

Job Title: Mechanical Engineer

Reports To: Engineering Manager
Direct Reports: None
Compensation: Salary
Employment Status: Full Time (45 hours per week)

COMPANY INFO

MW Watermark is a leader, locally and globally, helping everyone protect our planet's natural resources.

MW Watermark constantly scans for ideas, opportunities or technologies that can help us advance toward our vision.

MW Watermark is a safe place to work, to inspire, to become inspired, and from where you go home fulfilled knowing that you helped not just "me" but also "us".

For us, and each generation that follows, MW Watermark's vision is to leave the world a cleaner and safer place than that in which we lived.

Join us. Together, we can make a difference.

SUMMARY

This position will function as an integral part of M.W. Watermark's engineering department to design water treatment and related equipment as well as provide technical support for machine designers, project managers, and salespeople as needed. This position will take a leading role in product design and development as well as application to specific projects with unique requirements.

PRIMARY RESPONSIBILITIES

1. Creating 3D models for new product design, development and reengineering of products.
2. Preparing bills of materials, entering, and updating them with the ERP system.
3. Perform engineering calculations and FEA analysis as required for new designs and/or validation of existing designs.
4. As necessary, review project drawings for accuracy and conformance to departmental standards.
5. Coordinate with Watermark electrical engineer to ensure mechanical and electrical designs are in conformance for standard designs and customizations for projects.
6. Design using hydraulics and pneumatics, including schematics.
7. Piping & instrumentation diagrams.
8. Support the application of pumps, particularly air operated diaphragm, but also centrifugal and other positive displacement pumps using motor controls.
9. Valve and piping selection to meet customer requirements.
10. Calculation of allowable nozzle loads for customer piping connections.
11. Assist with material selection based on project requirements and chemical compatibility.
12. Assist with selection of coating systems including surface preparation and application guidelines.
13. Application of safety circuits, including machine guarding, light curtains and safety cables.
14. Analysis and documentation of equipment failure modes and effects.
15. Safety risk assessments for equipment to assist customers with proper machine guarding where requested.

16. Work with purchasing department to review and approve alternate components when necessary.
17. Work with vendors to communicate requirements and to obtain engineering and design data.
18. Communicate with customers to assist salespeople and project managers when responding to technical questions as needed.
19. Working knowledge of PLC controls hardware.
20. Support and assist with technical writing for the creation, update, and customization of installation, operation, and maintenance manuals within existing database of content.
21. Responsible for conceptual and detailed design and development of systems and components.
22. Production support including drawing interpretation, assisting manufacturing team with design related troubleshooting, teaming with production personnel to improve designs, etc.
23. The ability to work in a self-directed, fast-paced environment.
24. Promote and contribute to a continuous improvement culture.
25. Other duties as assigned by the Engineering Manager.

KNOWLEDGE AND SKILL REQUIREMENTS

1. Bachelor's degree in engineering.
2. Experience designing in 3D drafting software, particularly Autodesk Inventor, with knowledge of drafting software features such as, sheet metal, I-parts, assemblies, weldments, etc.
3. Hands-on experience with industrial equipment in a manufacturing environment.
4. Working knowledge of electrical systems, hydraulic systems, pneumatic systems, etc.
5. Knowledge of and the ability to apply principles of DFMA.
6. General knowledge of wastewater, filtration, and liquid solid separation a plus.
7. General knowledge of chemical pretreatment methods a plus.
8. Knowledge of industry standards relating to piping, welding, and structural requirements a plus.
9. Knowledge of instrumentation, including pressure, temperature, level, and flow transmitters a plus.
10. Database programming knowledge a plus.
11. Structural steel experience, specifically work platforms, stairs, and railings. Ability to work with a third party licensed structural engineer to verify and refine designs.

WORKING CONDITIONS

Working conditions are normal for an office environment. Occasionally work will be done on the production floor which requires the use of safety equipment to include but not limited to; safety glasses, hearing protection, steel toe work boots, and hardhats.

REMOTE WORK

This position cannot be done remotely. It requires working hands-on in the factory and with machine components that are being built in our factory.

“ADA CHECKLIST”
**CHECKLIST FOR DETERMINING THE GENERAL PHYSICAL REQUIREMENTS,
PHYSICAL ACTIVITIES, VISUAL ACUITY, AND WORKING CONDITIONS OF
SPA STAFF POSITIONS**

Position: Mechanical Engineer

Circle/check/bold the letters that correspond with the physical aspects of the essential functions of the position. Essential functions are the fundamental job duties, meaning the position exists to perform the function; there is a limited number of employees among whom the performance of the function can be distributed; and/or the incumbent is hired for expertise or ability to perform the function due to its high specialization. The Americans With Disabilities Act of 1990 (ADA) and associated Federal regulations protect qualified individuals with disabilities from discrimination in all areas of employment. To be considered qualified, an individual must be able to perform the essential functions of a position, with or without reasonable accommodation. It is important that the physical tasks associated with the essential functions be identified appropriately so that persons with disabilities can determine if any accommodation is necessary.

I certify that I have read the physical requirements as set forth below and am physically able to perform the necessary duties as indicated herein.

Employee Signature: _____ Date: _____

1. GENERAL PHYSICAL REQUIREMENTS

Please check the ONE description of general physical requirements that best describes the work requirements of the position:

- A. Sedentary work:** Exerting up to 10 pounds of force occasionally and/or a negligible amount of force frequently or constantly to lift, carry, push, pull or otherwise move objects, including the human body. Sedentary work involves sitting most of the time. Jobs are sedentary if walking and standing are required only occasionally and all other sedentary criteria are met.
- B. Light work:** Exerting up to 20 pounds of force occasionally and/or a negligible amount of force constantly to move objects. If the use of arm and/or leg controls requires exertion of force greater than that for Sedentary Work and the worker sits most of the time, the job is rated for light work.
- C. Medium work:** Exerting up to 50 pounds of force occasionally and/or up to 20 pounds of force frequently, and/or up to 10 pounds of force constantly to move objects.
- D. Heavy work:** Exerting up to 100 pounds of force occasionally and/or up to 50 pounds of force frequently, and/or up to 20 pounds of force constantly to move objects.
- E. Very heavy work:** Exerting in excess of 100 pounds of force occasionally, and/or in excess of 50 pounds of force constantly to move objects.

2. PHYSICAL ACTIVITIES

Please circle/check/bold ALL physical activities that apply to the essential functions of the position:

- A. Climbing:** Ascending or descending ladders, stairs, scaffolding, ramps, poles and the like, using feet and legs and/or hands and arms. Body agility is emphasized. This factor is important if the amount and kind of climbing required exceeds that required for ordinary locomotion.

- B. Balancing:** Maintaining body equilibrium to prevent falling when walking, standing or crouching on narrow, slippery or erratically moving surfaces. This factor is important if the amount and kind of balancing exceeds that needed for ordinary locomotion and maintenance of body equilibrium.
- C. Stooping:** Bending body downward and forward by bending spine at the waist. This factor is important if it occurs to a considerable degree and requires full use of the lower extremities and back muscles.
- D. Kneeling:** Bending legs at knee to come to a rest on knee or knees.
- E. Crouching:** Bending the body downward and forward by bending leg and spine.
- F. Crawling:** Moving about on hands and knees or hands and feet.
- G. Reaching:** Extending hand(s) and arm(s) in any direction.
- H. Standing:** Particularly for sustained periods of time.
- I. Walking:** Moving about on foot to accomplish tasks, particularly for long distances or moving from one work site to another.
- J. Pushing:** Using upper extremities to press against something with steady force in order to thrust forward, downward or outward.
- K. Pulling:** Using upper extremities to exert force in order to draw, drag, haul or tug objects in a sustained motion.
- L. Lifting:** Raising objects from a lower to a higher position or moving objects horizontally from position-to-position. This factor is important if it occurs to a considerable degree and requires the substantial use of the upper extremities and back muscles.
- M. Fingering:** Picking, pinching, typing or otherwise working, primarily with fingers rather than with the whole hand or arm as in handling.
- N. Grasping:** Applying pressure to an object with the fingers and palm.
- O. Feeling:** Perceiving attributes of objects, such as size, shape, temperature or texture by touching with skin, particularly that of fingertips.
- P. Talking:** Expressing or exchanging ideas by means of the spoken word. Those activities in which they must convey detailed or important spoken instructions to other workers accurately, loudly, or quickly.
- Q. Hearing:** Perceiving the nature of sounds at normal speaking levels or without correction. Ability to receive detailed information through oral communication, and make fine discriminations in sound.

- R. Repetitive Motions:** Substantial movements (motions) of the wrists, hands, and/or fingers.

3. VISUAL ACUITY

Please circle/check/bold the ONE description of visual acuity requirements (including color, depth perception, and field of vision), that best describes the requirements of the position:

- A.** The worker is required to have close visual acuity to perform an activity such as: preparing and analyzing data and figures; transcribing; viewing a computer terminal; expansive reading; visual inspection involving small defects, small parts and/or operation of machines (including inspection); using measurement devices; and/or assembly of fabrication of parts at distances close to the eyes.
- B.** The worker is required to have visual acuity to perform an activity such as: operating machines such as lathes, drill presses, power saws and mills where the seeing job is at or within arm's reach; performing mechanical or skilled trades tasks of a non-repetitive nature such as carpenters, technicians, service people, plumbers, painters, mechanics, etc.
- C.** The worker is required to have visual acuity to operate motor vehicles or heavy equipment.
- D.** The worker is required to have visual acuity to determine the accuracy, neatness, thoroughness of work assigned (i.e., custodial, food services, general labor, etc.) or to make general observations of facilities or structures (i.e., security guard, inspection, etc.)

4. WORKING CONDITIONS

Please circle ALL conditions the worker is subject to in performing the essential functions of the position:

- A.** The worker is subject to inside environmental conditions: Protection from weather conditions but not necessarily from temperature changes.
- B.** The worker is subject to outside environmental conditions: No effective protection from weather.
- C.** The worker is subject to both environmental conditions: Activities occur inside and outside.
- D.** The worker is subject to extreme cold: Temperatures typically below 32 degrees for periods of more than one hour. Consideration should be given to the effect of other environmental conditions such as wind and humidity.
- E.** The worker is subject to extreme heat: Temperatures above 100 degrees for periods of more than hour. Consideration should be given to the effect of other environmental conditions such as wind and humidity.
- F.** The worker is subject to noise: There is sufficient noise to cause worker to shout in order to be heard above the ambient noise level.
- G.** The worker is subject to vibration: Exposure to oscillating movements of extremities or whole body.

- H. The worker is subject to hazards: Includes a variety of physical conditions, such as proximity to moving mechanical parts, moving vehicles, electrical current, working on scaffolding and high places, exposure to high heat or exposure to chemicals.
- I. The worker is subject to atmospheric conditions: One or more of the following conditions that affect the respiratory system of the skin: Fumes, odors, dusts, mists, gases or poor ventilation.
- J. The worker is subject to oils: There is air and/or skin exposure to oils and other cutting fluids.
- K. The worker is required to wear a respirator.
- L. The worker frequently is in close quarters, crawl space, shafts, manholes, small, enclosed rooms, small sewage and water line pipes, and other areas which could cause claustrophobia.
- M. The worker is required to function in narrow aisles or passageways.
- N. The worker is exposed to infectious diseases.
- O. The worker is required to function around prisoners or mental patients.
- P. None: The worker is not substantially exposed to adverse environmental conditions (such as in typical office or administrative work).