Scan of Manufacturing and Production Demand in the Cuyahoga Region

August 2017
Analysis Overview

Job prospects in Manufacturing and Production are a common topic of public debate, but most of the rhetoric glosses over the nuanced nature of opportunities and challenges in the field. To investigate the true nature of demand for Manufacturing and Production jobs in the Cuyahoga region, Burning Glass analyzed key roles and job market dynamics across the Manufacturing and Production landscape. This analysis aims to quantify the demand for Manufacturing and Production roles in Cuyahoga, pinpoint key opportunities and challenges facing the field, and inform Cuyahoga Community College’s training and initiatives that support Cuyahoga’s Manufacturing and Production workforce.

Methodology

To conduct this analysis, Burning Glass drew from its detailed database of online employer demand, which includes over half a billion current and historical job postings across the US, UK, Canada, Australia and New Zealand. Burning Glass collects postings from over 45,000 online job sites to develop a comprehensive, real-time portrait of labor market demand. Burning Glass also leveraged its database of tens of millions of resumes to identify common transition opportunities between Manufacturing and Production roles. Our software extracts top line information about each job such as title, employer and industry, and then “reads” each job description or resume to identify actual job titles, skills, and qualifications that employers are seeking and job seekers possess. We then eliminate duplicate postings or resumes and place them in a database for further analysis.

Data from the Bureau of Labor Statistics were also leveraged to inform an analysis of the currently employed workforce in Cuyahoga.
Key Findings

- In 2016, there were **101,331 employed manufacturing and production workers** in Cuyahoga. Cuyahoga’s largest production jobs are concentrated in **Quality Assurance, Machining, and General Production** roles.

- **Cuyahoga’s manufacturing and production job demand is outpacing the national average.** Over the past two years there were 31,337 manufacturing and production job openings in Cuyahoga, and demand for these roles was **22% more concentrated in Cuyahoga than the nation overall.**

- Over the next 10 years, manufacturing and production employment is projected to remain flat in the region, **growing less than 1%.** Cuyahoga’s fastest-growing production jobs **focus on advanced systems and tools,** such as CNC Programmers, Medical Assemblers, and HVAC Mechanics / Installers.

- The **average salary for manufacturing and production jobs is $46,439.** Most of the highest-paying roles are related to logistics or supervisory roles.

- **Skilled Manufacturing and Production roles are often the hardest-to-fill positions,** with roles such as Logistics Analyst, Machinist, and Production Plant Manager taking significantly longer to fill than the regional average of 38 days. **HVAC roles are also among the hardest-to-fill Manufacturing and Production jobs in Cuyahoga,** remaining open for 53 days on average.

- **QA, machining, and HVAC skills are all among the top competencies** required across manufacturing and production roles in Cuyahoga. Key certifications relate to **HVAC and refrigeration, as well as Six Sigma.**
Current Manufacturing and Production Workforce Profile
Cuyahoga’s Manufacturing and Production Workforce by the Numbers

• In 2016, there were 101,331 employed manufacturing and production workers in Cuyahoga.

• Over the next 10 years, manufacturing and production jobs are projected to remain flat in the region, growing less than 1%.

• The average salary for manufacturing and production jobs is $46,439
Where are the Production jobs today?...

Cuyahoga’s largest production jobs are concentrated in QA, Machining, and General Production roles.

...And where will they be tomorrow?

Fastest-Growing and Fastest-Declining Production Occupations

Cuyahoga’s fastest-growing production jobs focus on advanced systems and tools, and include roles such as CNC Programmers, Medical Assemblers, and HVAC Mechanics / Installers.

Cuyahoga’s fastest-declining production jobs are highly specialized on outmoded or easily automated technologies.
Logistics and Supervisory roles pay best…

…While food production and lower-skilled roles pay well below average
Environmental Scan of Employer Demand for Manufacturing and Production Roles
Cuyahoga’s Manufacturing and Production Job Demand by the Numbers

- In the past two years, there were 31,337 manufacturing and production job openings in Cuyahoga.

- Manufacturing and production job demand is 22% more concentrated in Cuyahoga than the nation overall.

- The average advertised salary for manufacturing and production jobs is $40,190.

- On average, manufacturing and production job listings remain open 38 days – 1 day longer than the national average.

- 31% of manufacturing and production job openings require at least a bachelor’s degree.

<table>
<thead>
<tr>
<th>31,337</th>
<th>22%</th>
<th>$40,190</th>
<th>38 Days</th>
<th>31%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing and Production Job Openings</td>
<td>More Per Capita Openings</td>
<td>Average Advertised Salary</td>
<td>Average Opening Duration</td>
<td>Openings Requiring a BA Degree or Higher</td>
</tr>
</tbody>
</table>
What Manufacturing and Production Jobs Do Employers Demand in Cuyahoga?

Most-Demanded Production and Manufacturing Roles in Cuyahoga

<table>
<thead>
<tr>
<th>Role</th>
<th>Total Online Openings 2015 through 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production Worker</td>
<td>3,686</td>
</tr>
<tr>
<td>Manufacturing Machine Operator</td>
<td>2,889</td>
</tr>
<tr>
<td>Quality Inspector / Technician</td>
<td>1,961</td>
</tr>
<tr>
<td>Maintenance / Service Supervisor</td>
<td>1,832</td>
</tr>
<tr>
<td>Production Supervisor</td>
<td>1,749</td>
</tr>
<tr>
<td>Repair / Service Technician</td>
<td>1,726</td>
</tr>
<tr>
<td>Machinist</td>
<td>1,368</td>
</tr>
<tr>
<td>Quality Control Systems Managers</td>
<td>1,235</td>
</tr>
<tr>
<td>Baker</td>
<td>1,141</td>
</tr>
<tr>
<td>HVAC Mechanic / Installer</td>
<td>954</td>
</tr>
</tbody>
</table>

Demand is largest in roles related to general production, machining, QA, and maintenance and repair.

Most-Concentrated Production and Manufacturing Roles in Cuyahoga

<table>
<thead>
<tr>
<th>Role</th>
<th>Per Capita Concentration Relative to National Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tool and Die Maker</td>
<td>270% more openings per capita than the national average</td>
</tr>
<tr>
<td>Molding / Casting Worker</td>
<td>210%</td>
</tr>
<tr>
<td>CNC Programmer</td>
<td>195%</td>
</tr>
<tr>
<td>CNC Operator</td>
<td>162%</td>
</tr>
<tr>
<td>Machinist</td>
<td>146%</td>
</tr>
</tbody>
</table>

Demand for tool and die, molding, CNC, and machining roles is much more heavily concentrated in Cuyahoga than nationally.
What are the In-Demand Skills and Certifications for Production Roles?

- QA, machining, and HVAC skills are all among the top competencies required across manufacturing and production roles in Cuyahoga. Key certifications relate to HVAC and refrigeration, as well as Six Sigma.

**Key Skills in Manufacturing and Production Roles**

| Quality Assurance and Control |
| Computer Numerical Control (CNC) |
| Machining and Machine Operation |
| Microsoft Office (e.g. Excel) |
| Customer Service |
| Welding |
| HVAC |
| Packaging |
| Budgeting |
| Micrometers |

**Key Certifications in Manufacturing and Production Roles**

| HVAC Certification |
| Forklift Operator Certification |
| Refrigeration Technician Certification |
| Six Sigma |
| Certified Quality Engineer |
| EPA Certification |
| Automotive Service Excellence Certification |
| American Production and Inventory Control Society Certification |
| Professional Engineer |
| Six Sigma Black Belt |
What Manufacturing and Production Jobs are Hardest to Fill in Cuyahoga?

- Skilled Manufacturing and Production roles are often the hardest-to-fill positions, with roles such as Logistics Analyst, Machinist, and Production Plant Manager taking significantly longer to fill than the regional average.

- HVAC roles are also among the hardest-to-fill Manufacturing and Production jobs in Cuyahoga. On average, HVAC Mechanic and Installer job postings remain open for 53 days – nearly 40% longer than the average for all Manufacturing and Production job listings.

### Average Opening Duration

- **Logistics / Supply Chain Analyst**: 56 Days
- **HVAC Mechanic / Installer**: 53 Days
- **Machinist**: 49 Days
- **Production Plant Manager**: 46 Days
- **General / Electrical Engineering Technician**: 44 Days
- **All Manufacturing and Production**: 38 Days
Where Are the Jobs? Top Employers and Locations

- Cleveland is, by far, the largest market for Manufacturing and Production jobs in Cuyahoga, followed by Akron.
- Key employers range from adhesive and medical manufacturers to food and aluminum producers.

### Top Cities for Manufacturing and Production Jobs in Cuyahoga

<table>
<thead>
<tr>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleveland</td>
</tr>
<tr>
<td>Akron</td>
</tr>
<tr>
<td>Mentor</td>
</tr>
<tr>
<td>Canton</td>
</tr>
<tr>
<td>Solon</td>
</tr>
<tr>
<td>Strongsville</td>
</tr>
<tr>
<td>Twinsburg</td>
</tr>
<tr>
<td>Elyria</td>
</tr>
<tr>
<td>Medina</td>
</tr>
<tr>
<td>Euclid</td>
</tr>
</tbody>
</table>

### Top Manufacturing and Production Employers in Cuyahoga

<table>
<thead>
<tr>
<th>Employer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avery Dennison</td>
</tr>
<tr>
<td>Cleveland Clinic</td>
</tr>
<tr>
<td>Cintas</td>
</tr>
<tr>
<td>Swagelok</td>
</tr>
<tr>
<td>Nestle</td>
</tr>
<tr>
<td>Eaton</td>
</tr>
<tr>
<td>Western Enterprises</td>
</tr>
<tr>
<td>Component Repair Technologies</td>
</tr>
<tr>
<td>Kennametal</td>
</tr>
<tr>
<td>Alcoa</td>
</tr>
</tbody>
</table>
Manufacturing and Production Career Pathways
Manufacturing and Production Career Pathways

CNC Operator

Machine Operator

Aircraft/AP Mechanic

HVAC Mechanic/Installer

Maintenance Supervisor

Machinist

CNC Programmer

Production Supervisor

Machining

Installation, Maintenance and Repair

QA and Testing

Test Technician

Quality Inspector

Non-Destructive Testing Specialist

Quality Control Manager

Average Advertised Salary

Low

Medium

High

Cuyahoga Demand
Machining Career Pathway

Machine Operator
- Basic Machine Operation
- Manufacturing Floor Maintenance, Inspection and Cleaning

CNC Operator
- Welding Techniques e.g. MIG, TIG, GMAW, SMAW
- Metallurgy
- X-Rays

Machinist
- Basic CNC
- Grinders
- Drill Presses
- Milling Cutters
- Coordinate Measuring Machines
- Lathes
- Gauges
- Inspection Instruments
- Geometric Dimensioning and Tolerancing (GD&T)

CNC Programmer
- G & M Code
- CAM Tools
- Process Control & Improvement
- Multi-axis Machining
- CAD Software
  - e.g. CATIA, Siemens NX, AutoCAD

Production Supervisor
- Lean Manufacturing
- Six Sigma
- Good Manufacturing Practices (GMP)
- Performance Management
- Operations Management

Certifications to Add
- Forklift Operator Certification
- Machine Operator Certificate
- CNC Machining Certificate

Distinguishing Skills
- OSHA
- ANSI
- Welding Techniques e.g. MIG, TIG, GMAW, SMAW
- Metallurgy
- X-Rays
- Basic CNC
- Grinders
- Drill Presses
- Milling Cutters
- Coordinate Measuring Machines
- Lathes
- Gauges
- Inspection Instruments
- Geometric Dimensioning and Tolerancing (GD&T)

Cuyahoga Demand
- Low
- Medium
- High

Average Advertised Salary
- Low
- Medium
- High

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Installation, Maintenance, and Repair Career Pathway

**Repair Technician**
- Repair
- Inspection
- HVAC
- Plumbing
- Schematic Diagrams
- Power Tools
- Machinery
- Test Equipment

**Aircraft / AP Mechanic**
- Repair
- Inspection
- Test Equipment
- Power Tools
- Schematic Diagrams
- Micrometers

**HVAC Mechanic / Installer**
- HVAC
- Ventilation
- Boilers
- Cooling Towers
- Energy Management

**Maintenance Supervisor**
- Supervisory Skills
- Scheduling
- Budgeting
- Planning

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**Certifications to Add**
- Automotive Service Excellence (ASE) Certification
- Environmental Protection Agency Certification
- Airframe and Powerplant (A and P) Certification
- Aircraft Mechanic Certification
- Federal Aviation Administration (FAA) Certification
- HVAC Technician Certification (e.g., EPA 608)
- Refrigeration Technician Certification (e.g., CFC Type 2)

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**Distinguishing Skills**
- Repair
- Inspection
- HVAC
- Plumbing
- Schematic Diagrams
- Power Tools
- Machinery
- Test Equipment

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**Cuyahoga Demand**
- Low
- Medium
- High

**Average Advertised Salary**
- Low
- Medium
- High

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QA and Testing Career Pathway

Test Technician
- Repair
- Programmable Logic Controller (PLC) Programming
- Schematic Diagrams
- Machinery
- Inspection
- Test Equipment

Quality Inspector
- Inspection
- Quality Assurance and Control
- Product Testing

Non-Destructive Testing Specialist
- Nondestructive Testing (NDT)
- Quality Assurance and Control
- Welding

Quality Control Manager
- Supervisory Skills
- Planning
- Project Management
- Good Manufacturing Practices (GMP)
- ISO 9001 Standards

Distinguishing Skills
- Repair
- Programmable Logic Controller (PLC) Programming
- Schematic Diagrams
- Machinery
- Inspection
- Test Equipment
- American Society For Quality (ASQ) Certification
- Certified Quality Technician
- Inspection Certification
- Six Sigma Certification
- Certified Quality Engineer
- Quality Management Certification (e.g., CMQ)
- SIX SIGMA BLACK BELT
- SIX SIGMA GREEN BELT

Certifications to Add
- Non-Destructive Testing Specialist
- Quality Control Manager
For More Information, Contact:

Will Markow
Manager of Client Strategy – Analytics
Ph: 617-227-4800
wmarkow@burning-glass.com