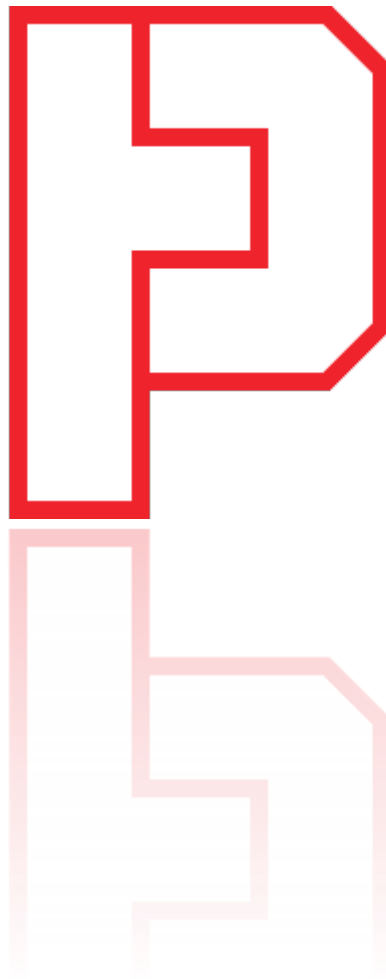**Hypertherm**®

ProNest® 2019
Nesting Software

What's New
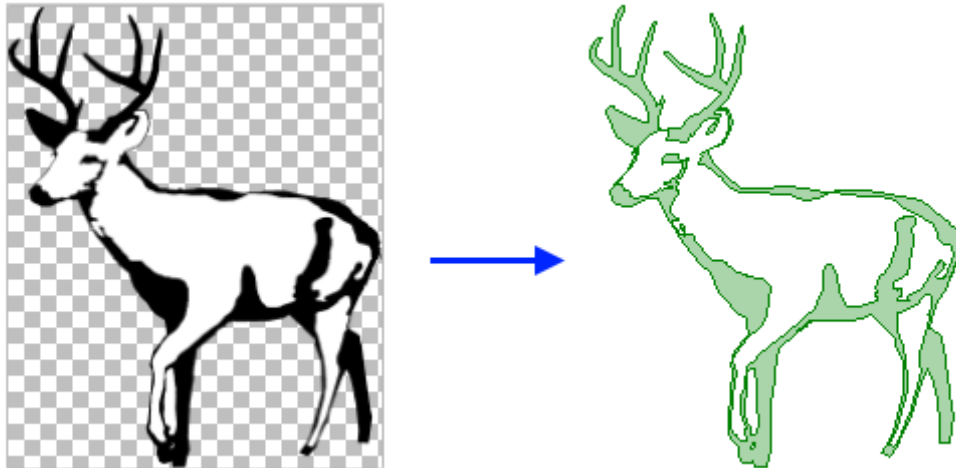
Released April 2018

New Features and Enhancements

The following enhancements are available in the ProNest 13.0 release:

CAD Import

Importing raster images

ProNest can import raster image files and convert them to vector parts that can be cut on your machine.

The following image file formats can be imported:

- PNG
- JPG, JPEG
- BMP
- GIF

New settings enable you to fine-tune the image prior to import, to get the best result. Once the image has been converted to a part, it can be nested and output.

For images that will be cut more than once, you can easily save a vector version of the part in the part library or save it as a DXF or DWG file using 2D CAD.

Nesting and Utilization

Manual Nesting: Smart Drag

Manual nesting is now much more fluid and intuitive. With existing parts on the nest, fitting in parts along the contours of other nested parts and the plate edges is much easier.
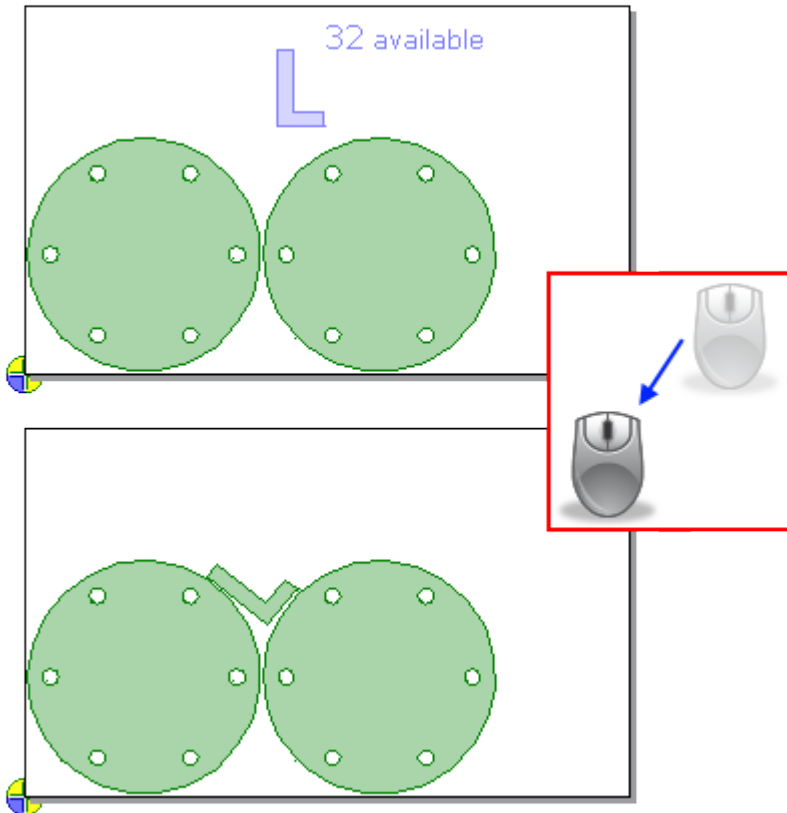
When dragging a part on the nest, the part will bump up against existing parts or plate edges and then rotate to fit. You can glide the part along edges of neighboring parts to get the best result. This makes it easy to fit parts into empty spaces on the nest, without the need to manually rotate the part to just to right angle.

Benefits include:

- Faster and easier to create tighter nests during manual nesting
- Achieve better plate utilization, especially when nesting around the contours of larger parts

This feature can be quickly turned on or off in the main window.

Ignore leads during nesting

In previous versions of ProNest, during manual and automatic nesting, you could either take all part leads into account or ignore leads altogether, regardless of lead size or the plate material. Taking all leads into account during nesting sometimes results in extra, unneeded space between parts.
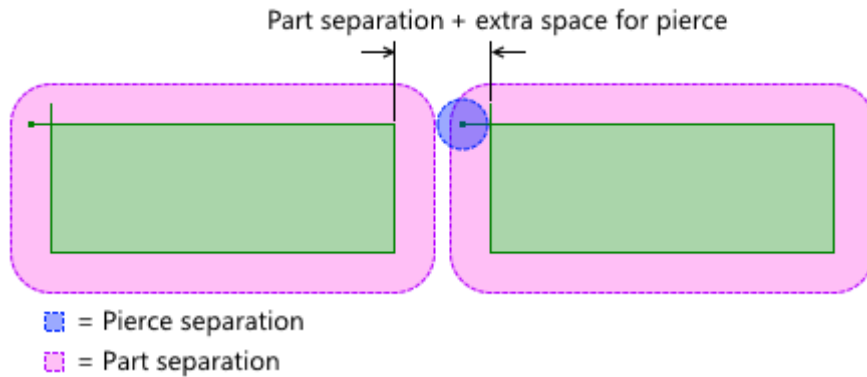
Now, you can ignore only certain leads during nesting, based on whether they're smaller than a user-defined percentage of the part separation.
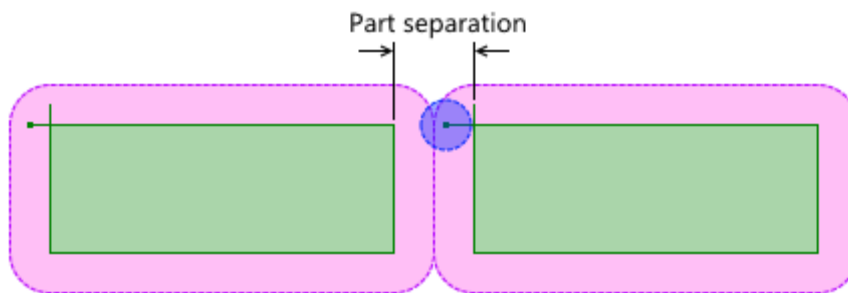
This is useful in cases where some leads/pierces are insignificant and should not affect the spacing between parts, but others are larger and should not be ignored, in case they cause real conflicts with neighboring parts.

Benefits include:

- Better material utilization by nesting parts closer together. In some scenarios, this may be the difference between a part set requiring two plates and fitting everything on a single plate.

- Reduce instances where there are conflicts shown on the nest, but there wouldn't actually be a problem during cutting.

- No need to enter Settings and turn the **Ignore part leads** setting on or off prior to nesting, based on material or lead length.

- Useful for both laser and plasma cutting.

Lead styles

Any lead style is available and can be selected in all areas of ProNest, including the Edit Part List, the main window, and the Leads settings spreadsheet. Previously, custom lead styles had to be applied manually in Advanced Edit.

## Productivity Modules

Fly cutting

Designed for laser cutting on thin materials, fly cutting is a method of cutting the aligned edges of *different* interior profiles together in a straight line. Pierces are made without slowing down or stopping the cutting head.
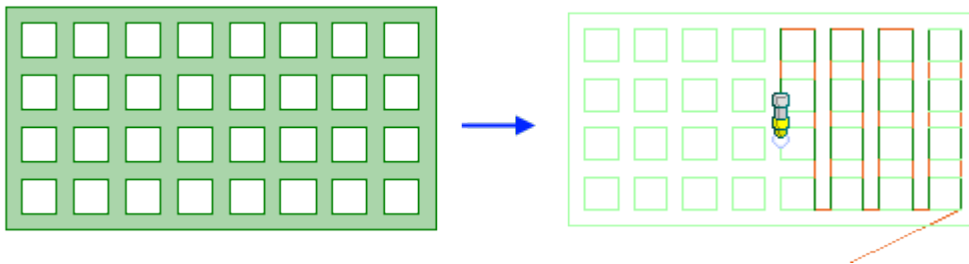
This technique provides faster cutting with fewer slowdowns required by changes of direction. Mechanical stress on the machine is reduced as the head is not making numerous changes in cut direction (compared with cutting interiors one by one).

Fly cutting straight edges

When fly cutting is enabled for a part, ProNest detects interior grids containing aligned edges. The interior sequence of the part is then changed so that aligned entities are cut one after the other in a line.
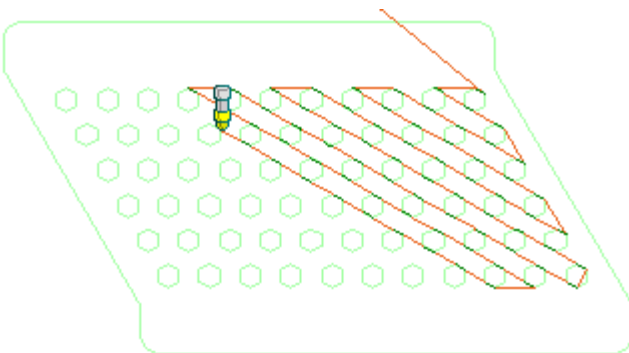
ProNest supports fly cutting for grids of various shapes, including square/rectangular, triangular, hexagonal, octagonal, and mixed.

Fast cutting arcs

For grids of aligned circles or slots, a similar fast cutting technique is used. Unlike with straight edges, these interiors are cut one by one, but pierces are still made without slowing down or stopping the cutting head.
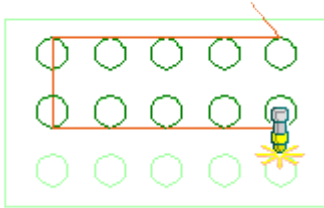
Skeleton Cut-Up: Integrate sequence with parts

A new setting allows skeleton lines and exterior part profiles to be cut together in groups. All skeleton lines intersecting the exterior profile will be cut first, followed by the exterior profile. The sequence will then move on to the next group of skeleton lines and parts.
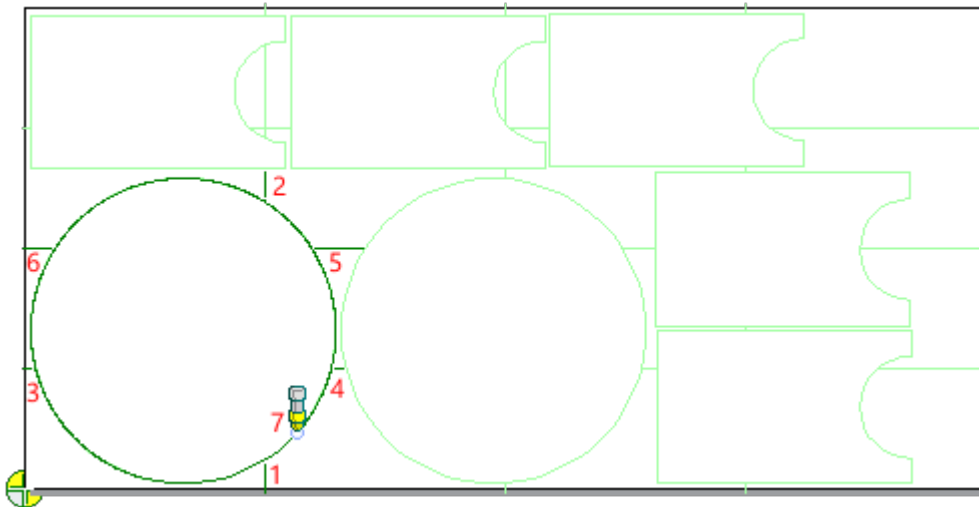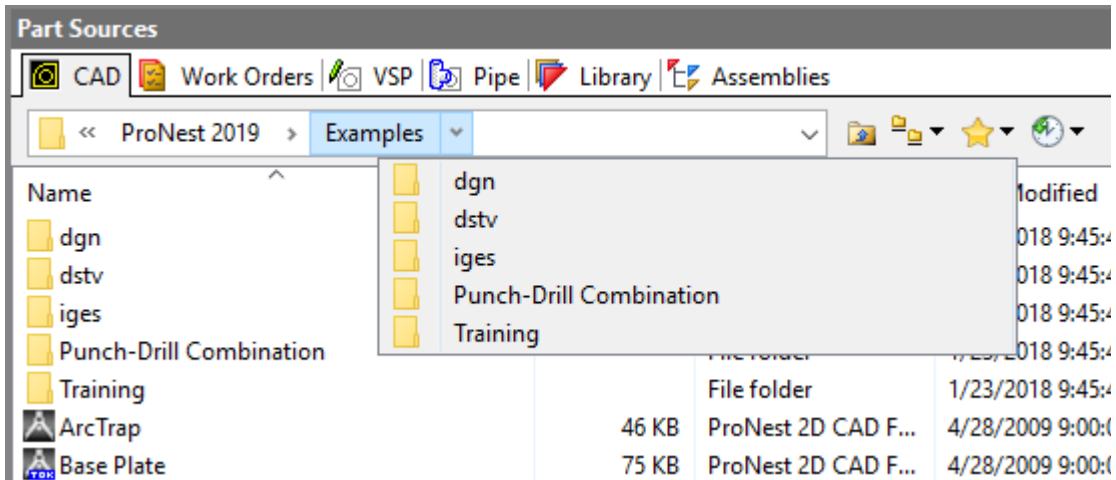

Selecting this setting can reduce part defects due to plate movement and lessen the chance of collisions with tipped-up parts.
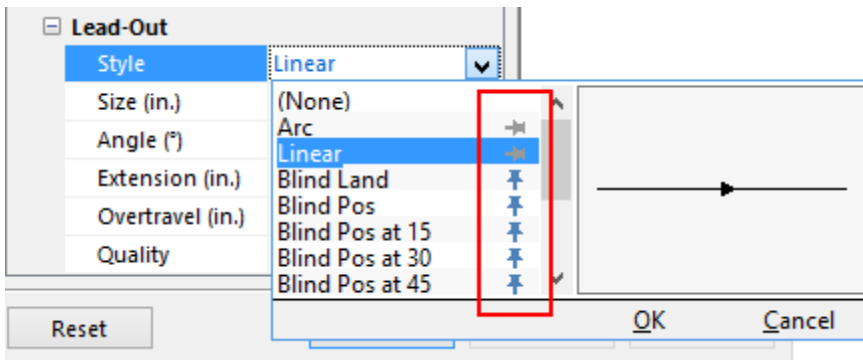
Ease of Use

Breadcrumbs style folder navigation

Several areas in ProNest now use a more modern breadcrumb style folder explorer, making it faster and easier to browse for folders and files.

Pin lead styles

When selecting leads, commonly used lead styles can now be pinned to the top of the list, for quick access.

Pinned lead styles are saved with the ProNest machine, so that machine-specific lead styles will always be readily available.

Assembly information

- If a part belongs to a ProNest assembly, the assembly name is now displayed in the Properties pane in the main window.

- Assembly name can now be selected when color-filling parts based on a part property. This can help you easily identify parts that belong to a particular assembly on a nest.

Job setup

Safe zones

A default safe zone scheme can now be applied for an entire machine. The default safe zones are applied to all plates, prior to nesting. For machines that have stops or clamps to hold the plate in place, you no longer have to apply a safe zone scheme each time a new nest is created or a plate is added to the plate list.

- You can specify a maximum material thickness to use default safe zones, which is useful for thicker plate that may not require clamps.

Design2Fab

Design2Fab Integration

Roundtrip Design2Fab integration has been added to ProNest, enabling you to leave a ProNest job, add fittings in Design2Fab and return to the ProNest job with the patterns added to the part list, ready for nesting and NC output.

(Introduced in ProNest 2017 version 12.1.3.)

Performance

History database performance improvements

For ProNest 2019, history data is stored in the main production database, instead of an external History database. History views are now schema-bound, resulting in several benefits:

- Faster queries that run against both production and history data. Speed improvements are particularly noticeable on larger databases with lots of history data.
- Prevention of unauthorized or accidental database changes.
- Faster installation of ProNest database.

3D Process Modules

SOLIDWORKS® Interface

For some sheet metal parts, ProNest automatically creates additional bend lines which are placed parallel to and on either side of a main bend line. Previously, these bend lines were always placed on the same layer as the main bend line during import. Now, you can have these bend lines placed on a different layer from the main bend line, in case they should be mapped to a different process or excluded altogether.

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To set a custom layer name for automatically-generated bend lines, edit the following section in the User.Prefs file:

> [SolidWorks]
>
> AutoBendLineLayerName=MyLayerName

Enterprise Modules

Work orders: Re-using nests

For cases where the same parts are cut repeatedly, you can now process the same nest over and over using different Work Orders for the parts in the nest. This allows nests that have good utilization and productivity to be re-used as needed.

Production Manager

Improvements to the Production Manager module include:

- A new preference allows nesting on remnants before the original nest is completed
- Production Manager editor is now available from the Data tab in ProNest or as a shortcut in the Windows Start menu.
- The Production Manager user interface updated with newer look and feel.
- Production Kiosk time data is now shown in the grid view.

Production Kiosk

The Production Kiosk (formerly called "Kiosk App") has a number of improvements:

- Kiosk production data, including machine, operator, start/stop time, and elapsed time, is now available in the ProNest database.
- Multiple machines are supported.
- Current nests in production can be temporarily placed on hold, in case a priority job needs to be cut.
- Multiple instances of the Production Kiosk application can be run from a single PC.
- Plate size and inventory information is displayed for available nests.
- Redesigned user interface for better ease of use.

STRUMIS

Nesting System Optimization for STRUMIS now supports the "Must nest all parts" setting. When selected, all optimization results are discarded unless all parts can be nested. (Originally introduced in ProNest 2017 12.1.1).