

# How to buy a screw - part III

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The previous two articles were discussions about the contribution of extruder screws to bottom line profitability, and how to decide if you need a new screw. Also covered was how to select potential suppliers and information you should provide to these suppliers to obtain meaningful quotations. Part III will cover finalization of the quotation to obtain only what you need, and to have an "apples to apples" comparison between suppliers, performance guarantees, and how to place the order.

At this point, let's assume that you have obtained the initial quotation from at least 2-3 suppliers. There are a number of points that you should consider in comparing the quotations, but, again, do not over specify and do not purchase equipment that you will not need. Listen to the supplier. Talk to them and be sure that you understand their suggestions, because they are usually very helpful. Questions that you now want to ask are as follows:

- Did they supply everything you asked for?
- Are the predicted output and stock temperature defined?
- Is the delivery time included?
- Are flight and root surface coatings specified? (flame hardening, Colmonoy, chrome)
- Is the price, with options, clearly specified?

At this point, there will be many considerations. A very useful tool is to prepare a chart with all of the specifications on one side with the suppliers across the top. This provides a means for making a direct comparison between suppliers and also is useful to be sure that all of the information that you need has been provided by each supplier. I would like price at the bottom of the chart. As mentioned before, the cost of nonperformance of an extruder screw is extremely high. Initial price is a secondary consideration. This is no time to be penny-wise and pound foolish. The specifications for output, pressure and temperature stability, stock temperature, and horsepower requirements are often times not very hard and fast rules. It may be advisable for you to contact the supplier by phone and discuss what realistic specifications are. How close are the numbers that they have quoted to the maximum that they expect? If this is the case, there is little room for error, or for the variability that may be in your process. The purpose of the phone call is for you to get a good feeling and understanding of how the quoted numbers were arrived at so you can make a judgement on how realistic the numbers are. Pay particular attention to major components that are present in one quotation and not in the other. For example, mixing sections or the latest design in barrier screws. These are costly items, but provide a degree of improvement in performance. Add a section called "supplier experience" to your comparison chart.

Performance guarantees are some times requested. However, your major guarantee of performance is the experience and reputation of the screw supplier. Performance guarantees mean many things, but they can be very costly to the supplier. Some reputable suppliers make it a policy not to provide performance guarantees. Some suppliers will give performance guarantees if you run a trial in their lab. You bear the cost of the trial, but it will be deducted from the screw price. This is a time, when specifying a performance guarantee, to be reasonable with the supplier and not to nitpick on very small details. Be aware that performance guarantees will often require that the supplier downgrade his estimate of his performance specifications to cover his risk. It can also raise the cost of the screw.

It is important to understand the details of what the performance guarantee means. Does it mean that the supplier will reserve the right to re-cut the screw five times? Who will pay for the shipping? If many recuts are required, this is very costly to you and the supplier, and other screws need to be available to keep your line running. You need to evaluate all of your own downtime costs. Should the guarantee specify that, after two recuts, the supplier will provide a 100% refund. Pick only your most important requirements and write the performance guarantee to cover only these requirements.

At this point, it may be important to review your quotation, eliminate the unnecessary items, be very specific, and ask for a final quotation. Don't request this unnecessarily of suppliers who you have no intention of using. The quotation will be part of your purchase requisition, so it is important to have a final quotation that you can refer to.

After a decision has been made as to the supplier, a purchase requisition should be written, in detail, specifying the points that are of importance. If the quotation details all of the requirements, just refer to the quotation number and date provided by the supplier in your purchase requisition.

It will be necessary to provide over all screw dimensions to the supplier if they do not have your type of machine in their database. If you can make these measurements without undo cost, do it even if just for a recheck. Overall length of the screw is important, as are all of the dimensions of the shank end of the extruder. Before a screw drawing will be released and the manufacturing process and delivery time begun, it is necessary that the supplier have this information.

In the next issue of the newsletter, we will cover other items on purchasing an extruder screw, but primarily we will focus on follow-up work, what to do when the screw arrives, and installation and startup procedures.

- Edited by Russ Gould

See also:

- How to buy a screw - Part I
- How to buy a screw - Part II
- Naming screws for materials, compression ratios, . . . .

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