We bring out the genius in you.

STEINER

INGENIOUS CUTTING TOOLS

Autofacer® Operating Instructions

Inertia Autofacer

TorqueBar Autofacer

ActivatingPad Autofacer

BumpStyle Autofacer

Thank you for investing in a Steiner Autofacer.

If this is your first experience with an Autofacer, you'll discover this is a truly ingenious tool that allows the machinist to reach through a hole and machine a circular feature on the back side of the part automatically; circular features such as a spot face, counter bore, countersink, chamfer, spherical radius, or some combination thereof.

This is accomplished by folding the cutting blade into the shaft of the tool body allowing the tool to pass into the part. Once the tool has entered the part the cutting blade is mechanically opened and cutting may begin.

The key design features of the Autofacer are:

1. Friction type clutch that mechanically opens and closes the cutting blade ensuring high reliability of part processing.

2. Cutting blades that are mechanically held open during cutting allowing the Autofacer to perform heavy interrupted cuts.

3. Autofacer body utilizes the part hole to support the tool while cutting. This enables the operator to run the Autofacer at carbide speeds and feeds even at long length-to-diameter ratios.

Autofacer cutting blades are available in many different configurations depending upon customers' applications. Having a full service grinding department at our manufacturing facility in the U.S.A. allows us to offer custom geometries on our indexable inserts and brazed carbide cutting blades. This means we can combine multiple operations into a single blade, thus maximizing time savings.

The Application Engineers at Steiner will select the appropriate method to ensure optimum performance, another way we bring out the genius in you. Backed by more than 40 years experience, we are here to serve your most demanding needs.

Maintenance Information

Lubrication

If through spindle coolant is being used, lubrication is not necessary for the operation of the tool.

If through spindle coolant is not being used, the clutch components of the Autofacer should be lubricated after every 10 hours of use.

Lubricate by disassembling the tool and by using the grease fitting, if present.

If the tool has not been in use for an extended period of time, lubricate before using with marine grease.

If the tool will not be in use for an extended period of time, make sure to clean and lubricate thoroughly with rust inhibitor before putting away.

Inspection

The Autofacer should be inspected for wear and tear monthly or sooner depending on usage.

It is a good idea to activate the tool by hand periodically to check for a smooth action and no noticeable binding.

Troubleshooting

The Shear Pin is breaking during machining...

- This is caused when cutting pressure it too high due to too high of a feed rate or a dull Cutter Blade or Insert. First, check the cutting edge to see if it needs sharpening or replacing. If not, decrease the feed rate by 10-20%.

The Shear Pin is breaking when exiting the part...

- This is caused when the blade has not closed. First check that cutter is properly attached to pivot pin. Next disassemble the tool and check activating rod for wear or damage.

The chip is not breaking...

- This is usually caused by too low of a feed rate. Autofacers are designed to be fed at high feed rates. Increase the feed rate by 10-20%.
- Program periodic dwells into the feed to thin the chip out.

The Cutter is coming loose from the Pivot Pin...

- Apply a small drop of serviceable Loctite (provided with purchase of Autofacer) to the thread of the secondary lock screw. If there is only one screw, apply Loctite to primary screw.
- The blade may not be locked onto the flat of the Pivot Pin. Please see "Cutter Installation Instructions."

The Cutter is not opening or closing all the way...

- The blade may not be locked onto the flat of the Pivot Pin. Please see "Cutter Installation Instructions".
- The tool may be jammed up by chips. Make sure there are no chips in the Cutter Body pocket where the blade folds into. Also, disassemble the Autofacer and check for chips or damage to the internal components of the clutch mechanism.

The tool is chattering...

- This is usually caused by too low of a feed rate. Autofacers are designed to be fed at high feed rates. Increase the feed rate by .001-.003 IPR (.03-.08 MMPR).
- The clearance between the Pilot and the work hole may be too great. The diameters should differ no more than .010 (.25mm), but no less than .002" (.05mm).

Things to check before operating:

1. Manually open and close the Autofacer. Check for smooth activation with no obvious signs of binding.

2. Is the cutting blade locked securely onto the flat of the Pivot Pin? See below for proper blade installation instructions.

Programming and Operating Hints

1. Turn ON the spindle through coolant **after** blade has opened.

2. Turn OFF the spindle through coolant **before** blade has closed.

3. Autofacers utilizing a Shear Pin must clear the work piece by a minimum of 3 inches before traversing. This will allow the shank to completely pull off the Cutter Body in case the Shear Pin breaks.

4. Cutting Blade must be clear of all obstructions prior to opening.

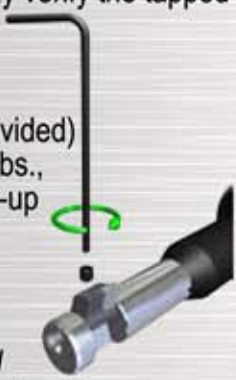
Cutter Installation Instructions

NOTICE! Reliability of Autofacer depends on the Cutting Blade being locked onto flat of the Pivot Pin

1. Insert the Pivot Pin into the Cutter Body and the Blade. Rotate the Pivot Pin until it engages tang of the Activating Rod.

2. With the Blade in open position, rotate clutch of tool until the alignment mark on the Pivot Pin is aligned with the hex wrench and set screw in Blade. This will ensure the set screw is aligned with flat on Pivot Pin. (For Pivot Pins without alignment mark, remove screw completely and visually verify the tapped hole is lined up with flat.)

3. Apply a small amount of serviceable Loctite (provided) to thread of screw. Tighten set screw to 6-10 in/lbs., being careful not to overtighten. If second follow-up screw is provided, install and tighten to 6 in/lbs.



TIP:
To verify the set screw is located on flat of Pivot Pin, loosen set screw slightly and attempt to pull Pivot Pin out of tool. The Pin should only be able to slide until the set screw gets caught on the end of the Pivot Pin flat.

Inertia Autofacer Sequence

1 With through coolant OFF and flood coolant ON, enter work hole in **clockwise** rotation at **500-800 rpm.**

2 Reverse spindle rotation to **counter-clockwise** at **500-800 rpm.** Do not stop spindle between changing rotation. Blade will open. After a 1-3 revolution dwell, increase rpm to proper cutting speed. Turn through coolant ON.

3 Backfeed to counterbore depth. Dwell for 1-3 revolutions to clean up cut.

4 If front cutting, fast feed forward to approach front face, feed to depth and dwell for 1-3 revolutions.

5 Feed to clear area to clear part. Turn OFF through coolant. Leave flood coolant ON.

6 Set spindle to **500-800 rpm** and reverse to **clockwise.** Do not stop spindle between changing rotation. Blade will close. Fast-feed out to complete machining cycle.

Torque Bar Autofacer Sequence

1 With through coolant OFF and flood coolant ON, enter work hole in **clockwise** rotation at **100 rpm.**

2 Reverse spindle rotation to **counter-clockwise** at **100 rpm.** Blade will open. After a 1-3 revolution dwell, increase rpm to proper cutting speed. Turn through coolant ON.

3 Back feed to counterbore depth. Dwell for 1-3 revolutions to clean up cut.

4 If front cutting, fast feed forward to approach front face, feed to depth and dwell for 1-3 revolutions.

5 Feed to clear area to clear part. Turn OFF through coolant. Leave flood coolant ON.

6 Set spindle to **100 rpm** and reverse to **clockwise.** Blade will close. Fast-feed out to complete machining cycle.

Activating Pad Autofacer Sequence

1 With through coolant OFF and flood coolant ON, enter work hole in **clockwise** rotation at **100 rpm.**

2 Reverse spindle rotation to **counter-clockwise** at **100 rpm.** Activating pads will grip ID of hole and blade will open.

3 After a 1-3 revolution dwell, increase rpm to proper cutting speed. Turn through coolant ON.

4 Back feed to counterbore depth. Dwell for 1-3 revolutions to clean up cut. If applicable, feed forward and machine front face to depth. Dwell for 1-3 revolutions.

5 Feed to clear area to clear part. Turn OFF through coolant. Leave flood coolant ON.

6 Set spindle to **100 rpm** and reverse to **clockwise.** Activating pads will grip ID of hole and blade will close. Fast-feed out to complete machining cycle.

Bump Style Autofacer Sequence

1 With through coolant OFF and flood coolant ON, enter work hole in **clockwise** rotation at **100 rpm** until tapered Activating Cone contacts part.

2 Compress Activating Cone .060" (1.5mm). Reverse spindle to **counter-clockwise**. Cone will grip face of part and blade will open.

3 After 1-3 revolution dwell, feed off of activating cone and increase rpm to proper cutting speed. Turn through coolant ON.

4 Back feed to counterbore depth. Dwell for 1-3 revolutions to clean up cut.

5 Drop to 100 rpm. Turn through coolant OFF, fast feed forward to contact Activating Cone and depress .060" (1.5mm). Reverse spindle to 100 rpm **clockwise**. Cone will grip face of part and blade will close.

6 At 100 rpm **clockwise**, fast feed out of the part to complete machining cycle.

Leonardo would love it.

That's because the Steiner Autofacer is the most ingenious, most reliable back spot facing tool on the planet. It saves up to 80% on part operation cycle time which eliminates operator intervention and costly secondary operations. And, it makes your workplace safer.

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