

Help On the Way

DO-IT-YOURSELF PROJECTS CAN BE GREAT, BUT ORIGINAL EQUIPMENT MANUFACTURERS OFTEN ADD VALUE WHEN UPGRADING AND OPTIMIZING TREATMENT PLANT EQUIPMENT

By Doug Pimlott

The annals of home ownership are filled with stories of do-it-yourself projects gone wrong.

Operators of water and wastewater treatment plants are more mechanically savvy than the typical homeowner, and yet even they can often benefit from the advice of an equipment manufacturer when undertaking a repair, upgrade or optimization project.

Plant owners and equipment manufacturers have a shared interest in seeing the process operate reliably and efficiently. Most likely, your equipment supplier has seen your particular issue many times before and will have the knowledge, experience and parts to help you do what is necessary.

This expertise can be all the more helpful in a time when many facilities are stretched for funding and have seen their maintenance staffs reduced. For rehabilitation work in particular, high-quality manufacturers have groups of specialists who can do the work for you.

For example, a facility in Florida replacing a clarifier drive discovered during construction that the center pier was corroded all the way through. It was a safety issue because the pier was the primary support for the access bridge. While the clarifier was down, the manufacturer fabricated a pier in one week and brought the unit back to a safe and operable condition with minimal downtime.

In addition, a high-quality manufacturer will have a valid contractor's license in your state and will provide insurance in which your municipality or company is named as the certificate holder. The completed project also comes with a warranty covering both parts and labor. Here are some basic tips for working effectively with an original equipment manufacturer to extend equipment life, improve performance and reduce maintenance.

GATHER THE INFO

The manufacturer needs to know the specific piece of equipment that needs attention. If at all possible, know the original project number before calling. Typically, you can find this on the cover of operations and maintenance manual in the title box of the manufacturer's drawings, or on the equipment itself. Then the manufacturer can access the correct bill of materials and drawings to understand the exact issue and find a solution.

But what if the documents have been lost? Many times, plant personnel have said, "You're not going to believe this, but all our documents were destroyed in a flood." In that case the equipment's steel nameplate is always stamped with the manufacturer's name and the original project number.

Unfortunately, nameplates are often affixed to steel or plastic chain guards or other parts that have deteriorated over the years and have been replaced. In this event, the control panel can be a treasure trove of information that has been shielded from the elements. In the panel you can often find the schematic drawings, which will include the project number. (Be sure to lock out/tag out the equipment in accord with OSHA and local standards before opening any panel.)

If you can't locate the original project number, don't worry: Any good manufacturer will be able to find it in their records. In one case, a refinery



Between corrosion, maintenance, and changes in flow, keeping a clarifier working at peak performance can be challenging. Complimentary inspection by OEMs for circular or rectangular clarifiers help assess equipment condition and performance. (Tow-Bro clarifier from Evoqua Water Technologies)

on the West Coast had a clarifier that was shearing pins daily. The operator was new and had no idea what the bottom of the tank even looked like; the manuals had been lost many years ago.

In this instance the manufacturer was able to re-create the manual and talk through and troubleshoot the issues over the phone. The customer then ordered the materials in advance and changed out the parts while being down for only a day.

In cases like these it's necessary to report the equipment type, city and state. If you're in a small town and need to work on a circular clarifier, that information will probably suffice. However, in a large metropolitan area where there probably are multiple plants and clarifiers and possibly many retrofit or upgrade projects, some information about dimensions and key attributes will narrow down the search.

For example, saying that it's a 65-foot half-bridge clarifier and naming the treatment plant should enable the manufacturer to locate the specific files.

DIGGING DEEPER

Here are some additional steps you can take to make sure you and manufacturer understand the equipment and the issue you are facing:

Take pictures

This is a huge plus for the digital age. Show overall pictures of the equipment as well as close-ups that help illustrate the problem. Pictures taken with a good-quality smartphone are usually sufficient. These pictures can assist in the diagnosis and ensure that everyone is on the same page about the equipment type.

Get the drawings

If you have lost your general arrangement drawings, ask the manufacturer for a copy. The manufacturer likely will not send you custom fabrication or proprietary drawings but will gladly send general arrangement and assembly drawings that would have been in your operations and maintenance manual. Electronically transferred documents can be kept on a network as a permanent reference or as a backup to paper-based drawings.

Tell the truth

If, for example, you didn't know that a certain compartment needed an oil change every six months and you have not changed it in years, let the manufacturer know. If there has been a failure, your contact will likely ask a series of questions to get to the root cause; this helps in arriving at a good diagnosis and supplying the materials needed to fix the problem.

Most likely, your equipment supplier has seen your particular issue many times before and will have the knowledge, experience and parts to help you do what is necessary.

Ask for an inspection

Your manufacturer most likely can provide a complimentary qualified inspection to assess your equipment's condition and operational performance. After that, you will receive a detailed report including full documentation of the inspection along with recommendations for rehabilitation, upgrades or replacement options.

Inspection greatly benefited an industrial facility in Alabama. Plant operators thought they needed a new drive for a clarifier they depended on to produce their product and were worried about the time and cost of replacement.

A free inspection found that only some topside bearings needed replacing; they did the work without draining the clarifier and saved more than \$60,000 in materials and labor.

STRAIGHT TO THE SOURCE

You shouldn't need to contact third parties for replacement components. Bearing houses, for example, can be convenient and quick, but they are generalists and serve many industries. Manufacturers often hear from treatment plant operators that they have ordered parts three different times and none of them fit. Even worse, they do fit physically but then cause further damage to the machine because their form and function differ from the original.

It is also common for a bearing house to simply call the manufacturer to procure the parts; this adds time and money to the solution and puts an unnecessary person in the mix in the event things do not go as planned.

PICK UP THE PHONE

Finally, don't hesitate to call the manufacturer. Specialists there can guide you through the process and make sure you start out on the right road. Your manufacturer can help you with a full range of projects including:

- **Restoration:** Rehabilitate your system to improve operational efficiency and extend life
- **Installation:** A single source of responsibility for components and labor
- **Updating:** Adding components and systems that improve capacity and performance with little or no structural modification.

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