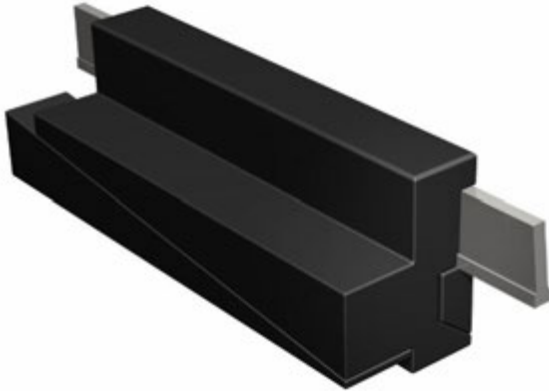


FoR Inverted Parting Toolholder Features and Tips

The FoR (Front or Rear) Inverted Parting Toolholder operates with the blade held upside down and can be used in a front or rear mounted tool post.



It has a number of features that make it ideal to use on smaller, less rigid lathes:

- Inverted blade design significantly reduces chance of a jam up and blade breakage.
- Minimal side overhang and no front overhang help maximize rigidity.
- Cutting takes place on the underside, so swarf tends to fall out of the groove rather than pile up on top of the cutting edge.
- Lack of swarf on top of blade means coolant is free to get right to the cutting edge.
- Horizontal mounting of blade further reduces chance of blade pulling itself into the cut – especially advantageous when turning brass and bronze.
- Simple to re-sharpen, as only the front face has to be ground.
- Wide choice of blade widths to suit a variety of workpiece diameters and situations. All holders take same size blade.
- Once set, blade will stay on center height when extended or retracted.
- Includes a fine adjustment system for tool height, no more thin shims needed to get the cutting edge exactly on center.
- Has the versatility to be used in a front or rear tool post.
- Clamping along full length of holder aids rigidity and keeps the blade straight and square.
- A slight concave radius is ground along the top (bottom) of the cutting edge – helps curl the chip, assisting in swarf ejection from the cut.

- Blades can be left with sharp corners to ensure the chip is removed at the end of a cut or, if preferred, a slight chamfer or radius can be added with an oilstone/hone to reduce striations in surface finish and increase the strength of blade corners.
- Blades can be re-sharpened multiple times and if used with care one blade will outlast several packets of indexable tips.

Front or Rear Mount?

For lathes with a screw-on chuck, the parting tool must be used in a rear tool post with the lathe running in the normal, forward direction. For lathes that are able to run safely in reverse, i.e. a camlock, bolt on, or LO spindle, the parting tool can be mounted in either the front tool post with the lathe running in the reverse direction, or in a rear tool post with the lathe running in the normal direction.

The Blade

The holders take the 1/2" T-type blades, also known as Empire blades (the original manufacturer) or Luers blades (the German inventor of this design). This design of blade has been used in the USA for decades on production turret lathes and screw machines.

The 1/2" blades are available in five different widths, from .040" (1 mm) to 1/8" and all will fit the same holder.

Our premium 3/32" Cobalt blades are available and are sourced from a leading US manufacturer who supplies tooling for the production screw machine, CNC, and turret lathe market. <https://secure.villagepress.com/store/items/detail/page/9/item/2854>

More Features

To aid setting the cutting edge exactly on center height, the holder has a 7° taper cut into the shank and a matching adjusting wedge that can be moved back or forth to give up to 1mm (.040") of vertical movement. This eliminates having to use thin shims to pack up the holder to exactly the correct height if you don't have an adjustable tool post.

Two small rare earth magnets hold the wedge securely in place when adjusting and a line can be scribed across for quick repeat setting.

The blades are simple to sharpen, as they only need the front clearance angle ground, this is easy to achieve on the side of a bench grinder's wheel.

Bay-Com Enterprises, Inc.



The top of the cutting edge (the bottom in our case) never needs touching, the blades can also be reversed in the holder so they can be ground on both ends to save time between sharpening.

The wedge and magnets can double as a re-sharpening guide, as 7° is ideal for the front clearance angle. The magnet prevents the wedge from moving about on the grinding rest when used as a sharpening jig. Just place the wedge on the grinding tool rest and use the side of the wheel to sharpen the blade.

Some General Notes on Parting

If you peruse the internet long enough you will find a huge difference of opinion on the ideal method of parting or cutting off in the lathe. You will find polar opposite views on almost every facet of parting off.

- Power feed vs hand feed
- Indexable carbide tipped tools vs HSS blades
- Rear tool posts vs front tool posts
- Upside down tools vs conventional tools
- Positive rake angle vs zero rake angle
- Fast vs slow speed
- High feed rate vs low feed rate
- Having the cutting edge on center vs above center vs below center

About the only thing everyone agrees with is to always use coolant and have the blade as square to the job as possible.

Geo H Thomas, the highly regarded UK model engineer and author of a number of books and articles on the subject, spent a huge amount of time investigating the ideal way to part off in a smaller lathe and concluded a HSS blade held upside down in a rear tool post gave the best results. An upside down blade held in a front tool post with the lathe running in reverse will have the same effect.

Really, it all comes down to what works best for each individual on their particular lathe and doing their particular tasks. Even the same make of lathe will have different amounts of play in the slides and spindle, which can affect the cut.

Front or Rear Parting Toolholders

The FoR parting toolholders have an adjustment range of plus or minus .5 mm (.02") from the nominal size and come in five sizes (8, 9.5, 12, 16, and 20 mm).

FoR Toolholder Shank Sizes	
8 mm	7/16" (11 mm) square
9.5 mm	1/2" (12.7 mm) square
12 mm	1/2" (12.7 mm) square
16 mm	5/8" (16 mm) square
20 mm	3/4" (19 mm) square