

BTD-20 TURF TOPPER TOP DRESSER



MANUAL & PARTS ILLUSTRATION

TABLE OF CONTENTS

- 01 Turf Topper Cover Page
- 02 Table of Contents
- 03 Warranty
- 04 Operation Manual Cover Page
- 05 Safety Regulations
- 06 Safety Regulations
- 07 Short Description & Technical Data
- 08 Initial Operating & Operation
- 09 Spreading
- 10 Repair & Maintenance
- 11 Repair & Maintenance
- 12 Stretching the Drive Train
- 13 Oil Change & Axel Maintenance
- 14 Adjustment of Spreader Roll Spacing
- 15 Stretching the Conveyor Belt
- 16 Installing & Removing the Conveyor Belt
- 17 Stretching the Conveyor
- 18 Parts Manual Cover Page
- **19 Chassis Drawing**
- 20 Chassis Parts List
- 21 Spreading Unit Drawing
- 22 Spreading Units Part List
- 23 Drive Parts Drawing
- 24 Drive Parts & PTO Shaft Parts List
- 25 PTO Shaft Drawing
- 26 PTO Shaft Parts List
- 27 Seven Hole Plug Lighting Part
- 28 Topdresser Facts
- 29 Helpful Topdressing Hints

Warranty

Bannerman Ltd warranties all **BTD-20-H** Top Dresser, when applied and installed, to be free from defects in material and workmanship under normal use and service for a period of 1 year from date of use. This warranty does not guarantee a particular service life of the products. Service life will vary with application, operating environment, level of maintenance and other factors beyond our control.

Bannerman Ltd's sole responsibilities for the **BTD-20-H** Top Dresser or parts determined to be defective and covered by this warranty is limited to repairing the product or part. **An allowance is to be applied to the labour cost for the removal and replacement.**

Prior authorization from **Bannerman Ltd** must be obtained before replacing or returning any part (s), or incurring any cost of labour. No charges for expense incurred in parts, labour or transportation by unauthorized persons will be allowed under this warranty. **Bannerman Ltd** reserves the right of any part or Bannerman assembly (with transportation prepaid) claimed to be covered under this warranty.

Bannerman Ltd shall not be liable, in event, for proximate, incidental, consequential, special or other damages. This includes, but it not limited to, damages for loss of production, loss of profit, loss of opportunity, or injury to persons arising out of any breach in this warranty.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR PARTICULAR PURPOSE, OR ANY OTHER WARRANTY EXTENDING BEYOND THAT SET FORTH ABOVE.

GORDON BANNERMAN LIMITED

41 Kelfield Street, Rexdale, M9W 5A3 Ontario, Canada

> CONTACT US: CAN 1-800-325-4871 USA 1-800-665-2696 info@sportsturfmagic.com

TURF TOPPER TOPDRESSER

OPERATION MANUAL



Safety Regulations

- The BTD-20 Turf Topper topdresser is solely for spreading small-grained and loose materials such as sand, small granular materials, soil mixtures, dry compost or similar products. Any other usage is <u>not</u> in accordance with the indicated use. The manufacturer does not answer for damage resulting from incorrect usage. The user alone has to incur the risk. Usage in accordance with the intended use includes compliance with the manufacturer's conditions of operation, maintenance and repair.
- 2. The BTD-20 Turf Topper is built according to prior art and is operationally reliable; however the BTD-20 Turf Topper could put life and limb of the operator or that of a third persons at risk if it is not used, maintained and repaired by persons who are familiar with it and have been informed of the dangers.
- 3. Any person who, in the plant of the user, is responsible for operation, maintenance and repair of the topdresser, must have read and understood the operating instructions and, in particular, this chapter, "Safety Regulations". Detach the topdresser from the towing vehicle during <u>all</u> maintenance and service work. Use <u>only</u> original spare parts from the manufacturer for repairs. Alongside the references in these operating instructions, the general regulations for safety and for prevention of accidents must be observed. When using the public roads, the corresponding provisions will be enforced. Accompanying persons are not allowed.
- 4. The BTD-20 Turf Topper may only be towed along public roads once it holds the necessary registration. Complete roadworthiness certificate, licensing permit and the additional safety facilities necessary for this (catchment loop, wheel chock, lighting) are obtainable on the request of the customer.
- 5. The operator is obliged to check the topdresser for any external damage or failure before putting it into operation. Any changes (including operating performance) which might affect safety must immediately be remedied. Changes to and rebuilding of the topdresser (other than changes allowed by the manufacturer) are, for reasons of safety, not allowed.
- 6. Before starting work, the operator must make himself familiar with all the fittings and controls as well as their functioning. The topdresser must be properly attached. Secure the topdresser when not in use, by means of the parking brake and/or wheel chocks to prevent the topdresser from rolling away; check the function of the parking brake regularly.
- 7. While the topdresser is in operation, no one is allowed to enter the loading ramp. A label with this notice is stuck on both sides of the topdresser. This notice must always be well legible and has to be replaced if damaged.

Safety Regulations

- 8. During operation, no one is allowed to stay within the zone of danger, since rotating parts and foreign flying particles could cause bodily injury. Never operate without protective guards.
- 9. Adjusting and repair work on axle (brake, wheel, bearings and tires) must only be undertaken by properly trained and authorized personnel.
- 10. The power takeoff shaft may only be mounted and dismounted when the drive of the towing vehicle is shut off; see also operating instructions "power takeoff shaft".
- 11. The authorized supporting load on the towing vehicle should be noted.

Short Description

The BTD-20 Turf Topper topdresser is appropriate for small-grained, loose materials such as sand, small granular materials, dry compost, soil mixtures, or similar products. The spreading equipment (conveyor belt and spreader drum) of the topdresser are driven by the towing vehicle's power take off shaft. Spreading density or spreading amount can be determined by the driving speed, the number of revolutions of the power take off shaft, and by adjusting the marked 10 position hydraulic regulator flow valve.

	Techincal Data			
	Length	13 Feet	3.80 Metres	
Dimensions	Width	5 Feet & 6 Inches	1.85 Metres	
	Height	8 Feet	2.30 Metres	
	Authorized Total Weight	8140 Pounds	3700 Kilograms	
M/sights	Authorized Axle Load	7040 Pounds	3200 Kilograms	
Weights	Authorized Supporting Load	1100 Pounds	500 Kilograms	
	Empty Weight	2222 Pounds	1010 kilograms	
Tire Equipment 9 Dressures	15.0/55-17 8PR	1.75 - 2.0 Bar	P.S.I.	
Tire Equipment & Pressures	19.0/45-17 10PR	0.75-1.0 Bar	P.S.I.	
	Wheel Width	1100 Millimetres		
	Ramp Size	1.45 x 2.10 Metres		
	Loading Capacity	1.9 Square Metres	3-4 Cubic Yards	
Other Information	Speed Limit	25 K.P.H.	M.P.H.	
Other mormation	Towing capacity	18 kW (25PS)	18-20 H.P	
	Maximum R.P.M of PTO Shaft	540		
	Spreading Amount	0.6-29.5 Millimetres	1/4 - 3 Inches	

Initial Operating

- 1. Screw plug-in shoe for the change lever brake at the towing vehicle on the appropriate part.
- 2. Should the topdresser be used on public roads, attached the license plate to the license plate holder on the left hand side at the rear of the topdresser, and install the light kit.
- 3. After the first ride with a full load
 - a) Tighten the wheel nuts.
 - b) Check the wheel hub clearance, hub clearance of the brake drum and have them adjusted, if necessary.
 - c) Check tire pressure.

Operation

Before Each Use

- 1) Check for any externally recognizable failures or damage and repair them.
- 2) Check tire pressure
- 3) Check lighting
- 4) Check conveyor belt alignment & tension, reset if necessary. Conveyor belt must not graze the sides.

Coupling & Taking Off

- 1. When the topdresser has come to a stop, use the ratchet brake lever and secure the topdresser with the wheel chocks to prevent it from rolling away.
- 2. Attach the topdresser to the towing vehicle & apply the catchment loop around the coupling mouth of the towing vehicle.
- 3. Connect the PTO shaft.
- 4. Remove the ratchet brake lever plug on the drawbar and plug it into the plug-in shoe on the towing vehicle.
- 5. Plug the seven-hole plug into the towing vehicle.
- 6. Place the brake lever and electric cable in such a way that they do not drag on the ground or chafe on the towing chafe.
- 7. Screw up support tire lifting the safety flap.
- 8. Disengage ratchet brake lever from the towing vehicle.
- 9. Unhitching the topdresser is carried out in the reverse order.

<u>Loading</u>

- 1. When loading, pay attention for the authorized total weight.
- 2. Check for the even loading.

Spreading

Select desired spreading amount Millimetres per Square Metres or Inches per Square Yard depending on:

- a) The speed of the towing vehicle
- b) R.P.M. of the PTO Shaft (540 R.P.M.)
- c) The speed of the conveyor belt variable flow valve.

Set the required spreading depth on a firm surface before starting work. Adjust the conveyor belt variable flow valve to the desired number 1 to 10.



Before using the reversing operation be sure to record ground speed, flow valve calibration of the conveyor, and material depth for future use.

Repair & Maintenance

For conveyor belt gear case change oil every 100 operating hours.

- Unscrew filler cap (Item #1).
- Loosen the oil level site gage (Item #2) and drain off oil.
- Screw in oil level site gage.
- Add oil SAE 120 to 140 right up to the top of the oil level site gage (Item #2).
- Screw on filler cap (Item #1).



Repair & Maintenance

Lubricate topdresser with multipurpose grease every 50 operating hours.

- 1. Bearings on both sides of the front conveyor belt
- 2. Forward bearings of the PTO shaft
- 3. Rear bearings of the PTO shaft
- 4. Bearings on both sides of the rear conveyor shaft.
- 5. Bearings on both sides of the spreader drum
- 6. Bearings on both sides of the axle drive shaft
- 7. Chain
- 8. Driving pinion at the rear of the conveyor shaft
- 9. Wheel set

Note: Bearings without a lubricating nipple do not require greasing.



Note: The two conveyor belt gears have permanent lubrication and therefore do not require maintenance.



Stretching the Drive Chain

Stretch the driving chain of the spreader drum every 50 operating hours.

- 1. Loosen two screws and remove chain cover.
- 2. Loosen screw on chain adjuster (1).
- 3. Press chain adjuster down by hand, so that the chain lying on the opposite side (2) has 10mm clearance.
- 4. Tighten screw of the chain adjuster.
- 5. Replace chain covering.

Once it is no longer possible to stretch the chain by means of the chain adjuster, shorten the chain by one link at the chain lock.



Warning:

If the chain is stretched too tightly This can reduce its life span.

If the chain shows signs of strong Wear, replace chain and chain Wheels.

Oil Change

Change oil at the Angular Gear every two years.

- 1. Screw off the bottomplate (2) of the angular gear (1), drain the oil, and fix the bottom plate with a new gasket.
- 2. Remove oil level plug (3) and fill with new oil SAE 120 to 140 until it reaches the level of the oil plug (quantity is approximately 1 Litre).
- 3. Screw on the cap with a new gasket.



Axle Maintenance

Axle maintenance every 1000 operating hours.

<u>Warning</u>: Maintenance work on the axle (brakes, and hub clearances, etc.) should be carried out by fully trained and authorized personnel only.

- 1. Tighten wheel nuts.
- 2. Check wheel hub clearance, hub clearance of the brake drum and have it adjusted, if necessary.
- 3. Check brake setting.
- 4. Test brake setting.
- 5. Test brake lining thickness (minimum 3mm) and, if necessary, have brake lining replaced.

Adjustment of the Spreader Drum Spacing

Adjust spreader drum spacing according to requirements.

Warning:

On no account should the distance be reduced to anything less than 5mm, otherwise this could damage the conveyor belt.

- 1. Loosen two screws (1) each on both sides of the topdresser.
- Loosen the counter nuts (2) on both sides. Lower the spreader roll by turning the screw (3), until the distance between the spreader drum and the conveyor belt over the whole width is not less than 5mm.
- 3. Tighten the counter nuts (2) on both sides.
- 4. Secure the spreader drum mountings with four screws (1).
- 5. Stretch the spreader drum's driving chain.



Stretching the Conveyor Belt

Stretching the conveyor belt in the case of slipping.

Warning:

Excessive stretching can reduce the life span of the conveyor belt.

- 1. Loosen Nut # 1 on the left side.
- 2. Tighten Nut # 2 on the right side, one turn.
- 3. Repeat steps 1 and 2 on both sides of the machine.







Installing and Removing the Conveyor Belt

- 1. Remove both triangular plate and lateral plate.
- 2. Release tension in the conveyor belt, evenly loosen the tension bolt (1) on both sides.
- 3. Take off upper gear (9), for this loosen three screws (10).
- 4. Remove toothed wheel (6).
- 5. Remove eccentric ring (7) on flange bearing (8) on both sides and unscrew flange bearing on both sides.
- 6. Take out eccentric bearing (12) at the flange bearing (1) on both sides.
- 7. On the right side, take out flange bearing (13) with tension bolt (1).
- 8. Loosen right-side screws (11) and take out the intermediate roller bearings (3).
- 9. Loosen left-side screws (11).
- 10. Remove front (2) and strip rollers (5) as well as the intermediate rollers (4).
- 11. Drive out conveyor belt towards the back.
- 12. The re-assembly takes place in reverse order.



Stretching Conveyor

Stretching conveyor after assembly

- 1. Once the tension has been released in the conveyor belt mark out a length of 1000mm on both sides.
- 2. Evenly stretch both sides of the conveyor belt with the two tension bolts, until the marked length reaches 1007mm.
- 3. Leave the conveyor belt to run in for approximately 30 minutes until it runs in the middle without grazing the sides, re-adjust if necessary.

Warning:

The conveyor belt should not graze the sides. If re-adjustment is necessary increase tension on the side which is doing the grazing. Too much tension will reduce the life span of the belt.

TURF TOPPER TOPDRESSER

PARTS MANUAL





	Holder for Wheel Chock Round Reflector Rubber Stripper - Front	11013	14
	Holder for Wheel Chock Round Reflector	LIUIS	2
	Holder for Wheel Chock	7 7 7 7 7	13
		10123	12
	Wheel Chock	11016	11
Special Equipment	Complete Lock-in Lever Brake	11007	10
	Clamp Rail	15319	9
	Stripper - Left	15009	œ
	Stripper - Right	15426	7
	Belt Cover - Left	15412	6
	Belt Cover - Right	15411	л
	Jockey Wheel with Fixture	15222	4
	Stoneguarg	15713	ω
	Filling Plate - Rear	15444	2
	Filling Plate - Front	15443	1
Notes	Part Description	Part #	ltem #



	· · · · ·							_	_			_
12	11	10	9	œ	7	6	ъ	4	ω	2	1	ltem #
10201	10209	11040	11033	11014	11009	11035	15712	15343	15709	15714	15698	Part #
Adjusting Washer (45X35X.5)	Adjusting Washer (45X35X1)	Feather Key (A10X8X30)	Circlip (35X1.5)	Triangular Reflector	Lighting Unit	Flange Bearing (Dia.35)	Chain Wheel (Z23)	Spreading Roller Tooth Set	Spreading Roller	Hood - Rear	Spreading Unit Frame	Part Description
						Lubrication Instructions		Consisting of 140 pieces				Notes



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28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10										Item #
	7 15693	6 15696	5 15679		3 15694		1 15006								3 15106	2	1 15105	0	9 15104	8	7 15107	6 15711	5 16048	4 16045	3 15703	2 16049	1 15704	# Part #
15645 Gearbox Flange	Gearbox Cover	Gearbox	Bevel Gear (Z18)	15691 Bevel Gear (Z13)	Gearbox Flange	15138 Distance Bush (Dia. 38X45)	Connecting Sleeve	15715 Longitudinal Shaft	15378 Shaft Cover - Front	15060 Protective Pipe	15414 Shaft Guard	6240 Transmission Guard	15344 Profile Shaft	15345 Profile Brush	Change Gear (Z40)	Change Gear (Z34)	Change Gear (Z54)	Change Gear (Z20)	Change Gear (Z47)	Change Gear (Z27)	Pinion (Z12)	15711 Gear (Z49)	16048 Roller - Rear	16045 Intermediate Roller	Pedestal	16049 Roller - Front	15704 Clamping Device	Part Description
Use Sealing Compound					Use Sealing Compound										Special Equipment		Special Equipment		Standard									Notes
																												te
56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	ltem #
																												m # Part #
56 11005 Circlip (62X2)	55 11033 Circlip (35X1.5)	54 11002 Circlip (30X1.5)	53 11008 Circlip (25X1.2)	52 11040 Feather Key (A10X8X30)	51 11004 Feather Key (A8X7X35)	50 11000 Feather Key (A8X7X30)	49 11041 Star Handle	48 11039 Folding Spilt Pin	47 11003 Ball Bearing (6026Z)	46 11017 Ball Bearing (6206)	45 11006 Rotary Shaft Lip Seal	44 11010 Transmission Gasket	43 11038 Roller Chain	42 10053 Shaft with Friction Clutch	41 11031 Slip-On Gear	40 10385 Conveyor Belt	39 11001 Flange Bearing (.30)	38 11035 Flange Bearing (Dia.35)	37 10242 Rubber Scaper for Clutch	36 15336 Distance Bush	35 15699 Jaw Clutch	34 15710 Chain Guard	33 15404 Chain Tensioner, Complete	32 15697 Chain Wheel	31 15379 Shaft Cover - Right	30 15380 Shaft Cover - Left	29 15695 Transmission Cross Member	

Code Designation	Function	Cable Colour
L	Left Indicator	Yellow
54g	Towing Vehicle Battery (+)	
31	Ground	White
R	Right Indicator	Green
58R	Right Rear Light	Brown
54	Brake Lights	Red
58L	Left Rear Light	Black



Equipment for professional turf management



A division of Gordon Bannerman Ltd.

41 Kelfield Street, Rexdale, Ontario Canada M9W 5A3 • Telephone 416-247-7875 • Fax 416-247-6540

Toll Free • Canada 1-800-325-4871 • USA 1-800-665-2696

TOPDRESSER FACTS

DID YOU KNOW OUR MACHINES ARE CAPABLE OF:

1. SPREADING:

- a) Sand
- b) Sand Peat Loam Mixtures
- c) Sand/Soil Mixtures
- d) Organic Top Soil with Leaf Mulch
- e) Manures & Soil Mixtures
- f) Calcine Clay for ball diamonds and other infield baseball diamond mixtures
- g) Aggregate Stone Dust for walking paths, golf cart paths, running tracks
- h) Bark Chips for walking paths
- i) Grass Clippings that need to be dispensed on golf courses in the roughs daily
- j) Reclaimed Sewage Sludge
- k) The Turf Topper with pin drums can be used as a mixer/blender/shredder for combining various soils prior to spreading
- 2. Spreading all material to desired depths evenly over a 58" width, only with **Bannerman Topdressers.**
- 3. Being calibrated to the highest accuracy to achieve cost control of the materials to be spread prior to dispensing.
- The Sport Topper's hydraulic brush enables the topdresser to thrust over 30% Sand topdressing material into the grass plant and place 10% to 15% of the Sand into the aeration holes. Therefore requiring less brushing or matting in. (Which results in Less possible damage to Grass Plant)

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HELPFUL TOPDRESSING HINTS

Approximate Topdressing Quantities

- A 1/8" Topdressing requires 0.4 cubic yards/1,000 square feet
- A ¼" Topdressing requires 0.8 cubic yards/1,000 square feet
- A 1" Topdressing requires 3.1 cubic yards/1,000 square feet

Athletic Field Measurements (Standard Areas)

Field Type	Feet Squared	Acres
Football (inside boundary lines)	58,000	1.3
Football (inside running track)	100,000	2.3
Soccer (minimum inside boundary)	65,000	1.5
Baseball (regulation)	88,000	2
Polo (inside boundary lines)	400,000	10

Approximate Material Weights (Cubic Yard)

Loam (loose)	2,000 Lbs
Clay (compact & wet)	3,050 Lbs
Clay Sand (compact)	3,250 Lbs
Silty Sand (wet)	3,100 Lbs
Sand (dry)	2,200 Lbs
Gravel	3,450 Lbs
Crusted Stone	36,000 Lbs
Peat Moss (compact)	450 Lbs
Peat Moss (loose)	110 Lbs

Useful Formulas

- Area of rectangle equals length x widths
- Area of right triangle equals ½ base x height
- Volume of pile equals 1/3 height x the area of the base
- Area of circle equals 3.14 (II) x the radius squared

(or 7.8 x the diameter squared)

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