

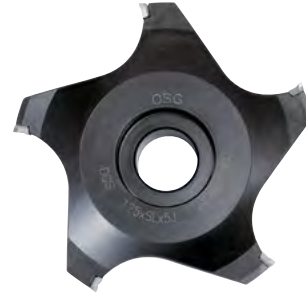


## List 6440 - EXOCARB® Disc Cutter®:s

### Roughing

Work Material	Cutting Speed (RPM)	Feed Rate (Inch/Tooth)
Carbon Steel 1018, 1050	325 - 1,050	0.0021 - 0.0060
Stainless Steel 300, 400	300 - 865	0.0018 - 0.0042
Cast Iron	450 - 5,100	0.0027 - 0.0098
Ductile Cast Iron	375 - 4,100	0.0027 - 0.0098
Aluminum A5052, A7075	3,280 - 10,000	0.0027 - 0.0098
Aluminum Alloy Casting ~ 13% Si	3,280 - 10,000	0.0027 - 0.0098
Aluminum Alloy Casting 13% Si ~	300 - 2,500	0.0027 - 0.0098
Copper	800 - 6,800	0.0027 - 0.0098

**DISC CUTTER<sup>®</sup>S**

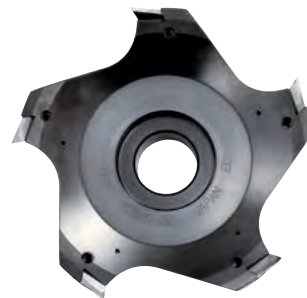


## List 6441 - EXOCARB® Disc Cutter®:PRO

### Finishing

Work Material	Cutting Speed (RPM)	Feed Rate (Inch/Tooth)
Aluminum A5052, A7075	3,280 - 13,120	0.0027 - 0.0059
Aluminum Alloy Casting ~ 13% Si	3,280 - 13,120	0.0027 - 0.0059
Aluminum Alloy Casting 13% Si ~	300 - 2,500	0.0027 - 0.0059
Copper	800 - 6,800	0.0027 - 0.0059

**DISC CUTTER<sup>®</sup>PRO**



# End Mill

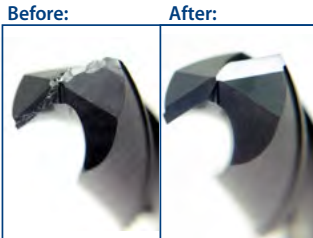
*Reconditioning*





## OSG Tool Reconditioning

OSG's Bensenville facility is the special cutting tool and regrinding authority based in the Chicago area. Through accurate and expedient regrinds of high-end cutting tools, OSG helps customers extend tool life and save money by restoring their used cutting tools to their original condition. In addition to regrinding, the Bensenville facility also manufactures custom drills, reamers, and other special cutting tools, performs product modifications and provides premium coating services.



As part of the OSG Corporation (headquartered in Japan), the regrind facility is the only OSG authorized regrinding source in America. The regrinding program uses the same OSG manufacturing drawings, adheres to OSG's strict quality control standards and uses the same equipment for OSG manufacturing and inspection procedures. As one of the world's leading cutting tool manufacturers, OSG offers a global network of support to our customers.



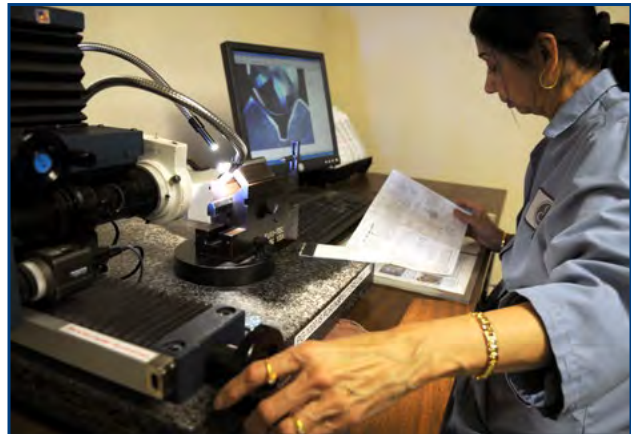
## Tool Reconditioning Lowers Costs

The primary benefit of tool reconditioning is clear: the reduction in overall tooling costs. As part of normal production, tool wear, chipping and breakage occurs often affecting tool performance and increasing manufacturing costs. By reconditioning high performance drills, end mills and taps, OSG helps manufacturers realize substantial cost savings through extended tool life without jeopardizing production quality or performance. Because OSG's reconditioned tools are manufactured to the same high level of quality and held to the same exacting standards that new tools are, customers of OSG's tool reconditioning services can expect the same high performance and quality they are accustomed with OSG's new tools even after regrinding multiple times.

## Engineering & Sales Support

OSG reconditions OSG tools using the same prints as the original tools made in our plants around the world. By using original part drawings, tools are accurately reconditioned to the original specifications, so customers are assured that reconditioned tools realize the same high level of performance. Manufacturers can also work directly with OSG design engineers to customize tools for enhanced performance or to meet specific requirements.

OSG's national sales team provides tooling expertise in the field for onsite evaluations and recommendations for manufacturers to implement a customized reconditioning program. The goal is to help manufacturers reduce tool costs and inventory, optimize performance and enhance overall profits.



*Contact your OSG representative or distributor to review your tool reconditioning program.*





## CNC Training

OSG CNC technicians are extensively trained on proper setup methodologies and reconditioning processes by an on-staff CNC trainer. Through their development, the CNC technician training program moves operators through three levels where they are diligently monitored and certified/reevaluated annually to maintain consistency and quality in our tools. Technicians are also trained and certified/reevaluated annually by Quality Assurance to perform inspections to print on first piece and in process tools.

## Inspector Training

In order to guarantee that our tools are reconditioned to the highest standards, inspectors also undergo annual training and certifications which involve standardized procedures. These are the same methods that are used in the OSG manufacturing facilities in Japan and around the world. Inspectors are trained to inspect and measure tools completely to the original tool prints.

Throughout the reconditioning process, the tools are also continuously inspected until 100% visual inspection ensures that no chipped or defective tools are received by the customer. The high tech inspection equipment used at the reconditioning facility is the same equipment used at all OSG locations. This includes in-house developed tool analyzers and state-of-the-art equipment with up to 300x magnification capabilities. The key to inspecting high performance, accurate reconditioned tools is assuring that they are held to the same inspection standards through the use of the same inspection methods as new OSG tools.

The Bensenville plant is subject to OSG's stringent JQA regrinding standards and is certified regularly by OSG Japan.

## Equipment and Facility

In 2015, OSG opened a reconditioning facility which is equipped with state-of-the-art production and inspection equipment. The facility uses high precision 5-Axis CNC grinders throughout the reconditioning process for improved repeatability and precision.

OSG's weekly equipment Preventive Maintenance (PM) program ensures consistency and accuracy throughout the reconditioning process. Through this PM program, OSG's tool reconditioning performance will be consistent year after year.













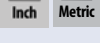

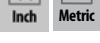

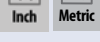



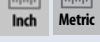










# HOLDERS





List	Item	Features	Product Page
<b>SynchroMaster</b>			
9950	SynchroMaster Tap Holders	 BT, CAT, HSK & Straight Shank Micro Float Tap Holders for synchronous tapping	 1565-1566
9953	SynchroMaster Collets	 ER Sealed Collets, for coolant-through the tap & coolant-through the collet	 1567
9955	SynchroMaster Accessories		1568
<b>HY-PRO® SHRINK</b>			
9900	HY-PRO® SHRINK HR-B Handy Unit	 General Purpose Shrink Fit Hot-Air Unit	1569
9901	HY-PRO® SHRINK Accessories	 Accessories for HR-B Handy Unit	1570-1571
9902	HY-PRO® SHRINK Mono Holders	 HSK-E Monoblock Holders, for standard & coolant-through the tool operations	 1572-1573
9903	HY-PRO® SHRINK Base Holders	 CAT, BT, and HSK 2-Piece Base Holders, for standard & coolant-through the tool operations	 1574
9904	HY-PRO® SHRINK Nozzle Holders	 CAT, BT, and HSK 2-Piece Nozzle-Type Holders, for coolant-through the holder operations	 1575
9905	HY-PRO® SHRINK Regular Extensions	 Regular Type Shrink Extensions, for standard & coolant-through the tool operations	 1576
9906	HY-PRO® SHRINK Flush Extensions	 Flush Type Shrink Extensions, for coolant-through the collet operations	 1577
9907	HY-PRO® SHRINK Slim Extensions	 Slim Type Shrink Extensions, for long reach & coolant-through the tool operations	 1578-1579
9908	HY-PRO® SHRINK Straight Regular Extensions	 Straight Regular Type Shrink Extensions, for standard milling / end mill chucks	 1580
9909	HY-PRO® SHRINK Straight Slim Extensions	 Straight Slim Type Shrink Extensions, for standard milling / end mill chucks	 1581-1582
9910	HY-PRO® SHRINK Straight Carbide Extensions	 Carbide Straight Type Shrink Extensions, for increased rigidity & reach	 1583
9911	HY-PRO® SHRINK Straight Slim Carbide Extensions	 Carbide Straight Slim Type Shrink Extensions, for increased rigidity & reach	 1583

