



# Clemas & Co Ltd

Industrial Cleaning Equipment  
Sales - Hire - Service

## TITAN 151 BF 87 OPERATOR MANUAL



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# 1. Important warnings

- 1.1 **Important warning:** Do not use this appliance without first reading the operating instructions.
- 1.2 **Important warning:** This appliance is not suitable for removing dusts hazardous to health.
- 1.3 **Important warning:** This appliance is to be used for the wet cleaning of non-textile floors only.
- 1.4 **Important warning:** This appliance is not authorised for use outdoors, on public footpaths or on highways.
- 1.5 **Important warning:** This appliance may be used on floors with a maximum slope of 12% only.

**IMPORTANT:** Before turning or driving around corners, speed should be considerably reduced. To do this, simply exert less pressure on the accelerator.

- 1.6 This appliance can be switched on only when the operator is sitting in the driver's seat. The driver's seat is fitted with a microswitch which enables starting up of all functions when activated by the weight of the operator.
- 1.7 This appliance may be used by fully trained personnel only.
- 1.8 In order to prevent unauthorised use of the machine, always remove the key from the key switch.
- 1.9 When leaving the machine, the operator should apply the parking brake to ensure it cannot move in his absence.
- 1.10 When using the machine, the operator should take care not to endanger any third persons, particularly children.
- 1.11 Before any cleaning or servicing work is carried out on the machine and before any parts are replaced, the following precautions must be taken: the machine plug must be removed from the battery socket and the key must be removed from the key switch.  
Apply the parking brake whenever work is carried out on the machine.

**IMPORTANT:** Before changing the main fuse, it is **ESSENTIAL** that the battery cabling is disconnected from the batteries.

- 1.12 We expressly draw your attention to the fact that original parts and accessories which are not supplied by us have neither been tested nor cleared by us. The installation and/or use of such items may therefore adversely affect the efficiency and characteristics of your floor cleaning machine, jeopardising its active and passive safety. The manufacturer declines all liability for damage occurring as a result of the use of non-original parts or accessories.
- 1.13 Under no circumstances may the charger leads (connecting the charger to the machine) supplied be modified. They must under no circumstances be prolonged.
- 1.14 All electrical functions of the machine are interrupted immediately as soon as the plug is inserted into the charger socket.
- 1.15 **Caution:** This appliance may only be used with the brushes supplied or with the brushes listed in the operating instructions. The safety of the appliance will be jeopardised by the use of other brushes.
- 1.16 **Caution:** Battery gas is highly explosive! Avoid sparks and open fire close to the batteries!

In order to avoid the build-up of dangerous gas inside the machine, the seat above the battery compartment must be removed whilst charging is in progress. The battery cell caps must also be removed or at least unscrewed.

- 1.17 **Important!** Rooms where batteries are being charged should always be well ventilated.

- 1.18 Instruction 1.16 does not apply to gel batteries.
- 1.19 The suitable temperature for the use of the machine ranges between +4°C and +35°C; when the machine is not used, the temperature range is between +0°C e +50°C.  
The humidity range for the machine under any conditions varies between 30% and 95%.

**This product is classified as RAEE type special waste and is covered by the requisites of the new environmental protection regulations (2002/96/CE RAEE). It must be disposed of separately from ordinary waste in compliance with current legislation and standards.**



**Special waste. Do not dispose of with ordinary waste.**

## 2. Notes before operating

- 2.1 Please read the following instructions on the use of the batteries and the battery charger (included with the batteries and/or battery charger) **before** operating battery powered machines:
- 2.2 New batteries supply full capacity after the first 8 - 10 charging cycles only. During this period, the machine should not therefore be used for excessively heavy cleaning.
- 2.3 To protect your battery, the machine is equipped with a computer aided charge indicator (BEM). This built-in safeguard incorporates a row of eight yellow light emitting diodes (LEDs) showing the state of charge at any time (capacity indicator). Once the battery reaches the programmed permissible remaining capacity, the brush motor is automatically switched off. This is indicated by a red LED.

When the battery is connected, the BEM performs a power-on self test for approximately 3 seconds. Afterwards machine operating hours are shown with a resolution of 0.1h.  
The capacity indicator is activated by turning the key switch to the "1" position.

The lit yellow LEDs indicate the remaining capacity. Each LED corresponds to a capacity window of approximately 10 %.

Once the permissible remaining capacity is reached, the left yellow LED flashes to indicate that the brush motor is about to stop.

The red LED indicates that the permissible remaining capacity has been reached. At the same time the brush motor is switched off.

- 2.4 Before operating the machine, make sure the cowling is completely closed.
- 2.5 A red light on the top of the control panel indicates that the hand brake is applied.
- 2.6 The driver's seat can be regulated forwards and backwards. It is also equipped with an "operator present" security device in the form of a microswitch which disables all functions when the operator gets off the seat.
- 2.7 The direction of motion is selected by the joystick on the left of the control panel.  
The direction of motion corresponds to the position of the joystick.  
When reversing with the squeegee lowered (in the working position), the electronic controls prevent motion until the squeegee has been completely raised. After the manoeuvre has been completed and forward motion has been resumed, the squeegee will return to the previous position.

**ATTENTION: The squeegee can be lowered during forward motion only.**

### 3. Commissioning and operating the machine

- 3.1 The plug at the end of the charger lead (connecting the charger to the battery) should only be removed from the battery socket after the charger has gone off automatically. The plug connected to the machine should then be inserted into the battery socket.
- 3.2 Close the seat plate (raised during charging).
- 3.3 Remove the tank lid and fill the clean water tank with COLD water, preferably using a hose. To obtain the cleaning liquid, add Gansow low foam detergent. If using other brands, refer to the producer's instructions or use your experience. Finally, close the tank lid.

**IMPORTANT: Detergents which produce a lot of foam may greatly impair the efficiency of the machine.**

**IMPORTANT: Make sure the gasket is free of holes, cracks or damage of any kind which could jeopardise the efficiency of the vacuum created by the motor, reducing the suction force and the quality of the cleaning obtained.**

- 3.4 The operator must not switch on the machine before sitting in the driver's seat.
- 3.5 The brushes are lowered by pressing the button with the corresponding icon at the bottom left. The brushes are lowered until they touch the ground and rotate automatically at the slightest pressure on the forward motion pedal. To increase the flow of detergent to the brushes, turn clockwise to regulate the quantity (to reduce, turn anticlockwise).

**IMPORTANT: the brushes will not turn or the detergent flow until light pressure is exerted on the forward motion pedal.**

- 3.6 The squeegee is lowered by pressing the button with the corresponding icon at the bottom right. It is lowered until it touches the ground, while suction is activated automatically by the lowering microswitch.

**IMPORTANT: when the direction of motion is reversed, the squeegee is automatically raised and suction is turned off. When forward movement is resumed, the setting is reset.**

- 3.7 The direction of motion corresponds to the position of the joystick on the left marked with arrows indicating the movement selected. The pedal electrically controls an electronic board and is spring loaded. When it is released, it therefore springs back immediately to the zero current position. With the standard programme on the electronic board, reverse speed is half forward speed.

- 3.8 **ATTENTION: Only valid for Titan 351 BF 140**

The brake pedal is on the left of the accelerator pedal and is an independent system. This means that, to avoid damage, it must be pressed only after the accelerator pedal has been released.

**IMPORTANT: Before starting work, test the service brake to verify efficiency.**

- 3.9 The machine has a safety system (level electrodes) to switch the vacuum motor off if the foam or dirty water reach a critically high level inside the tank.

**IMPORTANT: If the level electrodes are triggered while operating in manual mode and suction shuts down, the squeegee switch must be turned off and the tank emptied (or the fault resolved).**

### 4. Instructions for use during cleaning

- 4.1 After switching on the machine, the operator must wait about 3 seconds before all functions are verified and ready for use.

**IMPORTANT: Before turning or driving around corners the speed should be reduced considerably. To do this the operator simply exerts less pressure on the accelerator.**

- 4.2 Floors should be cleaned and dried in parallel strips overlapping by 5 - 10 cm.

Our after-sales service technician or demonstrator will show you how to use your machine as efficiently as possible.

- 4.3 Thanks to the vacuum created inside the collection tank, the used water and dirt are completely absorbed and conveyed to the dirty water tank. In order to ensure that neither dirty water nor foam can find their way into the vacuum motor, the tank is equipped with a foam cut-off system and the intake pipe is fitted with a filter to catch fluff. This filter stops the material several centimetres above the maximum possible water level inside the tank.

- 4.4 When the liquid in the clean water tank has been used up or after cleaning has been completed, switch off the brush motor by pressing the switch with the brush icon. This automatically causes the solenoid valve to shut off the supply of detergent to the brush, switches off the pump and raises the brush unit to the rest position.

Allow the machine to keep moving for another 5 or 6 m to suck up the remaining dirty water.

By pressing the button with the squeegee/vacuum motor icon, the squeegee will be raised to the rest position and the vacuum motor will be turned off.

- 4.5 When the accelerator pedal is released, the drive motor slows down and stops.

- 4.6 The parking brake should be applied to prevent the machine from moving by accident.

- 4.7 Empty the dirty water tank into a recipient or a drain using the drain hose. Remove the cap, release the hose from the hose clip at the back of the machine and drain the fluid.

- 4.8 At the end of cleaning, clean the machine (without using a water jet) and rinse the tank.

- 4.9 Our machines are fitted with a quick brush change system.

#### BRUSH CHANGE:

1. Make sure the brush head is raised, no function is active and the handbrake is on.
  2. Take hold of the brush with both hands and turn sharply in the normal brush rotation direction (in the case of two brushes, they rotate towards the centre; in the case of three, the centre brush rotates clockwise).
  3. Remove the old brushes from underneath the brush head and place the new ones as near as possible to the bayonet fitting lined up with each motor.
  4. Lower the head and press the pedal lightly briefly (about 2-3 secs)
  5. Switch the brushes off, raise the brush head and make sure the brushes are correctly attached. If not, then repeat operations 3, 4 and 5, making sure each brush is centred and lined up with the motor.
- 4.10 Before connecting the machine to the charger, make sure the key switch is off (the plug is under the seat, above the battery compartment). After 15 seconds, the charger comes on and recharging begins.

Please read the instructions on use of the batteries and battery charger (included with the batteries and/or battery charger) before operating battery powered machines:

- 4.11 In order to avoid build-up of dangerous gas inside the machine during recharging, the seat over the battery compartment must be removed whilst charging is in progress.

- 4.12 Instruction 4.11 does not apply to gel batteries.

## 5. Troubleshooting

### 5.1 No water is delivered.

- Check the water pump fuse.
- Turn the delivery knob clockwise.
- Clean the filter in the water tank.
- Fill the clean water tank.
- Check feed pipes for kinks.
- Lock the plug at the red emergency lever
- Check operation of the pump.

### 5.2 The vacuum motor does not start.

- Check the automatic vacuum motor switch.
- Clean the dirty water tank around the sensor electrodes and the electrodes themselves.
- Do not move the electrodes from their original position; make sure they are not out of position.
- If the distance between them, or between the electrodes and the side of the tank, is modified, the power cut-off mechanism may be activated by mistake.
- Observe how much foam is generated by the detergent used.
- Use Gansow's low foam detergent.

### 5.3 Water is not sucked up, although the vacuum motor is operating.

- Press the button with the "squeegee" icon.
- Make sure the drain hoses are closed.
- Check the tank lid is properly in place and lying flat on the water tank.
- Check the state of the tank gasket. Replace if necessary.
- Check on the state of the squeegee blades (see also points 5.4 and 5.5)
- Check that the suction tubes leading from the squeegee to the dirty water tank and the connectors inside the dirty water tank are not blocked.

### 5.4 The squeegee with suction is leaving smears.

- Clean the rear squeegee blade.
- Check the rear squeegee blade and if necessary turn or replace. The rear squeegee blade may be used four times.
- See also 5.8.
- Use the wheels to adjust the height of the squeegee from the ground.

### 5.5 The squeegee is stuck to the floor.

- Check the state of the front squeegee blade, in particular, that the slits are not blocked. If necessary, cut 1 to 3 additional slits.
- If excessively worn, turn the squeegee blades or replace them. The front squeegee blade may be used four times.

### 5.6 The brush motors switch off.

- Check the automatic switches (thermal circuit breakers).
- Lock the plug at the red emergency lever
- Batteries are flat, charge immediately (red LED of the BEM is on).

### 5.7 The dirty water does not drain out through the hose.

- Remove any blockages from around the drain hose coupling in the dirty water tank.
- Remove any blockages in the drain hose itself.

### 5.8 The machine is leaving a smeary film behind it (the flow of liquid to the brush has either been cut off or greatly reduced).

- Turn the delivery knob clockwise. (See also 5.1)
- Clean the filters in the clean water tank.
- The clean water tank is empty. Fill it.
- See also 5.1.

## 5.9 The machine will not move forwards or backwards.

- The switch in the driver's seat is broken.
- Check the fuses
- Insert the battery plug into the machine socket.
- Turn key switch.
- Lock the plug at the red emergency lever
- Release parking brake.

## 6. Service and maintenance

- 6.1 Before any cleaning or servicing work is carried out on the machine and before any parts are replaced, the following precautions must be taken: the machine plug must be removed from the battery socket, the key must be removed from the key switch and the parking brake must be applied so the machine cannot move. When leaving the machine, the operator should apply the parking brake to ensure the machine does not move unexpectedly.

**IMPORTANT: Before changing the main fuse, it is ESSENTIAL that the battery cabling is disconnected from the batteries.**

### 6.2 ATTENTION: Only valid for Titan 351 BF 140

The level of brake fluid in the brake fluid reservoir behind the driver's seat should be checked regularly once a week and topped up if necessary. The brake fluid should be replaced completely once a year.

**IMPORTANT: Brake fluid is corrosive and toxic. HANDLE WITH CARE, AVOID SPILLS AND DISPOSE OF APPROPRIATELY.**

- 6.3 The tyres should be examined at regular intervals and any foreign matter such as fragments of metal, splinters of broken glass etc should be removed.
- 6.4 Check the state of the squeegee blades regularly and turn or replace if worn. See also 5.4 and 5.5.
- 6.5 The filters in the clean water tank should be cleaned regularly at least twice a week.
- 6.6 The vacuum motor, water pump and solenoid valve are below the water tank. The vacuum motor ventilation slits must be checked regularly for blockages and cleaned if necessary. This is especially important when the dirt includes large amounts of fluff.
- 6.7 The dirty water tank should be rinsed out regularly with the drain hose open (to drain the washing water), to prevent the formation of bacteria. After finishing cleaning, leave the lid open to allow drying.

**IMPORTANT: After each cleaning cycle, the tank should be raised and left open in order to avoid damage to the lid gasket.**

- 6.8 If not used for long periods, leave the machine with the battery charged and the battery plug unplugged.
- 6.9 A general control by authorised IPC GANSOW personnel is recommended at least once every six months.
- 6.10 Faulty or unused batteries should be disposed of correctly.
- 6.11 For more information on our branches and authorised distributors in Germany and other countries, see the list of addresses below.

**IMPORTANT: Rooms where batteries are being charged should always be well ventilated.**

## 7. Extra

7.1 Rotating flash light

## 8. Technical data

<b>Machine model</b>	<b>Titan 151 BF 87</b>	<b>Titan 351 BF 140</b>
Drive motor 36 V	0,600 kW	1,4 kW
Vacuum motor 36 V	1 x 0,670 kW	2 x 0,658 kW
Brush motor 36 V	2 x 0,650 kW	3 x 0,650 kW
Air circulation	2,1 m <sup>3</sup> /min	2,4 m <sup>3</sup> /min
Vacuum max.	1800 mm WS	2050 mm WS
Sound pressure	79dB(A)	82 dB(A)
Vibration level (arm)	< 2,5 m/sec <sup>2</sup>	< 2,5 m/sec <sup>2</sup>
Vibration level (hand-arm)	< 2,5 m/sec <sup>2</sup>	< 2,5 m/sec <sup>2</sup>



## 9. Inspection and maintenance list

	weekly	monthly	¼ yearly	½ yearly	yearly
<b>1. General:</b>					
Check brush head	X				
Check position and condition of brushes	X				
Check the brush head is horizontal and flat when in the operating position	X				
Check clean water tank and dirty water tank for leaks			X		
Check that switches are working and lights are not blown.	X				
Check BEM (hour counter)	X				
Dismount and clean the vacuum motor				X	
Check the vacuum motor is working properly	X				
Check the squeegee blades	X				
Check the squeegee is in the correct position on the floor when suction is on	X				
Dismount suction hoses and clean			X		
Check the drive motor gearbox for leaks ( <b>if there are leaks please call the Gansow Service immediately</b> )				X	
Check tyres for the presence of foreign matter or wear		X			
Clean bayonet and brush connection		X			
<b>2. Motors</b>					
Check the carbon brushes of the traction motor			X		
Check the carbon brushes of the brush motor			X		
<b>3. Drive system</b>					
Check whether the motor cables are damaged or loose			X		
Check whether the drive pedal is moving smoothly (without play)			X		
<b>4. Dirty water tank</b>					
Clean electrodes	X				
Check outlet hose for damage	X				
Check suction pipes and hoses for blockages		X			
Check cover sealing		X			
<b>5. Battery</b>					
Check battery cable and connectors		X			
If not used for long periods, leave the machine with the battery charged and the battery plug unplugged.		X			
Check that cell caps are safe and not damaged ( <b>does not apply to GEL batteries</b> )		X			
Check acid level in each cell ( <b>does not apply to GEL batteries</b> )	X				
Grease terminals ( <b>does not apply to GEL batteries</b> )			X		
<b>6. Drive control unit</b>					
Clean control unit (blow out with compressed air)				X	
Check that contacts are clean and weld free				X	
Check fuses				X	
Check that cable connections are firmly secured (false connections)				X	
<b>7. Machine control unit</b>					
Clean control unit (blow out with compressed air)				X	
Check that automatic fuses are firmly in position				X	
Check connectors are firmly connected				X	
<b>8. Brakes</b>					

Check position and effect of brake pedal and that there are no leaks ( <b>valid only for Titan 351 BF 140</b> )		X			
Check rear brake linings					X
Check position and effect of parking brake			X		
<b>9. General inspections</b>					
Have the machine checked by an electrician				X	
Have the machine serviced				X	