



XCAL
TOOLS

S-2000

ROAD GRADING SYSTEM

S-2000



The S-2000 is an innovative road grading system that uses rotating, replaceable tungsten carbide tools as a cutting edge, ideal for maintaining a variety of non-hard surfaced roads (e.g., ice, dirt, gravel, hauling roads, roads including public road districts, private construction contractors, federal land management, logging and mining roads). It works by utilizing a replaceable conical tool installed in a heat-treated adapter board that allows better wear resistance and improved cutting capability over conventional steel blades and can be mounted on a motor grader in place of a conventional blade. It can also be mounted to an under body blade on a truck or a rear blade on a tractor.

Features and Benefits:

- **Lower Grading Costs:** Reduced equipment costs with a blade life equal to 5 to 15 sets of conventional blades.
- **Negligible Downtime:** Easy handling and installation in the field with no heavy lift required.
- **Improves Road Surface:** Cuts road surface instead of scraping providing improved mix of materials.
- **Increases Productivity:** Reduces dust and brings larger gravel particles to top of road surface.
- **Cost Effective Asphalt Removal:** Easily removes asphalt to desired profile and granulates material to a uniform size to be re-used for fill.
- **Excellent Ice Removal System:** Cutting action produces a grooved surface providing improved road traction.

Applications:

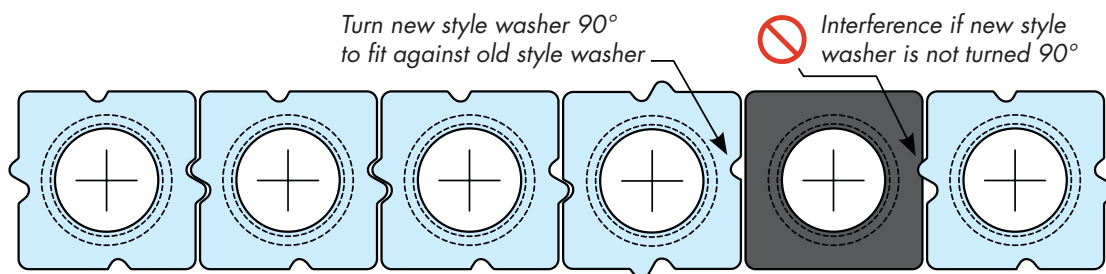
- Gravel reclamation and maintenance.
- Oil road reclamation.
- Asphalt planing or following a milling machine to remove final layer of asphalt.
- Removal of potholes, washboards and rebuilding the crown for proper drainage on dirt or gravel roads.
- Removal of temporary pavement marking.
- Snow removal and ice shaving.

S-2000 SQUARE WASHERS

In addition to the integral end protector – which always leaves cutting edges straight – the latest innovation to the S-2000 is a unique patent-pending square washer that further increases productivity.

Square Washer Benefits:

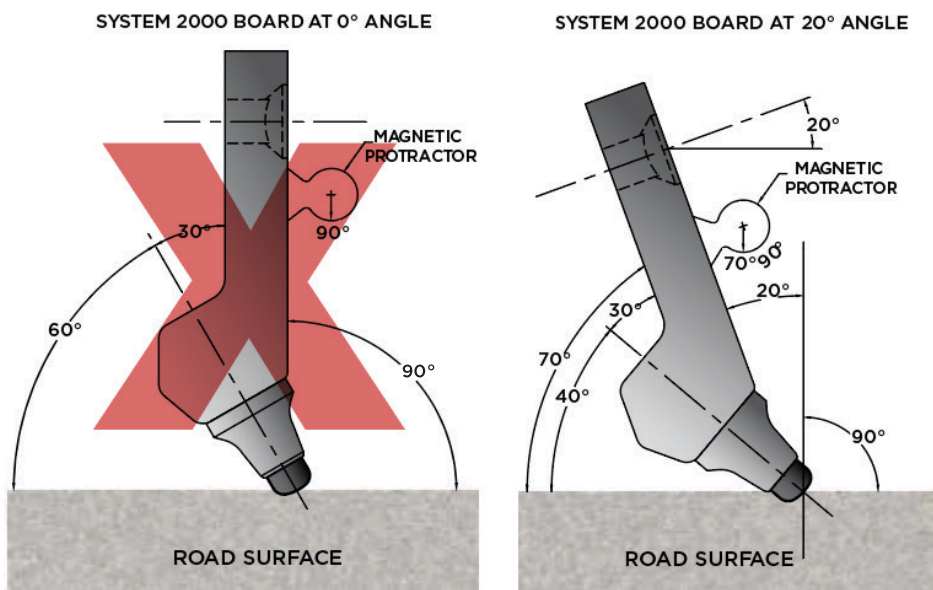
- New “gear tooth” arrangement prevents washers from sliding and opening a gap between the tools.
- Compatible with old-style square washer and end protectors.
- Pre-compressed retainer for easy installation.
- Enhances tool rotation eliminating premature wear of carbide tips.
- Eliminates washer rotation, preventing wear between washer and mating surface.
- Provides support and stability to the tool with an extruded cone that fits neatly into the bore of the adapter board.
- The S-2000 square washers act as a replaceable “armor plate” wear surface preventing material buildup to allow the tool to rotate freely for improved cutting ability. The square design eliminates washer rotation preventing wear between the washer and the adapter board.



S-2000 Square Washers With Interlocking Feature (For 22 mm And 25 mm Tools) *Patent-Protected Square Washer

Why the angle makes a difference:

The unique operating angle of the board, that is 20° back from vertical, creates a mixing action that produces a homogeneous blend of material. This can significantly reduce the need to add new gravel.



S-2000 HARD-FACED AND BLANK BOARDS

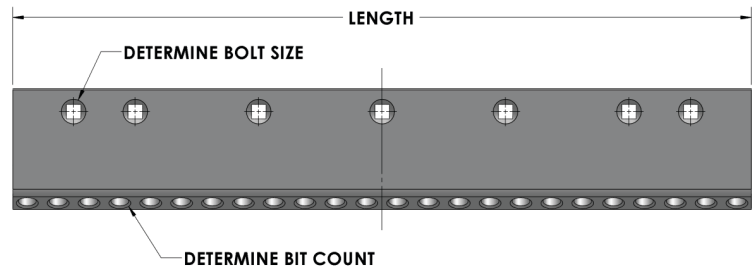
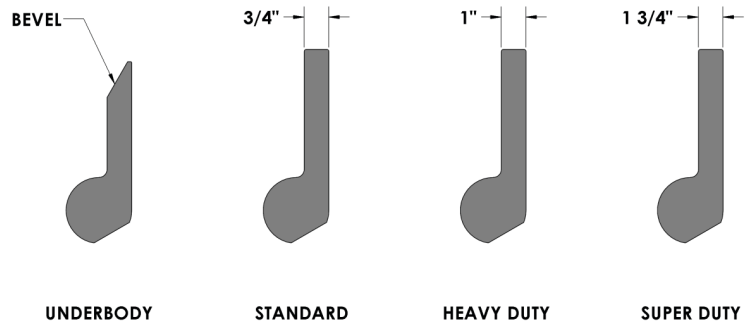
Hard-faced and Blank Boards

Our custom-made hard-faced design includes a crushed carbide cross-pattern design which gives you the strongest and most durable board.

Our boards come in one, three, and four foot sections to provide you with the versatility to construct your underbody design. The one-foot section is to replace the ends where the most wear is without replacing the whole board.

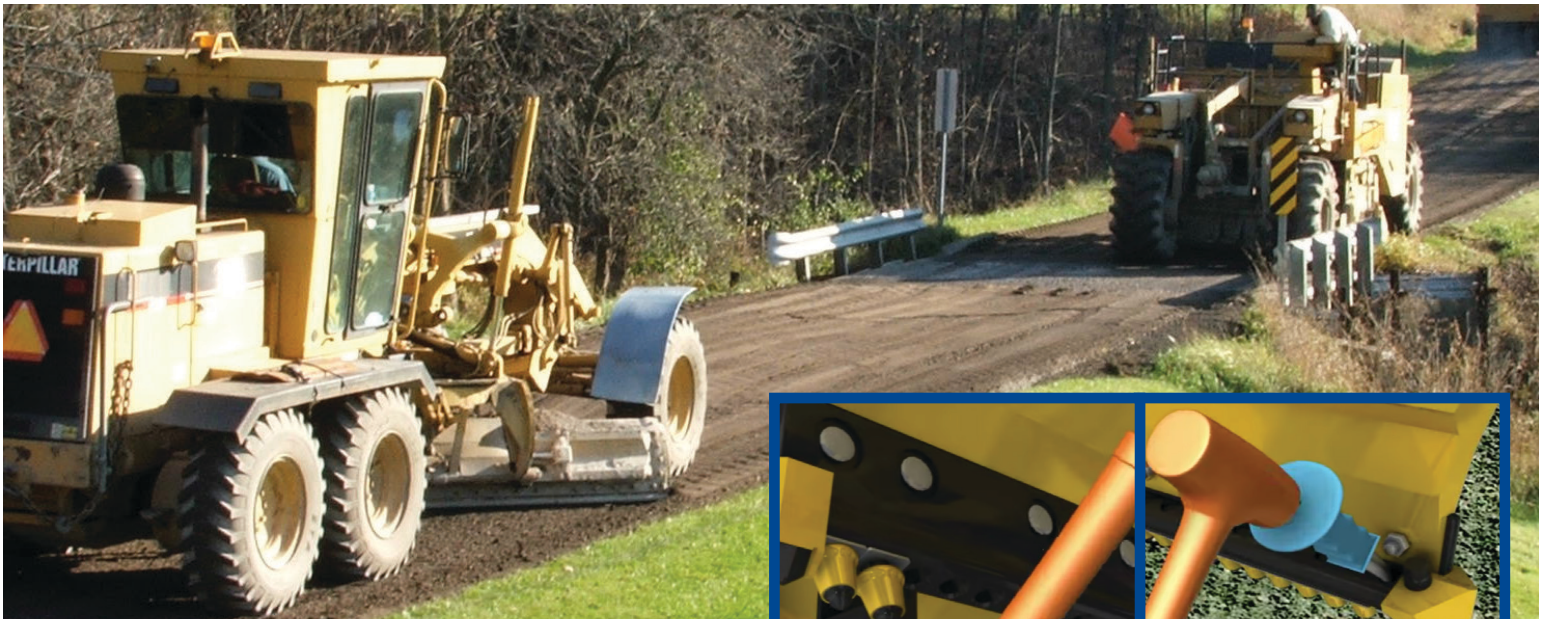


Blank boards and heavy duty mining system are also available.



Adapter blades/boards are available in the following sizes:

Board Style	Length, inches	Bolt Size, inches	Number of Bits	Part Number	Product Number
Underbody	36"	5/8"	24	BU36	PS2036NR
Underbody	48"	5/8"	32	BU48	PS2048NR
Standard	36"	3/4"	24	B36B	S1BB-2236-1930
Standard	36"	3/4"	21	BW36B	S1EB-2236-1930
Standard	36"	5/8"	24	B36A	S1BA-2236-1930
Standard	36"	5/8"	21	BW36A	S1EA-2236-1930
Standard	48"	3/4"	32	B36B	S1BB-2248-1930
Standard	48"	3/4"	28	BW48B	S1EB-2248-1930
Standard	48"	5/8"	32	B48A	S1BA-2248-1930
Standard	48"	5/8"	28	BW48A	S1EA-2248-1930
Heavy Duty	36"	3/4"	21	BH36	S1CB-2536-2530
Heavy Duty	48"	3/4"	28	BH48	S1CB-2548-2530
Super Duty	48"	1"	19	B48Z	S1FC-3548-4435

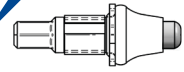


The S-2000 precompressed retainer feature makes installation and removal of the tools easy compared to conventional grading tools.

S-2000 tools are available in the following sizes:



Hexagon design makes install and removal **QUICK & EASY!**



	Part Number Product Code	Gauge (mm, in)	Base Diameter (mm, in)	Tip Height (mm, in)	Tip Diameter (mm, in)	Pieces per Box	Boxes per Pallet	Pieces per Pallet
	JMXG-2228WHX	43.0 mm 1.69 in	16.0 mm hex 0.63 in hex	14.8 mm 0.58 in	16.2 mm 0.64 in	50	60	3000
	JMXG-2201	44.0 mm 1.73 in	16.0 mm 0.60 in	17.4 mm 0.58 in	12.8 mm 1.11 in	65	60	3900
	JMXG-2227	40.0 mm 1.57 in	20.2 mm 0.94 in	21.2 mm 0.58 in	11.9 mm 1.11 in	65	60	3900
	JMXG-2228	42.0 mm 1.65 in	16.2 mm 0.64 in	14.8 mm 0.58 in	16.2 mm 0.64 in	65	60	3900
	JMXG-2228W	43.0 mm 1.70 in	16.2 mm 0.64 in	14.8 mm 0.58 in	16.2 mm 0.64 in	50	60	3000
	JMXG-2523W	57.0 mm 2.23 in	24.7 mm 0.97 in	23.8 mm 0.93 in	17.3 mm 0.68 in	30	60	1800
	JMXG-2513W	57.0 mm 2.24 in	15.3 mm 0.60 in	23.0 mm 0.90 in	15.3 mm 0.60 in	30	60	1800
	S4PX-2203-1030 S5PX-2203-1030	END PROTECTOR, LEFT, STD/UNDERBODY - Preserve the ends of the grader blade and create a smooth surface finish. END PROTECTOR, RIGHT, STD/UNDERBODY - Preserve the ends of the grader blade and create a smooth surface finish.						
	JMXA-CKP	CURVED KNOCK OUT PUNCH - Tool remover with carbide tip for extended life.						
	JMXA-AH38	AIR HAMMER PUNCH - 3/8" chuck. For removal of conical tools from blocks. The hardened tip provides long life. Fits light-duty air-hammer guns with 3/8-inch chucks.						

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 in-house 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 competitive product of the highest quality.



TRENCHING

- Wide flare shoulder provides maximum block bore and seat protection
- Step-shank design for improved strength
- Narrow body for efficient penetration



DRILLING

- Wide flare shoulder provides maximum block bore and seat protection
- Step-shank design for improved strength
- Narrow body for efficient penetration



ROAD MILLING

- Unique tool design provides superior rotation
- Improved thicker washer for increased protection and longer life



FOR MORE INFORMATION CONTACT:

XCAL TOOLS HEADQUARTERS • (276)-644-3520 • BRISTOL, VA • WWW.XCALTOOLS.COM