

# SV Reamers

## SV リーマ

鉄、FCD、ステンレスなどに最適

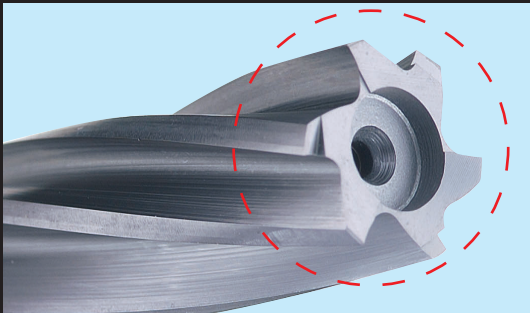
Iron, FCD, stainless steel and others

● 超微粒子超硬にTiAlNコーティング

Super-fine grain carbide TiAlN coated

● S45Cなど鋼材加工用高精度リーマ

High precision reaming operations on steel materials like S45C



### 特殊先端形状

Note the difference in configuration of cutting end from those of usual tools

耐

Improvement

- ▶ 精度 in Accuracy
- ▶ 面粗度 in Surface roughness
- ▶ 真直性 in Straightness
- ▶ 長寿命 in Long life



## SVリーマの特徴

### Features of SV Reamers

- ① 超微粒子超硬にTiAlNコーティングが施され、鋼材加工用長寿命高能率リーマです。

Superfine-grain carbide TiAlN coated reamers feature high efficiency and longer tool life for steel machining operations.

- ② 右刃、右ねじれ15°荒刃3枚と仕上げ刃3枚の6枚刃構成のスパイラルリーマのため切削バランスに優れ、φ精度H7、面粗さ2S以下と安定した高精度が得られます。

Omi reamer has a configuration of 3 rough-cut flutes and 3 finish-cut flutes making up of 6-flutes spiral tool with a right flute/15°right helix angle, which delivers better balanced machining as well as stably high precision under diametral accuracy of H7 and surface roughness of 2S

- ③ 先端外径部に喰付き刃がなく、下穴に食いにくいいため、下穴のずれや曲がりの影響を受けにくく、位置精度の良い真直性の高い穴加工が可能です。(荒刃にはカケ防止用微小C付)

Omi reamers have no chamfer flute on the outer diam. nose. This design features easy hole penetrating capability as well as less influence on hole displacement and bending, providing various hole making tasks to perform with higher position accuracy and straightness.(Coated fine-grain carbide on rough-cut flute to prevent fracture.)

- ④ フローティングチャックを使う必要はありません。

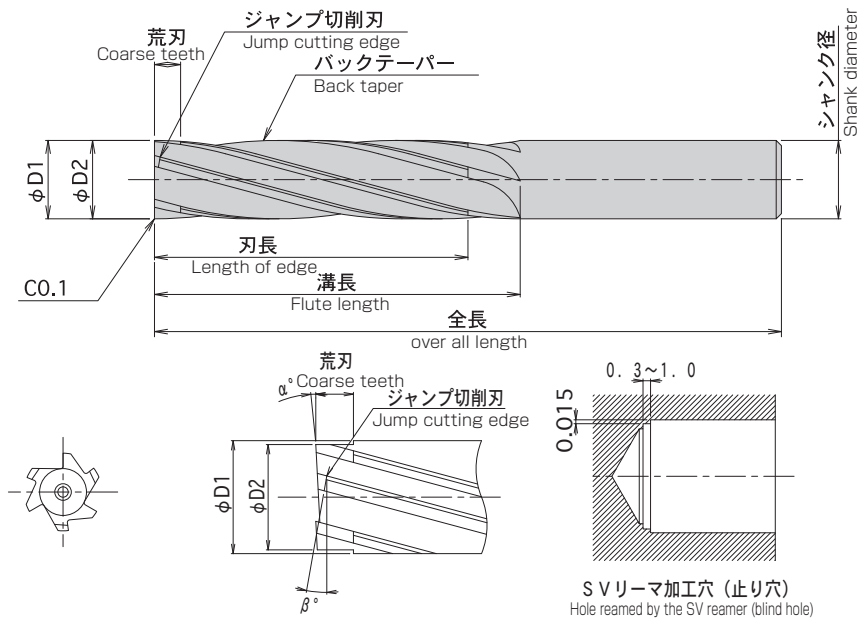
No floating chucks are required.

- ⑤ 右刃、右ねじれ15°のスパイラルリーマのため、止まり穴の加工に最適です。

The spiral reamers with a right flute/15°right helix angle are best suited for machining dead-end holes.

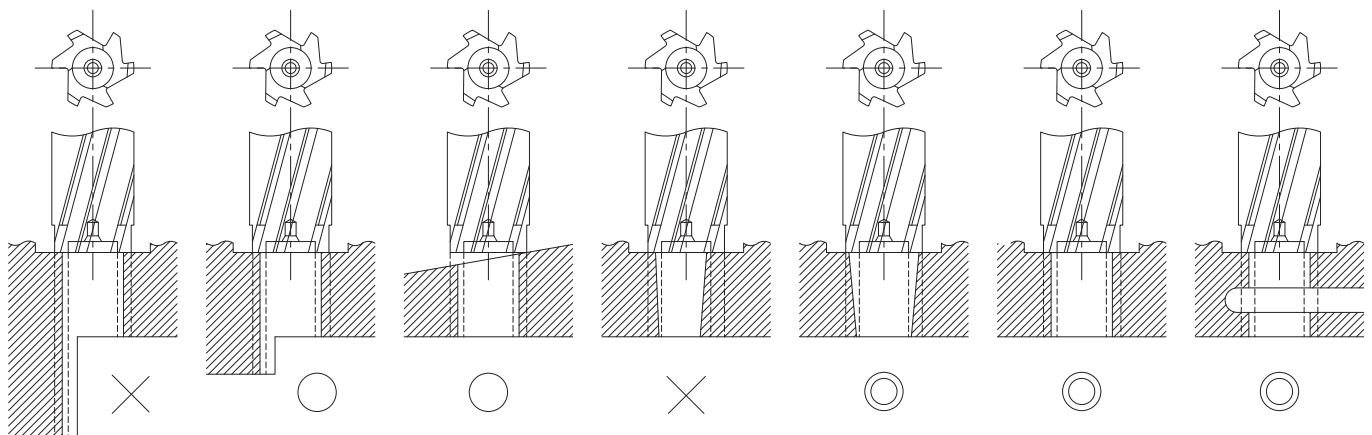
# SVリーマ各部の名称

## SV Reamer Terminology



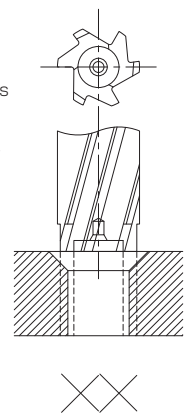
## SVリーマの加工形状製図例

### Design examples of reaming shapes by SV Reamers



- ◎ 可  
Reaming operations can be done.
- 程度・条件により可  
Reaming operations can be done in accordance with metal removal rates and cutting conditions.
- △ 不可・刃型変更  
Reaming operations are not permissible. It is necessary to replace blade shapes.
- △ 程度・条件により可  
Reaming operations can be done in accordance with metal removal rates and cutting conditions.
- × 不可・刃型変更  
Reaming operations are not permissible. It is necessary to replace blade shapes.
- × 程度・条件・被削材でも可あり  
Reaming operations may be done in accordance with metal removal rates, cutting conditions and materials.

面取りしない事  
(喰い付き時に刃カケ)  
Chamfering operations are not permissible. (Teeth fracture may occur when entering holes.)



S&C

## SVリーマ切削条件表

Cutting condition chart of SV Reamer

被削材 WORK MATERIAL		鋳鉄 CAST IRON FC 200		炭素鋼 CARBON STEELS S45C・SS41 (~HB200)		合金鋼 ALLOY STEELS SNC・SNM(HB200~250)	
切削速度 REAMING SPEED 80~150 m/min				20~60 m/min		15~50 m/min	
リーマ径 REAMER DIA (mm)	リーマ代/径 REMOVAL RATE OF REAMER	回転数 REVOLUTION (min <sup>-1</sup> )	送り速度 FEED (mm/rev)	回転数 REVOLUTION (min <sup>-1</sup> )	送り速度 FEED (mm/rev)	回転数 REVOLUTION (min <sup>-1</sup> )	送り速度 FEED (mm/rev)
3.0	0.2~0.3	8,500~16,000	0.03~0.10	1,960~6,370	0.03~0.10	1,592~5,300	0.03~0.10
5.0	0.3~0.6	5,100~9,550	0.05~0.15	1,290~3,820	0.04~0.10	955~3,821	0.04~0.10
6.0	0.3~0.6	4,240~7,960	0.05~0.15	1,060~3,180	0.04~0.10	790~3,180	0.04~0.10
8.0	0.3~1.0	3,200~5,970	0.06~0.20	800~2,390	0.05~0.15	600~2,390	0.05~0.15
10.0	0.3~1.0	2,550~4,780	0.06~0.20	640~1,910	0.05~0.15	480~1,910	0.05~0.15
12.0	0.3~1.0	2,120~3,980	0.06~0.20	530~1,590	0.05~0.15	400~1,690	0.05~0.15
16.0	0.3~2.0	1,590~2,990	0.08~0.30	400~1,200	0.08~0.20	300~1,190	0.08~0.20
18.0	0.3~2.0	1,420~2,650	0.08~0.30	360~1,060	0.08~0.20	270~1,060	0.08~0.20
20.0	0.3~2.0	1,280~2,390	0.08~0.30	320~960	0.08~0.20	240~960	0.08~0.20

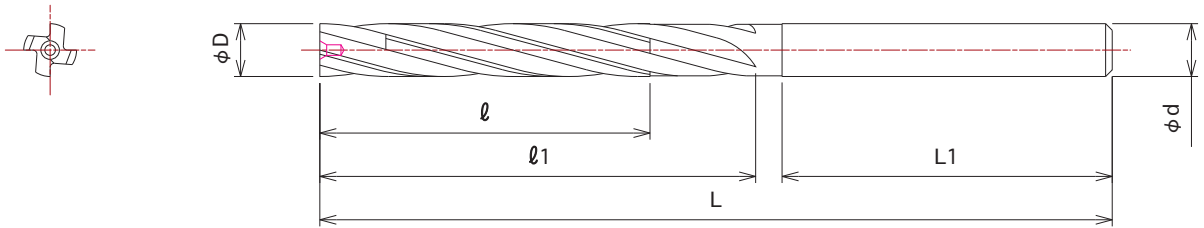
被削材 WORK MATERIAL		工具鋼 TOOL STEELS ステンレス鋼 STAINLESS STEELS SKD・SKT・SUS304(HRC25~35)		非鉄金属 NONFERROUS アルミ合金 ALUMINIUM ALLOY	
切削速度 REAMING SPEED 10~40 m/min				80~200m/min	
リーマ径 REAMER DIA (mm)	リーマ代/径 REMOVAL RATE OF REAMER	回転数 REVOLUTION (min <sup>-1</sup> )	送り速度 FEED (mm/rev)	回転数 REVOLUTION (min <sup>-1</sup> )	送り速度 FEED (mm/rev)
3.0	0.2~0.3	1,060~4,250	0.03~0.10	8,500~21,000	0.10~0.15
5.0	0.3~0.6	640~2,550	0.04~0.10	5,100~12,700	0.10~0.15
6.0	0.3~0.6	530~2,120	0.04~0.10	4,200~10,600	0.10~0.20
8.0	0.3~1.0	400~1,600	0.05~0.15	3,200~7,900	0.10~0.20
10.0	0.3~1.0	320~1,280	0.05~0.15	2,500~6,300	0.11~0.25
12.0	0.3~1.0	270~1,060	0.05~0.15	2,100~5,300	0.12~0.30
16.0	0.3~2.0	200~800	0.08~0.20	1,600~4,000	0.15~0.30
18.0	0.3~2.0	180~710	0.08~0.20	1,400~3,500	0.17~0.35
20.0	0.3~2.0	160~640	0.08~0.20	1,200~3,200	0.18~0.40

OSVR-0030▶0059

(ソリッド)

For STEELS スチール用

右刃右ネジレ 15° 4NT | TiAlNコーティング  
Right edge Right twist 15° NT | TiAlN coating



■ 本体

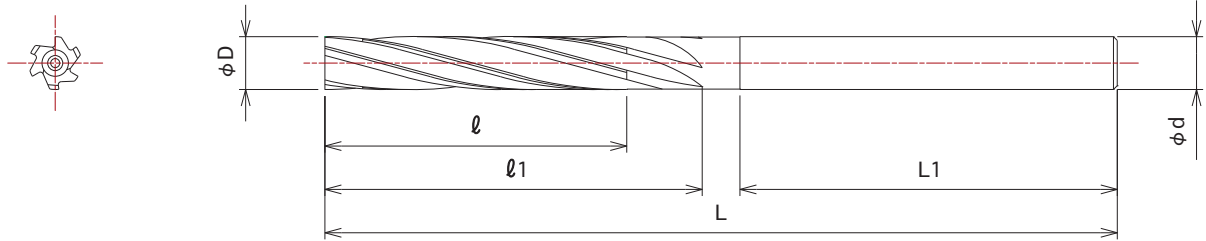
型番 Model NO	在庫 Stock	リーマ径 Reamer diameter	公差 Tolerance	全長 Over all length	刃長 Length of edge	溝長 Flute length	シャンク長 Shank length	シャンク径と公差 Tolerance on Shank diameter
OSVR-0000		φD	H7用	L	ℓ	ℓ1	L1	φd h6
OSVR-0030	◎	3.0	+0.006 +0.003	80	20	28	50	3.0 <sup>0</sup> <sub>-0.006</sub>
OSVR-0030-1	○	3.01						
OSVR-0030-2	○	3.02						
OSVR-0030-3	○	3.03	+0.007 +0.004	85	25	33	50	4.0 <sup>0</sup> <sub>-0.008</sub>
OSVR-0031	○	3.1						
OSVR-0032	○	3.2						
OSVR-0033	○	3.3						
OSVR-0034	○	3.4						
OSVR-0035	○	3.5						
OSVR-0036	○	3.6						
OSVR-0037	○	3.7						
OSVR-0038	○	3.8						
OSVR-0039	○	3.9						
OSVR-0040	◎	4.0						
OSVR-0040-1	○	4.01						
OSVR-0040-2	○	4.02						
OSVR-0040-3	○	4.03						
OSVR-0041	○	4.1	90	30	38	50	5.0 <sup>0</sup> <sub>-0.008</sub>	
OSVR-0042	○	4.2						
OSVR-0043	○	4.3						
OSVR-0044	○	4.4						
OSVR-0045	○	4.5						
OSVR-0046	○	4.6						
OSVR-0047	○	4.7						
OSVR-0048	○	4.8						
OSVR-0049	○	4.9						
OSVR-0050	◎	5.0	95	35	43	50	6.0 <sup>0</sup> <sub>-0.008</sub>	
OSVR-0050-1	○	5.01						
OSVR-0050-2	○	5.02						
OSVR-0050-3	○	5.03						
OSVR-0051	○	5.1						
OSVR-0052	○	5.2						
OSVR-0053	○	5.3						
OSVR-0054	○	5.4						
OSVR-0055	○	5.5						
OSVR-0056	○	5.6						
OSVR-0057	○	5.7						
OSVR-0058	○	5.8						
OSVR-0059	○	5.9						

(単位:mm)

# OSVR-0060▶0150-3 (ソリッド)

For STEELS スチール用

右刃右ネジレ 15° 6NT | TiAlNコーティング  
Right edge Right twist 15° 6NT | TiAlN coating



型番 Model NO	在庫 Stock	リーマ径 Reamer diameter	公差 Tolerance	全長 Over all length	刃長 length of edge	溝長 Flute length	シャンク長 Shank length	シャンク径と公差 Tolerance on Shank diameter
OSVR-0000		φD	H7用	L	ℓ	ℓ1	L1	φd h6
OSVR-0060	◎	6.0	±0.004	95	35	43	50	6.0 <sup>0</sup> <sub>-0.008</sub>
OSVR-0060-1	○	6.01						
OSVR-0060-2	○	6.02						
OSVR-0060-3	○	6.03		105	40	50	50	7.0 <sup>0</sup> <sub>-0.009</sub>
OSVR-0061	○	6.1						
OSVR-0062	○	6.2						
OSVR-0063	○	6.3		115	50	60	50	8.0 <sup>0</sup> <sub>-0.009</sub>
OSVR-0064	○	6.4						
OSVR-0065	○	6.5						
OSVR-0066	○	6.6	+0.010 +0.007	120	55	65	50	9.0 <sup>0</sup> <sub>-0.009</sub>
OSVR-0067	○	6.7						
OSVR-0068	○	6.8						
OSVR-0069	○	6.9		125	60	70	50	10.0 <sup>0</sup> <sub>-0.009</sub>
OSVR-0070	◎	7.0						
OSVR-0070-1	○	7.01						
OSVR-0070-2	○	7.02						
OSVR-0070-3	○	7.03						
OSVR-0071	○	7.1						
OSVR-0072	○	7.2						
OSVR-0073	○	7.3						
OSVR-0074	○	7.4						
OSVR-0075	○	7.5						
OSVR-0076	○	7.6						
OSVR-0077	○	7.7						
OSVR-0078	○	7.8						
OSVR-0079	○	7.9						
OSVR-0080	◎	8.0						
OSVR-0080-1	○	8.01						
OSVR-0080-2	○	8.02						
OSVR-0080-3	○	8.03						
OSVR-0081	○	8.1						
OSVR-0082	○	8.2						
OSVR-0083	○	8.3						
OSVR-0084	○	8.4						
OSVR-0085	○	8.5						
OSVR-0086	○	8.6						
OSVR-0087	○	8.7						
OSVR-0088	○	8.8						
OSVR-0089	○	8.9						
OSVR-0090	◎	9.0						
OSVR-0090-1	○	9.01						
OSVR-0090-2	○	9.02						
OSVR-0090-3	○	9.03						
OSVR-0091	○	9.1						
OSVR-0092	○	9.2						
OSVR-0093	○	9.3						

(単位:mm)

S>>>

◎在庫品 ○標準品 無印は受注生産 ※在庫品は場合によって品切れとなることがありますので、ご了承ください。



型番 Model NO	在庫 Stock	リーマ径 Reamer diameter	公差 Tolerance	全長 Over all length	刃長 length of edge	溝長 Flute length	シャンク長 Shank length	シャンク径と公差 Tolerance on Shank diameter
OSVR-0000		φD	H7用	L	ℓ	ℓ1	L1	φd h6
OSVR-0094	○	9.4	+0.010 +0.007	125	60	70		10.0 <sup>0</sup> <sub>-0.009</sub>
OSVR-0095	○	9.5						
OSVR-0096	○	9.6						
OSVR-0097	○	9.7						
OSVR-0098	○	9.8						
OSVR-0099	○	9.9						
OSVR-0100	◎	10.0						
OSVR-0100-1	○	10.01						
OSVR-0100-2	○	10.02						
OSVR-0100-3	○	10.03						
OSVR-0101	○	10.1		135	65	75	11.0 <sup>0</sup> <sub>-0.011</sub>	
OSVR-0102	○	10.2						
OSVR-0103	○	10.3						
OSVR-0104	○	10.4						
OSVR-0105	○	10.5						
OSVR-0106	○	10.6						
OSVR-0107	○	10.7						
OSVR-0108	○	10.8						
OSVR-0109	○	10.9						
OSVR-0110	◎	11.0						
OSVR-0110-1	○	11.01		140	70	80	12.0 <sup>0</sup> <sub>-0.011</sub>	
OSVR-0110-2	○	11.02						
OSVR-0110-3	○	11.03						
OSVR-0111	○	11.1						
OSVR-0112	○	11.2						
OSVR-0113	○	11.3						
OSVR-0114	○	11.4						
OSVR-0115	○	11.5						
OSVR-0116	○	11.6						
OSVR-0117	○	11.7						
OSVR-0118	○	11.8		145	75	85	14.0 <sup>0</sup> <sub>-0.011</sub>	
OSVR-0119	○	11.9						
OSVR-0120	◎	12.0						
OSVR-0120-1	○	12.01						
OSVR-0120-2	○	12.02						
OSVR-0120-3	○	12.03						
OSVR-0121		12.1						
OSVR-0122		12.2						
OSVR-0123		12.3						
OSVR-0124		12.4						
OSVR-0125	○	12.5		150	80	90	15.0 <sup>0</sup> <sub>-0.011</sub>	
OSVR-0126		12.6						
OSVR-0127		12.7						
OSVR-0128		12.8						
OSVR-0129		12.9						
OSVR-0130	○	13.0						
OSVR-0130-1		13.01						
OSVR-0130-2		13.02						
OSVR-0130-3		13.03						
OSVR-0131		13.1						
OSVR-0132		13.2						
OSVR-0133		13.3						
OSVR-0134		13.4						
OSVR-0135	○	13.5						
OSVR-0136		13.6						
OSVR-0137		13.7						
OSVR-0138		13.8						
OSVR-0139		13.9						
OSVR-0140	○	14.0						
OSVR-0140-1		14.01						
OSVR-0140-2		14.02						
OSVR-0140-3		14.03						
OSVR-0141		14.1						
OSVR-0142		14.2						

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(単位:mm)

型番 Model NO	在庫 Stock	リーマ径 Reamer diameter	公差 Tolerance	全長 Over all length	刃長 length of edge	溝長 Flute length	シャンク長 Shank length	シャンク径と公差 Tolerance on Shank diameter
OSVR-0000		ΦD	H7用	L	ℓ	ℓ1	L1	Φd h6
OSVR-0143		14.3	+0.013 +0.010	150	80	90	50	15.0 <sup>0</sup> <sub>-0.011</sub>
OSVR-0144		14.4						
OSVR-0145	○	14.5						
OSVR-0146		14.6						
OSVR-0147		14.7						
OSVR-0148		14.8						
OSVR-0149		14.9						
OSVR-0150	○	15.0						
OSVR-0150-1		15.01						
OSVR-0150-2		15.02						
OSVR-0150-3		15.03						

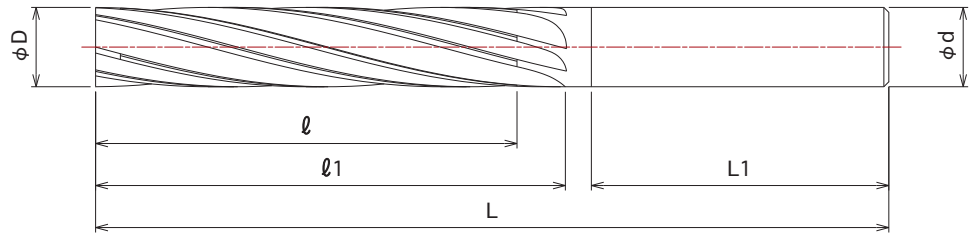
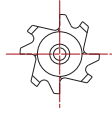
(単位:mm)

OSVR-0151▶0187

(ソリッド)

For STEELS スチール用

右刃右ネジレ 15° 8NT | TiAlNコーティング  
Right edge Right twist 15° 8NT | TiAlN coating



■ 本体

型番 Model NO	在庫 Stock	リーマ径 Reamer diameter	公差 Tolerance	全長 Over all length	刃長 Length of edge	溝長 Flute length	シャンク長 Shank length	シャンク径と公差 Tolerance on Shank diameter
OSVR-0000		φD	H7用	L	ℓ	ℓ1	L1	φd h6
OSVR-0151		15.1	+0.013 +0.010	160	85	95		16.0 <sup>0</sup> <sub>-0.011</sub>
OSVR-0152		15.2						
OSVR-0153		15.3						
OSVR-0154		15.4						
OSVR-0155	○	15.5						
OSVR-0156		15.6						
OSVR-0157		15.7						
OSVR-0158		15.8						
OSVR-0159		15.9						
OSVR-0160	○	16.0						
OSVR-0160-1		16.01						
OSVR-0160-2		16.02						
OSVR-0160-3		16.03						
OSVR-0161		16.1						
OSVR-0162		16.2						
OSVR-0163		16.3						
OSVR-0164		16.4						
OSVR-0165	○	16.5	+0.016 +0.013	165	90	100	55	17.0 <sup>0</sup> <sub>-0.011</sub>
OSVR-0166		16.6						
OSVR-0167		16.7						
OSVR-0168		16.8						
OSVR-0169		16.9						
OSVR-0170	○	17.0						
OSVR-0170-1		17.01						
OSVR-0170-2		17.02						
OSVR-0170-3		17.03						
OSVR-0171		17.1						
OSVR-0172		17.2						
OSVR-0173		17.3						
OSVR-0174		17.4						
OSVR-0175	○	17.5						
OSVR-0176		17.6						
OSVR-0177		17.7						
OSVR-0178		17.8						
OSVR-0179		17.9						
OSVR-0180	○	18.0		180	105	115		19.0 <sup>0</sup> <sub>-0.013</sub>
OSVR-0180-1		18.01						
OSVR-0180-2		18.02						
OSVR-0180-3		18.03						
OSVR-0181		18.1						
OSVR-0182		18.2						
OSVR-0183		18.3						
OSVR-0184		18.4						
OSVR-0185	○	18.5						
OSVR-0186		18.6						
OSVR-0187		18.7						

(単位:mm)



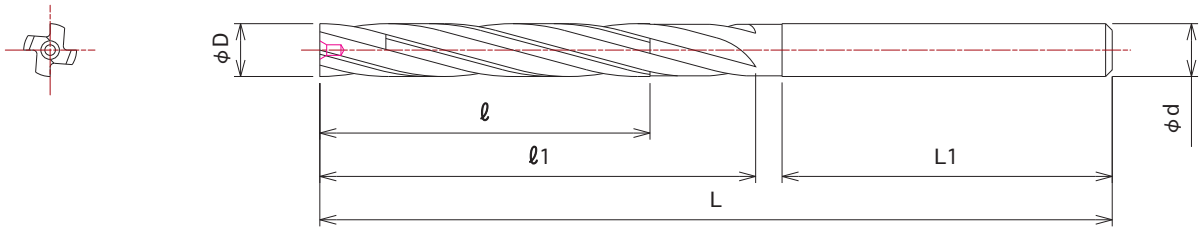
型番 Model NO	在庫 Stock	リーマ径 Reamer diameter	公差 Tolerance	全長 Over all length	刃長 length of edge	溝長 Flute length	シャンク長 Shank length	シャンク径と公差 Tolerance on Shank diameter
OSVR-0000		ΦD	H7用	L	ℓ	ℓ1	L1	Φd h6
OSVR-0188		18.8	+0.016 +0.013	180	105	115	55	19.0 <sup>0</sup> <sub>-0.013</sub>
OSVR-0189		18.9						
OSVR-0190	○	19.0						
OSVR-0190-1		19.01						
OSVR-0190-2		19.02						
OSVR-0190-3		19.03						
OSVR-0191		19.1		190	110	120	60	20.0 <sup>0</sup> <sub>-0.013</sub>
OSVR-0192		19.2						
OSVR-0193		19.3						
OSVR-0194		19.4						
OSVR-0195	○	19.5						
OSVR-0196		19.6						
OSVR-0197		19.7						
OSVR-0198		19.8						
OSVR-0199		19.9						
OSVR-0200	○	20.0						
OSVR-0200-1		20.01						
OSVR-0200-2		20.02						
OSVR-0200-3		20.03						

(単位:mm)

OSVRJ-002.98▶005.99 (ソリッド)

For STEELS スチール用

右刃右ネジレ 15° 4NT | TiAlNコーティング  
Right edge Right twist 15° 4NT | TiAlN coating



■ 本体

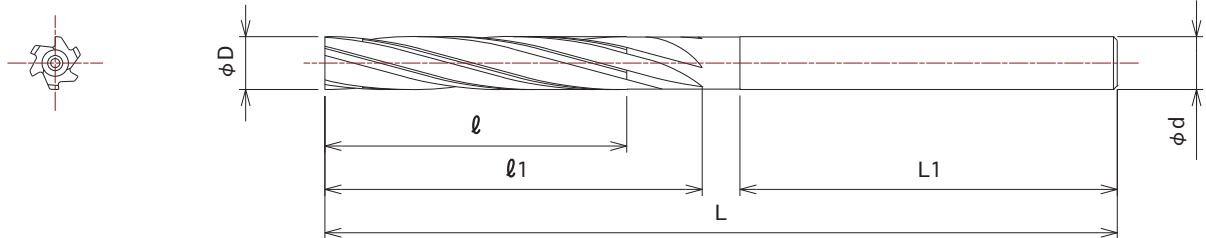
型番 Model NO	在庫 Stock	リーマ径 Reamer diameter	公差 Tolerance	全長 Over all length	刃長 length of edge	溝長 Flute length	シャンク長 Shank length	シャンク径と公差 Tolerance on Shank diameter
OSVRJ-000.00		φD		L	ℓ	ℓ1	L1	φd h6
OSVRJ-002.98		2.98	±0.002	80	20	28	50	3.0 <sup>0</sup> <sub>-0.006</sub>
OSVRJ-002.99		2.99						4.0 <sup>0</sup> <sub>-0.008</sub>
OSVRJ-003.00		3.00						5.0 <sup>0</sup> <sub>-0.008</sub>
OSVRJ-003.98		3.98		85	25	33		6.0 <sup>0</sup> <sub>-0.008</sub>
OSVRJ-003.99		3.99						7.0 <sup>0</sup> <sub>-0.008</sub>
OSVRJ-004.00		4.00						8.0 <sup>0</sup> <sub>-0.008</sub>
OSVRJ-004.98		4.98						9.0 <sup>0</sup> <sub>-0.008</sub>
OSVRJ-004.99		4.99		90	30	38		10.0 <sup>0</sup> <sub>-0.008</sub>
OSVRJ-005.00		5.00						11.0 <sup>0</sup> <sub>-0.008</sub>
OSVRJ-005.98		5.98						12.0 <sup>0</sup> <sub>-0.008</sub>
OSVRJ-005.99		5.99	95	35	43	13.0 <sup>0</sup> <sub>-0.008</sub>		

(単位:mm)

OSVRJ-006.00▶015.00 (ソリッド)

For STEELS スチール用

右刃右ネジレ 15° 6NT | TiAlNコーティング  
Right edge Right twist 15° 6NT | TiAlN coating



■ 本体

型番 Model NO	在庫 Stock	リーマ径 Reamer diameter	公差 Tolerance	全長 Over all length	刃長 length of edge	溝長 Flute length	シャンク長 Shank length	シャンク径と公差 Tolerance on Shank diameter	
OSVRJ-000.00		φD		L	ℓ	ℓ1	L1	φd h6	
OSVRJ-006.00		6.00	±0.002	95	35	43	50	6.0 <sup>0</sup> <sub>-0.009</sub>	
OSVRJ-006.98		6.98							
OSVRJ-006.99		6.99			105	40		50	7.0 <sup>0</sup> <sub>-0.008</sub>
OSVRJ-007.00		7.00							
OSVRJ-007.98		7.98							
OSVRJ-007.99		7.99			115	50		60	8.0 <sup>0</sup> <sub>-0.009</sub>
OSVRJ-008.00		8.00							
OSVRJ-008.98		8.98							
OSVRJ-008.99		8.99			120	55		65	9.0 <sup>0</sup> <sub>-0.009</sub>
OSVRJ-009.00		9.00							
OSVRJ-009.98		9.98							
OSVRJ-009.99		9.99			125	60		70	10.0 <sup>0</sup> <sub>-0.011</sub>
OSVRJ-010.00		10.00							
OSVRJ-010.98		10.98							
OSVRJ-010.99		10.99			135	65		75	11.0 <sup>0</sup> <sub>-0.011</sub>
OSVRJ-011.00		11.00							
OSVRJ-011.98		11.98							
OSVRJ-011.99		11.99							
OSVRJ-012.00		12.00							
OSVRJ-012.98		12.98			140	70		80	12.0 <sup>0</sup> <sub>-0.011</sub>
OSVRJ-012.99		12.99							
OSVRJ-013.00		13.00							
OSVRJ-013.98		13.98							
OSVRJ-013.99		13.99		145	75	85	14.0 <sup>0</sup> <sub>-0.011</sub>		
OSVRJ-014.00		14.00							
OSVRJ-014.98		14.98							
OSVRJ-014.99		14.99		150	80	90	15.0 <sup>0</sup> <sub>-0.011</sub>		
OSVRJ-015.00		15.00							

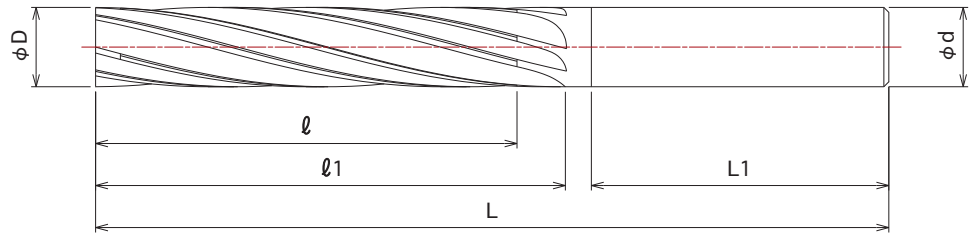
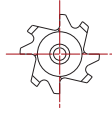
(単位:mm)

ソリッド

OSVRJ-015.98▶020.00 (ソリッド)

For STEELS スチール用

右刃右ネジレ 15° 8NT | TiAlNコーティング  
Right edge Right twist 15° 8NT | TiAlN coating



■ 本体

型番 Model NO	在庫 Stock	リーマ径 Reamer diameter φD	公差 Tolerance	全長 Over all length L	刃長 length of edge ℓ	溝長 Flute length ℓ1	シャンク長 Shank length L1	シャンク径と公差 Tolerance on Shank diameter φd h6
OSVRJ-000.00		φD		L	ℓ	ℓ1	L1	
OSVRJ-015.98		15.98	±0.002	160	85	95	55	16.0 <sup>0</sup> <sub>-0.011</sub>
OSVRJ-015.99		15.99						17.0 <sup>0</sup> <sub>-0.011</sub>
OSVRJ-016.00		16.00						18.0 <sup>0</sup> <sub>-0.011</sub>
OSVRJ-016.98		16.98						19.0 <sup>0</sup> <sub>-0.013</sub>
OSVRJ-016.99		16.99		190	110	120	60	20.0 <sup>0</sup> <sub>-0.013</sub>
OSVRJ-017.00		17.00						
OSVRJ-017.98		17.98						
OSVRJ-017.99		17.99						
OSVRJ-018.00		18.00						
OSVRJ-018.98		18.98						
OSVRJ-018.99		18.99						
OSVRJ-019.00		19.00						
OSVRJ-019.98		19.98						
OSVRJ-019.99		19.99						
OSVRJ-020.00		20.00						

(単位:mm)

NEW

REAMER

スパイラルリーマシリーズ

SPAIRAL REAMER

高精度の鋼加工用に! TiAlNコーティング付 For high-precision steel reaming! TiAlN coated.

スチール用 スパイラルリーマ

For steel

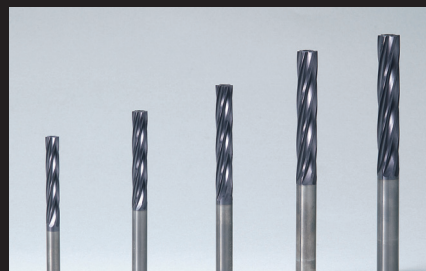
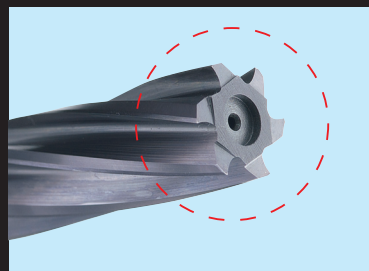
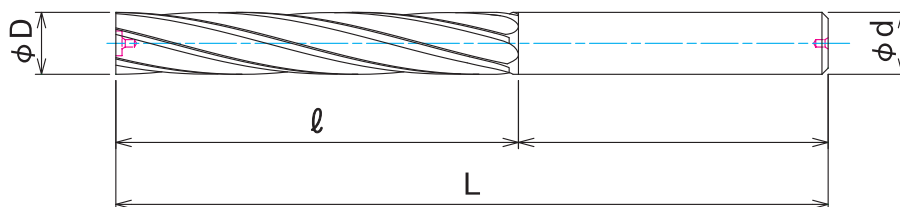
スチール用

汎用タイプ  
Universal type

高精度リーマ  
High-precision reamer

Spiral Reamer for Steel

高精度の鋼加工に! より長寿命に! For high-precision steel machining! For longer life!



H7  
3S

φ精度

Hole accuracy

面粗さ

Surface roughness

特徴 Features

- スパイラル形状の採用とコーティングによる低摩擦係数の性質により、切粉をスムーズに排出します。又、先端にエンド刃を採用する事により止まり穴にも最適で、又、下穴にも做いにくい性質を持つ、汎用性の高いリーマです。

Cuttings are smoothly discharged due to the spiral shape and as a result of the tool coating's low coefficient of friction.

By adopting an end flute on the outer diameter nose, the reamer is also optimal for preparing blind holes. This reamer, which has properties that are difficult to emulate, is very versatile.

- 不等分割刃を採用する事により、真円度や円筒度等、穴精度の向上を実現しました。

- 特殊処理を施したTiAlNコーティングの標準装備により、高硬度(約3000Hv)と低摩擦係数の性能を備え、超寿命と高速加工を実現。

The circularity, cylindricity, and hole dimension precision have been improved by adopting unequally spaced flutes on the reamer.

This reamer is coated with specially processed TiAlN as a standard feature to realize super-long life and high-speed reaming with extreme hardness (approximately 3,000 Hv) and a low coefficient of friction.

■ スチール用スパイラルリーマの切削加工条件表

Cutting Condition Chart: Spiral Reamer for use with steel

被削材 Work materials		炭素鋼 Carbon steel		合金鋼 Alloy steel		工具鋼・ステンレス鋼 Tool steel / Stainless steel		鋳鉄 Cast iron		非鉄金属・アルミ合金 Nonferrous metals / Aluminum alloys	
切削速度 Cutting speed (mm/min)		20~60		15~50		10~40		40~100		80~150	
リーマ径 Reamer diameter (mm)	リーマ代 Reamer margin (mm/径) (mm/diameter)	回転数 Revolution (min-1)	送り速度 Feed (mm/rev)	回転数 Revolution (min-1)	送り速度 Feed (mm/rev)	回転数 Revolution (min-1)	送り速度 Feed (mm/rev)	回転数 Revolution (min-1)	送り速度 Feed (mm/rev)	回転数 Revolution (min-1)	送り速度 Feed (mm/rev)
3.0	0.2~0.3	1,960~6,370	0.06~0.20	1,590~5,300	0.06~0.20	1,060~4,250	0.06~0.20	4,250~10,460	0.06~0.20	8,490~15,920	0.20~0.30
4.0	0.2~0.3	1,600~4,780	0.06~0.20	1,190~3,980	0.06~0.20	800~3,190	0.06~0.20	3,190~7,960	0.08~0.30	6,370~11,940	0.20~0.30
5.0	0.3~0.6	1,290~3,820	0.08~0.20	960~3,190	0.08~0.20	640~2,550	0.08~0.20	2,550~6,280	0.10~0.30	5,100~9,550	0.20~0.30
6.0	0.3~0.6	1,060~3,180	0.08~0.20	800~2,650	0.08~0.20	530~2,120	0.08~0.20	2,120~5,230	0.10~0.30	4,250~7,960	0.20~0.40
7.0	0.3~0.6	910~2,730	0.08~0.20	680~2,270	0.08~0.20	460~1,820	0.08~0.20	1,820~4,550	0.10~0.30	3,640~6,820	0.20~0.40
8.0	0.3~1.0	800~2,390	0.10~0.30	600~1,990	0.10~0.30	400~1,590	0.10~0.30	1,590~3,920	0.12~0.40	3,190~5,970	0.20~0.40
9.0	0.3~1.0	710~2,120	0.10~0.30	530~1,770	0.10~0.30	360~1,420	0.10~0.30	1,420~3,540	0.12~0.40	2,830~5,310	0.20~0.40
10.0	0.3~1.0	640~1,910	0.10~0.30	480~1,590	0.10~0.30	320~1,280	0.10~0.30	1,280~3,140	0.12~0.40	2,550~4,780	0.22~0.50
11.0	0.3~1.0	580~1,740	0.10~0.30	430~1,450	0.10~0.30	290~1,160	0.10~0.30	1,160~2,900	0.12~0.40	2,320~4,340	0.22~0.50
12.0	0.3~1.0	530~1,590	0.10~0.30	400~1,330	0.10~0.30	270~1,060	0.10~0.30	1,060~2,610	0.12~0.40	2,120~3,980	0.24~0.60
13.0	0.3~1.0	490~1,470	0.10~0.30	370~1,230	0.10~0.30	250~980	0.10~0.30	980~2,450	0.12~0.40	1,960~3,680	0.24~0.60
14.0	0.3~1.0	460~1,370	0.10~0.30	340~1,140	0.10~0.30	230~910	0.10~0.30	910~2,280	0.12~0.40	1,820~3,410	0.24~0.60
15.0	0.3~1.0	430~1,270	0.10~0.30	320~1,060	0.10~0.30	210~850	0.10~0.30	850~2,120	0.12~0.40	1,700~3,190	0.24~0.60
16.0	0.3~2.0	400~1,200	0.16~0.40	300~1,000	0.16~0.40	200~800	0.16~0.40	800~1,960	0.12~0.40	1,590~2,990	0.30~0.60
18.0	0.3~2.0	360~1,060	0.16~0.40	270~890	0.16~0.40	180~710	0.16~0.40	710~1,740	0.16~0.60	1,420~2,650	0.34~0.70
20.0	0.3~2.0	320~960	0.16~0.40	240~800	0.16~0.40	160~640	0.16~0.40	640~1,570	0.16~0.60	1,270~2,390	0.36~0.80

スパイラルリーマ

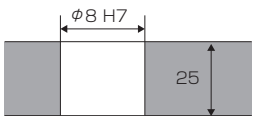
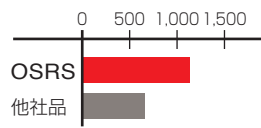
■標準品ラインナップ

Line up Standard Items

型番 Model No <b>OSRS-0000</b>	在庫 Stock	刃径 Reamer diameter φD	公差 Tolerance H7用	刃長 Length of edge ℓ	全長 Over all length L	シャンク径と公差 Tolerance on Shank diameter φd h6
<b>OSRS 0030</b>	◎	3.0	+0.006 +0.002	25	70	3.0 <sup>0</sup> -0.006
<b>OSRS 0031~0039</b>		3.1~3.9	+0.009 +0.004	30	75	4.0 <sup>0</sup> -0.008
<b>OSRS 0040</b>	◎	4.0		30	75	
<b>OSRS 0041~0049</b>		4.1~4.9		35	80	5.0 <sup>0</sup> -0.008
<b>OSRS 0050</b>	◎	5.0		35	80	
<b>OSRS 0051~0059</b>		5.1~5.9		40	85	6.0 <sup>0</sup> -0.008
<b>OSRS 0060</b>	◎	6.0	+0.012 +0.006	40	85	
<b>OSRS 0061~0069</b>		6.1~6.9		45	90	7.0 <sup>0</sup> -0.009
<b>OSRS 0070</b>	◎	7.0		45	90	
<b>OSRS 0071~0079</b>		7.1~7.9		50	100	8.0 <sup>0</sup> -0.009
<b>OSRS 0080</b>	◎	8.0		50	100	
<b>OSRS 0081~0089</b>		8.1~8.9	+0.015 +0.007	60	110	9.0 <sup>0</sup> -0.009
<b>OSRS 0090</b>	◎	9.0		60	110	
<b>OSRS 0091~0099</b>		9.1~9.9		65	115	10.0 <sup>0</sup> -0.009
<b>OSRS 0100</b>	◎	10.0		65	115	
<b>OSRS 0101~0109</b>		10.1~10.9		70	125	11.0 <sup>0</sup> -0.011
<b>OSRS 0110</b>	◎	11.0	+0.017 +0.008	70	125	
<b>OSRS 0111~0119</b>		11.1~11.9		75	130	12.0 <sup>0</sup> -0.011
<b>OSRS 0120</b>	◎	12.0		75	130	
<b>OSRS 0121~0129</b>		12.1~12.9		80	140	13.0 <sup>0</sup> -0.011
<b>OSRS 0130</b>	◎	13.0		80	140	
<b>OSRS 0131~0139</b>		13.1~13.9	+0.017 +0.008	85	145	14.0 <sup>0</sup> -0.011
<b>OSRS 0140</b>	◎	14.0		85	145	
<b>OSRS 0141~0149</b>		14.1~14.9		90	150	15.0 <sup>0</sup> -0.011
<b>OSRS 0150</b>	◎	15.0		90	150	
<b>OSRS 0151~0159</b>		15.1~15.9		95	160	16.0 <sup>0</sup> -0.011
<b>OSRS 0160</b>	◎	16.0	+0.017 +0.008	95	160	
<b>OSRS 0161~0169</b>		16.1~16.9		100	165	17.0 <sup>0</sup> -0.011
<b>OSRS 0170</b>	◎	17.0		100	165	
<b>OSRS 0171~0179</b>		17.1~17.9		110	175	18.0 <sup>0</sup> -0.011
<b>OSRS 0180</b>	◎	18.0		110	175	
<b>OSRS 0181~0189</b>		18.1~18.9	+0.017 +0.008	115	180	19.0 <sup>0</sup> -0.013
<b>OSRS 0190</b>	◎	19.0		115	180	
<b>OSRS 0191~0199</b>		19.1~19.9		120	190	20.0 <sup>0</sup> -0.013
<b>OSRS 0200</b>	◎	20.0		120	190	

◎在庫品 ○標準品

使用実例 Example of Actual Use

加工物 Work piece	使用工具・切削条件 Tool in use / Cutting conditions			結果 Result
機械部品 Machine part  プリハードン鋼 Pre-hardened steel HRC-35~40  	使用工具 Tool in use <b>OSRS-0080</b>  下穴径 Prepared hole diameter φ 7.5	切削油 Cutting oil 水溶性切削油(エマルジョン系 希釈倍率10倍) Water soluble cutting oil (emulsion type; dilution times: 10)	切削速度 Cutting speed 30m/min  送り速度 Feed 0.15mm/rev	1,200穴加工(継続加工可能) で他社製リーマ(600穴)の 倍以上! In testing, our OSRS reamed 1,200 holes while being operated continuously, more than twice as efficiently as a competitor's reamer (600 holes)!  

スパイラルリーマ