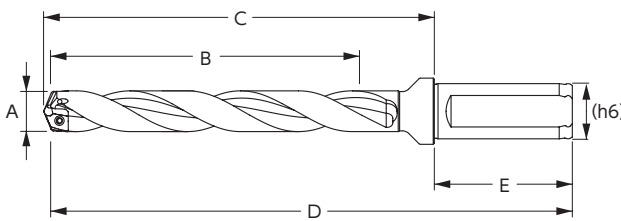


φ 11.00 ~ 11.99 11 Series

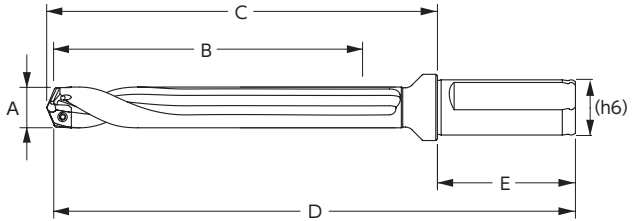
★ Select same size series between inserts and holders.

Holders (Metric system shank)

*Please use straight fluted for more than 3.5MPa coolant pressure.



① : Helical fluted

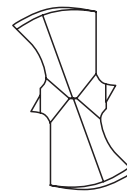
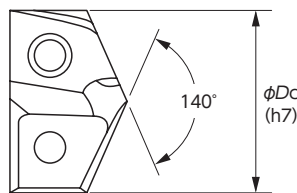


② : Straight fluted

SS	(A) Insert cutting edge dia	(B) Max. machining length	P/N	Stock	Shape	Dimensions				Parts	
						(C) Body length	(D) Overall length	(E) Shank dia. x length	Screw for pipe	Clamping screw	Screwdriver (Optional)
11.00 ~ 11.99	16.0 1D	60111H-16FM	●	①	44.7	90.7	φ 16×48	1/16"	71843-IP6-10	8IP-6	
	36.0 3D	60311H-16FM	●	①	64.7	110.6					
		60311S-16FM	●	②							
	59.9 5D	60511H-16FM	●	①	88.6	134.6					
		60511S-16FM	●	②							
	83.9 7D	60711H-16FM	●	①	112.6	158.6					
60711S-16FM		●	②								

Inserts

We take your order by 1 piece as the unit.



Shape	Standard				hard-to-cut material, stainless steel, AS		Cast Iron CI	
	Carbide (K35)		Carbide (K20)		Carbide (K20)		Carbide (K20)	
Material grade	AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)	
Coating	AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)	
φDc	Part No.		Part No.		Part No.		Part No.	
11.00	7C111P-11	●	7C211P-11	●	7C211P-11AS	●	7C211P-11CI	●
11.11	7C111P-0014	●	7C211P-0014	●	7C211P-0014AS	●	7C211P-0014CI	●
11.50	7C111P-11.5	●	7C211P-11.5	●	7C211P-11.5AS	●	7C211P-11.5CI	●
11.51	7C111P-.453	●	7C211P-.453	●	7C211P-.453AS	●	7C211P-.453CI	●
11.91	7C111P-0015	●	7C211P-0015	●	7C211P-0015AS	●	7C211P-0015CI	●

Recommended tightening torque for clamping screw:50 (N·cm)

※The tightening torque is calculated by using 0.14 as the coefficient of friction ($\mu = 0.14$) and 90% of the yield point.
*Replace the holders periodically, using "every 100th insert replacement" as a guideline.
For recommended cutting conditions, please refer to page **098 - 099**.

Notes) *Each holder comes with 4 clamping screws and a screw releasing agent (E-Z BREAK). A crewdriver is available only as an optional item.

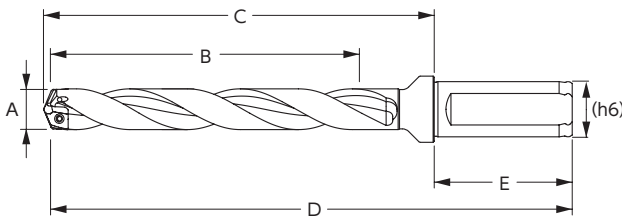
- : Standard stock
- : Semi-standard stock (Time required for delivery: approx. 2 weeks)production-to-order basis
- : Products shifting to production-to-order basis
- No symbol: Products manufactured production-to-order basis

φ 12.00 ~ 12.99 12 Series

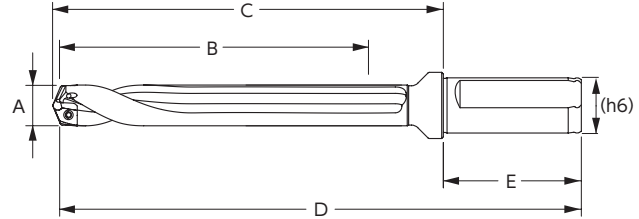
★ Select same size series between inserts and holders.

Holders (Metric system shank)

*Please use straight fluted for more than 3.5MPa coolant pressure.



① : Helical fluted

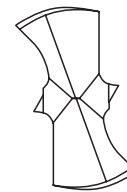
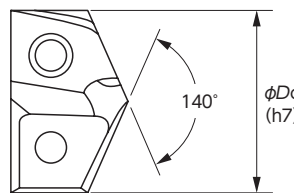


② : Straight fluted

(A) Insert cutting edge dia	(B) Max. machining length	P/N	Stock	Shape	Dimensions				Parts	
					(C) Body length	(D) Overall length	(E) Shank dia. x length	Screw for pipe	Clamping screw	Screwdriver (Optional)
12.00 ~ 12.99	16.0 1D	60112H-20FM	●	①	45.4	93.2	φ 20×50	1/8"	7247-IP7-10	8IP-7
	39.0 3D	60312H-20FM	●	①	68.8	116.6				
		60312S-20FM	●	②						
	64.9 5D	60512H-20FM	●	①	94.8	142.6				
		60512S-20FM	●	②						
	90.9 7D	60712H-20FM	●	①	120.8	168.6				
60712S-20FM		●	②							

Inserts

We take your order by 1 piece as the unit.



Shape	Standard						hard-to-cut material, stainless steel, AS		Cast Iron CI	
Material grade	Carbide (K35)				Carbide (K20)		Carbide (K20)		Carbide (K20)	
Coating	AM200 (AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM200 (AlCrN)	Stock
φDc	Part No.		Part No.		Part No.		Part No.		Part No.	
12.00	5C112H-12	●	7C112P-12	●	7C212P-12	●	7C212P-12AS	●	5C212H-12CI	●
12.30	5C112H-.484	●	7C112P-.484	●	7C212P-.484	●	7C212P-.484AS	●	5C212H-.484CI	●
12.50	5C112H-12.5	●	7C112P-12.5	●	7C212P-12.5	●	7C212P-12.5AS	●	5C212H-12.5CI	●
12.70	5C112H-0016	●	7C112P-0016	●	7C212P-0016	●	7C212P-0016AS	●	5C212H-0016CI	●

Recommended tightening torque for clamping screw: 84 (N·cm)

※ The tightening torque is calculated by using 0.14 as the coefficient of friction ($\mu = 0.14$) and 90% of the yield point.

*Replace the holders periodically, using "every 100th insert replacement" as a guideline.

For recommended cutting conditions, please refer to page **O98 - O99**.

Notes) *Each holder comes with 4 clamping screws and a screw releasing agent (E-Z BREAK). A screwdriver is available only as an optional item.

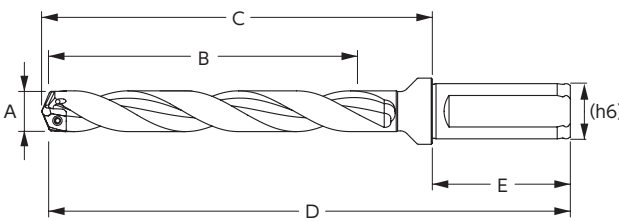
- : Standard stock
- : Semi-standard stock (Time required for delivery: approx. 2 weeks) production-to-order basis
- : Products shifting to production-to-order basis
- No symbol: Products manufactured production-to-order basis

φ 13.00 ~ 13.99 13 Series

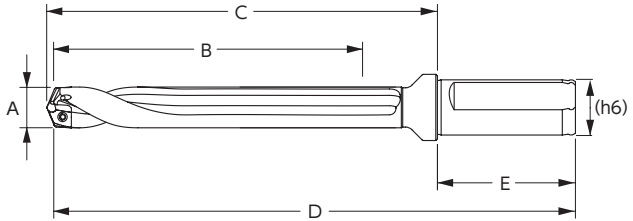
★ Select same size series between inserts and holders.

Holders (Metric system shank)

*Please use straight fluted for more than 3.5MPa coolant pressure.



① : Helical fluted

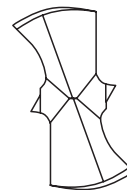
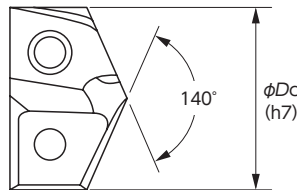


② : Straight fluted

(A) Insert cutting edge dia	(B) Max. machining length	P/N	Stock	Shape	Dimensions				Parts	
					(C) Body length	(D) Overall length	(E) Shank dia. x length	Screw for pipe	Clamping screw	Screwdriver (Optional)
13.00 ~ 13.99	16.0 1D	60113H-20FM	●	①	45.2	93.0	φ 20×50	1/8"	7247-IP7-10	8IP-7
	42.0 3D	60313H-20FM	●	①	71.5	119.3				
		60313S-20FM	●	②						
	70.0 5D	60513H-20FM	●	①	99.5	147.3				
		60513S-20FM	●	②						
	97.9 7D	60713H-20FM	●	①	127.5	175.3				
60713S-20FM		●	②							

Inserts

We take your order by 1 piece as the unit.



Shape	Standard				hard-to-cut material, stainless steel, AS		Cast Iron CI				Hard Steels/Low rigid machine LR
	Carbide (K35)		Carbide (K20)		Carbide (K20)		Carbide (K20)		Carbide (K35)		Carbide (K35)
Material grade	AM200 (AlCrN)		AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)		AM200 (AlCrN)		AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)
Coating	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock
φDc	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
13.00	5C113H-13	7C113P-13	7C213P-13	7C213P-13AS	5C213H-13CI	7C213P-13CI	7C113P-13LR				
13.08	5C113H-.515	7C113P-.515	7C213P-.515	7C213P-.515AS	5C213H-.515CI	7C213P-.515CI	7C113P-.515LR				
13.49	5C113H-0017	7C113P-0017	7C213P-0017	7C213P-0017AS	5C213H-0017CI	7C213P-0017CI	7C113P-0017LR				
13.50	5C113H-13.5	7C113P-13.5	7C213P-13.5	7C213P-13.5AS	5C213H-13.5CI	7C213P-13.5CI	7C113P-13.5LR				
13.89	5C113H-.546	7C113P-.546	7C213P-.546	7C213P-.546AS	5C213H-.546CI	7C213P-.546CI	7C113P-.546LR				

Recommended tightening torque for clamping screw: 84 (N·cm)

※The tightening torque is calculated by using 0.14 as the coefficient of friction ($\mu = 0.14$) and 90% of the yield point.
*Replace the holders periodically, using "every 100th insert replacement" as a guideline.
For recommended cutting conditions, please refer to page **098 - 099**.

Notes) *Each holder comes with 4 clamping screws and a screw releasing agent (E-Z BREAK). A screwdriver is available only as an optional item.

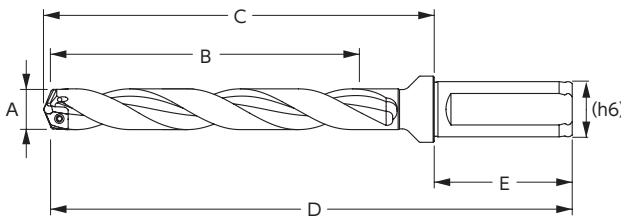
- : Standard stock
- ◎ : Semi-standard stock (Time required for delivery: approx. 2 weeks) production-to-order basis
- : Products shifting to production-to-order basis
- No symbol: Products manufactured production-to-order basis

φ 14.00 ~ 14.99 14 Series

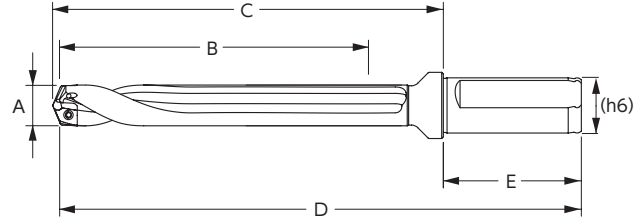
★ Select same size series between inserts and holders.

Holders (Metric system shank)

*Please use straight fluted for more than 3.5MPa coolant pressure.



① : Helical fluted

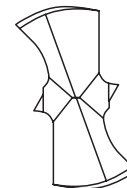
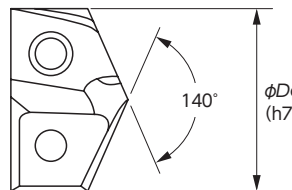


② : Straight fluted

(A) Insert cutting edge dia	(B) Max. machining length	P/N	Stock	Shape	Dimensions				Parts	
					(C) Body length	(D) Overall length	(E) Shank dia. x length	Screw for pipe	Clamping screw	Screwdriver (Optional)
14.00 ~ 14.99	17.5 1D	60114H-20FM	●	①	47.2	94.6	φ 20×50	1/8"	7247-IP7-10	8IP-7
	45.0 3D	60314H-20FM	●	①	75.0	122.4				
		60314S-20FM	●	②						
	75.0 5D	60514H-20FM	●	①	104.9	152.4				
		60514S-20FM	●	②						
	104.9 7D	60714H-20FM	●	①	134.9	182.4				
60714S-20FM		●	②							

Inserts

We take your order by 1 piece as the unit.



Shape	Standard						hard-to-cut material, stainless steel, AS		Cast Iron CI			Hard Steels/Low rigid machine LR		
Material grade	Carbide (K35)			Carbide (K20)			Carbide (K20)		Carbide (K20)		Carbide (K35)		Carbide (K35)	
Coating	AM200 (AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM200 (AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock
φDc	Part No.		Part No.		Part No.		Part No.		Part No.		Part No.		Part No.	
14.00	5C114H-14	●	7C114P-14	●	7C214P-14	●	7C214P-14AS	●	5C214H-14CI	●	7C214P-14CI	●	7C114P-14LR	●
14.29	5C114H-0018	●	7C114P-0018	●	7C214P-0018	●	7C214P-0018AS	●	5C214H-0018CI	●	7C214P-001CI	●	7C114P-0018LR	●
14.50	5C114H-14.5	●	7C114P-14.5	●	7C214P-14.5	●	7C214P-14.5AS	●	5C214H-14.5CI	●	7C214P-14.5CI	●	7C114P-14.5LR	
14.68	5C114H-.578	●	7C114P-.578	●	7C214P-.578	●	7C214P-.578AS	●	5C214H-.578CI		7C214P-.578CI		7C114P-.578LR	
14.80	5C114H-14.8	●	7C114P-14.8	●	7C214P-14.8	●	7C214P-14.8AS	●	5C214H-14.8CI		7C214P-14.8CI		7C114P-14.8LR	

Recommended tightening torque for clamping screw:84 (N·cm)

※The tightening torque is calculated by using 0.14 as the coefficient of friction (μ = 0.14) and 90% of the yield point.
*Replace the holders periodically, using "every 100th insert replacement" as a guideline.
For recommended cutting conditions, please refer to page **O98** - **O99**.

Notes) *Each holder comes with 4 clamping screws and a screw releasing agent (E-Z BREAK). A crewdriver is available only as an optional item.

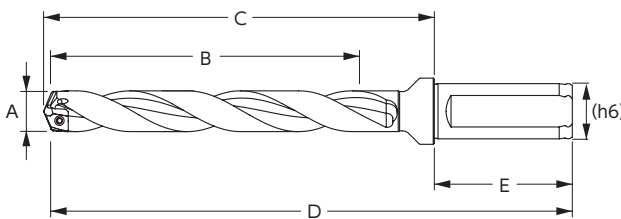
- : Standard stock
- : Semi-standard stock (Time required for delivery: approx. 2 weeks)production-to-order basis
- : Products shifting to production-to-order basis
- No symbol: Products manufactured production-to-order basis

φ 15.00 ~ 15.99 15 Series

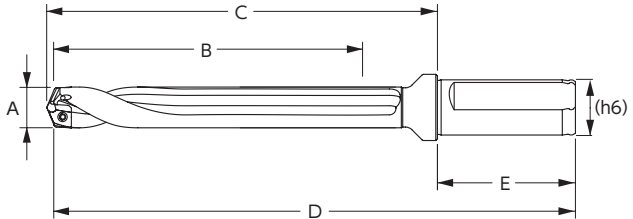
★ Select same size series between inserts and holders.

Holders (Metric system shank)

*Please use straight fluted for more than 3.5MPa coolant pressure.



① : Helical fluted

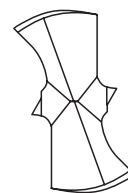
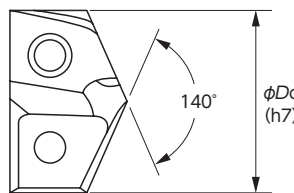


② : Straight fluted

(A) Insert cutting edge dia	(B) Max. machining length	P/N	Stock	Shape	Dimensions				Parts	
					(C) Body length	(D) Overall length	(E) Shank dia. x length	Screw for pipe	Clamping screw	Screwdriver (Optional)
15.00 ~ 15.99	17.5 1D	60115H-20FM	●	①	46.8	94.3	φ 20×50	1/8"	7247-IP7-10	8IP-7
	48.0 3D	60315H-20FM	●	①	77.6	125.1				
		60315S-20FM	●	②						
	80.0 5D	60515H-20FM	●	①	109.6	157.0				
		60515S-20FM	●	②						
	111.9 7D	60715H-20FM	●	①	141.6	189.0				
60715S-20FM		●	②							

Inserts

We take your order by 1 piece as the unit.



Shape	Standard				hard-to-cut material, stainless steel, AS		Cast Iron CI				Hard Steels/Low rigid machine LR
	Carbide (K35)		Carbide (K20)		Carbide (K20)		Carbide (K20)		Carbide (K35)		Carbide (K35)
Material grade	AM200 (AlCrN)		AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)		AM200 (AlCrN)		AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)
Coating	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock
φDc	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
15.00	5C115H-15	● 7C115P-15	● 7C215P-15	● 7C215P-15AS	● 5C215H-15CI	● 7C215P-15CI	● 7C115P-15LR				
15.08	5C115H-0019	● 7C115P-0019	● 7C215P-0019	● 7C215P-0019AS	● 5C215H-0019CI	● 7C215P-0019CI	● 7C115P-0019LR				
15.25	5C115H-15.25	● 7C115P-15.25	● 7C215P-15.25	● 7C215P-15.25AS	● 5C215H-15.25CI	● 7C215P-15.25CI	● 7C115P-15.25LR				
15.48	5C115H-.609	● 7C115P-.609	● 7C215P-.609	● 7C215P-.609AS	● 5C215H-.609CI	● 7C215P-.609CI	● 7C115P-.609LR				
15.50	5C115H-15.5	● 7C115P-15.5	● 7C215P-15.5	● 7C215P-15.5AS	● 5C215H-15.5CI	● 7C215P-15.5CI	● 7C115P-15.5LR				
15.70	5C115H-.618	● 7C115P-.618	● 7C215P-.618	● 7C215P-.618AS	● 5C215H-.618CI	● 7C215P-.618CI	● 7C115P-.618LR				
15.88	5C115H-0020	● 7C115P-0020	● 7C215P-0020	● 7C215P-0020AS	● 5C215H-0020CI	● 7C215P-0020CI	● 7C115P-0020LR				

Recommended tightening torque for clamping screw: 84 (N·cm)

※The tightening torque is calculated by using 0.14 as the coefficient of friction ($\mu = 0.14$) and 90% of the yield point.
*Replace the holders periodically, using "every 100th insert replacement" as a guideline.
For recommended cutting conditions, please refer to page **098 - 099**.

Notes) *Each holder comes with 4 clamping screws and a screw releasing agent (E-Z BREAK). A crewdriver is available only as an optional item.

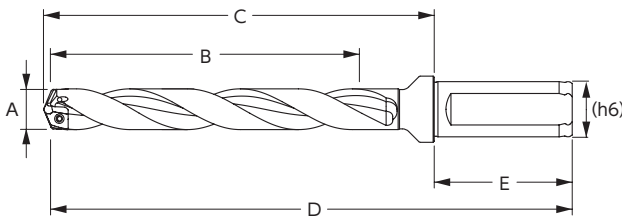
- : Standard stock
- : Semi-standard stock (Time required for delivery: approx. 2 weeks) production-to-order basis
- : Products shifting to production-to-order basis
- No symbol: Products manufactured production-to-order basis

φ 16.00 ~ 16.99 16 Series

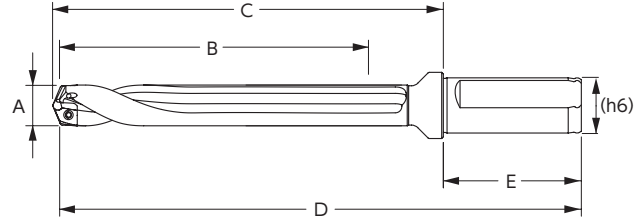
★ Select same size series between inserts and holders.

Holders (Metric system shank)

*Please use straight fluted for more than 3.5MPa coolant pressure.



① : Helical fluted

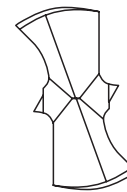
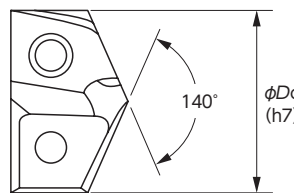


② : Straight fluted

(A) Insert cutting edge dia	(B) Max. machining length	P/N	Stock	Shape	Dimensions				Parts	
					(C) Body length	(D) Overall length	(E) Shank dia. x length	Screw for pipe	Clamping screw	Screwdriver (Optional)
16.00 ~ 16.99	21.0 1D	60116H-20FM	●	①	53.7	100.8	φ 20×50	1/8"	72556-IP8-10	8IP-8
	51.0 3D	60316H-20FM	●	①	84.2	131.3				
		60316S-20FM	●	②						
	84.9 5D	60516H-20FM	●	①	118.2	165.8				
		60516S-20FM	●	②						
	118.9 7D	60716H-20FM	●	①	152.2	199.3				
60716S-20FM		●	②							

Inserts

We take your order by 1 piece as the unit.



Shape	Standard						hard-to-cut material, stainless steel, AS		Cast Iron CI				Hard Steels/Low rigid machine LR	
Material grade	Carbide (K35)			Carbide (K20)			Carbide (K20)		Carbide (K20)		Carbide (K35)		Carbide (K35)	
Coating	AM200 (AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM200 (AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock
φDc	Part No.		Part No.		Part No.		Part No.		Part No.		Part No.		Part No.	
16.00	5C116H-16	●	7C116P-16	●	7C216P-16	●	7C216P-16AS	●	5C216H16CI	●	7C216P16CI	●	7C116P-16LR	●
16.08	5C116H-16.08		7C116P-16.08		7C216P-16.08		7C216P-16.08AS		5C216H16.08CI		7C216P16.08CI		7C116P-16.08LR	
16.27	5C116H-.640	●	7C116P-.640	●	7C216P-.640	●	7C216P-.640AS	●	5C216H.640CI	●	7C216P.640CI	●	7C116P-.640LR	
16.50	5C116H-16.5	●	7C116P-16.5	●	7C216P-16.5	●	7C216P-16.5AS	●	5C216H16.5CI	●	7C216P16.5CI	●	7C116P-16.5LR	
16.67	5C116H-0021	●	7C116P-0021	●	7C216P-0021	●	7C216P-0021AS	●	5C216H0021CI	●	7C216P0021CI	●	7C116P-0021LR	

Recommended tightening torque for clamping screw:175 (N·cm)

※ The tightening torque is calculated by using 0.14 as the coefficient of friction ($\mu = 0.14$) and 90% of the yield point.
*Replace the holders periodically, using "every 100th insert replacement" as a guideline.
For recommended cutting conditions, please refer to page **O98** - **O99**.

Notes) *Each holder comes with 4 clamping screws and a screw releasing agent (E-Z BREAK). A crewdriver is available only as an optional item.

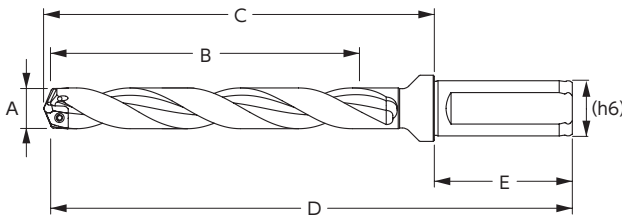
- : Standard stock
- : Semi-standard stock (Time required for delivery: approx. 2 weeks)production-to-order basis
- : Products shifting to production-to-order basis
- No symbol: Products manufactured production-to-order basis

φ17.00 ~ 17.99 17 Series

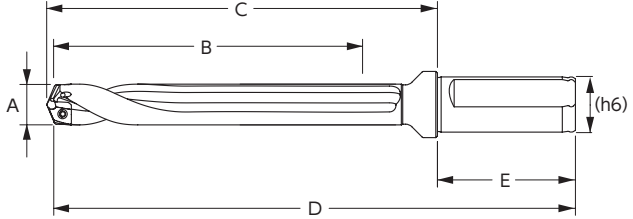
★ Select same size series between inserts and holders.

Holders (Metric system shank)

*Please use straight fluted for more than 3.5MPa coolant pressure.



① : Helical fluted

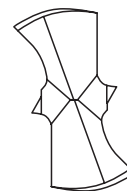
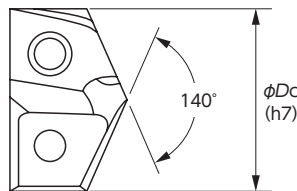


② : Straight fluted

(A) Insert cutting edge dia	(B) Max. machining length	P/N	Stock	Shape	Dimensions				Parts	
					(C) Body length	(D) Overall length	(E) Shank dia. x length	Screw for pipe	Clamping screw	Screwdriver (Optional)
17.00 ~ 17.99	21.0 1D	60117H-20FM	●	①	53.4	100.5	φ20×50	1/8"	72567-IP8-10	8IP-8
	54.0 3D	60317H-20FM	●	①	87.0	134.1				
		60317S-20FM	●	②						
	89.9 5D	60517H-20FM	●	①	122.9	170.1				
		60517S-20FM	●	②						
	125.9 7D	60717H-20FM	●	①	158.9	206.0				
60717S-20FM		●	②							

Inserts

We take your order by 1 piece as the unit.



Shape	Standard					hard-to-cut material, stainless steel, AS		Cast Iron CI			Hard Steels/Low rigid machine LR			
Material grade	Carbide (K35)				Carbide (K20)	Carbide (K20)		Carbide (K20)		Carbide (K35)		Carbide (K35)		
Coating	AM200 (AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM200 (AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock
φDc	Part No.		Part No.		Part No.		Part No.		Part No.		Part No.		Part No.	
17.00	5C117H-17	●	7C117P-17	●	7C217P-17	●	7C217P-17AS	●	5C217H-17CI	●	7C217P-17CI	●	7C117P-17LR	●
17.07	5C117H-.671	●	7C117P-.671	●	7C217P-.671	●	7C217P-.671AS	●	5C217H-.671CI	●	7C217P-.671CI	●	7C117P-.671LR	●
17.10	5C117H-17.1	●	7C117P-17.1	●	7C217P-17.1	●	7C217P-17.1AS	●	5C217H-17.1CI	●	7C217P-17.1CI	●	7C117P-17.1LR	●
17.20	5C117H-17.2	●	7C117P-17.2	●	7C217P-17.2	●	7C217P-17.2AS	●	5C217H-17.2CI	●	7C217P-17.2CI	●	7C117P-17.2LR	●
17.46	5C117H-0022	●	7C117P-0022	●	7C217P-0022	●	7C217P-0022AS	●	5C217H-0022CI	●	7C217P-0022CI	●	7C117P-0022LR	●
17.50	5C117H-17.5	●	7C117P-17.5	●	7C217P-17.5	●	7C217P-17.5AS	●	5C217H-17.5CI	●	7C217P-17.5CI	●	7C117P-17.5LR	●
17.86	5C117H-.703	●	7C117P-.703	●	7C217P-.703	●	7C217P-.703AS	●	5C217H-.703CI	●	7C217P-.703CI	●	7C117P-.703LR	●
17.90	5C117H-17.9	●	7C117P-17.9	●	7C217P-17.9	●	7C217P-17.9AS	●	5C217H-17.9CI	●	7C217P-17.9CI	●	7C117P-17.9LR	●
17.95	5C117H-.17.95	●	7C117P-17.95	●	7C217P-17.95	●	7C217P-17.95AS	●	5C217H-17.95CI	●	7C217P-17.95CI	●	7C117P-17.95LR	●

Recommended tightening torque for clamping screw:175 (N·cm)

※The tightening torque is calculated by using 0.14 as the coefficient of friction (μ = 0.14) and 90% of the yield point.
*Replace the holders periodically, using "every 100th insert replacement" as a guideline.
For recommended cutting conditions, please refer to page **098 - 099**.

Notes) *Each holder comes with 4 clamping screws and a screw releasing agent (E-Z BREAK). A crewdriver is available only as an optional item.

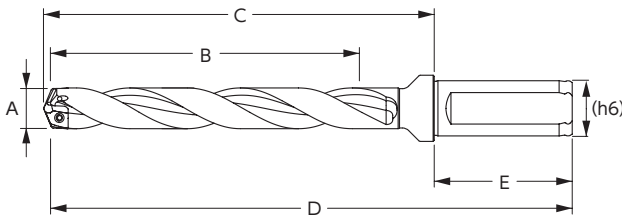
- : Standard stock
- : Semi-standard stock (Time required for delivery: approx. 2 weeks)production-to-order basis
- : Products shifting to production-to-order basis
- No symbol: Products manufactured production-to-order basis

φ 18.00 ~ 19.99 18 Series

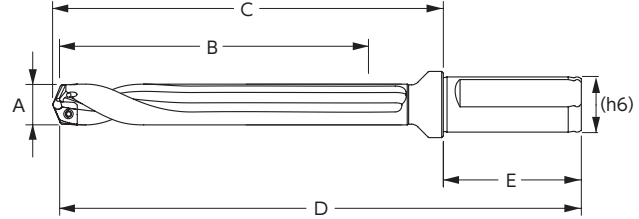
★ Select same size series between inserts and holders.

Holders (Metric system shank)

*Please use straight fluted for more than 3.5MPa coolant pressure.



① : Helical fluted

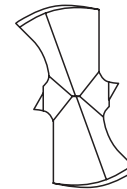
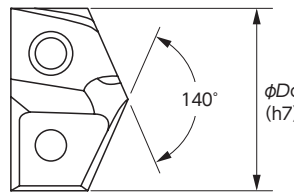


② : Straight fluted

(A) Insert cutting edge dia	(B) Max. machining length	P/N	Stock	Shape	Dimensions			Parts		
					(C) Body length	(D) Overall length	(E) Shank dia. x length	Screw for pipe	Clamping screw	Screwdriver (Optional)
18.00 ~ 19.99	22.0 1D	60118H-25FM	●	①	58.8	111.9	φ 25×56	1/8"	7375-IP9-10	8IP-9
	60.0 3D	60318H-25FM	●	①	96.8	150.0				
		60318S-25FM	●	②						
	99.9 5D	60518H-25FM	●	①	136.8	190.0				
		60518S-25FM	●	②						
	139.9 7D	60718H-25FM	●	①	176.8	230.0				
60718S-25FM		●	②							

Inserts

We take your order by 1 piece as the unit.



Shape	Standard				hard-to-cut material, stainless steel, AS				Cast Iron CI				Hard Steels/Low rigid machine LR			
Material grade	Carbide (K35)		Carbide (K20)		Carbide (K20)		Carbide (K20)		Carbide (K35)		Carbide (K35)		Carbide (K35)		Carbide (K35)	
Coating	AM200 (AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM200 (AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock
φDc	Part No.		Part No.		Part No.		Part No.		Part No.		Part No.		Part No.		Part No.	
18.00	5C118H-18	●	7C118P-18	●	7C218P-18	●	7C218P-18AS	●	5C218H-18CI	●	7C218P-18CI	●	7C118P-18LR	●		
18.26	5C118H-0023	●	7C118P-0023	●	7C218P-0023	●	7C218P-0023AS	●	5C218H-0023CI	●	7C218P-0023CI	●	7C118P-0023LR	●		
18.50	5C118H-18.5	●	7C118P-18.5	●	7C218P-18.5	●	7C218P-18.5AS	●	5C218H-18.5CI	●	7C218P-18.5CI	●	7C118P-18.5LR	●		
18.65	5C118H-.734	●	7C118P-.734	●	7C218P-.734	●	7C218P-.734AS	●	5C218H-.734CI	●	7C218P-.734CI	●	7C118P-.734LR	●		
19.00	5C118H-19	●	7C118P-19	●	7C218P-19	●	7C218P-19AS	●	5C218H-19CI	●	7C218P-19CI	●	7C118P-19LR	●		
19.05	5C118H-0024	●	7C118P-0024	●	7C218P-0024	●	7C218P-0024AS	●	5C218H-0024CI	●	7C218P-0024CI	●	7C118P-0024LR	●		
19.25	5C118H-.758	●	7C118P-.758	●	7C218P-.758	●	7C218P-.758AS	●	5C218H-.758CI	●	7C218P-.758CI	●	7C118P-.758LR	●		
19.45	5C118H-.765	●	7C118P-.765	●	7C218P-.765	●	7C218P-.765AS	●	5C218H-.765CI	●	7C218P-.765CI	●	7C118P-.765LR	●		
19.50	5C118H-19.5	●	7C118P-19.5	●	7C218P-19.5	●	7C218P-19.5AS	●	5C218H-19.5CI	●	7C218P-19.5CI	●	7C118P-19.5LR	●		
19.80	5C118H-19.8	●	7C118P-19.8	●	7C218P-19.8	●	7C218P-19.8AS	●	5C218H-19.8CI	●	7C218P-19.8CI	●	7C118P-19.8LR	●		
19.85	5C118H-0025	●	7C118P-0025	●	7C218P-0025	●	7C218P-0025AS	●	5C218H-0025CI	●	7C218P-0025CI	●	7C118P-0025LR	●		

Recommended tightening torque for clamping screw:305 (N·cm)

※The tightening torque is calculated by using 0.14 as the coefficient of friction ($\mu = 0.14$) and 90% of the yield point.

*Replace the holders periodically, using "every 100th insert replacement" as a guideline.
For recommended cutting conditions, please refer to page **O98 - O99**.

Notes) *Each holder comes with 4 clamping screws and a screw releasing agent (E-Z BREAK). A crewdriver is available only as an optional item.

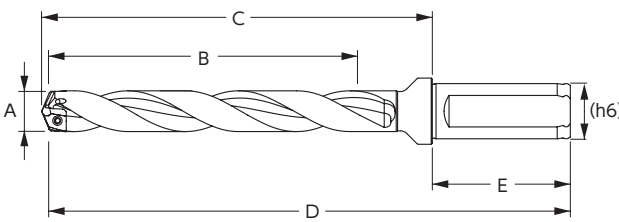
- : Standard stock
- : Semi-standard stock (Time required for delivery: approx. 2 weeks)production-to-order basis
- : Products shifting to production-to-order basis
- No symbol: Products manufactured production-to-order basis

φ 20.00 ~ 21.99 20 Series

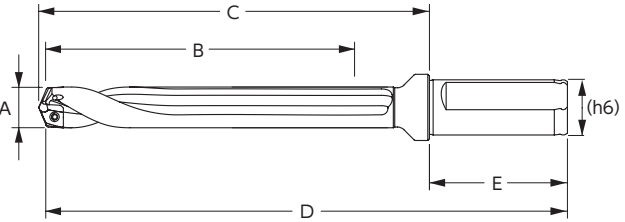
★ Select same size series between inserts and holders.

Holders (Metric system shank)

*Please use straight fluted for more than 3.5MPa coolant pressure.



① : Helical fluted

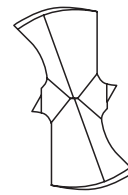
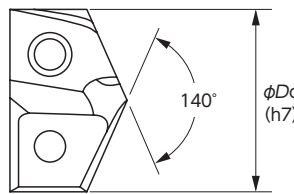


② : Straight fluted

(A) Insert cutting edge dia	(B) Max. machining length	P/N	Stock	Shape	Dimensions				Parts	
					(C) Body length	(D) Overall length	(E) Shank dia. x length	Screw for pipe	Clamping screw	Screwdriver (Optional)
20.00 ~ 21.99	24.0 1D	60120H-25FM	●	①	60.4	113.6	φ25×56	1/8"	7375-IP9-10	8IP-9
	66.0 3D	60320H-25FM	●	①	102.9	156.1				
		60320S-25FM	●	②						
	110.0 5D	60520H-25FM	●	①	146.9	200.1				
		60520S-25FM	●	②						
	153.9 7D	60720H-25FM	●	①	190.9	244.0				
		60720S-25FM	●	②						

Inserts

We take your order by 1 piece as the unit.



Shape	Standard					hard-to-cut material, stainless steel, AS		Cast Iron CI			Hard Steels/Low rigid machine LR	
	Carbide (K35)			Carbide (K20)		Carbide (K20)		Carbide (K20)			Carbide (K35)	
Material grade	AM200 (AlCrN)		AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)		AM200 (AlCrN)		AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)	
Coating	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock
φDc	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
20.00	5C120H-20	7C120P-20	7C220P-20	7C220P-20AS	5C220H-20CI	7C220P-20CI	7C120P-20LR					
20.24	5C120H-.796	7C120P-.796	7C220P-.796	7C220P-.796AS	5C220H-.796CI	7C220P-.796CI	7C120P-.796LR					
20.50	5C120H-20.5	7C120P-20.5	7C220P-20.5	7C220P-20.5AS	5C220H-20.5CI	7C220P-20.5CI	7C120P-20.5LR					
20.64	5C120H-0026	7C120P-0026	7C220P-0026	7C220P-0026AS	5C220H-0026CI	7C220P-0026CI	7C120P-0026LR	●				
21.00	5C120H-21	7C120P-21	7C220P-21	7C220P-21AS	5C220H-21CI	7C220P-21CI	7C120P-21LR					
21.43	5C120H-0027	7C120P-0027	7C220P-0027	7C220P-0027AS	5C220H-0027CI	7C220P-0027CI	7C120P-0027LR					
21.50	5C120H-21.5	7C120P-21.5	7C220P-21.5	7C220P-21.5AS	5C220H-21.5CI	7C220P-21.5CI	7C120P-21.5LR					
21.83	5C120H-.859	7C120P-.859	7C220P-.859	7C220P-.859AS	5C220H-.859CI	7C220P-.859CI	7C120P-.859LR					

Recommended tightening torque for clamping screw:305 (N·cm)

※The tightening torque is calculated by using 0.14 as the coefficient of friction (μ = 0.14) and 90% of the yield point.
*Replace the holders periodically, using "every 100th insert replacement" as a guideline.
For recommended cutting conditions, please refer to page **098 - 099**.

(Notes) *Each holder comes with 4 clamping screws and a screw releasing agent (E-Z BREAK). A crewdriver is available only as an optional item.

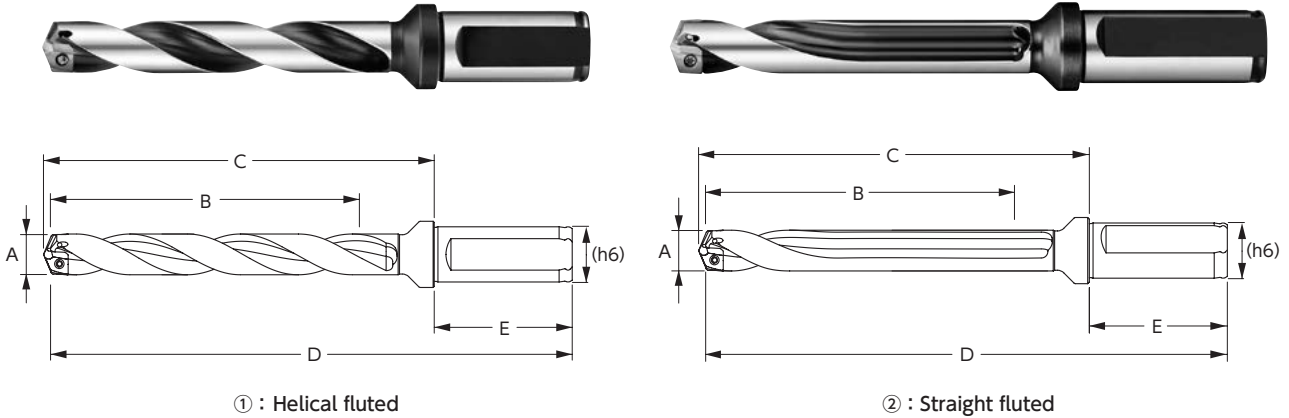
- : Standard stock
- ◎ : Semi-standard stock (Time required for delivery: approx. 2 weeks)production-to-order basis
- : Products shifting to production-to-order basis
- No symbol: Products manufactured production-to-order basis

φ 22.00 ~ 23.99 22 Series

★ Select same size series between inserts and holders.

Holders (Metric system shank)

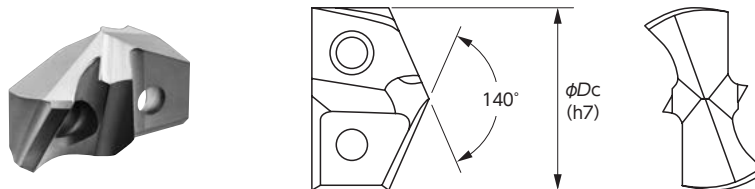
*Please use straight fluted for more than 3.5MPa coolant pressure.



(A) Insert cutting edge dia	(B) Max. machining length	P/N	Stock	Shape	Dimensions			Parts		
					(C) Body length	(D) Overall length	(E) Shank dia. x length	Screw for pipe	Clamping screw	Screwdriver (Optional)
22.00 ~ 23.99	27.0 1D	60122H-25FM	●	①	63.0	116.1	φ 25 × 56	1/8"	739-IP9-10	8IP-9
	72.0 3D	60322H-25FM	●	①	108.3	161.3				
		60322S-25FM	●	②						
	119.9 5D	60522H-25FM	●	①	156.2	209.3				
		60522S-25FM	●	②						
	167.9 7D	60722H-25FM	●	①	204.2	257.3				
		60722S-25FM	●	②						

Inserts

We take your order by 1 piece as the unit.



Shape	Standard						hard-to-cut material, stainless steel, AS		Cast Iron CI				Hard Steels/Low rigid machine LR	
	Carbide (K35)			Carbide (K20)			Carbide (K20)		Carbide (K20)				Carbide (K35)	
Material grade	AM200 (AlCrN)		AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)		AM200 (AlCrN)		AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)	
Coating	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock
φDc	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
22.00	5C122H-22	●	7C122P-22	●	7C222P-22	●	7C222P-22AS	●	5C222H-22CI	●	7C222P-22CI	●	7C122P-22LR	●
22.23	5C122H-0028	●	7C122P-0028	●	7C222P-0028	●	7C222P-0028AS	●	5C222H-0028CI	●	7C222P-0028CI	●	7C122P-0028LR	●
22.61	5C122H-.890	●	7C122P-.890	●	7C222P-.890	●	7C222P-.890AS	●	5C222H-.890CI	●	7C222P-.890CI	●	7C122P-.890LR	●
23.00	5C122H-23	●	7C122P-23	●	7C222P-23	●	7C222P-23AS	●	5C222H-23CI	●	7C222P-23CI	●	7C122P-23LR	●
23.02	5C122H-0029	●	7C122P-0029	●	7C222P-0029	●	7C222P-0029AS	●	5C222H-0029CI	●	7C222P-0029CI	●	7C122P-0029LR	●
23.42	5C122H-.921	●	7C122P-.921	●	7C222P-.921	●	7C222P-.921AS	●	5C222H-.921CI	●	7C222P-.921CI	●	7C122P-.921LR	●
23.80	5C122H-23.8	●	7C122P-23.8	●	7C222P-23.8	●	7C222P-23.8AS	●	5C222H-23.8CI	●	7C222P-23.8CI	●	7C122P-23.8LR	●
23.81	5C122H-0030	●	7C122P-0030	●	7C222P-0030	●	7C222P-0030AS	●	5C222H-0030CI	●	7C222P-0030CI	●	7C122P-0030LR	●
23.85	5C122H-23.85	●	7C122P-23.85	●	7C222P-23.85	●	7C222P-23.85AS	●	5C222H-23.85CI	●	7C222P-23.85CI	●	7C122P-23.85LR	●

Recommended tightening torque for clamping screw: 305 (N·cm)

※ The tightening torque is calculated by using 0.14 as the coefficient of friction ($\mu = 0.14$) and 90% of the yield point.

*Replace the holders periodically, using "every 100th insert replacement" as a guideline.

For recommended cutting conditions, please refer to page **O98 - O99**.

Notes) *Each holder comes with 4 clamping screws and a screw releasing agent (E-Z BREAK). A screwdriver is available only as an optional item.

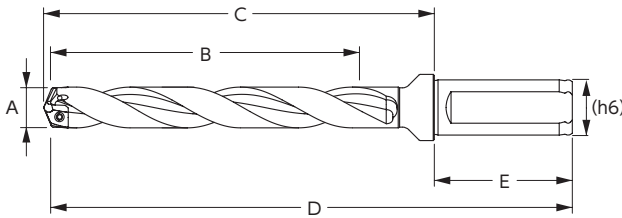
- : Standard stock
- ◎ : Semi-standard stock (Time required for delivery: approx. 2 weeks) production-to-order basis
- : Products shifting to production-to-order basis
- No symbol: Products manufactured production-to-order basis

φ 24.00 ~ 25.99 24 Series

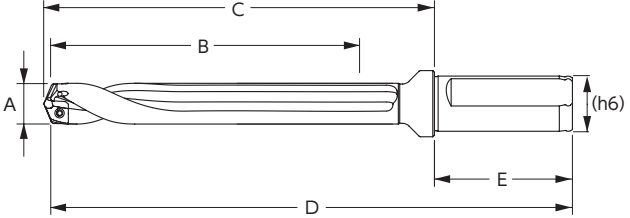
★ Select same size series between inserts and holders.

Holders (Metric system shank)

*Please use straight fluted for more than 3.5MPa coolant pressure.



① : Helical fluted

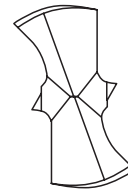
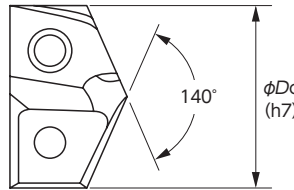


② : Straight fluted

(A) Insert cutting edge dia	(B) Max. machining length	P/N	Stock	Shape	Dimensions				Parts	
					(C) Body length	(D) Overall length	(E) Shank dia. x length	Screw for pipe	Clamping screw	Screwdriver (Optional)
24.00 ~ 25.99	28.5 1D	60124H-25FM	●	①	67.1	120.1	φ25×56	1/8"	739-IP9-10	8IP-9
	78.0 3D	60324H-25FM	●	①	116.8	169.8				
		60324S-25FM	●	②						
	129.9 5D	60524H-25FM	●	①	168.7	221.8				
		60524S-25FM	●	②						
	181.9 7D	60724H-25FM	●	①	220.7	273.8				
		60724S-25FM	●	②						

Inserts

We take your order by 1 piece as the unit.



Shape	Standard					hard-to-cut material, stainless steel, AS		Cast Iron CI			Hard Steels/Low rigid machine LR			
Material grade	Carbide (K35)				Carbide (K20)	Carbide (K20)		Carbide (K20)			Carbide (K35)			
Coating	AM200 (AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM200 (AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock
φDc	Part No.		Part No.		Part No.		Part No.		Part No.		Part No.		Part No.	
24.00	5C124H-24	●	7C124P-24	●	7C224P-24	●	7C224P-24AS	●	5C224H-24CI	●	7C224P-24CI	●	7C124P-24LR	●
24.61	5C124H-0031	●	7C124P-0031	●	7C224P-0031	●	7C224P-0031AS	●	5C224H-0031CI	●	7C224P-0031CI	●	7C124P-0031LR	
25.00	5C124H-25	●	7C124P-25	●	7C224P-25	●	7C224P-25AS	●	5C224H-25CI	●	7C224P-25CI	●	7C124P-25LR	
25.40	5C124H-0100	●	7C124P-0100	●	7C224P-0100	●	7C224P-0100AS	●	5C224H-0100CI	●	7C224P-0100CI	●	7C124P-0100LR	●
25.50	5C124H-25.5		7C124P-25.5	●	7C224P-25.5	●	7C224P-25.5AS	●	5C224H-25.5CI		7C224P-25.5CI		7C124P-25.5LR	
25.60	5C124H-1.008	●	7C124P-1.008	●	7C224P-1.008	●	7C224P-1.008AS	●	5C224H-1.008CI		7C224P-1.008CI		7C124P-1.008LR	●
25.78	5C124H-1.015	●	7C124P-1.015	●	7C224P-1.015	●	7C224P-1.015AS	●	5C224H-1.015CI	●	7C224P-1.015CI	●	7C124P-1.015LR	●

Recommended tightening torque for clamping screw:305 (N·cm)

※The tightening torque is calculated by using 0.14 as the coefficient of friction ($\mu = 0.14$) and 90% of the yield point.
*Replace the holders periodically, using "every 100th insert replacement" as a guideline.
For recommended cutting conditions, please refer to page **O98 - O99**.

Notes) *Each holder comes with 4 clamping screws and a screw releasing agent (E-Z BREAK). A crewdriver is available only as an optional item.

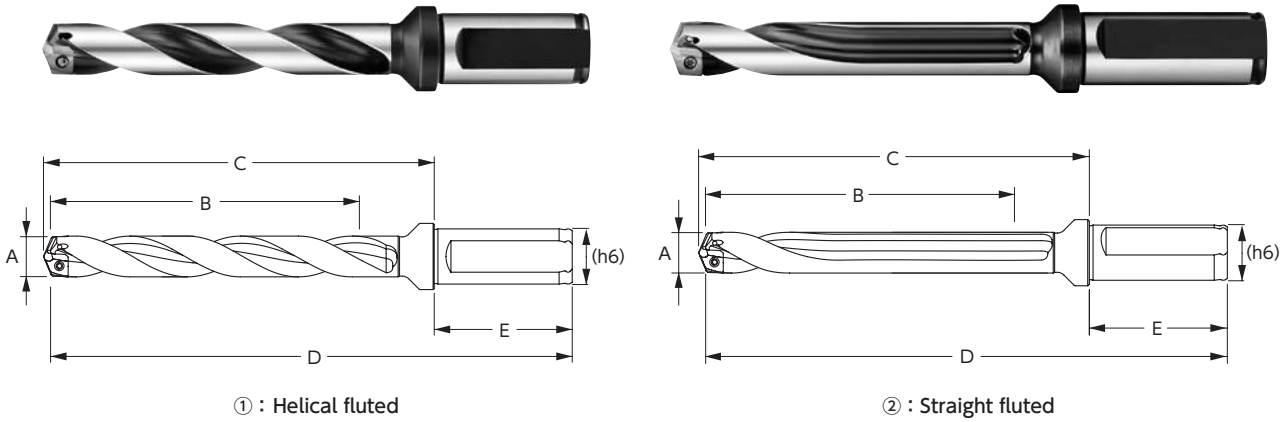
- : Standard stock
- : Semi-standard stock (Time required for delivery: approx. 2 weeks)production-to-order basis
- : Products shifting to production-to-order basis
- No symbol: Products manufactured production-to-order basis

φ 26.00 ~ 28.99 26 Series

★ Select same size series between inserts and holders.

Holders (Metric system shank)

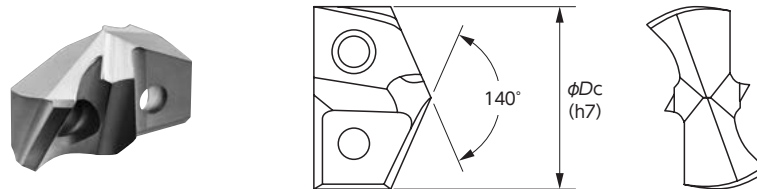
*Please use straight fluted for more than 3.5MPa coolant pressure.



(A) Insert cutting edge dia	(B) Max. machining length	P/N	Stock	Shape	Dimensions			Parts		
					(C) Body length	(D) Overall length	(E) Shank dia. x length	Screw for pipe	Clamping screw	Screwdriver (Optional)
26.00 ~ 28.99	32.0 1D	60126H-32FM	●	①	75.7	133.0	φ 32×60	1/8"	7495-IP15-10	8IP-15
	87.0 3D	60326H-32FM	●	①	130.9	188.1				
		60326S-32FM	●	②						
	145.0 5D	60526H-32FM	●	①	188.8	246.1				
		60526S-32FM	●	②						
	202.9 7D	60726H-32FM	●	①	246.8	304.1				
60726S-32FM		●	②							

Inserts

We take your order by 1 piece as the unit.



Shape	Standard				hard-to-cut material, stainless steel, AS		Cast Iron CI				Hard Steels/Low rigid machine LR			
	Carbide (K35)		Carbide (K20)		Carbide (K20)		Carbide (K20)				Carbide (K35)			
Coating	AM200 (AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM200 (AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock
	Part No.		Part No.		Part No.		Part No.		Part No.		Part No.			
26.00	5C126H-26	●	7C126P-26	●	7C226P-26	●	7C226P-26AS	●	5C226H-26CI	●	7C226P-26CI	●	7C126P-26LR	●
26.20	5C126H-0101	●	7C126P-0101	●	7C226P-0101	●	7C226P-0101AS	●	5C226H-0101CI	●	7C226P-0101CI	●	7C126P-0101LR	●
26.59	5C126H-1.046	●	7C126P-1.046	●	7C226P-1.046	●	7C226P-1.046AS	●	5C226H-1.046CI	●	7C226P-1.046CI	●	7C126P-1.046LR	●
26.99	5C126H-0102	●	7C126P-0102	●	7C226P-0102	●	7C226P-0102AS	●	5C226H-0102CI	●	7C226P-0102CI	●	7C126P-0102LR	●
27.00	5C126H-27	●	7C126P-27	●	7C226P-27	●	7C226P-27AS	●	5C226H-27CI	●	7C226P-27CI	●	7C126P-27LR	●
27.78	5C126H-0103	●	7C126P-0103	●	7C226P-0103	●	7C226P-0103AS	●	5C226H-0103CI	●	7C226P-0103CI	●	7C126P-0103LR	●
28.00	5C126H-28	●	7C126P-28	●	7C226P-28	●	7C226P-28AS	●	5C226H-28CI	●	7C226P-28CI	●	7C126P-28LR	●
28.17	5C126H-1.109	●	7C126P-1.109	●	7C226P-1.109	●	7C226P-1.109AS	●	5C226H-1.109CI	●	7C226P-1.109CI	●	7C126P-1.109LR	●
28.50	5C126H-28.5	●	7C126P-28.5	●	7C226P-28.5	●	7C226P-28.5AS	●	5C226H-28.5CI	●	7C226P-28.5CI	●	7C126P-28.5LR	●
28.58	5C126H-0104	●	7C126P-0104	●	7C226P-0104	●	7C226P-0104AS	●	5C226H-0104CI	●	7C226P-0104CI	●	7C126P-0104LR	●

Recommended tightening torque for clamping screw:690 (N·cm)

※The tightening torque is calculated by using 0.14 as the coefficient of friction ($\mu = 0.14$) and 90% of the yield point.

*Replace the holders periodically, using "every 100th insert replacement" as a guideline.

For recommended cutting conditions, please refer to page **O98 - O99**.

(Notes) *Each holder comes with 4 clamping screws and a screw releasing agent (E-Z BREAK). A crewdriver is available only as an optional item.

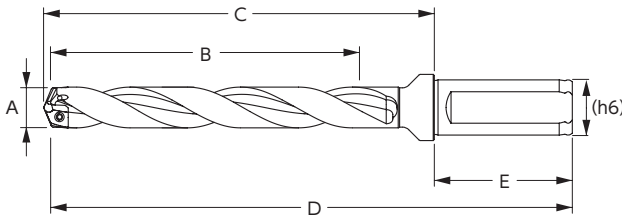
- : Standard stock
- : Semi-standard stock (Time required for delivery: approx. 2 weeks)production-to-order basis
- : Products shifting to production-to-order basis
- No symbol: Products manufactured production-to-order basis

φ 29.00 ~ 31.99 29 Series

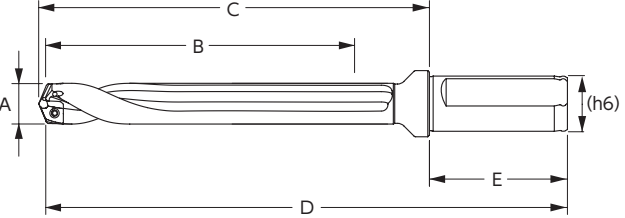
★ Select same size series between inserts and holders.

Holders (Metric system shank)

*Please use straight fluted for more than 3.5MPa coolant pressure.



① : Helical fluted

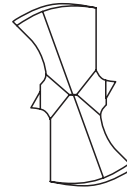
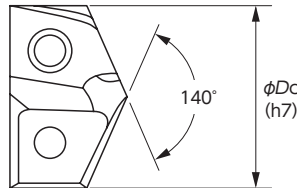


② : Straight fluted

(A) Insert cutting edge dia	(B) Max. machining length	P/N	Stock	Shape	Dimensions				Parts	
					(C) Body length	(D) Overall length	(E) Shank dia. x length	Screw for pipe	Clamping screw	Screwdriver (Optional)
29.00 ~ 31.99	35.0 1D	60129H-32FM	●	①	78.2	135.2	φ32×60	1/4"	7495-IP15-10	8IP-15
	96.0 3D	60329H-32FM	●	①	139.1	196.2				
		60329S-32FM	●	②						
	159.9 5D	60529H-32FM	●	①	203.1	260.1				
		60529S-32FM	●	②						
	223.9 7D	60729H-32FM	●	①	267.1	324.1				
		60729S-32FM	●	②						

Inserts

We take your order by 1 piece as the unit.



Shape	Standard						Cast Iron CI				Hard Steels/Low rigid machine LR		
Material grade	Carbide (K35)			Carbide (K20)			Carbide (K20)				Carbide (K35)		
Coating	AM200 (AlCrN)		AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)		AM200 (AlCrN)		AM300 (multilayer AlCrN)		AM300 (multilayer AlCrN)		
φDc	Part No.	Stock	Part No.	Stock	Part No.	Stock	Part No.	Stock	Part No.	Stock	Part No.	Stock	
29.00	5C129H-29	●	7C129P-29	●	7C229P-29	●	7C229P-29AS	●	5C229H-29CI	●	7C229P-29CI	●	7C129P-29LR
29.37	5C129H-0105	●	7C129P-0105	●	7C229P-0105	●	7C229P-0105AS	●	5C229H-0105CI	●	7C229P-0105CI	●	7C129P-0105LR
30.00	5C129H-30	●	7C129P-30	●	7C229P-30	●	7C229P-30AS	●	5C229H-30CI	●	7C229P-30CI	●	7C129P-30LR
30.16	5C129H-0106	●	7C129P-0106	●	7C229P-0106	●	7C229P-0106AS	●	5C229H-0106CI	●	7C229P-0106CI	●	7C129P-0106LR
30.50	5C129H-30.5	●	7C129P-30.5	●	7C229P-30.5	●	7C229P-30.5AS	●	5C229H-30.5CI	●	7C229P-30.5CI	●	7C129P-30.5LR
30.96	5C129H-0107	●	7C129P-0107	●	7C229P-0107	●	7C229P-0107AS	●	5C229H-0107CI	●	7C229P-0107CI	●	7C129P-0107LR
31.00	5C129H-31	●	7C129P-31	●	7C229P-31	●	7C229P-31AS	●	5C229H-31CI	●	7C229P-31CI	●	7C129P-31LR
31.75	5C129H-0108	●	7C129P-0108	●	7C229P-0108	●	7C229P-0108AS	●	5C229H-0108CI	●	7C229P-0108CI	●	7C129P-0108LR
31.80	5C129H-31.8	●	7C129P-31.8	●	7C229P-31.8	●	7C229P-31.8AS	●	5C229H-31.8CI	●	7C229P-31.8CI	●	7C129P-31.8LR

Recommended tightening torque for clamping screw:690 (N·cm)

※The tightening torque is calculated by using 0.14 as the coefficient of friction (μ = 0.14) and 90% of the yield point.

*Replace the holders periodically, using "every 100th insert replacement" as a guideline.
For recommended cutting conditions, please refer to page 098 - 099.

(Notes) *Each holder comes with 4 clamping screws and a screw releasing agent (E-Z BREAK). A crewdriver is available only as an optional item.

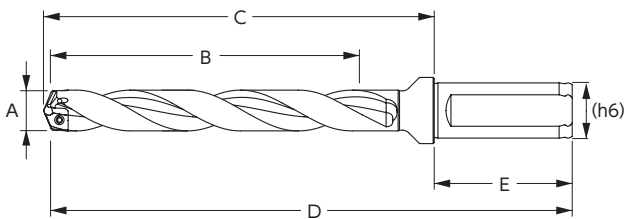
- : Standard stock
- : Semi-standard stock (Time required for delivery: approx. 2 weeks)/production-to-order basis
- : Products shifting to production-to-order basis
- No symbol: Products manufactured production-to-order basis

φ 32.00 ~ 35.00 32 Series

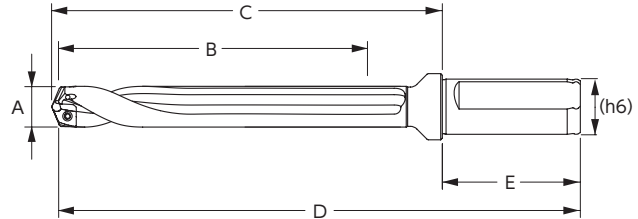
★ Select same size series between inserts and holders.

Holders (Metric system shank)

*Please use straight fluted for more than 3.5MPa coolant pressure.



① : Helical fluted

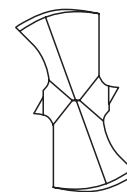
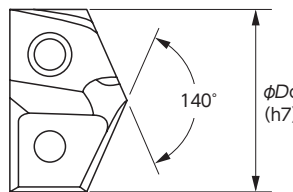


② : Straight fluted

(A) Insert cutting edge dia	(B) Max. machining length	P/N	Stock	Shape	Dimensions			Parts		
					(C) Body length	(D) Overall length	(E) Shank dia. x length	Screw for pipe	Clamping screw	Screwdriver (Optional)
32.00 ~ 35.00	38.0 1D	60132H-40FM	●	①	94.2	160.7	φ 40×70	1/4"	7495-IP15-10	8IP-15
	105.0 3D	60332H-40FM	●	①	161.3	227.7				
		60332S-40FM	●	②						
	175.0 5D	60532H-40FM	●	①	231.3	297.7				
		60532S-40FM	●	②						
	244.9 7D	60732H-40FM	●	①	301.3	367.7				
		60732S-40FM	●	②						

Inserts

We take your order by 1 piece as the unit.



Shape	Standard				hard-to-cut material, stainless steel, AS		Cast Iron CI		Hard Steels/Low rigid machine LR	
Material grade	Carbide (K35)		Carbide (K20)		Carbide (K20)		Carbide (K20)		Carbide (K35)	
Coating	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock	AM300 (multilayer AlCrN)	Stock
φDc	Part No.		Part No.		Part No.		Part No.		Part No.	
32.00	7C132P-32	●	7C232P-32	●	7C232P-32AS	●	7C232P-32CI	●	7C132P-32LR	
32.15	7C132P-32.15	●	7C232P-32.15	●	7C232P-32.15AS		7C232P-32.15CI		7C132P-32.15LR	
32.50	7C132P-32.5	●	7C232P-32.5	●	7C232P-32.5AS		7C232P-32.5CI		7C132P-32.5LR	
32.55	7C132P-0109	●	7C232P-0109	●	7C232P-0109AS		7C232P-0109CI		7C132P-0109LR	
33.00	7C132P-33	●	7C232P-33	●	7C232P-33AS	●	7C232P-33CI	●	7C132P-33LR	●
33.34	7C132P-0110	●	7C232P-0110	●	7C232P-0110AS	●	7C232P-0110CI	●	7C132P-0110LR	●
33.50	7C132P-33.5	●	7C232P-33.5	●	7C232P-33.5AS		7C232P-33.5CI		7C132P-33.5LR	
34.00	7C132P-34	●	7C232P-34	●	7C232P-34AS	●	7C232P-34CI	●	7C132P-34LR	
34.13	7C132P-0111	●	7C232P-0111	●	7C232P-0111AS		7C232P-0111CI		7C132P-0111LR	
34.50	7C132P-34.5	●	7C232P-34.5	●	7C232P-34.5AS		7C232P-34.5CI		7C132P-34.5LR	
34.93	7C132P-0112	●	7C232P-0112	●	7C232P-0112AS	●	7C232P-0112CI	●	7C132P-0112LR	
35.00	7C132P-35	●	7C232P-35	●	7C232P-35AS	●	7C232P-35CI	●	7C132P-35LR	

Recommended tightening torque for clamping screw: 690 (N·cm)

※ The tightening torque is calculated by using 0.14 as the coefficient of friction ($\mu = 0.14$) and 90% of the yield point.

*Replace the holders periodically, using "every 100th insert replacement" as a guideline.

For recommended cutting conditions, please refer to page **O98 - O99**.

(Notes) *Each holder comes with 4 clamping screws and a screw releasing agent (E-Z BREAK). A screwdriver is available only as an optional item.

- : Standard stock
- ◎ : Semi-standard stock (Time required for delivery: approx. 2 weeks) production-to-order basis
- : Products shifting to production-to-order basis
- No symbol: Products manufactured production-to-order basis

Recommended Cutting Conditions

Recommended cutting conditions for GEN3

Work material	Hardness	Recommended material grade	Cutting speed (m/min)		Cutting feed rate (mm/rev)								
			AM200	AM300	φ11.00	φ12.00	φ13.00	φ14.00	φ15.00	φ16.00	φ17.00	φ18.00	φ20.00
					φ11.99	φ12.99	φ13.99	φ14.99	φ15.99	φ16.99	φ17.99	φ19.99	φ21.99
Free-cutting steel	100 ~ 150	K35	146	168	0.28	0.30	0.33	0.36	0.38	0.41	0.43	0.48	0.53
	150 ~ 200	K35	127	145	0.25	0.28	0.30	0.33	0.36	0.38	0.41	0.43	0.48
	200 ~ 250	K35	119	130	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.41	0.46
Low carbon steel S10C ~ S25C	85 ~ 125	K35	137	158	0.28	0.30	0.33	0.36	0.38	0.41	0.43	0.48	0.53
	125 ~ 175	K35	119	137	0.25	0.28	0.30	0.33	0.36	0.38	0.41	0.46	0.48
	175 ~ 225	K35	108	125	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.46
Medium carbon steel S30C ~ S50C	225 ~ 275	K35	95	107	0.18	0.20	0.23	0.25	0.28	0.30	0.33	0.38	0.41
	125 ~ 175	K35	119	137	0.25	0.28	0.30	0.33	0.36	0.38	0.41	0.46	0.51
	175 ~ 225	K35	108	125	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.48
Alloy steel SCr, SCM	225 ~ 275	K35	95	107	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.41	0.46
	275 ~ 325	K35	81	91	0.18	0.20	0.23	0.25	0.28	0.30	0.33	0.38	0.41
	125 ~ 175	K35	114	126	0.25	0.28	0.30	0.33	0.36	0.38	0.41	0.46	0.51
Alloy steel SS	175 ~ 225	K35	105	116	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.48
	225 ~ 275	K35	95	104	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.41	0.46
	275 ~ 325	K35	87	94	0.15	0.18	0.20	0.23	0.25	0.28	0.30	0.36	0.38
	325 ~ 375	K35	78	85	0.15	0.15	0.18	0.20	0.23	0.25	0.28	0.33	0.36
Alloy steel SS	225 ~ 300	K35	70	76	0.20	0.23	0.25	0.28	0.28	0.30	0.33	0.36	0.38
	300 ~ 350	K35	63	69	0.15	0.18	0.20	0.23	0.25	0.28	0.28	0.30	0.33
	350 ~ 400	K35	56	61	0.13	0.15	0.18	0.20	0.23	0.25	0.25	0.28	0.30
Structural steel SS, SM	100 ~ 150	K35	108	125	0.25	0.28	0.30	0.33	0.33	0.38	0.38	0.43	0.48
	150 ~ 250	K35	87	101	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.43
	250 ~ 350	K35	81	93	0.18	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.38
Heat-resistant alloy Hastelloy, Inconel	140 ~ 220	K20	37	40	0.15	0.18	0.18	0.20	0.20	0.23	0.23	0.25	0.28
	220 ~ 310	K20	29	30	0.13	0.15	0.15	0.18	0.18	0.20	0.20	0.23	0.25
Stainless steel SUS	135 ~ 185	K35	64	67	0.10	0.13	0.13	0.15	0.15	0.18	0.18	0.20	0.20
	185 ~ 275	K35	47	49	0.08	0.10	0.10	0.13	0.13	0.15	0.15	0.18	0.18
Tool steel SKD	150 ~ 200	K35	78	81	0.15	0.18	0.18	0.20	0.20	0.23	0.23	0.25	0.28
	200 ~ 250	K35	59	62	0.13	0.15	0.15	0.18	0.18	0.20	0.20	0.23	0.25
Cast iron FC, FCD	120 ~ 150	K20	152	175	0.30	0.33	0.36	0.38	0.41	0.43	0.48	0.53	0.56
	150 ~ 200	K20	146	168	0.28	0.30	0.33	0.36	0.38	0.41	0.46	0.51	0.53
	200 ~ 220	K20	131	151	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.48	0.51
	220 ~ 260	K20	113	130	0.23	0.25	0.28	0.30	0.33	0.36	0.41	0.46	0.48
Forging aluminum	260 ~ 320	K20	102	116	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.46
	30	K20	425	488	0.33	0.38	0.40	0.43	0.45	0.48	0.50	0.55	0.58
Cast aluminum	180	K20	300	351	0.30	0.35	0.38	0.40	0.43	0.45	0.48	0.50	0.55
	30	K20	300	351	0.30	0.33	0.35	0.38	0.40	0.43	0.45	0.48	0.50
Titanium alloy	180	K20	225	262	0.28	0.30	0.33	0.35	0.38	0.40	0.43	0.45	0.48
	140 ~ 220	K20	42	43	0.13	0.15	0.17	0.20	0.20	0.22	0.22	0.25	0.28
	220 ~ 310	K20	33	34	0.10	0.12	0.15	0.17	0.17	0.20	0.20	0.22	0.25

Recommended cutting conditions by holder length

Holder type	1D ~ 5D	7D
Cutting speed	Recommended value	Recommended value × 0.8
Cutting feed rate	Recommended value	Recommended value × 0.8

⚠ If non-water soluble oil coolant is used, there may be risks of flashing or fire due to heat resulting from the chips or tool breakage (heat generated from friction between the broken tool and work piece being cut) during machining.

Recommended coolant pressure and supply

● ~ 5D Holder

Cutting feed rate (mm/rev)				
φ 22.00 }	φ 24.00 }	φ 26.00 }	φ 29.00 }	φ 32.00 }
φ 23.99	φ 25.99	φ 28.99	φ 31.99	φ 35.00
0.56	0.58	0.61	0.64	0.66
0.51	0.53	0.56	0.58	0.61
0.48	0.51	0.53	0.56	0.58
0.56	0.58	0.61	0.64	0.66
0.51	0.53	0.56	0.58	0.61
0.48	0.51	0.53	0.56	0.58
0.43	0.46	0.48	0.51	0.53
0.53	0.56	0.58	0.61	0.64
0.51	0.53	0.56	0.58	0.61
0.48	0.51	0.53	0.56	0.58
0.43	0.46	0.48	0.51	0.53
0.53	0.56	0.58	0.61	0.64
0.51	0.53	0.56	0.58	0.61
0.48	0.51	0.53	0.56	0.58
0.41	0.43	0.46	0.48	0.51
0.38	0.41	0.43	0.46	0.48
0.41	0.43	0.46	0.48	0.51
0.36	0.38	0.41	0.43	0.46
0.33	0.36	0.38	0.41	0.43
0.53	0.56	0.58	0.61	0.64
0.48	0.51	0.53	0.56	0.58
0.43	0.48	0.51	0.52	0.56
0.28	0.30	0.30	0.33	0.36
0.25	0.28	0.28	0.30	0.33
0.23	0.23	0.25	0.25	0.28
0.20	0.20	0.23	0.23	0.25
0.30	0.33	0.36	0.38	0.41
0.28	0.30	0.33	0.36	0.38
0.58	0.61	0.64	0.66	0.69
0.56	0.58	0.61	0.64	0.66
0.53	0.56	0.58	0.61	0.64
0.51	0.53	0.56	0.58	0.61
0.48	0.51	0.53	0.56	0.58
0.61	0.66	0.68	0.74	0.76
0.58	0.63	0.66	0.71	0.74
0.53	0.56	0.58	0.61	0.64
0.51	0.53	0.56	0.58	0.58
0.28	0.30	0.30	0.33	0.33
0.25	0.28	0.28	0.30	0.30

Insert cutting edge dia. (mm)	Coolant pressure (MPa)	Coolant supply rate (L/min)
11.00 ~ 13.99	3.5	19
14.00 ~ 15.99	3.1	23
16.00 ~ 17.99	2.8	30
18.00 ~ 19.99	2.5	34
20.00 ~ 21.99	2.1	38
22.00 ~ 25.99	2.1	42
26.00 ~ 35.00	2.1	46

Note) Please multiply above by 1.5 when using 7D holder.

Clamping screws and the corresponding screwdrivers

Size Series	Insert cutting edge dia. (mm)	Allowable tightening torque for clamping screws (N·cm)	Clamping screw	Stock	Screw driver	Stock
11	11.00 ~ 11.99	50	71843-IP6-10	●	8IP-6	●
12 ~ 15	12.00 ~ 15.99	84	7247-IP7-10	●	8IP-7	●
16	16.00 ~ 16.99	175	72556-IP8-10	●	8IP-8	●
17	17.00 ~ 17.99	175	72567-IP8-10	●	8IP-8	●
18	18.00 ~ 21.99	305	7375-IP9-10	●	8IP-9	●
22 ~ 24	22.00 ~ 25.99	305	739-IP9-10	●	8IP-9	●
26 ~ 32	26.00 ~ 35.00	690	7495-IP15-10	●	8IP-15	●

Note) *The tightening torque is calculated by using 0.14 as the coefficient of friction ($\mu = 0.14$) and 90% of the yield point.

Ten clamping screws are supplied in a case. Please order by the case.

