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GETTING THE BEST FROM YOUR DRY CLEANING MACHINE

Although the modern dry cleaning machine is designed to be failsafe, things can still go badly wrong if the operator has been inadequately trained, or is not conscientious and fails to carry out critical maintenance procedures at the appropriate time.

Failure to clean lint screens/bags and maintain the button trap in good condition, are perhaps the most common operator errors that often result in extended drying times. Holes in dust bags and *poor seals* on lint bag frames and lint screens are also very common faults that over a period of time will inevitably lead to expensive recovery head maintenance being required. The perforations in most button trap baskets are very small and are easily blocked and although the trap may appear to be clean it could still seriously restrict the solvent flow, reducing cleaning efficiency and more seriously, cause solvent to be retained in the cage, or the button trap. Regularly check the button trap when it is dry by holding it up to the light. Any blocked holes can usually be cleared with the spotting table steam/air gun. Insufficient solvent in the machine is another fairly common fault together with empty detergent containers.

It is also important to frequently check the cage, lint screen, button trap and still door seals to ensure that they are free from debris and are in good condition. Solvent vapour detectors are available that can be used to check seals for leaks. Check for vapour escapes when the machine is before halfway into the drying cycle.

Distillation rates can vary considerably, particularly after a number of dirty loads have been cleaned. During busy periods, if distillation is not complete before the next load is processed, solvent can build up in the still, leaving the base tank short of solvent and the risk of the still being overfilled. In the case of machines that are not fitted with a device to prevent overfilling, this can easily lead to the still 'blacking over' Repeated black-overs, often cause a partial, or at worst, a complete blockage of the still vapour pipe.

Today the modern dry cleaning machine is controlled by computer and routine procedures such as filter maintenance and the removal of liquid residues from the still can be done at the touch of a button. These critical procedures are often done at a specified time or day of the week without reference to, or knowledge of, the actual machine condition. Inadequately trained staff may be completely unaware of the relevance of high filter pressure, poor solvent flow rates or slow distillation and are often completely unaware of a developing problem until it has reached the point of no return.

Regular informed monitoring of the operation of your machine is the key to trouble free operation.

Do's and don'ts of operation

Do

* Ensure machine operators are properly trained and not just 'button pushers'.
* Regularly check the first stages of the wash cycle.
* Check the filter pressure at least twice every day.
* Pay particular attention to lint screen, button trap and still maintenance.
* Make sure you maintain the recommended levels of solvent in your machine. *Insufficient solvent in the machine is a fairly common problem.*
* Check that distillation from the last load is complete before you start the next load
* Regularly check the condition/colour of your base tank solvent.

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* Regularly check the detergent container on the machine.
* Keep accurate records of weights processed and solvent used.
* Have your machine maintained by a qualified engineer

Don't

* Assume staff can safely and professionally deal with an emergency. *Make Sure!*
* Overload your machine.
* Just load the machine, press the start button and walk away.
* Assume a good operator can train another member of staff
* Clean items contaminated with petrol or flammable liquids.
* Ignore unusual machine noises, or strong solvent smells

MACHINE PROGRAMMES

If you are to get the best out of your dry cleaning machine the process structures for your automatic processes are critical. For example, research has clearly shown that the height of the dip alone can easily make a *difference of around 20%* in terms of stain removal in the machine. The following variables all influence mechanical action during the dry cleaning wash cycle and mechanical action is a critical factor determining how well your machine cleans.

1. The height of the dip – High dip = low mechanical action Low dip = High mechanical action.
2. The cleaning time – the longer the wash cycle the more prolonged the mechanical action.
3. The weight of the load affects mechanical action because the maximum is achieved with a full load, but overloading reduces mechanical action, although under loading reduces the friction and rubbing action required, and increases the risk of distortion and damage to delicate items.
4. The r.p.m. low speed rotation of the cage. (Too fast and items cling to the rotating cage; too slow and the items fail to tumble over each other giving a washing action and agitation.)
5. The weight of the solvent (specific gravity) - High SG gives increased mechanical action. Low SG gives reduced mechanical action.

Approximate solvent specific gravities	Perchloroethylene		1.6 = 1.6 kg's / ltr
	Hydrocarbon		0.8 = 0.8 kg's / ltr
	Cyclosiloxane	(Green earth)	1.0 = 1.0 kg's / ltr

It will be seen from the above that Perc is twice the weight of hydrocarbon and therefore has the potential for significantly greater mechanical action than hydrocarbon solvents. However, while good mechanical action is required when processing heavily soiled robust loads, very reduced mechanical action is essential when cleaning silks and delicate fabrics.

Don't assume that your machine programmes are ideal, check them against these outline process structures, which assume cleaning in perc.

Normal Cleaning Process

A programme for cleaning dark robust garments should have a minimum cleaning time (the time garments are tumbled in a dip or flow of solvent) of at least 11 minutes. This will normally comprise of a short circulating dip from the base tank of around 3 minutes, drain and extract to the still. Followed by the second stage drawn from the distilled tank and detergent added. This is an 8 – 9 minute low dip wash over the filter. The dip is then drained and extracted to the base tank. A low dip is important to ensure maximum mechanical action.

A lot of solvent splashing around in the cage looks good but it reduces cleaning efficiency.

Delicates Process

This process structure is suitable for silks and delicate whites. Under load the machine by approximately 50%. The cleaning time should be *no more than 6 minutes*, comprising of a 4 minute *high dip wash* from the base tank over the filter, (solvent must be no more than a very light straw colour). Drain to still followed by 1 - 1½ minute rinse in distilled solvent, drain and extract to the base tank. For very sensitive items such as angora, interrupted cage rotation or slow low speed can be employed if this facility is available.

Cleaning times will need to be extended for hydrocarbon solvents. For example the cleaning time for heavily soiled robust loads may need to be up to 20 minutes for maximum soil and stain removal.

Finally, even the best machines wear out and have to be replaced. The need to achieve the solvent mileage requirements set out in the SED may mean that older and some very well used machines will need to be replaced sooner rather than later. So, by keeping records for SED you are already checking your solvent mileage, but only if you are doing it monthly can you see early changes, which may **indicate something is going wrong**, requiring immediate attention