rev)	Vf (mm/min)	Vc (min)	n (min <sup>-1</sup> )	f (mm/rev)	Vf (mm/min)	Vc (min)	n (min <sup>-1</sup> )	f (mm/rev)	Vf (mm/min)
1	50	16,000	0.01	160	50	16,000	0.01	160	30	9,600	0.01	96
2	50	8,000	0.01	80	50	8,000	0.01	80	30	4,800	0.01	48
3	150	16,000	0.01	160	150	16,000	0.01	160	70	7,400	0.01	74
4	150	12,000	0.01	120	150	12,000	0.01	120	70	5,600	0.01	56
5	150	9,500	0.01	95	150	9,500	0.01	95	80	5,000	0.01	50
6	150	8,000	0.01	80	150	8,000	0.01	80	80	4,200	0.01	42
8	225	9,000	0.01	90	225	9,000	0.01	90	100	4,000	0.01	40
10	225	7,200	0.01	72	225	7,200	0.01	72	100	3,200	0.01	32
12	225	6,000	0.01	60	225	6,000	0.01	60	100	2,600	0.01	26

## C Chamfering (hole)



Work materials	Carbon (S50C, SS400) ~250HB				Mold Steel (NAK80) 38~43HRC				Hardened Steel (SKD11) ~60HRC			
Tool dia. φDc (mm)	Vc (min)	n (min <sup>-1</sup> )	f (mm/rev)	Vf (mm/min)	Vc (min)	n (min <sup>-1</sup> )	f (mm/rev)	Vf (mm/min)	Vc (min)	n (min <sup>-1</sup> )	f (mm/rev)	Vf (mm/min)
1	50	16,000	0.03	480	50	16,000	0.03	480	7.5	2,400	0.06	140
2	50	8,000	0.03	240	50	8,000	0.03	240	7.5	1,200	0.06	72
3	150	16,000	0.09	1,440	150	16,000	0.09	1,440	15	1,600	0.09	140
4	150	12,000	0.09	1,100	150	12,000	0.09	1,100	15	1,200	0.09	110
5	150	9,500	0.09	860	150	9,500	0.09	860	15	950	0.09	86
6	150	8,000	0.09	720	150	8,000	0.09	720	15	800	0.09	72
8	225	9,000	0.15	1,350	225	9,000	0.15	1,350	25	1,000	0.15	150
10	225	7,200	0.15	1,080	225	7,200	0.15	1,080	25	800	0.15	120
12	225	6,000	0.15	900	225	6,000	0.15	900	25	650	0.15	98

## Slotting



Work materials	Carbon (S50C, SS400) ~250HB				Mold Steel (NAK80) 38~43HRC				Hardened Steel (SKD11) ~60HRC			
Depth of cut	ap≤0.25D				ap≤0.25D				ap≤0.25D			
Tool dia. φDc (mm)	Vc (min)	n (min <sup>-1</sup> )	f (mm/rev)	Vf (mm/min)	Vc (min)	n (min <sup>-1</sup> )	f (mm/rev)	Vf (mm/min)	Vc (min)	n (min <sup>-1</sup> )	f (mm/rev)	Vf (mm/min)
1	50	16,000	0.06	960	50	16,000	0.06	960	20	6,400	0.06	380
2	50	8,000	0.06	480	50	8,000	0.06	480	20	3,200	0.06	190
3	150	16,000	0.09	1,440	150	16,000	0.09	1,440	70	7,400	0.06	440
4	150	12,000	0.09	1,100	150	12,000	0.09	1,100	70	5,600	0.06	340
5	150	9,500	0.09	860	150	9,500	0.09	860	40	2,500	0.075	188
6	150	8,000	0.09	720	150	8,000	0.09	720	40	2,100	0.075	160
8	225	9,000	0.15	1,350	225	9,000	0.15	1,350	50	2,000	0.15	300
10	225	7,200	0.15	1,080	225	7,200	0.15	1,080	50	1,600	0.15	240
12	225	6,000	0.15	900	225	6,000	0.15	900	50	1,300	0.15	200

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