



# Clemas & Co Ltd

Industrial Cleaning Equipment  
Sales - Hire - Service

## TITAN 252 BF100 OPERATING MANUAL



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## TITAN 252 BF 100

### 1. Import warnings

- 1.1 **Caution!** Do not use this appliance without reading the operating instructions.
- 1.2 **Caution!** This appliance is not suitable for removing dusts hazardous to health.
- 1.3 **Caution!** This appliance is only to be used for the wet cleaning of non-textile floors.
- 1.4 **Caution!** This appliance is not authorised for use outdoors, on public footpath or highways.
- 1.5 **Caution!** This appliance may only be used on floors tilted to a maximum of 10 %.
- 1.6 **Attention!** Before turning or driving around corners the speed should considerably be reduced. To do this the operator simply applies less pressure to the accelerator.
- 1.7 This appliance is only to be switched on after taking place on the driver seat. The driver seat is equipped with a switch which is activated only by putting a load on the drive control. By getting off the seat a time delayed braking to stand still (approx. 3 seconds) takes place.
- 1.8 This appliance may only be used by personnel fully trained in its use.
- 1.9 In order to prevent unauthorised use of the machine always remove the key from the key switch.
- 1.10 When leaving the machine the operator should fix the parking brake, thus ensuring that it cannot move whilst he is away.
- 1.11 When using the machine the operator should take care not to endanger any third persons, particularly children.
- 1.12 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.

The parking brake must be fixed so the machine cannot move.

**Attention!** Before changing the main fuse the battery is directly to remove from the battery cabling (danger of short circuit).



- 1.13 **Attention!** Although the nominal Voltage is 48 Volts the battery voltage must read 42 – 58 Volts depending on charging condition. Hence please use fuses rated for 58 Volts only (see wiring diagram).
- 1.14 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 incorporation and/or use of such products may therefore adversely modify design features of your floor cleaning machine, thereby rendering it less safe to operate from both the active and the passive point of view. The manufacturer does not accept any liability for damage occurring as a result of the use of any parts or accessories other than originals.
- 1.15 Under no circumstances may the charger leads supplied (cables for connecting the charger up to the machine) be modified. It is particularly important that they should not be extended.
- 1.16 All electrical functions of the machine are interrupted as soon as the charger leads are plugged in.
- 1.17 **Caution!** This appliance may only be used with the delivered brushes or with the brushes listed in the operating instructions. The security will be influenced by the use of other brushes.
- 1.18 This appliance may be used with all brushes offered by the producer.
- 1.19 **Caution!** Battery gas is high explosive!  
Avoid sparks and open fire close to the batteries!

In order to avoid any build-up of gas inside the machine, the seat plate over the battery compartment must be removed whilst charging is in progress. At the same time, the stoppers of the battery cells must be removed or at least unscrewed.

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

## 2. Note before Operating

- 2.1 Please read the following instructions **before** operating the battery type machine:
- Special Instructions for the Use of Battery Type Machines and Chargers.
  - Description resp. Operating Instructions for the battery charger to be utilised.
  - Operating Instructions and/or servicing schedule for the battery.
- 2.2 Note that brand-new batteries need a running-in period and thus cannot yet supply full power during the first 8 - 10 discharges. Therefore, the machine should be kept off heavy duty jobs during that time.
- 2.3 To protect your battery from unpermitted discharge, the machine is equipped with a computer aided discharge indicator (BEM). This built-in safeguard incorporates a row of eight yellow light emitting diodes (LED's) showing the state of charge at any time given (capacity indicator). Once the battery reaches the programmed, permissible remaining capacity, the brush unit is automatically switched off. This is indicated by one separate red LED.



Once the battery is connected, the BEM performs a power-on self test for approximately 3 seconds. Afterwards the machines operating hours are shown with a resolution of 0.1h.

The capacity indicator itself is activated after turning the key switch into "1"-position.

Illuminated yellow LED's 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 is flashing to indicate that the brush unit stops soon.

The red LED signals that the permissible remaining capacity is reached. At the same time the brush unit is switched off.

- 2.4 It is not allowed to put the machine into operation unless the complete covering and both protection bars are properly fixed to the machine.
- 2.5 A red light situated on the top of the switch board indicates that the hand brake is applied. In this case the function "drive" is only mechanically disconnected.

**Attention!** The drive control is still activated when the hand brake is applied!

- 2.6 By the adjustment of the driver's seat into direction "forwards" and "backwards", it will be very easy to find the optimum seat position. The driver's seat is provided with a switch by which the drive steering is activated if the driver takes place on the driver's seat.
- 2.7 The direction of motion is selected by the switch on the left side on the switch board. By means of operating the switch in the position "backwards" (Turn switch into the direction of driver's seat) and using the drive pedal, the squeegee situated on the floor will be raised automatically, i.e. the squeegee can be lowered while forward drive only.

### 3. Commissioning

- 3.1 The plug at the end of the charger lead (connecting the charger up to the battery) should only be removed from the battery socket after the charger has been switched off by himself. The plug wired up to the machine should then be inserted into the battery socket.
- 3.2 The seat plate over the batteries, which has been raised during the loading process, has to be put back into its former position.
- 3.3 When the tank lid has been opened, the clean water tank is filled up with clean **cold** water preferably using a hose pipe. Cleaning liquid is obtained by mixing in **Gansow** low-suds detergent in the case of other brands refer to the producer's instructions or according to experience.  
Cleaning agents which produce a lot of suds may greatly impair the efficiency of the machine. Finally the tank lid must be closed.



**Important!** Ensure that the tank lid over the water tank is lying flat, that there are no holes or cracks in the tank lining and that the outlet hose is firmly screwed. These conditions are essential for the creation of an optimum vacuum inside the dirty water tank, which is in turn essential for a good suction effect to be obtained.

- 3.4 The operator must not switch on the machine before he took place on the driver's seat.
- 3.5 The brush drive is switched on by means of the pressure switch with the brush icon. This automatically switches on a pump and also opens a solenoid valve, releasing cleansing agent solution (i. e. clean water or clean water with a detergent) for the brushes.  
These machines are equipped with an electronic control system for the water pump. By turning the control button (on the switch box) clockwise, it is possible to regulate the required amount of water from 0 to 8 litres per minute. The scale underneath the poti gives the opportunity to mark certain settings if desired.
- 3.6 Lower the squeegees by pressing the switch with the squeegee icon. The vacuum motor is switched on by pressing the switch with the turbine icon.
- 3.7 The direction of motion is selected by the switch on the left side on the switch board:  
Push switch away from the driver seat = forward drive is activated  
Pull switch forwards the driver seat = backward drive is activated

The operator then sets the machine in motion by applying pressure to the accelerator pedal. As the accelerator pedal is spring loaded, it automatically returns to 0-position when released and in doing so the traction motor switches off (dead man switch). With the standard programme the machine has half the speed to drive backwards than the max. reachable forward speed

- 3.8 The foot brake is operated by applying pressure to the brake pedal, located beside the accelerator.

**Important!** Before setting off, always test the brakes first to make sure that they are working properly.

- 3.9 The machine is equipped with an orange switch "Auto" for a user-friendly control of cleaning aggregates.

This automatic is activated by pressing the "Auto"-switch on the switch board under the steering column and the switch is illuminated. The automatic can be switched on in each operation situation of the machine but pay attention that activated functions of the machine have a priority. Therefore switch off brush and vacuum motor first and then switch on the automatic function.

If you start operating the machine in automatic mode the following working sequence takes place.

1. The squeegee and the brush head are lowering.
2. The vacuum motor is activated immediately.



3. The brush motors, water pump and solenoid valve are activated if the drive pedal is pressed.
4. The brush motors, water pump and solenoid valve are switched off after approx. 2 seconds if the drive pedal is removed.

If you stop operating the machine in automatic mode the following working sequence takes place.

1. The brush motors, water pump and solenoid valve stop immediately.
2. The brush head is lifting immediately.
3. The squeegee is staying on the floor for approx. 4 seconds.
4. The vacuum motor is activated until the squeegee reaches its upper position.

- 3.10 The machine has a foam cut-off system to protect the vacuum motor, which switches off the vacuum motor if the foam or dirt water reach a critical high level inside the tank.

If in automatic operation modus the foam cut-off system switches, the automatic modus must be switched off and on again after the light of the squeegee/ vacuum motor switch is off.

If in manual operation modus the foam cut-off system switches, the squeegee/vacuum motor switch must be switched off and on again in order to reset the electronic printed circuit board into the normal modus again.

## 4. Instructions for use

- 4.1 After the operator switches on the machine, he has to wait about 3 seconds before all functions are released.

By applying pressure to the accelerator pedal and turning the direction switch at the driver seat the machine drives forward and is steered by the steering wheel.

**Attention!** Before turning or driving around corners the speed should considerably be reduced. To do this the operator simply applies less pressure to the accelerator.

- 4.2 Floors should be cleaned in parallel strips which should overlap by 6 - 10 cm.

When our after-sales service technician shows you how to use your new machine (or when he gives you a pre-sales demonstration), he will show you the best way to drive over your floor.

- 4.3 The used water and the dirt are sucked up into the dirty water tank by means of a vacuum created inside the tank. In order to ensure that neither dirty water nor foam can find their way into the suction 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 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 completion of a cleaning operation the brush drive is first switched off by pressing the switch with the brush icon. This automatically causes the solenoid valve to shut off the supply of cleansing solution to the brush and switches off the pump.



By pressing the button with the icon lifting/lowering brush, the brush head will be raised to the rest position.

Allow the machine to keep moving for another 3 or 4 yards (5 or 6 m) to suck up the remaining dirty water. The vacuum motor is switched off by pressing the switch with the turbine icon.

By pressing the button with the icon squeegee, the squeegee will be raised to the rest position.

Is the machine in automatic modus, see 3.9.

- 4.5 By releasing the accelerator pedal the driving motor slows down to stand still.
- 4.6 The parking brake should be applied so as to prevent the machine from moving by accident.
- 4.7 Quick emptying of the water tank via drain hose into a gully by pulling out the hoses of the clamp holder under the rear cover of the machine and opening the bolt.
- 4.8 After cleaning operations have finished, the machine should be cleaned all over and the tank has to be rinsed out (not wash down with a water-hose).
- 4.9 Our machines are fitted with a quick change system for the brushes.

**Important!** The brush change and particularly the engage of the brushes is not allowed with the switch „Auto“!

Changing of brushes:

1. Switch off the brush motors with the switch “Brush”.
  2. If necessary raise the brush head with the switch “Brush lifting/lowering”.
  3. Take hold of the brush with both hands and turn the brush sharply into the direction of the normal brush rotation, until the brush releases from the bayonet fitting (the direction of rotation is indicated by an arrow on the brush-head).
  4. Remove the old brush from underneath the brush-head and place the new brush, roughly in the middle of the brush-head, and directly under the bayonet fitting.
  5. Lower the brush-head.
  6. Switch on the brushes with the switch “Brush” for a short period of time and then switch off again.
  7. Raising the brush-head will then ensure that the new brush is correctly fitted, i. e. it will not fall off, if it does repeat steps 1, 3, 4 and 5.
- 4.10 The key switch should be switched off before connecting machine and charger (plug at the steering column). After 15 seconds the charger switches on and the charging process starts.

**Important!** Before putting your battery machine into service, please make sure you have read our enclosed leaflets:

- Special Instructions for the Use of Battery Type Machines and Chargers.
- Description resp. Operating Instructions for the battery charger to be utilised.
- Operating Instructions and /or servicing schedule for the battery.



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

## 5. Operational errors and how to rectify them

5.1 The water is not running.

- check the fuse of water pump.
- Check the sieve in the dirt trap.
- Operate the knob of poti clockwise.
- Clean the filters in the clean water tank.
- Fill up the clean water tank again.
- Check feed pipes for any possible kinks.
- Check the function of the pump.

**Attention!** The pump head is fitted with a sieve. If necessary this sieve should be cleaned.

5.2 The vacuum motor is not running.

- Check the fuse of vacuum motor.
- Clean the dirty water tank where the electrodes are situated and the electrodes themselves.
- Be careful not to displace the electrodes from their original position, and that they are in the right position in their first place.  
By reducing the distance between them, or between one of them and the side of the tank, the cut-off mechanism may be activated by mistake.
- Observe foam formation of the used cleaning agent. Use **Gansow**'s foam-inhibited cleaning detergent.

5.3 The water is not being absorbed from the floor even though the vacuum motor is working.

- Press button with the icon "squeegee" or "Auto" (see 3.9).
- Make sure that the outlet hoses are closed.
- Check that tank lid is properly in place and lying flat on top of dirty water tank.
- Check on the state of the tank's sealing strip. Replace if necessary.
- Check on the stare of the squeegee rubbers (cf. also points 5.4 and 5.5)
- Check suction tubes (leading from squeegee to dirty water tank) and connection pieces inside dirty water tank for possible blockages.
- While driving backwards the squeegee will be automatically raised in order to protect the squeegee blade.

5.4 The suction foot is leaving marks behind it.

- Clean the rear squeegee blade.
- Check the rear squeegee blade and if necessary turn it over or replace it. The rear squeegee blade may be used four times.
- Control the position of the squeegee wheels.
- See also 5.8.





- 5.5 The squeegee is stuck to the floor by force of suction.
- Check the state of the front squeegee blade, paying particular attention to the inlet slits/notches. If necessary carefully cut 1-3 additional inlet slits/notches.
  - If very worn turn over the squeegee blades or replace them if necessary. The front squeegee blade may be used four times.
- 5.6 The brush motors switches off.
- Check the fuses.
  - Batteries are flat, charge immediately (red LED of the BEM is on).
- 5.7 The dirty water will not drain off.
- Remove dirt from the dirty water tank in front of the connecting pieces leading to the drainage hose.
  - Remove any obstruction from the drainage pipe itself.
- 5.8 The scrubber drier is leaving a smeary film behind it (the flow of liquid to the brush has either been cut off or greatly reduced).
- Open poti (more). (See also 5.1)
  - Clean the filter in the clean water tank.
  - The clean water tank is empty, refill it.
  - See also 5.1.
- 5.9 Machine will neither move forwards nor backwards.
- Switch in driver's seat is broken.
  - Check fuses.
  - Insert battery plug into machine socket.
  - Turn key switch.
  - 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, and the key must be removed from the key switch and the parking brake must be fixed so the machine cannot move.

When leaving the machine the operator should fix the parking brake, thus ensuring that it cannot move whilst he is away.

**Attention!** Before changing the main fuse, the battery is directly to remove from the battery cabling (danger of short circuit).

- 6.2 The brake fluid reservoir, placed behind the driver's seat at the battery back wall of the machine, should be checked regularly once a week to make sure it is filled to the correct height. The brake fluid should be replaced once all every year.

**Attention!** Brake fluid must be handled with caution as it is toxic and corrosive.  
Brake fluid must not be spilled.  
Brake fluid must be disposed off properly.



- 6.3 The tyres should be examined at regular intervals for the presence of foreign bodies, such as fragments of metal, splinters of broken glass etc. Any such objects should be removed at once.
- 6.4 The filter in the clean water tank and the dirt trap sieve under the tank should be cleaned regularly twice a week.
- 6.5 Continually check the state of the squeegee blades and if necessary turn them over or replace them. See also 5.4 and 5.5.
- 6.6 Vacuum motor, water pump and solenoid valve are below the water tank. The ventilation slits on the vacuum motor must be checked regularly for blockages and cleaned if necessary. This is especially important where soiling includes large amounts of fluff.
- 6.7 The dirty water tank should be hosed down or rinsed out regularly, so as to prevent any accumulation of slime or bacteria. After cleaning operations have finished the lid of the dirty water tank should always be left open to allow the tanks to dry out.
- 6.8 When cleaning is over for the day the outside of the machine should be rubbed down all over.
- 6.9 The built-in batteries are expensive and need **continuous** maintenance.
- 6.10 **Important!** Rooms where batteries are being charged should always be well ventilated.
- 6.11 Before putting your battery machine into service, please make sure you have read our enclosed leaflets:
  - Special Instructions for the Use of Battery Type Machines and Chargers.
  - Description resp. Operating instructions for the battery charger to be utilised.
  - Operating instructions and/or servicing schedule for the battery.
- 6.12 If machines are taken out of service for a lengthy period they should be stored fully charged and the battery plug is to be plugged out.
- 6.13 We advise to call Gansow's after-sales service personnel once every 6 months to check the machine over.
- 6.14 Faulty batteries or those that are no longer required have to be disposed off properly.
- 6.15 For information on our branches and authorized distributors in Germany and abroad, please refer to the addresses mentioned below.

## 7. Optional extras

- 7.1 For an additional charge the machine can be completely supplied with the following special options not supplied with the standard version:
  - Rotating flash light



## 8. Technical Data

<b>Machine model</b>	<b>Titan 252 BF 100</b>
Drive motor 48 V	1,6 kW
Suction motor 48 V	0,530 kW
Brush motor 48 V	3 x 0,600 kW
Sound pressure level* Acc. to DIN 45 635	77 dB (A)
Air circulation max.	36 l/sec
Vacuum max.	1600 mm WS

The detected weighted acceleration value is less 2,5 m/s<sup>2</sup> acc. to ENV 25349.

\* The sound pressure level is measured according to MRL postscript 1 point 1.7.4 f at the range of application and with full function of the machine, at the position of the operator.



## Inspection and Maintenance List

**For machine model TITAN 252 BF 100**

When delivering the machine to the user, the after-sales service will give an introduction into the machine and explain the inspection- and maintenance list. All positions of the inspection- and maintenance list will be undertaken by the local **Gansow** organisation.

**Important!** Repairs may only be carried out by qualified personnel.

Only original spare-parts may be used as any modification of the machine would void any warranty since the structural condition of the machine would no longer be as described in the model certificate. It is a requirement of the guarantee, that after any repair by unauthorised personnel the machine must be approved (to confirm that the work has been carried out properly) by a suitably qualified person.

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 as to make sure that the machine cannot be set in motion inadvertently.

When leaving the machine the operator should fix the parking brake, thus ensuring that it cannot move whilst he is away.

The following tasks should be carried out daily before and/or after using the machine:

- Remove dirty water and rinse out tank
- Clean machine as a whole (not wash down with a water-hose)
- Charge battery and check that battery terminal are securely in position
- Test brakes to ensure that they are in proper working order
- Check electronic foam cut-out system
- Check that tank cover is lying flat
- Check warning systems (horn, rotating flash light)

Recommended servicing and/or inspection intervals assuming machine is in use for approx. 2 - 4 hours daily.

	weekly	monthly	¼ yearly	½ yearly	yearly
1. <u>General:</u>					
Check brush head	X				
Check position and condition of brushes	X				
Check that brush head is lying flat when in operating position	X				
Check clean water tank and dirty water tank for leaks			X		
Check that selection switches and monitoring lamps on dashboard are working	X				
Check BEM	X				
Dismount and clean vacuum motor				X	
Check that vacuum motor is working properly	X				



	weekly	monthly	¼ yearly	½ yearly	yearly
Check squeegee blades	X				
Check that squeegee is in correct position on the floor when suction is switched on	X				
Dismount suction hose and clean			X		
Check gear of traction motor for leaks (if there are leaks please call the Gansow Service immediatly)				X	
Check tires for the presence of foreign bodies or for wear		X			
Clean bayonet and brush connection		X			
2. <u>Motors</u>					
Check carbon brushes of the traction motor			X		
Check carbon brushes of the brush motor			X		
3. <u>Drive system</u>					
Check whether motor cables have become damaged or loosen			X		
Check whether drive pedal is moving smoothly			X		
4. <u>Recovery water tank</u>					
Clean electrodes	X				
Check outlet hose	X				
Check suction pipes for blockages		X			
Check cover sealing		X			
5. <u>Battery</u>					
Check battery cable and plug		X			
If machine is not being used, charge battery at least:		X			
Check that cell connectors are secure ( <b>does not apply to maintenance-free batteries</b> )		X			
Check acid level of individual cells ( <b>does not apply to maintenance-free batteries</b> )	X				
Grease terminals ( <b>does not apply to maintenance-free batteries</b> )			X		
6. <u>Drive control unit</u>					
Clean control unit (blow out with compressed air)				X	
Check contacts (contactors)				X	
Check fuses				X	
Check that cable connections are firmly secured				X	
7. <u>Machine control unit</u>					



Clean control unit (blow out with compressed air)				X	
Check that automatic fuses are firmly in position				X	
	weekly	monthly	¼ yearly	½ yearly	yearly
Check plug connections and screw in connections				X	
8. <u>Brakes</u>					
Check position and effect of brake pedal		X			
Check brake blocks on rear wheels					X
Check position and effect of parking brake			X		
9. <u>General inspections</u>					
Check by an electrician				X	
Call for Gansow after sales service				X	