METRIC

VSM890-12

90° Shoulder Mill

Eight Cutting-Edge
Advantage for Precision
Shoulder Milling

WIDIA™

VSM890-12 -MH geometry inserts are the first choice for economical shoulder milling in semi-roughing and roughing applications. With 8 cutting edges, these inserts offer a robust design and a true 90-degree shoulder on materials up to 8.0mm depth of cut.

THE NEW PSTS INSERT FEATURES

- ▽ Pressed and Sintered to Size (PSTS) reduces cost per edge
- ▽ Cutting Edge strength for reliable, and consistent performance
- ▽ Versatile chip breaker for smooth cutting action in all types of materials
- ▽ Positive Geometry for smooth cutting, less vibrations

WIDIA™

Industries

General Engineering

Automotive

Oil & Gas

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Materials

P Steels

S High-Temp Alloys

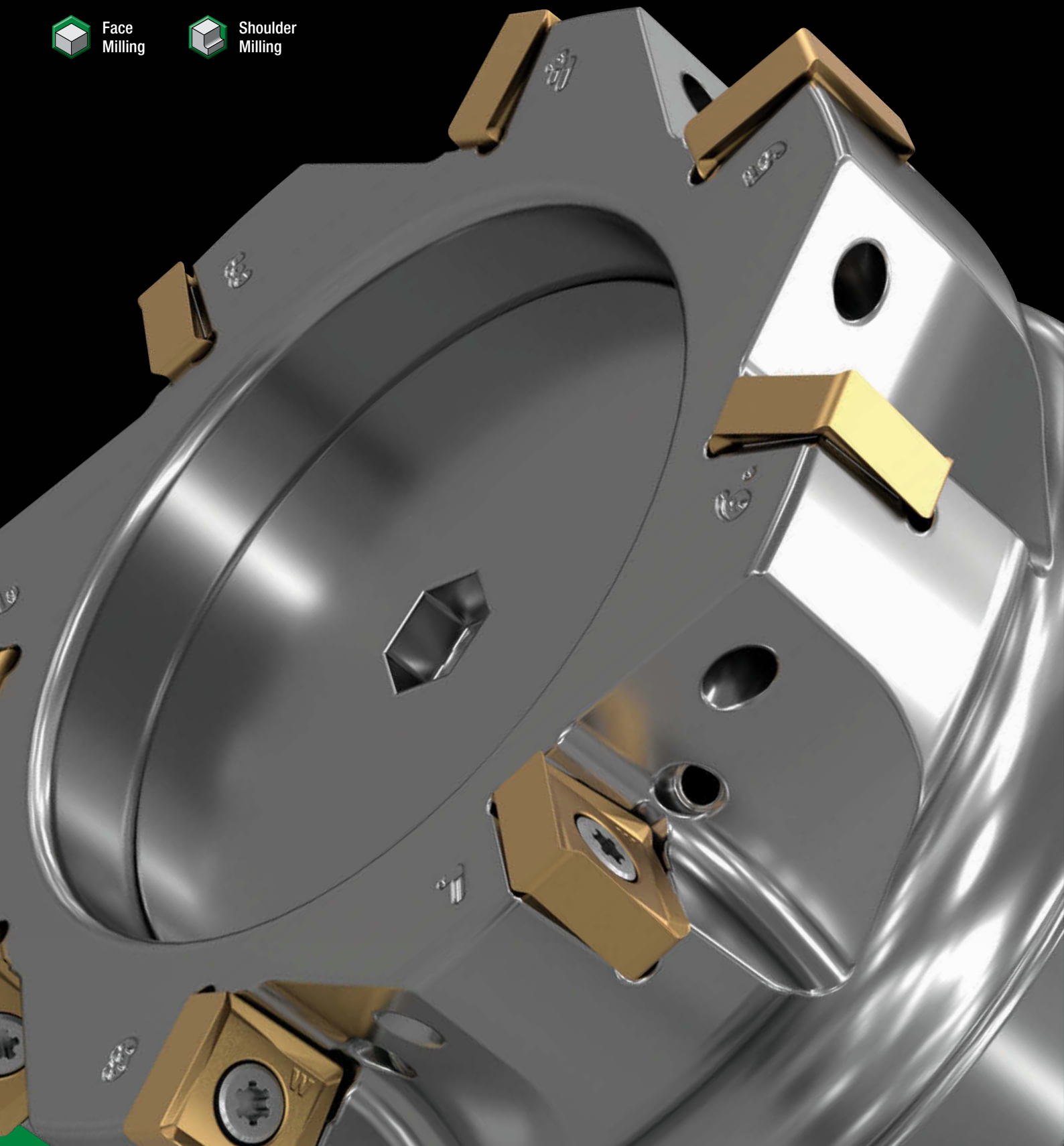
M Stainless Steels

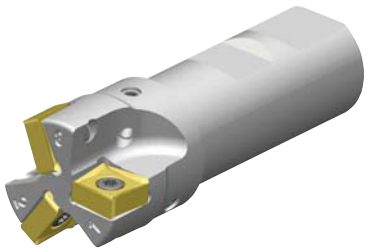
K Cast Iron

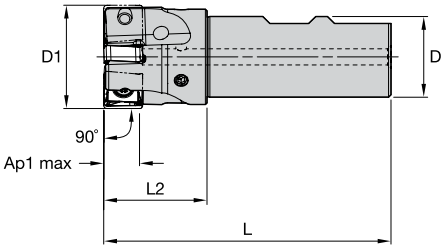
Applications

Face Milling

Shoulder Milling



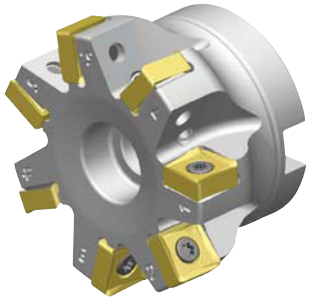


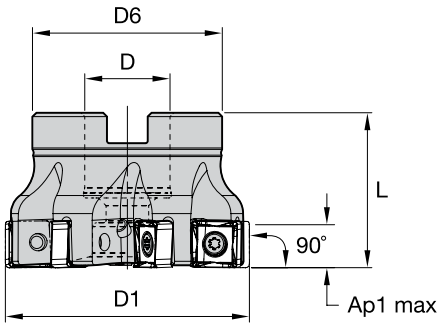


VSM890-12

Weldon® End Mills

Order Number	Catalog Number	D1	D	L	L2	Ap1 Max	Z	Max RPM	Coolant	kg
6596066	VSM890D032Z03B25SN12	32	25	89	32	9,8	3	33200	Yes	0,31

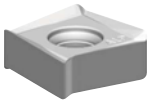


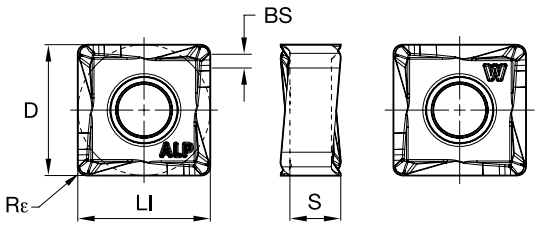


VSM890-12

Shell Mills

Order Number	Catalog Number	D1	D	D6	L	Ap1 Max	Z	Max RPM	Coolant	kg
6596067	VSM890D040Z04S22SN12	40	22	39	40	9,8	4	28000	Yes	0,20
6596068	VSM890D050Z04S22SN12	50	22	49	40	9,8	4	24100	Yes	0,32
6596069	VSM890D050Z05S22SN12	50	22	49	40	9,8	5	24100	Yes	0,32
6596070	VSM890D063Z05S22SN12	63	22	49	40	9,8	5	20800	Yes	0,48
6596111	VSM890D063Z07S22SN12	63	22	49	40	9,8	7	20800	Yes	0,45
6596112	VSM890D080Z05S27SN12	80	27	60	50	9,8	5	18000	Yes	0,96
6596113	VSM890D080Z07S27SN12	80	27	60	50	9,8	7	18000	Yes	1,03
6596114	VSM890D080Z09S27SN12	80	27	60	50	9,8	9	18000	Yes	1,01
6596115	VSM890D100Z06S32SN12	100	32	78	50	9,8	6	15800	Yes	1,69
6596116	VSM890D100Z08S32SN12	100	32	78	50	9,8	8	15800	Yes	1,56
6596117	VSM890D100Z11S32SN12	100	32	78	50	9,8	11	15800	Yes	1,53
6596118	VSM890D125Z07S40SN12	125	40	89	63	9,8	7	13900	Yes	2,79
6596119	VSM890D125Z10S40SN12	125	40	89	63	9,8	10	13900	Yes	2,98
6596121	VSM890D125Z14S40SN12	125	40	89	63	9,8	14	13900	Yes	2,86
6596122	VSM890D160Z08S40SN12	160	40	110	63	9,8	8	12200	Yes	4,10
6596123	VSM890D160Z12S40SN12	160	40	110	63	9,8	12	12200	Yes	4,15
6596124	VSM890D160Z16S40SN12	160	40	110	63	9,8	16	12200	Yes	8,97
6596125	VSM890D200Z10S60SN12	200	60	130	63	9,8	10	10800	Yes	5,62
6596126	VSM890D200Z14S60SN12	200	60	130	63	9,8	14	10800	Yes	5,59
6596127	VSM890D200Z22S60SN12	200	60	130	63	9,8	22	10800	Yes	5,67
6596128	VSM890D250Z16S60SN12	250	60	130	63	9,8	16	9600	Yes	8,10





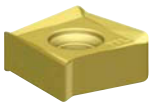
VSM890-12

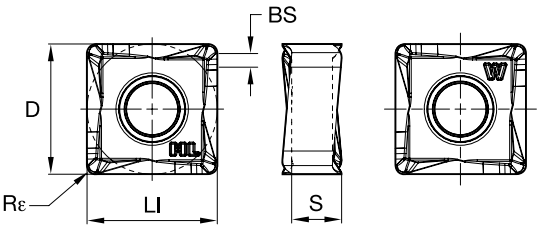
SNHX-ALP • For Aluminum and Other Non-Ferrous Alloys

● Primary
○ Secondary

	WK15CM	WN25PM	WP25PM	WP35CM	WP40PM	WS40PM	WU10PM
P		●	●	●	●	●	
M			●	●	●	●	
K	●		○	○			●
N		●				○	
S			●	○	○	●	
H			○				●

ISO Catalog Number	Cutting Edges	LI	S	D	BS	Rε	WK15CM	WN25PM	WP25PM	WP35CM	WP40PM	WS40PM	WU10PM
SNHX120408PNERALP	8	12,00	4,61	12,00	1,34	0,80	I	6596397	I	I	I	I	I





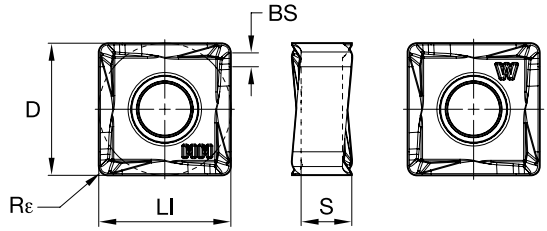
VSM890-12

SNHX-ML • Precision Finishing and Light Machining

● Primary
○ Secondary

	WK15CM	WN25PM	WP25PM	WP35CM	WP40PM	WS40PM	WU10PM
P			●	●	●	●	
M			●	●	●	●	
K	●		○	○			●
N		●				○	
S			●	○	○	●	
H			○				●

ISO Catalog Number	Cutting Edges	LI	S	D	BS	Rε	WK15CM	WN25PM	WP25PM	WP35CM	WP40PM	WS40PM	WU10PM
SNHX120408PNERML	8	12,00	4,61	12,00	1,34	0,80	I	I	6596398	I	I	6596399	I



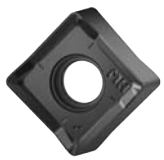
VSM890-12

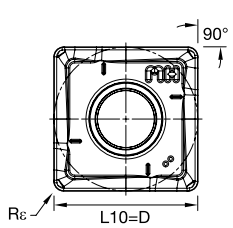
SNHX-MM • Universal Geometry for Medium Machining

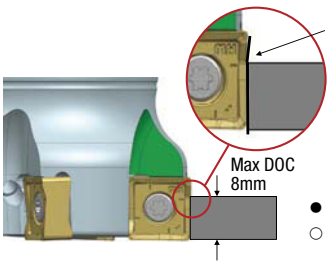
● Primary
○ Secondary

	WK15CM	WN25PM	WP25PM	WP35CM	WP40PM	WS40PM	WU10PM
P			●	●	●	●	
M			●	●	●	●	
K	●		○	○			●
N		●				○	
S			●	○	○	●	
H			○				●

ISO Catalog Number	Cutting Edges	LI	S	D	BS	Rε	WK15CM	WN25PM	WP25PM	WP35CM	WP40PM	WS40PM	WU10PM
SNHX120408PNSRMM	8	12,00	4,61	12,00	1,34	0,80	6667462	I	6596431	6797597	6596432	6596433	6596400
SNHX120416PNSRMM	8	12,00	4,58	12,00	1,00	1,60	6712874	I	6712875	I	6712876	6712877	I







NEW! VSM890-12

SNPX12-MHD8 • Semi Roughing and Roughing Applications

● Primary
○ Secondary

	WK15CM	WP35CM	WU20PM	WP25PM	WS40PM	WU35PM	WK20PM	WP40PM
P		●	●	●	●	●		●
M		●	●	●	●	●		●
K	●	○	○	○			●	
N			○					
S		○	○	●	●	●		○
H		○	○					

ISO Catalog Number	Cutting Edges	D	D1	L10	S	Rε	WK15CM	WP35CM	WU20PM	WP25PM	WS40PM	WU35PM	WK20PM	WP40PM
SNPX120408PNSRMHD8	8	12	4,75	12	4,76	0,80	7186419	7186418	7186418	7230959	7230958	7230957	7230955	7230956

NOTE: For shoulder milling up to a maximum depth of cut (DOC) of 8mm. Not suitable for step-down or plunging operations.

Recommended Starting Speeds • [m/min]

Material Group		WK15CM			WN25PM			WP25PM			WP35CM			WP40PM			WS40PM			WU10PM			WU35PM			WU20PM			WK20PM		
P	1	–	–	–	–	–	–	330	**285**	270	455	**395**	370	295	**260**	245	–	–	–	–	–	–	310	**275**	260	330	**290**	270	–	–	–
	2	–	–	–	–	–	–	275	**240**	200	280	**255**	230	250	**215**	180	–	–	–	–	–	–	265	**230**	190	275	**250**	200	–	–	–
	3	–	–	–	–	–	–	255	**215**	175	255	**230**	205	230	**195**	160	–	–	–	–	–	–	240	**205**	170	255	**220**	175	–	–	–
	4	–	–	–	–	–	–	225	**185**	150	190	**175**	160	205	**170**	135	–	–	–	–	–	–	215	**180**	145	225	**190**	150	–	–	–
	5	–	–	–	–	–	–	185	**170**	150	260	**230**	210	170	**155**	135	170	**145**	120	–	–	–	180	**160**	145	185	**175**	150	–	–	–
	6	–	–	–	–	–	–	165	**125**	100	160	**135**	110	150	**115**	90	150	**110**	80	–	–	–	155	**120**	95	165	**130**	100	–	–	–
M	1	–	–	–	–	–	–	205	**180**	165	205	**185**	155	195	**170**	155	210	**170**	140	–	–	–	205	**180**	160	205	**180**	165	–	–	–
	2	–	–	–	–	–	–	185	**160**	130	185	**160**	140	175	**150**	125	180	**145**	120	–	–	–	185	**155**	130	185	**160**	130	–	–	–
	3	–	–	–	–	–	–	140	**120**	95	145	**130**	115	130	**115**	90	145	**110**	85	–	–	–	140	**120**	95	140	**120**	95	–	–	–
K	1	420	**385**	340	–	–	–	230	**205**	185	295	**265**	240	–	–	–	–	–	–	295	**265**	240	–	–	–	250	**220**	185	360	**290**	245
	2	335	**295**	275	–	–	–	180	**160**	150	235	**210**	190	–	–	–	–	–	–	230	**205**	190	–	–	–	200	**180**	150	280	**230**	195
	3	280	**250**	230	–	–	–	150	**135**	120	195	**175**	160	–	–	–	–	–	–	195	**175**	160	–	–	–	180	**150**	120	210	**175**	140
N	1	–	–	–	1075	**945**	875	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	550	**470**	400	–	–	–
	2	–	–	–	945	**875**	760	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	550	**470**	400	–	–	–
	3	–	–	–	945	**875**	760	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	400	**350**	300	–	–	–
S	1	–	–	–	–	–	–	40	**35**	25	–	–	–	–	–	–	40	**35**	25	–	–	–	40	**35**	30	40	**35**	25	–	–	–
	2	–	–	–	–	–	–	40	**35**	25	–	–	–	–	–	–	40	**35**	25	–	–	–	40	**35**	30	40	**35**	25	–	–	–
	3	–	–	–	–	–	–	50	**40**	25	–	–	–	–	–	–	50	**40**	25	–	–	–	55	**40**	30	50	**40**	25	–	–	–
	4	–	–	–	–	–	–	70	**50**	35	–	–	–	–	–	–	60	**50**	30	–	–	–	70	**55**	35	70	**50**	35	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	160	**130**	90	–	–	–	110	**80**	70	–	–	–

NOTE: First choice starting feed (fz) is in bold type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds • [mm]

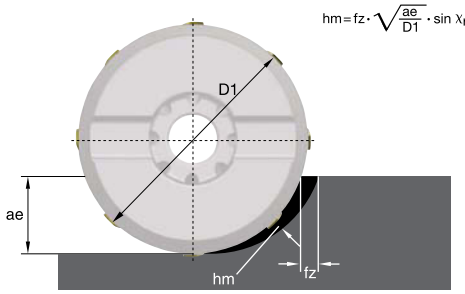
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.E..ALP	0,12	**0,28**	0,43	0,08	**0,20**	0,31	0,06	**0,15**	0,23	0,06	**0,13**	0,20	0,05	**0,12**	0,18	.E..ALP
.E..ML	0,17	**0,32**	0,60	0,13	**0,23**	0,44	0,09	**0,18**	0,33	0,08	**0,15**	0,28	0,08	**0,14**	0,26	.E..ML
.S..MM	0,23	**0,36**	0,82	0,17	**0,26**	0,59	0,13	**0,20**	0,44	0,11	**0,17**	0,38	0,10	**0,16**	0,35	.S..MM
.S..MH8	0,24	**0,71**	1,17	0,17	**0,51**	0,84	0,13	**0,38**	0,63	0,11	**0,34**	0,55	0,11	**0,3**	0,5	.S..MH8

NOTE: First choice starting feed (fz) is in bold type.
Use corresponding speed (vc).
fz and vc are valid for ae ≥0,4 D1.
For smaller ae, fz and vc should be multiplied by the factor given below:

$$fz = \frac{hm}{\sin \chi_r} \cdot \sqrt{\frac{D1}{ae}}$$

$$hm = fz \cdot \sqrt{\frac{ae}{D1}} \cdot \sin \chi_r$$



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FOR EVERY MACHINE SHOP

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