

# **TROUBLESHOOTING**

By Paul Waller

## **Take it for a Test Drive -- How to Buy Used Blown Film Equipment**

There are so many bargains on used equipment out there that it is often difficult to justify the cost and lead time for new equipment. How can you make sure the great bargain is not a lemon? Can you make a profit even if the equipment is operating as designed? The safest approach is to assume the equipment was not kept in top operating condition for the last few months prior to being put up for sale. You can reduce the risk by taking a few simple steps.

### **Step 1 -- Know What You Are Buying**

Inspect the equipment and itemize exactly what you are buying. Record the serial numbers and make sure the equipment has no liens against it and was not stolen. This is especially important if the equipment is stored in a warehouse. The Original Equipment Manufacturer (OEM) and the local police can check for you.

### **Step 2 -- Contact the Original Equipment Manufacturer (OEM) Representative**

Ask what similar new equipment should be able to produce and what it would cost. Ask if the company will quote on repairs to its brand of used equipment.

### **Step 3 -- Take it for a Test Drive**

You have two choices when buying a used car: take a good look at it and kick the tires or take it for a test drive. The same is true of production equipment. It may not be practical to set up and test equipment stored in a warehouse. A good mechanic can learn a lot about the condition of a car by making a visual inspection. Find a similar expert to inspect the equipment. Do not hesitate to hire an independent consultant if no one in your company qualifies.

A test run is very worthwhile if the equipment has not been decommissioned. Independent consultants can do this if you are not comfortable running the equipment yourself. Be cautious about employing anyone recommended by the vendor.

The following tools are required to properly evaluate a film line.

1. Safety equipment should include safety glasses, insulated gloves, safety shoes, safety razor to cut film and ear plugs.
2. Use a brass knife to clean the die. Never put a knife that can cut your hand on the die lips or rubber covered rollers.
3. Use a level to assure the die, air ring, nip rollers and idler rollers are level. Spin each idler to check for worn bearings or bent shafts.

4. Use a plumb bob to assure the haul off nips are centered above the die. Since the extruder barrel will get longer as it heats up, the extruder and die must be up to operating temperature for this test.
5. Use a tape measure to assure the equipment is aligned and to measure the width of the film produced during the test.
6. Use a film thickness gauge to measure the average and variation in thickness of film around the bubble.
7. Use a marking pen to record the length of film produced in a given period of time. Convert the production rate into feet per minute or meters per minute.

A contact pyrometer is useful but not essential. It measures the melt temperature and gradients of heated metal components. The melt temperature may be up to 25°C above the last zone of the extruder.

#### **Step 4 -- Compare the Used Equipment to New Equipment**

The equipment evaluation should provide a list of items that require repair or replacement. Obtain a quotation from the OEM representative to complete this work, including labor and installation. You should be able to deduct this cost from the purchase price, or have the vendor arrange for the repairs.

#### **Step 5 – Can You Make a Profit?**

Determine the maximum sustainable production rate to produce film that meets your quality standards during the test run. Prepare a budget that includes realistic rates for market price, scrap rate, raw materials, labor, utilities, overhead, taxes and maintenance items. If the cash flow projection is still positive, deduct a realistic profit margin. The balance is the maximum depreciation you can afford to absorb. Shipping, installation and start-up expenses are one time expenses that should be included here. You can calculate the price ceiling once you estimate the useful service life for the equipment. Do the same calculation for new equipment and adjust your offer to reflect the added risk of purchasing used equipment.

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