



XCAL
TOOLS



ROAD MILLING & RECLAIMING

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SUPERIOR QUALITY

XCAL TOOLS takes pride in manufacturing and selling a full line of road planing, soil stabilization, reclaiming, grading, trenching and foundation drilling bits and carbide tooling products that are American-made. Our inhouse operations gives us the flexibility to quickly test and adapt to changing environments and customer needs. Our cost effective production methods, allows us to provide a exceptional product of the highest quality.

SERVICE AND INNOVATION

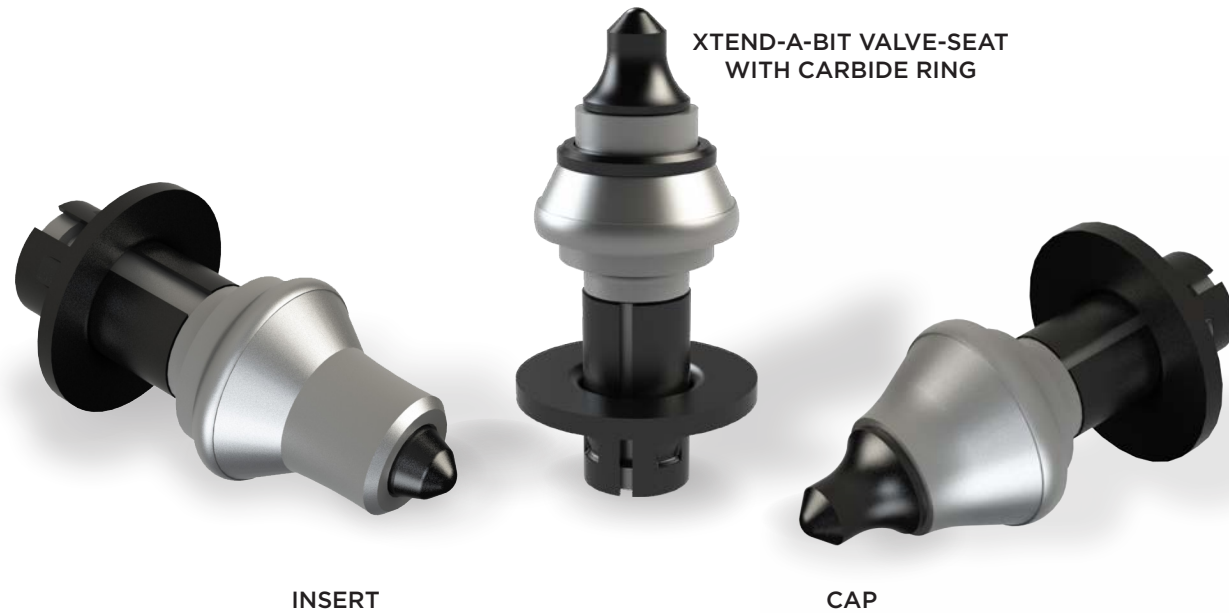
For over 20 years, our carbide producer XCAL INDUSTRIES, has been producing high quality carbide for the mining, roof drilling, snow and ice removal, road planing, wear products and metal cutting blanks, producing over fifty grades of cemented carbide and the capability to develop extra coarse, tougher grades to meet the demands of the industry.

These affiliates of JENNMAR, in collaboration with each other, can provide you with superior quality products and unmatched customer service. Our commitment to the customer is guided by three words; SAFETY, SERVICE, and INNOVATION. It's these words that form the foundation of our business. It's who we are.



Carbide Tips

We are an ISO 9001 certified facility that offers a wide range of carbide tips to match the various challenges that you might face. Producing over fifty grades of cemented carbide and the ability to create new ones, we can find a carbide grade to meet your needs. Our versatility helps us to check and respond easily to evolving conditions and customer needs. All of our tips provide superb penetration and maximum productivity – regardless of whether you work in soft, medium-hard or extremely hard and demanding conditions.



Insert Carbide Tips

Insert carbide tips are best for penetration applications where steel wash is not an issue. These tips are ideal for use in hard, high-impact conditions.



Cap Carbide Tips

Flat bottom carbide tips are the preferred general application tip that effectively works in 80% of cutting conditions.



Valve-Seat Carbide Tips

Valve-Seat carbide tips have a valve-seat braze joint for increased strength and shear resistance. The tips provide excellent penetration, and the large carbide shoulder gives excellent protection against steel wash. These tips are best suited for use in soft to medium materials or conditions.



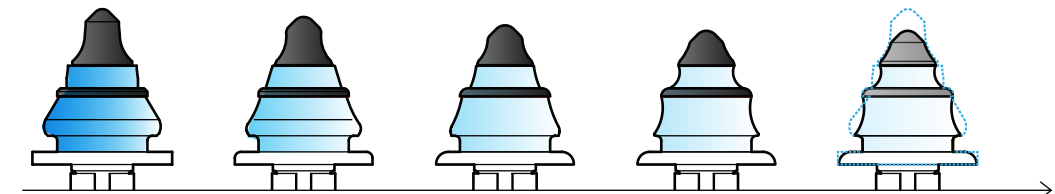
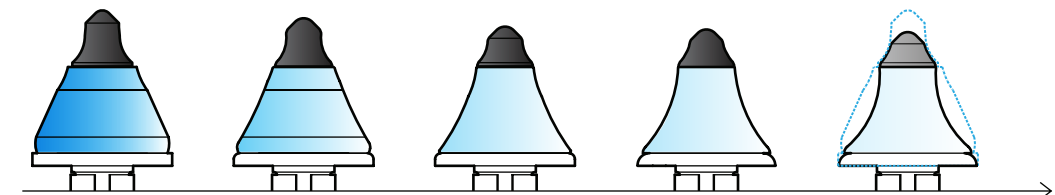
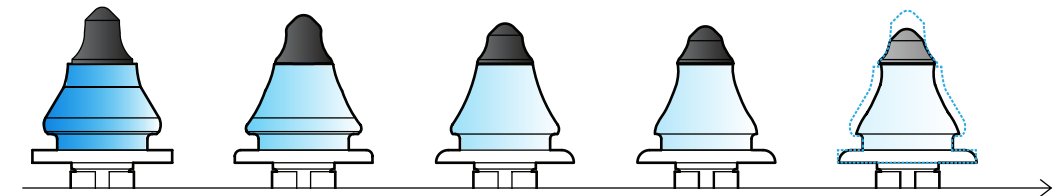
Carbide Ring

Strategically placed carbide ring prevents body wear, maximizing carbide tip use. The carbide ring also adds greater block protection.



Tool Wear

Xtend-A-Bit tools are equipped with a carbide ring placed slightly below the tip to prevent body wear and maximize carbide tip use. Each tool is available with either a valve seat or CAP carbide tip. Xtend-A-Bit tools reign supreme in high body wash conditions.



Choosing the Right Bit for Your Application

XTEND-A-BIT is fitted with a carbide ring that protects the steel body of the bit from erosion when the bits are exposed to extremely abrasive material.

If your heavy duty bits consistently show an hour-glass wear pattern on the body, but the carbide tips are not wearing away, consider replacing your bits with the XTEND-A-BIT.

Customers who have previously experienced hourglass wear, who have replaced their bits with XTEND-A-BITS, report two to three times their bit life.

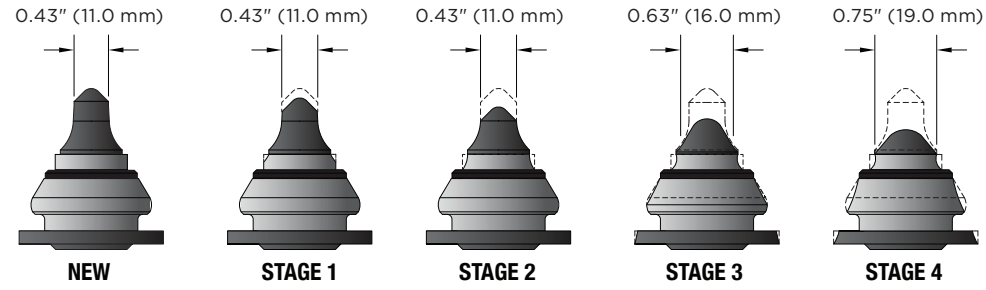
Ideal applications for XTEND Series (CARBIDE RING) tools:

- Tools are worn out and still have considerable life remaining in the tip.
- High steel/body wear.
- Any heavy wear application.



Tool Wear Characteristics

For maximum productivity, use tools until stage three of wear.



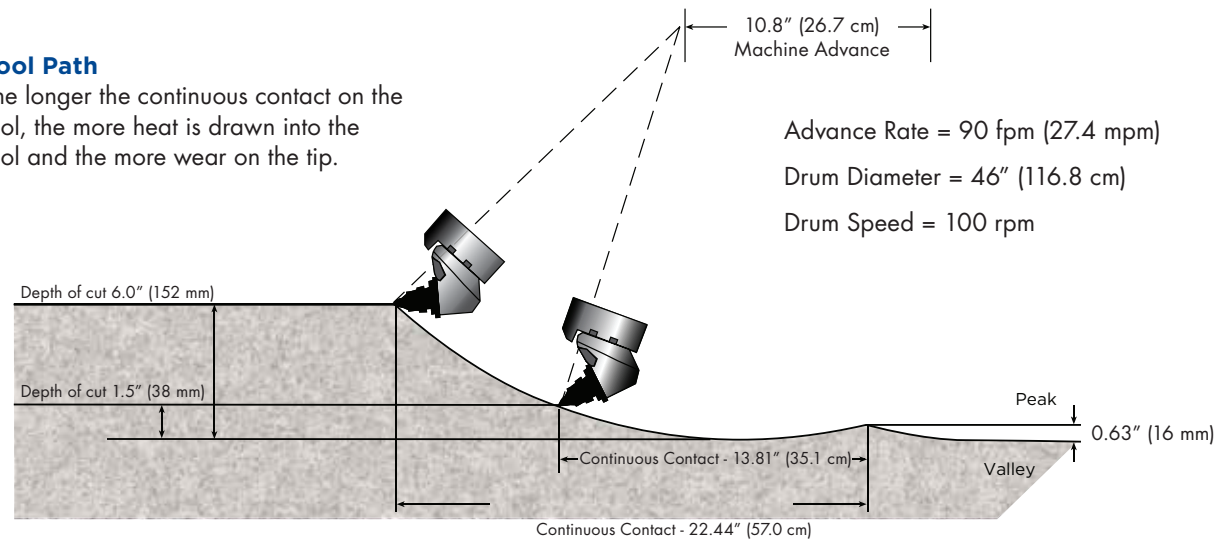
Tools Engaged and Surface Area of the Tip in the Cut

This chart shows the change in the total surface area of tips engaged as wear occurs. Tip wear relates to the depth of cut and speed at which the machine is operating, as indicated below.

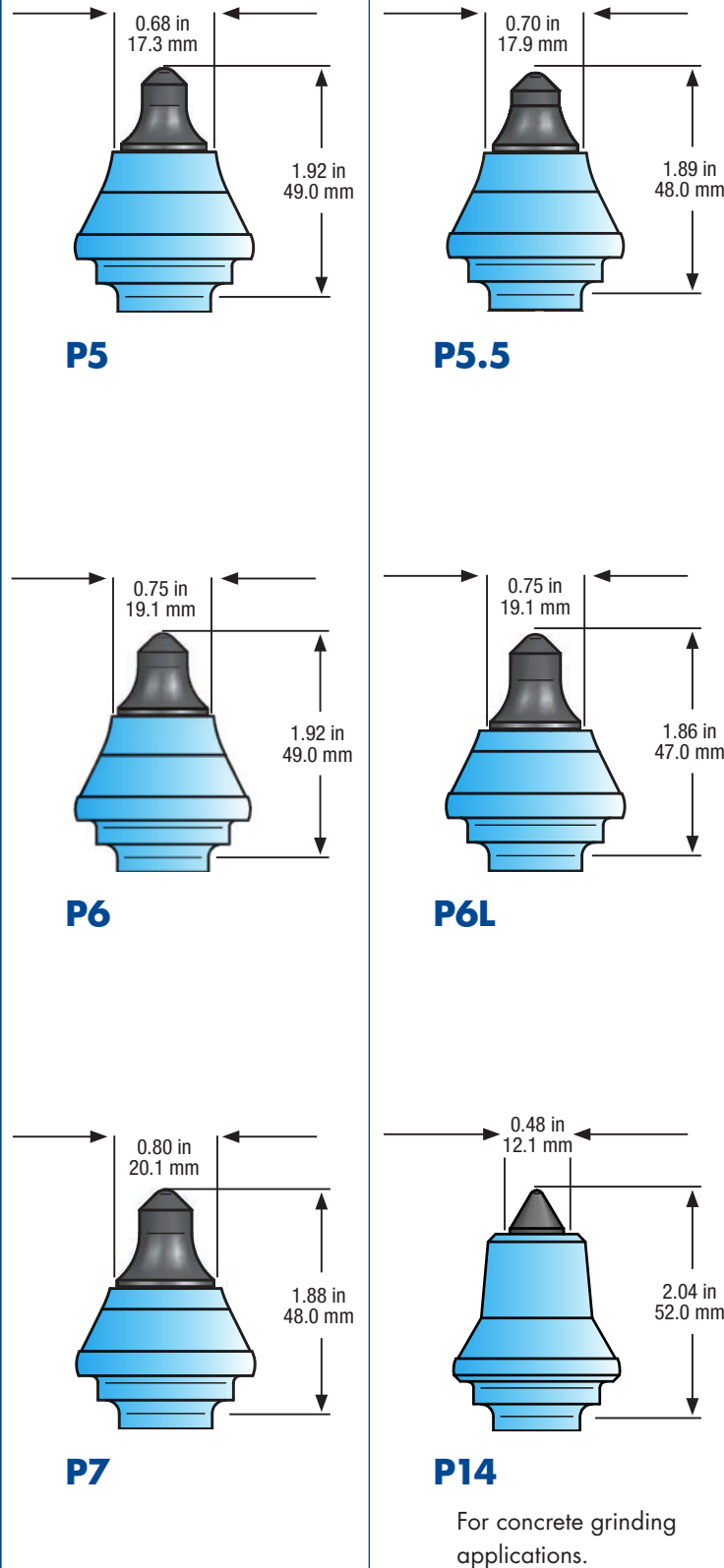
SPEED		NP68 SURFACE AREA OF TIPS IN THE CUT												
		DEPTH OF CUT	NEW TOOL		STAGE 1		STAGE 2		STAGE 3		STAGE 4			
			FPM	MPM	in ²	cm ²	in ²	cm ²	in ²	cm ²	in ²	cm ²		
				TOOLS ENGAGED *	0.15	1.00	0.15	1.00	.15	1.00	.322	2.00	0.43	0.8
1.5"	(3.8 cm)	30	9.1	11	1.62	10.5	1.62	10.5	1.62	10.5	3.47	22.4	4.78	30.9
1.5"	(3.8 cm)	60	18.3	13	1.91	12.4	1.91	12.4	1.91	12.4	4.10	26.5	5.65	36.5
1.5"	(3.8 cm)	120	36.6	17	2.50	16.2	2.50	16.2	2.50	16.2	5.37	34.6	7.39	47.7
3"	(7.6 cm)	30	9.1	15	2.21	14.3	2.21	14.3	2.21	14.3	4.47	30.6	6.52	42.1
3"	(7.6 cm)	60	18.3	16	2.36	15.2	2.36	15.2	2.36	15.2	5.05	32.6	6.96	44.9
3"	(7.6 cm)	120	36.6	20	2.95	19.0	2.95	19.0	2.95	19.0	6.31	40.7	8.69	56.1
6"	(15.2 cm)	30	9.1	20	2.95	19.0	2.95	19.0	2.95	19.0	6.31	40.7	8.69	56.1
6"	(15.2 cm)	60	18.3	22	3.24	20.9	3.24	20.9	3.24	20.9	6.95	44.8	9.56	61.7
6"	(15.2 cm)	120	36.6	26	3.83	24.7	3.83	24.7	3.83	24.7	8.21	53.0	11.30	72.9
12"	(30.5 cm)	30	9.1	28	4.12	26.6	4.12	26.6	4.12	26.6	8.84	57.0	12.17	78.5
12"	(30.5 cm)	60	18.3	30	4.42	28.5	4.42	28.5	4.42	28.5	9.47	61.1	13.04	84.1

Tool Path

The longer the continuous contact on the tool, the more heat is drawn into the tool and the more wear on the tip.



Road Milling/Reclaiming



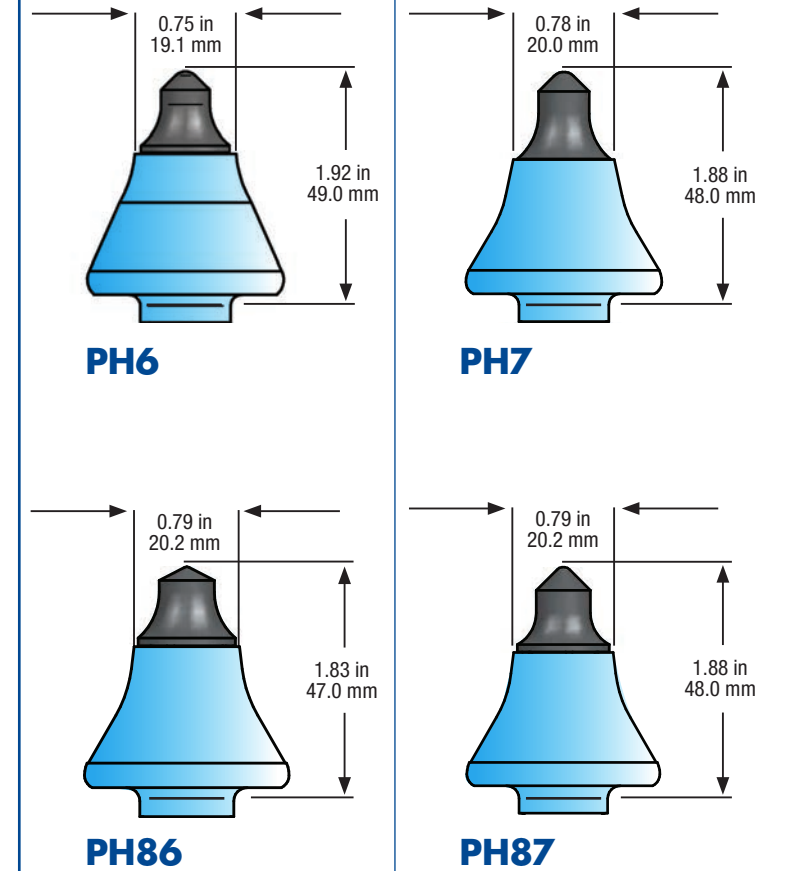
Features:

- Unique tool design provides superior rotation
- Full sleeve retainer and washer maintain maximum block bore and seat protection
- Puller groove for easy extraction

Part Number	Shank (in, mm)	Tip Diameter (in, mm)	Base Diameter (in, mm)	Gauge (in, mm)	Pieces per Box	Pieces per Pallet
P5	0.74 in 19 mm	0.36 in 9.2 mm	0.68 in 17.3 mm	1.92 in 49.0 mm	50	3000
P5.5	0.74 in 19 mm	0.40 in 10.1 mm	0.70 in 17.9 mm	1.89 in 48.0 mm	50	3000
P6	0.74 in 19 mm	0.41 in 10.5 mm	0.75 in 19.1 mm	1.92 in 49.0 mm	50	3000
P6L	0.74 in 19 mm	0.41 in 10.5 mm	0.75 in 19.1 mm	1.86 in 47.0 mm	50	3000
P7	0.74 in 19 mm	0.43 in 11.0 mm	0.80 in 20.1 mm	1.88 in 48.0 mm	50	3000
P14	0.74 in 19 mm	0.47 in 12.1 mm	0.48 in 12.1 mm	2.04 in 52.0 mm	50	3000



Road Milling/Reclaiming



Features:

- Heavy duty body provides longer body life in steel wash conditions
- Full sleeve retainer and washer maintain maximum block bore and seat protection

Part Number	Shank (in, mm)	Tip Diameter (in, mm)	Base Diameter (in, mm)	Gauge (in, mm)	Pieces per Box	Pieces per Pallet
PH6	0.74 in 19 mm	0.41 in 10.5 mm	0.75 in 19.1 mm	1.92 in 49.0 mm	50	3000
PH7	0.74 in 19 mm	0.41 in 10.5 mm	0.78 in 20.0 mm	1.88 in 48.0 mm	50	3000
PH86	0.74 in 19 mm	0.45 in 11.4 mm	0.79 in 20.2 mm	1.83 in 47.0 mm	50	3000
PH87	0.74 in 19 mm	0.47 in 11.9 mm	0.79 in 20.2 mm	1.88 in 48.0 mm	50	3000

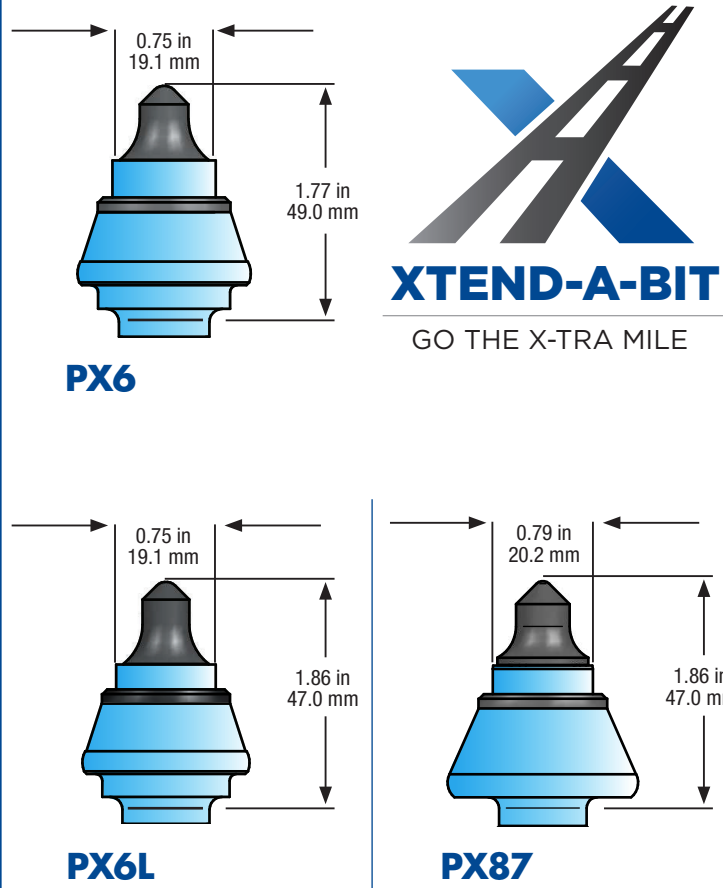
MAXIMUM ROTATION & BLOCK FACE DEFENSE



XCAL TOOLS's newly engineered washer provides optimum rotation and block face protection!



Road Milling/Reclaiming



Features:

- Strategically placed carbide ring prevents body wear, maximizing carbide tip use
- Carbide ring also adds greater block protection if tip is lost
- Puller groove feature for easy enhanced rotation
- Full sleeve retainer and washer maintain maximum block bore and seat protection

Part Number	Shank (in, mm)	Tip Diameter (in, mm)	Base Diameter (in, mm)	Gauge (in, mm)	Pieces per Box	Pieces per Pallet
PX6	0.74 in 19 mm	0.41 in 10.5 mm	0.75 in 19.1 mm	1.77 in 49.0 mm	50	3000
PX6L	0.74 in 19 mm	0.41 in 10.5 mm	0.75 in 19.1 mm	1.86 in 47.0 mm	50	3000
PX87	0.74 in 19 mm	0.47 in 12.0 mm	0.79 in 20.2 mm	1.86 in 47.0 mm	50	3000

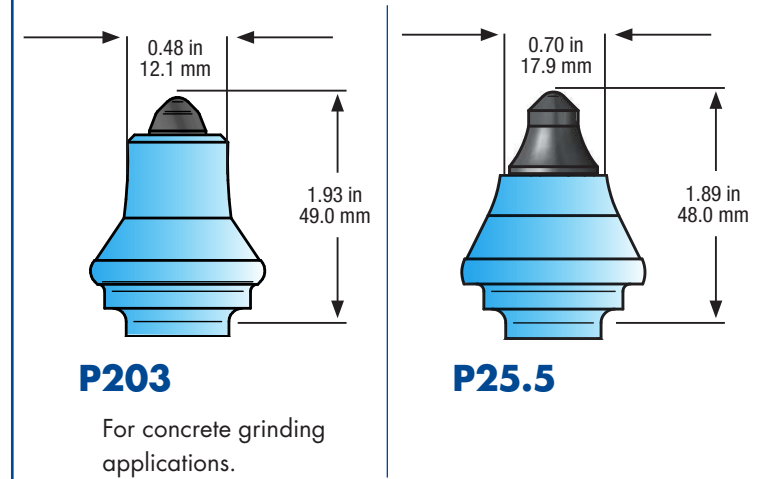
ALL ROAD MILLING TOOLS ARE NOT CREATED EQUAL

XTEND-A-BIT's enhanced carbide tip bit is suited for cutting extremely hard or thick asphalt, or for use in applications where you may inadvertently strike rock in the road base.

Customers who have previously experienced hourglass wear, who have replaced their bits with XTEND-A-BITs, report two to three times their bit life!



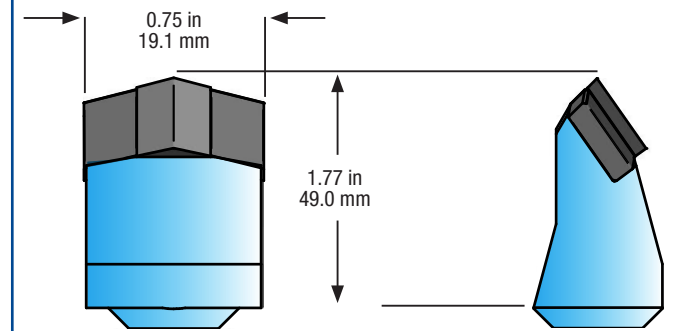
Road Milling/Reclaiming



Features:

- Unique tool design provides superior rotation
- Puller groove for easy extraction
- Full sleeve retainer and washer maintain maximum block bore and seat protection

Part Number	Shank (in, mm)	Tip Diameter (in, mm)	Base Diameter (in, mm)	Gauge (in, mm)	Pieces per Box	Pieces per Pallet
P203	0.87 in 22 mm	0.47 in 12.1 mm	0.48 in 12.1 mm	1.93 in 49.0 mm	50	3000
P25.5	0.87 in 22 mm	0.40 in 10.1 mm	0.70 in 17.9 mm	1.89 in 48.0 mm	50	3000
P2X	0.87 in 22 mm	NA	NA	2.00 in 50 mm	40	2400



P2X

Non-rotating tool with flat carbide edge for soft to medium hard conditions. Used for soil stabilization.



Notes



Proudly made in the U.S.A.





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