IC4 3316 IRONER IC4 3320 IRONER





Wascomat provides efficient washers, dryers, flatwork ironers and wetcleaning systems in a size and model for every laundry and wetcleaning need!



WASCOMAT CUSTOMER SUPPORT

Whether you need spare parts or technical advice to guide you to the source of a malfunction, our nationwide network of authorized dealers are able and ready to serve your needs, or call the Wascomat Customer Service Hotlines listed below.

SPARE PARTS **516-371-2000**

<u>Before ordering parts</u>, refer to the Wascomat spare parts manual (also available on www.wascomat.com) to determine <u>the part number(s)</u> for the item(s) you need.

For quick service, please have the following information available:

- 1. Part Number of the item(s) you need.
- 2. Model of the machine.
- 3. Serial number of the machine.
- 4. Electrical data for the machine:
 - 120 or 208-240 Volt?
 - Single or three phase?
 - 50 or 60 Cycle?

To insure parts order accuracy, only fax or email parts orders are accepted:

- Fax: 516-371-4029
- email: parts@wascomat.com

TECHNICAL SUPPORT 516-371-0700

For service information, first contact your local authorized Wascomat dealer.

Wascomat technical support can assist you or your technician to diagnose and repair your laundry machines over the phone. Please call from the location where the machines are installed (we suggest you use a cellular or cordless phone), and have the following information available:

- 1. Model of the machine.
- 2. Serial number of the machine.
- 3. Electrical data for the machine:
 - 120 or 208-240 Volt?
 - Single or three phase?
 - 50 or 60 Cycle?
- 4. An accurate description of the malfunction.

To expedite parts order shipment, please use your credit card. We accept: American Express, Mastercard, Visa, Discover, Diner's Club.

WARRANTY CLAIMS

Wascomat's Technical Support staff will honor valid manufacturer's parts warranty claims providing your Wascomat machines are registered for warranty coverage upon installation. <u>If they are not registered</u>, you can validate your warranty claim by providing information about when and where you purchased the Wascomat machine(s), the model and serial number(s). Additional warranty proof may also be required.

461 Doughty Blvd., Inwood, N.Y. 11096-0338 Sales and Administration – Tel: 516-371-4400 • Fax: 516-371-4204 • e-mail: sales@wascomat.com Spare Parts – Tel: 516-371-2000 • Fax: 516-371-4029 • e-mail: parts@wascomat.com Technical Support – Tel: 516-371-0700 • Fax: 516-371-4029 En Mexico: Llame gratis a este numero 001-800-010-1010

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Precaution for use

- The machine should not be used by children.
- This ironer must be used exclusively for textiles appropriate for machine ironing, which have been previously and exclusively washed in water.
- Blankets should not be ironed.
- Be careful with synthetic linen and also with printed linen. They can melt and stick on the cylinder.
- Do not iron articles that contain plastic, foam, sponge rubber or similarly textured rubberlike materials.
- Do not iron linens coated with solvent, paint, wax, grease or any easily inflammable products.

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In the machine you should have found a set of instructions and a servicing poster to display in your laundry.

You must have found with this handbook, a crank for the manual drive of the cylinder.

Depending on its destination, the dryer ironer is delivered bare or may be placed on a transport pallet and/or packed with plastic film.

In some cases, it may be delivered in maritime packing (wood crate).

Please refer to the handling chapter in this instruction handbook for a description of handling operations.

Before any use, it is compulsory to read the instruction handbook. Users must have learnt how to the machine operates. The identification plate is situated on the left side.

This machine should be installed in conformance to the health and safety regulations, and only used in a sufficiently aerated area. Check the instructions before installing or using the machine.

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The machines described in this handbook have an ironing capacity of 1.650 m (65") or 2.065 m (81¹/₃") wide according to their type.

The ironing speed can be adjusted according to the linen texture and its degree of moisture.

The temperature of the ironing cylinder can also be adjusted by a thermostat.

The parameters are displayed by a control panel.



Identification plate

For safety reasons use only original spare parts. Wascomat
Product
Conforms to - ANSI/UL STD 141 - NFPA STD 79 - UL STD 795 - CGA STD 7.3 302 1444
Model no. Date Serial no.
Maximum power supply
Volts
Hertz
Phase
Max. fuse size
GAS Input rating BTU Type of gas (mbar) Static pressure in. H ₂ O
32007834

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Standard control consol



- 1. "Voltage" indicator
- 2. "Stop" switch
- 3. "On" switch
- 4. "Ironing speed adjustment" potentiometer
- 5. "Ironing temperature selection" thermostat
- 6. "Heating" indicator on
- 7. Gas heating "Ignitor failure" indicator
- 8. "On / Off" heating switch with "On" indicator

Starting machine with standard console

- Turn main section switch to I (ON), the indicator (1) "voltage" lights".
- Turn the potentiometer (4) to the minimum speed.
- Adjust thermostat (5) on required temperature. Usual ironing temperature is around 180 °C (355 °F) for cotton.
- Press button (3) "On".

The cylinder and the guiding bands rotate.

The fan works and draws the air out of the machine to outside the building.

- Press switch (8) "heating on", the key indicator lights. The heating indicator (6) lights. The temperature rise is reached after approximately 12 min for a temperature of 180 °C (355 °F). The heating indicator (6) switches off as soon as the required ironing temperature is reached.
- Check that the finger protection is working. The finger protection must stop the machine when it is touched.
 Press button (3) "On" to restart the machine.
- Adjust potentiometer (4) on an average speed and start ironing.
- Ajust the ironing speed depending on the textile processed and the moisture rate of the linen.
- If the pipe burner is secured, the indicator (6) switches off and the indicator (7) lights ; (to restart the machine, press "STOP HEATING" and then "HEATING ON" (8).

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Stopping machine with standard console

- In order to extend the lifetime of your machine and its components, observe the following instructions to stop the heating.
- Press switch (6) "**Heating stop**", its indicator switches off. The "**Heating**" indicator (8) switches off too.
- Continue to feed in damp laundry until the temperature falls to 120°C (248°F).
- Turn the general switch situated on the left casing to O (off).

CAREFUL : At any time, it is possible to stop the machine by pressing key (2) "**General stop**", a high temperature of the ironing cylinder may damage the ironing strips.

Complementary instructions for starting up a machine with gas heating.

The ignition of the burner is delayed by 30 seconds following the start command in order to allow for the pre-ventilation of the combustion chamber.

The machine will be ready for use after the message has disappeared : "Error Gas Ignition".

The noise at the inter-ignition is not an explosion. It is a normal phenomenon.

Complementary instructions for starting up a machine with electrical heating.

The typical ironing temperature is 150 to 180 $^{\circ}$ C (300 $^{\circ}$ F to 356 $^{\circ}$ F). You just have to set the electronic thermostat to the required temperature.

In automatic mode, the ironing temperature is defined and managed by the machine.

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Additional instructions to optimise a dryer-ironer.

When ironing small sheets or small washing, pass abreast the washing of the heating cylinder to provide correct regulation of the cylinder temperature.

As a general rule, the whole of the cylinder should be used (1). Either iron the linen from the front (2) or iron alternately (3), which makes maximum use of the heat units available over the surface of the cylinder. It also overcomes difficulties arising from random control values caused by partial use of the cylinder.



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Precautions for use

Please respect the following usage recommendations to get the best out of your ironer:

In manual mode

Avoid when running, too low or badadjusted temperatures as consequence of :
 - a too high ironing speed with high moisture content in sheets : bad sliding on metallic sparts.

- a partial use of the ironing length of the cylinder : creating overheating (be carreful especially, to the risk for the polycotton sheets to loose their shape, generally stabilised at 200 °C (392 °F).

- You should begin ironing when the «Warming up» message disappears.
- Check that the washing can be ironed and check the temperature at which it is to be ironed.

The productivity and quality of ironing depend on the washing quality ; make sure that all these conditions are satisfied.

- We recommend as far as possible, that you should feed pieces of flat washing (towels, sheets, etc.) by their hem, with the seam facing top, to obtain maximum ironing quality.
- Carefully engage the washing to be ironed, because it is impossible to disengage a badly engaged washing.
- Do not iron washing folded in four, because it will be too thick to achieve the drying/ ironing/folding quality that you are entitled to expect from your machine.
- If possible, use the entire ironing width of the dryer ironer.

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Practices to avoid

- Make sure that the width of the washing does not exceed the useful width of the machine.
- Sizes not fitting the cylinder working length, partial use of the cylinder.
- Blankets should not be ironed.

Practices not recommended

- Worn polycotton sheets (cotton worn away) : uneven finish look when folded, high static electricity.
- Large cotton or flax-made sheets > 200 g/m².

Cautions

- Prepare the large sheets before feeding.
- Avoid the torn, worn or holed sheets, that may hook and alter the measurements and the longitudinal folding.
- Comply with the mini-maxi sizes of sheets.



	Draw-	Fitted-	Comforter	Butcher's	Linen	Linen
	sheets	sheets	cases	apron	< 200 g/m²	> 200 g/m²
Flatwork ironer	~	~	~	0	✓	0

✓ Yes O Cautions

× Practices to avoid

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Using the handle

The dryer ironer is fitted with a handle.

This is very useful to take out the washing if there is a power failure while you are ironing; or you can use it to feed a piece of wet washing to protect the ironing bands when the ironing temperature is too high.



Using the tipping feed bin

The dryer-ironer is equipped with a tipping feed bin. This is very useful for letting large items hang to assist feeding and allow smoothing of linen by hand.

For ease of opening, lift the bin slightly before pivoting.





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CAUTION

Disconnect the machine electrical power supply before doing any repair or servicing work.



CAUTION

Do not use the machine unless it is plugged into a correctly earthed power socket complying with standards in force.

WARNING



The presence of dangerous mechanims inside the machine can cause serious injuries. Respect all safety instructions before doing any work on the machine. Replace protective casings after doing any work.



CAUTION

For your personal safety, never use the machine without the protective housings.

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CAUTION The temperature of the ironing cylinder after use can reach 200 °C (392 °F) and can cause serious burns if you touch it. Allow the machine to cool down before doing any repair or servicing work.
SAFETY Never iron if the mobile safety protector (hand protection bar) is not operating.
IMPORTANT To ensure optimal operation of the machine (gas heating, electronic boards, etc.), ensure that the ambient temperature does not fall below 15°C (59 °F).

All repair and servicing work must be undertaken by a competent person.

Never wear full clothes during work (wide sleeves, ties, scarves, etc.).

Disconnect all energy sources and let the ironing cylinder cool down before doing any work on the machine.

In order to avoid any danger of fire or explosion, never use inflammable products to clean the machine.

If you smell gas, turn off the gas supply, open the windows, do not touch any switches and inform the maintenance service.

Evacuation of vapour from a dryer ironer with gas heating must never be connected to the evacuation used for a gas heating machine and a dry cleaning machine or other machine of the same type.

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4. Safety

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Locking and tagging procedure

A red insert at the beginning of this instruction handbook schematically shows the locking and tagging procedure described below. If you wish, you can detach this insert and display it close to the machine to remind maintenance personnel of the safety instructions.



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Safety devices

Feed safety device

The space between the feed safety flap and the drive bands is too small for you to enter your fingers. The machine stops automatically as soon as the flap is pushed in.

Protection of motors

The motors have overload protection :

- by thermomagnetic circuit breakers and
- by the electrical selector (for movement).

Restarting the machine

After each stoppage of the machine, power cut, emergency stop, or activation of the feed safety, it will then be possible to start again:

- in the case of a machine with a standard console, only after pressing the green button of the panel;

Gas heating

The gas burner is ignited and the flame is controlled by an electronic box that provides integral safety, for example if the flue draft is poor or if the gas supply is cut off.

If you have a standard console, the orange lamp signals that the system has been set to safe. If this lamp flashes this signals that the machine has overheated.

A pressure switch connected to the combustion products outlet turns off the machine's heating function should extraction problems arise.

Accessibility

All casings can be disassembled using a special tool.

Heating safety device

The control panel applies an initial safety level at the time the machine starts up.

A safety thermostat, which is independent of all electronic systems, limits the heating temperature of the ironing cylinder in all circumstances (except in the case of a steam heating machine).

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Power supply failure

If there is a mains power supply failure, use the handle to remove any washing engaged in the machine. If the temperature is too high, use the handle to feed some wet washing and protect the ironing bands.

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SAFETY

Make sure that the protection casings are in position before use.

Complementary instructions for operation

Check daily that the hand safety bar is working correctly, the machine must stop when you press it. The screen on control panel displays "Emergency Stop/ Reset Push Button". Press any key to resume ironing.

Ironing Temperature Display

The control enclosure includes an electronic thermostat panel which shows in real time the temperature of the ironing cylinder.

A running temperature over the selected temperature is normal. This happening is not a failure of measuring devices but it is due to heating inertia.

In automatic mode, temperature and speed management are handled by the machine itself.

Fire-related risks.

Should a fire breakout inside the machine, it is recommended that you use a CO2 extinguisher.

Note: in the case of a machine using gas heating, it is strictly forbidden to attempt to put out the fire before having first turned off the gas inlet valve.

The client must ensure conformity towards the Labour Code and his supplier of fire-fighting equipment who issues the Q4 certificate to him.

Repair and maintenance work on the machine.

All work on the machine must be carried out by qualified personnel, able to carry out the work required.

Ensure that the applicable safety conditions for the destination country are fully observed.

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Encountered problem	Cause of problem	Solution
The linen remains stuck to the cylinder	Your washing is not rinsed correctly	Check rinsing with a 1 % phenolphthalein solution diluted in alcohol. If this colorless liquid turns to pink on the washing as it comes out of the washing machine, and it still contains detergents.
	if the washing is insufficiently rinsed.	Increase the number of rinsings if necessary or reduce product doses.
	Check that ironer separating ribbons are intact.	
	Check the cylinder temperature.	
	The washing is not sufficiently spun.	
	Your linen is starched	There is a risk of starch deposits forming on the cylinder
When the linen comes off the dryer-ironer it is not	Your washer-spin dryer has a spin rating of below 300G.	You should plan on a short pre- drying session in a dryer (5 – 10 mins).
dry	Check the drying quality of your washing machine.	The residual moisture content of the washing should be about 50 %.
	The ironing speed is too high.	Reduce the ironing speed.
	The ironing temperature is too low.	
	The linen that you are trying to iron is too thick.	
	Check operation of the heating.	
	Check operation and cleanliness of the vacuum intake system.	
	Check the condition of ironing bands (fibers containing scale).	
	Check the pressure of the ironing roller on the ironing cylinder.	

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Encountered problem	Cause of problem	Solution
The heating does not work, or works badly	Check the temperature preselection.	
	Check the safety thermostat.	
	Check to see if the panel is showing overheating or a high temperature.	Check the panel's sensors.
	Check the cylinder's rotation detection system.	
	Gas heating Check the gas inlet.	
	Clean pressure reducer filters.	
	Check electronic ignition.	
	Check the position of the ignition electrodes and flame control.	
	Check operation of the gas solenoid valve.	
	The flame is yellow	Check that the vapour intake fan is working and is turning in the right direction.
		Check that air inlets are not blocked.
		Check the combustion products exhaust flue.
		Check injector calibration.
		Clean machine air inlet filters.
	Electrical heating Check heating contacts KM6, KM7 and KM8.	
	Check heating resistances.	
	Check resistance connections.	
	Check phases.	

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Encountered problem	Cause of problem	Solution
The machine temperature drops	Check the sensor in the thermostat regulation system.	
	Check the thermostat by measuring the cylinder temperature with a thermometer.	
	Check that the regulation shoe is in contact with the cylinder.	
The machine stops suddenly	Check the electric power supply.	
	Check the hand safety flap switches S5 and S6.	
	Check the movement and ventilation fans.	
	Check circuit breakers.	

Static electricity

- Synthetic textiles are used increasingly in laundry. The low rate of relative moisture on output from drying allows high ironing speeds, which leads to production of harmful static electricity when the linen is ironed in the machine.
- Any friction generates static electricity. Remember the plastic ruler people rub over their
 pullover to attract little bits of paper. With the same causes producing the same effects,
 the linen being subjected to friction in the course of ironing, the rubbing of the linen
 against the cylinder generates static electricity. If too much static electricity builds up,
 friction has to be reduced, which can be done by removing the driving chain of the presscylinder to reduce the generation of static electricity.

Linen colouring

- The brown coloring is due to detergent residues, and will disappear at the next washing.
- Colouring caused by the temperature being too high is permanent. Reduce the ironing temperature or increase the ironing speed.
- The washing should be correctly rinsed so that it does not turn yellow and does not make the cylinder dirty.
 - Check the quality of the washing water (TH/TAC).
 - Check the washing and rinsing cycles (see "phenolphthalein" operating incidents).
 - Check incrustation of the washing (ash content).

The feed bands are not turning

• This type of incident is normal when it only affects a few bands.

When washing will not engage any more, adjust the tension of all the bands by changing the setting of the feed table.

Do not overtighten the bands.

The band must stop turning when you press on it with your finger. It must start again when you remove your finger.

Complementary instructions for starting up a machine with gas heating.

The message **"Error Gas Ignition"** is flashing on display screen during 30 seconds to show that the gas burner is being ignited. If this message is still displayed after 6 seconds, there may be an ignition fault, a failure in gas valve opening or a lack of gas. Switch the machine off and call your local repairman if this occurs regularly.

About 12 minutes is necessary to warm up.

Note:

Do not forget to open the stop valve on the gas supply line before starting to use the machine, and then close it again after use.

The noise at the inter-ignition is not an explosion. It is a normal phenomenon.

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Preventive maintenance

CAREFUL

SHUT OFF THE POWER SUPPLY OF THE MACHINE BEFORE ANY MAINTENANCE OR REPAIR INTERVENTION IS CARRIED OUT AND MAKE SURE THAT THE CYLIN-DER IS COLD.

DAILY (8 H.)

1. Check that the finger protection is working.

WEEKLY (40 H.)

- 2. Clean the fan grates of motors.
- 3. Clean the stripper fingers and the thermostat attachment.
- 4. Clean the ironer external, from dust.
- **G.** Clean the fluff filter with suction device.
- **G.** Clean the cover filter with suction device.

MONTHLY (170 H.)

5. Check that the parting strips are intact and replace if necessary.

EVERY SIX MONTH (1000 H.)

- 6. Slightly grease the chains (see lubrication table in the handbook).
- 7. Clean and check the support rollers of the cylinder.
- 8. Check that the crank is working.
- 9. Check that the electrical connections are shut off on the supply terminal.
- **10.** Clean the whole suction device.
- **11.** Check the heating elements, wires and connections (only for electric heated machines).
- **12.** Clean the gas filters (only for gas heated machines).
- **13.** Check the condition and tension of the ironing strips and of the clips.
- 14. Check the feeding bands, their drive and the clamps.
- **15.** Check that the thermostat is working.
- **16.** Clean the ironer internal, from dust.

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ONCE A YEAR (2000 H.)

- 17. Check if the cylinder has any deposits of detergent or lime. Clean if necessary.
- **18.** Check and clean the outer pipes.
- G. Clean the fluff filter with suction device.
- **G.** Clean the cover filter with suction device.
- **G.** Clean the inner gas burner with suction device.
- **G.** Check the sight of the ceramic plates joints and change them if necessary.

EVERY THREE YEAR (6000 H.)

- G. Clean the fluff filter with suction device.
- **G.** Clean the cover filter with suction device.
- **G.** Clean the ceramic plates with suction device.
- G. Change the high temperature joints made of mineral wool.
- **G.** Check the tightness of the venturis.



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Any repairing or maintenance operation should be carried out by a specialist.



CAUTION

SAFETY

For an optimal service of your machine, execute this instructions at regular intervals and according to the frequency of use.

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Check of the detaching cords or pressure roller :

It is necessary to lift up the upper casing of the machine.

Proceed as follows :

- Stop the machine.
- Dismantle the side casing with the key.
- Do not touch the screws (A) which serve as a link with the casing, a screw in each caisson.
- Unscrew and remove the scews (B). **Careful** : do not touch the screws (C) which are used for the joint of the finger protection device.

Now you can lift up the upper casing in order to access to the detaching cords.

After the intervention, hinge the upper casing down, reset and tighten the screws, then reassemble the side casings.



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Replacing ironing bands

- Remove the feed tray to obtain easy access to the ironing bands.
- Remove staples from the two ends of the bands to be replaced and staple the end of the old band with the end of the new band.
- Rotate the cylinder using the handle.
- Unstaple the ends of the old and the new band, and staple the two ends of the new band together.
- Do the same for the other bands.
- Replace the feed tray.



CAUTION

The tension of the ironing bands was adjusted in the factory with the machine hot.

Never retension the bands.

Their tension must be as low as possible (just enough to drive them) since excessive tension will cause fast wear of these bands. Remember these comments if you need to make an adjustment or a replacement.



Motors :

The fan motor is permanently lubricated. The movement motor is permanently lubricated.

Bearings:

Permanently lubricated.

Heat control :

Make sure that the shoe of the thermostatic control and the safety control devices are always clean and in cylinder contact.

Gas heating :

Check annually the good working of the burner (removal and blowing). Check and clean the lint filter regulary.

Cylinder :

The cylinder must be kept very clean to make ironing easier and must be of a very high quality.

Deposits of washing powder or lime must be removed as soon as they start to affect the quality of the ironing.

The use of VERY FINE saddle grinder ONLY is recommended (grain 180 or Scotch Brite 3M BFB-AM).

THIS SHOULD BE RUBBED IN THE SAME DIRECTION AS THE LINEN IS PASSED THROUGH THE MACHINE.

Should the machine be stopped for a long period, in order to avoid any oxidation of the cylinder, a sheet impregnated with paraffin wax should be fed through the machine.

Using an old sheet, grate a little paraffin wax onto half of the unfolded sheet, fold in half and then run it through the flatwork-ironer while it is still hot enough.

If the machine is to be left unused for a longer period, it is advisable to oil the cylinder slightly (anti-rust oil ref. 96010012).

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Explanation of graphic symbols



Do not iron.

Explanation of Washing symbols

7. Appendices

(ISO 3758:2005 standard)

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To overcome language barriers, the following are symbols used internationally to give you guidance and recommendations when washing different textiles.

<u>Washing</u>	The tub sy	mbolizes washing.		
ť	Max. washing emperature in °C	Mechanical action	<u>Dry or water</u> cleaning	<i>The circle symbolizes dry or water cleaning.</i>
D1232	95	normal		Normal dry cleaning with perchloroethyl, solvent of hydrocarb.
	95	mild		Mild dry cleaning with perchloroethyl, solvent of hydrocarb.
D1234 70	70	normal		Normal dry cleaning with solvent of hydrocarbon.
	60	normal		Mild dry cleaning with solvent of hydrocarbon.
D1236	60	mild		Do not dry clean.
D1237	50	normal		Normal water cleaning.
D1238	50	mild		Mild water cleaning.
D1239	40	normal		Very mild water cleaning.
L1240	40	mild		
D1241	40	very mild	Drying	The circle in a square symbolizes tumble drying.
D1242	30	normal	D1251	Can be put in a tumble dryer. Normal temperature.
01243	30	mild	01250	Can be put in a tumble dryer. Lower temperature.
D1244	30	very mild	0122	Do not put in a tumble dryer.
D1245	40	Wash by hand		
D1245		Do not wash	Ironing	The iron sybolizes the domestic ironing and pressing process.
			D1261	Max. température 200 °C.
<u>Bleachin</u>	ng The tric bleachi	ingle symbolizes ng.		Max. température 150 °C.
		allowed (chlorine or	Dizes	Max. temp. 110 °C. The steam can cause irreversible damages.

Bleaching

The triangle symbolizes bleaching. Bleaching allowed (chlorine or oxygen). Bleaching allowed (only oxygen).

Do not bleach.

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Conversion of measurement units

The following is a list of correspondences of the main frequently used units, to avoid the need to use measurement unit conversion tables.

 $1 \text{ kg/cm}^2 = 0.980 665 \text{ bar}$

 $1 \text{ kg/cm}^2 = 10 000 \text{ mm H}_2\text{O}$

 $1 \text{ kg/cm}^2 = 735.557 6 \text{ mm Hg}$

- bar: 1 bar = 100 000 Pa 1 bar = 1.019 7 kg/cm² 1 bar = 750.06 mm Hg $1 \text{ bar} = 10 197 \text{ mm H}_{2}\text{O}$ 1 bar = 14.504 psi british thermal unit : 1 Btu = 1 055,06 J 1 Btu = 0.252 1 kcal 1 cal = 4.185 5 J calorie : $1 \text{ cal} = 10^{-6} \text{ th}$ 1 kcal = 3.967 Btu 1 cal/h = 0.001 163 W 1 kcal/h = 1.163 W continental horse-power : 1 ch = 0.735 5 kW 1 ch = 0.987 0 HP cubic foot : 1 cu ft = 28.316 8 dm³ 1 cu ft = 1 728 cu in cubic inch : 1 cu in = 16.387 1 dm³ foot : 1 ft = 304.8 mm1 ft = 12 ingallon (U.K.): 1 gal = 4.545 96 dm³ or l 1 gal = 277.41 cu in gallon (U.S.A.): 1 gal = 3.785 33 dm³ or l 1 gal = 231 cu inhorsepower : 1 HP = 0.745 7 kW 1 HP = 1.013 9 ch1 in = 25.4 mminch : 1 J = 0.000 277 8 Wh joule : 1 J = 0.238 92 calkilogramme : 1 kg = 2.205 62 lbkilogramme per square centimter : $1 \text{ kg/cm}^2 = 98 066.5 \text{ Pa}$
 - pound : $1 \text{ lb} = 453.592 \ 37 \text{ g}$ meter : $1 \text{ m} = 1.093 \ 61 \text{ yd}$ $1 \text{ m} = 3.280 \ 83 \text{ ft}$ 1 m = 39.37 incubic meter : $1 \text{ m}^3 = 1 \ 000 \ \text{dm}^3$ $1 \text{ m}^3 = 35.314 \ 7 \ \text{cu} \text{ ft}$ $1 \ \text{dm}^3 = 61.024 \ \text{cu} \text{ in}$ $1 \ \text{dm}^3 = 0.035 \ 3 \ \text{cu} \text{ ft}$
 - pascal : 1 Pa = 1 N/m² 1 Pa = 0.007 500 6 mm Hg 1 Pa = 0.101 97 mm H₂O 1 Pa = 0.010 197 g/cm² 1 Pa = 0.000 145 psi 1 MPa = 10 bar
 - **psi :** 1 psi = 0.068 947 6 bar
 - thermie : 1 th = 1 000 kcal 1 th = 10^6 cal 1 th = 4.185 5 x 10^6 J 1 th = 1.162 6 kWh 1 th = 3 967 Btu
 - watt : 1 W = 1 J/s 1 W = 0.860 11 kcal/h
 - watt-hour : 1 Wh = 3600 J 1 kWh = 860 kcal
 - yard : 1 yd = 0,914 4 m 1 yd = 3 ft 1 yd = 36 in
 - temperature degrees : 0 °K = -273.16 °C 0 °C = 273.16 °K t °C = 5/9 (t °F-32) t °F = 1.8 t °C + 32

7. Appendices

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	LUBRIFICATION TABLE								
	USES	Rolling bearings Bearings	Rolling bearings Bearings hight temperature	Assembly paste (fretting corrosion)	Bare gears Chains shafts Thread Slides	Flange joints Union pipes Steam circuits	Reducers with wheels and screws	Reducers with gears	Circuits and pneumatic devices
TYPES OF LUBRICANTS AND STANDAR- DIZATION		Lithium soap grease	Lithium soap grease + silicone oil	Lithium soap paste + mineral oil + mineral solid greases	Lithium soap grease with MOS2 additive	Graphite grease mini 60% graphite, special leakproof	Extreme hight pressure oil	Extreme hight pressure oil	Inhibited oil SAE5
		Grade ISO NLGI2	Grade ISO NLGI3	Grade ISO NLGI1	Grade ISO NLGI2	Grade ISO NLGI2	Grade ISO VG150	Grade ISO VG220	Grade ISO VG22
	MPERATURE	-20°C + 140°C -4°F + 284°F	-40°C + 200°C -40°F + 392°F	-20°C + 150°C -4°F + 302°F	-20°C + 135°C -4°F + 275°F	-30°C + 700°C -22°F + 1292°F	0°C + 100°C 32°F + 212°F	0°C + 120°C 32°F + 248°F	+10°C + 65°C +50°F + 149°F
RE	COMMENDED	ALVANIA R2	NTN SH44 M	ALTEMP Q NB 50	MI-SETRAL 43N	GRACO AF 309	REDUCTELF SP150	REDUCTELF SP200	LUBRAK ATL SAE 5W
co	DE PRODUCT	96 011 008	-	96 011 014	96 011 000	96 011 004	96 010 001	96 010 004	96 010 030
	ANTAR	ROLEXA 2			EPOXA MO 2		EPONA Z 150	EPONA Z 220	MISOLA AH
	ВР	LS EP 2					ENERGOL CRXP 150	ENERGOL CRXP 220	SHF 22
	CASTROL	SPEEROL EP2					ALPHA SP 150	ALPHA SP 220	
	ELF	EP2			STATERMA MO10		REDUCTELF SP150	REDUCTELF SP220	SPINEF 22
	ESSO	BEACON EP2			MULTI PURPOSE GREASE MOLY		SPARTAN EP150	SPARTAN EP220	SPINESSO 22
c o	FINA	MARSON EP2					GIRAN SR150	GIRAN SR220	
R	GBSA					BELLEVILLE N			
E S	GRAFOIL					GRACO AF 309			
P O N	KLUBER	CENTOPLEX 2	UNISILKON L50Z	ALTEMP Q.NB50	UNIMOLY GL82	WOLFRACOAT C	LAMORA 150	LAMORA 220	CRUCOLAN 22
DE	MOBIL	MOBILUX					MOBILGEAR 629	MOBILGEAR 630	DTE 24
N C	KERNITE	LUBRA K LC			LUBRA K MP		TOP BLENB ISO 80W90	TOP BLENB ISO 220	LUBRA KATL SAE5W
E	SETRAL				MISETRAL 43N				
	SHELL	ALVANIA R2			RETINAAM		OMALA 150	OMALA 220	TELLUS 22
	TOTAL	MULTISS EP2					CARTER EP150	CARTER EP220	EQUIVIS 22
	MOLYKOTE		MOLYCOTE 44	PATE DX					
	OPAL	GEVAIR SP			SUPER MOS 2		GEAROPAL GM 65 ISO 150	GEAROPAL GM 75 ISO 220	HYDROPAL HO 110 HM++22
	ITECMA	GRL-ULTRA	VULCAIN		GMO	LHT-C	DURAGEAR 80 W 140	DURAGEAR 80 W 140	AEROSYN
	DOW CORNING		SH 44 N						

When reliable laundry and wetcleaning equipment is desired, the choice is Wascomat!

The world's oldest and leading manufacturer of commercial laundry equipment for <u>coin laundries</u>, <u>hotels</u>, <u>motels</u>, <u>nursing homes</u> and any other <u>institutional laundry use</u>, and the <u>environmentally safe</u>, <u>wetcleaning "dual-use" systems</u> for drycleaners.

WASCOMAT PROVIDES "PEACE OF MIND GUARANTEE"

Backed by a company that's been in the laundry equipment business for over 100 years and has earned a reputation as the standard of quality worldwide, <u>Wascomat dealers provide</u>:

- Free survey of your laundry needs
- Laundry design and layout
- Quality laundry equipment in a size and model for every need
- Installation, start-up and training
- Worldwide parts and service
- Best warranty in the business
- "Lease-a-Laundry Program", which includes the laundry equipment installation and ongoing service

EXPAND, MODERNIZE, RETOOL OR BUILD A NEW LAUNDRY WITH LOW-COST FINANCING OR LEASING FROM WASCOMAT*

With Wascomat/Viking financing or leasing you can obtain and install durable, efficient, state-of-the-art Wascomat washers, dryers and non-polluting, environmentally-friendly wetcleaning equipment to meet all anti-pollution regulations.

For more information and to apply for financing or leasing, call Viking Financial Services LLC 1-800-645-2209

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Wascomat provides efficient, quality washers, dryers, flatwork ironers and non-polluting wetcleaning equipment.

FRONT-LOAD WASHER MODELS

<u>Solid</u> and <u>soft-mount</u>, coin operated and commercial laundry washers in <u>standard</u>, <u>high</u> and <u>ultra-high</u> extract models. Designed for long life and efficient water and energy use. **Available**

from 18 to 250 lb. capacities.

SIDE-LOAD WASHER MODELS

Pullman, Side-Load, Barrier and Clean Room washer models with high 300 to 350 G-Force extraction, designed and built for long, troublefree life and big water and energy savings. <u>Available from 55 to</u> <u>250 lb. capacities.</u>

GAS EFFICIENT DRYER MODELS

Coin operated and commercial energy and gas efficient, user friendly TD dryer models with optional <u>unique Wascomat</u> <u>Residual Moisture Control (RMC)</u>. **Available in a size and model for every laundry need**.



AUTOMATIC FLATWORK IRONERS

A unique one-operator, fully automatic, labor saving, ironer that does it all: feeds, irons, folds, stacks and counts. Also available in fully and semi-automatic

> models in a size and model for every laundry need.

WASCOMAT NON-POLLUTING WETCLEAN EQUIPMENT

The best alternative to Perc, uses water and complies with OSHA, EPA and all other environmental, antipollution regulations. Wascomat state-of-the-art wetclean technology eliminates all pollution concerns and provides the best wetcleaning and washing results. <u>Available in a</u> <u>size and model for every</u> wetcleaning need.

With the push of a button, the unique <u>Wascomat</u> <u>"Dual-Use" Wetcleaner</u> converts to an ideal laundry washer for washing shirts, comforters, drapes, all other washable garments and cleaner's wash-dry-fold customer service.



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