



Indexable Centering and Chamfering Cutter

Vol 1

OSG PHOENIX[®] PLDS





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Indexable Centering and Chamfering Cutter

A versatile series of indexable end mills for spot drilling, countersinking & chamfering.

List 52512

PLDS SA (Inch)

List 78034

PLDS SS (Metric)

List 78134

PLDS SF (Metric)

List 78PLDS

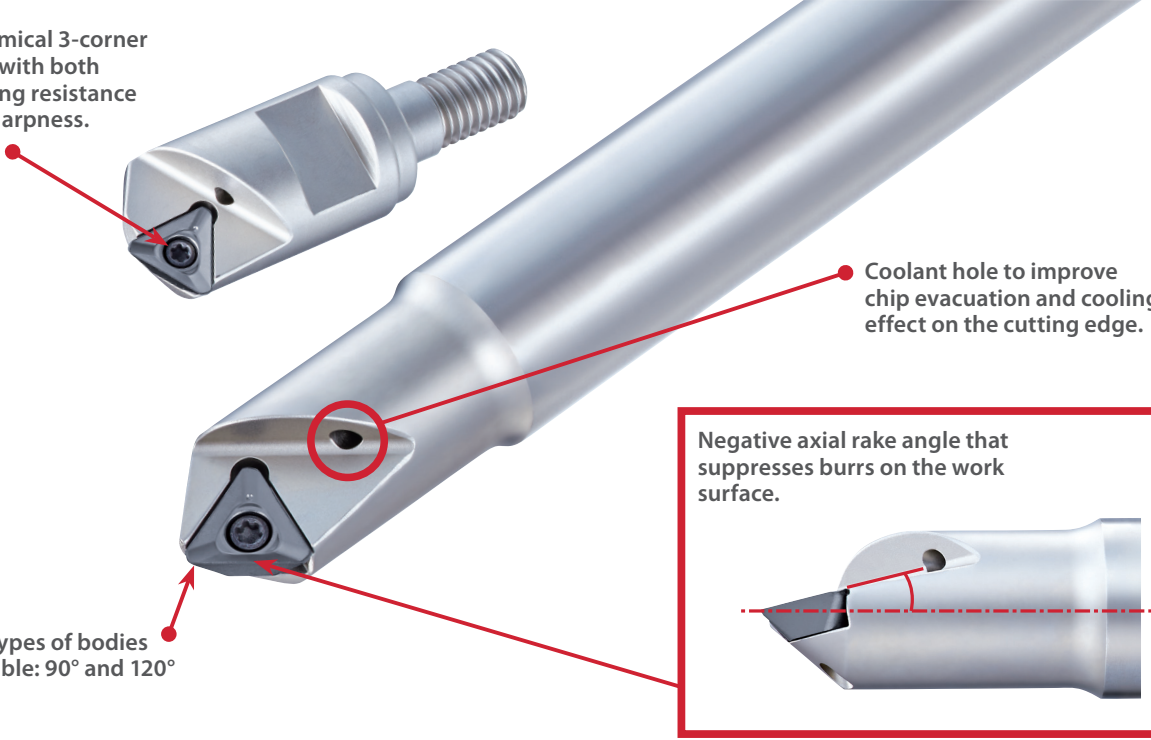
PLDS Inserts

List 7808H

PLDS Accessories

Features & Benefits

Economical 3-corner insert with both chipping resistance and sharpness.



Coolant hole to improve chip evacuation and cooling effect on the cutting edge.

Negative axial rake angle that suppresses burrs on the work surface.

Two types of bodies available: 90° and 120°

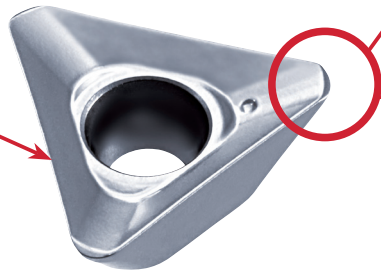
» Economic 3-Corner Insert Combines Chipping Resistance and Sharpness

High-strength insert grades that can be selected according to the work material.

XP9020 for Steel and cast iron

XP2040 for stainless steel and heat resistant alloys

Large rake angle and low cutting resistance.

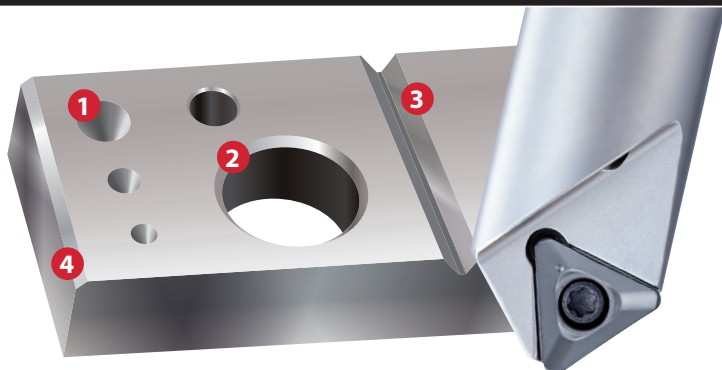


Highly rigid negative chamfer tip enables difficult centering operations.

Cutting edge specification enables optimal chip shape creation.

» Versatile Tool for Efficient Processing in Multiple Operations

1. Centering
2. Hole Entry Countersinking
3. V Slotting
4. Corner Chamfering

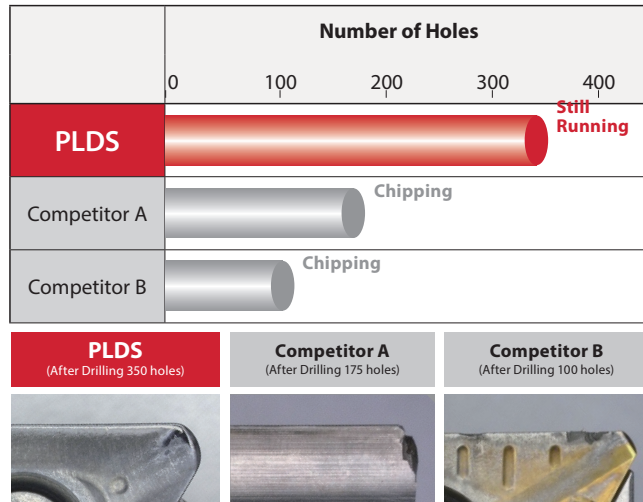


Processing Data

» 90° Centering in Stainless Steel - 304 Stainless Steel

The PLDS shows excellent wear resistance and can continue to be used even after machining more than twice the number of holes as the competitor products.

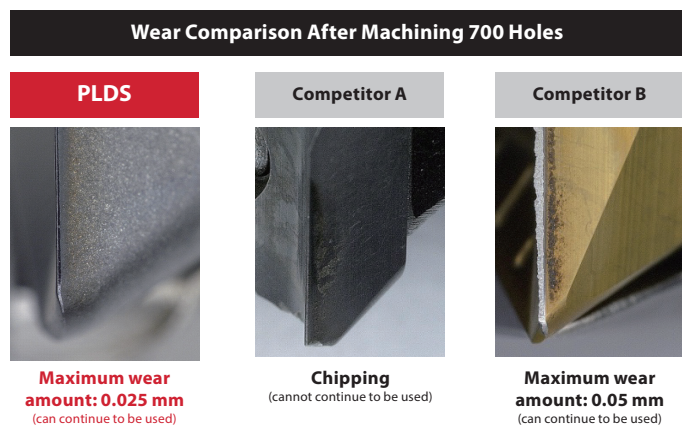
Tool	PLDS11R002SS16-90
Insert (Grade)	TPKT110308ER-DM (XP2040)
Work Material	304 Stainless Steel
Cutting Speed	206 SFM (2000 RPM)
Feed	3.15 IPM (0.0016 in/rev)
Depth	0.157 in (Ø0.394" Countersink diameter)
Coolant	Water-Soluble
Machine	HMC



» 90° Centering in Carbon Steel - 1050 Carbon Steel

The PLDS exhibits minimal wear even after machining 700 holes.

Tool	PLDS11R002SS16-90
Insert (Grade)	TPKT110308ER-DM (XP9020)
Work Material	1050 Carbon Steel
Cutting Speed	308 SFM (3000 RPM)
Feed	7.09 IPM (0.0024 in/rev)
Depth	0.157 in (Ø0.394" Countersink diameter)
Coolant	Water-Soluble
Machine	HMC



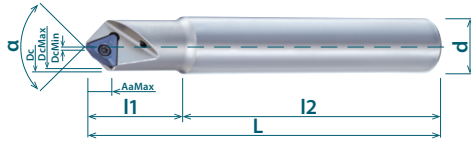
List 52512

PLDS SA (Inch)



NEW SPEED FEED P7

Recommended Materials: p7
Accessories & Inserts: p6



EDP No.	Body Type	Teeth Type	Designation	Point Angle	Min Drill Hole Dia. (inch)	Max Drill Hole Dia. (inch)	Tool Dia. (inch)	No. of Teeth	Shank Dia. (inch)	Shank Length (inch)	Overall Length (inch)	Neck Length (inch)	Max Depth of Cut (inch)	Applicable Insert
				α	Dc Min	Dc Max	Aa Max		d	l2	L	l1	Aa Max	
52512000	Cylindrical Shank	Normal	PLDS11R002SA0625-90	90°	0.098	0.531	0.567	1	0.625	3.250	4.500	1.250	0.228	TPKT11
52512001			PLDS11R002SA0625-L90	90°	0.098	0.531	0.567	1	0.625	6.750	8.000	1.250	0.228	TPKT11
52512002			PLDS11R002SA0625-120	120°	0.094	0.630	0.681	1	0.625	3.250	4.500	1.250	0.157	TPKT11
52512003			PLDS11R002SA0625-L120	120°	0.094	0.630	0.681	1	0.625	6.750	8.000	1.250	0.157	TPKT11

Packed: 1 pc.



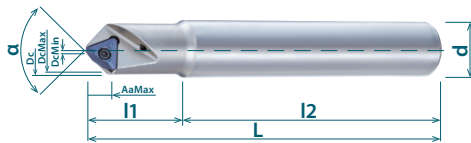
List 78034

PLDS SS (Metric)



NEW SPEED FEED P7

Recommended Materials: p7
Accessories & Inserts: p6



EDP No.	Body Type	Teeth Type	Designation	Point Angle	Min Drill Hole Dia. (mm)	Max Drill Hole Dia. (mm)	Tool Dia. (mm)	No. of Teeth	Shank Dia. (mm)	Shank Length (mm)	Overall Length (mm)	Neck Length (mm)	Max Depth of Cut (mm)	Applicable Insert
				α	Dc Min	Dc Max	Aa Max		d	l2	L	l1	Aa Max	
7803401	Cylindrical Shank	Normal	PLDS11R002SS16-90	90°	2.5	13.5	14.4	1	16	80	110	30	5.8	TPKT11
7803402			PLDS11R002SS16-L90	90°	2.5	13.5	14.4	1	16	170	200	30	5.8	TPKT11
7803403			PLDS11R002SS16-120	120°	2.4	16	17.3	1	16	80	110	30	4	TPKT11
7803404			PLDS11R002SS16-L120	120°	2.4	16	17.3	1	16	170	200	30	4	TPKT11

Packed: 1 pc.

Note: This is stocked overseas. Please contact OSG for availability and delivery.



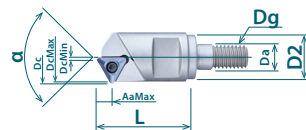
List 78134

PLDS SF (Metric)



NEW SPEED FEED P7

Recommended Materials: p7
Accessories & Inserts: p6
SF Arbors: p1462-1464 of
Cutting Tool Solutions 2020 catalog



EDP No.	Body Type	Designation	Point Angle	Min Drill Hole Dia. (mm)	Max Drill Hole Dia. (mm)	Tool Dia. (mm)	No. of Teeth	Pilot Dia. (mm)	Thread Dia. (mm)	Overall Length (mm)	Flange Dia. (mm)	Max Depth of Cut (mm)	Wrench Size	Applicable Insert
			α	Dc Min	Dc Max	Dc		Da	Dg	L	D2	Aa Max		
7803405	Screw Fit Head	PLDS11R002SF8-90	90°	2.5	13.5	14.4	1	8.5	M8	32	14.5	5.8	10	TPKT11
7803406		PLDS11R002SF8-120	120°	2.4	16	17.3	1	8.5	M8	32	14.5	4	10	TPKT11

Packed: 1 pc.

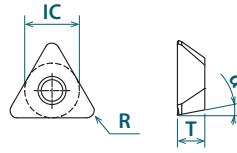
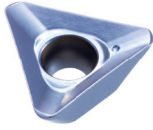
Note: This is stocked overseas. Please contact OSG for availability and delivery.



List 78PLDS

NEW

PLDS Inserts





Designation	No. of Cutting Edges	Insert Size				EDP Number	
		IC (mm)	T (mm)	α	R (mm)	XP9020	XP2040
TPKT110308ER-DM	3	6.35	3.18	11°	0.8	7814205	7813205

Packed: 10 pcs.

PXI

List 7808H

PLDS Accessories

Appearance	EDP No.	Designation	Applicable Insert	Recommended Tightening Torque
 Clamping Screw	7808138	FS22550P (M2.2 x 5, Torx 71P)	TPKT11...	1.0 Nm
 Wrench	7808224	71P-D (Torx 71P)	TPKT11...	-

Note: Wrench sold separately.

Packed: Clamping Screws = 10 pcs.; Wrench = 1 pc.

PXT

Cutting Conditions

	Work Material	Tensile Strength - Hardness	Cutting Speed Vc (SFM)	Feed Rate f (in/rev)	
				Centering	Countersinking
P	Mild Steels, Carbon Steels (1010, 1018)	~180 HB	260 (200 - 400)	0.0025 (0.001 - 0.003)	0.003 (0.002 - 0.0045)
	Carbon Steels, Alloy Steels (1050, 4140)	~280 HB	260 (200 - 400)	0.0025 (0.001 - 0.003)	0.003 (0.002 - 0.0045)
	Die Steels (H13, D2)	~280 HB	260 (200 - 400)	0.0025 (0.001 - 0.003)	0.003 (0.002 - 0.0045)
M	Stainless Steels (304, 420)	~250 HB	260 (200 - 330)	0.0025 (0.001 - 0.003)	0.003 (0.002 - 0.0045)
K	Cast Iron (No. 35 B)	~350 N/mm ²	330 (200 - 460)	0.0025 (0.001 - 0.003)	0.003 (0.002 - 0.0045)
	Ductile Cast Iron (60-40-18)	~800 N/mm ²	330 (200 - 460)	0.0025 (0.001 - 0.003)	0.003 (0.002 - 0.0045)
N	Aluminum Alloys (6061, 7075)	~13% Si	500 (330 - 650)	0.0025 (0.001 - 0.003)	0.003 (0.002 - 0.0045)
S	Heat Resistant Alloys (Inconel 718)	-	115 (80 - 200)	0.0015 (0.001 - 0.0025)	0.003 (0.002 - 0.0045)
	Titanium Alloy (Ti-6Al-4V)	-	130 (100 - 330)	0.0025 (0.001 - 0.003)	0.003 (0.002 - 0.0045)
H	Pre-hardened Steel (P20, Stavax)	40 - 43 HrC	200 (165 - 260)	0.0025 (0.001 - 0.003)	0.003 (0.002 - 0.0045)
	Hardened Steels (D2)	43 - 48 HrC	165 (130 - 260)	0.0025 (0.001 - 0.003)	0.003 (0.002 - 0.0045)

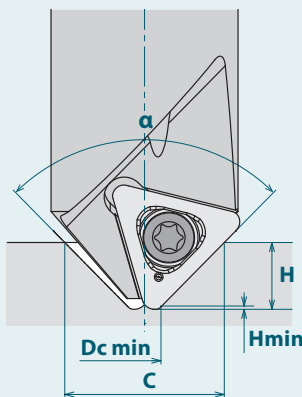
1. For V slotting, use 80% of the Countersinking feed rate shown in the above table.

Recommended Materials by Application

Insert Grade	Chip Breaker	Coolant	P	M	K	N	S	H
XP9020	DM	Yes	⊙	○	⊙	○	○	○
XP2040	DM	-	○	○				
		Yes	○	⊙		○	⊙	⊙

○ good ⊙ best

Standard Centering Depth (H)



When Point Angle (α) = 90°
Min. Centering Depth (H min) = 0.25mm
Min. Drill Hole Diameter (Dc min) = Ø2.5mm

$$H = (C - Dc \text{ min}) \div 2 + H_{\text{min}}$$

H = Centering Depth (in mm)
 C = Countersink Diameter (in mm)

Ex: If Point Angle (α) = 90° and Countersink Diameter (C) = Ø10mm, Centering Depth (H) = 4mm

When Point Angle (α) = 120°
Min. Centering Depth (H min) = 0.1mm
Min. Drill Hole Diameter (Dc min) = Ø2.4mm


$$H = (C - Dc \text{ min}) \div 3.46 + H_{\text{min}}$$

H = Centering Depth (in mm)
 C = Countersink Diameter (in mm)

Ex: If Point Angle (α) = 120° and Countersink Diameter (C) = Ø10mm, Centering Depth (H) = 2.3mm



shaping your dreams

 **Safe use of cutting tools**

- Use safety cover, safety glasses and safety shoes during operation.
- Do not touch cutting edges with bare hands.
- Do not touch cutting chips with bare hands. Chips will be hot after cutting.
- Stop cutting when the tool becomes dull.
- Stop cutting operation immediately if you hear any abnormal cutting sounds.
- Do not modify tools.
- Please use appropriate tools for the operation. Check dimensions to ensure proper selection.

FOR MORE INFORMATION CONTACT US

800-837-2223 • osgtool.com

