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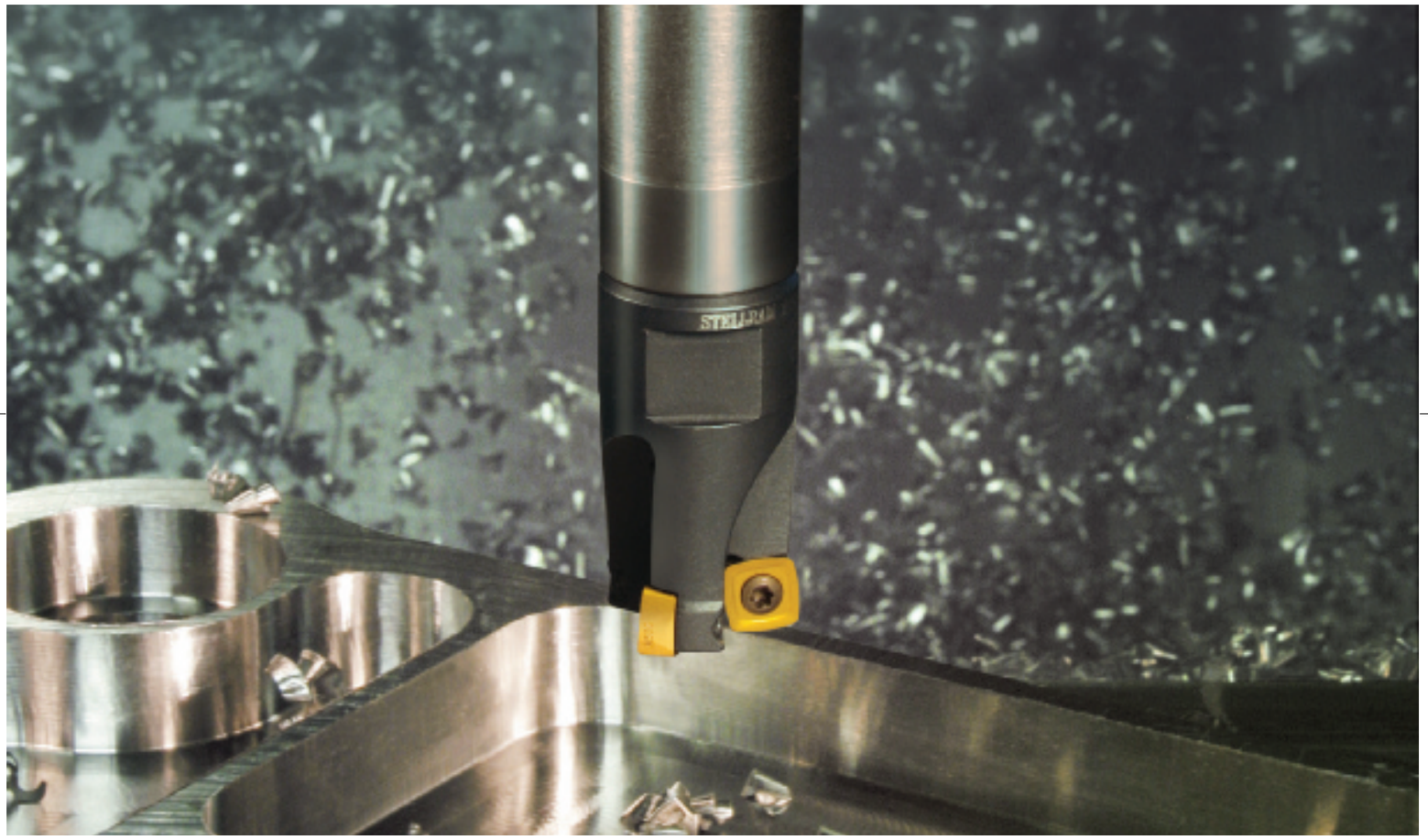
7792VX HIGH FEED FACE MILLS - INCH

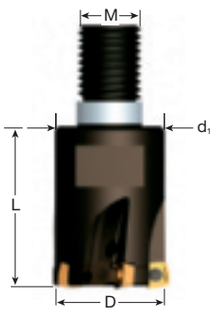


ATI Stellram® tooling systems for all your tooling requirements.

US patent # 7,220,083 and foreign patents pending. X400 patent # 7,244,519

7792 VXP06 High Feed Milling Cutter

Cylinder Shanks



Modular Head

7792 VXP06 Cylindrical Shanks

EDP #	Description	Dimensions (inch) D	L	l_2	$a_{p\ max.}$	d_1	Z	Spares EDP#		EDP#	
030487	**C7792VXP06CA.62Z2R5.5**	0.625	7.42	0.980	0.035	0.625	2	015565	F2506T	018488	T7
030412	**C7792VXP06CA.75Z3R6.1**	0.750	8.09	1.260	0.035	0.750	3	015565	F2506T	018488	T7
030413	**C7792VXP06CA1.0Z4R6.1**	1.000	8.34	1.575	0.035	1.000	4	015061	F2507T	018488	T7
030414	**C7792VXP06CA1.25Z5R8**	1.250	9.76	1.575	0.035	1.250	5	015061	F2507T	018488	T7

The above steel cylindrical shank cutters can be cut to length as needed for maximum rigidity

7792 VXP06 Modular Heads/Screw-On

EDP #	Description	Dimensions (inch) D	L	M	$a_{p\ max.}$	d_1	Z	Spares EDP#		EDP#	
030415	**A7792VXP06SA.625Z2R1**	0.625	1.000	M8	0.035	0.511	2	015565	F2506T	018488	T7
030416	**A7792VXP06SA.75Z2R1.4**	0.750	1.377	M10	0.035	0.708	2	015565	F2506T	018488	T7
030417	**A7792VXP06SA.75Z3R1.4**	0.750	1.377	M10	0.035	0.708	3	015565	F2506T	018488	T7
030418	**A7792VXP06SA1.0Z3R1.4**	1.000	1.377	M12	0.035	0.826	3	015061	F2507T	018488	T7
030419	**A7792VXP06SA1.0Z4R1.4**	1.000	1.377	M12	0.035	0.826	4	015061	F2507T	018488	T7
030420	**A7792VXP06SA1.25Z5R2**	1.250	1.669	M16	0.035	1.141	5	015061	F2507T	018488	T7

For Cylinderical shank in high density alloy for modular heads refer to page: 8

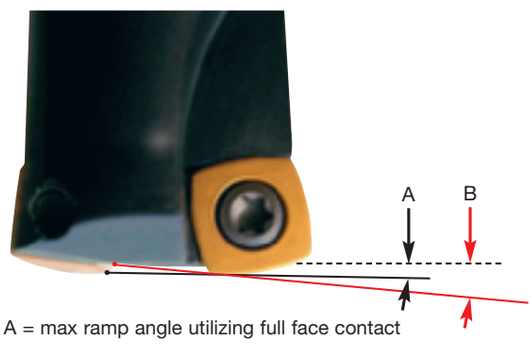
7792 VXP06 Technical Advice

Milling Cutter Order Example: **A7792VXP06CA.62Z2R5.5**
Milling Insert Order Example: **XPLT060308ER - D41 X500**

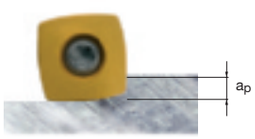
Maximum Ramping Angle

Item Description	Max Ramp Angle A	Max Ramp Angle B
C7792VXP06CA.62Z2R5.5	6.09	8.20
C7792VXP06CA.75Z3R6.1	3.86	6.74
C7792VXP06CA1.0Z4R6.1	2.11	4.34
C7792VXP06CA1.25Z5R8	1.43	2.69
A7792VXP06SA.625Z2R1	6.09	8.2
A7792VXP06SA.75Z2R1.4	3.86	6.74
A7792VXP06SA.75Z3R1.4	3.86	6.74
A7792VXP06SA1.0Z3R1.4	2.11	4.34
A7792VXP06SA1.0Z4R1.4	2.11	4.34
A7792VXP06SA1.25Z5R2	1.43	2.69

Ramp angle A uses one outside cutting edge only.
Ramp angle B uses two cutting edges (one outside and one inside edge).



A = max ramp angle utilizing full face contact
B = max ramp angle utilizing full contact + internal corner radius



Depth of Cut (a_p)

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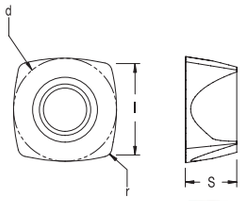
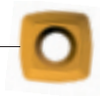
Inserts for 7792 VXP06



XPLT06 -D41



New high feed 6mm inserts		Application & Material			Dimensions (inch)			
		Roughing	*Semi-Finishing*	*Finishing*				
EDP #	**Description**	▼	▼▼	▼▼▼	d	l	s	r
030402	**XPLT060308ER-D41 X500**	◆◆◆			0.276	0.276	0.125	0.031
030403	**XPLT060308ER-D41 X400**	◆◆◆			0.276	0.276	0.125	0.031
030404	**XPLT060308ER-D41 SP6564**	◆◆◆			0.276	0.276	0.125	0.031
030405	**XPLT060308ER-D41 SC3025**	◆			0.276	0.276	0.125	0.031

XP_06 Inserts Recommended Cutting Conditions

		▼ *Facing*			▼▼ *Slotting*			▼▼▼ *Plunging*		
	Material	Speed V_c (SFM)	Feed h_m (inch)	D.O.C. a_p max (in)	Speed V_c (sfm)	Feed h_m (inch)	D.O.C. a_p max (in)	Speed V_c (sfm)	Feed h_m (inch)	W.O.C. a_e max (in)
◆	Unalloyed Steels	400-770	0.008-0.032	0.035	400-770	0.008-0.024	0.0354	400-770	0.002-0.006	0.118
◆	Alloyed Steels	250-525	0.008-0.032	0.035	250-525	0.008-0.024	0.0354	250-525	0.002-0.004	0.118
◆	Stainless Steels	380-870	0.006-0.031	0.035	380-870	0.006-0.024	0.0354	380-870	0.002-0.005	0.118
◆	PH Stainless	140-320	0.006-0.026	0.035	140-320	0.006-0.019	0.0354	140-320	0.002-0.004	0.118
◆	Cast Irons	500-1300	0.008-0.032	0.035	500-1300	0.008-0.024	0.0354	500-1300	0.002-0.005	0.118
◆	Aluminum & Alloys	-	-	-	-	-	-	-	-	-
◆	High Temp. Alloys	80-200	0.006-0.020	0.035	80-200	0.004-0.016	0.0354	80-200	0.002-0.003	0.118
◆	Hard Steels (52-56 HRC)	115-330	0.008-0.020	0.035	115-330	0.008-0.016	0.0354	115-330	0.002-0.003	0.118

h_m = average chip thickness

Star Guide Key to Recommended Tools

Material Designations							
P	Unalloyed Steels	M	Stainless Steels	K	Cast Irons	S	High Temp. Alloys
P	Alloyed Steels	M	PH Stainless	N	Aluminum & Alloys	H	Hard Materials

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7792 VXD09 High Feed Milling Cutter

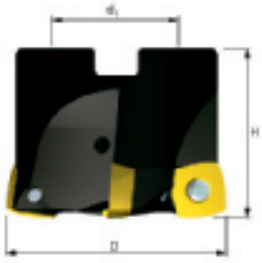
Weldon Shank

7792VXD09 Weldon Shank

		Dimensions (inch)						Spares			
EDP #	Part Number	D	L/H	l_2	d_1	a_p max.	Z	EDP#		EDP#	
029474	**C7792VXD09WA1.00Z2R**	1.000	3.855	1.574	1.000	0.059	2	015269	F3508T	015240	T15
029475	**C7792VXD09WA1.25Z3R**	1.250	3.855	1.574	1.250	0.059	3	015064	F3510T	015240	T15

7792VXD09 Shell Mill Fixation

029476	**C7792VXD09A1.50Z3R**	1.500	1.259	-	0.500	0.059	3	015064	F3510T	015240	T15
029477	**C7792VXD09A1.50Z4R**	1.500	1.259	-	0.500	0.059	4	015064	F3510T	015240	T15
030431	**C7792VXD09A1.50Z5R**	1.500	1.259	-	0.500	0.059	5	015064	F3510T	015240	T15
030432	**C7792VXD09A2.00Z5R**	2.000	1.574	-	0.750	0.059	5	015064	F3510T	015240	T15
030433	**C7792VXD09A2.00Z6R**	2.000	1.574	-	0.750	0.059	6	015064	F3510T	015240	T15



Shell Mill Fixation

7792VXD09 Modular Head

		Dimensions (inch)						Spares			
EDP #	Part Number	D	L/H	l_2	d_1	a_p max.	Z	EDP#		EDP#	
030616	**A7792VXD09SA1.0Z2R1.4**	1.000	1.400	M12	0.827	0.059	2	015269	F3508T	015240	T15
030617	**A7792VXD09SA1.25Z3R2**	1.250	1.700	M16	1.142	0.059	3	015064	F3510T	015240	T15

Note: For cylindrical shank in high density alloy for modular heads refer to page: 8

Modular Head

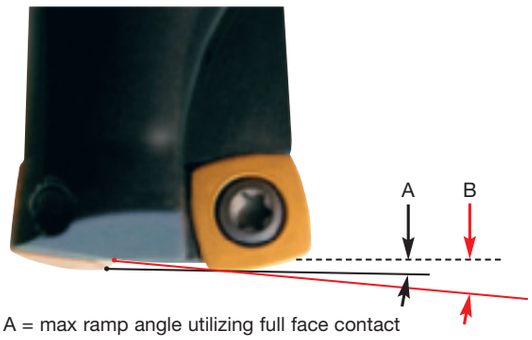
7792 VXD09 Technical Advice

Milling Cutter Order Example: **C7792VXD09-A1.50Z3R**
Milling Insert Order Example: **XDLW090408SR-D X400**

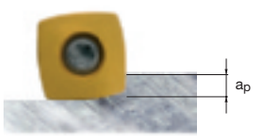
Maximum Ramping Angle

Item Description	Max Ramp Angle A	Max Ramp Angle B
C7792VXD09WA1.00Z2R	2.70°	8.00°
C7792VXD09WA1.25Z3R	1.50°	4.50°
C7792VXD09-A1.50Z3R	1.10°	2.70°
C7792VXD09-A1.50Z4R	1.10°	2.70°
C7792VXD09-A1.50Z5R	1.10°	2.70°
C7792VXD09-A2.00Z5R	0.70°	1.80°
C7792VXD09-A2.00Z6R	0.70°	1.80°
A7792VXD09SA1.0Z2R1.4	2.70°	8.10°
A7792VXD09SA1.25Z3R2	1.50°	4.50°

Ramp angle A uses one outside cutting edge only.
Ramp angle B uses two cutting edges (one outside and one inside edge).



A = max ramp angle utilizing full face contact
B = max ramp angle utilizing full contact + internal corner radius



Depth of Cut (a_p)

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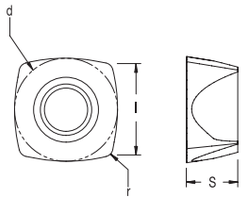
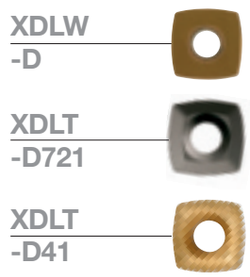
Inserts for 7792 VXD09



EDP #	Part Number	Grade	Application & Material ▼ Roughing	▼▼ Semi-Finishing	▼▼▼ Finishing	Dimensions (inch) d	l	s	r
029485	**XDLW090408SR-D**	**X500**	◆			0.375	0.375	0.187	0.031
029486	**XDLW090408SR-D**	**SC3025**	◆			0.375	0.375	0.187	0.031
029487	**XDLW090408SR-D**	**X400**	◆◆◆			0.375	0.375	0.187	0.031
029637	**XDLT090408ER-D721**	**GH2**	◆			0.500	0.500	0.219	0.031
029685	**XDLT090408ER-D41**	**X500**	◆◆◆			0.500	0.500	0.219	0.031
029686	**XDLT090408ER-D41**	**SP6564**	◆◆◆			0.500	0.500	0.219	0.031



XD_09 Inserts Recommended Cutting Conditions

Material	▼ *Facing* Speed V_c (SFM)	Feed h_m (inch)	D.O.C. a_p max (in)	▼▼ *Slotting* Speed V_c (SFM)	Feed h_m (inch)	D.O.C. a_p max (in)	▼▼▼ *Plunging* Speed V_c (SFM)	Feed h_m (inch)	W.O.C. a_e max (in)
◆ Unalloyed Steels	395 - 770	0.012 - 0.079	0.059	395 - 770	0.012 - 0.059	0.059	395 - 770	0.004 - 0.006	0.236
◆ Alloyed Steels	230 - 525	0.012 - 0.079	0.059	230 - 525	0.012 - 0.059	0.059	230 - 525	0.004 - 0.008	0.236
◆ Stainless Steels	370 - 870	0.008 - 0.039	0.059	370 - 870	0.008 - 0.031	0.059	370 - 870	0.004 - 0.006	0.236
◆ PH Stainless	160 - 320	0.008 - 0.024	0.059	160 - 320	0.004 - 0.016	0.059	160 - 320	0.002 - 0.003	0.236
◆ Cast Irons	400 - 1300	0.012 - 0.079	0.059	400 - 1300	0.012 - 0.059	0.059	400 - 1300	0.004 - 0.008	0.236
◆ Aluminum & Alloys	1310 - 3280	0.012 - 0.039	0.059	1310 - 3280	0.012 - 0.039	0.059	1310 - 3280	0.004 - 0.012	0.236
◆ High Temp. Alloys	80 - 200	0.008 - 0.031	0.059	80 - 200	0.004 - 0.020	0.059	80 - 200	0.002 - 0.004	0.236
◆ Hard Steels (52-56 HRC)	115 - 330	0.012 - 0.039	0.059	115 - 330	0.012 - 0.032	0.059	115 - 330	0.003 - 0.005	0.236

h_m = average chip thickness

Star Guide Key to Recommended Tools

Material Designations							
P ◆	Unalloyed Steels	M ◆	Stainless Steels	K ◆	Cast Irons	S ◆	High Temp. Alloys
P ◆	Alloyed Steels	M ◆	PH Stainless	N ◆	Aluminum & Alloys	H ◆	Hard Materials

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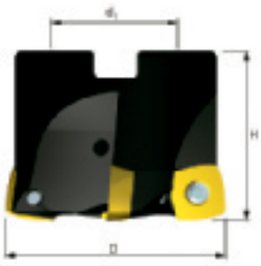
7792 VXD12 High Feed Milling Cutter



Shell Mill Fixation

7792 VXD12 Shell Mill Fixation

		Dimensions (inch)						Spares			
EDP #	Part Number	D	H	M	d_1	$a_{p\ max}$	Z	EDP#		EDP#	
029480	C7792VXD12-A2.00Z3R	2.000	1.574	-	0.750	0.098	3	015263	D4012T	015240	T15
029481	C7792VXD12-A2.00Z4R	2.000	1.574	-	0.750	0.098	4	015263	D4012T	015240	T15
030485	C7792VXD12-A2.00Z5R	2.000	1.574	-	0.750	0.098	5	015263	D4012T	015240	T15
029482	C7792VXD12-A2.50Z4R	2.500	1.574	-	1.000	0.098	4	015263	D4012T	015240	T15
029483	C7792VXD12-A2.50Z5R	2.500	1.574	-	1.000	0.098	5	015263	D4012T	015240	T15
029484	C7792VXD12-A3.00Z5R	3.000	1.968	-	1.000	0.098	5	015263	D4012T	015240	T15
030486	C7792VXD12-A3.00Z8R	3.000	1.97	-	1.000	0.098	8	015263	D4012T	015240	T15
030437	C7792VXD12-A4.00Z6R	4.000	1.97	-	1.250	0.098	6	015263	D4012T	015240	T15
030438	C7792VXD12-A4.00Z9R	4.000	1.97	-	1.250	0.098	9	015263	D4012T	015240	T15
030439	C7792VXD12-A5.00Z8R	5.000	2.48	-	1.500	0.098	8	015263	D4012T	015240	T15
030440	C7792VXD12-A5.00Z11R	5.000	2.48	-	1.500	0.098	11	015263	D4012T	015240	T15
030441	C7792VXD12-6.00Z8R	6.000	2.48	-	1.500	0.098	8	015263	D4012T	015240	T15
030442	C7792VXD12-6.00Z12R	6.000	2.48	-	1.500	0.098	12	015263	D4012T	015240	T15

NOTE: For cutter diameters larger than 6.00" you can use cartridge EDP 030378 80VX9Z R-12 with A8000, A8010 or A8100 series modular cutter bodies.
See General Milling Catalog 327CATUSA.V4 page 50.

7792 VXD12 Technical Advice

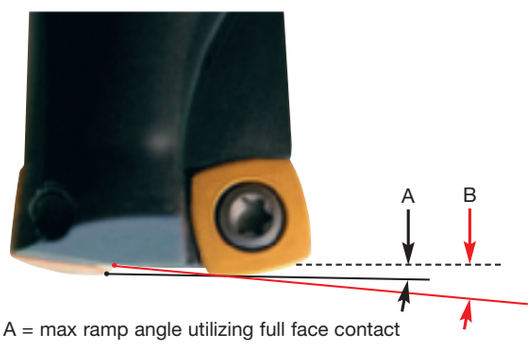
Milling Cutter Order Example: **C7792VXD12-A2.00Z5R**
Milling Insert Order Example: **XDLW120508SR-D X500**

Maximum Ramping Angle

Item Description	Max Ramp Angle A	Max Ramp Angle B
C7792VXD12-A2.00Z3R	0.90°	1.40°
C7792VXD12-A2.00Z4R	0.90°	1.40°
C7792VXD12-A2.00Z5R	0.90°	1.40°
C7792VXD12-A2.50Z4R	0.60°	0.90°
C7792VXD12-A2.50Z5R	0.60°	0.90°
C7792VXD12-A3.00Z5R	0.45°	0.90°
C7792VXD12-A3.00Z8R	0.45°	0.90°
C7792VXD12-A4.00Z6R	0.31°	1.42°
C7792VXD12-A4.00Z9R	0.31°	1.42°
C7792VXD12-A5.00Z8R	0.24°	1.04°
C7792VXD12-A5.00Z11R	0.24°	1.04°
C7792VXD12-A6.00Z8R	0.19°	0.82°
C7792VXD12-A.600Z12R	0.19°	0.82°

Ramp angle A uses one outside cutting edge only.
Ramp angle B uses two cutting edges (one outside and one inside edge).

Depth of Cut (a_p)



A = max ramp angle utilizing full face contact
B = max ramp angle utilizing full contact + internal corner radius

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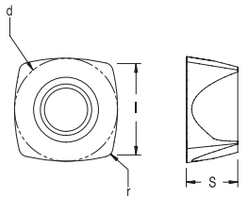
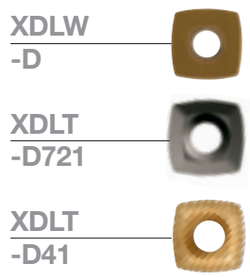
Inserts for 7792 VXD12



EDP #	Part Number	Grade	Application & Material ▼ Roughing	▼▼ Semi-Finishing	▼▼▼ Finishing	Dimensions (inch) d	l	s	r
029488	**XDLW120508SR-D**	**X500**	◆			0.500	0.500	0.219	0.031
029489	**XDLW120508SR-D**	**SC3025**	◆			0.500	0.500	0.219	0.031
029490	**XDLW120508SR-D**	**X400**	◆◆◆			0.500	0.500	0.219	0.031
029638	**XDLT120508ER-D721**	**GH2**	◆			0.500	0.500	0.219	0.031
029682	**XDLT120508ER-D41**	**X500**	◆◆◆			0.500	0.500	0.219	0.031
029683	**XDLT120508ER-D41**	**SP6564**	◆◆◆			0.500	0.500	0.219	0.031



XD_12 Inserts Recommended Cutting Conditions

Material	▼ *Facing* Speed V_c (SFM)	Feed h_m (inch)	D.O.C. a_p max (in)	▼▼ *Slotting* Speed V_c (SFM)	Feed h_m (inch)	D.O.C. a_p max (in)	▼▼▼ *Plunging* Speed V_c (SFM)	Feed h_m (inch)	W.O.C. a_e max (in)
◆ Unalloyed Steels	395 - 770	0.012 - 0.118	0.098	395 - 770	0.012 - 0.079	0.079	395 - 770	0.004 - 0.007	0.354
◆ Alloyed Steels	230 - 525	0.012 - 0.118	0.098	230 - 525	0.012 - 0.079	0.079	230 - 525	0.004 - 0.010	0.354
◆ Stainless Steels	370 - 870	0.008 - 0.047	0.098	370 - 870	0.008 - 0.040	0.079	370 - 870	0.004 - 0.007	0.354
◆ PH Stainless	160 - 320	0.008 - 0.028	0.098	160 - 320	0.004 - 0.024	0.079	160 - 320	0.002 - 0.004	0.354
◆ Cast Irons	400 - 1300	0.012 - 0.118	0.098	400 - 1300	0.012 - 0.079	0.079	400 - 1300	0.004 - 0.010	0.354
◆ Aluminum & Alloys	1310 - 3280	0.012 - 0.059	0.098	1310 - 3280	0.012 - 0.059	0.079	1310 - 3280	0.004 - 0.016	0.354
◆ High Temp. Alloys	80 - 200	0.008 - 0.040	0.098	80 - 200	0.004 - 0.028	0.079	80 - 200	0.002 - 0.004	0.354
◆ Hard Steels (52-56 HRC)	115 - 330	0.012 - 0.059	0.098	115 - 330	0.012 - 0.039	0.079	115 - 330	0.003 - 0.006	0.354

h_m = average chip thickness

Star Guide Key to Recommended Tools

Material Designations							
P	◆ Unalloyed Steels	M	◆ Stainless Steels	K	◆ Cast Irons	S	◆ High Temp. Alloys
P	◆ Alloyed Steels	M	◆ PH Stainless	N	◆ Aluminum & Alloys	H	◆ Hard Materials

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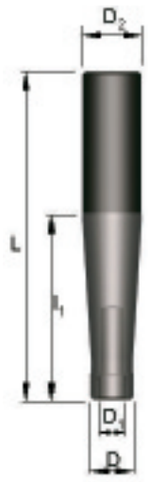
Shanks - Cylindrical (with through coolant)



Cylindrical shank in high density alloy

EDP #	Part Number	Dimensions (mm) L	l_1	D	D_1	D_2	M
030641	**M-13-M8-CA5/8-3.543**	3.543	1.600	0.512	0.335	0.625	M8
030642	**M-13-M8-CA5/8-4.331**	4.331	2.500	0.512	0.335	0.625	M8
030643	**M-13-M8-CA5/8-5.118**	5.118	3.000	0.512	0.335	0.625	M8
030644	**M-13-M8-CA5/8-6.693**	6.693	4.750	0.512	0.335	0.625	M8
030645	**M-18-M10-CA3/4-4.331**	4.331	2.500	0.709	0.413	0.750	M10
030646	**M-18-M10-CA3/4-5.118**	5.118	3.000	0.709	0.413	0.750	M10
030647	**M-18-M10-CA3/4-6.693**	6.693	4.750	0.709	0.413	0.750	M10
030648	**M-21-M12-CA1-5.157**	5.157	3.000	0.827	0.492	1.000	M12
030649	**M-21-M12-CA1-6.142**	6.142	4.000	0.827	0.492	1.000	M12
030650	**M-21-M12-CA1-7.126**	7.126	5.000	0.827	0.492	1.000	M12
030651	**M-21-M12-CA1-8.110**	8.110	6.000	0.827	0.492	1.000	M12
030652	**M-21-M12-CA1-9.094**	9.094	7.000	0.827	0.492	1.000	M12
030653	**M-29-M16-CA1.25-6.3**	6.300	4.000	1.141	0.669	1.250	M16
030654	**M-29-M16-CA1.25-8.27**	8.268	6.000	1.141	0.669	1.250	M16
030655	**M-29-M16-CA1.25-10.2**	10.236	8.000	1.141	0.699	1.250	M16
030656	**M-29-M16-CA1.25-12.2**	12.205	10.000	1.141	0.669	1.250	M16

Example with cylindrical shank: **M-13-M8-CA5/8-3.543**

Technical Advice

M: Modular shank
13: Diameter in front of the modular shank (D)
M8: Tapping in metric (M)
CA5/8: Cylindrical shank diameter 0.625" with through coolant
3.543: Total length of the body in inches

Case Study 7792VXP06

Part:	**Die**
Tool:	**Modular head - A7792VXP06SA.625Z2R1** **High density (Tungsten) Shank – M-13-M8-CA5/8 5.118** **Length of reach 7 x diameter**
Insert:	**XPLT060308ER-D41 X500**
Material:	**Alloyed Steel, Z16CND1702**
Operation:	**Slotting/pocketing operation**

Results:	**COMPETITOR**	**STELLRAM**
Speed:	*360 sfm (110 m/min)*	*360 sfm (110 m/min)*
N (rpm)	*2150*	*2150*
Feed rate:	*17.2 ipm (438 mm/min)*	*59.3 ipm (1505mm/min)*
Feed per tooth	*0.004 ipt (0.10mm/Z)*	*0.014 ipt (0.35mm/Z)*
DOC (a_p)	*0.029" (0.75mm)*	*0.020" (0.5mm)*
WOC (a_e)	*0.571" (14.5mm)*	*0.571" (14.5mm)*
MR	*0.3in^3 / min (5cm^3 / min)*	*0.67in^3 / min (11cm^3 / min)*
Results:	*11 slots with low material removal*	*12 slots per edge with higher material removal*

Case Study 7792VXD09

Part:	**Stand**
Tool:	**C7792VXD09WA1.25Z3R**
Insert:	**XDLT090408ER-D41 SP6564**
Material:	**Stainless Steel 304L**
Operation:	**Facing operation**

Results:	**COMPETITOR**	**STELLRAM**
Speed:	*328 sfm (100m/min)*	*492 sfm (150 m/min)*
N (rpm)	*995*	*1492*
Feed rate:	*29.5 ipm (750mm/min)*	*59.3 ipm (2686mm/min)*
Feed per tooth	*0.010 ipt (0.25mm/Z)*	*0.024 ipt (0.6mm/Z)*
DOC (a_p)	*0.015" (0.4mm)*	*0.028" (0.7mm)*
WOC (a_e)	*0.591" (15.0mm)*	*0.591" (15.0mm)*
MR	*0.24in^3 / min (4cm^3 / min)*	*1.7.in^3 / min (28cm^3 / min)*
Results:	*20 parts*	*20 parts (3 times faster than Competitor's button cutter)*

Case Study 7792VXD12

Part:	**Lube valve**
Tool:	**C7792VXD12A2.50Z5R**
Insert:	**XDLT120508ER-D41 X500**
Material:	**Allvac® 718.**
Operation:	**Facing operation**

Results:	**COMPETITOR**	**STELLRAM**
Speed:	*131.2 sfm (40 m/min)*	*98.4 sfm (30 m/min)*
N (rpm)	*202*	*152*
Feed rate:	*7.16 ipm (182mm/min)*	*23.8 ipm (606mm/min)*
Feed per tooth	*0.006 ipt (0.15mm/Z)*	*0.031 ipt (0.8mm/Z)*
DOC (a_p)	*0.08" (2.0mm)*	*0.04" (1.0mm)*
WOC (a_e)	*2.48" (63.0mm)*	*2.48" (63.0mm)*
MR	*1.4in^3 / min (23cm^3 / min)*	*2.31.in^3 / min (38cm^3 / min)*
Results:	*1 part*	*3 parts (3 times longer tool life than Competitor's 45° cutter -C7792VXD12 had a higher material removal)*

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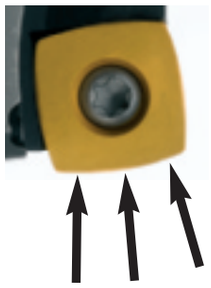
Application Advantages

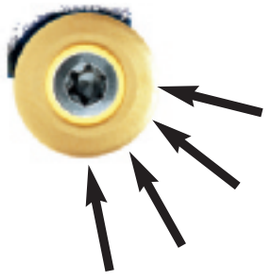
The advantages of facemilling and producing cavities with Stellram's high feed face mill are numerous.

The unique design of the insert, approach angle and the cutter body ensure the cutting forces are predominantly directed in the axial direction. The example shown with a round insert tool shows complex forces which result in high levels of vibration and damage to the cutting edge.



7792VX

- Cutting forces predominantly axial
- Relationship between cutting edge and work piece is at its most stable.
- Results in high feed rates and consistent tool life.



Round Insert Tools

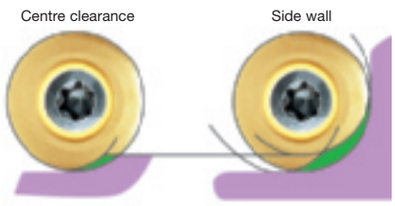
- Tangential forces act around the radius
- Leads to vibration and damage of the cutting edge
- Leads to reduced feed and lower productivity

The 7792VX machines with a constant volume of chip throughout all aspects of producing cavities and produces a side wall that is close to profile.

Round insert tools have increasing chip volume through the process.

7792VX

- Constant cutting section (chip volume) irrespective of position in cavity.
- Producing a close to profile side wall.
- Near-square side walls possible.

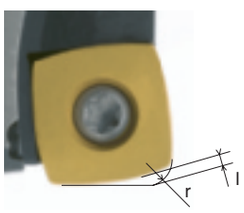


Round insert

- Greater surface contact.
- Increased chip section for side wall machining.
- Vibration in corners.
- Undulating side wall cusps.

CNC Programme - Corner Radius Definition

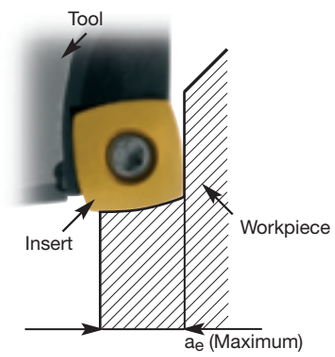
The use of common CAD / CAM systems requires a round insert dimension to be known for cavity machining. This is available with the Stellram 7792VX cutter as shown below and in the reference table.



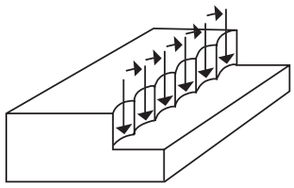
Insert	Dimensions (inch)	
Designation	r	l
XP**060308***	0.054	0.016
XD**090408***	0.079	0.031
XD**120508***	0.098	0.042

Tool definition-Scallop height and step over

	Tool definition (inch)													
Diameter	0.625	0.75	1	1.25	1.00	1.25	1.50	2.00	2.00	2.50	3.00	4.00	5.00	6.00
Insert size	0.236	0.236	0.236	0.236	0.354	0.354	0.354	0.345	0.500	0.500	0.500	0.500	0.500	0.500
a_e max	0.118	0.118	0.118	0.118	0.236	0.236	0.236	0.236	0.354	0.354	0.354	0.354	0.354	0.354
Scallop height	Step over (inch)													
0,010	0.156	0.175	0.196	0.222	0.196	0.222	0.248	0.283	0.283	0.312	0.352	0.393	0.440	0.486
0.020	0.219	0.246	0.276	0.312	0.276	0.312	0.350	0.400	0.400	0.440	0.496	0.555	0.621	0.686
0.030	0.266	0.299	0.336	0.381	0.336	0.381	0.427	0.488	0.488	0.538	0.607	0.679	0.760	0.840
0.039	0.305	0.343	0.386	0.438	0.386	0.438	0.492	0.562	0.562	0.620	0.700	0.783	0.877	0.969
0.079	0.417	0.472	0.534	0.610	0.534	0.610	0.686	0.789	0.787	0.870	0.983	1.102	1.235	1.366
0.118	0.492	0.562	0.640	0.734	0.640	0.734	0.830	0.955	0.955	1.056	1.197	1.343	1.506	1.667
0.157					0.722	0.833	0.945	1.091	1.091	1.210	1.373	1.543	1.732	1.918
0.197					0.787	0.915	1.042	1.207	1.207	1.341	1.525	1.716	1.929	2.138
0.236					0.841	0.983	1.125	1.308	1.308	1.456	1.659	1.870	2.104	2.334
0.276									1.397	1.559	1.780	2.009	2.263	2.512
0.315									1.477	1.652	1.890	2.136	2.409	2.676
0.354									1.549	1.736	1.990	2.253	2.544	2.829



The scallop height is calculated in relation to the step over.

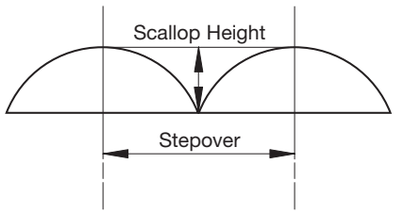


The maximum radial engagement is directly in relation to insert cutting edge length.

For insert type: **XP...06 the a_e, max is 0.118".**

For insert type: **XD...09 the a_e, max is 0.236".**

For insert type: **XD...12 the a_e, max is 0.354".**



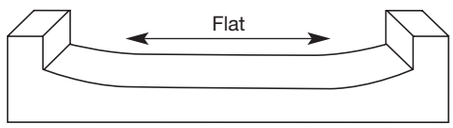
The cutting edge should not be in contact with the material face after machining to maintain the cutting edge quality.

- **Helical interpolation capacity for 7792VX product line**

Helical interpolation Dia. min max (inch)			
Insert size	**Cutter dia.**	**Hole min.**	**Hole max.**
06	0.625	0.850	1.170
06	0.750	1.100	1.420
06	1.000	1.600	1.920
06	1.250	2.100	2.420
09	1.000	1.370	1.920
09	1.250	1.870	2.420
09	1.500	2.370	2.920
09	2.000	3.370	3.920
12	2.000	3.130	3.920
12	2.500	4.130	4.920
12	3.000	5.130	5.920
12	4.000	7.130	7.920
12	5.000	9.130	9.920
12	6.000	11.130	11.920

- **Facing operation maximum flat surface for 7792VX**

Max flat surface (inch)		
Insert size	**Cutter dia.**	**Pitch**
06	0.625	0.255
06	0.750	0.380
06	1.000	0.630
06	1.250	0.880
09	1.000	0.480
09	1.250	0.730
09	1.500	0.980
09	2.000	1.480
12	2.000	1.270
12	2.500	1.770
12	3.000	2.270
12	4.000	3.270
12	5.000	4.270
12	6.000	5.270



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