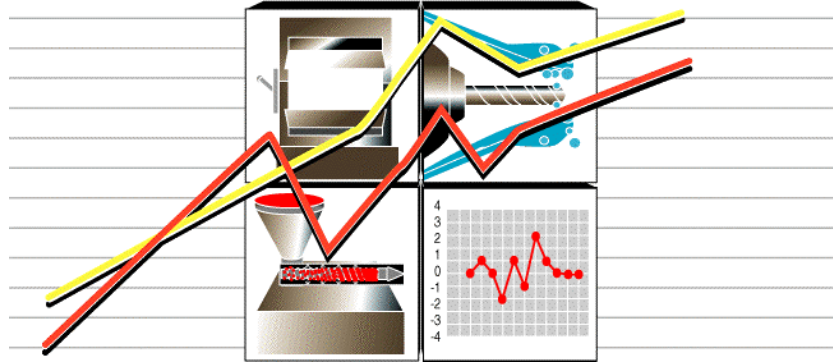




## Instructions for Using This Electronic Form



*At any time, you may elect to print this document and handwrite your responses, and return by either fax or by mail.*

This form is designed to be **completed electronically**. To do so, you will need the newest form of Adobe Acrobat Reader software, version 9.0. A free copy is available for download from their website at <http://get.adobe.com/reader>

You can use your mouse or the tab key to move from one answer box to another. (To make the answer boxes visible, look for and click on the "Highlight Fields" button in the upper right hand corner of your screen.)

If you are using an earlier version of acrobat, please be aware of the following:

You may not have the ability to save your answers as part of the file. Alternatively, you may find that you are able to save your answers **ONLY ONCE** and that if you reopen the file, you are unable to make further changes.

We recommend printing a blank copy of this form as backup or go to [www.performancebenchmarking.org](http://www.performancebenchmarking.org) to download another copy of this form.

To **submit** your data, you may:

Print a hard copy with your responses and fax or mail it to us.

Save your answers as part of the file and submit by email (using the button in the upper right hand corner). This opens a link to your email service (either outlook or internet mail) in order to create an email message with your responses attached. You may have to then open your email account and manually click the send button.

Save your answers and this file on your computer under another file name and attach it in a separate email to [pbs@mmtc.org](mailto:pbs@mmtc.org).

# PERFORMANCE BENCHMARKING

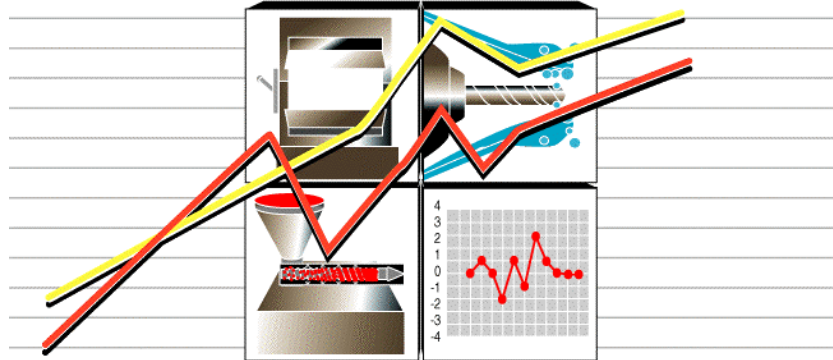
For Benchmarking Use Only

Site ID

Svkey

## Manufacturers of Machined Parts and Assemblies

(Valid through 4/15/11)



This form is for plants that cut or machine metal or advanced materials to make parts or products in volumes of at least several units. **If more than 50% of your sales are of one-off items such as dies, molds, or prototypes, this is the wrong form for you.** Please use our “Makers of Dies, Molds, or One-Off Machined Products” form instead. Call us or go to [www.performancebenchmarking.org](http://www.performancebenchmarking.org) to download the appropriate form.

- Please report all of your data for the same 12-month period, preferably calendar 2009.
- Please indicate currency units if not U.S. Dollars: \_\_\_\_\_
- If you operate more than one plant, please provide data for each plant separately.

### Company Contact Person

Contact Person: \_\_\_\_\_

Company Name: \_\_\_\_\_

\_\_\_\_\_  
*(This is how it will appear on your report)*

Address: \_\_\_\_\_

City/Town: \_\_\_\_\_

State/Province: \_\_\_\_\_

Country/Postal Code: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-Mail: \_\_\_\_\_

### Plant Location (If Different)

City/Town: \_\_\_\_\_

State/Province: \_\_\_\_\_

Country: \_\_\_\_\_

**Please return this questionnaire, and direct any questions to:**

Performance Benchmarking Service  
MMTC

47911 Halyard

Plymouth, MI 48170

(P) 888-414-6682

(F) 734-451-4202

E-mail [pbs@mmtc.org](mailto:pbs@mmtc.org)

<http://www.performancebenchmarking.org>

**Please keep a copy of this questionnaire in case we need to contact you for clarification.**



In the past year, roughly what percent of your sales were to customers in the following industries?	<ul style="list-style-type: none"> <li>• Automotive 33. _____ %</li> <li>• Aircraft/Aerospace 34. _____ %</li> <li>• Computer, Communications, or Electronic Equipment 35. _____ %</li> </ul>
In the past year, what percent of your sales were from:	<ul style="list-style-type: none"> <li>• Products you didn't make three years ago? 36. _____ %</li> <li>• Customers you didn't serve three years ago? 37. _____ %</li> <li>• Industries you didn't serve three years ago? 38. _____ %</li> </ul>
In the past year, what percent of your sales were shipped outside your home continent or trade area (e.g., North America/NAFTA, European Union, Asia/Pacific, etc.)?	39. _____ % sales exported beyond trade area
<b>Financial:</b> What were your total sales at this location in the past year? (Use calendar 2009 or your most recent fiscal year.) What were your sales <i>two years</i> earlier (i.e., calendar 2007)?	Annual Sales: <ul style="list-style-type: none"> <li>• Calendar 2009 or most recent fiscal year 40. \$ _____</li> <li>• Two years earlier (e.g., 2007) 41. \$ _____</li> </ul>
<b>Receivables:</b> On average during the past year, what were your receivables – the amount that your customers owed you?	42. \$ _____ average receivables
<b>Labor Costs:</b> What was your total payroll in the past year? ( <u>Include</u> payments for Social Security, Medicare, bonuses, and overtime. <u>Exclude</u> payments for health care, pension plans, and other fringe benefits. Also <u>exclude</u> any payments made to people who are not your employees.)  How much of payroll was for :	43. Hourly employees who work on the shop floor? \$ _____ 44. All others who work in the shop or factory (e.g., foremen & supervisors) <u>plus</u> all design/engineering staff? \$ _____ 45. All other non-shop, non-engineering employees? \$ _____ 46. Total Payroll (Q43+Q44+Q45) \$ _____
What were your expenses for health care, pension plans, workers' comp, and other fringe benefits not included in payroll? How much of those expenses were for:  <ul style="list-style-type: none"> <li>• Factory employees (working in the shop or in design/engineering)?</li> <li>• Non-factory employees?</li> </ul>	47. \$ _____ factory employees 48. \$ _____ non-factory employees
What did you spend for temporary or contract personnel in the past year? How much of your spending was for:  <ul style="list-style-type: none"> <li>• Factory temps (working in the shop or in design/engineering)?</li> <li>• Non-factory temps?</li> </ul>	49. \$ _____ factory temps 50. \$ _____ non-factory temps
<b>Purchases from Other Firms and Locations:</b> In the past year, how much did you spend on purchased raw material, parts, supplies, and perishable tools? (Do <u>not</u> include energy costs here.) Approximately what percent of these purchases were from supplier locations outside your home continent or trade area (e.g., North America/NAFTA, European Union, Asia/Pacific, etc.)?	51. \$ _____ raw material, parts, supplies 52. _____ % <b>not</b> from home continent or trade area
In the past year, how much did you spend on services you paid others to provide? How much of this spending was for:  <ul style="list-style-type: none"> <li>• Manufacturing-related services? (e.g., subcontracted heat treating, coating, grinding, outside repair &amp; maintenance, tooling design/build, design services, waste disposal, etc.) Include factory insurance and property taxes here.</li> <li>• Non-manufacturing-related services? (e.g., outside payroll, legal, and accounting services; phone, postage, shipping, sales commissions to non-employees, etc.)</li> </ul>	53. \$ _____ manufacturing services 54. \$ _____ non-manufacturing services
In the past year, how much did you spend on energy, across all fuels (electricity, natural gas, fuel oil, etc.)? What percent of that was for the factory (i.e., <i>not</i> for the office)?	55. \$ _____ energy costs 56. _____ % for factory
<b>Plant &amp; Equipment Costs:</b> In the past year, what were your expenses for depreciation, rent, and leases? Be sure to include: 1) depreciation & amortization of factory buildings & equipment you own; 2) factory rent; and 3) factory equipment lease payments.	57. \$ _____ depreciation, rent, and lease payments
Roughly what is the replacement value of all the machines and equipment you use? Please include the value of machines that you <u>lease</u> as well as those you <u>own</u> . By replacement value, we mean that if you use a 20-year-old machine, how much it would cost to replace it with a roughly identical 20-year-old machine. (Please do NOT include the value of your building or land, and do NOT report book value.)	58. \$ _____ machinery/equipment replacement value

<p><b>Order Processing, Scheduling and Delivery:</b> Is yours a business that requires almost no inventory? By this we mean that you buy little or no material, and do very quick-turnaround processing on parts or tools your customers send to you.</p>	<p>59. <input type="checkbox"/> Yes <input type="checkbox"/> No <b>[IF YES, SKIP TO QUESTION 62.]</b></p>																																			
<p>How much total inventory (raw, WIP, and final) did you have on hand at the <i>end</i> of the past year?</p>	<p>60. \$ _____ year-end inventory</p>																																			
<p>How much total inventory at the <i>beginning</i> of the year?</p>	<p>61. \$ _____ beginning of year inventory</p>																																			
<p>In the past year, what percent of your deliveries were made on time?</p>	<p>62. _____ % deliveries you made on time</p>																																			
<p>What percent of deliveries made by your suppliers were made on time?</p>	<p>63. _____ % deliveries your suppliers made on time</p>																																			
<p>How much did you spend in the past year on "premium freight" charges for which customers did not reimburse you?</p>	<p>64. \$ _____ premium freight</p>																																			
<p>In the past year, to what extent did you "bump" work from your planned production schedules in order to get "rush" or "hot" jobs done on time? That is, roughly what percent of lots or jobs required bumping another previously-scheduled lot or job?</p>	<p>65. _____ % of lots/jobs that bumped scheduled jobs <b>[If you do not schedule production, enter NA.]</b></p>																																			
<p>What percent of your sales were from orders you got over the internet?</p>	<p>66. _____ % of sales from internet orders</p>																																			
<p>What percent of your purchases were made over the internet?</p>	<p>67. _____ % of purchases made over internet</p>																																			
<p>Are your order entry and/or production scheduling system(s) integrated with EDI or the internet, so that orders can be processed and scheduled automatically, without human intervention?</p>	<p>68. <input type="checkbox"/> Yes <input type="checkbox"/> No</p>																																			
<p><b>Quoting and Estimating</b> Which cost components do you calculate separately for each new job? Which do you sometimes calculate, but only for unusual jobs? Which do you roll into your hourly billing rates? Check NA for any costs that do not apply to your business, or for items that are bought and owned directly by your customers ("consigned").</p> <ul style="list-style-type: none"> <li>- direct material</li> <li>- tooling, jigs, and fixtures</li> <li>- engineering/design labor</li> <li>- factory indirect labor</li> <li>- order processing</li> <li>- inventory holding costs</li> </ul>	<table border="0"> <thead> <tr> <th></th> <th>Calculated Separately for Each Job</th> <th>Calculated for Special Jobs</th> <th>Included in Usual Hourly Billing Rates</th> <th>NA</th> </tr> </thead> <tbody> <tr> <td>69.</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>70.</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>71.</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>72.</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>73.</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>74.</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>		Calculated Separately for Each Job	Calculated for Special Jobs	Included in Usual Hourly Billing Rates	NA	69.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	70.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	71.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	72.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	73.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	74.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Calculated Separately for Each Job	Calculated for Special Jobs	Included in Usual Hourly Billing Rates	NA																																
69.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																
70.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																
71.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																
72.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																
73.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																
74.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																
<p><b>Human Resources:</b> On average in the past year, how many individuals worked at this location? Please include part-time and contract labor. (If your employment counts changed significantly over the past year, please be careful to report AVERAGE, not YEAR-END counts.)</p>	<p>75. _____ average number of individuals working at this location</p>																																			
<p>How many of the personnel from your answer to Q75 were contractors, rather than people on your own payroll?</p>	<p>76. _____ contract personnel</p>																																			
<p>Over the past year, how many different people did you have <u>on your payroll</u> for at least one day? That is, how many W2's did you generate? <b>[Note: Your answer should not be less than Q75 minus Q76.]</b></p>	<p>77. _____ people on payroll for at least one day</p>																																			
<p>How many of your total personnel (from Q75) were hourly people who worked on the shop floor? How many of these shop floor workers (from Q78):</p> <ul style="list-style-type: none"> <li>• Were represented by labor unions?</li> <li>• Were covered by company-subsidized health insurance, for which you paid at least \$3000 per worker?</li> </ul>	<p>78. _____ hourly shop floor personnel</p> <p>Number of these shop floor workers:</p> <p>79. _____ in unions</p> <p>80. _____ for whom you paid &gt;= \$3000/yr in health premiums</p>																																			
<p>On average in the past year, how many hours per week did these shop workers (from Q78) work?</p>	<p>81. _____ hours per week, per worker</p>																																			
<p>What was the average wage rate, <u>excluding</u> overtime, for hourly shop employees (from Q78)? Please include all skill/seniority levels in this average.</p>	<p>82. Avg. hourly wage \$ _____ per hour</p>																																			
<p>In the past year, roughly what percent of your shop labor time was spent doing work manually or with hand tools? That is, what percent was spent doing manual or hand-tool assembly, packaging, finishing, or other light manufacturing work?</p>	<p>83. _____ % shop labor time doing manual or hand-tool work</p>																																			
<p>In the past year, what percent of your personnel at this location (from Q75) used a computer or programmable machine controller at least once a week as part of their job?</p>	<p>84. _____ % personnel using computer or programmable machine controller</p>																																			
<p><b>Design and Manufacturing:</b> In the past year, roughly what percent of your sales were from jobs where you designed the part or assembly?</p>	<p>85. _____ % sales from products of own design</p>																																			

How large is your production or factory area?	86. _____ sq. ft.
What percent of your cutting tools:	<ul style="list-style-type: none"> <li>• Are in quick-change holders? 87. _____ %</li> <li>• Are pre-set? 88. _____ %</li> </ul>
Do you have a bar code or similar system for tracking inventory or work-in-process?	89. Bar code or similar system? <input type="checkbox"/> Yes <input type="checkbox"/> No
How many regular-use, production metal removal machines do you have? Include your lathes, mills, EDMs, etc. Do not include any presses or any other non-metal removal equipment. Also do not include non-production or tryout machines.  Please describe their age and features.	Regular-use, metal removal machines 90. _____ Number of these machines that are: <ul style="list-style-type: none"> <li>• Less than 5 years old 91. _____</li> <li>• 5+ years, but upgraded 92. _____</li> <li>• 20+ years old and not upgraded 93. _____</li> <li>• NC or CNC 94. _____</li> <li>• Equipped with changeable pallets 95. _____</li> <li>• Integrated with automated material transfer system 96. _____</li> <li>• Programmable, and have their CAM programs generated from CAD models 97. _____</li> </ul>
<b>If Q97 &gt;0:</b> What percent of your CNC operators do CAM programming?	98. _____ % operators doing CAM programming <b>("NA" if you do not generate CAM programs from CAD files.)</b>
How many hours was your shop open for production last year? <i>Example:</i> Two 8-hr shifts per day * 5 days per week* 50 weeks = 4000. <b>The next 2 questions refer only to those machines included in Q90.</b>  What was your total number of available machine hours in the past year? By "available," we mean <i>staffed</i> with someone assigned to run it or scheduled to run unattended. <i>Example:</i> The shop was open for two 8-hour shifts per day, 250 days per year. Staffing was set so that 25 machines were manned on the first shift and 10 on the second shift. Thus total available machine-hours were: [25 machines x 8 hours/day x 250 days/year] + [10 machines x 8 hours/day x 250 days/year] = 70,000 machine-hrs	99. _____ hours shop was open last year  100. _____ available machine-hours ("available" = staffed machine-hours, <i>plus</i> machine-hours scheduled to run unattended)
How many of those available hours (from Q100) were machines actually <u>running</u> parts? (Do NOT include any hours that the machines were idle or waiting, such as setup time, maintenance time, time spent resolving quality problems, etc.)	101. _____ running machine-hours
<b>Quality Assurance:</b> In the past year, what was your scrap rate? By "scrap," we mean work you rejected internally due to errors, <b>not</b> unavoidable material loss. If you can, please provide the dollar value of output scrapped (costs for wasted labor and machine time plus cost for ruined material).  Otherwise, provide the proportion (% or PPM) of units or output scrapped. (Answer either Q102 and Q103, or just Q104)	<b>Scrap Due to Errors (Do NOT Include Offal or Design Scrap)</b> 102. \$ _____ cost of material ruined due to errors 103. \$ _____ total scrap cost (ruined material <b>plus</b> cost of wasted labor and machine time)  <b>OR</b> 104. _____ proportion of units or output scrapped <input type="checkbox"/> % <input type="checkbox"/> PPM <b>(Check % or PPM.)</b>
In the past year, what percent of shop labor time was spent doing rework or reprocessing of output that was not done right the first time?	105. _____ % shop labor time spent doing rework
In the past year, what proportion (% or PPM) of the units you shipped were initially rejected for quality reasons or not-to-spec condition? <b>[Even if your customers accept or reject entire lots, enter % or parts per million bad if you know it.]</b>	106. _____ initially rejected due to quality <input type="checkbox"/> % <input type="checkbox"/> PPM <b>(Check % or PPM.)</b>
<b>Standard Shop Procedures</b>	
<i>Which of the following were true in the past year?</i>	
• SPC charts usually done by production workers monitoring their own work?	107. <input type="checkbox"/> Yes <input type="checkbox"/> No
• Regularly displayed quality data where operators could easily see it?	108. <input type="checkbox"/> Yes <input type="checkbox"/> No
• Engaged in a Total Quality Management (TQM) or similar program?	109. <input type="checkbox"/> Yes <input type="checkbox"/> No
• Did studies to find sources of recurring errors?	110. <input type="checkbox"/> Yes <input type="checkbox"/> No
<i>In the past year, did you regularly track data and generate reports showing:</i>	
• Inspection labor time or costs?	111. <input type="checkbox"/> Yes <input type="checkbox"/> No
• Types of defects resulting in scrap?	112. <input type="checkbox"/> Yes <input type="checkbox"/> No
• Types of defects resulting in customer returns?	113. <input type="checkbox"/> Yes <input type="checkbox"/> No
• Scrap or defect rate by machine?	114. <input type="checkbox"/> Yes <input type="checkbox"/> No
• Time needed to correct an SPC-identified problem?	115. <input type="checkbox"/> Yes <input type="checkbox"/> No
• Overall cost of quality?	116. <input type="checkbox"/> Yes <input type="checkbox"/> No