

# GOLD QUAD EXT CUT

## High Shear Long Edge Cutters Excel in Nickel Alloys



### Diameters:

- 2.00" - 4.00"

### Length of Cut:

- 1.50" - 4.00"

### Insert Styles:

- SDMS1305
- SDES1305
- ZDES135
- ZDMS1305

### Insert Grades:

- IN2505
- IN2530
- IN4005
- IN4015
- IN4030
- IN4035

### Materials:

- Stainless Steel
- Hi-temp Alloys
- Iron
- Steel

### Features & Benefits include:

- Extreme geometry promotes high shearing action for efficient cutting of SS and Nickel Alloys
- Corner radius offerings of .031", .060", .125" & .250"
- R.031 & R.060 inserts may be used in both end and side stations
- Rake face insert geometry for utmost shear
- Flat top insert geometry for strength and durability
- Chip splitter insert geometry for vibration resistance and channel cut efficiency
- Internal coolant supply

**UPDATED**

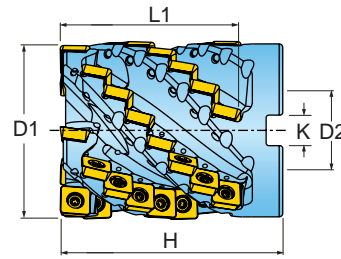
**PRODUCT  
ANNOUNCEMENT  
\*2015\***

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# GOLD QUAD EXT CUT SERIES 25J3P SHELL MILL

## 0° LEAD HIGH SHEAR EXTENDED FLUTE SHELL MILL

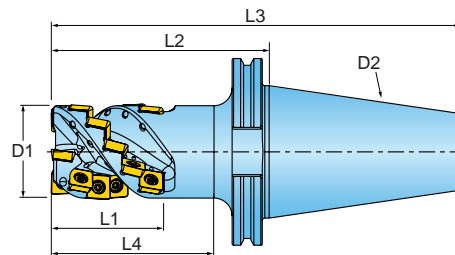


Cutter Number	D1 Nominal Diameter	L1 Length of Cut	H Height	D2 Bore Diameter	Keyway Width	No. of Effective Flutes	No. of Flutes Total	Total Inserts
25J3P-20023D1R01	2.000	1.53	2.35	0.750	0.312	3	3	12
25J3P-20023D1R02*	2.000	1.53	2.35	0.750	0.312	4	4	16
25J3P-20030D1R01	2.000	1.90	3.00	0.750	0.312	3	3	15
25J3P-20030D1R02*	2.000	1.90	3.00	0.750	0.312	4	4	20
25J3P-20035D1R01	2.000	2.60	3.50	0.750	0.312	3	3	21
25J3P-20035D1R02*	2.000	2.60	3.50	0.750	0.312	4	4	28
25J3P-25040D3R01	2.500	3.00	4.00	1.000	0.375	4	4	32
25J3P-30037D4R01	3.000	3.00	3.75	1.250	0.500	5	5	40
25J3P-30050D4R10	3.000	4.08	5.00	1.250	0.500	5	5	55
25J3P-40050D5R01	4.000	4.08	5.00	1.500	0.625	5	5	55

\* 2.00" diameter x 4 flute cutters must use ZDES/ZDMS (chipsplitters) if radial width of cut is over .50".  
 Note: Nose insert is tipped on a slight angle and may fall outside true form up to .010", depending on insert corner radius.

# GOLD QUAD EXT CUT SERIES 25J3P V-FLANGE

## 0° LEAD HIGH SHEAR EXTENDED FLUTE END MILL

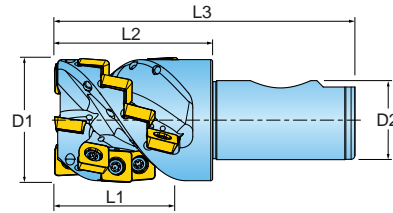


Cutter Number	D1 Effective Diameter	L1 Length of Cut	L2 Extension Length	L3 Overall Length	L4 Projection Length	D2 Adaption Style	No. of Effective Flutes	No. of Total Flutes	Total Inserts
25J3P-2004548R01	2.000	2.62	4.50	8.50	3.50	ICT #50 V-Flange	3	3	21
25J3P-2004548R02*	2.000	2.62	4.50	8.50	3.50	ICT #50 V-Flange	4	4	28
25J3P-2006248R01	2.000	4.08	6.25	10.25	5.25	ICT #50 V-Flange	3	3	33

\* 2.00" diameter x 4 flute cutters must use ZDES/ZDMS (chipsplitters) if radial width of cut is over .50".  
 Note: Nose insert is tipped on a slight angle and may fall outside true form up to .010", depending on insert corner radius.

# GOLD QUAD EXT CUT SERIES 25J3P WELDON SHANK

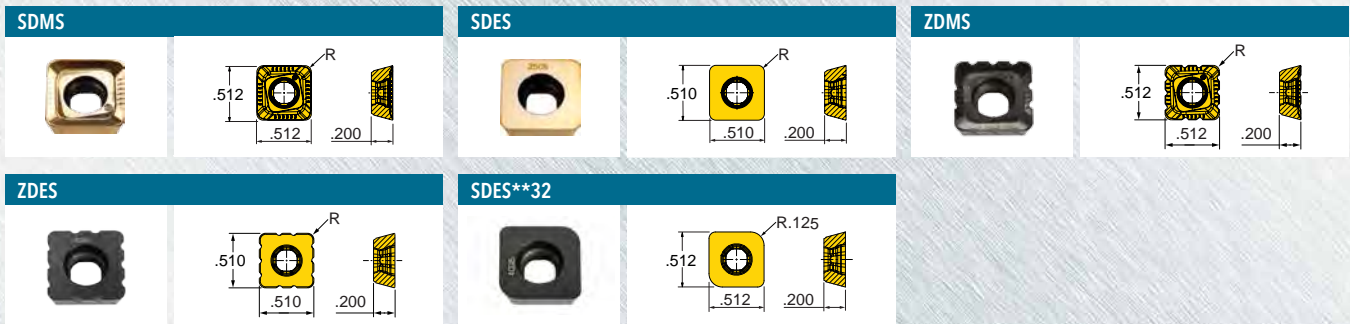
90° LEAD HIGH SHEAR EXTENDED FLUTE END MILL



Cutter Number	D1 Effective Diameter	L1 Length of Cut	L2 Extension Length	L3 Overall Length	D2 Adaption Style	No. of Effective Flutes	No. of Total Flutes	Total Inserts
25J3P-2002581R01	2.000	1.90	2.50	4.75	1.250 W w/Flange	3	3	15

Note: Nose insert is tipped on a slight angle and may fall outside true form up to .010", depending on insert corner radius.

# GOLD QUAD EXT CUT SERIES 25J3P INSERTS & HARDWARE



## Inserts

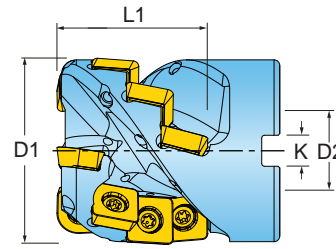
Part Number	Corner	Station	No. of Indexes	Applications	Grade					
					IN2505	IN2530	IN4005	IN4015	IN4030	IN4035
SDES130508N	0.031 R	End & Side	4	Flat Face			•	•	•	
SDES130515N	0.060 R	End & Side	4	Flat Face	•	•	•	•	•	
SDES130532R	0.125 R	End	2	Flat Face			•		•	
ZDES130515R	0.060 R	End & Side	4	Flat Face - Splitters			•	•	•	
SDES130508N-001	0.031 R	End & Side	4	Flat Face - SS/Hi-Temp/Ti					•	•
SDES130515N-001	0.060 R	End & Side	4	Flat Face - SS/Hi-Temp/Ti	•	•			•	•
SDES130532R-001	0.125 R	End	2	Flat Face - SS/Hi-Temp/Ti					•	•
ZDES130515R-001	0.060 R	End & Side	4	Flat Face - Splitters - SS/Hi-Temp/Ti						•
SDMS130515R-PH	0.060 R	End & Side	4	Positive - SS/Hi-Temp/Ti	•	•	•		•	•
ZDMS130515R-PH	0.060 R	End & Side	4	Positive - Splitters - SS/Hi-Temp/Ti						•

## Hardware

SM40-100-R0	DS-A00T	DS-T156B	DT-35-02	DS-T15B1

# GOLD QUAD EXT CUT SERIES 25J3P-R SHELL MILL - LARGE CORNER RADIUS

0° LEAD HIGH SHEAR EXTENDED FLUTE SHELL MILL FOR LARGER CORNER RADIUS

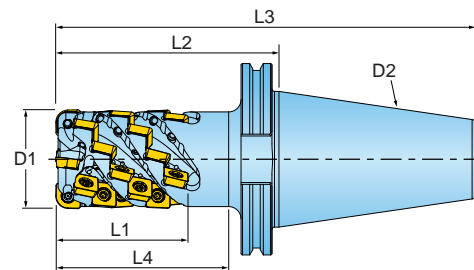


Cutter Number	D1 Nominal Diameter	L1 Length of Cut	H Height	D2 Bore Diameter	Keyway Width	No. of Effective Flutes	No. of Flutes Total	Total Inserts
25J3P-20023D1R01-R	2.000	1.53	2.35	0.750	0.312	3	3	12
25J3P-20023D1R02-R*	2.000	1.53	2.35	0.750	0.312	4	4	16
25J3P-20030D1R01-R	2.000	1.90	3.00	0.750	0.312	3	3	15
25J3P-20030D1R02-R*	2.000	1.90	3.00	0.750	0.312	4	4	20
25J3P-20035D1R01-R	2.000	2.60	3.50	0.750	0.312	3	3	21
25J3P-20035D1R02-R*	2.000	2.60	3.50	0.750	0.312	4	4	28
25J3P-25040D3R01-R	2.500	3.00	4.00	1.000	0.375	4	4	32
25J3P-30037D4R01-R	3.000	3.00	3.75	1.250	0.500	5	5	40
25J3P-30050D4R10-R	3.000	4.08	5.00	1.250	0.500	5	5	55
25J3P-40050D5R01-R	4.000	4.08	5.00	1.500	0.625	5	5	55

\* 2.00" diameter x 4 flute cutters must use ZDES/ZDMS (chipsplitters) if radial width of cut is over .50".

# GOLD QUAD EXT CUT SERIES 25J3P-R V-FLANGE - LARGE CORNER RADIUS

0° LEAD HIGH SHEAR EXTENDED FLUTE END MILL FOR LARGE CONRRER RADIUS

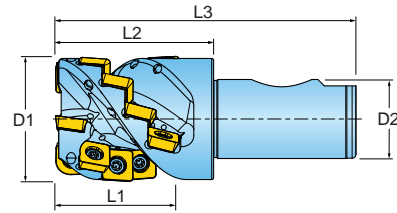


Cutter Number	D1 Effective Diameter	L1 Length of Cut	L2 Extension Length	L3 Overall Length	L4 Projection Length	D2 Adaption Style	No. of Effective Flutes	No. of Total Flutes	Total Inserts
25J3P-2004548R01-R	2.000	2.62	4.50	8.50	3.75	ICT #50 V-Flange	3	3	21
25J3P-2004548R02-R*	2.000	2.62	4.50	8.50	3.75	ICT #50 V-Flange	4	4	28
25J3P-2006248R01-R	2.000	4.08	6.25	10.25	5.50	ICT #50 V-Flange	3	3	33

\* 2.00" diameter x 4 flute cutters must use ZDES/ZDMS (chipsplitters) if radial width of cut is over .50".

# GOLD QUAD EXT CUT SERIES 25J3P-R WELDON SHANK - LARGE CORNER RADIUS

90° LEAD HIGH SHEAR EXTENDED FLUTE END MILL FOR LARGE CORNER RADIUS



Cutter Number	D1 Effective Diameter	L1 Length of Cut	L2 Extension Length	L3 Overall Length	D2 Adaption Style	No. of Effective Flutes	No. of Total Flutes	Total Inserts
25J3P-2002581R01-R	2.000	1.90	2.50	4.75	1.250 W w/Flange	3	3	15

Note: Nose insert is tipped on a slight angle and may fall outside true form up to .010", depending on insert corner radius.

## GOLD QUAD EXT CUT SERIES 25J3P-R INSERTS & HARDWARE

SDMS	SDES	ZDMS
ZDES	SDES**63	

### Inserts

Part Number	Corner	Station	No. of Indexes	Applications	Grade					
					IN2505	IN2530	IN4005	IN4015	IN4030	IN4035
SDES130515N	0.060 R	Side	4	Flat Face	•	•	•	•	•	
SDES130563R	0.250 R	End	2	Flat Face			•		•	
ZDES130515R	0.060 R	Side	4	Flat Face - Splitters			•	•	•	
SDES130515N-001	0.060 R	Side	4	Flat Face - SS/Hi-Temp/Ti	•	•			•	•
SDES130563R-001	0.250 R	End	2	Flat Face - SS/Hi-Temp/Ti					•	•
ZDES130515R-001	0.060 R	Side	4	Flat Face - Splitters - SS/Hi-Temp/Ti						•
SDMS130515R-PH	0.060 R	Side	4	Positive - SS/Hi-Temp/Ti	•	•	•		•	•
ZDMS130515R-PH	0.060 R	Side	4	Positive - Splitters - SS/Hi-Temp/Ti						•



### Hardware

SM40-100-R0	DS-A00T	DS-T156B	DT-35-02	DS-T15B1

## INSERT STYLES

Photo	Part Number	Corner	Station	No. of Indexes	Material Focus	Description
 <p>Keen Edge 4x R.06"</p>	SDMS130515R-PH	R.06	End/Side	4	Low Carbon Steel, Stainless Steel	<b>RAKE FACE - KEEN EDGE</b> Positive rake insert with keen edge. Extreme shearing action makes this geometry a first choice for Low Carbon Steels & most Stainless Steels.
 <p>Keen Edge Chip Splitter 4x R.06"</p>	ZDMS130515R-PH	R.06	End/Side	4	Low Carbon Steel, Stainless Steel	<b>RAKE FACE - KEEN EDGE - CHIP SPLITTERS</b> Chip splitters are highly recommended for channel milling. They produce small chips that are more easily evacuated. Chip splitter geometry promotes more efficient cutting because it draws less horse power.
 <p>Keen Edge 4x R.03"</p>	SDES130508N-001	R.03	End/Side	4	Alloy Steel, Hi-Temp Alloys, Titanium	<b>FLAT FACE - KEEN EDGE</b> Highly recommended as a first choice geometry for Titanium. The Flat Face insert brings durability to the keen edge, making it a good choice for end stations. Also offered with various corner radii. Radii up to R.06 can be commonized for use on both end and side stations.
 <p>Keen Edge 4x R.06"</p>	SDES130515N-001	R.06	End/Side	4	Alloy Steel, Hi-Temp Alloys, Titanium	
 <p>Keen Edge 2x R.12"</p>	SDES130532R-001	R.12	End	2	Alloy Steel, Hi-Temp Alloys, Titanium	
 <p>Keen Edge 2x R.25"</p>	SDES130563R-001	R.25	End	2	Alloy Steel, Hi-Temp Alloys, Titanium	
 <p>Keen Edge Chip Splitter 4x R.06"</p>	ZDES130515R-001	R.06	End/Side	4	Alloy Steel, Hi-Temp Alloys, Titanium	
 <p>Keen Edge 4x R.06"</p>	SDES130515R-001	R.06	End/Side	4	Alloy Steel, Hi-Temp Alloys, Titanium	
 <p>Landed Edge 4x R.03"</p>	SDES130508N	R.031	End/Side	4	Cast Steel, Iron	<b>FLAT FACE - LANDED EDGE</b> Flat face and landed edge offer utmost durability to diffuse DOC notching & mechanical shock. Various radii are offered for end stations. Radii up to R.06 can be commonized for use on both end and side stations.
 <p>Landed Edge 4x R.06"</p>	SDES130515N	R.06	End/Side	4	Cast Steel, Iron	
 <p>Landed Edge 2x R.12"</p>	SDES130532R	R.12	End	2	Cast Steel, Iron	

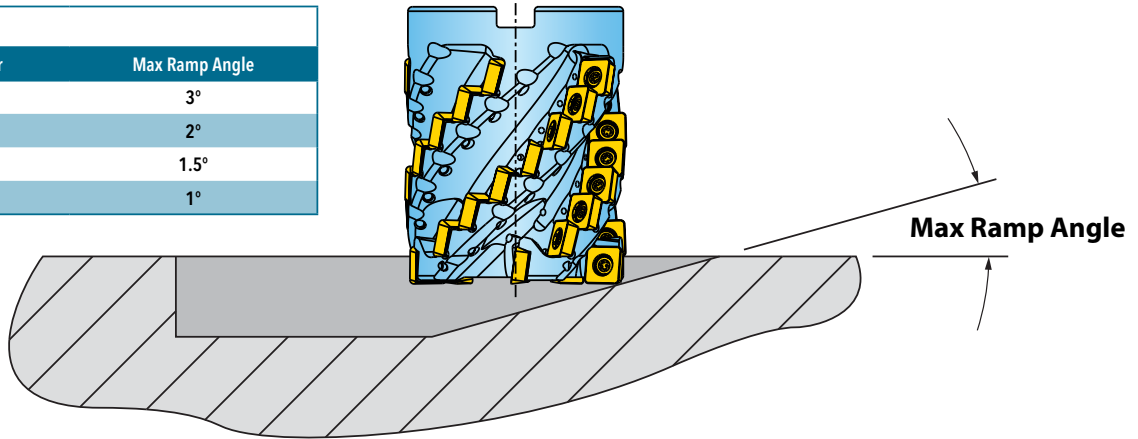
# GOLD QUAD EXT CUT INSERT SELECTION GUIDE

Photo	Part Number	Corner	Station	No. of Indexes	Material Focus	Description
 <p>Landed Edge 4x R.06"</p>	SDES130563R	R.25	End	2	Cast Steel, Iron	FLAT FACE - LANDED EDGE Flat face and landed edge offer utmost durability to diffuse DOC notching & mechanical shock. Various radii are offered for end stations. Radii up to R.06 can be commonized for use on both end and side stations.
 <p>Landed Edge Chip Splitter 4x R.06"</p>	ZDES130515R	R.06	End/Side	4	Cast Steel, Iron	FLAT FACE - LANDED EDGE - CHIP SPLITTERS Good choice when needing chip control and strength to battle vibration.

# GOLD QUAD EXT CUT RAMP ANGLE INFORMATION

## Ramping

Cutter Diameter	Max Ramp Angle
2.00	3°
2.50	2°
3.00	1.5°
4.00	1°



# GOLD QUAD EXT CUT OPERATING GUIDELINES

Hi-Quad Long Edge Cutters - Series 25J3P					IN4005	IN4030	IN4035	IN4015	IN2530	IN2505	Coolant
Material	Brinnell Hardness	SFM	Feed per Insert (Inch)								
Cast Iron	Gray	150 - 250	300 - 650	.004 - .010	2			1			No
	Nodular		300 - 500								
Steel	Low Carbon 1018, 8620	100 - 250	275 - 600	.004 - .010	2	1			3	4	No
	High Carbon F-6180	250 - 400									
	Alloyed Steel 4140, 4340	150 - 300									
	Tool Steel A-6, D-1, D-2	Up to 300									
Stainless Steel	300 Series, 304, 316	-	250 - 400	.004 - .010	3	2	1				May not be required at high speeds
	400 Series 15-5 PH	Up to 320									Yes
	13-8 PH	-									
Nickel Alloys	Inconel, Hastelloy, Waspalloy	-	65-110	.003 - .006	3	2	1		4	5	Yes
Titanium	6AL-4V	-	90 - 120	.005 - .008	3	2	1		4	5	Yes
	5553	-	65 - 100	.003 - .006							
	10-23	-	60 - 80	.005 - .008							

## STARTING FEED RATE GUIDELINES FOR EXTENDED FLUTE MILL BASED ON RADIAL WIDTH OF CUT

Material	Material Specification	Radial WOC (Inch)	Feed Rate (APT <sup>2</sup> )			
			2.00 Dia.	2.50 Dia.	3.00 Dia.	4.00 Dia.
Cast Iron	Gray / Nodular	0.06	0.016	0.018	0.019	0.022
		0.12	0.012	0.013	0.014	0.016
		0.25	0.008	0.009	0.010	0.011
		0.50	0.007	0.007	0.008	0.009
		0.75	0.006	0.006	0.007	0.007
Steel	Low / Medium Carbon 1018, 1045, 8620	0.06	0.016	0.018	0.019	0.022
		0.12	0.012	0.013	0.014	0.016
		0.25	0.008	0.009	0.010	0.011
		0.50	0.007	0.007	0.008	0.009
		0.75	0.006	0.006	0.007	0.007
	Alloyed Steel, 4140, 4340, Tool Steel A-6, D-1, D-2	0.06	0.014	0.016	0.018	0.020
		0.12	0.010	0.012	0.013	0.014
		0.25	0.007	0.008	0.009	0.010
		0.50	0.006	0.006	0.007	0.008
		0.75	0.005	0.005	0.006	0.006
Stainless Steel	300 Series, 304, 316, 13-8PH	0.06	0.014	0.016	0.018	0.020
		0.12	0.010	0.012	0.013	0.014
		0.25	0.007	0.008	0.009	0.010
		0.50	0.006	0.006	0.007	0.008
		0.75	0.005	0.005	0.006	0.006
	400 Series 15-5 PH, 17-4PH	0.06	0.014	0.016	0.018	0.020
		0.12	0.010	0.012	0.013	0.014
		0.25	0.007	0.008	0.009	0.010
		0.50	0.006	0.006	0.007	0.008
		0.75	0.005	0.005	0.006	0.006
Nickel Alloys & 5553 Titanium	Inconel, Hastelloy, Waspalloy, 5553 Ti	0.06	0.011	0.013	0.014	0.016
		0.12	0.008	0.009	0.010	0.011
		0.25	0.006	0.007	0.008	0.009
		0.50	0.005	0.005	0.006	0.007
		0.75	0.004	0.004	0.005	0.005
6AL-4V & 10-2-3 Titanium	6AL-4V & 10-2-3 Titanium	0.06	0.014	0.016	0.018	0.020
		0.12	0.010	0.012	0.013	0.014
		0.25	0.007	0.008	0.009	0.010
		0.50	0.006	0.006	0.007	0.008
		0.75	0.005	0.005	0.006	0.006

These values are intended as starting parameters. Actual feed rates are to be determined by your specific application.



# GOLD QUAD EXTCUT CHIP SPLITTER INFORMATION

- Draws less horsepower
- Reduces cutting force and vibration/chatter
- Improves chip evacuation (Chips split into small pieces)
- Reduces heat generation
- Suitable for long overhang machining (Weak machining and fixture applications)
- Mountable on all standard cutter lines without any modification



Side A



Side B

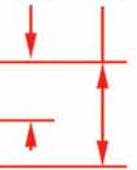
With 2 Grooves



With 3 Grooves



.09 .16



The number "2" designates the number of chip splitters presented on the OD of the entire flute



The number "3" designates the number of chip splitters presented on the OD of the entire flute