



7745 VOD SYSTEMS

Stellram® tooling systems
for all your milling
requirements.

The tooling.
7745 VOD systems.

The material.
Steel, tool steel, stainless steel, heat
resistant alloys, cast irons and
aluminum alloys.

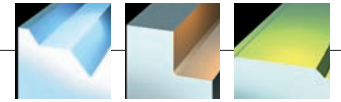
The application.
Face milling, ramp milling, pocket milling
and chamfering.

THE ADVANTAGES

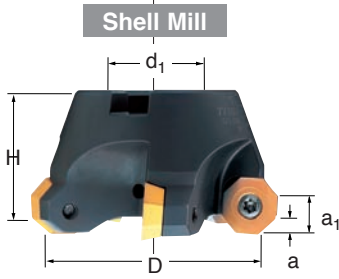
- 1 tool, multiple operations.
- 8 cutting edges per insert.
- PVD, CVD and uncoated grades for all materials.
- 6 geometries for a wide range of applications.
- P-20 tool steel bodies for accuracy and durability.
- Standard and close pitch cutter range from 2.00 up to 6.00 inch diameter.
- Through tool coolant for optimum chip evacuation.
- High feed rates for maximum productivity.



7745 VOD MILLING



7745 VOD 06 using OD..06 inserts



Shell Mill



End Mill

Cartridge Style



New!

	EDP #	Part Number	Dimensions (Inch)					No. of Teeth		
			D	H	d ₁	a ₁	a			
Shell Mills	026561	C7745 VOD06 -A 2.00 R	2.00	1.57	0.75	0.445	0.173	4	F4011T	T20
Standard Pitch	026562	C7745 VOD06 -A 2.50 R	2.50	1.57	0.75	0.445	0.173	5	F4011T	T20
	026563	C7745 VOD06 -A 3.00 R	3.00	1.97	1.00	0.445	0.173	6	F4011T	T20
	026564	C7745 VOD06 -A 4.00 R	4.00	1.97	1.25	0.445	0.173	7	F4011T	T20
	026565	C7745 VOD06 -A 5.00 R	5.00	2.48	1.50	0.445	0.173	8	F4011T	T20
	⊗ 026566	C7745 VOD06 -6.00 R	6.00	2.48	1.50	0.445	0.173	10	F4011T	T20

Metric diameters available from 50mm to 160mm.

Cartridge Style	026587	80 VOD 45R-06	F4011T	T20
------------------------	--------	----------------------	--------	-----

For Series
8000V, 8010V, 8100V

Common Spares	EDP #	Part Number		EDP #	Part Number	
	015270	F4011T		015241	T20	

7745 VOD 04 using OD..04 inserts

	EDP #	Part Number	Dimensions (Inch)						No. of Teeth		
			D	L/H	l ₂	d ₁	a ₁	a			
Shell Mills	026571	C7745 VOD04 -A 2.00 Z06R	2.00	1.57	-	0.75	0.3	0.138	6	F4011T	T20
Fine Pitch	026572	C7745 VOD04 -A 2.50 Z07R	2.50	1.57	-	0.75	0.3	0.138	7	F4011T	T20
	026573	C7745 VOD04 -A 3.00 Z09R	3.00	1.97	-	1.00	0.3	0.138	9	F4011T	T20
	026574	C7745 VOD04 -A 4.00 Z11R	4.00	1.97	-	1.25	0.3	0.138	11	F4011T	T20
	026575	C7745 VOD04 -A 5.00 Z12R	5.00	2.48	-	1.50	0.3	0.138	12	F4011T	T20
	⊗ 026577	C7745 VOD04 -6.00 Z15R	6.00	2.48	-	1.50	0.3	0.138	15	F4011T	T20

Metric diameters available from 50mm to 160mm.

Shell Mills	EDP #	Part Number	D	L/H	l ₂	d ₁	a ₁	a	No. of Teeth		
Standard Pitch	015421	C7745 VOD04 -A 1.50 R	1.50	1.37	-	0.50	0.3	0.138	4	F4011T	T20
	014893	C7745 VOD04 -A 2.00 R	2.00	1.57	-	0.75	0.3	0.138	4	F4011T	T20
	014894	C7745 VOD04 -A 2.50 R	2.50	1.57	-	0.75	0.3	0.138	5	F4011T	T20
	014895	C7745 VOD04 -A 3.00 R	3.00	1.97	-	1.00	0.3	0.138	6	F4011T	T20
	014896	C7745 VOD04 -A 4.00 R	4.00	1.97	-	1.25	0.3	0.138	7	F4011T	T20
	026578	C7745 VOD04 -A 5.00 R	5.00	2.48	-	1.50	0.3	0.138	8	F4011T	T20
	⊗ 026576	C7745 VOD04 -6.00 R	6.00	2.48	-	1.50	0.3	0.138	10	F4011T	T20

Metric diameters available from 40mm to 160mm.

End Mills	EDP #	Part Number	D	L/H	l ₂	d ₁	a ₁	a	No. of Teeth		
Standard Series	014897	C7745 VOD04 WA 1.00 R	1.00	3.54	1.97	0.75	0.3	0.138	2	F4011T	T20
	014898	C7745 VOD04 WA 1.25 R	1.20	3.77	1.57	1.00	0.3	0.138	3	F4011T	T20
	014899	C7745 VOD04 WA 1.50 R	1.50	4.33	2.00	1.25	0.3	0.138	4	F4011T	T20

Metric diameters available from 25mm to 40mm.

Cartridge Style	014313	80 VOD 45R -04	F4011T	T20
------------------------	--------	-----------------------	--------	-----

For Series
8000V, 8010V, 8100V

Common Spares	EDP #	Part Number		EDP #	Part Number	
	015270	F4011T		015241	T20	



EDP # = Internal Item Number: please quote this number when ordering

Insert Grade Availability

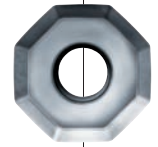
New!

Uncoated	CVD Coated		PVD Coated
GH1	MP91M	X500	SP4036
EDP #	EDP #	EDP #	EDP #
026588	-	-	-
024911	-	-	-

06 Inserts
Part Number
ODET 0605 APFN -441
-

04 Inserts
Part Number
-
ODET 0404 APFN -441

The -441 geometry is peripheral ground with a sharp cutting edge for use on aluminum alloys, Titanium alloys, copper and brass.



-	026591	026592	026598
-	022199	022198	-

ODET 0605 APEN -44
-

-
ODET 0404 APEN -44

The -44 geometry is peripheral ground with a ground facet for producing the best surface quality in most materials.



-	017303	015143	-
---	--------	--------	---

-

ODMT 040408 EN -41

The -41 geometry is an economical insert which has pressed periphery with radii and is suitable where surface finishes are less important.



-	026589	026590	026597
-	017775	022061	-

ODMT 0605 APEN -41
-

-
ODMT 0404 APEN -41

The -41 geometry, in APEN format, has a pressed periphery and facet, and is an economical alternative to geometry -44.

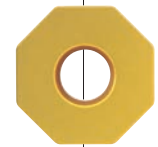


-	025836	025838	-
-	017304	017672	-

ODMW 060512 SN
-

-
ODMW 040408 SN

SN geometry is our strongest in this range, ideal for unstable conditions, long overhangs and very high feed rates.

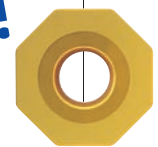


-	026595	026596	026599
---	--------	--------	--------

ODMW 060512 TN

-

TN geometry is similar to SN, but has a smaller edge preparation which reduces machine power consumption.



New!

Uncoated

GH1
Uncoated micrograin carbide for semi-finish and finish machining.
For use in:
Aluminum Alloys
Titanium Alloys
Copper & Brass

CVD Coated

MP91M	X500
TiN-TiCN-Al ₂ O ₃ CVD coated carbide for general applications.	TiN-TiCN-TiN CVD coated carbide for exotic applications.
For use in:	For use in:
Steel	Alloyed Steel
Stainless Steel	Stainless Steel
Heat Resistant Alloys	Heat Resistant Alloys
Cast Iron	Ductile Iron

PVD Coated

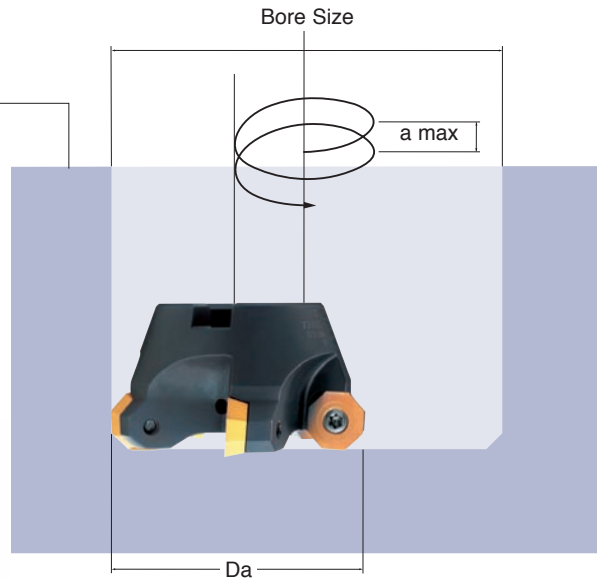
SP4036
TiAlN PVD coated micrograin carbide. Ideal for reducing built-up edge.
For use in:
Alloyed Steel
Stainless Steel
Heat Resistant Alloys
Cast Iron
Cast Steel

EDP # = Internal Item Number: please quote this number when ordering



7745 VOD 06 Ramp Milling Method

Milling with Circular Interpolation				
Milling Cutter (Inch)		Hole Ø (Inch)		a max (depth of cut)
D	Ø Da	D min.	D max.	
Ø 2.00	Ø 2.39	Ø 3.64	Ø 4.77	0.228
Ø 2.50	Ø 2.89	Ø 4.94	Ø 5.77	0.228
Ø 3.00	Ø 3.39	Ø 5.94	Ø 6.77	0.228
Ø 4.00	Ø 4.39	Ø 7.94	Ø 8.77	0.228
Ø 5.00	Ø 5.39	Ø 9.94	Ø 10.77	0.228
Ø 6.00	Ø 6.39	Ø 11.94	Ø 12.01	0.228



7745 VOD 04 Ramp Milling Method

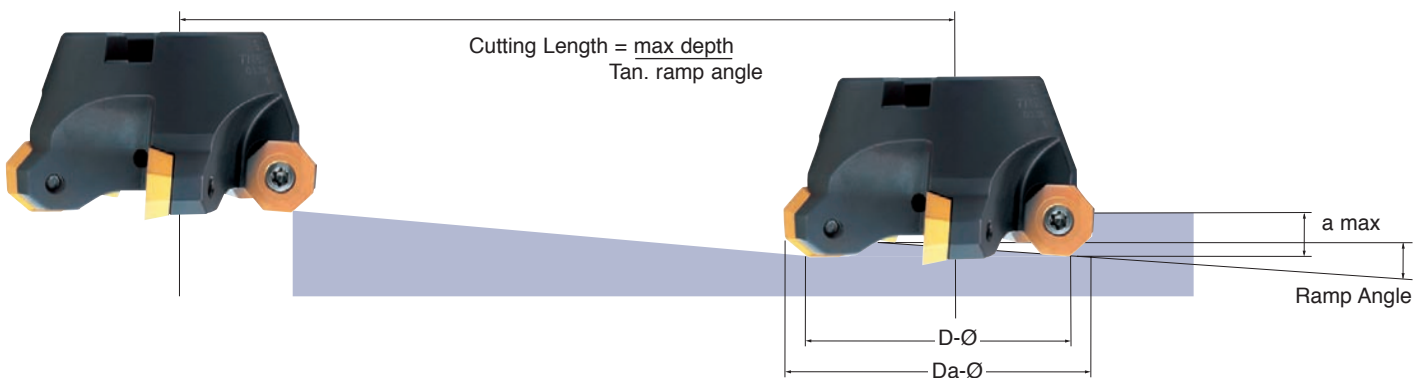
Milling with Circular Interpolation				
Milling Cutter (Inch)		Hole Ø (Inch)		a max (depth of cut)
D	Ø Da	D min.	D max.	
Ø 1.00	Ø 1.31	Ø 1.96	Ø 2.59	0.165
Ø 1.25	Ø 1.56	Ø 2.46	Ø 3.09	0.165
Ø 1.50	Ø 1.81	Ø 2.96	Ø 3.59	0.165
Ø 2.00	Ø 2.31	Ø 3.96	Ø 4.59	0.165
Ø 2.50	Ø 2.81	Ø 4.96	Ø 5.59	0.165
Ø 3.00	Ø 3.31	Ø 5.96	Ø 6.59	0.165
Ø 4.00	Ø 4.31	Ø 7.96	Ø 8.59	0.165
Ø 5.00	Ø 5.31	Ø 9.96	Ø 10.59	0.165

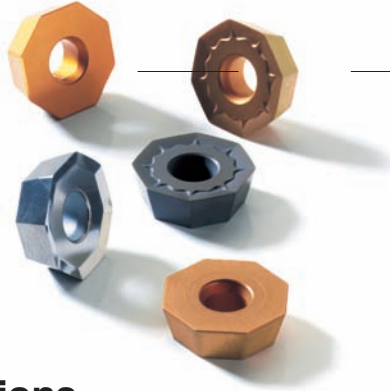
7745 VOD 06 Ramp Milling Method

Linear Ramp Down			
Milling Cutter (Inch)		Ramp Angle	a max (depth of cut)
D	Ø Da		
Ø 2.00	Ø 2.39	6.0°	0.393"
Ø 2.50	Ø 2.89	4.6°	0.393"
Ø 3.00	Ø 3.39	3.3°	0.393"
Ø 4.00	Ø 4.39	2.6°	0.393"
Ø 5.00	Ø 5.39	2.0°	0.393"
Ø 6.00	Ø 6.39	1.5°	0.393"

7745 VOD 04 Ramp Milling Method

Linear Ramp Down			
Milling Cutter (Inch)		Ramp Angle	a max (depth of cut)
D	Ø Da		
Ø 1.00	Ø 1.31	17.0°	0.315"
Ø 1.25	Ø 1.56	12.1°	0.315"
Ø 1.50	Ø 1.81	8.5°	0.315"
Ø 2.00	Ø 2.31	6.1°	0.315"
Ø 2.50	Ø 2.81	4.3°	0.315"
Ø 3.00	Ø 3.31	3.0°	0.315"
Ø 4.00	Ø 4.31	2.4°	0.315"
Ø 5.00	Ø 5.31	2.0°	0.315"





04 Insert Cutting Conditions

Material		Composition (%)			Grade	Cutting Speed (Vc) ft./min.	Feed Rate (fz) inch/tooth				
		C.	Cr.	Ni.			ODET_-441 min. max.	ODET_-44 min. max.	ODMT_-41 min. max.	ODMW_SN min. max.	
Unalloyed Steel	400 - 700 N/mm 120 - 200 HBN	<0.4			X500	360 - 830	-	0.003 - 0.011	0.004 - 0.017	0.010 - 0.023	
					MP91M	400 - 990	-	0.003 - 0.010	0.004 - 0.015	0.010 - 0.021	
					SP4036	350 - 900	-	0.003 - 0.010	0.004 - 0.015	-	
Alloyed Steel	700 - 950 N/mm 200 - 280 HBN	>0.4			X500	300 - 660	-	0.003 - 0.010	0.004 - 0.015	0.010 - 0.021	
					MP91M	360 - 830	-	0.003 - 0.009	0.004 - 0.013	0.010 - 0.019	
					SP4036	200 - 700	-	0.003 - 0.009	0.004 - 0.013	-	
	950 - 1400 N/mm 280 - 415 HBN				X500	230 - 460	-	0.003 - 0.009	0.004 - 0.013	0.010 - 0.019	
					MP91M	260 - 590	-	0.003 - 0.008	0.004 - 0.011	0.010 - 0.017	
Tool Steel	675 - 1350 N/mm 200 - 400 HBN				X500	200 - 360	-	0.003 - 0.010	0.004 - 0.011	0.010 - 0.017	
					MP91M	230 - 410	-	0.003 - 0.009	0.004 - 0.011	0.010 - 0.014	
					SP4036	260 - 500	-	0.003 - 0.009	0.004 - 0.011	-	
Stainless Steel	400 Series	<0.3	13-19		X500	400 - 730	-	0.003 - 0.010	0.004 - 0.013	0.010 - 0.019	
					MP91M	500 - 830	-	0.003 - 0.009	0.004 - 0.012	0.010 - 0.015	
					SP4036	200 - 580	-	0.003 - 0.009	0.004 - 0.012	-	
	200 Series	<0.3	~19	9		X500	380 - 660	-	0.003 - 0.008	0.004 - 0.012	0.010 - 0.013
						MP91M	460 - 730	-	0.003 - 0.007	0.004 - 0.011	0.010 - 0.012
						SP4036	200 - 580	-	0.003 - 0.007	0.004 - 0.011	-
	300 Series	<0.1	13-19	15		X500	400 - 590	-	0.003 - 0.009	0.004 - 0.009	-
						MP91M	460 - 730	-	0.003 - 0.007	0.004 - 0.008	-
						SP4036	250 - 650	-	0.003 - 0.007	0.004 - 0.008	-
	Precipitation Hardening	>15	>15			X500	200 - 400	-	0.003 - 0.009	0.004 - 0.010	-
MP91M						260 - 460	-	0.003 - 0.007	0.004 - 0.007	-	
SP4036						200 - 530	-	0.003 - 0.007	0.004 - 0.007	-	
High Temperature Alloys	Iron Based				X500	120 - 300	-	0.003 - 0.007	0.004 - 0.010	-	
					SP4036	60 - 330	-	0.003 - 0.007	0.004 - 0.008	-	
	Cobalt Based				X500	150 - 230	-	0.003 - 0.007	0.004 - 0.010	-	
					SP4036	130 - 260	-	0.003 - 0.007	0.004 - 0.008	-	
	Nickel Based				X500	70 - 200	-	0.003 - 0.007	0.004 - 0.008	-	
					SP4036	70 - 200	-	0.003 - 0.007	0.004 - 0.007	-	
	Titanium Based					GH1	120 - 150	0.003 - 0.006	-	-	-
						X500	120 - 200	-	0.003 - 0.007	0.004 - 0.008	-
SP4036						120 - 200	-	0.003 - 0.007	0.004 - 0.007	-	
Gray Cast Iron	GG <260 HBN				MP91M	590 - 1320	-	0.003 - 0.011	0.004 - 0.013	0.010 - 0.017	
					SP4036	500 - 1100	-	0.003 - 0.011	0.004 - 0.013	-	
Spheroidal Cast Iron	GGG 40 - 70 140 - 180 HBN				MP91M	330 - 660	-	0.003 - 0.009	0.004 - 0.013	0.010 - 0.016	
					SP4036	260 - 550	-	0.003 - 0.009	0.004 - 0.013	-	
					X500	260 - 530	-	0.003 - 0.009	0.004 - 0.012	0.010 - 0.017	
Nodular Cast Iron	GGG 80 - 100 200 - 290 HBN				MP91M	330 - 590	-	0.003 - 0.007	0.004 - 0.008	0.010 - 0.011	
					SP4036	260 - 500	-	0.003 - 0.007	0.004 - 0.008	-	
					X500	260 - 410	-	0.003 - 0.008	0.004 - 0.010	0.010 - 0.011	
Malleable/Ductile Cast Iron	160 - 240 HBN				MP91M	330 - 660	-	0.003 - 0.007	0.004 - 0.011	0.010 - 0.014	
					SP4036	260 - 550	-	0.003 - 0.007	0.004 - 0.011	-	
					X500	330 - 500	-	0.003 - 0.009	0.004 - 0.012	0.010 - 0.016	
Aluminum & Alloys	Si<6% Si>6%				GH1	1320 - 6600	0.003 - 0.012	-	-	-	
					GH1	830 - 2810	0.003 - 0.011	-	-	-	
Copper & Brass					GH1	500 - 1650	0.003 - 0.011	-	-	-	

06 Insert Cutting Conditions

Material		Composition (%)			Grade	Cutting Speed (Vc) ft/min.	Feed Rate (fz) inch/tooth									
		C.	Cr.	Ni.			ODET_-441		ODET_-44		ODMT_-41		ODMW_SN		ODMW_TN	
						min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	
Unalloyed Steel	400 - 700 N/mm 120 - 200 HBN	<0.4			X500	360 - 830	-		0.004 - 0.011	0.004 - 0.019	0.012 - 0.031	0.006 - 0.023				
					MP91M	400 - 990	-		0.004 - 0.011	0.004 - 0.017	0.012 - 0.023	0.006 - 0.019				
					SP4036	350 - 900	-		0.004 - 0.011	0.004 - 0.017	-	0.006 - 0.019				
Alloyed Steel	700 - 950 N/mm 200 - 280 HBN	>0.4			X500	300 - 660	-		0.004 - 0.011	0.004 - 0.017	0.012 - 0.027	0.006 - 0.019				
					MP91M	360 - 830	-		0.004 - 0.009	0.004 - 0.015	0.012 - 0.019	0.006 - 0.015				
					SP4036	200 - 700	-		0.004 - 0.009	0.004 - 0.015	-	0.006 - 0.015				
	950 - 1400 N/mm 280 - 415 HBN				X500	230 - 460	-		0.004 - 0.009	0.004 - 0.015	0.012 - 0.023	0.006 - 0.017				
					MP91M	260 - 590	-		0.004 - 0.009	0.004 - 0.013	0.012 - 0.011	0.006 - 0.015				
					SP4036	150 - 500	-		0.004 - 0.009	0.004 - 0.013	-	0.006 - 0.015				
Tool Steel	675 - 1350 N/mm 200 - 400 HBN				X500	200 - 360	-		0.004 - 0.009	0.004 - 0.013	0.012 - 0.019	0.006 - 0.015				
					MP91M	230 - 410	-		0.004 - 0.009	0.004 - 0.011	0.012 - 0.015	0.006 - 0.013				
					SP4036	260 - 500	-		0.004 - 0.009	0.004 - 0.011	-	0.006 - 0.013				
Stainless Steel	400 Series	<0.3	13-19		X500	400 - 730	-		0.004 - 0.011	0.004 - 0.015	0.012 - 0.023	0.006 - 0.019				
		>0.3	13-19		MP91M	500 - 830	-		0.004 - 0.009	0.004 - 0.013	0.012 - 0.019	0.006 - 0.015				
					SP4036	200 - 580	-		0.004 - 0.009	0.004 - 0.013	-	0.006 - 0.015				
	200 Series	<0.3	~19	9	X500	380 - 660	-		0.004 - 0.009	0.004 - 0.011	0.012 - 0.015	0.006 - 0.011				
		>0.3	~19	9-12	MP91M	460 - 730	-		0.004 - 0.008	0.004 - 0.009	0.012 - 0.013	0.006 - 0.009				
					SP4036	200 - 580	-		0.004 - 0.008	0.004 - 0.009	-	0.006 - 0.009				
	300 Series	<0.1	13-19	15	X500	400 - 590	-		0.004 - 0.009	0.004 - 0.011	-	-				
					MP91M	460 - 730	-		0.004 - 0.008	0.004 - 0.008	-	-				
					SP4036	250 - 650	-		0.004 - 0.008	0.004 - 0.008	-	-				
	Precipitation Hardening	>15	>15		X500	200 - 400	-		0.004 - 0.009	0.004 - 0.011	-	-				
					MP91M	260 - 460	-		0.004 - 0.008	0.004 - 0.008	-	-				
					SP4036	200 - 530	-		0.004 - 0.008	0.004 - 0.008	-	-				
High Temperature Alloys	Iron Based				X500	120 - 300	-		0.004 - 0.007	0.004 - 0.011	-	-				
					SP4036	60 - 330	-		0.004 - 0.007	0.004 - 0.009	-	-				
	Cobalt Based				X500	150 - 230	-		0.004 - 0.007	0.004 - 0.011	-	-				
					SP4036	130 - 260	-		0.004 - 0.007	0.004 - 0.009	-	-				
	Nickel Based				X500	70 - 200	-		0.004 - 0.007	0.004 - 0.009	-	-				
					SP4036	70 - 200	-		0.004 - 0.007	0.004 - 0.008	-	-				
	Titanium Based				GH1	120 - 150	0.004 - 0.006		-	-	-	-				
					X500	120 - 200	-		0.004 - 0.007	0.004 - 0.009	-	-				
					SP4036	120 - 200	-		0.004 - 0.007	0.004 - 0.008	-	-				
Gray Cast Iron	GG				MP91M	590 - 1320	-		0.004 - 0.011	0.004 - 0.015	0.012 - 0.019	0.006 - 0.017				
	<260 HBN				SP4036	500 - 1100	-		0.004 - 0.011	0.004 - 0.015	-	0.006 - 0.017				
Spheroidal Cast Iron	GGG 40 - 70 140 - 180 HBN				MP91M	330 - 660	-		0.004 - 0.009	0.004 - 0.013	0.012 - 0.019	0.006 - 0.013				
					SP4036	260 - 550	-		0.004 - 0.009	0.004 - 0.013	-	0.006 - 0.013				
					X500	260 - 530	-		0.004 - 0.011	0.004 - 0.015	0.012 - 0.023	0.006 - 0.015				
Nodular Cast Iron	GGG 80 - 100 200 - 290 HBN				MP91M	330 - 590	-		0.004 - 0.007	0.004 - 0.009	0.012 - 0.015	0.006 - 0.009				
					SP4036	260 - 500	-		0.004 - 0.007	0.004 - 0.009	-	0.006 - 0.009				
					X500	260 - 410	-		0.004 - 0.009	0.004 - 0.011	0.012 - 0.017	0.006 - 0.011				
Malleable/Ductile Cast Iron	160 - 240 HBN				MP91M	330 - 660	-		0.004 - 0.008	0.004 - 0.012	0.012 - 0.015	0.006 - 0.013				
					SP4036	260 - 550	-		0.004 - 0.008	0.004 - 0.012	-	0.006 - 0.013				
					X500	330 - 500	-		0.004 - 0.009	0.004 - 0.014	0.012 - 0.017	0.006 - 0.015				
Aluminum & Alloys	Si<6%				GH1	1320 - 6600	0.003 - 0.013		-	-	-	-				
	Si>6%				GH1	830 - 2810	0.003 - 0.011		-	-	-	-				
Copper & Brass					GH1	500 - 1650	0.003 - 0.011		-	-	-	-				



STELLRAM U.S.A. 1 TELEDYNE PLACE, LAVERGNE, TENNESSEE, U.S.A. 37086

TEL: 615 641 4200

www.stellram.com

LITERATURE RE-ORDER NUMBER
278FLYUSAi.V2
SUPERIOR 03/01 - PRINTED IN THE U.K.

CUSTOMER ORDER & TECHNICAL TEL: **800 232 1200**
CUSTOMER ORDER & TECHNICAL FAX: **800 223 2219**

© 2000, Metalworking Products,
An Allegheny Technologies Company.
The Starburst Logo is a registered trademark of ATI Properties, Inc.
Stellram is a registered trademark of Stellram S.A.
An Allegheny Technologies Company.