

Shaper Cutters

Freud's Shaper Cutters and Performance System® Cutters are revolutionary. Recognized for their versatility, quality, and innovation, Freud offers the flexibility to choose the cutter that fits every need. The conventional fixed wing shaper cutters and Performance Systems® Cutters with re-sharpenable inserts both feature Freud made TiCo™ Hi-Density Carbide, Anti-Kickback Design, Computer Balancing, Shear Angle, and Multi-Axis grinding.

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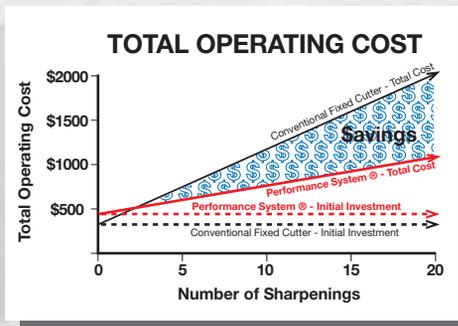
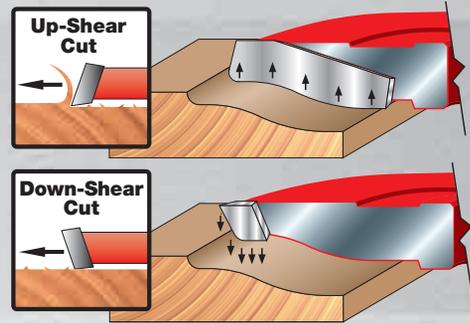
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Performance System[®] Cutters

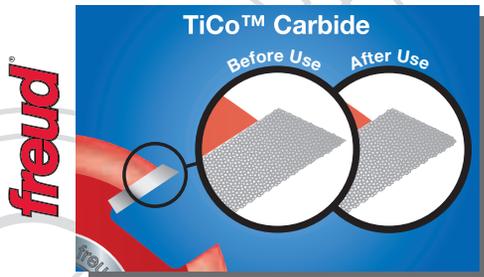
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Fixed Wing Cutters & Sets

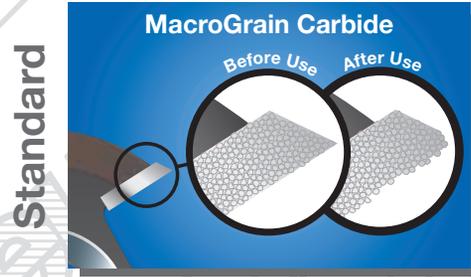
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Freud—Shaper Cutters Features And Benefits



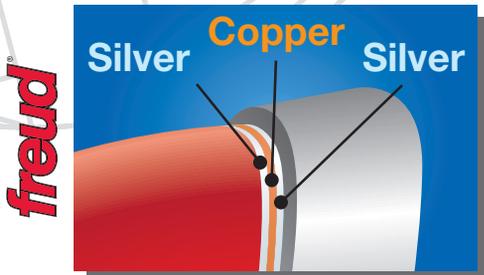
Superior Freud Made TiCo™ Carbide Provides Longer Cutting Life

Freud's proprietary carbide is comprised of micro grains, smaller in size than other carbides, and consists of over twenty unique carbide formulations designed for each shaper cutter application. In addition, titanium is added to the carbide, making it impervious to chemical attack. This slows down the wearing process so the Freud cutter will maintain a sharp edge.



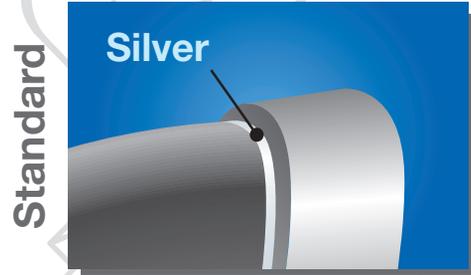
Standard Off-The-Shelf Carbide

Most manufacturers create shaper cutters with standard off-the-shelf carbide, which is not specifically designed for wood cutting applications. These carbides will not maintain the proper tooth geometry or sharp edge. After a few cuts these standard carbides might not show imperfections; however, without the proper carbide formulation, material finish and cutting life will suffer.



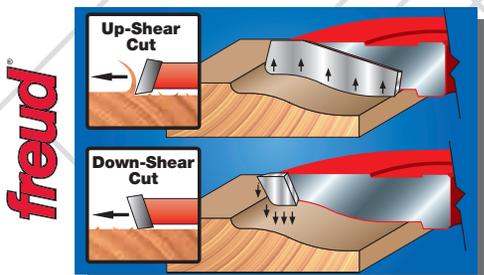
Advanced Tri-Metal Brazing

Freud's innovative Tri-Metal Brazing process bonds the carbide tips to the cutter body. This method consists of copper alloy sandwiched between layers of silver alloy. The copper allows for flexibility and impact resistance to protect the carbide tips and steel shoulders when cutting knots, laminates, hardwoods, etc.



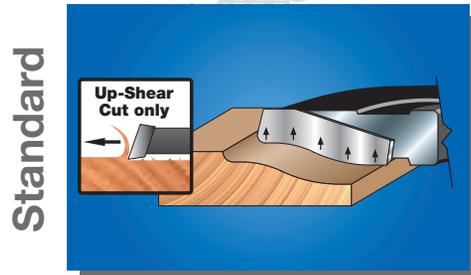
Standard Brazing

Other manufacturers use silver alloy alone, which does not allow for expansion during operation. This causes the bond to develop stresses, leading to cracks in the carbide and failed joints.



Freud's 2 + 2 Raised Panel Cutter

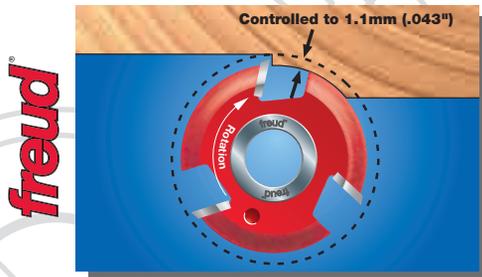
Freud offers a four-wing raised panel cutter that will revolutionize the way raised panel doors are made. Freud's exclusive 2 + 2 Raised Panel Shaper Cutters produce glass-smooth cuts, even on the cross grain. This ingenious configuration of both positive and negative shear angles eliminates the fuzz on the top edge of the profile and reduces the need for sanding.



Others Raised Panel Cutter Designs

No other raised panel cutters have the Freud 2 + 2 cutting system. Without the small down-shear cutter, other panel cutters leave fuzz at the top edge of the profile creating additional rework which alters the original profile.

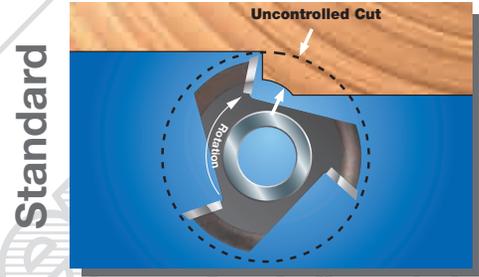
Freud—Shaper Cutters Features And Benefits



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Kickback-Reducing Design

Kickbacks are one of the most dangerous hazards in woodworking. This happens so quickly that it can be impossible to react before injury occurs. Freud's kickback-reducing shoulder design restricts the tooth bite to 1.1 mm, reducing the effects of kickback from overfeeding. This design helps ensure a safer working environment.



Standard

Standard Shaper Cutter Design

Standard shaper cutter designs do not include a kickback reducing shoulder. The cutters do not have extra support behind the cutting flute. This limitation allows the cutter to take large bites out of the material which can lead to uncontrolled, rough cuts, particularly when operating at lower speeds.



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Balanced Design

Computer Balancing Prevents Chattering And Vibration

A shaper cutter that is even slightly out of balance will vibrate and chatter while cutting, and it can be extremely dangerous if it is far out of balance. All Freud shaper cutters are computer balanced to ensure vibration-free operation.



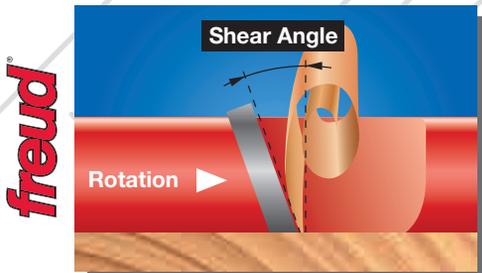
Standard

Unbalanced Design

Unbalanced Shaper Cutters Cause Chattering And Vibration

Shaper cutters that are not spin balanced often have a side that is heavier than the other. At high speeds, the cutters will begin to vibrate causing noise or chatter. An unbalanced shaper cutter can cause damage to the shaper.

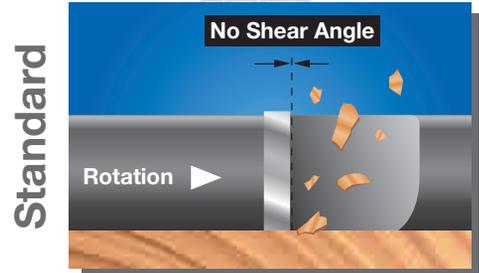
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Superior Shear Angle Design

The shear angle is the angle that the cutting edge makes with the spindle of the shaper. Freud carbide tips are angled to slice through the wood fibers similar in principle to using a hand plane at an angle to the direction of the motion. This slicing action becomes even more important when cutting across the grain. Freud's high shear angle cutters leave a cross-grain cut that requires virtually no sanding.



Standard

Standard Shaper Cutters Have Little Or No Shear Angle

Cutters without shear or with too little shear chop the wood and are more likely to produce tear-out and chatter marks. In addition, not having the proper shear angle causes premature wearing of the carbide and puts more strain on the shaper.

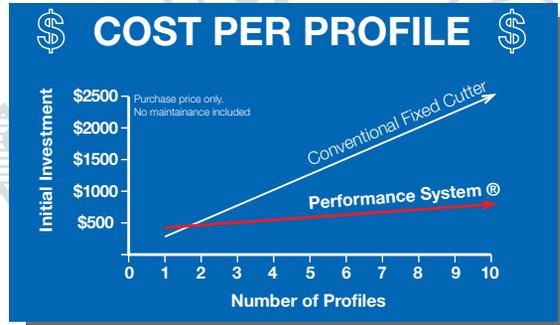
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Freud—Performance System® Shaper Cutters

The Performance System® Cost Advantage Over Conventional Fixed Cutters

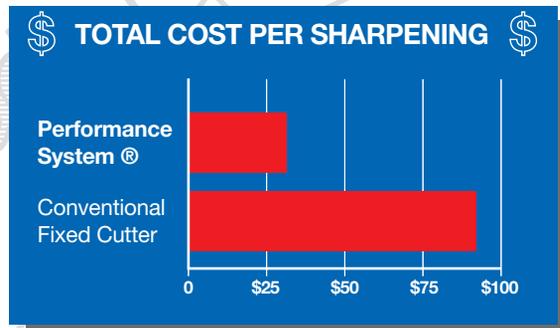
Cost Per Profile

Freud's Performance System® cutters are designed for maximum performance, flexibility and savings. When a new profile cutter is needed, the investment cost of the Performance System® drops well below that of conventional fixed wing cutters. With the Performance System®, all that is required is a set of profile knives. With conventional cutters a complete new cutter must be purchased. The graph to the right illustrates the savings of using this system.



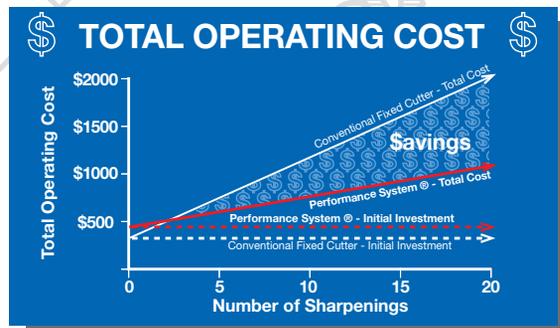
Operating Cost Per Sharpening

Freud's Performance System® cutters are less expensive to operate. With the patented sharpening system, all that is required is face grinding the insert knives on a surface grinder. This method is both fast and inexpensive. When the knives can no longer be sharpened, they are easily replaced. With conventional fixed wing cutters, a completely new cutter must be purchased. The chart to the right shows the Total Operating Cost Per Sharpening.



Total Operating Cost

When examining the overall operating cost of conventional fixed wing cutters vs. the savings with Freud's Performance System®, the amount saved grows rapidly. The chart to the right shows the true operating cost through twenty sharpenings. Freud's Performance System® makes up the difference in the initial investment, well before the fifth sharpening. The longer it is used, the more the Performance System® investment pays off.



NOTE: To determine the operating cost the following parameters were used: The average cost to sharpen a conventional fixed cutter rail & stile set is \$29.00, and the average cost to sharpen a pair of knives is \$12.00. After five sharpenings the knives and fixed cutters were expended and replaced. The Performance System® will last longer between sharpenings due to the system's ability to use a harder micrograin carbide. The cost for cutterheads, knives and conventional cutters is at list price.