Newbould Precision, Inc

The Toolmaker's Toolmaker
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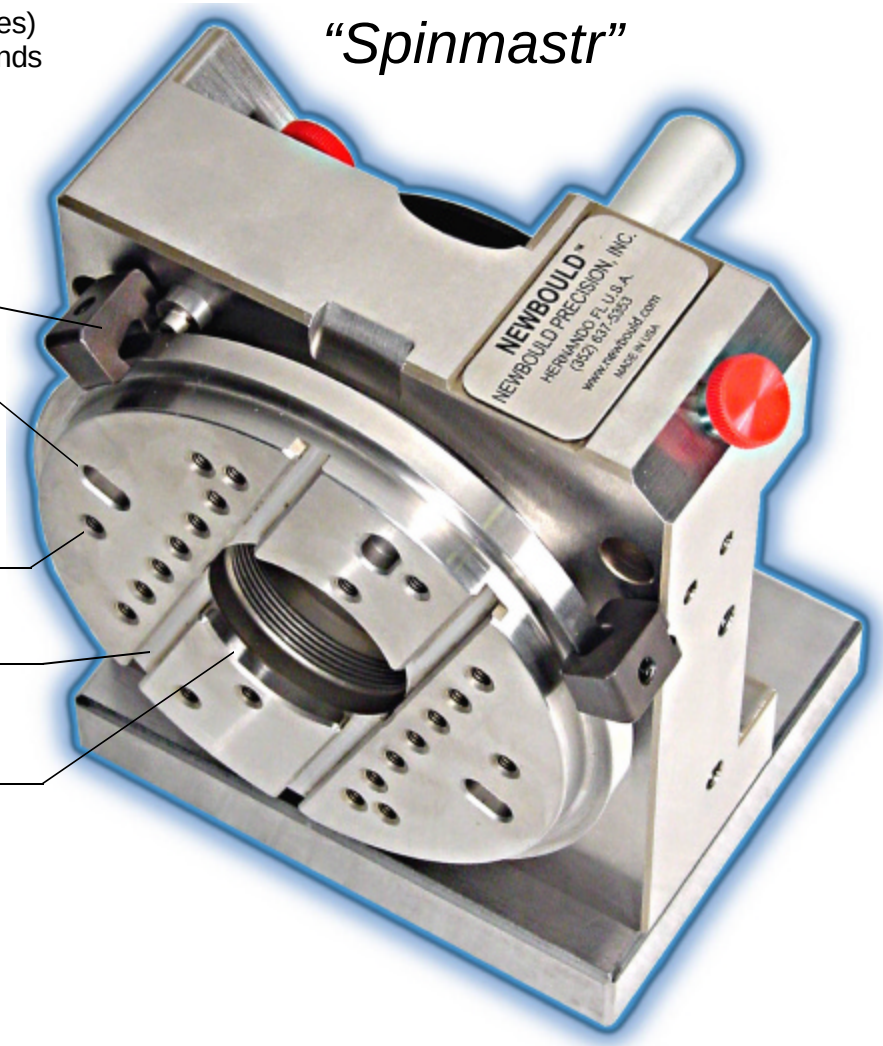
At a glance

Center height:	3-3/4" on 3/4" foot
Thru-hole:	1.640"
Vee Block capacity:	030" to 2"
Indexing positions:	72 (5 degrees)
Indexing accuracy:	10 arc seconds
Spindle max T.I.R.:	(1) micron
Weight:	14 lbs.

The Newbould "Spinmastr"



Arcing/positioning stops **Page 5**

Pallet dowel slots. **Page 3**

Buck Chuck and pallet mounting holes. **Page 4**

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5-C collet and bore Specifications. **Page 3**

Today, in 2003, we often must compete with labor costs of pennies per hour. Can you afford to use a tool that you must "make do" with?

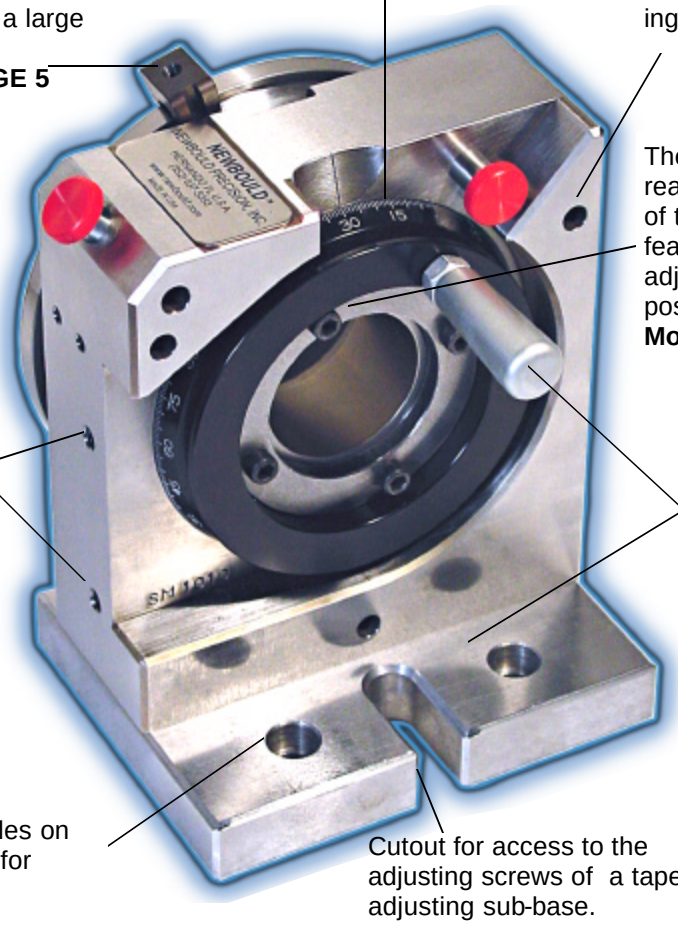
The Newbould Spinmastr is without equal in the speed of setup and the certainty of accurate work with good finishes

The one piece adjustable stops, designed and introduced by me (rj newbould) in 1975, can be used for both arcing stops, or locking a position with a single stop utilizing the tapered groove on the rear of the stop and the tapered shotpin.

Since the locking screw is on the periphery, the stop can be installed or removed even if there is a large work piece mounted on the faceplate. **MORE ON PAGE 5**

The machine engraved, hard anodized dial-pulley, is graduated every 1 degree.

There are (3) mounting holes C'bored from the front for 1/4" S.H.C.S.. If desired, the Spinmastr can be mounted flat to a tooling plate without using clamps.



The (4) cap screws on the rear are for activating one of the major timesaving features, the zero adjustment of the 72 position indexing plate. **More details on page (4).**

The optional **motor drive** (shown in the bottom photos) mounts with these two holes and extends toward the rear of the Spinmastr when used in the horizontal axis.

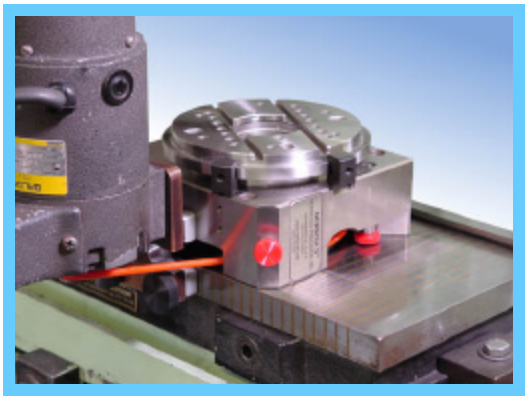
Both the manual handle and foot are easily removable for using the Spinmastr flat on it's back. Foot is keyed to base for ease in re-attaching.

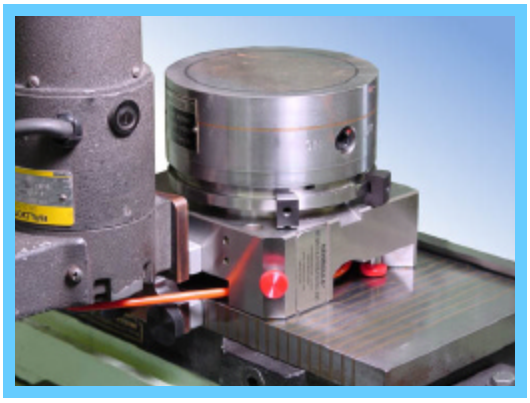
See photos below

(2) C'bored holes on 2-1/2" centers for 5/16 S.H.C.S.

Cutout for access to the adjusting screws of a taper adjusting sub-base.

The Newbould Spinmastr can be motorized either horizontally or vertically, and can be used with many work holding systems, including a magnetic chuck.



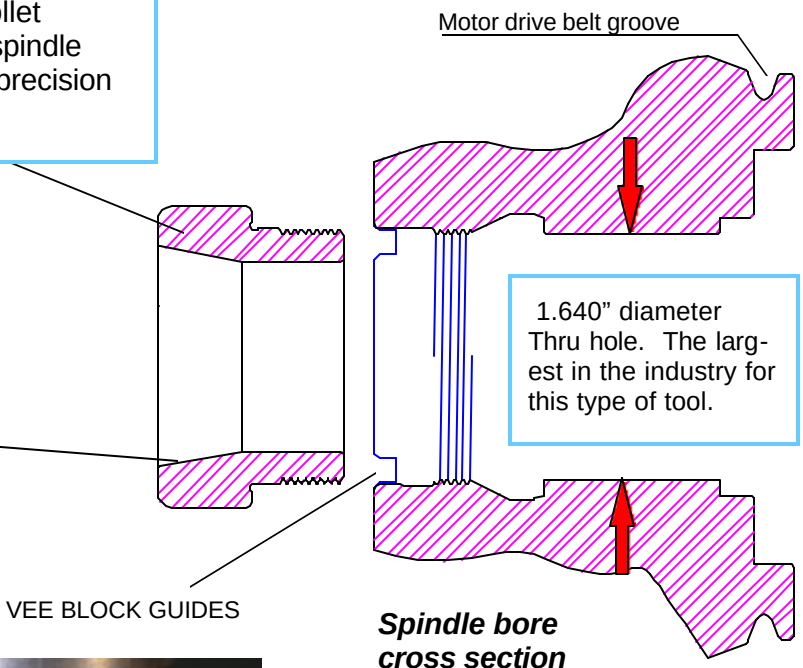


Newbould Spinmastr Benefits

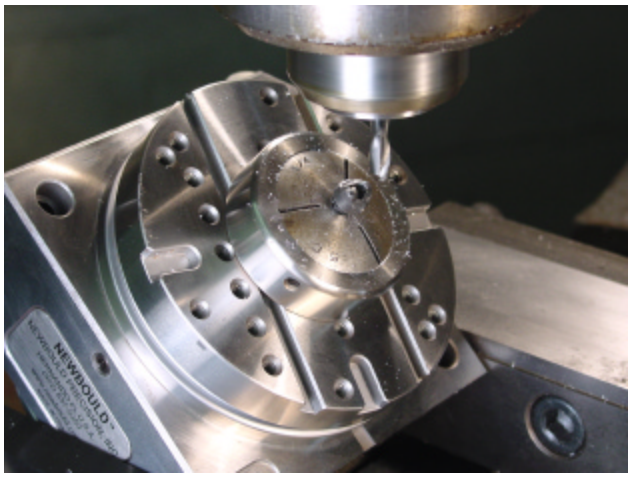
Spindle bore and Pallet system

The Newbould 5-C collet adapter threads into spindle and is located by the precision 1.700” diameter bore.

The Collet taper can be ground to match an individual spindle. Accuracy and repeatability of runout is within .0001” when this is done



Spindle bore cross section



This Illustration shows the 5-C adapter in a Newbould Model 211 being used to mill a special clamp screw for holding a small diameter in the vee block. More clamp details on page (6).

The 5-C adapter is also used for adjusting centrality when mounting a Buck chuck directly to the faceplate. It provides the boss for the adjusting screws.

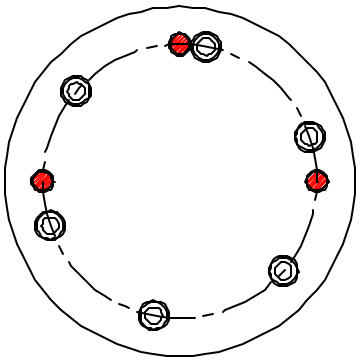
This feature is identical on the Spinmastr.

With the epitome of simplicity, the Newbould Pallet system allows mounting all sorts of special tooling.

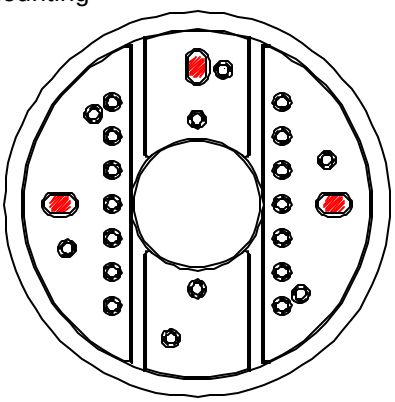
Using standard dowels you can make repeatable setups faster than with any other spin fixture.

More details on page (4)

1/2” thick Blank Pallet with dowels marked in red



Dowels fit in slots as shown. You can use either the six #10 counterbored holes or a center hole for mounting



Newbould Spinmastr Benefits

Pallet System, Zero Null and Hole pattern

Zero Null allows free rotational adjustment while shotpin is engaged.
Range of adjustment is approximately 16 degrees, as illustrated.

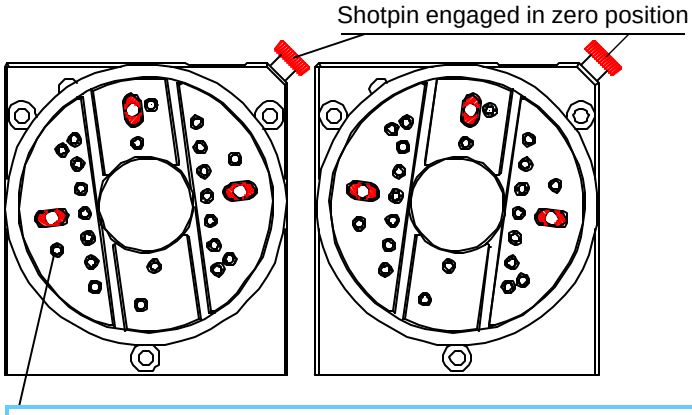
Problem: Simultaneously align centrality and angular adjustment.

Solution: Adjust centrality first, give part final clamping, then use the zero null feature to adjust angularity without needing to loosen the part.

It doesn't get any easier. Any toolmaker who has done this will tell you the time saved by using the zero null feature can easily save 20 minutes or more per setup.

Problem: You want to use special tooling and there is no mounting hole pattern. You also want to remove and replace that tooling without a long difficult setup.

Solution: The Newbould Pallet.

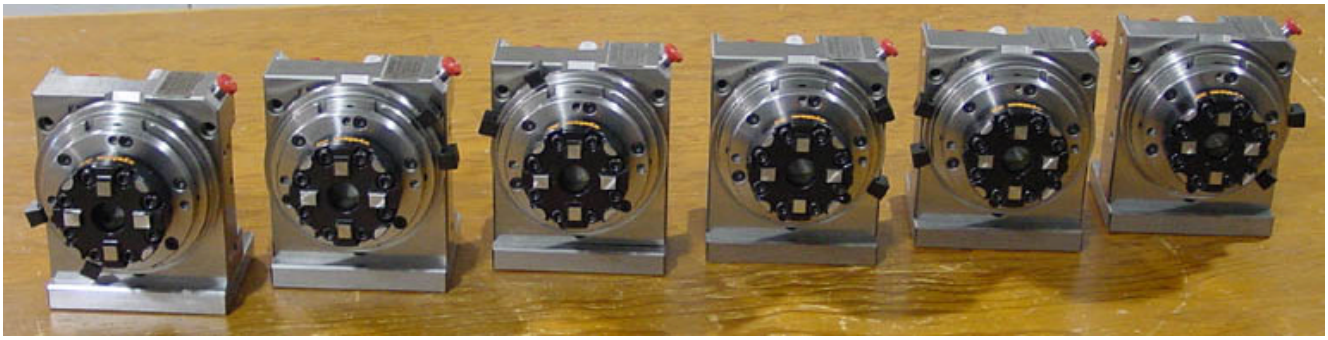


A hole pattern of (6) 10-32 tapped holes matches the 4" Buck Ajust-Tru Chuck. The 5-C adapter is used as the adjusting boss for the chuck. These holes are one method of fastening the Newbould Pallet. The Pallets can also be fastened with a single screw thru the spindle bore, as is the magnetic chuck adapter.

The white areas in the pallet slots indicate location of the pallet dowels. The pallet dowels are not a precision location, just so long as the mounting screws will fit. Using dowels that are in good shape, the pallet will repeat it's position within .0002". If greater accuracy is needed, a small tapping adjustment can be made before final clamping. Not needing a high precision of the pallet dowel locations makes it economical for the customer to make their own pallets if desired.

Recently, a very astute customer in Wisconsin chose to purchase 6 additional Spinmastrs with System 3-R chucks mounted on pallets. In addition to the other Spinmastr benefits, this allows them to remove the chuck to use the spindle with other setups, then re-attach the 3-R chucks with a very fast setup time.

This advantage is made possible by the pallet system combined with the zero adjustment feature



Newbould Spinmastr Benefits

Multiple Adjustable Stops and Vee Block Guides

Problem: You need one or more locking index positions that do not fall on the 72 (5 degree) normal shotpin positions.

Solution: The Newbould adjustable stops which can be use either for side acting (arcing) or for locking a position. Over 30 of these stops can be used in the same setup for locking odd angle positions.

As with many other "firsts" before and since, these stops were designed and introduced by me in 1975 . The "Newbould Indexer" was introduced in 1974, and put on display in the Smithsonian Institution that same year. It is only the 28th basic mechanism in history.

I'm pleased to say that my customers are happy. They like my designs, unsurpassed quality, and personalized service.

That is the "Newbould" advantage

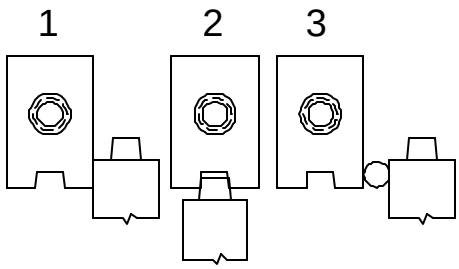
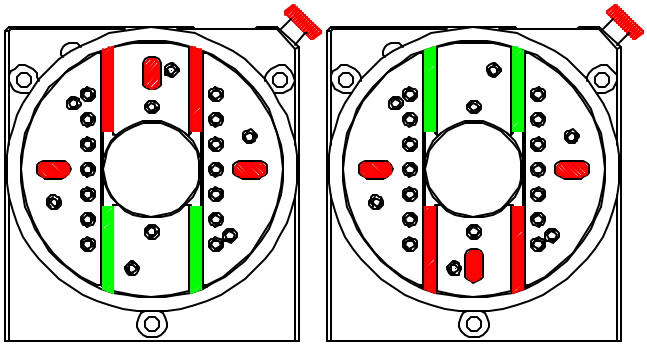


Fig. 1 shows arcing use, normally set using one of the 72 shotpin positions.

Fig. 2 shows a locking position set either with one of the 72 shotpin positions, the graduated dial, or on a sine plate.

Fig. 3 shows how to set the stop for arcing using a pin or gage block sized the angle sine times 2.450". The spindle is first locked into the nearest 5 degree position, and the difference between that angle and the desired angle is the angle used for calculation. The maximum pin/gage size necessary for this is about .213"

Vee block guides



Fitted guides on bottom Oversize guides on bottom

The guides in green are a close fit on the vee block. The red areas have approx. .004"/side clearance.

The engraved dial has zeros 180 degrees apart ,so that the angle readings are the same whichever way the vee block is attached.

Problem: Accurately centralize a difficult part being held in the vee block.

Solution: Rotate the Spinmastr Faceplate 180 degrees and use the vee block guides that are wider spaced to allow sideways adjustment.

It's not uncommon for a frustrated toolmaker to spend a lot of time and pound pretty hard on the vee block to try to get centralization. Not only is that expensive, it is very hard on the spindle bearing.

Newbould Spinmastr Benefits

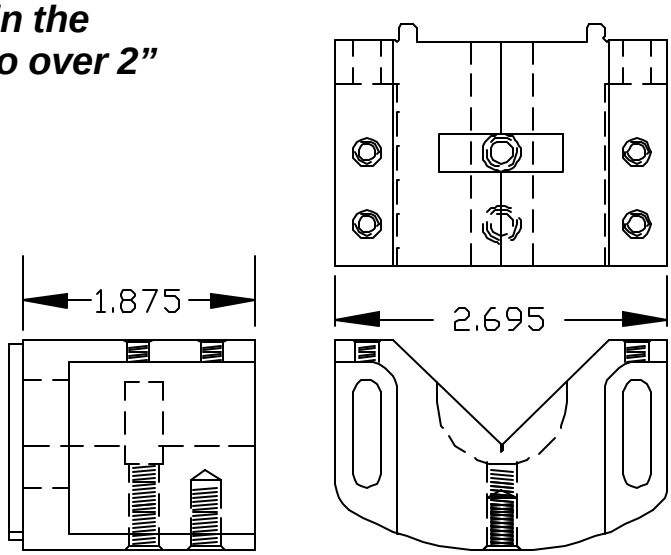
Vee Block and Clamps

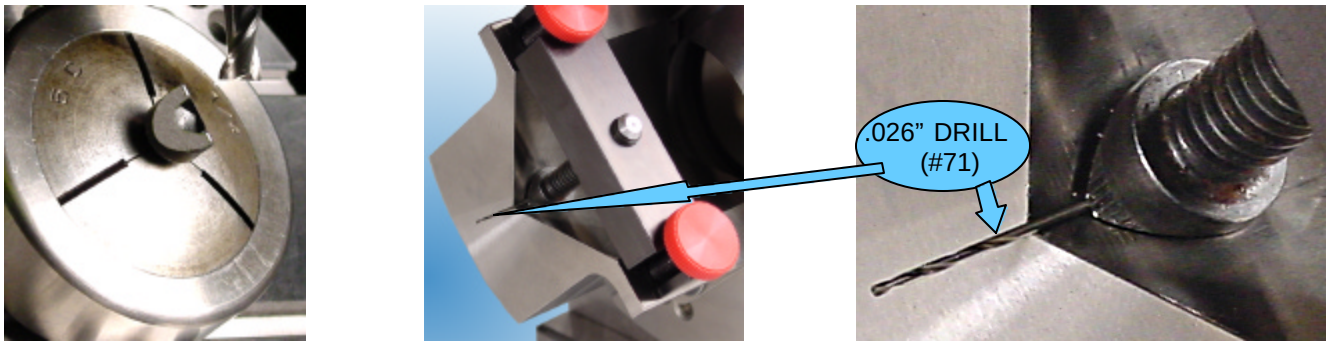
The widest range of any Vee Block in the industry. Capacity less than .030" to over 2"

Another *first:* A vee block which not only will hold over 2" but the very small parts as well. (no need for a wee block here)
Plus a new clamping system that is easier to use, more versatile, and will not put twist marks on your parts.
Plus an optional wrap-around non-distorting clamp for those really heavy parts.

Yes, it will hold sharp cornered square parts too.

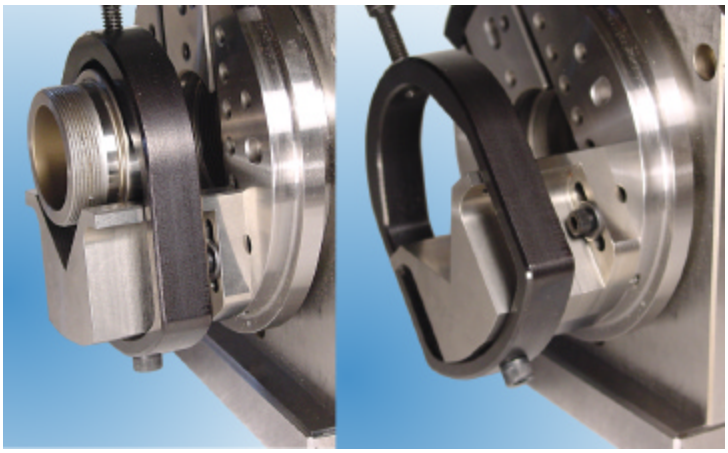
The Unique clamping arrangements are more versatile and easier to use than any other on the market.





(Above) A standard 1-/4 20 S.H.C.S. modified with a 45 degree angle on 2 sides and leaving a flat ground on the top, provides a 2 point clamp for very small parts. ***Having 2 pressure points rather than 1 minimizes distortion of the part.***

The standard flat clamp is able to handle parts up to 2" in diameter. The slotted design allows the clamp to be easily removed to wipe the vee. *By using the two side screws for the clamping action, the part is not damaged by a twisting screw.*



An optional wrap-around clamp is available when you need heavy clamping pressure without the possibility of distorting the vee block. ***Both clamps have two positions, central or outer end, where it can be bolted in place so that you don't have a loose clamp to deal with.***