



## **STATE OF COLORADO**

### **CLASS SERIES DESCRIPTION**

**July 1, 2000**

#### **MACHINING TRADES**

**D6B1TX TO D6B4XX**

#### **DESCRIPTION OF OCCUPATIONAL WORK**

This class series uses four levels in the Labor, Trades, and Crafts Occupational Group and describes work that involves design, layout, fabrication, assembly, installation, maintenance, and repair of metallic and non-metallic equipment, devices, instruments, parts, assemblies, and systems. The work includes constructing devices by bending, cutting, blowing, shaping, and joining glass; welding flat and cylindrical or irregular parts in flat, horizontal, vertical, and overhead positions using arc and gas welding techniques; or operating machines that bore, cut, mill, abrade, or plane materials. Positions determine dimensions and tolerances of finished work, determine the sequence of operation and set-up requirements, calculate and set controls on equipment, and read and interpret blueprints and sketches. Some positions may require licensure or certification.

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#### **MACHINING TRADES I**

**D6B1TX**

#### **CONCEPT OF CLASS**

This class describes the clearly defined level where positions follow established work procedures. Positions operate within standard guidelines and alternatives which are known and any deviation from such requires prior approval. Some assignments do not move beyond this level.

#### **FACTORS**

**Allocation must be based on meeting all of the four factors as described below.**

**Decision Making** -- The decisions regularly made are at the defined level, as described here. Within limits prescribed by the operation, choices involve selecting alternatives that affect the manner and speed with which tasks

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are carried out. These choices do not affect the standards or results of the operation itself because there is typically only one correct way to carry out the operation. These alternatives include independent choice of such things as priority and personal preference for organizing and processing the work, proper tools or equipment, speed, and appropriate steps in the operation to apply. By nature, the data needed to make decisions can be numerous but are clear and understandable so logic is needed to apply the prescribed alternative. Positions can be taught what to do to carry out assignments and any deviation in the manner in which the work is performed does not change the end result of the operation.

**Complexity** -- The nature of, and need for, analysis and judgment is prescribed, as described here. Positions apply established, standard guidelines which cover work situations and alternatives. Action taken is based on learned, specific guidelines that permit little deviation or change as the task is repeated. Any alternatives to choose from are clearly right or wrong at each step.

**Purpose of Contact** -- Regular work contacts with others outside the supervisory chain, regardless of the method of communication, are for the purpose of exchanging or collecting information with contacts. This involves giving learned information that is readily understandable by the recipient or collecting factual information in order to solve factual problems, errors, or complaints.

**Line/Staff Authority** -- The direct field of influence the work of a position has on the organization is as an individual contributor. The individual contributor may explain work processes and train others. The individual contributor may serve as a resource or guide by advising others on how to use processes within a system or as a member of a collaborative problem-solving team. This level may include positions performing supervisory elements that do not fully meet the criteria for the next level in this factor.

## **MACHINING TRADES II**

D6B2XX

### **CONCEPT OF CLASS**

This class describes the full-operating level. Positions operate independently to perform the full range of tasks and determine solutions to the full range of problems. Judgment is used to select the most appropriate guidelines and adapt them to accomplish the tasks. Positions continually determine practical solutions to problems by applying specific processes, techniques, and methods. Position serves as a resource to others. Some assignments do not move beyond this level. Some positions may require certification. This class differs from Machining Trades I on Decision Making and Complexity.

### **FACTORS**

**Allocation must be based on meeting all of the four factors as described below.**

**Decision Making** -- The decisions regularly made are at the operational level, as described here. Within limits set by the specific process, choices involve deciding what operation is required to carry out the process. This includes

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determining how the operation will be completed. By nature, data needed to make decisions are numerous and variable so reasoning is needed to develop the practical course of action within the established process. Choices are within a range of specified, acceptable standards, alternatives, and technical practices.

**Complexity** -- The nature of, and need for, analysis and judgment is patterned, as described here. Positions study information to determine what it means and how it fits together in order to get practical solutions. Guidelines exist for most situations. Judgment is needed in locating and selecting the most appropriate of these guidelines which may change for varying circumstances as the task is repeated. This selection and interpretation of guidelines involves choosing from alternatives where all are correct but one is better than another depending on the given circumstances of the situation.

**Purpose of Contact** -- Regular work contacts with others outside the supervisory chain, regardless of the method of communication, are for the purpose of any of exchanging or collecting information with contacts. This involves giving learned information that is readily understandable by the recipient or collecting factual information in order to solve factual problems, errors, or complaints.

**Line/Staff Authority** -- The direct field of influence the work of a position has on the organization is as an individual contributor. The individual contributor may explain work processes and train others. The individual contributor may serve as a resource or guide by advising others on how to use processes within a system or as a member of a collaborative problem-solving team. This level may include positions performing supervisory elements that do not fully meet the criteria for the next level in this factor.

**MACHINING TRADES III**

D6B3XX

**CONCEPT OF CLASS**

This class describes the specialized level where positions design and fabricate unique, one-of-a-kind, highly specialized equipment or scientific instruments. This level may also include positions that design and fabricate adaptations of mechanized equipment. Some positions may perform classroom instruction of students. Some positions may require certification. This class differs from Machining Trades II on Complexity and Purpose of Contact.

**FACTORS**

**Allocation must be based on meeting all of the four factors as described below.**

**Decision Making** -- The decisions regularly made are at the operational level, as described here. Within limits set by the specific process, choices involve deciding what operation is required to carry out the process. This includes determining how the operation will be completed. By nature, data needed to make decisions are numerous and variable so reasoning is needed to develop the practical course of action within the established process. Choices are within a range of specified, acceptable standards, alternatives, and technical practices.

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**Complexity** -- The nature of, and need for, analysis and judgment is formulative, as described here. Positions evaluate the relevance and importance of theories, concepts, and principles in order to tailor them to develop a different approach or tactical plan to fit specific circumstances. While general policy, precedent, or non-specific practices exist, they are inadequate so they are relevant only through approximation or analogy. In conjunction with theories, concepts, and principles, positions use judgment and resourcefulness in tailoring the existing guidelines so they can be applied to particular circumstances and to deal with emergencies.

**Purpose of Contact** -- Regular work contacts with others outside the supervisory chain, regardless of the method of communication, are for the purpose of either of the following:

Detecting, discovering, exposing information, problems, violations or failures by interviewing or investigating where the issues or results of the contact are not known ahead of time.

Advising, counseling, or guiding the direction taken to resolve complaints or problems and influence or correct actions or behaviors.

**Line/Staff Authority** -- The direct field of influence the work of a position has on the organization is as an individual contributor. The individual contributor may explain work processes and train others. The individual contributor may serve as a resource or guide by advising others on how to use processes within a system or as a member of a collaborative problem-solving team. This level may include positions performing supervisory elements that do not fully meet the criteria for the next level in this factor.

**MACHINING TRADES IV**

D6B4XX

**CONCEPT OF CLASS**

This class describes the supervisory level. Supervisory positions are responsible for a work unit including accountability for the use of equipment, space, and resources. Supervisors directly control the work of assigned staff and determine the work procedures for the unit. This class differs from Machining Trades III on Line/Staff Authority.

**FACTORS**

**Allocation must be based on meeting all of the four factors as described below.**

**Decision Making** -- The decisions regularly made are at the operational level, as described here. Within limits set by the specific process, choices involve deciding what operation is required to carry out the process. This includes determining how the operation will be completed. By nature, data needed to make decisions are numerous and variable so reasoning is needed to develop the practical course of action within the established process. Choices are within a range of specified, acceptable standards, alternatives, and technical practices.

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**Complexity** -- The nature of, and need for, analysis and judgment is formulative, as described here. Positions evaluate the relevance and importance of theories, concepts, and principles in order to tailor them to develop a different approach or tactical plan to fit specific circumstances. While general policy, precedent, or non-specific practices exist, they are inadequate so they are relevant only through approximation or analogy. In conjunction with theories, concepts, and principles, positions use judgment and resourcefulness in tailoring the existing guidelines so they can be applied to particular circumstances and to deal with emergencies.

**Purpose of Contact** -- Regular work contacts with others outside the supervisory chain, regardless of the method of communication, are for the purpose of either of the following:

Detecting, discovering, exposing information, problems, violations or failures by interviewing or investigating where the issues or results of the contact are not known ahead of time.

Advising, counseling, or guiding the direction taken to resolve complaints or problems and influence or correct actions or behaviors.

**Line/Staff Authority** -- The direct field of influence the work of a position has on the organization is as a unit supervisor. The unit supervisor is accountable, including signature authority, for actions and decisions that directly impact pay, status, and tenure of three or more full-time equivalent positions. At least one of the subordinate positions must be in the same series or at a comparable conceptual level. The elements of formal supervision must include providing documentation to support recommended corrective and disciplinary actions, signing performance plans and appraisals, and resolving informal grievances. Positions start the hiring process, interview applicants, and recommend hire, promotion, or transfer.

### **ENTRANCE REQUIREMENTS**

Minimum entry requirements and general competencies for classes in this series are contained in the State of Colorado Department of Personnel web site.

For purposes of the Americans with Disabilities Act, the essential functions of specific positions are identified in the position description questionnaires and job analyses.

### **CLASS SERIES HISTORY**

Effective 7/1/00 (LLB). Machinist I (D3G1) and Welder (D3N1) abolished as part of the LTC consolidation study. Draft published 3/31/99, proposed 5/24/99, and final 7/1/99.

Effective 7/1/99 (LLB). LTC consolidation study. Machinist II (D3G2) and Elevator Mechanic (D2F1-D2F2) abolished as vacant. Instrument Maker/Fabricator (D3E1-D3E4), Machinist I (D3G1), Research Glassblower (D2I) consolidated. Draft published 3/31/99 and proposed 5/24/99.

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Effective 9/1/93 (LDS). Job Evaluation System Revision project. Published proposed 6/1/93. Instrument Maker/Fabricator, (D3E1 -D3E4), Machinist (D3G1 -2), Welder (D3N1), and Research Glassblower (D3I1).

Revised 12/1/86. Changed class code, title, nature of work, entrance requirements, and pay differential on Instrument Maker/Fabricator I (A4902X) Instrument Maker/Fabricator II (A4904A), Instrument Maker/Fabricator Specialist (A4906X), Instrument Maker/Fabricator III (A4908X), and Instrument Maker/Fabricator IV (A4910X), Machinist (A4858X) and Supervising Machinist (A4860X), Welder Certified (A4569X), Research Glassblower (A4900X).

Revised 1/1/84. Changed in-grade hire step on Machinist (A4858X).

Revised 7/1/79. Changed class code, title, nature of work, and entrance requirements, on Instrument Maker/Fabricator II (A4904A), Instrument Maker/Fabricator Specialist (A4906X), and Instrument Maker/Fabricator IV (A4910X).

Created 1/1/75. Instrument Maker/Fabricator I (A4902X) Instrument Maker/Fabricator II (A4904A), Instrument Maker/Fabricator Specialist (A4906X), Instrument Maker/Fabricator III (A4908X), and Instrument Maker/Fabricator IV (A4910X), Machinist (A4858X) and Supervising Machinist (A4860X), Welder Certified (A4569X), Research Glassblower (A4900X).

**SUMMARY OF FACTOR RATINGS**

| <b>Class Level</b>   | <b>Decision Making</b> | <b>Complexity</b> | <b>Purpose of Contact</b> | <b>Line/Staff Authority</b> |
|----------------------|------------------------|-------------------|---------------------------|-----------------------------|
| Machining Trades I   | Defined                | Prescribed        | Exchange                  | Indiv. Contributor          |
| Machining Trades II  | Operational            | Patterned         | Exchange                  | Indiv. Contributor          |
| Machining Trades III | Operational            | Formulative       | Detect, Advise            | Indiv. Contributor          |
| Machining Trades IV  | Operational            | Formulative       | Detect, Advise            | Unit Supervisor             |