



## Modern Machine Shop Top Shops 2020

### Welcome to Top Shops!

This year marks the tenth annual *Modern Machine Shop* Top Shops benchmarking survey, which highlights the attributes shared by leading U.S. machining businesses.

Again this year, participants fully completing the survey will receive additional value in reports customized for their own shop. The reports are designed to make it quick and easy to know where you stand compared to the Top Shops benchmarking group and to other shops. Answer the survey questions, provide your email address and select 'Submit Responses' at the end of the survey to receive at a later date your custom report packed with useful perspective. You will automatically link to [mmsonline.com](http://mmsonline.com) once your survey is successfully submitted. If you need to gather data or you get interrupted, you may close and return to the survey on this same device as many times as you like until you select 'Submit Responses' on the final page. As always, all responses will remain confidential.

Additionally, if you'd like to enter the Top Shops Honors Program competition, be sure to provide your email address as well as all the other contact information requested. Shops selected for the Honors Program will be profiled in an upcoming issue of *Modern Machine Shop* magazine. Do not provide contact information if you'd like to remain anonymous.

This survey must be completed by February 28, 2020. It is important that you answer all of the questions in order to ensure data quality and to receive your customized report. If you have questions, please contact Derek Korn, Executive Editor—*Modern Machine Shop* at [dkorn@mmsonline.com](mailto:dkorn@mmsonline.com).



## Modern Machine Shop Top Shops 2020

### Company & Contact Information

**1. To receive a custom report of results, please fully complete the survey and provide your email address here:**

**2. To enter the 2020 Top Shops Honors Program, also provide the following contact information:**

Name:	<input type="text"/>
Title:	<input type="text"/>
Company:	<input type="text"/>
Address:	<input type="text"/>
City:	<input type="text"/>
State:	<input type="text" value="-- select state --"/>
ZIP:	<input type="text"/>
Company website:	<input type="text"/>
Company telephone number:	<input type="text"/>



## Modern Machine Shop Top Shops 2020

### Before we get started...

Most questions refer to 'your shop,' and here's how we'd like you to think about it...

If your company has more than one location, please answer all survey questions in terms of the scope for which you have the most access to operations and performance data. In some cases, that is multiple locations combined. In other cases, it is just one location, often the location where the person completing the survey works. Either is acceptable since questions are asked in ways that make data from all size businesses comparable.

If, however, you have equal access to site-specific operations and performance data for more than one location, please answer the survey based on the one location that is most representative of your business overall. In other words, provide answers based on a 'typical' location rather than one that is particularly strong or particularly weak.

*Most important is that you be consistent throughout the survey as far as the location(s) to which your responses apply.*

**Please also note that questions pertain to 2019 unless indicated otherwise.**



## Modern Machine Shop Top Shops 2020

### Profile Information

***Please see the instructions at each question for the acceptable format for entering your data. If you receive an error message, please check your response for the correct format. It is also possible your response is considered outside the reasonable range for that question.***

**3. Approximately how many part numbers (SKUs) did your business produce in 2019?**

*Please enter a whole number only; no decimals, commas or other symbols.*

**4. Approximately how many total parts did your business produce in 2019?**

*Please enter a whole number only; no decimals, commas or other symbols.*

**5. Approximately what was your median batch size in 2019?**

*Please enter a whole number only; no decimals, commas or other symbols.*

**6. Which dimensional volume(s) describe the parts your facility produces on a regular basis? (Select ALL that apply)**

- Fitting with a 6" cube
- 12" cube
- 16" cube
- 24" cube
- 36" cube
- 48" cube
- Larger than 48" cube

**7. What is the tightest tolerance to which your shop machines parts on a regular basis? Select the option that comes closest.**

- +/- 0.0001 inch
- +/- 0.0005 inch
- +/- 0.0010 inch
- +/- 0.0050 inch
- +/- 0.0100 inch



## Modern Machine Shop Top Shops 2020

### Profile Information

**8. What category best describes your shop's relation to its customer base? (Select **ONE response**)**

- Captive shop (component of a larger company)
- Contract shop (independent shop, 50% or more business is from contract work)
- Job shop (independent shop, 50% or less business is from contract work)

**9. Which of the following industries does your shop serve? (Select **ALL that apply**)**

- |  |   |
|--|---|
| <input type="checkbox"/> Aerospace   | <input type="checkbox"/> Machinery/equipment manufacturing                    |
| <input type="checkbox"/> Appliances  | <input type="checkbox"/> Medical  |
| <input type="checkbox"/> Automotive  | <input type="checkbox"/> Military   |
| <input type="checkbox"/> Die/mold  | <input type="checkbox"/> Off-road & construction machinery                    |
| <input type="checkbox"/> Electronics, computers & telecommunications           | <input type="checkbox"/> Oil- & gas-field & mining machinery                  |
| <input type="checkbox"/> Forming & fabricating (non-automotive)                | <input type="checkbox"/> Power generation (turbines, batteries, wiring, etc.) |
| <input type="checkbox"/> Furniture manufacturing                               | <input type="checkbox"/> Pumps, valves & plumbing products                    |
| <input type="checkbox"/> Industrial motors, hydraulics & mechanical components |   |
| <input type="checkbox"/> Other (please specify)                                |   |



## Modern Machine Shop Top Shops 2020

### Profile Information

**10. Which of the industries served do you typically consider THE PRIMARY contributors to your shop's business? (Select up to 3)**

- Aerospace
- Appliances
- Automotive
- Die/mold
- Electronics, computers & telecommunications
- Forming & fabricating (non-automotive)
- Furniture manufacturing
- Industrial motors, hydraulics & mechanical components
- Machinery/equipment manufacturing
- Medical
- Military
- Off-road & construction machinery
- Oil- & gas-field & mining machinery
- Power generation (turbines, batteries, wiring, etc.)
- Pumps, valves & plumbing products
- [Insert text from Other]



## Modern Machine Shop Top Shops 2020

### Profile Information

**11. Of which trade associations was your shop a member in 2019? (Select ALL that apply)**

- American Mold Builders Association (AMBA)
- National Tooling & Machining Association (NTMA)
- Precision Machined Products Association (PMPA)
- Precision Metalforming Association (PMA)
- Technology & Manufacturing Association (TMA)
- Not a member of these associations





# Modern Machine Shop Top Shops 2020

## Machining Technology

### 12. Which types of machining equipment does your shop use? *(Select ALL that apply)*

- |   |  |
|---|--|
| <input type="checkbox"/> Broaching machines                               | <input type="checkbox"/> Machining centers, vertical             |
| <input type="checkbox"/> Drilling machines                                | <input type="checkbox"/> Milling machines (non-CNC)              |
| <input type="checkbox"/> Flexible manufacturing systems (FMS)             | <input type="checkbox"/> Plasma or oxy-fuel CNC cutting machines |
| <input type="checkbox"/> Gear-cutting machines                            | <input type="checkbox"/> Sawing machines                         |
| <input type="checkbox"/> Grinding machines (for regrinding cutting tools) | <input type="checkbox"/> Swiss-type lathes                       |
| <input type="checkbox"/> Grinding machines (for workpieces)               | <input type="checkbox"/> Turning centers, horizontal CNC         |
| <input type="checkbox"/> Honing machines                                  | <input type="checkbox"/> Turning centers, vertical CNC           |
| <input type="checkbox"/> Laser-cutting machines                           | <input type="checkbox"/> Twin-spindle CNC turning machines       |
| <input type="checkbox"/> Lathes (non-CNC)                                 | <input type="checkbox"/> Waterjet machines                       |
| <input type="checkbox"/> Machining centers, horizontal                    | <input type="checkbox"/> Wire, sinker, small-hole EDM            |
| <input type="checkbox"/> Other (please specify)                           |  |

### 13. Which machining strategies does your shop use? *(Select ALL that apply)*

- |   |   |
|---|---|
| <input type="checkbox"/> Five-axis machining (full contouring)  | <input type="checkbox"/> Hard turning                       |
| <input type="checkbox"/> Five-axis machining (positioning only) | <input type="checkbox"/> High-speed machining               |
| <input type="checkbox"/> Four-axis machining (full contouring)  | <input type="checkbox"/> Lights-out or unattended machining |
| <input type="checkbox"/> Four-axis machining (positioning only) | <input type="checkbox"/> Micromachining                     |
| <input type="checkbox"/> Hard milling                           | <input type="checkbox"/> Prototyping                        |
| <input type="checkbox"/> Other (please specify)                 |   |



## Modern Machine Shop Top Shops 2020

### Machining Technology

**14. Does your shop have 3D additive manufacturing/part printing capability?**

- Yes, we have a 3D printer or additive manufacturing machine
- No, we do not have this capability



## Modern Machine Shop Top Shops 2020

### Machining Technology

**15. Describe your shop's 3D printer. (Select all that apply)**

- Desktop 3D printer for plastic parts
- Standalone and/or industrial 3D printer for plastic parts
- Standalone additive manufacturing machine for metal parts
- Hybrid machine tool combining additive manufacturing and machining

**16. What does your shop produce using 3D printing or additive manufacturing capability? (Select ALL that apply)**

- Look-and-feel prototypes to validate designs
- Functional prototypes to test parts prior to production
- Tooling and fixturing used internally
- Tooling and fixturing produced for customers
- Short-run initial production
- Full production of end-use parts

**17. If your shop utilizes 3D printing or additive manufacturing capabilities in any other way(s), please describe the way(s) here. If not, please enter 'none.'**



## Modern Machine Shop Top Shops 2020

### Machining Technology

#### 18. Which tooling strategies does your shop use? *(Select ALL that apply)*

- |   |   |
|---|---|
| <input type="checkbox"/> Carbide recycling program                        | <input type="checkbox"/> Shopfloor tool vending systems           |
| <input type="checkbox"/> Coolant management system                        | <input type="checkbox"/> Tool balancing                           |
| <input type="checkbox"/> Coolant chiller                                  | <input type="checkbox"/> Tool inventory management/usage tracking |
| <input type="checkbox"/> Custom/specialty tooling                         | <input type="checkbox"/> Tool presetting                          |
| <input type="checkbox"/> High-pressure coolant delivery                   | <input type="checkbox"/> Tool regrinding                          |
| <input type="checkbox"/> Live tooling on lathes                           | <input type="checkbox"/> Through-tool coolant delivery            |
| <input type="checkbox"/> Minimum quantity lubrication                     | <input type="checkbox"/> None of the above                        |
| <input type="checkbox"/> On-machine probing for tool breakage/measurement |   |

#### 19. Which workholding strategies does your shop use? *(Select ALL that apply)*

- |  |   |
|--|---|
| <input type="checkbox"/> Hydraulic/pneumatic-actuated fixtures | <input type="checkbox"/> Quick-change devices |
| <input type="checkbox"/> Indexers/rotary tables                | <input type="checkbox"/> Tombstones           |
| <input type="checkbox"/> Magnetic chucks                       | <input type="checkbox"/> Vacuum chucks        |
| <input type="checkbox"/> Multiple workpiece fixturing          | <input type="checkbox"/> None of the above    |
| <input type="checkbox"/> Pallet changers                       |   |



## Modern Machine Shop Top Shops 2020

### Machining Technology

#### 20. Which types of software does your shop use? *(Select ALL that apply)*

- |   |  |
|---|--|
| <input type="checkbox"/> CAD systems—2D           | <input type="checkbox"/> Job-estimating software                   |
| <input type="checkbox"/> CAD systems—3D           | <input type="checkbox"/> PLM software                              |
| <input type="checkbox"/> CMM programming software | <input type="checkbox"/> SPC/quality management software           |
| <input type="checkbox"/> ERP/MRP software         | <input type="checkbox"/> Toolpath simulation/verification software |
| <input type="checkbox"/> CAM programming software | <input type="checkbox"/> None of the above                         |

#### 21. Which types of inspection equipment does your shop use? *(Select ALL that apply)*

- |  |  |
|--|--|
| <input type="checkbox"/> CMM in quality department                   | <input type="checkbox"/> Portable measuring arms |
| <input type="checkbox"/> Laser trackers                              | <input type="checkbox"/> Shopfloor CMMs          |
| <input type="checkbox"/> Microscopes                                 | <input type="checkbox"/> Vision systems          |
| <input type="checkbox"/> On-machine probes for workpiece measurement | <input type="checkbox"/> None of the above       |
| <input type="checkbox"/> Optical comparators                         |  |

#### 22. Which types of ancillary equipment does your shop use? *(Select ALL that apply)*

- |   |   |
|---|---|
| <input type="checkbox"/> Ballbar calibration device | <input type="checkbox"/> Machine condition monitoring (i.e. monitoring spindle, environmental conditions, etc.) |
| <input type="checkbox"/> Bar feeders                | <input type="checkbox"/> Machine connectivity (Ethernet, MTConnect)   |
| <input type="checkbox"/> Bar pullers                | <input type="checkbox"/> Machine mist control units   |
| <input type="checkbox"/> Chip handling equipment    | <input type="checkbox"/> Marking/engraving equipment  |
| <input type="checkbox"/> Heat treating equipment    | <input type="checkbox"/> None of the above  |

**23. Which surface finishing treatments did your shop offer/perform in 2019?**

- Plating
- Anodizing
- Black oxide
- Passivation
- Chem film
- Other (please specify)
- Liquid coating
- Powder coating
- Electrocoating
- No finishing offered



## Modern Machine Shop Top Shops 2020

### Machining Technology

**24. Which metallic materials does your shop machine? (Select ALL that apply)**

- |  |   |
|--|---|
| <input type="checkbox"/> Aluminum                | <input type="checkbox"/> High-temperature alloys (not titanium) |
| <input type="checkbox"/> Brass                   | <input type="checkbox"/> Mild steels                            |
| <input type="checkbox"/> Bronze                  | <input type="checkbox"/> Stainless steels                       |
| <input type="checkbox"/> Cast iron               | <input type="checkbox"/> Titanium                               |
| <input type="checkbox"/> Compacted graphite iron | <input type="checkbox"/> Tool steel                             |
| <input type="checkbox"/> Copper                  | <input type="checkbox"/> None                                   |
| <input type="checkbox"/> Other (please specify)  |   |

**25. Which non-metallic materials does your shop machine? (Select ALL that apply)**

- Carbon-fiber-reinforced plastic (CFRP)
- Ceramic
- General plastics
- Medical-grade plastics
- Wood
- None
- Other (please specify)



## Modern Machine Shop Top Shops 2020

### Machining Technology

***Please see the instructions at each question for the acceptable format for entering your data. If you receive an error message, please check your response for the correct format. It is also possible your response is considered outside the reasonable range for that question.***

**26. How many CNC machine tools did your shop have in production (non-tool room) in 2019?**

***Please enter a whole number only; no decimals, commas or other symbols.***

**27. What is the average age (in years) of the CNC machine tools currently in use on your shop floor?**

***Please enter a whole number only; no decimals, commas or other symbols.***

**28. What was your shop's average capacity utilization in 2019?**

**There is no single formula that fits how every shop figures capacity utilization. For this question, please think about what you consider to be at full capacity for your shop. Then enter as a percentage the degree to which your shop's capacity was typically in use relative to being at full capacity in 2019.**

***You may enter a decimal, but no other signs or symbols.***

***Example: if your shop was typically using capacity that represented about 85% of full capacity in 2019, meaning your shop typically had 15% capacity available, you would enter 85 for capacity utilization.***





# Modern Machine Shop Top Shops 2020

## Shopfloor Practices and Performance

**29. Which of the following practices and improvement methodologies does your shop use? (Select ALL that apply OR the last option only)**

- 5S workplace organization
  - Benchmarking
  - Cellular manufacturing
  - Continuous improvement program
  - Just-in-time movement of materials
  - Kaizen events/blitzes
  - Kanban and pull systems
  - Overall Equipment Effectiveness (OEE) monitoring and analysis
  - Poka yoke (error prevention)
  - Other (please list)
- Quality certifications (i.e. ISO, NADCAP, etc.)
  - Single-minute exchange of dies (SMED)
  - Six sigma
  - Theory of constraints
  - Total productive maintenance
  - Total quality management
  - Value-stream mapping
  - No formal methodology

**30. Does your shop use robots to perform part loading/unloading for any of your machine tools?**

- Yes
- No



## Modern Machine Shop Top Shops 2020

### Shopfloor Practices and Performance

**31. Are any of the robots your shop uses collaborative models (using sensor technology to work safely alongside humans without traditional fencing, guarding, etc.)?**

Yes

No



## Modern Machine Shop Top Shops 2020

### Shopfloor Practices and Performance

**Please see the instructions at each question for the acceptable format for entering your data. If you receive an error message, please check your response for the correct format. It is also possible your response is considered outside the reasonable range for that question.**

**32. What was your shop's order lead time in 2019, defined as the average number of days from receipt of an order to delivery to customer.**

*You may enter a decimal, but no other signs or symbols.*

*Example: For 6 days, you would enter 6. For 6 1/2 days, you would enter 6.5.*

**33. What was your shop's on-time delivery rate in 2019, defined as the percentage of goods delivered on the timing committed. Enter your number without a % sign.**

*You may enter a decimal, but no other signs or symbols.*

*Example: For 80%, you would enter 80. For 80.5%, you would enter 80.5.*

**34. What was your shop's average setup time in 2019, defined as the time, in minutes, between the completion of the last good piece of one run and the first good piece of the next run.**

*Please enter a whole number only; no decimals, commas or other symbols.*

*Example: If the last good piece of Run A ends at 11:45, and the first good piece of Run B ends at 12:10, you would enter 25.*

**35. What was your shop's finished product first-pass quality yield in 2019, defined as the percentage of product that passed inspection on first attempt; i.e. no re-work was required. Enter your number without a % sign.**

*You may enter a decimal, but no other signs or symbols.*

*Example: For 80%, you would enter 80. For 80.5%, you would enter 80.5.*



## Modern Machine Shop Top Shops 2020

### Shopfloor Practices and Performance

**36. What was your shop's scrap and rework COST percentage, defined as the cost of 2019 scrapped or reworked materials as a percentage of 2019 total dollar sales.**

**Enter your number between 0 and 100 without a % sign.**

*You may enter a decimal, but no other signs or symbols.*

*Example: If \$550 worth of materials were scrapped and sales were \$50,000, you would enter 1.1.*

**37. What was your shop's scrap and rework UNIT percentage, defined as the number of 2019 scrapped or reworked parts as a percentage of 2019 total parts produced. Enter your number between 0 and 100 without a % sign.**

*You may enter a decimal, but no other signs or symbols.*

*Example: If 83 parts were scrapped or reworked, and 1000 parts were produced, you would enter 8.3.*

**38. What was your shop's machine usage in 2019, defined as the average number of hours machines are in production in a 24-hour day.**

*You may enter a decimal, but no other signs or symbols. Your answer should be between 1 and 24.*

*Example: For 8 hours, you would enter 8. For 8 1/2 hours, you would enter 8.5.*

**39. What was your shop's spindle utilization time in 2019, defined as the average amount of in-cut time as a percentage of the average machine total up-time. Enter your number without a % sign.**

*You may enter a decimal, but no other signs or symbols.*

*Example: If total machine up-time is 22 on average, and average in-cut time is 17, you would enter 77.*



## Modern Machine Shop Top Shops 2020

### Shopfloor Practices and Performance

**40. Installing a Web-enabled, shop-wide machine monitoring system has been suggested as the first step towards data-driven manufacturing/Industrial Internet of Things concepts. Please select the statement that best describes your shop regarding machine monitoring. (Select ONE response)**

- We have a machine monitoring system in place for some or all machine tools.
- We plan to install a machine monitoring system.
- We do not plan to install a machine monitoring system.



## Modern Machine Shop Top Shops 2020

### Shopfloor Practices and Performances

**41. Briefly describe your shop's machine monitoring system. *(Please be specific)***

**42. When do you expect to begin installation of a machine monitoring system at your shop? *(Select ONE response)***

- First half of 2020
- Second half of 2020
- 2021 or later



## Modern Machine Shop Top Shops 2020

### Shopfloor Practices and Performance

**43. Briefly explain one new technology, machining strategy or strategic initiative that has been most influential in contributing to the overall success of your shop in recent years. *(Please be specific)***



## Modern Machine Shop Top Shops 2020

### Business Strategy and Performance

**44. Which of the following supply chain practices does your shop use? (Select ALL that apply)**

- |   |   |
|---|---|
| <input type="checkbox"/> Access to customer forecasts                           | <input type="checkbox"/> Just-in-time deliveries to customers               |
| <input type="checkbox"/> Certification of major suppliers                       | <input type="checkbox"/> Sharing forecasts with suppliers                   |
| <input type="checkbox"/> Customer satisfaction surveys                          | <input type="checkbox"/> Vendor-managed or -owned inventories               |
| <input type="checkbox"/> Design for manufacturability (DFM) advice to customers | <input type="checkbox"/> Vendor-managed or -owned inventories for customers |
| <input type="checkbox"/> Just-in-time deliveries from suppliers                 | <input type="checkbox"/> None of these                                      |

**45. Which of the following are effective sales/marketing tools for your shop? (Select ALL that apply)**

- |  |  |
|--|--|
| <input type="checkbox"/> Blogs                       | <input type="checkbox"/> Print advertising (e.g., magazines)             |
| <input type="checkbox"/> Brochures/catalogs          | <input type="checkbox"/> Sales personnel                                 |
| <input type="checkbox"/> Customer tours of your shop | <input type="checkbox"/> Social media (Facebook, Twitter, YouTube, etc.) |
| <input type="checkbox"/> Email promotions            | <input type="checkbox"/> Trade shows/events                              |
| <input type="checkbox"/> Online - advertising        | <input type="checkbox"/> None of these                                   |
| <input type="checkbox"/> Online - company website    |  |

**46. Please select the social media channels your shop actively used in 2019 OR select the last option only. (Select ALL that apply)**

- |                                    |  |
|------------------------------------|--|
| <input type="checkbox"/> Facebook  | <input type="checkbox"/> Pinterest                                 |
| <input type="checkbox"/> Twitter   | <input type="checkbox"/> Snapchat                                  |
| <input type="checkbox"/> LinkedIn  | <input type="checkbox"/> YouTube                                   |
| <input type="checkbox"/> Instagram | <input type="checkbox"/> Did not actively use social media in 2019 |





## Modern Machine Shop Top Shops 2020

### Business Strategy and Performance

**Please see the instructions at each question for the acceptable format for entering your data. If you receive an error message, please check your response for the correct format. It is also possible your response is considered outside the reasonable range for that question.**

**47. How many active customers did your shop have in 2019?**

*Please enter a whole number only; no decimals, commas or other symbols.*

**48. What was your shop's customer retention rate for 2019? This is the number of your shop's customers in 2019, who were also customers in 2018, as a percentage of your 2018 total customer base. Enter your number without a % sign.**

*You may enter a decimal, but no other signs or symbols.*

*Example: If you had 50 customers in 2019 who were also customers in 2018, and a total of 60 customers in 2018, your customer retention rate would be 83%, and you would enter 83.*

**49. What percentage of new business quoted in 2019 was actually booked? Enter your number without a % sign.**

*You may enter a decimal, but no other signs or symbols.*

*Example: If you quoted 80 new jobs in 2019 and booked 40, you would enter 50.*

*You may enter decimals but no other signs or symbols.*



## Modern Machine Shop Top Shops 2020

### Business Strategy and Performance

**50. What were your shop's dollar investments in the following areas in 2019?**

*Please enter whole numbers only; decimals, commas, other symbols, and words are not accepted.*

*Enter '0' if your shop made no investment in a category.*

Capital equipment (not tooling)

Tooling

Employee costs (all wages, benefits, etc.)

Materials and components

**51. Does your shop lease or own its manufacturing facility?**

- Lease
- Own
- Both



## Modern Machine Shop Top Shops 2020

### Business Strategy and Performance

**52. Please provide your shop's total revenue for 2019. Providing your shop's revenue confidentially enables us to perform useful calculations on your behalf.**

*Please enter a whole number only; no decimals, commas, or other symbols.*

**53. Please provide your shop's 2019 gross sales per number of machines in dollars.**

*You may enter a decimal, but no other signs or symbols.*

*Example: If your shop's 2019 gross sales were \$5000 and you have 2 machines, you would enter 2500.*

**54. Please provide your shop's 2019 gross sales per number of employees in dollars.**

*You may enter a decimal, but no other signs or symbols.*

*Example: If your shop's 2019 gross sales were \$5000 and you have 20 employees, you would enter 250.*

**55. Were any capital investments made in your shop in 2019? (Select ONE only)**

- Yes
- No
- Not sure



## Modern Machine Shop Top Shops 2020

### Business Strategy and Performance

**56. Please provide your shop's 2019 capital equipment expenditure as a percentage of gross sales. Enter your number without a % sign.**

**Formula = [(2019 cap equip exp / 2019 gross sales) \* 100]**

**Example: If your shop's capital equipment expenditure was \$500 and your gross sales were \$5000, you would enter 10.**

**57. Please provide your shop's percent change in annual sales from 2018 to 2019 using the following formula. Round to the nearest whole number, using a minus sign if necessary.**

**Formula = [(2019 gross sales - 2018 gross sales) / 2018 gross sales] \* 100**

**Example: If your 2019 sales were \$5000 and your 2018 sales were \$4000, you would enter 25.**

**58. Please *estimate* your shop's percent change in annual sales from 2019 to 2020 using the following formula. Round to the nearest whole number, using a minus sign if necessary.**

**Formula = [(2020 estimated sales - 2019 gross sales) / 2019 gross sales] \* 100**

**Example: If your estimated 2020 sales are \$4000 and your 2019 sales were \$5000, you would enter -20.**



## Modern Machine Shop Top Shops 2020

### Business Strategy and Performance

**59. What, if any, type(s) of machining or manufacturing capital equipment does your shop plan to purchase in 2020? If none, please enter 'none' here.**

***(Please be specific)***



## Modern Machine Shop Top Shops 2020

### Business Strategy and Performance

60. Please provide your shop's 2019 net income (after tax) relative to gross sales, rounded to the nearest whole number. Include a minus sign if your number is negative.

**Formula = [(2019 net income / 2019 gross sales) \* 100]**

*Example: If your 2019 net income was negative \$300 and your gross sales were \$5000, you would enter -6.*

61. Please provide your shop's 2019 net income (after tax) relative to total assets, rounded to the nearest whole number. This is ROA on your shop's accounting balance sheet. Include a minus sign if your number is negative.

**Formula = [(2019 net income / 2019 total assets) \* 100]**

*Example: If your 2019 net income was negative \$300 and your total assets were \$5000, you would enter -6.*

62. Please provide your shop's 2019 overall profit margin percentage. Round to the nearest whole number and enter without a % sign.



## Modern Machine Shop Top Shops 2020

### Business Strategy and Performance

**63. Below are business practices that your shop may or may not apply. Please select all that you consider to have been in place at your shop in 2019.**

- Regularly scheduled, formal review of the state of the business
- Periodic, informal review of the state of the business
- Business metric goal setting
- Business strategy development
- Regularly scheduled management/department head meetings
- Occasional management/department head meetings
- Steering board/committee including outside membership
- None of these



## Modern Machine Shop Top Shops 2020

### Human Resources

**64. Which human resource practices/programs did your shop use in 2019? (Select ALL that apply)**

- |  |   |
|--|---|
| <input type="checkbox"/> 401 (k) plan                      | <input type="checkbox"/> Formal employee training program |
| <input type="checkbox"/> Annual review and raise program   | <input type="checkbox"/> Formal safety/health program     |
| <input type="checkbox"/> Apprenticeship program            | <input type="checkbox"/> Leader/supervisor development    |
| <input type="checkbox"/> Bonus plan                        | <input type="checkbox"/> Paid medical benefits            |
| <input type="checkbox"/> Education reimbursements          | <input type="checkbox"/> Profit- or revenue-sharing plan  |
| <input type="checkbox"/> Employee ownership options (ESOP) | <input type="checkbox"/> Teaming/team-building practices  |
| <input type="checkbox"/> Other (please list)               |   |

**65. Which statement best describes your shop as far as skills relative to needs in 2019? (Select ONE only)**

- We experienced a shortage of skills needed and took action.
- We experienced a shortage of skills needed but did not take action.
- We did not experience a shortage of skills needed.





## Modern Machine Shop Top Shops 2020

### Human Resources

**66. Which actions did your shop take in 2019 to address a shortage of skills your shop needs? (Select ALL that apply)**

- |  |  |
|--|--|
| <input type="checkbox"/> Flexible schedules                | <input type="checkbox"/> Outreach program to broader populations (e.g. completed rehab; released from incarceration) |
| <input type="checkbox"/> Weekend only shifts               | <input type="checkbox"/> Billboard advertising   |
| <input type="checkbox"/> Signing incentives                | <input type="checkbox"/> Television advertising  |
| <input type="checkbox"/> Unlimited time off                | <input type="checkbox"/> Radio advertising   |
| <input type="checkbox"/> Mentor program                    | <input type="checkbox"/> Rewards for referrals   |
| <input type="checkbox"/> Cross training                    | <input type="checkbox"/> Increased automation  |
| <input type="checkbox"/> Attendance incentives             | <input type="checkbox"/> Provide, pay for, or subsidize transportation to/from shop                                  |
| <input type="checkbox"/> Outreach program at local schools | <input type="checkbox"/> Temp agency   |
| <input type="checkbox"/> 'Get paid to learn/train' program | <input type="checkbox"/> Temp-to-Perm hiring   |
| <input type="checkbox"/> Loosened hiring criteria          |  |
| <input type="checkbox"/> Other (please list)               |  |



## Modern Machine Shop Top Shops 2020

### Human Resources

***Please see the instructions at each question for the acceptable format for entering your data. If you receive an error message, please check your response for the correct format. It is also possible your response is considered outside the reasonable range for that question.***

**67. How many total people did your shop employ in 2019 at the location(s) to which your other answers apply?**

***Please enter a number only; no decimals, commas or other symbols.***

**68. How many employees were directly involved in manufacturing in 2019 at the location(s) to which your other answers apply?**

***Please enter a number only; no decimals, commas or other symbols.***

**69. What was your shop's annual labor turnover rate of shopfloor employees in 2019? This is the number of voluntary plus involuntary separations of shopfloor employees as a percentage of the total usual number of shopfloor staff. Enter your number between 0 and 100 without a % sign.**

***You may enter a decimal, but no other signs or symbols.***

***Example: If 6 shopfloor employees left in 2019 and your usual shopfloor staff totals 30, you would enter 20.***



## Modern Machine Shop Top Shops 2020

### Human Resources

**70. What is the average age of your shopfloor employees?**

*Please enter a number only; no decimals, commas or other symbols.*

**71. What is the average years of experience of your shopfloor employees?**

*Please enter a number only; no decimals, commas or other symbols.*

**72. How many shifts per day did your shop typically run in 2019?**

*Please enter a number only; no decimals commas or other symbols.*

**73. Were any of your employees part of a union in 2019?**

Yes

No



## Modern Machine Shop Top Shops 2020

### Human Resources

**74. What was the average hourly wage rate for non-management machine operators in 2019, excluding overtime?**

*Please enter a number. You may enter a decimal, but no other signs or symbols.*

**75. What was the average hourly wage rate for non-management set-up personnel in 2019, excluding overtime?**

*Please enter a number. You may enter a decimal, but no other signs or symbols.*

**76. What was the average hourly wage rate for non-management CAM programmers in 2019, excluding overtime?**

*Please enter a number. You may enter a decimal, but no other signs or symbols.*

**77. Did your shop have any accident incidents in 2019?**

- Yes
- No
- Not sure



## Modern Machine Shop Top Shops 2020

### Human Resources

**78. What was your shop's annual accident incident rate for shop floor employees in 2019? This is the number of shop floor accident incidents as a percentage of the total usual number of shop floor staff. Please enter your number between 0 and 100 without a % sign.**

*You may enter decimals but no other signs or symbols.*

*Example: if you had 2 accident incidents in 2019 and your usual shop floor staff totals 30, you would enter 6.67.*

**79. What was your shop's insurance Experience Modification Rate (EMR) for 2019?**

*You may enter decimals but no other signs or symbols.*

**80. Which of the following designated safety roles did your shop have in place in 2019?**

- Safety manager
- Safety committee
- None of these

**81. On average, about how many hours of operations training did each hourly paid, non-management shop floor employee receive in 2019? (Select ONE response)**

- less than 8 hours
- 8-20 hours
- 21-40 hours
- more than 40 hours



## Modern Machine Shop Top Shops 2020

This is the final page of the survey. Please double-check your responses for accuracy and completeness before you continue.

Once you click **Submit Responses** on this page. You will be taken to the *Modern Machine Shop* website. Your survey will be locked and submitted and you will not be able to change any of your answers. Before you click **Submit Responses**, you may close and return to the survey on this page to make changes as many times as you like until the deadline on February 28, 2020.