

# Demystifying dryers

Vigilant inspection and routine maintenance are the best ways to prevent costly downtime and repairs.

BY PHILLIP LAWLESS | MANAGING EDITOR



Fully functional dryers are generally the crowd-pleasing finale of every professional carwash. For owners, dryers are a necessity because they remove rinse water and enable every washed car to shine like a superstar. For customers, a thorough drying cycle is the ultimate encore — the bombastic, grand finish to a hopefully virtuosic washing performance.

But, today, dryers have to work harder than ever to remove water. The stubborn spot-free waters cling to cars in a strange, last-ditch attempt at survival. Further, higher wash volumes and faster line speeds easily expose aging dryer systems. As customer cars flash by, these elderly antiques are left winded, hanging on for dear life. These challenges can often leave owners wonder-

ing, “What can I do to keep my dryers from breathing their last breath?”

## Effective operation

The easiest way to see if a dryer is operating effectively is a visual check. Owners and operators should observe cars on the line to see if the dryer is removing the optimum amount of water from vehicles, according to Cheryl Dobie with Aerodry Systems LLC. If this is not the case, an operator should first check and make sure all motors are running.

Owners should also note the frequency of motor startups per hour, Sharon Minogue, director of advertising and technical illustration with Proto-Vest Inc., said. More system startups per hour equal high-

er energy usage, higher power costs and a shorter motor life. In addition, drying units should be run strictly according to the manufacturer’s specifications, and there should be no air escaping out of the dryer other than through the discharge ports.

Still, if a wash is not fully drying cars, it may not be a dryer problem. Other wash cycles may also be at fault. “Adjustments may be needed to either the dryer or to the wash system or both,” Dobie said. “The dryer is commonly regarded as either the entire problem or the perfect solution; however, any dryer’s performance can be enhanced or impeded by the process that precedes the dryer.”

Here, the chemical carwash cleaning products can be a big contributor as well.

These wash chemicals work together, and they work best when they are pH balanced. Minogue said obtaining the right chemical balance during the wash process allows for the cleanest, brightest and driest results.

## Common problems

There are many problems that can plague older drying systems. A list of indications that it may be time to upgrade a system includes:

- Low dryer performance;
- Frequent downtime;
- Excessive repairs;
- Noise level concerns; and
- The inability to find parts.

Even with the greatest care, Minogue said it is not unusual for an electric motor to fail or for an impeller to have cycle fatigue and require replacement. "Many manufacturers have come and gone over the last 50 years, which may make it difficult or expensive to find and replace parts for older units."

Dobie said it can be especially hard to find the moving parts on older systems such as follower nozzles, fans and sensors.

Another common problem with older dryer systems is that the configurations manufactured over 20 years ago do not allow for sound abatement. Because of this, these dryers cannot meet current requirements for lower sound levels, Minogue explained.

## New systems

Today's new drying systems feature housings constructed from a number of materials: Stainless steel, aluminium, plastic and fiberglass. Dobie said materials that are resistant to stress fractures in the caustic carwash environment will be the most expensive. However, these materials will result in less maintenance and downtime and add significant life to the system. Additionally, only certain materials lend themselves to effective sound

abatement.

Also, two types of air producer fans can be used to form the working components of new systems — axial or centrifugal. Dobie said both have very different attributes. Based on the type of fan, operators should make sure to use the proper ductwork required and make sure all safety concerns are addressed.

Many new dryers also offer variable fre-

in-rush electrical current can be reduced or eliminated which reduces energy consumption and increases efficiency."

Air on demand systems restrict the air entering into the blower system. This reduces the horsepower and the workload of the motor until full power is needed in the drying area. Minogue said these units are very effective in saving the operator money on electricity usage. The system

minimizes the need for electricity between vehicles by minimizing startups and frequent high-demand rates, and it increases the longevity of the motor.

## Combating "sticky water"

Minogue said the dryer technology available today uses lower horsepower, and it can allow a greater return on investment than older systems. Still, today's systems are expected to meet the challenge of removing the "sticky water or dead water" that is created by reverse osmosis.

Water filtered through reverse osmosis units is used for final rinses because it dries spot-free. Even so, it also has a tendency to cling to cars, and this makes it harder for dryers to remove the water. Minogue said some manufacturers have simply increased horsepower to combat this "sticky water," while others have made use of more effective designs to minimize the needed power.

Dobie agreed that removing spot-free water is a challenge for every drying system. "Operators can compensate somewhat by mixing fresh water with spot-free in the rinse as well as adjusting line speed, drip space and the amount of drying agent applied," she suggested.

## Maintenance and warranties

Once a new drying system is purchased and installed, owners can ensure its longevity through proper preventative main-

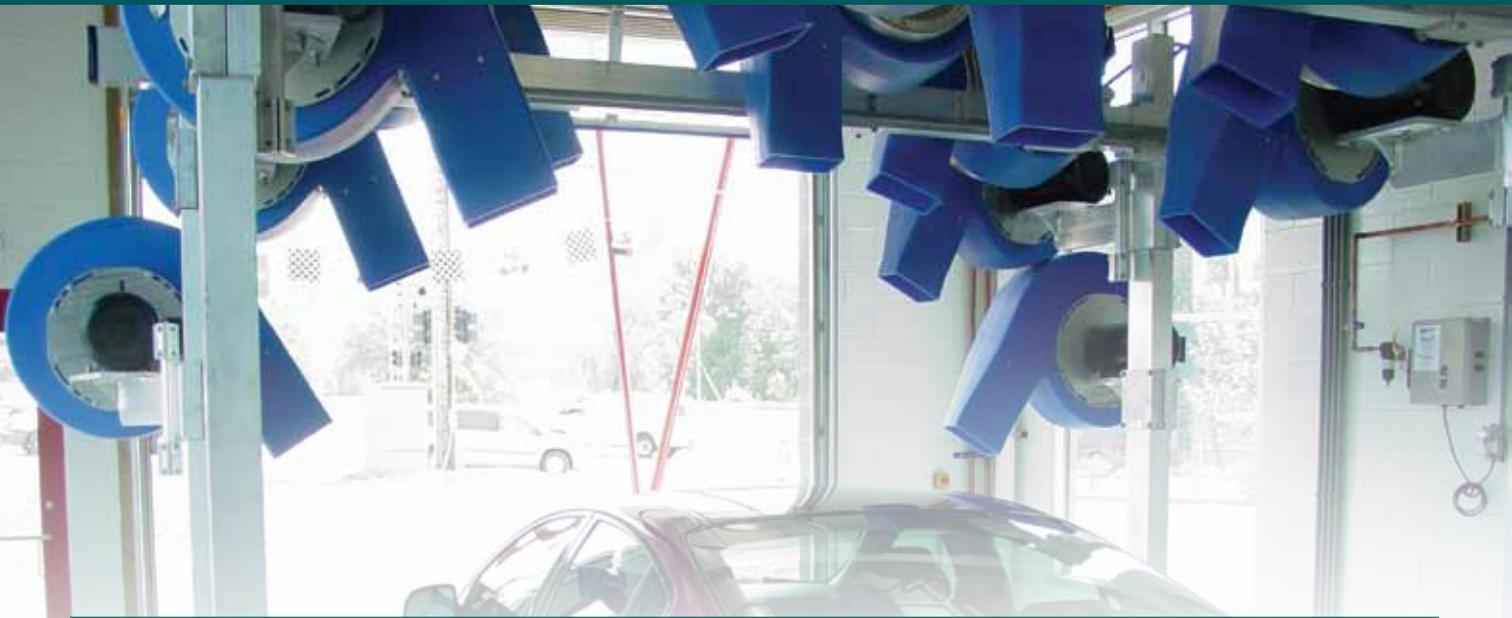
"In contrast to leaving the dryer running continuously, different methods are available which produce air flow only when a vehicle is in the drying stage."

— Cheryl Dobie with Aerodry Systems LLC



tenance and warranties. "In contrast to leaving the dryer running continuously, different methods are available which produce air flow only when a vehicle is in the drying stage," Dobie said. "Regulation of air production can be affected using timers, VFDs, blast gates or similar."

VFDs offer many advantages and multiple functions which can lengthen the life of the dryer motors, Dobie said. "Start up



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## 10 tips to prevent dryer problems

Below are 10 tips from industry professionals that owners and operators can use to guarantee optimal performance from their dryers. For best results, owners should always follow the manufacturer's maintenance instructions.

1. Clean dryers regularly.
2. Check air intake area for debris.
3. Make sure air flow inlets and outlets are not obstructed.
4. Inspect system for unusual wear.
5. Listen for strange noises and vibrations.
6. Oil and grease system periodically.
7. Discharge water trap.
8. Ensure electrical connections.
9. Examine fan blades for fractures.
10. Reposition blowers for an effective air flow.

tenance, Minogue said. A well maintained dryer should provide many years of trouble-free operation.

“As with any piece of equipment, regular cleaning will not only keep up aesthetic appearances but will also reduce system failure while extending the life of your dryer,” Minogue explained. “This includes the exterior of the unit as well as checking for debris in or around intake areas to prevent damage from accidental ingestions and even discharges of foreign material.”

Minogue also recommended a regular inspection of the unit to check for unusual wear, vibrations or noises. If any of these conditions are noticed, especially noise or vibrations, the dryer should be shut down immediately to diagnose and correct the cause. “This will prevent increased downtime and reduce any resulting safety concerns.”

Warranties on new systems can vary by manufacturer. “The OEM manufacturer usually offers a warranty against defects in materials and workmanship for a given period of time,” Minogue said. The electric motors are usually covered by a separate manufacturer's warranty. These warranties will not cover products or components that have been subject to misuse, abuse, incorrect installation or accidental damage.

Dobie said typical warranties cover manufacturing defects for periods of 90 days to one year, dependent on the manufacturer, while motor manufacturers generally provide longer warranties. She also warned that warranties generally do not cover the cost freight or on-site labor.

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