

# Industrial Machinery Mechanics

## Labor Market Analysis: San Diego County

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November 2018

### Summary

According to available labor market information, there is demand for *Industrial Machinery Mechanics*. *Industrial Machinery Mechanics* has a labor market demand of 246 annual job openings. (For comparison, the average regional demand for an occupation is 275 job openings.) This occupation's entry-level and median wages are higher than the Self-Sufficiency Standard, suggesting that students who successfully complete a program and obtain employment may earn living wages. Two community colleges in San Diego County reported supplying awards for this occupation.

The following list summarizes findings from the labor market analysis for *Industrial Machinery Mechanics*:

- Between 2017 and 2022, *Industrial Machinery Mechanics* are projected to increase by 151 jobs or six percent.
- Employers in San Diego County will need to hire 246 workers annually to fill new jobs and backfill jobs due to attrition such as retirement or turnover.
- Between 2010 and 2017, there was an average of 125 online job postings per year for *Industrial Machinery Mechanics*.
- *Industrial Machinery Mechanics* earn median hourly earnings of \$26.86; this is more than the Self-Sufficiency Standard for a single adult in San Diego County, which is \$15.99 per hour.
- There are three Taxonomy of Programs (TOP) codes associated with this occupation: Industrial Systems Technology and Maintenance (094500), Diesel Technology (094700), and Manufacturing and Industrial Technology (095600). There are 10 Classification of Instructional Programs (CIP) codes associated with this occupation.
- According to TOP data, three community colleges supply the region with awards for this occupation: San Diego Miramar College, San Diego Continuing Education and San Diego City College.
- Comparing labor demand (annual openings) with labor supply suggests that there is a supply gap for this occupation in San Diego County, with 246 annual openings and nine awards. Comparatively, there are 2,844 annual openings in California and 564 awards.

- Between January 1, 2015 and December 31, 2017, the top five employers in San Diego County for this occupation were SeaWorld San Diego, Jones Lang Lasalle Incorporated, Marriott International Incorporated, PAE Incorporated, and Sunstate Equipment Company.
- The typical on-the-job training for this profession is long-term on-the-job training. The typical entry-level education is a high school diploma or equivalent.

## Introduction

This report provides labor market information in San Diego County for the following occupational code in the Standard Occupational Classification (SOC)<sup>1</sup> system:

**Industrial Machinery Mechanics (SOC 49-9041):** Repair, install, adjust, or maintain industrial production and processing machinery or refinery and pipeline distribution systems. Excludes 'Millwrights' (49-9044), 'Mobile Heavy Equipment Mechanics, Except Engines' (49-3042), and 'Maintenance Workers, Machinery' (49-9043). Sample reported job titles include:

- Over Hauler
- Maintenance Mechanic
- Machine Adjuster
- Loom Fixer
- Loom Technician
- Fixer
- Master Mechanic
- Maintenance Technician

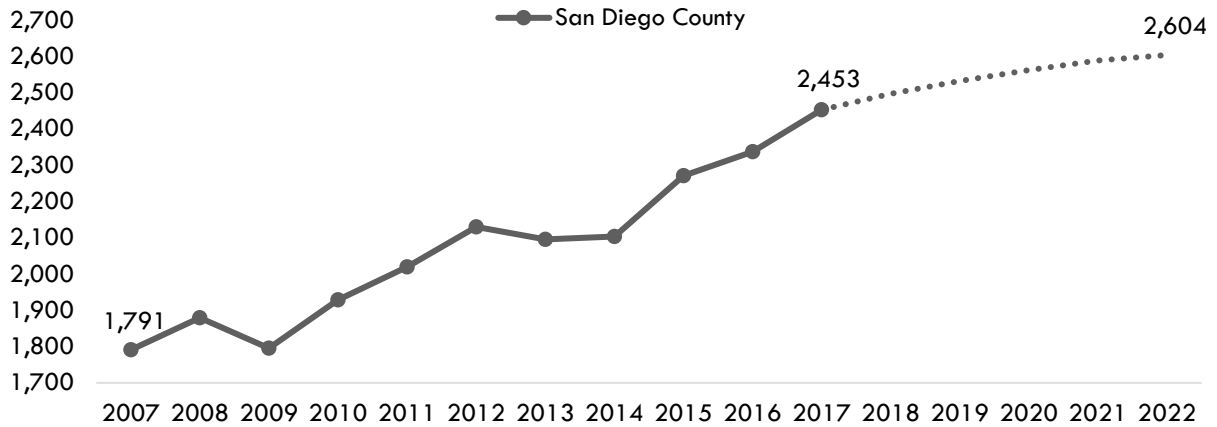
## Projected Occupational Demand

Between 2017 and 2022, *Industrial Machinery Mechanics* are projected to increase by 151 jobs or six percent (Exhibit 1). Employers in San Diego County will need to hire 246 workers annually to fill new jobs and backfill jobs due to attrition such as retirement or turnover.

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<sup>1</sup> The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](https://www.bls.gov/soc).

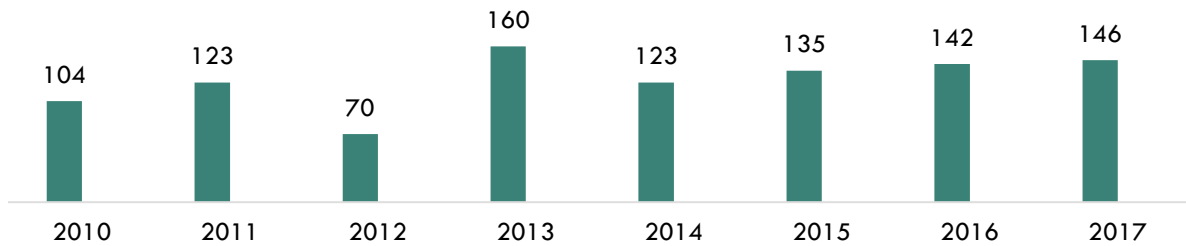
**Exhibit 1: Number of Jobs for Industrial Machinery Mechanics (2007-2022)<sup>2</sup>**



## Online Job Postings

Between 2010 and 2017, there was an average of 125 online job postings per year for *Industrial Machinery Mechanics* (Exhibit 2).

**Exhibit 2: Number of Online Job Postings for Industrial Machinery Mechanics in San Diego County (2010-2017)<sup>3</sup>**



## Earnings

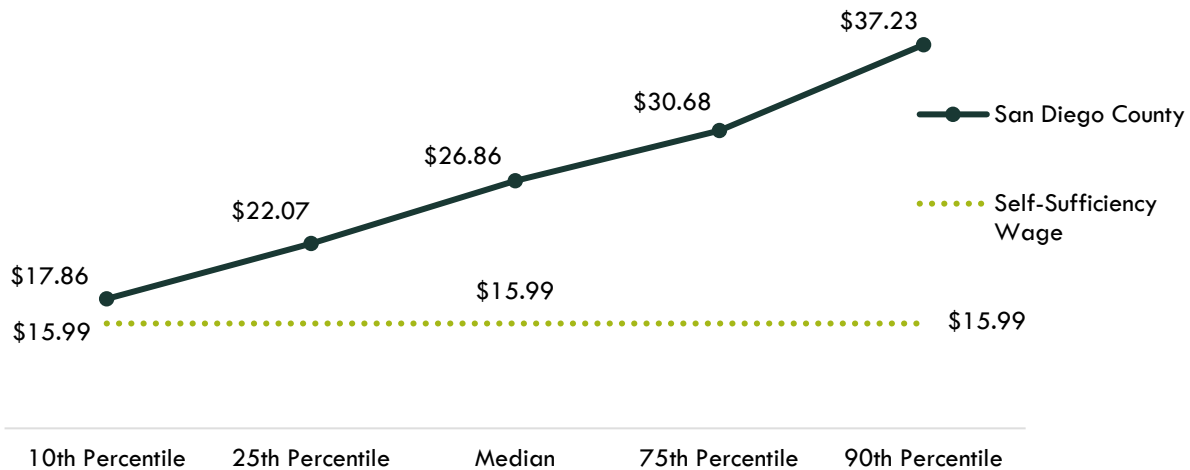
*Industrial Machinery Mechanics* earn median hourly earnings of **\$26.86**; this is more than the Self-Sufficiency Standard for a single adult in San Diego County, which is **\$15.99** per hour (Exhibit 3).<sup>4</sup>

<sup>2</sup> Economic Modeling Specialists, Int'l. (EMSI). San Diego (6073). 2018.03 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2007-2022.

<sup>3</sup> Labor Insight Jobs. Burning Glass Technologies. San Diego, CA. Full years 2010-2017.

<sup>4</sup> The self-sufficiency wage in San Diego for one adult is \$15.99. [insightcced.org/2018-self-sufficiency-standard](https://insightcced.org/2018-self-sufficiency-standard).

**Exhibit 3: Hourly Earnings for Industrial Machinery Mechanics in San Diego County<sup>5</sup>**



## Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of awards in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes.<sup>6</sup> There are **three** TOP codes associated with this occupation: Industrial Systems Technology and Maintenance (094500), Diesel Technology (094700), and Manufacturing and Industrial Technology (095600). There are **10** CIP codes associated with this occupation; however, only the three most closely related codes are listed in Exhibit 4.

**Exhibit 4: Related TOP and CIP Codes in San Diego County**

### SOC 49-9041: Industrial Machinery Mechanics

TOP 094500: Industrial Systems Technology and Maintenance

TOP 094700: Diesel Technology

TOP 095600: Manufacturing and Industrial Technology

CIP 150613: Manufacturing Engineering Technology/Technician

CIP 470303: Industrial Mechanics and Maintenance Technology

CIP 470605: Diesel Mechanics Technology/Technician

<sup>5</sup> EMSI. San Diego (6073). 2018.03 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2017-2022.

<sup>6</sup> TOP data comes from the California Community Colleges Chancellor's Office MIS Data Mart ([datamart.cccco.edu](http://datamart.cccco.edu)) and CIP data comes from the Integrated Postsecondary Education Data System ([nces.ed.gov/ipeds/use-the-data](http://nces.ed.gov/ipeds/use-the-data)).

According to TOP data, **two** community colleges supply the region with awards for this occupation: **San Diego Continuing Education and San Diego City College** (Exhibit 5). The awards for the program, Diesel Technology (094700), were omitted from this brief because they are accounted for in a separate brief, *Bus and Truck Mechanics and Diesel Engine Specialists* (SOC 49-3031). (Visit [coecc.net](http://coecc.net) for more information.) According to CIP data, no other providers supply the region with awards for this occupation.

**Exhibit 5: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions (Program Year 2013-14 through PY2016-17 Average)**

TOP6 or CIP	TOP6 or CIP Title	3-Yr Annual Average CC Awards (PY14-15 to PY16-17)	Other Educational Institutions 3-Yr Annual Average Awards (PY13-14 to PY15-16)	3-Yr Total Average Supply (PY13-14 to PY16-17)
<b>094500</b>	<b>Industrial Systems Technology and Maintenance</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>095600</b>	<b>Manufacturing and Industrial Technology</b>	<b>9</b>	<b>0</b>	<b>9</b>
	San Diego Continuing Ed	1	0	
	San Diego City	8	0	
			<b>Total</b>	<b>9</b>

## Demand vs. Supply

Comparing labor demand (annual openings) with labor supply<sup>7</sup> suggests that there is a **supply gap** for this occupation in San Diego County, with **246** annual openings and **nine** awards. Comparatively, there are **2,844** annual openings in California and **564** completions<sup>8</sup> (Exhibit 6).

**Exhibit 6: Labor Demand (Annual Openings) Compared to Labor Supply (Average Annual Awards)**

Community Colleges and Other Postsecondary Educational Institutions	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or <b>Oversupply</b>
San Diego	246	9	<b>237</b>
California	2,844	564	<b>2,280</b>

**Please note:** This is a basic analysis of supply and demand of labor. This data should be used to discuss the potential gaps or oversupply of workers; however, it should not be the only basis for determining

<sup>7</sup> Labor supply can be found from two different sources: EMSI or the California Community Colleges Chancellor's Office MIS Data Mart. EMSI uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.

<sup>8</sup> EMSI. California (6). 2018.03 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2017-2022.

whether or not a program should be developed. Additionally, the data does not include workers who are currently in the labor force who could fill these positions or workers who are not captured by publicly available data.

## Student Outcomes

Based on the information available in the CTE LaunchBoard, students who took courses in the related TOP codes exhibited the following outcomes (Exhibit 7).

**Exhibit 7: Strong Workforce Program Metrics for TOP 095600: Manufacturing and Industrial Technology San Diego-Imperial Region vs. California (PY2015-16)**

Metric	San Diego-Imperial	California
Number of course enrollments <sup>9</sup>	135	6,935
Completed 12+ CTE Units in One Year <sup>10</sup>	16	1,248
Completed 48+ CTE Contact Hours in One Year <sup>11</sup>	0	N/A
Number of students who got a degree or certificate <sup>12</sup>	12	155
Number of students who transferred <sup>13</sup>	N/A	108
Employed in the second fiscal quarter after exit <sup>14</sup>	86%	77%
Employed in the fourth fiscal quarter after exit <sup>15</sup>	91%	75%
Job closely related to field of study <sup>16</sup>	N/A	N/A
Median earnings in the second fiscal quarter after exit <sup>17</sup>	\$9,218	\$9,800
Median change in earnings <sup>18</sup>	263%	56%
Attained a living wage <sup>19</sup>	N/A	67%

<sup>9</sup> The number of enrollments in courses assigned to the TOP code in the selected year.

<sup>10</sup> The number of students who completed 12 or more credit CTE units.

<sup>11</sup> The number of students who completed 48 or more noncredit CTE instructional contact hours.

<sup>12</sup> The number of unduplicated students who earned a locally-issued certificate, Chancellor's Office approved certificate, associate degree, and/or California Community Colleges bachelor's degree in the selected TOP code.

<sup>13</sup> Students who took non-introductory courses or completed a California Community Colleges Chancellor's Office award in the selected TOP code in selected year who subsequently enrolled for the first time in a four-year institution the following year.

<sup>14</sup> Among all exiters with a valid SSN, the percentage who were employed two quarters after exiting California Community Colleges.

<sup>15</sup> Among exiting students with a valid SSN, the percentage who were employed four quarters after exiting California Community Colleges.

<sup>16</sup> Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

<sup>17</sup> Among exiting students, the median second-quarter earnings one year after the year in which they exited California Community Colleges.

<sup>18</sup> Among exiting students with a valid SSN, the percentage change in earnings one year before and one year after exiting California Community Colleges.

<sup>19</sup> Among completers and skills builders who exited, the proportion of students who attained a living wage.

## Top Employers and Work Locations

Between January 1, 2015 and December 31, 2017, the top five employers in San Diego County for this occupation were [SeaWorld San Diego](#), [Jones Lang Lasalle Incorporated](#), [Marriott International Incorporated](#), [PAE Incorporated](#), and [Sunstate Equipment Company](#) (Exhibit 8).

### Exhibit 8: Top Employers in San Diego County for *Industrial Machinery Mechanics*<sup>20</sup>

Top Employers	
• SeaWorld San Diego	• Epsilon Systems Solutions Incorporated
• Jones Lang Lasalle Incorporated	• University Of California San Diego
• Marriott International Incorporated	• Hilton Hotel Corporation
• PAE Incorporated	• San Diego State University
• Sunstate Equipment Company	• Naval Air Systems Command

## Skills, Education and Certifications

Exhibit 9 indicates the educational attainment for the occupation found currently in the national labor force. The typical on-the-job training for this profession is [long-term on-the-job training](#). The typical entry-level education is a [high school diploma or equivalent](#).<sup>21</sup>

### Exhibit 9: National Educational Attainment of *Industrial Machinery Mechanics*<sup>22</sup>

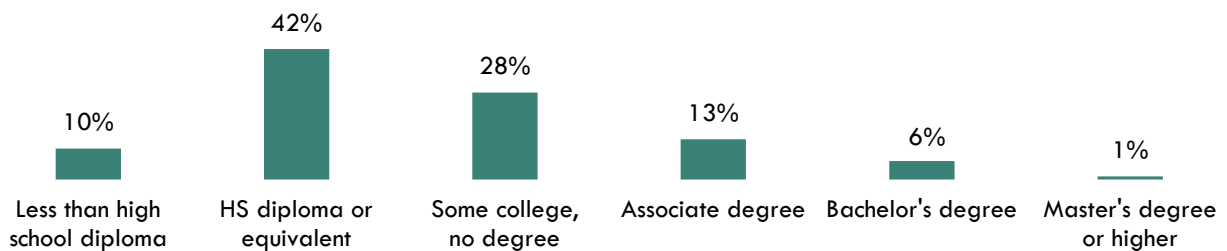


Exhibit 10 lists the top specialized, soft and software skills that appeared in online job postings for this occupation between January 1, 2015 and December 31, 2017.

<sup>20</sup> Labor Insight Jobs. Burning Glass Technologies. San Diego, CA. Full years 2015-2017.

<sup>21</sup> EMSI. San Diego (6073). 2018.03 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2017-2022.

<sup>22</sup> Bureau of Labor Statistics, Educational attainment for workers 25 years and older by detailed occupation. [bls.gov/emp/ep\\_table\\_111.htm](https://bls.gov/emp/ep_table_111.htm).

## Exhibit 10: Top Skills for *Industrial Machinery Mechanics* in San Diego County<sup>23</sup>

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> <li>• Repair</li> <li>• Machinery</li> <li>• Predictive Maintenance</li> <li>• Plumbing</li> <li>• Welding</li> </ul>	<ul style="list-style-type: none"> <li>• Preventive Maintenance</li> <li>• Troubleshooting</li> <li>• Communication Skills</li> <li>• English</li> <li>• Computer Literacy</li> </ul>	<ul style="list-style-type: none"> <li>• Active Server Pages</li> <li>• Microsoft Excel</li> <li>• Microsoft Word</li> <li>• Microsoft Outlook</li> <li>• Lockout / Tagout (LOTO)</li> </ul>

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### Important Disclaimers

All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. This study examines the most recent data available at the time of the analysis; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and the report findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

<sup>23</sup> Labor Insight Jobs. Burning Glass Technologies. San Diego, CA. Full years 2015-2017.