



Facing

Case Studies

Structural Steel	
<p>Plate</p> <ul style="list-style-type: none"> · Vc=492 sfm (n = 382 RPM) · D.O.C. x ae = 0.39" x 4.92" · fz=0.008 ipt (Vf = 18.03 ipm) · Dry · 6 flutes · MSRS15125R-6T · SPMT1806EDER-NB2 · SPMT1806EDER-NB3 (PR830) 	<p>Productivity improved by 4.4 times!</p>
MSRS15	Metal Removal Rate 34.91in ³ /min.
Competitor's Cutter A	7.87in ³ /min.
<p>[Competitor's Cutter A] ø125mm, 6 flutes Vc=492sfm (n=382RPM) apxae=0.12x4.92in fz=0.006ipt (Vf=13.54ipm)</p>	<p>[User's Comments] Because conditions can be raised drastically, this cutter was very effective at reducing cycle time. Productivity improved by 4.4 times. (Customer Evaluation)</p>

1050 Steel	
<p>Rail</p> <ul style="list-style-type: none"> · Vc=492 (n = 300 RPM) · D.O.C. x ae = 0.24" x 5.51" · fz=0.008 ipt (Vf = 18.90 ipm) · Dry · 8 flutes · MSRS15160R-8T · SPMT1806EDER-NB2 · SPMT1806EDER-NB3 (PR830) 	<p>Productivity improved by 4.7 times!</p>
MSRS15	Metal Removal Rate 24.59in ³ /min.
Competitor's Cutter B	5.21in ³ /min.
<p>[Competitor's Cutter B] Machining at 0.08" x 3 passes Vc = 492 sfm (n = 300RPM) D.O.C. x ae= 0.08 x 5.51in fz=0.005ipt (Vf=11.81ipm)</p>	<p>[User's Comments] MSRS can complete cutting with 1 pass what needed to be cut with 3 passes previously. Cutting sound of MSRS was still quiet. Productivity improved by 4.7 times. (Customer Evaluation)</p>

Cast Steel	
<p>Industrial Machine Components</p> <ul style="list-style-type: none"> · Vc = 325 sfm (n = 200 RPM) · D.O.C. x ae = 0.394" x 4.490" · fz = 0.016 ipt (Vf = 25 ipm) · Dry · 8 flutes · MSRS15160R-8T · SPMT1806EDER-NB2 · SPMT1806EDER-NB3 (PR830) 	<p>Productivity improved by 2.5 times!</p>
MSRS15	Metal Removal Rate 44.18in ³ /min.
Competitor's Cutter C	17.70in ³ /min.
<p>[Competitor's Cutter C] ø6", 8 flutes Vc = 820sfm (n = 522min⁻¹) D.O.C. x ae = 0.394" x 4.490" fz=0.010ipt (Vf=40.00ipm)</p>	<p>[User's Comments] Before MSRS, ap could not be increased due to high cutting resistance, but MSRS can increase ap without increasing load on the main spindle. Productivity improved by 2.5 times (Customer Evaluation)</p>

1045 Steel	
<p>Gear</p> <ul style="list-style-type: none"> · Vc = 675 sfm (n = 255 RPM) · D.O.C. x ae = 0.394" x 7.874" · fz = 0.007 ipt (Vf = 23.62 ipm) · Dry · 14 flutes · MSRS15250R-14T · SPMT1806EDER-NB2 · SPMT1806EDER-NB3 (PR830) 	<p>Productivity improved by 2.6 times!</p>
MSRS15	Metal Removal Rate 73.23in ³ /min.
Competitor's Cutter D	28.00in ³ /min.
<p>[Competitor's Cutter D] ø250mm, 12 flutes Vc=400sfm (n=153RPM) D.O.C. x ae = 0.20"x7.87" fz = 0.010 ipt (Vf = 18.07 ipm)</p>	<p>[User's Comments] Cutting sound is quiet even when cutting width is less than 80% of cutter dia. Productivity improved by 2.6 times. (Customer Evaluation)</p>

Q&A

Q-1 What amount of cutting width (ae) is recommended in a radial direction?

A-1 The estimated amount is 70-80% of the diameter of the cutting tool.

Q-2 Why does the MSRS15 have a 75° lead?

A-2 45° cutting angles can reduce the impact in cutting a workpiece but also increase thrust force. On the other hand, a 90° cutting angle can reduce thrust forces but increases the impact when the insert cuts the workpiece. The 75° cutting angle of the MSRS15 can suppress both thrust force and impact, offering a good balance and enabling smooth machining even in heavy machining applications.

GRADES	A
LINEUP / INSERTS	B
45° / 70° LEAD	C
75° LEAD	D
90° LEAD	E
HIGH FEED	F
MULTI-FUNCTION	G
SLOT MILLS	H
RADIUS / BALL-NOSE	J
OTHER APPLICATIONS	K
TOOL HOLDING	O
SPARE PARTS	P
TECHNICAL	R
INDEX	T