



Geng St arted User Guide

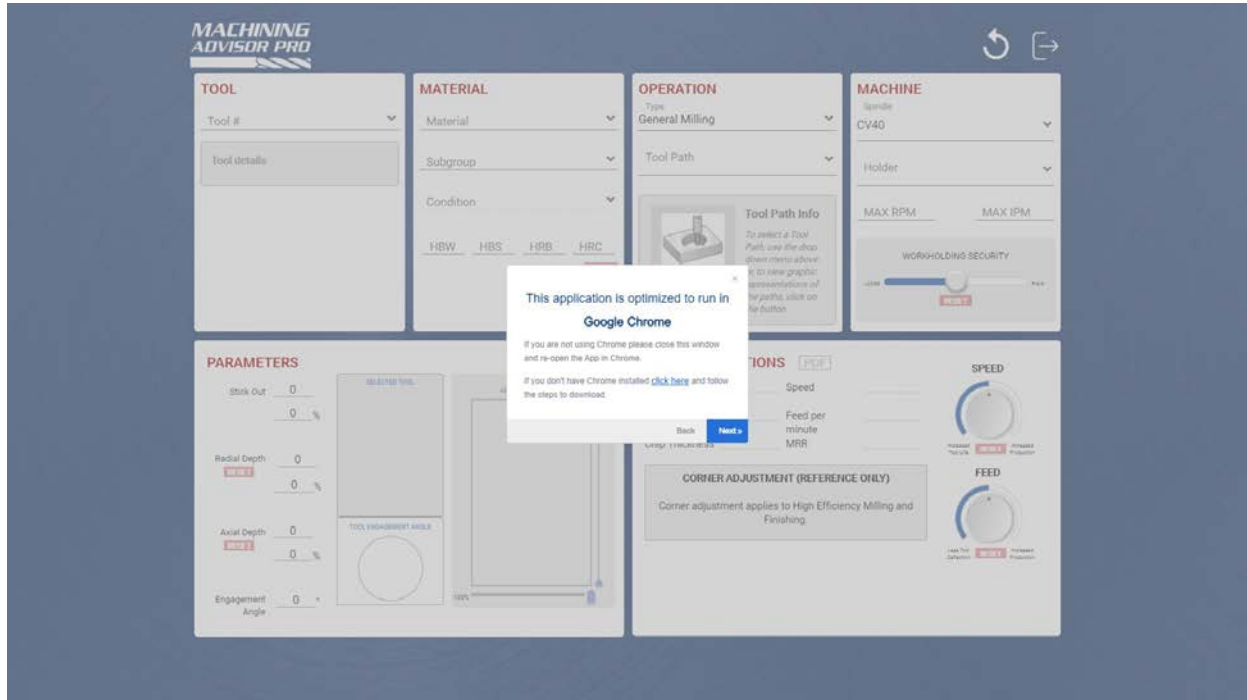
Last updated: 1/25/2018

The screenshot displays the Machining Advisor Pro software interface. The interface is organized into several panels:

- TOOL:** Includes fields for Tool #, Tool details, and a dropdown menu.
- MATERIAL:** Includes fields for Material, Subgroup, and Condition, with tabs for HBW, HBS, HRC, and HRC.
- OPERATION:** Includes fields for Type (General Milling) and Tool Path, along with a Tool Path Info section.
- MACHINE:** Includes fields for Spindle (CV40) and Holder, and a WORKHOLDING SECURITY slider.
- PARAMETERS:** Includes fields for Stick Out, Radial Depth, Axial Depth, and Engagement Angle, along with a diagram of a tool and workpiece.
- CONDITIONS:** Includes fields for Speed, Feed per minute, and MRR, along with a diagram of a tool and workpiece.
- CORNER ADJUSTMENT (REFERENCE ONLY):** Includes a text box stating "Corner adjustment applies to High Efficiency Milling and Finishing".

A central dialog box with the text "Welcome to Machining Advisor Pro" is overlaid on the interface. The dialog box has a close button (X) in the top right corner. Below the text, there is a blue button labeled "Next >".

Browser Compatibility



For best user experience, please use Google Chrome.

The screenshot displays the MACH Advisor software interface, which is used for tool selection and configuration. The interface is divided into several sections:

- TOOL:** Shows the selected tool as 00030 (H45AL-SR-20125). A tooltip prompts the user to "Enter your tool number" and provides a "More Information" link. The tool details include: Brand: Helical, Tool: End Mills for Aluminum - 2 Flute - Square, Type: 5/16" Inch, Units: Inches, Profile: Square Corner, Cutting Diameter: 0.125, Length of Cut: 0.375, Flutes: 2, Shank Diameter: 0.125, and Coating: UNCOATED.
- MATERIAL:** Includes dropdown menus for Material, Subgroup, and Condition. The Condition section has tabs for HBW, HBS, HRB, and HRC, with a "SELECT" button.
- OPERATION:** Shows the operation type as General Milling and a dropdown for Tool Path. A "Tool Path Info" section includes a 3D model of the tool and a note: "To select a Tool Path, use the drop down menu above or to view graphic representations of the path, click on the button."
- MACHINE:** Includes dropdown menus for Spindle (CV40) and Holder. It also features MAX RPM and MAX IPM fields, and a WORKHOLDING SECURITY slider with a "SELECT" button.
- PARAMETERS:** Contains input fields for Stroke Out, Radial Depth, Axial Depth, and Engagement Angle, each with a "SELECT" button. It also includes visual diagrams for "SELECTED TOOL" and "WORKHOLDING SECURITY".
- RECOMMENDATIONS:** Provides fields for Surface Speed, Feed per tooth, and Chip Thickness, with corresponding Speed, Feed per minute, and MRR dropdowns. It also includes a "CORNER ADJUSTMENT (REFERENCE ONLY)" section with a note: "Corner adjustment applies to High Efficiency Milling and Finishing." Two circular gauges for SPEED and FEED are shown, with "SELECT" buttons and "Low Tool Engagement" / "High Tool Engagement" labels.

Enter your tool number.

The screenshot displays the MACHING ADVISOR PRO software interface. A central pop-up window prompts the user to "Enter or select a material". The interface is divided into several sections:

- TOOL:** Tool # 00030 (H45AL-SR-20125). Tool details include Brand: HPCOR, Type: End Mills for Aluminum, 2 Flute - Square, and various dimensions.
- MATERIAL:** Material: Aluminum Alloy, Cast. Subgroup and Condition are also visible.
- OPERATION:** Type: General Milling. Tool Path is also visible.
- MACHINE:** Spindle: CV40. Holder is also visible. MAX RPM and MAX IPM are shown, along with a WORKHOLDING SECURITY slider.
- PARAMETERS:** Includes fields for Stabk Out, Radial Depth, Axial Depth, and Engagement Angle. It also features diagrams for "SELECTED TOOL" and "WORKHOLDING SECURITY".
- RECOMMENDATIONS:** Includes fields for Surface Speed, Feed per tooth, and Chip Thickness. It also features a "CORNER ADJUSTMENT (REFERENCE ONLY)" section with a slider.

Enter or select a material

Material Subgroup

The screenshot displays the MACHINING ADVISOR PRO software interface. A central pop-up window titled "MATERIAL" is open, showing the selection process for a material subgroup. The pop-up contains the following information:

- Material:** Aluminum Alloy.
- Subgroup:** 242 - Copper series cast alu...
- Condition:** T571
- Properties:** HBW 0, HBS 85, HRB 45, HRC 0.

A tooltip above the pop-up reads "Enter or select a material subgroup." The background interface shows various sections:

- TOOL:** Tool # 00030 (H45AL-SR-20125), Tool details, Brand: Helical, Type: 4AT Helix, Holder: Square Shank, Cutting Diameter: 0.153, Length of Cut: 0.279, Flutes: 2, Shank Diameter: 0.123, Coating: (MILITARY).
- MACHINE:** Spindle: CY40, Holder, MAX RPM, MAX IPM, WORKHOLDING SECURITY.
- PARAMETERS:** Shank Out, Radial Depth, Axial Depth, Engagement Angle, with visual diagrams for "SELECTED TOOL" and "ADJUSTED MATERIAL".
- RECOMMENDATIONS:** Surface Speed, Feed per tooth, Chip Thickness, Speed, Feed, and a "CORNER ADJUSTMENT (REFERENCE ONLY)" section.

Enter or select a material subgroup.

The screenshot displays the MACHING ADVISOR PRO software interface. The main content is divided into several panels:

- TOOL**: Shows tool details for tool # 00030 (H45AL-SR-20125).
- MATERIAL**: Shows material selection for Aluminum Alloy. A dropdown menu is open, displaying a condition T571 and a table of hardness values:

HBW	HBS	HRB	HRC
0	85	45	0

A tooltip above the dropdown menu reads: "If applicable, select a condition and/or adjust the hardness values. Click Next to Continue".

- MACHINE**: Shows machine details for Spindle CV40 and Holder.
- PARAMETERS**: Includes input fields for Stick Out, Radial Depth, Axial Depth, and Engagement Angle. It also features diagrams for BALL END MILL and ASSOCIATED ALIQUOT, and a section for TOOL PRESENTATION ANGLE.
- RECOMMENDATIONS**: Includes input fields for Surface Speed, Feed per tooth, and Chip Thickness. It also features a CORNER ADJUSTMENT (REFERENCE ONLY) section with a note: "Corner adjustment applies to High Efficiency Milling and Finishing".
- WORKHOLDING SECURITY**: A slider control for adjusting workholding security.

If applicable, select a condition and/or adjust the hardness values

The screenshot displays the MACHING ADVISOR PRO software interface. The main window is divided into several sections:

- TOOL:** Tool # 00030 (H45AL-SR-20125). Details include Brand: HSS-Co, Type: End Mills for Aluminum, 2 Flute - Square, and various dimensions.
- MATERIAL:** Aluminum Alloy, Cast. Subgroup: 242 - Copper series cast alu... Condition: T571. A table shows properties: 1800, 185, 145, 145, 0.
- MACHINE:** Spindle CV40, Holder Weldon. MAX RPM and MAX IPM are shown with a WORKHOLDING SECURITY slider.
- PARAMETERS:** Stick Out: 0.5 (400%), Radial Depth: 0.075 (59.98%), Axial Depth: 0.1938 (155%), Engagement Angle: 101.51°. Includes visualizations for SELECTED TOOL and TOOL ENGAGEMENT ANALYSIS.
- RECOMMENDATIONS:** PDF icon. Surface Speed: 1,844.709 (Speed: 56,370), Feed per tooth: 0.0016 (Feed per minute: 176.0), Chip Thickness: 0.0016 (MRR: 2,558). Includes CORNER ADJUSTMENT (REFERENCE ONLY) section.
- TOOL PATH:** A pop-up window titled "Select your tool path." with a "More Information" link, "Back" button, and "Next >" button. It shows "Traditional Roughing" selected and a "Zig Zag Tool Path" visualization with the text: "Equidistant parallel lines that fit with the cut area.".

Select your tool path.

The screenshot displays the MACHINING ADVISOR PRO software interface. The main content is organized into several panels:

- TOOL:** Tool # 00030 (H45AL-SR-20125). Tool details include Brand: HPCOR, Type: End Mills For Aluminum, 2 Flute - Square, Flute Angle: 40° Index, Profile: Square Corner, Cutting Diameter: 0.125, Length of Cut: 0.375, Flutes: 2, Shank Diameter: 0.125, Coating: UNCOATED.
- MATERIAL:** Material: Aluminum Alloy, Cast. Subgroup: 242 - Copper series cast alu... Condition: T571. Performance metrics: 130W: 0, 180: 85, 180: 45, 180: 0.
- OPERATION:** Type: General Milling. Tool Path: Traditional Roughing. A Zig-Zag Tool Path diagram is shown with the note: "Equivalent parallel line that fit with the cut area".
- PARAMETERS:** Stick Out: 0.5 (400%), Radial Depth: 0.075 (59.98%), Axial Depth: 0.1938 (155%), Engagement Angle: 101.51°. Includes diagrams for Selected Tool, HPCOR H45AL-SR-20125, and Tool Engagement Angle.
- RECOMMENDATIONS:** PDF icon. Surface Speed: 1,844.709, Speed: 56,370, Feed per tooth: 0.0016, Feed per minute: 176.0, Chip Thickness: 0.0016, MRR: 2.558. Includes Corner Adjustment (Reference Only) section: "Corner adjustment applies to High Efficiency Milling and Finishing".
- WORK-HOLDING SECURITY:** A slider control ranging from 100% to 400%, currently set at 150%.
- Machine Selection:** A dropdown menu is open, showing options for Spindle (CV40) and Holder (Weldon). A tooltip above the dropdown reads: "Enter or select your Spindle and Holder from the drop downs."

Enter or select your Spindle and Holder from the drop downs.

Machine Specifics

MACHINING ADVISOR PRO

TOOL

Tool #
00030 (H45AL-SR-20125)

Tool details

Brand: HSSAR
Type: End Mills for Aluminum - 2 Flute - Square
Size: 40° Helix
Coating: Soltec
Profile: Square Corner
Cutting Diameter: 0.125
Length of Cut: 0.271
Flutes: 2
Shank Diameter: 0.125
Coating: TiN/AlTiN

MATERIAL

Material
Aluminum Alloy, Cast

Subgroup
242 - Copper series cast alu...

Condition
T571

HSW	HSB	HFB	HBC
0	85	45	0

OPERATION

Type
General Milling

Tool Path
Traditional Roughing

Zig-Zag Tool Path
*Equivalent parallel lines that fit with the cut area.**

Optional: Enter Max RPM/ Max IPM and adjust workholding for more precise recommendations.

[More Information](#)

Back Next

MAX RPM MAX IPM

WORKHOLDING SECURITY

Slider: LOWEST HIGHEST

PARAMETERS

Stick Out: 0.5
400 %

Radial Depth: 0.075
59.98 %

Axial Depth: 0.1930
155 %

Engagement Angle: 101.51°

RECOMMENDATIONS PDF

Surface Speed	1,844.799	Speed	56,370
Feed per tooth	0.0018	Feed per minute	176.0
Chip Thickness	0.0015	MRR	2.558

CORNER ADJUSTMENT (REFERENCE ONLY)

Corner adjustment applies to High Efficiency Milling and Finishing

SPEED FEED

Adjusters: Increase/Decrease, Low/High, Optimal

Optional: Enter Max RPM/ Max IPM and adjust workholding for more precise recommendations.

The screenshot displays the MACHINING ADVISOR PRO software interface. The top navigation bar includes the logo and a refresh icon. The main interface is divided into several panels:

- TOOL:** Tool # 00030 (H45AL-SR20125). Tool details include Brand: HSS-E, Type: End Mills For Aluminum, 2 Flute - Square, Length of Cut: 3.371, Flutes: 2, Shank Diameter: 0.125, Cutting Speed: 1200.
- MATERIAL:** Material: Aluminum Alloy, Cast. Subgroup: 242 - Copper series cast alu... Condition: T571. HRC: 45, HB: 0.
- OPERATION:** Type: General Milling. Tool Path: Traditional Roughing. A diagram shows a Zig-Zag Tool Path with the note: "Equivalent parallel flow that fit with the cut area".
- MACHINE:** Spindle: CV40. Holder: Weldon. MAX RPM and MAX IPM are shown. A WORK-HOLDING SECURITY slider is set to approximately 50%.
- PARAMETERS:** Stick Out: 0.5 (400%). Radial Depth: 0.075 (59.98%). Axial Depth: 0.1938 (155%). Engagement Angle: 101.51°. Includes a diagram of the selected tool and a TOOL ENGAGEMENT ANGLE diagram.
- RECOMMENDATIONS:** PDF icon. Surface Speed: 1,844.709. Speed: 56,370. Feed per tooth: 0.0016. Feed per minute: 176.0. Chip Thickness: 0.0016. MRR: 2.558. Includes a CORNER ADJUSTMENT (REFERENCE ONLY) section with a note: "Corner adjustment applies to High Efficiency Milling and Finishing".

An optional dialog box is overlaid on the PARAMETERS panel, stating: "Optional: adjust specific parameters to better reflect your application." with a "More Information" link and "Back" and "Next" buttons.

Optional: Adjust specific parameters to better reflect your application.

Adjusting Parameters

The screenshot displays the MACHINING ADVISOR PRO software interface, which is organized into several panels:

- TOOL:** Shows Tool # 00030 (H45AL-SR-20125) and Tool details including Brand (HSS-E), Flute (2nd Flute Per Flute), Flute Length (2.75), Flute Width (0.125), Profile (Square Corner), Cutting Diameter (1.125), Length of Cut (0.875), and Flute T.
- MATERIAL:** Shows Material Aluminum Alloy, Cast, Subgroup 242 - Copper series cast alu..., and Condition T571. It includes a table for hardness values: HRC (0), HB (85), HRB (45), and HV (0).
- OPERATION:** Shows Type General Milling, Tool Path Traditional Roughing, and a Zig-Zag Tool Path diagram with the note "Equivalent parallel lines that fit with the cut area".
- MACHINE:** Shows Spindle CV40, Holder Weldon, and a WORK-HOLDING SECURITY slider.
- RECOMMENDATIONS:** Lists Surface Speed (1,844.709), Speed (56,370), Feed per tooth (0.0016), Feed per minute (176.0), and Chip Thickness (0.0016), MRR (2.558). It also includes a CORNER ADJUSTMENT (REFERENCE ONLY) section.
- PARAMETERS:** A central panel with a "Back" and "Next" navigation bar. It displays: Stick Out (0.5), Radial Depth (0.075), Axial Depth (0.1938), and Engagement Angle (101.51). It also features a "SELECTED TOOL" diagram, a "TOOL ENGAGEMENT ANGLE" diagram, and an "ADJUSTABLE" slider.

An optional tooltip is visible over the PARAMETERS section, stating: "Optional: update values in this column to adjust recommendations."

Optional: Update values in this column to adjust recommendations.

The screenshot displays the MACHINING ADVISOR PRO software interface, which is organized into several panels:

- TOOL:** Shows Tool # 00030 (H45AL-SR-20125) and tool details including brand (HSS), type (End Mills for Aluminum - 2 Flute - Square), length of cut (3.375), and diameter (0.75).
- MATERIAL:** Shows Material Aluminum Alloy, Cast, Subgroup 242 - Copper series cast alu..., and Condition T571. It includes a table of properties:

100%	10%	10%	10%
0	85	45	0
- OPERATION:** Shows Type General Milling, Tool Path Traditional Roughing, and a Zig-Zag Tool Path diagram with the note "Equivalent parallel lines that fit with the cut area".
- MACHINE:** Shows Spindle CV40, Holder Weldon, and Workholding Security sliders for MAX RPM and MAX IPM.
- PARAMETERS:** A central panel with a blue border containing:
 - Stick Out: 0.5
 - Radial Depth: 0.075 (59.98%)
 - Axial Depth: 0.1938 (155%)
 - Engagement Angle: 101.51°
 - Selected Tool diagram
 - ADOC/RDOC ADJUSTER slider (0% to 100%)
 - TOOL ENGAGEMENT ANGLE diagram
- RECOMMENDATIONS:** A PDF icon and a table of recommended values:

Surface Speed	1,844.709	Speed	56,370
Feed per tooth	0.0016	Feed per minute	176.0
Chip Thickness	0.0016	MRR	2.558
- CORNER ADJUSTMENT (REFERENCE ONLY):** A section for corner adjustment with a slider and a note: "Corner adjustment applies to High Efficiency Milling and Finishing".
- SPEED and FEED:** Two circular gauges for Speed and Feed, each with a slider and a "MAX" button.

An optional callout box states: "Optional: ADOC and RDOC values can also be updated using these sliders".

Optional: ADOC and RDOC values can also be updated using the sliders on the side and bottom of the ADOC/RDOC Adjuster

Tool Engagement Angle Graphic

The screenshot displays the MACHINING ADVISOR PRO software interface, which is organized into several panels:

- TOOL:** Tool # 00030 (H45AL-SR-20125). Details include Stock Metric, Type: AIR Tools, Holder: Square Shank, Cutting Diameter: 0.153, Length of Cut: 0.279, Flutes: 2, Shank Diameter: 0.123, and Coating: UNCOATED.
- MATERIAL:** Material: Aluminum Alloy, Cast. Subgroup: 242 - Copper series cast alu... Condition: T571. Parameters: HBW: 0, HRB: 85, HV0.05: 45, HV0.1: 0.
- OPERATION:** Type: General Milling. Tool Path: Traditional Roughing. Includes a "Zig-Zag Tool Path" graphic with the note: "Equivalent parallel lines that fit with the cut area".
- MACHINE:** Spindle: CY40. Holder: Weldon. Controls for MAX RPM and MAX IPM. A WORKHOLDING SECURITY slider is present.
- PARAMETERS:** Stock Out: 0.5. Radial Depth: 0.59 (155%). Axial Depth: 0.1938 (155%). Engagement Angle: 101.51. Includes a "TOOL ENGAGEMENT ANGLE" graphic and an "ADJUST" slider. A tooltip states: "Optional: TEA can also be adjusted with the graphic below".
- RECOMMENDATIONS:** Includes a PDF icon and a table of values: Surface Speed: 1,844.709 (Speed: 56,370); Feed per tooth: 0.0016 (Feed per minute: 176.0); Chip Thickness: 0.0016 (MRR: 2.558). Also includes "CORNER ADJUSTMENT (REFERENCE ONLY)" and "FEED" controls.

Optional: Tool Engagement Angle can also be adjusted with the TEA graphic.

The screenshot displays the MACHING ADVISOR PRO software interface, which is organized into several panels:

- TOOL:** Tool # 00030 (H45AL-SR-20125). Details include Brand (Walter), Tool (Ball Mills for diameters 3 Flute / Round), Type (AlN balls), Size (mm), Profile (Round Corner), Cutting Diameter (3.15), Length of Cut (3.7), Flute J, Break Spans (0.1), and Coating (UNCOATED).
- MATERIAL:** Material Aluminum Alloy, Cast. Subgroup 242 - Copper series cast alu... Combination T571. Properties: HBW 0, H22 85, H22 45, HRC 0.
- OPERATION:** Type General Milling, Tool Path Traditional Roughing.
- MACHINE:** Machine CV40, Machine Weldon. MAX RPM and MAX IPM are indicated.
- PARAMETERS:** Stick Out 0.5 (400%), Radial Depth 0.075 (59.98%), Axial Depth 0.1938 (155%), Engagement Angle 101.51°. Includes visualizations for tool engagement and workpiece geometry.
- RECOMMENDATIONS:** A table of optimized values:

Parameter	Value	Unit
Surface Speed	1,844.709	Speed
Feed per tooth	0.0016	Feed per minute
Chip Thickness	0.0016	MRR
Speed	56,370	
Feed per minute	176.0	
MRR	2.558	

Below the table is a section for CORNER ADJUSTMENT (REFERENCE ONLY) with a note: "Corner adjustment applies to High Efficiency Milling and Finishing." There are also two circular gauges for SPEED and FEED with "IMPROVE" buttons and arrows indicating adjustment directions.

A pop-up message in the center reads: "Your customized recommendations appear here once the first 4 sections are complete." with a "More Information" link and "Back" / "Next" navigation buttons.

Your customized recommendations appear once the first 4 sections are complete.

Refine your Parameters

The screenshot displays the MACHING ADVISOR PRO software interface, which is organized into several panels:

- TOOL:** Tool # 00030 (H45AL-SR-20125). Tool details include Brand: HSS-Co, Type: End Mills For Aluminum - 2 Flute - Square, Size: 1/4" Dia, Flute: Square Groove, Cutting Diameter: 0.125, Length of Cut: 3.375, Flutes: 2, Shank Diameter: 0.125, Coating: TiAlN/TiCN.
- MATERIAL:** Material: Aluminum Alloy, Cast. Subgroup: 242 - Copper series cast alu... Condition: T571. A table shows values for 1100, 1105, 1106, and 1107, with 85, 45, and 0 respectively.
- OPERATION:** Type: General Milling. Tool Path: Traditional Roughing. A Zig-Zag Tool Path diagram is shown with the note: "Equivalent path lines that fit with cut area".
- MACHINE:** Spindle: CV40, Holder: Weldon. MAX RPM and MAX IPM fields are present.
- PARAMETERS:** Stick Out: 0.5, Radial Depth: 0.075 (59.98%), Axial Depth: 0.1938 (155%), Engagement Angle: 101.51°. Includes visualizations for SELECTED TOOL and TOOL ENGAGEMENT ANALYSIS.
- RECOMMENDATIONS:** Surface Speed: 1,844.709, Speed: 56,370, Feed per tooth: 0.0016, Feed per minute: 176.0, Chip Thickness: 0.0016, MRR: 2.558. Includes a PDF icon and a CORNER ADJUSTMENT (REFERENCE ONLY) section.
- SPEED & FEED DIALS:** Two circular dials for adjusting Speed and Feed. The Speed dial has a "Next" button above it. Both dials have "INCREASE" and "DECREASE" buttons.

An optional pop-up window is visible over the recommendations section, containing the text: "Optional: optimize for tool life or production using the dials below" and a "More Information" link.

Optional: optimize for tool life or production using the Speed & Feed dials.

Export your Recommendations

The screenshot displays the Machining Advisor Pro interface, which is organized into several panels:

- TOOL:** Tool # 00030 (H45AL-SR-20125). Details include Brand: Helical, Tool: End Mills for Aluminum - 2 Flute - Square, Type: 45° Helix, Profile: Square Corner, Cutting Diameter: 0.125, Length of Cut: 0.375, Flutes: 2, Shank Diameter: 0.125, Coating: UNCOATED.
- MATERIAL:** Material: Aluminum Alloy, Cast. Subgroup: 242 - Copper series cast alu... Condition: T571. Properties: HBW 0, HBS 85, HRB 45, HRC 0.
- OPERATION:** Type: General Milling, Tool Path: Traditional Roughing. A "Zig Zag Tool Path" visualization is shown.
- MACHINE:** Spindle: CV40, Holder: Weldon. MAX RPM and MAX IPM are indicated.
- PARAMETERS:** Stick Out: 0.5 (400%), Radial Depth: 0.075 (59.98%), Axial Depth: 0.1938 (155%), Engagement Angle: 101.51%. Includes visualizations for "SELECTED TOOL" and "ADJUSTABLE ADJUSTER".
- RECOMMENDATIONS:** Surface Speed: 1,844.709, Speed: 56,970, Feed per tooth: 0.0016, Feed per minute: 176.0, Chip Thickness: 0.0016, MRR: 2.558. Includes "CORNER ADJUSTMENT (REFERENCE ONLY)" and "FEED" controls.

An optional feature is highlighted: "Optional: click PDF to download your recommended parameters." This is shown as a tooltip over a "PDF" button in the Recommendations panel and a "PDF" button in the Machine panel.

Optional: Click PDF to download your recommended parameters.