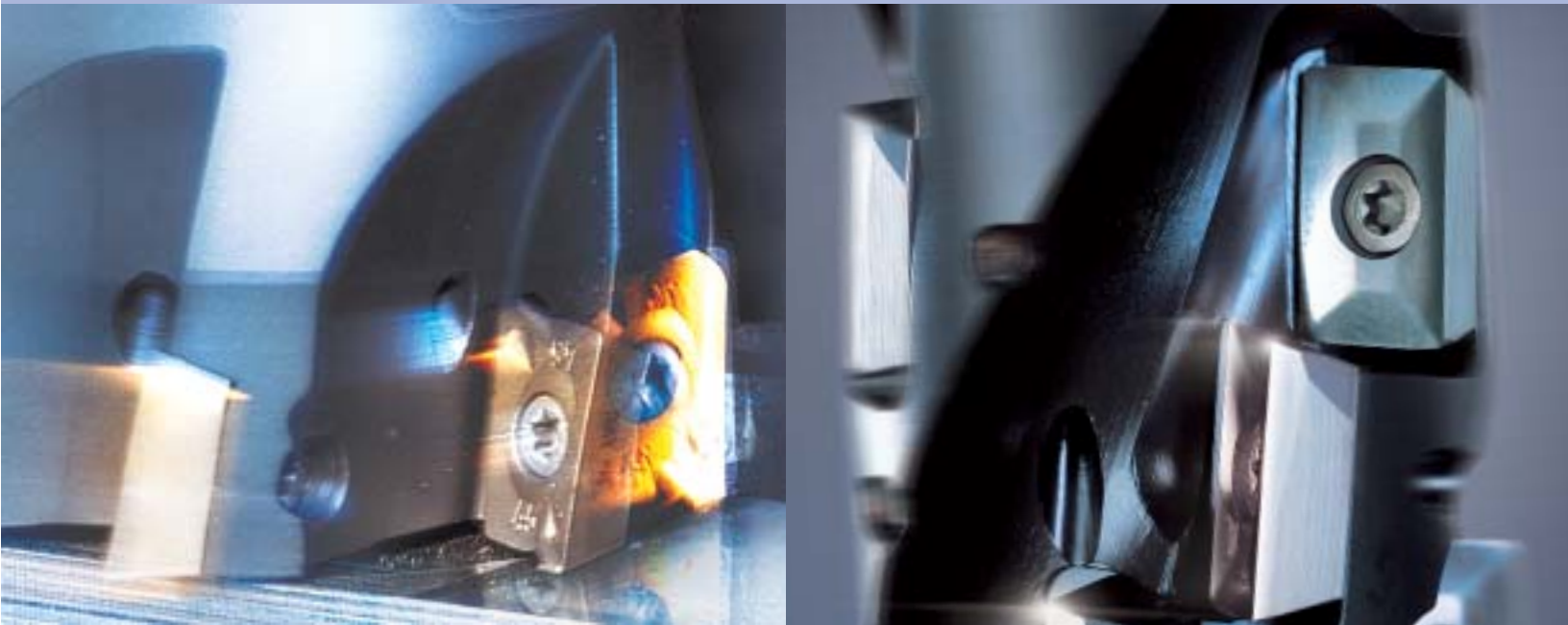


**New!**

# PowerMill90™

7690 VA 12/  
5315 VA 12

## THE TOOLING

- 90° Milling – 7690 VA12 / 5315 VA 12.

## THE MATERIAL

- Steels, stainless steels, cast irons, aluminum and alloys and high temperature alloys.

## THE APPLICATION

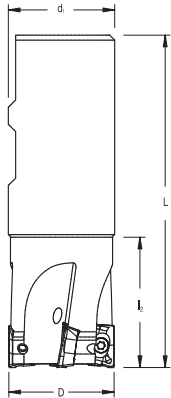
- Shoulder milling, slotting and pocketing.

## PERFORMANCE FEATURES

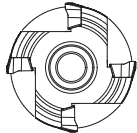
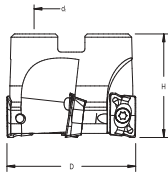
- High metal removal capability and excellent surface finish.
- Thicker inserts provide high feed rates and greater security.
- Positive soft cutting geometry for better power utilization.
- 90° approach angle for accurate shoulder, slot and pocket milling.
- Long edge version with full effective flutes for heavy metal removal.

Stellram® tooling systems for  
all your milling requirements.

# 7690 VA 12 Milling Cutter



Weldon Shank



Shell Mill Fixation



Depth of Cut ( $a_p$ )

## 7690 VA 12 Weldon Shank Coarse Pitch

EDP #	Part Number	Dimensions (inch)						No. of Inserts	Spares			
		D	L/H	$l_2$	$d_1$	$a_{max.}$	EDP#		Screw	EDP#	Driver	
027935	C7690VA12WA.750Z02R1.37	0.75	3.40	1.37	0.750	0.433	2	027860	F3007T	022157	T8	
027936	C7690VA12WA1.00Z02R1.60	1.00	3.90	1.60	1.000	0.433	2	027860	F3007T	022157	T8	
027937	C7690VA12WA1.25Z03R1.60	1.25	3.90	1.60	1.250	0.433	3	027860	F3007T	022157	T8	
027938	C7690VA12WA1.50Z04R2.03	1.50	4.33	2.03	1.250	0.433	4	027860	F3007T	022157	T8	

## 7690 VA 12 Weldon Shank Fine Pitch

EDP #	Part Number	Dimensions (inch)						No. of Inserts	Spares			
		D	L/H	$l_2$	$d_1$	$a_{max.}$	EDP#		Screw	EDP#	Driver	
027939	C7690VA12WA1.00Z03R1.60	1.00	3.90	1.60	1.000	0.433	3	027860	F3007T	022157	T8	
027940	C7690VA12WA1.25Z04R1.60	1.25	3.90	1.60	1.250	0.433	4	027860	F3007T	022157	T8	
027941	C7690VA12WA1.50Z05R2.03	1.50	4.33	2.03	1.250	0.433	5	027860	F3007T	022157	T8	

## 7690 VA 12 Shell Mill Fixation Coarse Pitch

EDP #	Part Number	Dimensions (inch)						No. of Inserts	Spares			
		D	L/H	$l_2$	$d_1$	$a_{max.}$	EDP#		Screw	EDP#	Driver	
027945	C7690VA12-A1.50Z04R	1.50	1.26	-	0.500	0.433	4	027860	F3007T	022157	T8	
027946	C7690VA12-A2.00Z05R	2.00	1.57	-	0.750	0.433	5	027860	F3007T	022157	T8	
027947	C7690VA12-A2.50Z06R	2.50	1.57	-	0.750	0.433	6	027860	F3007T	022157	T8	
027948	C7690VA12-A3.00Z07R	3.00	1.97	-	1.000	0.433	7	027860	F3007T	022157	T8	

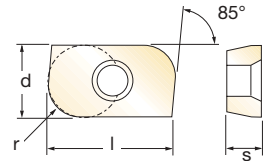
## 7690 VA 12 Shell Mill Fixation Fine Pitch

EDP #	Part Number	Dimensions (inch)						No. of Inserts	Spares			
		D	L/H	$l_2$	$d_1$	$a_{max.}$	EDP#		Screw	EDP#	Driver	
027949	C7690VA12-A1.50Z05R	1.50	1.26	-	0.500	0.433	5	027860	F3007T	022157	T8	
027950	C7690VA12-A2.00Z06R	2.00	1.57	-	0.750	0.433	6	027860	F3007T	022157	T8	
027951	C7690VA12-A2.50Z08R	2.50	1.57	-	0.750	0.433	8	027860	F3007T	022157	T8	
027952	C7690VA12-A3.00Z09R	3.00	1.97	-	1.000	0.433	9	027860	F3007T	022157	T8	

# 7690 VA 12

Milling Cutter order example: **C7690VA12-A1.50Z05R**  
 Milling Insert order example: **ADKT12T3PDER-45 SP6564**

# Inserts for 7690 VA 12



EDP#	Part Number	Grade	Application & Material			Dimensions (inch)				
			Roughing	Semi-Finishing	Finishing	d	l	s	r	h <sub>m</sub> min
027915	ADKT12T3PDER-45	MP91M	◆	◆	◆	0.309	0.500	0.156	Facet	0.003
027916	ADKT12T3PDER-45	SC3025	◆	◆	◆	0.309	0.500	0.156	Facet	0.003
027914	ADKT12T3PDER-45	SP6564		◆	◆	0.309	0.500	0.156	Facet	0.003
027913	ADKT12T3PDER-45	X500	◆			0.309	0.500	0.156	Facet	0.003



029098	ADGT12T3PDFR-721	GH1	◆	◆	◆	0.309	0.500	0.156	Facet	0.0015
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029328	ADHT12T308ER-46	SP6564		◆◆◆	◆◆◆	0.309	0.500	0.156	0.031	0.002
029329	ADHT12T308ER-46	X500	◆◆◆			0.309	0.500	0.156	0.031	0.002
029330	ADHT12T316ER-46	SP6564		◆◆◆	◆◆◆	0.309	0.500	0.156	0.063	0.002
029331	ADHT12T316ER-46	X500	◆◆◆			0.309	0.500	0.156	0.063	0.002
029336	ADHT12T320ER-46	SP6564		◆◆◆	◆◆◆	0.309	0.500	0.156	0.079	0.002
029337	ADHT12T320ER-46	X500	◆◆◆			0.309	0.500	0.156	0.079	0.002
029332	ADHT12T324ER-46	SP6564		◆◆◆	◆◆◆	0.309	0.500	0.156	0.094	0.002
029333	ADHT12T324ER-46	X500	◆◆◆			0.309	0.500	0.156	0.094	0.002
029338	ADHT12T330ER-46	SP6564		◆◆◆	◆◆◆	0.309	0.500	0.156	0.118	0.002
029339	ADHT12T330ER-46	X500	◆◆◆			0.309	0.500	0.156	0.118	0.002
029037	ADHT12T332ER-46	SP6564		◆◆◆	◆◆◆	0.309	0.500	0.156	0.125	0.002
029036	ADHT12T332ER-46	X500	◆◆◆			0.309	0.500	0.156	0.125	0.002
029334	ADHT12T340ER-46	SP6564		◆◆◆	◆◆◆	0.309	0.500	0.156	0.157	0.002
029335	ADHT12T340ER-46	X500	◆◆◆			0.309	0.500	0.156	0.157	0.002
029326	ADHT12T3PDER-46	SP6564		◆◆◆	◆◆◆	0.309	0.500	0.156	Facet	0.002
029327	ADHT12T3PDER-46	X500	◆◆◆			0.309	0.500	0.156	Facet	0.002



If insert radius is over 0.063", the insert pocket on our standard cutters must be modified.

## AD\_12 Recommended Cutting Conditions

Material	Speed	▼ Roughing Feed	D.O.C.	Speed	▼ Semi-Finishing Feed	D.O.C.	Speed	▼ Finishing Feed	D.O.C.
	V <sub>C</sub> (feet/min)	f <sub>z</sub> (feed/tooth)	a <sub>p</sub> (inch)	V <sub>C</sub> (feet/min)	f <sub>z</sub> (feed/tooth)	a <sub>p</sub> (inch)	V <sub>C</sub> (feet/min)	f <sub>z</sub> (feed/tooth)	a <sub>p</sub> (inch)
◆ Unalloyed Steels	400 - 740	0.003 - 0.006	0.276-0.433	680 - 850	0.003 - 0.008	0.098-0.276	750 - 1000	0.003 - 0.010	0.008-0.098
◆ Alloyed Steels	250 - 450	0.003 - 0.006	0.276-0.433	400 - 500	0.003 - 0.008	0.098-0.276	400 - 525	0.003 - 0.010	0.008-0.098
◆ Stainless Steels	375 - 525	0.003 - 0.007	0.276-0.433	410 - 655	0.003 - 0.007	0.098-0.276	490 - 885	0.003 - 0.007	0.008-0.098
◆ PH Stainless	310 - 490	0.000 - 0.007	0.276-0.433	375 - 590	0.003 - 0.007	0.098-0.276	410 - 785	0.003 - 0.007	0.008-0.098
◆ Cast Irons	500 - 920	0.003 - 0.006	0.276-0.433	750 - 1025	0.003 - 0.007	0.098-0.276	900 - 1200	0.003 - 0.008	0.008-0.098
◆ Aluminum & Alloys	655 - 2625	0.002 - 0.006	0.276-0.433	985 - 3935	0.002 - 0.007	0.098-0.276	1310 - 5250	0.002 - 0.008	0.008-0.098
◆ High Temp. Alloys	80 - 130	0.002 - 0.004	0.276-0.433	100 - 165	0.002 - 0.005	0.098-0.276	100 - 195	0.002 - 0.006	0.008-0.098
◆ Hard Steels (52-56 HRC)	-	-	-	-	-	-	-	-	-






### Star Guide Key to Recommended Inserts

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



# Technical Data:

## ISO Grade Chart

Materials	Code	Coated					Micro-grain Uncoated
		CVD			PVD		
		HC MP91M	HC X500	HC SC3025	HC SP6564	HF GH1	
 Unalloyed and Alloyed Steels <b>P</b>	C8	P01					
		P05					
	C7	P10					
		P15					
		P20					
		P25					
	C6	P30					
		P35					
	C5	P40					
		P50					
 Stainless Steels <b>M</b>		M05					
		M10					
		M15					
		M20					
		M30					
		M35					
		M40					
 Cast Irons <b>K</b>	C4	K01					
		K05					
	C3	K10					
		K15					
	C2	K20					
		K25					
	C1	K30					
		K35					
		K40					
	 Aluminum & Alloys <b>N</b>		N01				
		N05					
		N10					
		N15					
		N20					
		N25					
		N30					
 High Temperature Alloys <b>S</b>		S01					
		S05					
		S10					
		S15					
		S20					
		S25					
		S30					

**New!**

- **MP91M:** For use on steels and alloyed steels. This grade is recommended every time wear characteristics are more important than toughness.
- **X500:** Premium grade for use in difficult conditions and low cutting speeds.
- **SC3025:** The 1st choice grade for all cast iron applications.
  - Excellent wear and abrasion resistance offers greater tool life.
  - 25% - 50% longer tool life than the competition in laboratory and field tests.
- **SP6564:** Recommended for stainless steels and high temperature alloys, in either higher speed or dry machining applications.
- **GH1:** Micrograin grade for machining aluminum. The grade performs equally well with or without coolant.

## Case study:

### PowerMill90

Part: **Plate**  
 Tool: **C7690VA12-A2.00Z06R**  
 Insert: **ADKT12T3PDER-45 X500**  
 Material: **Unalloyed Steels**

Results:	Competition	<b>Stellram</b>
Speed (feet/min):	470 SFM	<b>630 SFM</b>
DOC:	0.118"	<b>0.236"</b>
Feedrate:	21 IPM	<b>36 IPM</b>
Feed per Tooth:	0.004"	<b>0.005"</b>
Results:	2 components per Insert	<b>12</b>



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