

**TORO** Count on it.

## Greensmaster® 3100/3150/3250-D



Unrivaled cutting performance from the world's most popular riding greensmowers.

**TORO** Count on it.

Superior quality of cut for the most consistent and truest ball roll.

The industry's finest aftercut appearance and best playing surface from an all-new cutting unit.

Proven performance from the legendary Toro® triplex design.



#### Greensmaster 3100

- 18 hp Briggs & Stratton® Vanguard® engine
- Low compaction
- Legendary design

Long-lasting, powerful performance with minimal engine noise.

Easy maintenance with a new cutting unit and fewer service points.

Reduced turf compaction resulting from flexible, 2-ply floatation tires.

Operator productivity enhanced thanks to numerous driver station conveniences.



#### Greensmaster 3150

- 18 hp Briggs & Stratton Vanguard engine
- All-new hydraulic system
- Standard leak detector
- Optional 3-wheel drive



#### Greensmaster 3250-D

- 21 hp Briggs & Stratton/Daihatsu® Diesel engine
- Optional 3-wheel drive
- Optional leak detector

GREENSMAS<sup>TM</sup>TER® 3100/3150/3250-D

# LEGENDARY CUTTING UNITS

As the acclaimed leader in riding greensmowers, The Toro Company takes great pride in offering the highest quality products that are on the cutting edge of technology.

And when it comes to a smooth cutting surface, no product matches the beauty and consistency achieved with the new Riding Greensmaster Cutting Unit from Toro.



## DUAL POINT ADJUSTMENT

The dual point adjustment (DPA) simplifies the bedknife-to-reel alignment process. A clicking dial on each side of the cutting unit adjusts and holds the bedknife in exact increments. It's fast, easy and requires no special tools. The bedknife maintains a consistent angle throughout the life of the reel, providing the same quality of cut every time out.

## REDUCED MAINTENANCE

Daily maintenance on the new cutting unit has never been easier. Sealed bearings are maintenance-free and eliminate spills on greens due to over-greasing. The precisely manufactured rollers remain level without adjustments and the bedknife removes easily for sharpening. This all accounts for fewer human errors and greater time savings.

## QUALITY DESIGN

Unlike any other cutting unit available today, the new Greensmaster Cutting Unit design features a die-cast aluminum frame. This increases the torsional strength of the cutting unit and protects against corrosion. Every part is precisely manufactured for perfect alignment to provide the highest quality cut. Both the 8 and 11-blade reels are made from harder steel for a longer life. Grass baskets are mounted independent of the cutting units to ensure that the varying weight of the basket does not affect the cutting performance.

## MADE TO FIT

The revolutionary new Riding Greensmaster Cutting Unit fits all present and past Toro riding greensmowers.

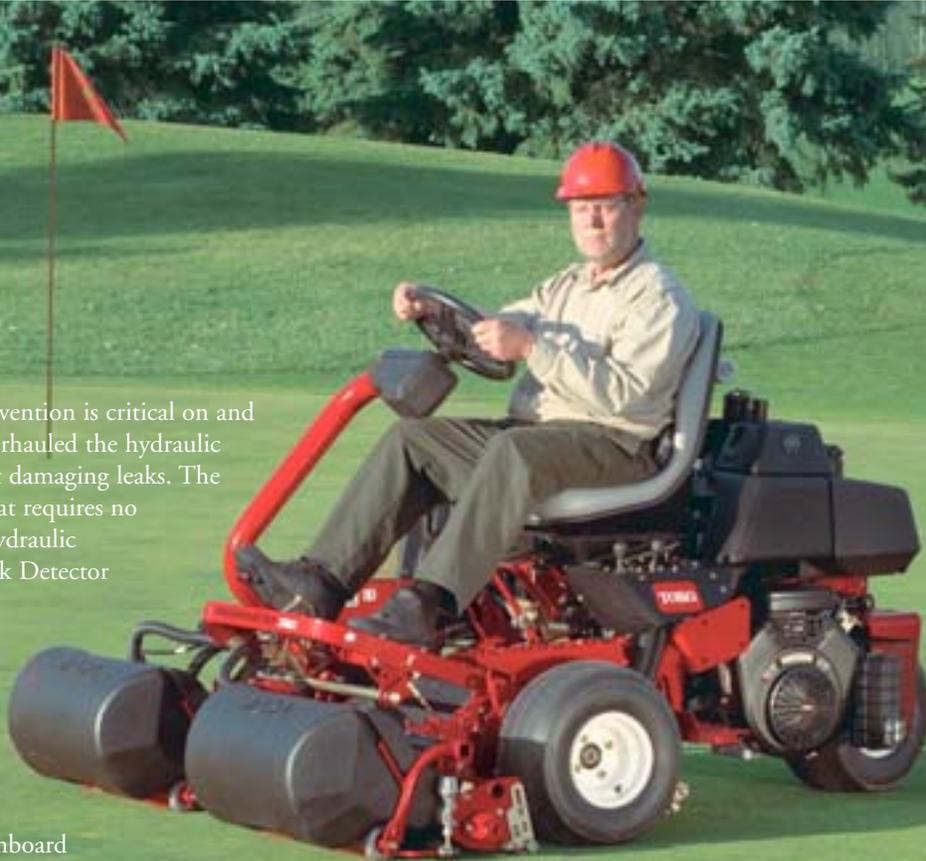
GREENSMAS<sup>TM</sup>TER® 31000/31500/32500-D

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# SAFER HYDRAULICS ENVIED DESIGN LOW IMPACT

**SAFER HYDRAULICS** Leak prevention is critical on and around the greens. We completely overhauled the hydraulic system on the 3150 to further prevent damaging leaks. The result is a mono-valve block design that requires no camshaft or detents and 17% fewer hydraulic connections. The Toro Guardian® Leak Detector is standard on the 3150 and optional on the 3250-D.

**ALWAYS ON THE JOB** Mechanics and superintendents alike appreciate the service-friendly design of the Toro Greensmaster. The new cutting unit virtually eliminates daily maintenance, and an available onboard backlapping kit helps keep the blades sharp. Service points are readily accessible and designed for quick adjustments without special tools.



**ENVIED DESIGN** The legendary Toro triplex design, with its unique placement of the cutting units, offers numerous advantages, including the easy-empty center basket. Rear-wheel tracking within the radius of the front wheels helps keep operators out of trouble in sharp turns. The low-mounted engine and hydraulic components provide exceptional hillside stability. This configuration also improves service and maintenance accessibility.

**LOW IMPACT** Large floatation tires disperse the weight of the mower for a lighter footprint that is gentler on turf. The softer, two-ply sidewalls flex through the turns to reduce scuffing and compaction.



GREENSMAS<sup>TM</sup> 3100/3150/3250-D

# GN POWER OPTIONS A JOY TO RUN

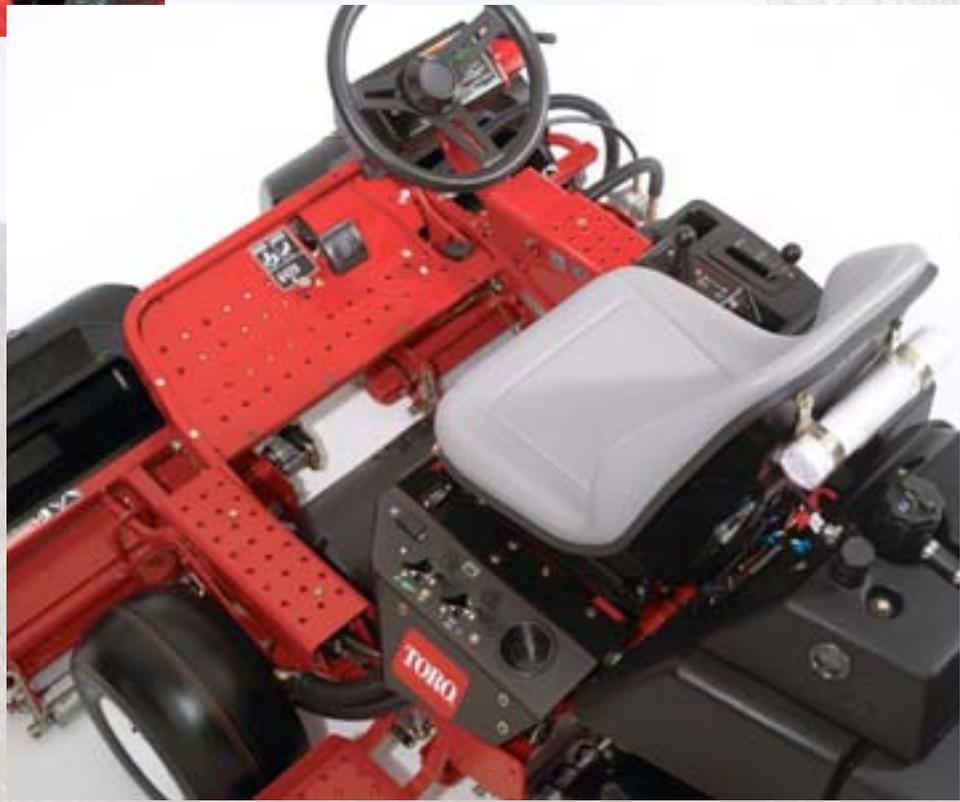


**POWER OPTIONS** Choose from three different models to deliver the performance you demand. The 18 hp Briggs & Stratton® Vanguard® V-twin engine on the 3100 and 3150 is a strong performer with plenty of torque at low RPMs. This reduces engine noise and vibration for increased operator comfort and longer engine life. A powerful, 21 hp Briggs & Stratton/Daihatsu Diesel engine provides ample reserve power on the 3250-D. Hydrostatic drive helps reduce brake wear, while available 3-wheel drive on the 3150 and 3250-D provide superior traction when needed.

**A JOY TO RUN** Operator comfort is a key component to the Toro Greensmaster series. An ergonomic bucket seat, adjustable steering arm and a quiet engine keep the driver productive. Controls are easy to operate and located for driver convenience. A single joystick on the 3150 and 3250-D controls the cutting units, making operation more



precise and easier to master. Additional safety features include a rollover protection system on optional 3-wheel drive models.



## 3100/3150/3250-D ATTACHMENTS

Grooming reel



Grooming brush



Rear roller brush



GREENSMAS<sup>TM</sup>TER® 3100/3150/3250-D

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# SPECIFICATIONS

## Greensmaster 3100/3150/3250-D

	<b>Greensmaster 3100 Model 04356</b>	<b>Greensmaster 3150 Model 04357</b>	<b>Greensmaster 3250-D Model 04383</b>
<b>Engine</b>	18 hp (13.4 kW), Briggs & Stratton® Vanguard® V-Twin cylinder, OHV, air-cooled gasoline engine.	18 hp (13.4 kW), Briggs & Stratton Vanguard V-Twin cylinder, OHV, air-cooled gasoline engine.	21 hp (15.7 kW) Briggs & Stratton/Daihatsu® 850D 3-cylinder, water-cooled diesel engine.
<b>Fuel Capacity</b>	7.5 gallon (28.4 liter).	7 gallon (26.5 liter).	6 gallon (22.7 liter).
<b>Traction Drive</b>	All hydraulic drive, consisting of multiple stack pump, valve, and two motors.	Hydrostatic piston pump, closed loop system. Foot pedal forward and reverse; infinitely variable.	Hydrostatic piston pump, closed loop system. Foot pedal forward and reverse; infinitely variable.
<b>Ground Speed</b>	Forward — 1st, mow: 3.8 mph (6.1 km/h); 2nd, transport: 8.1 mph (13 km/h). Reverse — 1.9 mph (3 km/h).	Forward — 1st, mow: 3.8 mph (6.1 km/h); 2nd, transport: 8.1 mph (13 km/h). Reverse — 1.9 mph (3 km/h).	Forward — variable from 2-5 mph (3.2-8 km/h); transport: 8.8 mph (14.1 km/h); Reverse — 2.5 mph (4.0 km/h).
<b>Turf Compaction</b>	8-10 psi (dependent on tire pressure) with operator and cutting units down.	8-10 psi (dependent on tire pressure) with operator and cutting units down.	10 psi (dependent on tire pressure), with operator and cutting units down.
<b>Implement Drive</b>	Hydraulic drive, individual pump and valve sections operating 3 reel motors.	Single pump, mono valve block, series reel drive to 3 reel motors.	Single pump, mono valve block, series reel drive to 3 reel motors.
<b>Steering</b>	Power steering. No-tool quick adjust steering arm and adjustable tilt.	Power steering. Adjustable steering wheel tilt and a 5-position steering arm tilt.	Power steering. No-tool quick adjust steering arm and adjustable tilt.
<b>Electrical Features</b>	12 volt battery. 16 amp alternator. Ignition switch/key. Seat switch, mow and traction drive & parking brake, interlock switches.	12 volt battery. 16 amp alternator. Ignition switch/key. Seat switch. Harness terminals and fuse slot available for optional lights installation.	12 volt battery. 40 amp alternator. Ignition switch/key. Seat switch. High temperature engine kill override switch. Harness terminals, fuse slot, and console switch location available for optional lights installation.
<b>Controls/Gauges</b>	Hand operated choke, throttle and gear selection. Foot operated traction drive, brakes, and mow/lift pedal for starting or stopping of implements. Hour meter and volt meter.	Raise/lower-mow joystick. Functional control lever (neutral, mow, transport). Foot operated traction drive and brakes. Hour meter. Hand operated throttle and choke. Mechanical engine speed control.	Raise/lower-mow joystick. Functional control lever (neutral, mow, transport). Foot operated traction drive and brakes. Hour meter and 4 bulb warning cluster. Hand operated throttle. Mechanical engine speed control. Water in fuel warning light.
<b>Tires</b>	Three 18 x 9.5-8, 2-ply pneumatic tubeless, demountable and interchangeable. Smooth tread.	Three 18 x 9.5-8, 2-ply pneumatic tubeless, demountable and interchangeable. Smooth tread.	Three 19 x 10.5-8, 2-ply pneumatic tubeless, demountable and interchangeable. Smooth tread.
<b>Leak Detection</b>	Optional. Manufactured by B.H. Sales.	Equipped with Turf Guardian™	Turf Guardian optional.
<b>Sound Level</b>	82 dB(A) at operator's ear under normal operation.	83 dB(A) at operator's ear under normal conditions.	84 dB(A) at operator's ear under normal conditions.
<b>Dimensions</b>	<b>Wheel Tread:</b> 49.5" (126 cm) <b>Wheelbase:</b> 47" (119 cm) <b>Length:</b> 90" (229 cm) <b>Width w/reels:</b> 69.75" (177 cm) <b>Height:</b> 48.5" (123 cm) <b>Wet Weight (without reels):</b> 940 lbs. (427 kg)	<b>Wheel Tread:</b> 49.5" (149.9 cm) <b>Wheelbase:</b> 46.87" (119 cm) <b>Length:</b> 90" (229 cm) <b>Width w/reels:</b> 69.75" (177 cm) <b>Height:</b> 48.5" (123 cm) <b>Wet Weight (without reels):</b> 970 lbs. (440 kg)	<b>Wheel Tread:</b> 50.5" (128 cm) <b>Wheelbase:</b> 48.6" (123 cm) <b>Length w/baskets:</b> 93.9" (238 cm) <b>Width:</b> 68.0" (173 cm) <b>Height:</b> 50.5" (128 cm) <b>Net Weight (without reels):</b> 1,108 lbs. (503 kg)
<b>Width of Cut</b>	59" (150 cm)	59" (150 cm)	59" (150 cm)
<b>Warranty</b>	Two year limited warranty. Refer to the Operator's Manual for further details.	Two year limited warranty. Refer to the Operator's Manual for further details.	Two year limited warranty. Refer to the Operator's Manual for further details.

## Riding Greensmaster Cutting Units with Dual Point Adjustment (DPA)

8-Blade: DPA, 04610; 11-Blade: DPA, 04611

<b>Tractor</b>	These cutting units will mount on any Toro riding Greensmaster.
<b>Height of Cut</b>	Cutting height is adjusted on front roller by two vertical screws and held by two locking cap screws. Bench HOC range is .062-.297" (1.6-7.5 mm). With high HOC kit, range is .285-1" (7.3-25.4 mm). Effective HOC may vary depending on turf conditions and bedknife installed.
<b>Reel Weldment</b>	Reels are 5" (13 cm) in diameter, 21" (53.3 cm) in length. High carbon steel blades are welded to 5 stamped steel spiders, and heat treated to RC 48-54 hardness. The reel is ground for diameter and concentricity, and backgrind.
<b>Reel Bearings</b>	Two double row, self-aligning ball bearings, 30 +/- .1 mm inside diameter slip fit onto reel shaft with lock nut. Multiple seal barriers on both sides of bearing for added protection. Reel position maintained by a wave washer with no adjusting nut.
<b>Maintenance</b>	No grease zerks, sealed bearing design eliminates daily maintenance.
<b>Reel Drive</b>	The reel weldment shaft is a 1.375" (35 mm) diameter tube with drive inserts permanently pressed in both ends. A replaceable floating coupler with an internal eight tooth spline is factory installed on the right end, and held in place by a snap ring. The floating coupler may be moved to the other end when the cutting unit is used on the GR3250-D front right position.
<b>Frame</b>	Precision machined, die-cast aluminum cross member with two bolt-on die-cast aluminum side plates.
<b>Aggressiveness</b>	Aggressiveness stays constant throughout the life of the reel. Patented design.
<b>Bedknife</b>	Replaceable single edged, high carbon steel bedknife austempered to RC 48-55, fastened to a machined cast iron bedbar with 13 screws. Tournament bedknife is standard.
<b>Bedknife Adjustment</b>	Dual screw, indexed "click" adjustment to the reel; detents corresponding positively to .0007" (.018 mm) bedknife movement for each position.
<b>Front and Rear Rollers</b>	Front: Aluminum Wiehle®, 2.5" (6.4 cm) diameter with sealed bearings and through-shaft. Option between full, narrow-spaced and wide-spaced roller. Rear: Steel full, 2" (5.1 cm) diameter with sealed bearings and through-shaft.
<b>Grass Shield</b>	Non-adjustable shield with adjustable cut-off bar to improve grass discharge from reel in wet conditions.
<b>Total Weight</b>	8-blade: 72 lbs. (32.7 kg) with aluminum Wiehle roller. 11-blade: 75 lbs. (34.1 kg) with aluminum Wiehle roller.

### DPA Cutting Unit Options

Service Bedknives	Part No.	Description	Height of Cut Range (recommended)
	93-4262	Micro-Cut Bedknife	.062-.188" (1.6-4.8 mm)
	94-4263	Tournament Bedknife	.125-.375" (3.2-9.5 mm)
	93-4264	Lo-Cut Bedknife (1/8)	.188-1.00" (4.8-25.4 mm)
	94-6392	Hi-Cut Bedknife	.312-1.00" (7.9-25.4 mm)
	63-8600	Fairway Bedknife	.375-1.00" (9.5-25.4 mm)
<b>Full Roller</b>	Model 04620. Set of three (3) 2.5" +/- .03" (6.35 cm) diameter, with sealed bearings and through-shaft (steel tube).		
<b>Narrow-Spaced Wiehle</b>	Model 04621. Set of three (3) 2.5" +/- .03" (6.35 cm) diameter, .20" +/- .03" spacing with sealed bearings and through-shaft (aluminum).		
<b>Wide-Spaced Wiehle</b>	Model 04622. Set of three (3) 2.5" +/- .03" (6.35 cm) diameter, .93" +/- .03" spacing with sealed bearings and through-shaft (aluminum).		
<b>Groomer</b>	Includes a set of three (3) grooming reels, 2.375" (6.03 cm) diameter, .028" (.71 mm) thick heat treated spring steel, operating at 3,000 RPM. Powered by a six (6) rib Poly-V-Belt. Model 04630. Kit contains three (3) left-hand side drive assemblies for GR3050/3100/3150. Model 04631. Kit contains two (2) left-hand drive assemblies and one (1) right-hand side drive assembly for GR3250-D.		
<b>Powered Rear Roller Brush</b>	Model 04640. Includes three (3) brush assemblies. Fits GR3050/3100/3150 cutting units. Model 04641. Includes three (3) brush assemblies. Fits GR3250-D cutting units.		
<b>Roller Scraper Kits</b>	P/N 106-4661. One (1) front Wiehle scraper (narrow-spaced Wiehle). P/N 106-4662. One (1) wide Wiehle roller scraper (wide-spaced Wiehle). P/N 106-4663. One (1) full roller scraper (smooth). Model 04646. Set of three (3) spring-loaded rear roller scrapers.		
<b>High Height of Cut Kit</b>	P/N 106-4699. For one (1) cutting unit. Adjustable up to 1" HOC.		
<b>5-Blade Heavy Duty Reel</b>	P/N 106-2626. One (1) reel weld assembly.		
<b>Groomer Brush Assy.</b>	P/N 106-2616. One (1) brush.		

## Greensmaster® 3050/3100/3150 Cutting Units

8-Blade: 04404, 04408, 04468; 11-Blade: 04406, 04450

<b>Type of Cutter</b>	Three 21" (53 cm) reels.		
<b>Height of Cut</b>	HOC range: 1/8" - 3/4" (3.2-19 mm). Effective HOC may vary depending upon turf conditions and bedknife installed.		
<b>Optional Bedknives</b>	<b>Bedknife</b>	<b>Blade Thickness</b>	
	Micro-Cut Bedknife	5/64" (2.0 mm)	
	Tournament Bedknife (SPA std.)	3/32" (2.4 mm)	
	Lo-Cut Bedknife (04408 & 04406 std.)	1/8" (3.2 mm)	
	High-Cut Bedknife	3/16" (4.8 mm)	
Fairway Bedknife (04404 std.)	1/4" (6.4 mm)		
<b>HOC and Roller Adjustment</b>	<b>Front Roller:</b>	Micrometer hand adjustment; 1 turn = .025" (.6 mm) HOC change.	
	<b>Rear Roller SPA Cutting Units:</b>	4 fixed hole positions. Left-hand shoulder bolt has eccentric to provide rear roller leveling.	
	<b>Rear Roller 4-Bolt Adjustment:</b>	Cutting Units: adjustable swing arm to also provide for rear roller leveling.	
<b>Reel/Frame</b>	Reels are 5" (13 cm) diameter. High carbon steel blades, RC-42-48. Reel blades are welded to 5 stamped steel spiders. Welded cutting unit frame.		
<b>Bedknife and Bedbar</b>	<b>Single Point Adjustment (SPA) Models:</b> Replaceable single edged, high carbon steel bedknife austempered to RC 48-55, fastened to a machined cast iron bedbar. The bedbar pivots on 4 rubber bushings. The left end has an eccentric pivot bolt for leveling.		
	<b>4-Bolt Adjustment Models:</b> Opposed screw adjustment, replaceable bedknife.		
<b>Clip Frequency and Optimum HOC Range</b>	<b>Model</b>	<b>Inches (max.)</b>	<b>Cuts per Meter</b>
	11-Blade: 04406, 04450	.18" (4.6 mm)	217
	8-Blade: 04404, 04408 and 04468	.25" (6.4 mm)	158
			<b>Optimum HOC Range</b>
			1/8" - 7/32" (3.2-5.6 mm)
			1/8" - 7/32" (3.2-5.6 mm)
<b>Bedknife to Reel Adjustment</b>	<b>SPA Models:</b> Bedknife adjusts against reel with a single point control knob containing detents of .001" (.025 mm) bedknife movement for each indexed position. <b>4-Bolt Models:</b> Opposed screw adjusts bedknife to reel.		
<b>Reel Drive</b>	Each reel is powered by a quick disconnect gear type motor with displacement of .43 cu. in./rev. (7 cc).		
<b>Rollers</b>	Front and rear rollers are 2" (5.1 cm) diameter with regreaseable water pump type bearings. Front rollers must be ordered separate (see Accessory Matrix at www.Toro.com).		

## Greensmaster 3200/3250-D Cutting Units

8-Blade: 4-Bolt, 04470, or Single Point Adjustment, 04472; 11-Blade: 4-Bolt, 04471, or Single Point Adjustment, 04473

<b>Height of Cut</b>	Cutting height is adjusted on rear roller by two vertical screws and held by two locking cap screws. Bench HOC range is 3/32" - 1.03" (2.4-26.2 mm). Higher heights may require changing the front roller bracket aggressiveness setting. Effective HOC may vary depending on turf conditions and bedknife installed.		
<b>Reel Weldment</b>	Reels are 5" (13 cm) in diameter, 21" (53.3 cm) in length. High-carbon steel blades are welded to 5 stamped steel spiders, and heat treated to RC 48-54 hardness.		
<b>Reel Bearings</b>	Two double row ball bearings, 30 mm inside diameter press to fit onto reel shaft. Inverted seal pressed onto reel shaft. Bearing side-load maintained by wave washer.		
<b>Reel Drive</b>	The reel weldment shaft is a 1.375" diameter tube with drive inserts permanently pressed in both ends. A replaceable floating coupler with an internal eight tooth spline is factory installed on the right end, and held in place by a snap ring. The floating coupler may be moved to the other end when the cutting unit is used on the 3200's front right position.		
<b>Cutting Unit Attitude</b>	Front roller bracket has four positions that allows the user to change the cutting unit attitude and behind center distance of bedknife from reel centerline. Varying settings will significantly alter the cutting unit's aggressiveness and amount of grass removed.		
<b>Bedknife</b>	Replaceable single edged, high carbon steel bedknife austempered to RC 48-55, fastened to a machined cast iron bedbar. 4-bolt and SPA models both use 13 screw bedknives. Extended tournament bedknife is standard.		
<b>Bedknife Adjustment</b>	<b>4-Bolt Models:</b> Two opposed screws on each end of bedbar to level and regulate bedknife to reel contact. <b>SPA Models:</b> Two rubber bushings as pivots and a centered lever arm to regulate knife to reel contact. A single screw has detents corresponding to .0007" (.018 mm) bedknife movement for each indexed position. A linear adjustment on the bedbar left end allows leveling of bedknife to reel blades.		
<b>Clip Frequency and Optimum HOC Range</b>	Dependent on mowing ground speed, reel rpm and number of reel blades. Example below assumes a 3.8 mph (6.1 km/h) ground speed:		
	<b>Model</b>	<b>Inches (max.)</b>	<b>Cuts per Meter</b>
	11-Blade: 04471 or 04473	.18" (4.6 mm)	217
	8-Blade: 04470 or 04472	.25" (6.4 mm)	158
			<b>Optimum HOC Range</b>
			1/8" - 7/32" (3.2-5.6 mm)
			1/8" - 7/32" (3.2-7.1 mm)
<b>Front and Rear Rollers</b>	<b>Standard Wiehle Front Roller:</b> 2" (5.2 cm) diameter. Right bracket has an eccentric shoulder bolt to provide leveling. A second eccentric may be added to the left bracket for increased leveling range. Roller has a regreaseable water pump type bearing.		
	<b>Standard Smooth Rear Roller:</b> 2" (5.2 cm) diameter. Roller has a through shaft with greaseable ball bearings.		
<b>Counterbalance Weight</b>	The cutting unit left end weight seals the bearing area and balances the reel motor's weight during cutting.		