

WE TEACH OLD ROBOTS NEW TRICKS



Waldron Automation LLC provides reconditioned FANUC robots sized for the application for the following industrial solutions.

- **Palletizing Systems, 12 pcpm with new SAS Automation end-of-arm tools.**
Secondary Operations: Tier Sheet & Pallet Loading.
- **Injection molding / Blow molding part removal and insert loading.**
Secondary Operations: Degate, Router & Torch, Clip Inserting, Hot Knife Cutting.
- **Foundry Material Handling part removal and insert loading.**
Secondary Operations: Degate Loading, Quenching, Fixture Loading.
- **Punch Press loading and stacking.**
Secondary Operations: Single Or Progressive Die Loading, Edge Sanding.

Pricing: Our goal is to provide you the *basic robot, end-of-arm tool and programming to do the process.** We recommend that you purchase the guarding and do the installation. We provide an OSHA approved gate switch and wire as required. We can provide the technical assistance to interface with your equipment and provide a programming class and start up assistance.

Options include Alumized Kevlar suits, pick point conveyor, safety enclosures, robot platforms, extended warranties. We also build custom secondary machines for your application. Systems start at \$45,000*

FANUC preventive maintenance service, parts, and programming service.

Craig Waldron craigwal@bellsouth.net
Cell: (404) 680-3256 | Fax: (256) 231-1171
Anniston, Alabama



How to Compete with Offshore Low Labor Costs: Employ Highly Skilled Labor at 30 Cents per hour.

How would you like to hire an extremely skilled laborer for 30 cents per hour? A laborer that works 24 hours a day, 7 days a week, 52 weeks a year? Good news—you can! It's called an industrial robot and it's been around for decades working in a vast number of industries and applications. But one thing that's often overlooked is the real cost of employing a robot versus using manual labor. This is in lieu of the fact that we know robots work faster, longer, produce higher quality and productivity, and don't mind working in harsh environments.

So, let's look at the operating costs for industrial robots. According to the latest information from the US Department of Energy, the national average cost per kWh for industrial usage is 4.99 cents per kilowatt-hour, or about 5 cents per kilowatt-hour.

So, for example, the power consumption for an "average" robot is about 5 KVA. Applying a power factor of 85% to convert KVA to KW results in approximately 6 KW as an average robot's power usage. At 5 cents cost per KWh and 6 KW usage, the cost per hour for electrical energy to operate an average robot is 30 cents.

A robot must have a "hand" or gripper added to it to be comparable to a human laborer. This gripper allows it to pick up parts or tools to do work. These grippers are normally pneumatically operated and require very little air consumption. According to the US Department of Energy, the national average cost for compressed air is 2 cents per hour for 1 CFM of compressed air. So, the result is the cost of compressed air to operate a robot's gripper is negligible. For example, a 2-inch bore by 2-inch stroke gripper cylinder cycling 4 times per minute uses 25 cubic inches of compressed air per minute, or about 0.014 CFM. At 2 cents per hour per CFM, this is less than a penny per hour cost.

So, the total direct operating cost of an average robot is 30 cents per hour!
The total operating cost per year working one shift, 5 days per week, 52 weeks per year is \$624.00

In the past decade, great strides have been made by robot manufacturers to improve the reliability and uptime of today's industrial robots. Now the average mean-time-between-failure (MTBF) for an industrial robot is 60,000 plus hours! This means that, as a user, you need not plan on hidden costs for robot repair or downtime.

Another important factor to consider is that the average cost of maintenance per year on a robot is less than \$500. This is mainly a scheduled periodic check of lubrication points on the robot manipulator.

Let's compare these costs to the costs associated with an "average" manual laborer. Only as an example, let's use a cost of \$15 per hour for a burdened rate for a human laborer. In many cases, this is a very low rate. Even at this rate, a robot at 30 cents per hour costs 50 TIMES LESS than a manual laborer!

This does not even take into account the cost of "maintenance" of manual workers. Just a few of these manual maintenance items include lost production due to lunch and breaks, the cost of lunch room and supplies, protective clothing and safety devices, parking lots, insurance, workers compensation, retirement and 401K contributions, lost time due to injuries, vacations, training and retraining, and the cost of Inconsistent and unpredictable production. All of these items have a direct cost in maintaining a manual labor force.