



Count on it.

Form No. 3440-740 Rev A

Service Manual

POWER TRX™ HD Service Manual



Published: November 2020

Revision History

Preface

This service manual was written expressly for Toro service technicians. The Toro Company has made every effort to make the information in this manual complete and correct.

Basic shop safety knowledge and mechanical/electrical skills are assumed. The Table of Contents lists the systems and the related topics covered in this manual.

We are hopeful that you will find this manual a valuable addition to your service shop. If you have any questions or comments regarding this manual, please contact us at the following address:

The Toro Company
RLC/SWS Customer Care Department
8111 Lyndale Avenue South
Bloomington, MN 55420

The Toro Company reserves the right to change product specifications or make changes to this manual without notice.

Service Procedure Icons

The following icons appear throughout this Service Manual to bring attention to specific important details of a service procedure.



Critical Process

This icon is used to highlight:

- Installing safety equipment (shields, guards, seat belts, brakes, and R.O.P.S. components) that may have been removed
- Dimensions or settings that must be maintained for proper machine operation
- A specific fastener tightening sequence
- Component orientation that may not be obvious



Critical Torque

This icon is used to highlight an assembly torque requirement that is different than what is recommended in the Standard Torque Tables.



Fluid Specifications

This icon is used to highlight fluid specifications and capacities that are less common, and may not appear on the machine service decal or in the machine *Operator's Manual*.

Note: Refer to the service decal on the machine and the machine *Operator's Manual* for commonly used fluid specifications and capacities.

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Safety Instructions



DANGER



This safety symbol means danger. When you see this symbol, carefully read the instructions that follow. Failure to obey the instructions could cause serious permanent injury, disability, or death.



WARNING



This safety symbol means warning. When you see this symbol, carefully read the instructions that follow. Failure to obey the instructions can result in serious injury.



CAUTION



This safety symbol means caution. When you see this symbol, carefully read the instructions that follow. Failure to obey the instructions can result in minor to moderate injury and/or damage to property or equipment.

Think Safety First

Avoid unexpected starting of engine...

Always turn off the engine, remove the ignition key and disconnect the spark plug wire(s) before cleaning, adjusting, or repair.

Avoid lacerations and amputations...

Stay clear of all moving parts whenever the engine is running. Treat all normally moving parts as if they were moving whenever the engine is running or has the potential to start.

Avoid burns...

Do not touch the engine, muffler, or other components, which may be hot during operation, while the unit is running or shortly after it has been running.

Avoid fires and explosions...

Use extreme care in handling fuel. It is flammable and its vapors are explosive. Extinguish all cigarettes, cigars, pipes, and other sources of ignition. Avoid spilling fuel and never smoke while working with any type of fuel or lubricant. Wipe up any spilled fuel or oil immediately. Never remove the fuel cap or add fuel when the engine is running. Always use approved, labeled containers for storing or transporting fuel and lubricants. Do not add or drain fuel in an enclosed space. Do not store the machine or fuel container where there is an open flame, spark, or pilot light, such as on a water heater or other appliance.

Avoid asphyxiation...

Do not operate an engine in a confined area without proper ventilation.

Avoid injury from batteries...

Think Safety First (continued)

Battery acid is poisonous and can cause burns. Avoid contact with skin, eyes and clothing. Battery gases can explode. Keep cigarettes, sparks and flames away from the battery.

Avoid injury due to inferior parts...

Use only original equipment parts to ensure that important safety criteria are met.

Avoid injury to bystanders...

Always clear the area of bystanders before starting or testing powered equipment.

Avoid injury due to projectiles...

Always clear the area of sticks, rocks or any other debris that could be picked up and thrown by the powered equipment.

Avoid modifications...

Never alter or modify any part unless it is a factory approved procedure.

Avoid unsafe operation...

Always test the safety interlock system after making adjustments or repairs on the machine. Refer to the Electrical section in this manual for more information.

Avoid electrical shock...

Never touch electrical wires or components while the engine is running. They can be sources of shock. De-energize the system if you are having to do repairs. If testing electrical components ensure you are working in a dry environment.

Hydraulic System...

Release all pressure in the hydraulic system before performing any work on the system. Keep your body and hands away from pin-hole leaks or nozzles that eject hydraulic fluid under high pressure. Do not use your hands to search for leaks. Hydraulic fluid escaping under pressure can have sufficient force to penetrate under the skin and cause serious injury. Seek medical attention right away if hydraulic fluid gets in the skin.

Personal Protective Equipment...

Tie back long hair, and do not wear loose clothing or jewelry. Use appropriate personal protective equipment (PPE) for protecting yourself from potential hazards in the environment in which you will work. Each process outlined in this manual may need different PPE to protect the service person. Use the proper PPE for the task at hand.

Tools...

All tools should be in proper working order. Do not use tools that are broken or in disrepair. Use the proper tool for the proper application.

Lifts, Hoists, and Jacks...

All lifts, hoists, and jacks should be used in accordance with the manufacturer information. Inspect lifts, hoists, and jacks prior to use. Do not overload lifts, hoists, and jacks. Do not work under a suspended load. Ensure chock blocks are used on equipment that can move. Use lifts or jacks and jack stands that are rated to support the total weight of the machine and any attachments. Do not rely on jacks to support the machine. If you are unsure of the operation of any lifts, hoists, and jacks do not use.

Fire Extinguishers...

Think Safety First (continued)

The proper class of fire extinguisher should be used in case of fire.

Class A extinguishers are for ordinary combustible materials such as paper, wood, cardboard, and most plastics. The numerical rating on these types of extinguishers indicates the amount of water it holds and the amount of fire it can extinguish. Geometric symbol (green triangle).

Class B fires involve flammable or combustible liquids such as gasoline, kerosene, grease and oil. The numerical rating for class B extinguishers indicates the approximate number of square feet of fire it can extinguish. Geometric symbol (red square).

Class C fires involve electrical equipment, such as appliances, wiring, circuit breakers and outlets. Never use water to extinguish class C fires - the risk of electrical shock is far too great! Class C extinguishers do not have a numerical rating. The C classification means the extinguishing agent is non-conductive. Geometric symbol (blue circle).

ABC fire extinguishers are a dry chemical type used for multiple purposes. See above information for description. Ensure fire extinguishers are serviceable and replace any that are discharged or out of inspection dates



Specifications and Maintenance

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Specifications

POWER TRX™ HD Snowthrower				
Model Name	Power TRX™ Commercial 1428	Power TRX™ Commercial 1432	Power TRX™ Commercial 1428	Power TRX™ Commercial 1432
Model	38890	38891	38870	38875
Clearing Width	71 cm (28 inch)	81 cm (32 inch)	71 cm (28 inch)	81 cm (32 inch)
Snow Cut Depth	51 cm (20 inch)			
Engine	420cc Toro Premium OHV			
Engine Model	LC190FDS		LC190FDS-1	
Oil Type & Capacity	0.95 L (32 oz) 10w 30 / 5w 30 Synthetic			
High Idle RPM	3300 ± 100			
Ignition Coil Air Gap	0.3-0.5 mm (0.011-0.019 inch)			
Spark Plug	NGK BPR6ES			
Spark Plug Gap	0.7-0.8 mm (0.028-0.032 inch)			
Fuel Capacity	4.5 L (1.2 gal)			
Starting	Recoil/Electric			
Throwing Distance	Up to 18.3 m (60 feet)			
Drive System	Hydrostatic			
Scraper	Fixed			
Weight	138 kg (304 lb)	141 kg (311 lb)	138 kg (304 lb)	141 kg (311 lb)
Length	160 cm (63 inch)			
Width	74 cm (29 inch)	84 cm (33 inch)	74 cm (29 inch)	84 cm (33 inch)
Height	114 cm (45 inch)			

Torque Specifications

The recommended fastener torque values are listed in the following tables. For critical applications, as determined by Toro, either the recommended torque or a torque that is unique to the application is clearly identified and specified in the service manual.

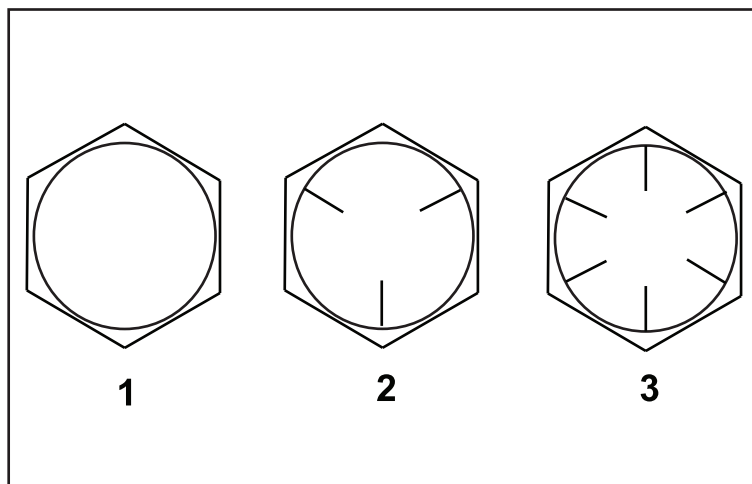
These torque specifications for the installation and tightening of fasteners shall apply for all fasteners which do not have a specific requirement identified in the service manual. The following factors shall be considered when applying torque: cleanliness of the fastener, use of a thread sealant (Loctite), degree of lubrication on the fastener, presence of a prevailing torque feature, hardness of the surface underneath of the fastener's head, or similar condition which affects the installation.

As noted in the following tables, torque values should be reduced by 25% for lubricated fasteners to achieve the similar stress as a dry fastener. Torque values may also have to be reduced when the fastener is threaded into aluminum or brass. The specific torque value should be determined based on the aluminum or brass material strength, fastener size, length of thread engagement, etc.

The standard method of verifying torque shall be performed by marking a line on the fastener (head or nut) and mating part, then back off fastener 1/4 of a turn. Measure the torque required to tighten the fastener until the lines match up.

Fastener Identification

Inch Series Bolts and Screws



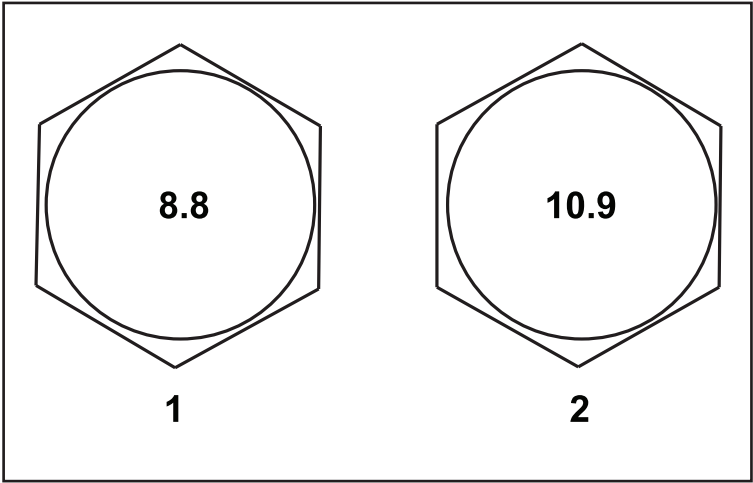
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Figure 1

1. Grade 1
2. Grade 5

3. Grade 8

Metric Bolts and Screws



g272209

Figure 2

1. Class 8.8
2. Class 10.9

Standard Torque for Dry, Zinc Plated, and Steel Fasteners (Inch Series)

Thread Size	Grade 1, 5, & 8 Fasteners with Thin Height Nuts	SAE Grade 1 Bolts, Screws, Studs & Sems with Regular Height Nuts (SAE Grade 2 or Better Nut)		SAE Grade 5 Bolts, Screws, Studs & Sems with Regular Height Nuts (SAE Grade 5 or Better Nut)		SAE Grade 8 Bolts, Screws, Studs & Sems with Regular Height Nuts (SAE Grade 8 or Better Nut)	
		in-lb	N • cm	in-lb	N • cm	in-lb	N • cm
#6-32 UNC	10 ± 2	13 ± 2	147 ± 23	15 ± 2	169 ± 23	23 ± 3	260 ± 34
#6-40 UNF				17 ± 2	192 ± 23	25 ± 3	282 ± 34
#8-32 UNC	13 ± 2	25 ± 5	282 ± 30	29 ± 3	328 ± 34	41 ± 5	463 ± 56
#8-36 UNF				31 ± 4	350 ± 45	43 ± 5	486 ± 56
#10-24 UNC	18 ± 2	30 ± 5	339 ± 56	42 ± 5	475 ± 56	60 ± 6	678 ± 68
#10-32 UNF				48 ± 5	542 ± 56	68 ± 7	768 ± 79
1/4-20 UNC	48 ± 7	53 ± 7	599 ± 79	100 ± 10	1130 ± 113	140 ± 15	1582 ± 169
1/4-28 UNF	53 ± 7	65 ± 10	734 ± 113	115 ± 12	1299 ± 136	160 ± 17	1808 ± 192
5/16-18 UNC	115 ± 15	105 ± 15	1186 ± 169	200 ± 25	2260 ± 282	300 ± 30	3390 ± 339
5/16-24 UNF	138 ± 17	128 ± 17	1446 ± 192	225 ± 25	2542 ± 282	325 ± 33	3672 ± 373
	ft-lb	ft-lb	N • m	ft-lb	N • m	ft-lb	N • m
3/8-16 UNC	16 ± 2	16 ± 2	22 ± 3	30 ± 3	41 ± 4	43 ± 5	58 ± 7
3/8-24 UNF	17 ± 2	18 ± 2	24 ± 3	35 ± 4	47 ± 5	50 ± 6	68 ± 8
7/16-14 UNC	27 ± 3	27 ± 3	37 ± 4	50 ± 5	68 ± 7	70 ± 7	95 ± 9
7/16-20 UNF	29 ± 3	29 ± 3	39 ± 4	55 ± 6	75 ± 8	77 ± 8	104 ± 11
1/2-13 UNC	30 ± 3	48 ± 7	65 ± 9	75 ± 8	102 ± 11	105 ± 11	142 ± 15
1/2-20 UNF	32 ± 4	53 ± 7	72 ± 9	85 ± 9	115 ± 12	120 ± 12	163 ± 16
5/8-11 UNC	65 ± 10	88 ± 12	119 ± 16	150 ± 15	203 ± 20	210 ± 21	285 ± 28
5/8-18 UNF	75 ± 10	95 ± 15	129 ± 20	170 ± 18	230 ± 24	240 ± 24	325 ± 33
3/4-10 UNC	93 ± 12	140 ± 20	190 ± 27	265 ± 27	359 ± 37	375 ± 38	508 ± 52
3/4-16 UNF	115 ± 15	165 ± 25	224 ± 34	300 ± 30	407 ± 41	420 ± 43	569 ± 58
7/8-9 UNC	140 ± 20	225 ± 25	305 ± 34	430 ± 45	583 ± 61	600 ± 60	813 ± 81
7/8-14 UNF	155 ± 25	260 ± 30	353 ± 41	475 ± 48	644 ± 65	667 ± 66	904 ± 89

Note: Reduce torque values listed in the table above by 25% for lubricated fasteners. Lubricated fasteners are defined as threads coated with a lubricant such as oil, graphite, or thread sealant such as Loctite.

Torque values may have to be reduced when installing fasteners into threaded aluminum or brass. The specific torque value should be determined based on the fastener size, the aluminum or base material strength, length of thread engagement, etc.

The nominal torque values listed above for Grade 5 and 8 fasteners are based on 75% of the minimum proof load specified in SAE J429. The tolerance is approximately ± 10% of the nominal torque value. Thin nuts include jam nuts.

Standard Torque for Dry, Zinc Plated, and Steel Fasteners (Metric Series)

Thread Size	Class 8.8 Bolts, Screws, Studs with Regular Height Nuts (Class 8 or Stronger Nuts)		Class 10.9 Bolts, Screws, Studs with Regular Height Nuts (Class 10 or stronger Nuts)	
	in-lb	N • cm	in-lb	N • cm
M5 X 0.8	57 ± 6	644 ± 68	78 ± 8	881 ± 90
M6 X 1.0	96 ± 10	1085 ± 113	133 ± 14	1503 ± 158
	ft-lb	N • m	ft-lb	N • m
M8 X 1.25	19 ± 2	26 ± 3	28 ± 3	38 ± 4
M10 X 1.5	38 ± 4	52 ± 5	54 ± 6	73 ± 8
M12 X 1.75	66 ± 7	90 ± 10	93 ± 10	126 ± 14
M16 X 2.0	166 ± 17	255 ± 23	229 ± 23	310 ± 31
M20 X 2.5	325 ± 33	440 ± 45	450 ± 46	610 ± 62

Note: Reduce torque values listed in the table above by 25% for lubricated fasteners. Lubricated fasteners are defined as threads coated with a lubricant such as oil, graphite, or thread sealant such as Loctite.

Torque values may have to be reduced when installing fasteners into threaded aluminum or brass. The specific torque value should be determined based on the fastener size, the aluminum or base material strength, length of thread engagement, etc.

The nominal torque values listed above are based on 75% of the minimum proof load specified in SAE J1199. The tolerance is approximately ± 10% of the nominal torque value. Thin height nuts include jam nuts.

SAE Grade 8 Steel Set Screws

Thread Size	Recommended Torque	
	Square Head	Hex Socket
1/4 - 20 UNC	140 ± 20 in-lb	73 ± 12 in-lb
5/16 - 18 UNC	215 ± 35 in-lb	145 ± 20 in-lb
1/2 - 13 UNC	75 ± 15 ft-lb	50 ± 10 ft-lb
3/8 - 16 UNC	35 ± 10 ft-lb	18 ± 3 ft-lb

Wheel Bolts and Lug Nuts

Thread Size	Recommended Torque**	
7/16 - 20 UNF Grade 5	65 ± 10 ft-lb	88 ± 14 N • m
1/2 - 20 UNF Grade 5	80 ± 10 ft-lb	108 ± 14 N • m
M12 X 1.25 Class 8.8	80 ± 10 ft-lb	108 ± 14 N • m
M12 X 1.5 Class 8.8	80 ± 10 ft-lb	108 ± 14 N • m

**For steel wheels and non-lubricated fasteners.

Thread Cutting Screws (Zinc Plated Steel)

Type 1, Type 23, or Type F	
Thread Size	Baseline Torque*
No. 6 - 32 UNC	20 ± 5 in-lb
No. 8 - 32 UNC	30 ± 5 in-lb
No. 10 - 24 UNC	38 ± 7 in-lb
1/4 - 20 UNC	85 ± 15 in-lb
5/16 - 18 UNC	110 ± 20 in-lb
3/8 - 16 UNC	200 ± 100 in-lb

*Hole size, material strength, material thickness and finish must be considered when determining specific torque values. All torque values are based on non-lubricated fasteners.

Conversion Factors

in-lb X 11.2985 = N • cm

ft-lb X 1.3558 = N • m

N • cm X 0.08851 = in-lb

N • m X 0.73776 = ft-lb

Thread Cutting Screws (Zinc Plated Steel)

Threads Size	Threads per Inch		Baseline Torque*
	Type A	Type B	
No. 6	18	20	20 ± 5 in-lb
No. 8	15	18	30 ± 5 in-lb
No. 10	12	16	38 ± 7 in-lb
No. 12	11	14	85 ± 15 in-lb

*Hole size, material strength, material thickness and finish must be considered when determining specific torque values. All torque values are based on non-lubricated fasteners.

Equivalents and Conversions

Decimal and Millimeter Equivalents

Fractions	Decimals	mm	Fractions	Decimals	mm
1/64	0.015625	0.397	33/64	0.515625	13.097
1/32	0.03125	0.794	16/32	0.53125	13.484
3/64	0.046875	1.191	35/64	0.546875	13.891
1/16	0.0625	1.588	9/16	0.5625	14.288
5/64	0.078125	1.984	37/64	0.578125	14.684
3/32	0.09375	2.381	19/32	0.59375	15.081
1/8	0.1250	3.175	5/8	0.6250	15.875
9/64	0.140625	3.572	41/64	0.640625	16.272
5/32	0.15625	3.969	21/32	0.65625	16.669
11/64	0.171875	4.366	43/64	0.671875	17.066
3/16	0.1875	4.762	11/64	0.6875	17.462
13/64	0.203125	5.159	45/64	0.703125	17.859
7/32	0.21875	5.556	23/32	0.71875	18.256
15/64	0.234375	5.953	47/64	0.734375	18.653
1/4	0.2500	6.350	3/4	0.7500	19.050
17/64	0.265625	6.747	49/64	0.765625	19.447
9/32	0.28125	7.144	25/32	0.78125	19.844
19/64	0.296875	7.541	51/64	0.796875	20.241
5/16	0.3125	7.938	13/16	0.8125	20.638
21/64	0.328125	8.334	53/64	0.828125	21.034
11/32	0.34375	8.731	27/32	0.84375	21.431
23/64	0.359375	9.128	55/64	0.859375	21.828
3/8	0.3750	9.525	7/8	0.8750	22.225
25/64	0.390625	9.922	57/64	0.890625	22.622
13/32	0.40625	10.319	29/32	0.90625	23.019
27/64	0.421875	10.716	59/64	0.921875	23.416
7/16	0.4375	11.112	15/16	0.9375	23.812
29/64	0.453125	11.509	61/64	0.953125	24.209
15/32	0.46875	11.906	31/32	0.96875	24.606
31/64	0.484375	12.303	63/64	0.984375	25.003
1/2	0.5000	12.700	1	1.000	25.400
1 mm = 0.03937 in.			0.001 in. = 0.0254 mm		

U.S. to Metric Conversions

	To Convert	Into	Multiply By
Linear Measurement	Miles	Kilometers	1.609
	Yards	Meters	0.9144
	Feet	Meters	0.3048
	Feet	Centimeters	30.48
	Inches	Meters	0.0254
	Inches	Centimeters	2.54
	Inches	Millimeters	25.4
Area	Square Miles	Square Kilometers	2.59
	Square Feet	Square Meters	0.0929
	Square Inches	Square Centimeters	6.452
	Acre	Hectare	0.4047
Volume	Cubic Yards	Cubic Meters	0.7646
	Cubic Feet	Cubic Meters	0.02832
	Cubic Inches	Cubic Centimeters	16.39
Weight	Tons (Short)	Metric Tons	0.9078
	Pounds	Kilograms	0.4536
	Ounces	Grams	28.3495
Pressure	Pounds/Square Inch	Kilopascal	6.895
Work	Foot-Pounds	Newton-Meters	1.356
	Foot-Pounds	Kilogram-Meters	0.1383
	Inch-Pounds	Kilogram-Centimeters	1.152144
Liquid Volume	Quarts	Liters	0.9463
	Gallons	Liters	3.785
Liquid Flows	Gallons/Minute	Liters/Minute	3.785
Temperature	Fahrenheit	Celsius	1. Subtract by 32°
			2. Multiply by 5/9



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GEARS

The Systematic approach to defining, diagnosing and solving problems.



G

Gather Information

- Information reported by the customer
- Information observed by you
- Establish the what, where and when of the issue



E

Evaluate Potential Causes

- Consider possible causes of the problem to develop a hypothesis
- Narrow down the focus of the problem



A

Assess Performance

- Ensure you have all the necessary tools for testing
- Test all potential causes of the failure
- Reevaluate and create new hypotheses if necessary



R

Repair

- Return the unit to service by repairing, rebuilding or replacing



S

Solution Confirmation

- Did the issue go away
- Was the root cause of the issue correctly repaired
- Are there any other new symptoms

General Troubleshooting

See Operator's Manual for troubleshooting information.



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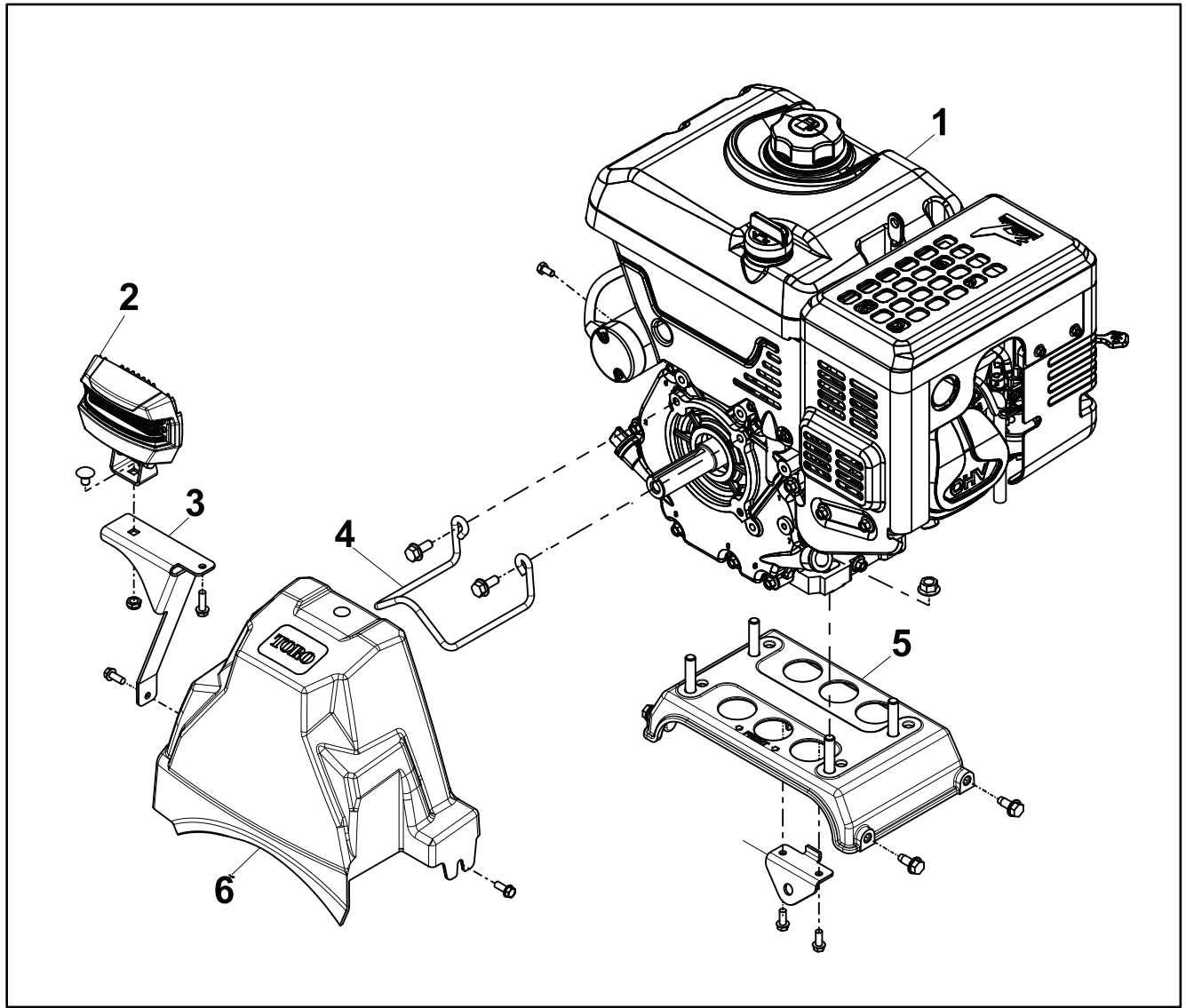
General Information

Models 38890 and 38891 use Toro Engine LC190FDS and have 120v starters.

Models 38870 and 38875 use Toro Engine LC190FDS-1 and have 230v starters.

Service and Repairs

Engine Assembly



g332805

Figure 3

- | | |
|-----------------------|--------------------------|
| 1. Engine | 4. Belt Guide |
| 2. LED Light Assembly | 5. Engine Plate Assembly |
| 3. Light Bracket | 6. Belt Cover |

Engine Replacement

Engine Removal

1. Park the machine on a level surface. Stop the engine, wait for all moving parts to stop and remove the key.
2. Remove the traction belt. [Traction Belt Removal \(page 7-7\)](#)
3. Remove the 2 (1/4-20 x 1 inch) bolts securing the QUICK STICK® rod. Remove the QUICK STICK® rod.
4. Remove the 2 (15 mm) nuts securing the LH engine to the LH engine plate. Repeat on the RH side of the machine.



g263346

Figure 4

-
5. Using a proper lifting device, lift the engine away from the machine.

Engine Installation



1. Using a proper lifting device, place the engine into position on the machine.
2. Apply loctite and install the 2 (15 mm) nuts securing the LH engine to the LH engine plate. Torque the nuts to $12.25 \pm 1.7 \text{ N} \cdot \text{m}$ ($150 \pm 15 \text{ in-lb}$). Repeat on the RH side of the machine.

Engine Installation (continued)



g263346

Figure 5

-
3. Install the QUICK STICK® rod into the gear face on the chute post. Secure with 2 (1/4–20 x 1 inch) bolts.



CAUTION



When installing the traction belt, make sure the belt is riding on top of the traction pulley sheaves to ensure the belt does not break.

4. Install the traction belt. [Traction Belt Installation \(page 7–8\)](#)



Track Drive System

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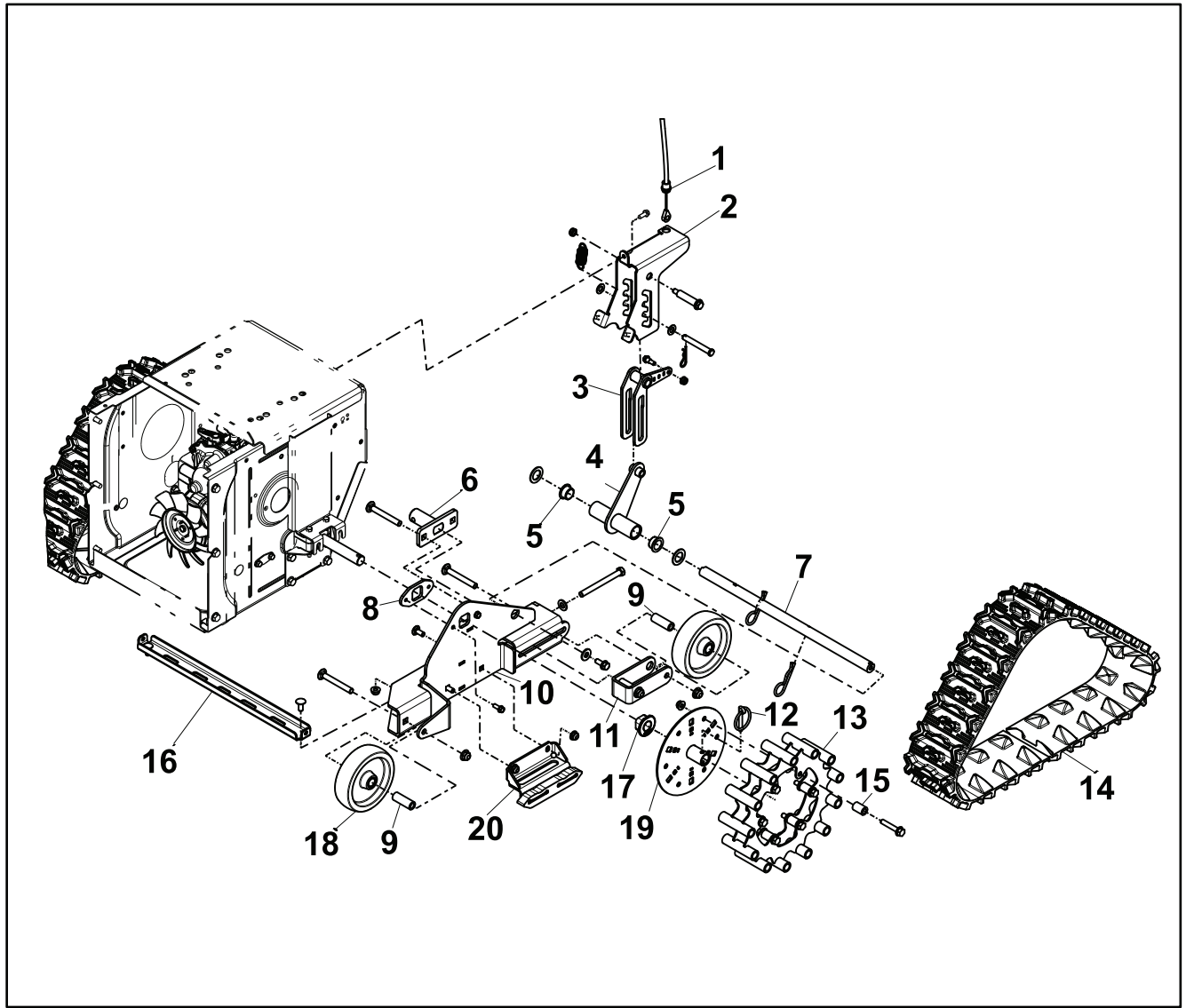
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General Information

The track drive system uses bypasses in the hydro to make the wheel clutch system work.

Service and Repairs

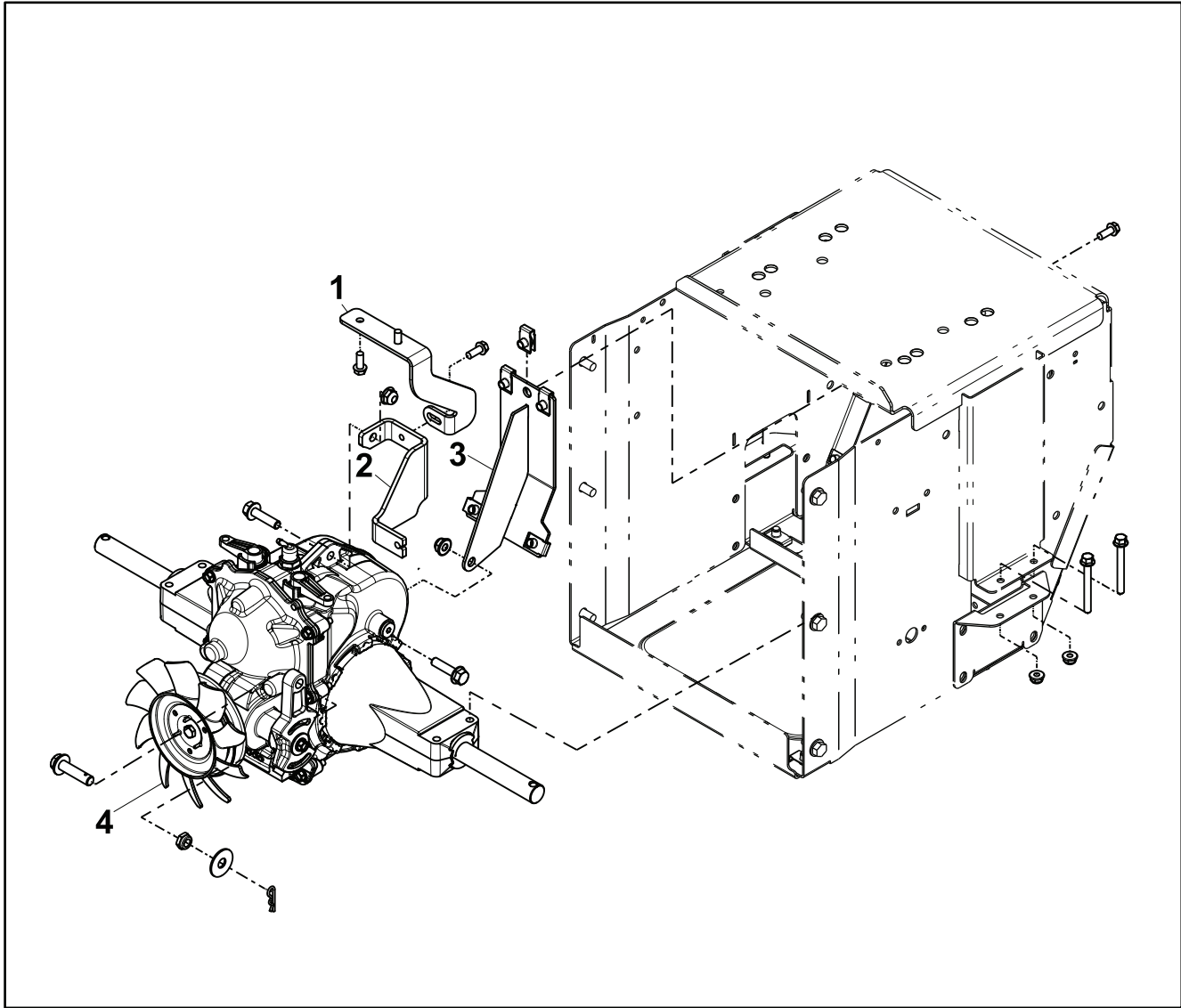
Track Drive Assembly



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Figure 6

- | | |
|-------------------------------|--------------------------|
| 1. Height Adjust Cable | 11. Bogey Yoke |
| 2. Adjuster Height Bracket | 12. Lynch Pin |
| 3. Welded Latch Assembly | 13. Drive Wheel Assembly |
| 4. Link Pivot Assembly | 14. Snow Track |
| 5. Flange Bushing | 15. Support Tube |
| 6. Welded Tensioner | 16. Front Brace |
| 7. Pivot Bar | 17. Axle Bushing |
| 8. Axle Bushing Support | 18. Bogey Wheel |
| 9. Wheel Bushing | 19. Drive Hub Assembly |
| 10. LH Track Support Assembly | 20. Track Skid Assembly |



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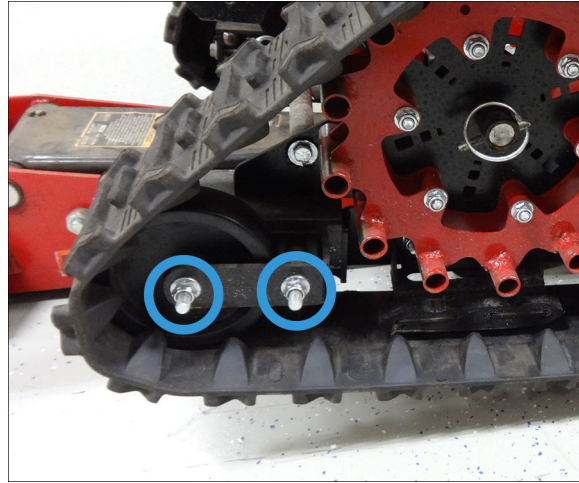
Figure 7

- | | |
|------------------------|-----------------------|
| 1. Upper Hydro Bracket | 3. Rear Hydro Bracket |
| 2. Cable Hydro Bracket | 4. Hydro |

Track Replacement

Track Removal

1. Park the machine on a level surface. Stop the engine, wait for all moving parts to stop and remove the key.
2. Using a floor jack or overhead lifting device, raise the machine until the tracks are off the ground.
3. Loosen the 2 (9/16 inch) nuts on the rear LH bogey yoke. Repeat on the RH side of the machine.



g332809

Figure 8

-
4. Unscrew the (9/16 inch) rear hex head bolt securing the LH tension plate to the tension lug until the track is loose. Repeat on the RH side of the machine.



g332810

Figure 9

-
5. Remove the track by first slipping it off the drive wheel and then the bogey wheels.

Track Installation

1. Install the new track by sliding the bottom of the track on the two bogey wheels, then over the drive wheel.
2. Tighten the (9/16 inch) rear hex head bolt securing the LH tension plate to the tension lug until a deflection of 9.5 mm (3/8 inch) is achieved. Repeat on the

Track Installation (continued)

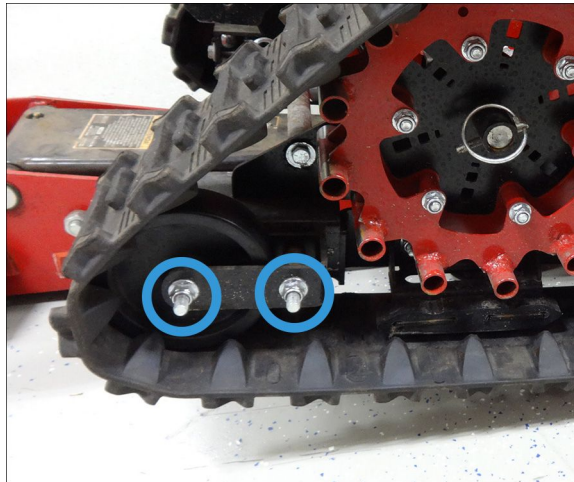
RH side of the machine. If a deflection of 9.5 mm (3/8 inch) is not achieved, see the Operator's Manual for the deflection setting procedure.



g332810

Figure 10

-
3. Torque the 2 (9/16 inch) nuts on the LH bogey yolk to 47.5 N•m (35 ft-lb). Repeat on the RH side of the machine.



g332809

Figure 11

Hydro Replacement

Hydro Removal

1. Park the machine on a level surface. Stop the engine, wait for all moving parts to stop and remove the key.



CAUTION

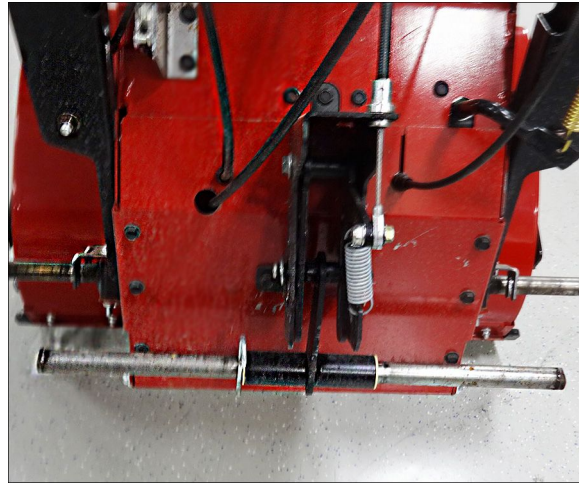


Do not flip the snowthrower on the auger housing. Damage to the hydrostat may occur.

2. Using an overhead lifting device, raise the unit off the floor.

Hydro Removal (continued)

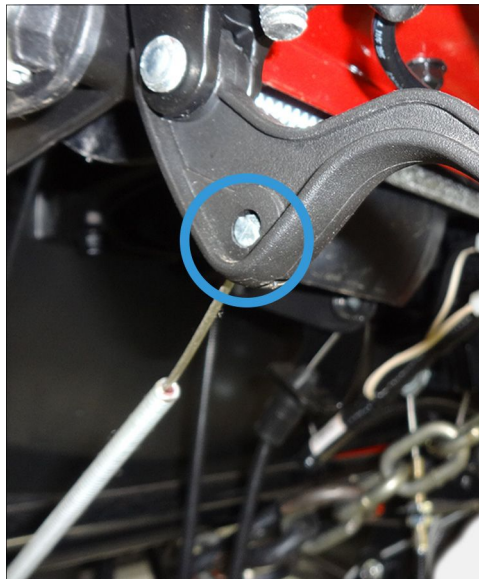
3. Remove the tracks from the machine. [Track Removal \(page 5–5\)](#)
4. Remove the 3 (1/4–20 x 5/8 inch) screws securing height adjust assembly and pivot bar to the frame.



g332811

Figure 12

-
5. Remove the LH clutch cable from the LH clutch cable lever. Repeat on the RH side of the machine.

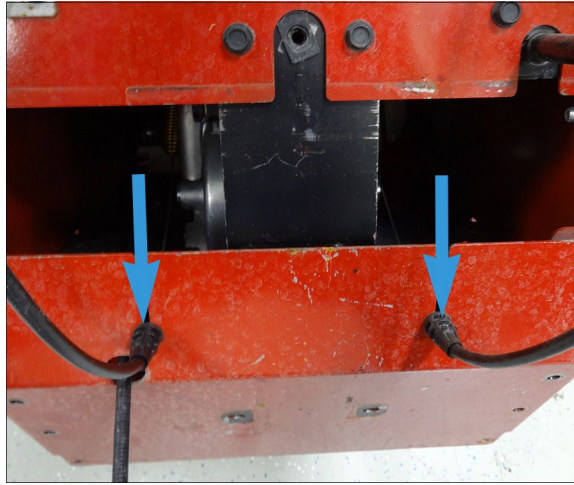


g332812

Figure 13

-
6. Remove the (1/4–20 x 5/8 inch) screw securing the traction cable to the underside of the control panel. Remove the traction cable.
 7. Remove the 4 (1/4–20 x 5/8 inch) bolts securing the rear cover to the traction frame and bottom cover. Remove the rear cover.
 8. Unclip the clutch cables from the rear cover.

Hydro Removal (continued)

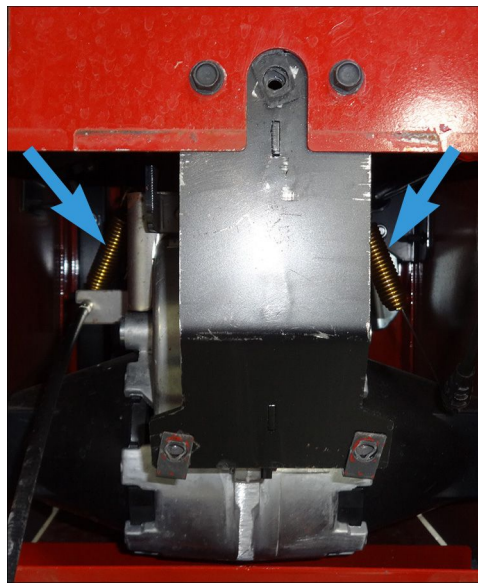


g332814

Figure 14

-
9. Remove the clutch cable springs from the hydro.

Note: The clutch cable springs may have cable ties securing the springs to the hydro clutch arms.

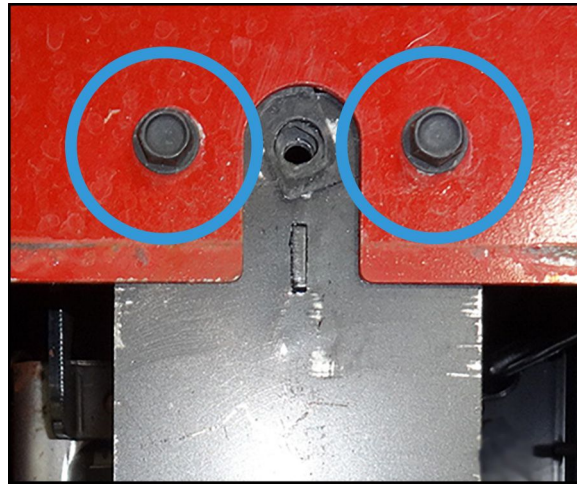


g332815

Figure 15

-
10. Remove the 2 (1/4–20 x 5/8) bolts securing the rear hydro bracket to the frame.

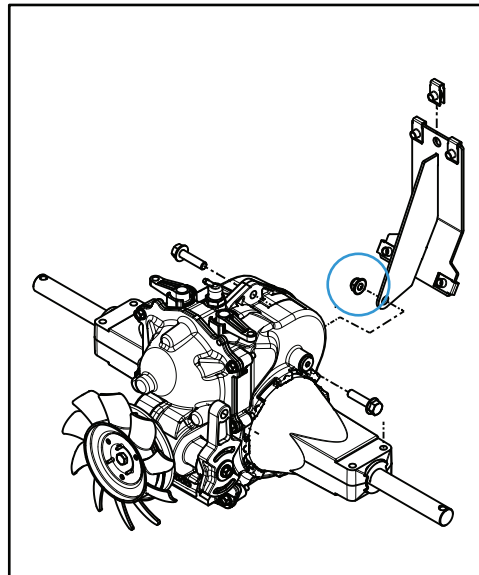
Hydro Removal (continued)



g335296

Figure 16

-
11. Remove the nut securing the rear hydro bracket to the hydro. Remove the rear hydro bracket.

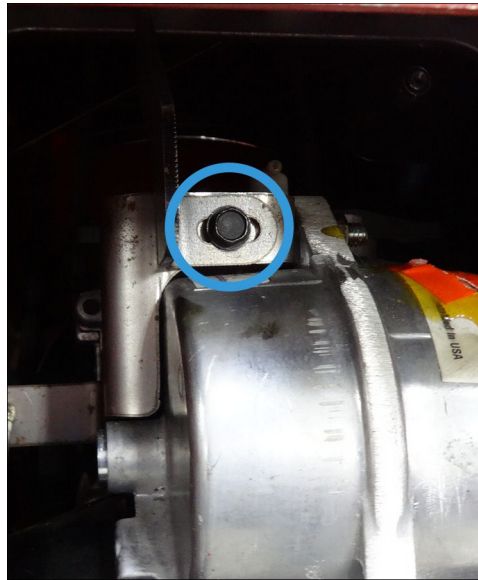


g335295

Figure 17

-
12. Remove the (3/8 inch) screw securing the hydro to the upper hydro bracket.

Hydro Removal (continued)



g332823

Figure 18

-
13. Remove the 4 (3/8 inch) screws securing the bottom cover to the traction frame. Remove the bottom cover.
 14. Place a floor jack under the hydro and lower frame brace to support the hydro.



g332817

Figure 19

-
15. Remove the hydro belt from the hydro.

Hydro Removal (continued)



g332819

Figure 20

-
16. Remove the 2 (1/4–20 x 2 1/4 inch) screws and 2 (5/16–18 x 3/4 inch) nuts securing the LH lower frame brace to the LH traction frame. Repeat on the RH side of the machine.



g332816

Figure 21

-
17. Remove the 2 (1/4–20 x 2 1/4 inch) screws and 2 (5/16–18 x 3/4 inch) nuts securing the LH hydro to the LH traction frame. Repeat on the RH side of the machine.

Hydro Removal (continued)



g332818

Figure 22

-
18. Using a floor jack, slowly lower and remove the hydro from the machine.

Hydro Installation

1. Using a floor jack, slowly raise the hydro and lower frame brace into the housing.
2. Install the 2 (1/4–20 x 2 1/4 inch) screws and 2 (5/16–18 x 3/4 inch) nuts securing the LH lower frame brace to the LH traction frame. Repeat on the RH side of the machine



g332816

Figure 23

-
3. Install the 2 (1/4–20 x 2 1/4 inch) screws and 2 (5/16–18 x 3/4 inch) nuts securing the LH hydro to the LH traction frame. Repeat on the RH side of the machine.

Hydro Installation (continued)



g332818

Figure 24

-
4. Install the hydro belt to the hydro.

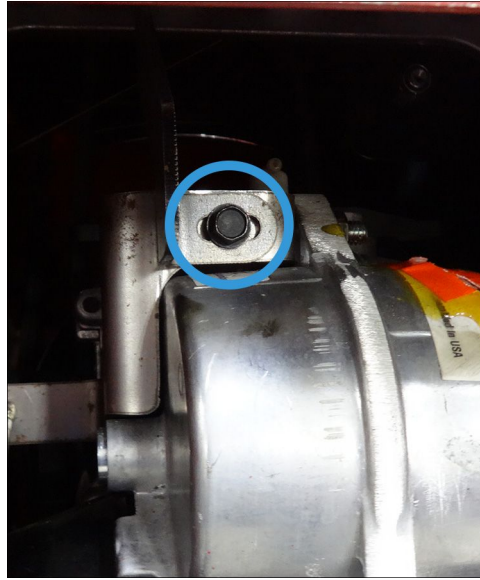


g332819

Figure 25

-
5. Remove the floor jack from under the hydro.
 6. Install the bottom cover and secure with 4 (3/8 inch) screws.
 7. Install the (3/8 inch) screw securing the hydro to the upper hydro bracket.

Hydro Installation (continued)

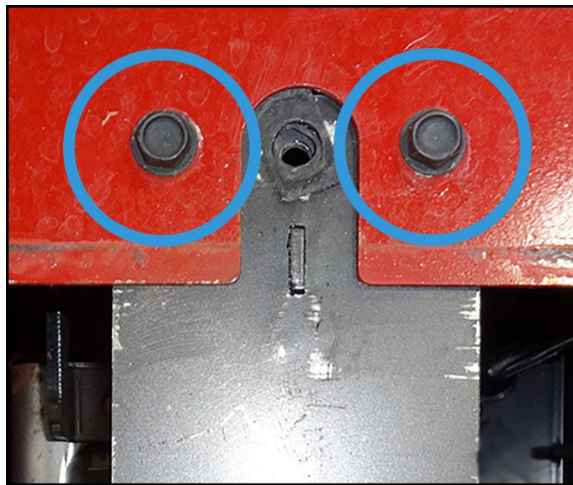


g332823

Figure 26



8. Install the rear hydro bracket to the frame and secure with 2 (1/4–20 x 5/8) bolts. Torque the 2 bolts to 6 N • m (50 in-lb).

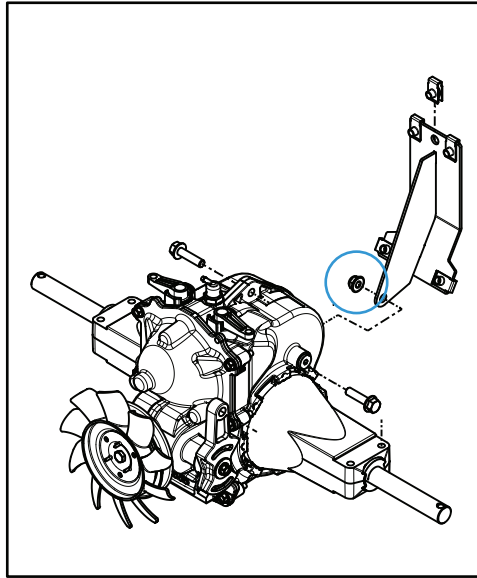


g335296

Figure 27

9. Install the nut securing the rear hydro bracket to the hydro.

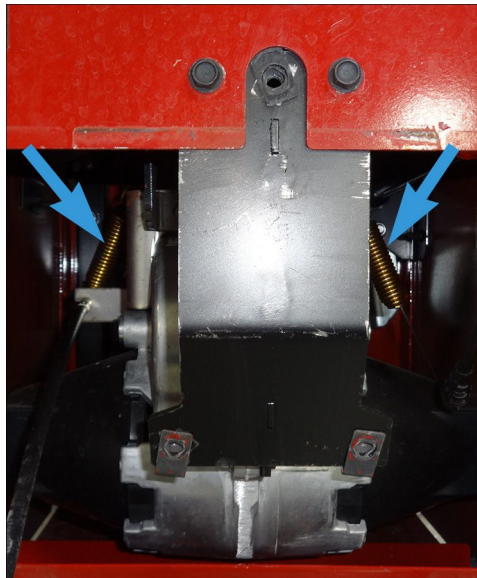
Hydro Installation (continued)



g335295

Figure 28

10. Install the clutch cable springs to the hydro.

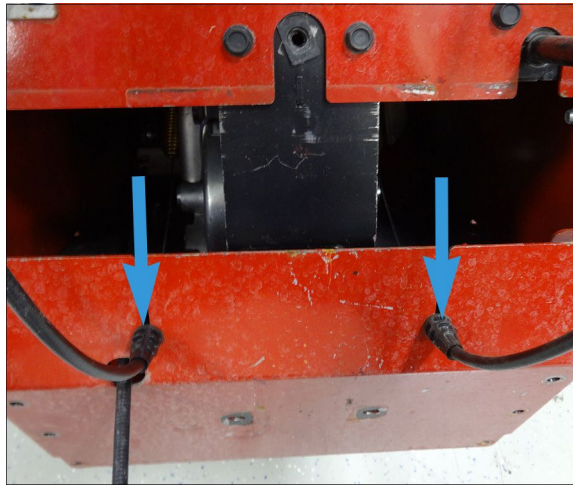


g332815

Figure 29

11. Clip the clutch cables into the rear cover.

Hydro Installation (continued)



g332814

Figure 30

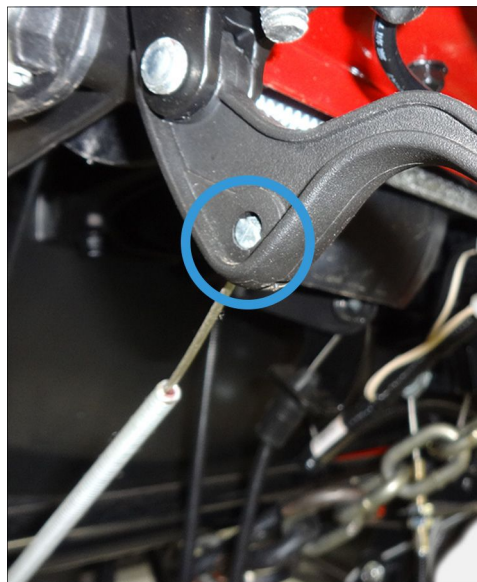
-
12. Install the rear cover to traction frame and secure with 4 (1/4–20 x 5/8 inch) bolts.



13. Install the traction cable to the underside of the control panel and secure with a (1/4–20 x 5/8 inch) screw. Torque the screw to 6 N • m (50 in-lb).

Note: Once the speed control cable has been removed, it may need to be re-set to gain neutral position of the hydro by adjusting the jam nuts.

14. Install the LH clutch cable to the LH clutch lever. Repeat on the RH side of the machine.

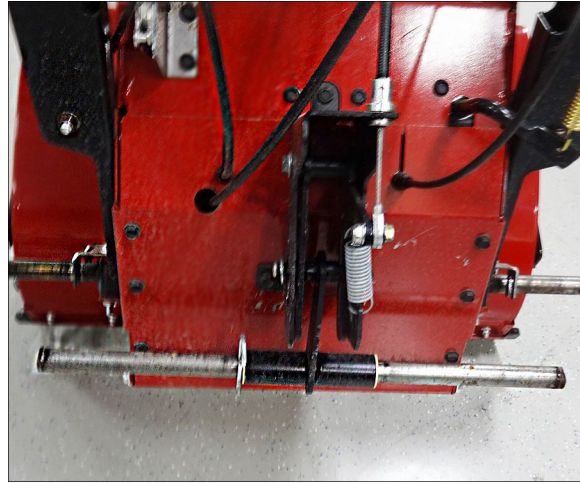


g332812

Figure 31

-
15. Install the 3 (1/4–20 x 5/8 inch) screws securing the height adjuster assembly and pivot bar to the frame.

Hydro Installation (continued)



g332811

Figure 32

-
16. Install the tracks onto the machine. [Track Installation \(page 5–5\)](#)
 17. Lower the machine to the ground and remove the overhead lifting device.



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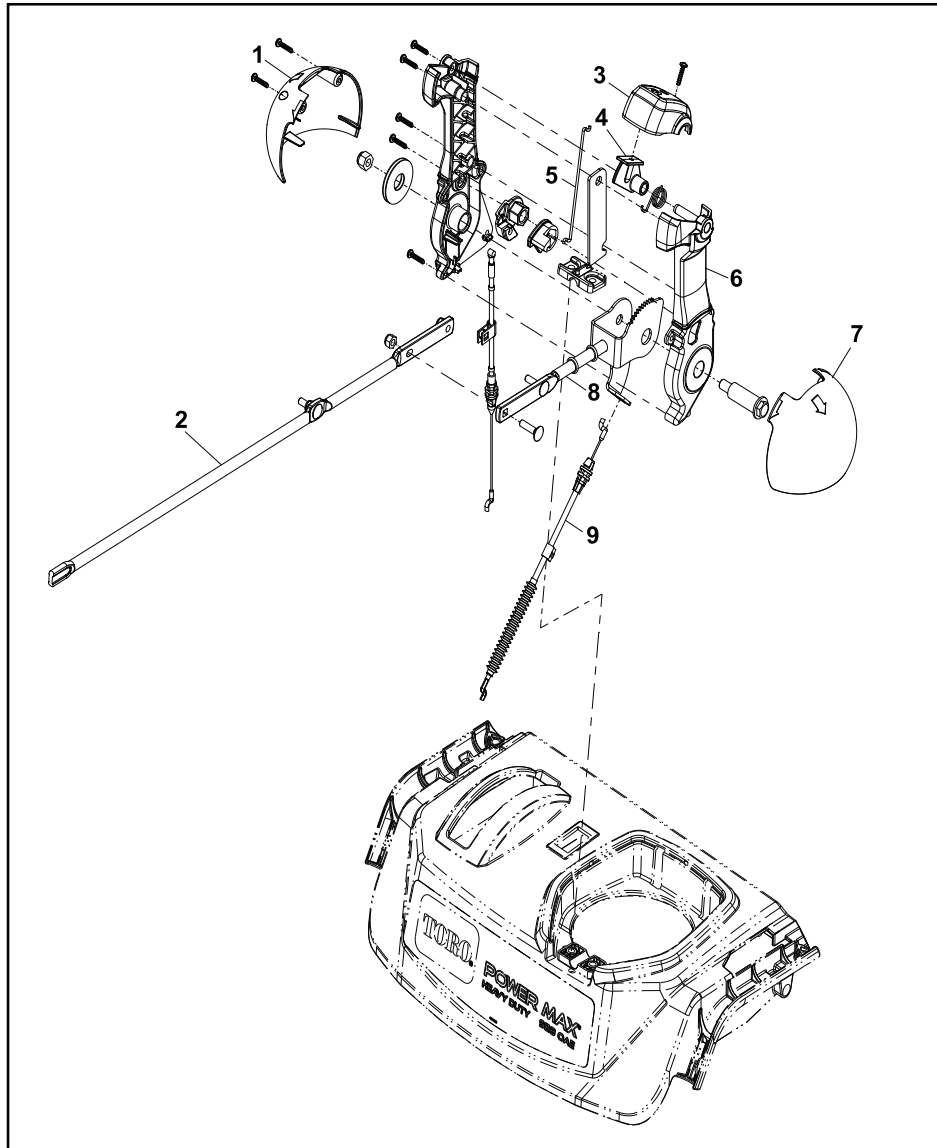
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General Information

The POWER TRX™ models 38890, 38891, 38870, and 38875 are all commercial units and are built with commercial grade handles and controls.

Service and Repairs

QUICK STICK® Assembly

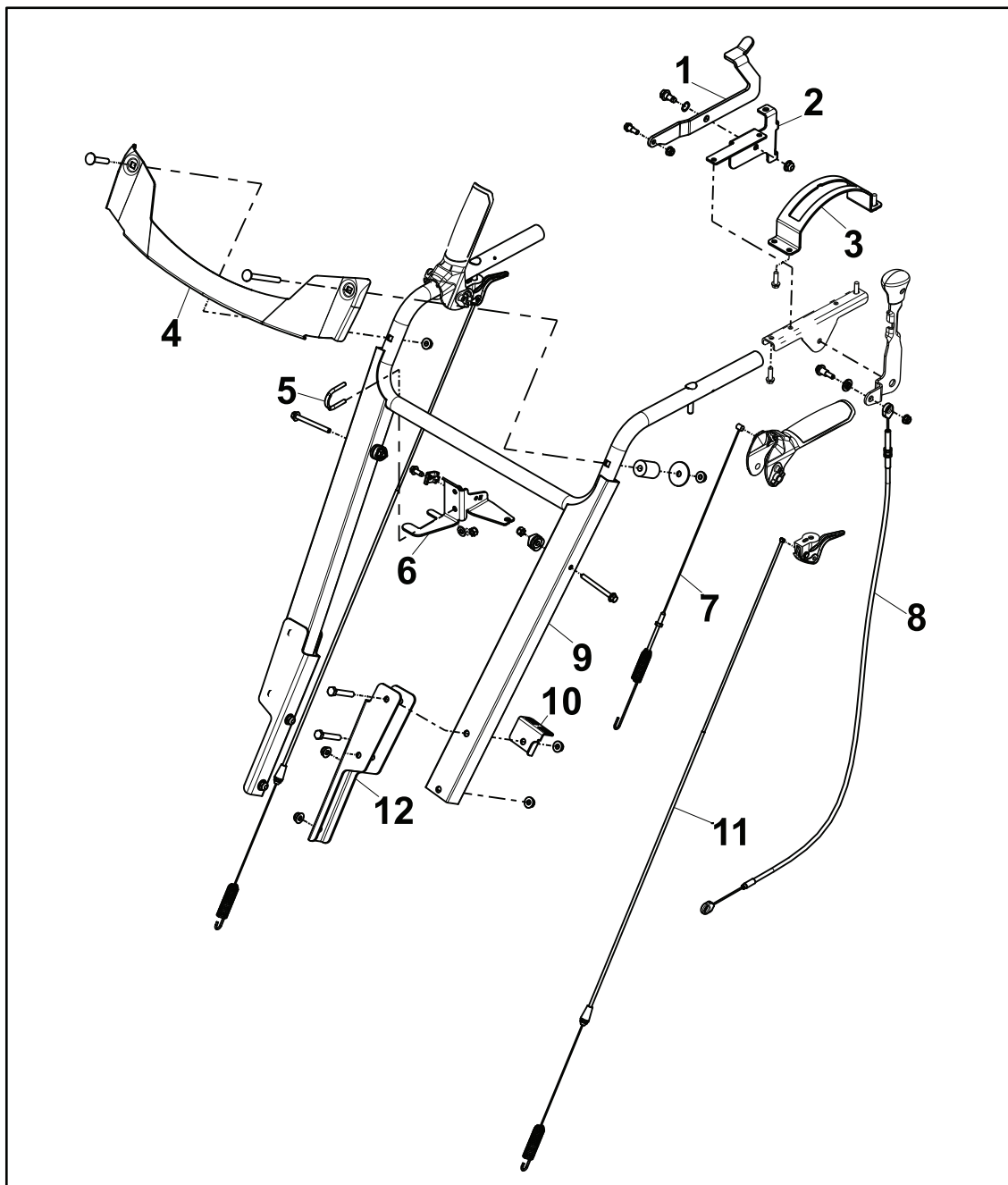


g263540

Figure 33

- | | |
|--------------------------|---------------------------------|
| 1. RH QUICK STICK® Globe | 6. Chute Control Lever Assembly |
| 2. Chute Rod | 7. LH QUICK STICK® Globe |
| 3. Lever Cap | 8. Chute Control Rod |
| 4. Latch Trigger | 9. Deflector Control Cable |
| 5. Latch Link | |

Handle Bracket Assembly



g332807

Figure 34

- | | |
|---------------------------|----------------------------|
| 1. Track Adjustment Lever | 7. Upper Traction Cable |
| 2. Lever Bracket | 8. Push Pull Hydro Cable |
| 3. Speed Shift Gate | 9. HD Handle Assembly |
| 4. Metal Trim | 10. Cleanout Stick Bracket |
| 5. Light Clamp | 11. Clutch Cable |
| 6. Speed Cable Bracket | 12. Lower Handle Bracket |

QUICK STICK® Replacement

QUICK STICK® Removal

1. Park the machine on a level surface. Stop the engine, wait for all moving parts to stop and remove the key.
2. Unhook the Z-bend and disconnect the deflector cable from the underside of the QUICK STICK®.



g262301

Figure 35

-
3. On the underside of the control panel, remove the 2 (1/4–10 x 0.82 inch) screws holding the QUICK STICK® cover in place.



g262302

Figure 36

-
4. Lift the front cover and pull forward to release the latch tabs on the rear. Set the cover aside.

QUICK STICK® Removal (continued)



g262303

Figure 37

-
5. Remove the 3 (1/4–20 x 1 inch) carriage bolts and nuts on the chute control rod and lift the QUICK STICK® out of the control panel.

Note: Notice the location of the cable clamp for latch cable function.

6. Remove the top cover.
7. Disconnect the chute cable.



g262304

Figure 38

QUICK STICK® Disassembly

1. Remove the Phillips head screw retaining the blue lever cap.

QUICK STICK® Disassembly (continued)



g262305

Figure 39

-
2. Remove the 2 Phillips head screws on the RH of the QUICK STICK® globe (the part that looks like a ball). Remove both halves and set aside.



g262306

Figure 40

-
3. Remove the (9/16 inch) locknut from the shoulder bolt. Slide the chute control rod off and remove the friction washer.
 4. Hold the QUICK STICK® so that the 5 screws holding the handle halves are facing up. Remove the 5 Phillips head screws and lift off the top handle half.

QUICK STICK® Disassembly (continued)



g262318

Figure 41

-
5. Lift the metal latch pawl off the hex on the cable lever. Remove the latch trigger and spring.

Note: Notice the orientation of the pawl to the lever for reassembly.



g262319

Figure 42

-
6. Rotate the cable until the barrel fitting slides off the cable lever.

QUICK STICK® Disassembly (continued)



g262320

Figure 43

QUICK STICK® Reassembly

1. Place the latch spring over the boss. The straight end of the spring should be down with the hooked end facing up.



g262321

Figure 44

2. Slide the latch trigger over the boss until it is fully seated, making sure that the stop on the trigger lever is above the stop on the quick lever. While holding the trigger lever in place, rotate the hooked end of the spring until it hooks under the front edge of the trigger lever.
3. Rotate the cable until the barrel fitting slides onto the cable lever.
4. Install the latch trigger and spring. Lift the metal latch pawl onto the cable lever hex.
5. Install the top handle into position, secure with 5 Phillips head screws.
6. Install the (1 3/4 inch) friction washer. Slide the chute control rod into place. Secure with a (9/16 inch) locknut onto the shoulder bolt.
7. Install both globes. Secure with 2 Phillips head screws on the right hand side of the chute control cover (the part that looks like a ball).
8. Install the cap and screw retaining the blue lever cap.

QUICK STICK® Installation

Note: The cable clamp must be installed on the chute control rod or the cable latch will not function.

1. Install the QUICK STICK® onto the control panel. Secure with 3 (1/4–20 x 1 inch) carriage bolts and nuts on the chute control rod.
2. Install the front cover into position. Secure with the latch tabs on the rear.
3. Install the 2 (1/4–10 x 0.82 inch) screws securing the QUICK STICK® cover in place on the underside of the control panel.
4. Hook the Z-bend and connect the deflector cable from the underside.

Control Interlock Replacement

Control Interlock Removal

1. Park the machine on a level surface. Stop the engine, wait for all moving parts to stop and remove the key.
2. Disconnect the auger and traction cables from the levers. If this is a wheel clutch model, disconnect the wheel clutch cables.



g263048

Figure 45

3. Remove the shoulder screw under the RH handgrip. When removed, the lockout latch, extension spring, flat washer, and locknut will drop out.

Control Interlock Removal (continued)



g263047

Figure 46

-
4. To remove the lockout rod, go to the RH end. There are 2 roll pins on the LH side and 1 in the lockout cam on the RH side.



g263046

Figure 47

-
5. Once the roll pins are driven out, the lockout rod can be moved to the side and removed. The lockout link can now be removed from the lockout rod.
 6. Remove the levers.

Note: Steps 1 and 2 above, do not need to be done in that order. It's possible to remove the rod without removing the shoulder bolt.

Control Interlock Removal (continued)



g263049

Figure 48

Control Interlock Installation

Note: Notice the spring on the lockout latch. The end with the slight bend goes behind the lockout latch and the hooked end goes over the small tab. It is easier to install the latch mechanism first, then hook the end of the spring with a wire to pull into place.

1. Install the traction lever and torsion spring.
2. Install the lockout link onto the lockout rod.
3. Install the lockout cam and auger lever.
4. Install the 2 roll pins on the LH side and the pin in the lockout cam on the RH side.
5. Install the lockout latch, extension spring, flat washer, and locknut. Install the shoulder screw under the RH handgrip
6. If this is a wheel clutch model, connect the wheel clutch cables. Connect the auger and traction cables to the levers.

Control Replacement and Adjustment

Deflector Cable Removal

1. Park the machine on a level surface. Stop the engine, wait for all moving parts to stop and remove the key.
2. Depress the tabs that retain the cable in the bracket under the control panel. Disconnect the Z-bend on the end.

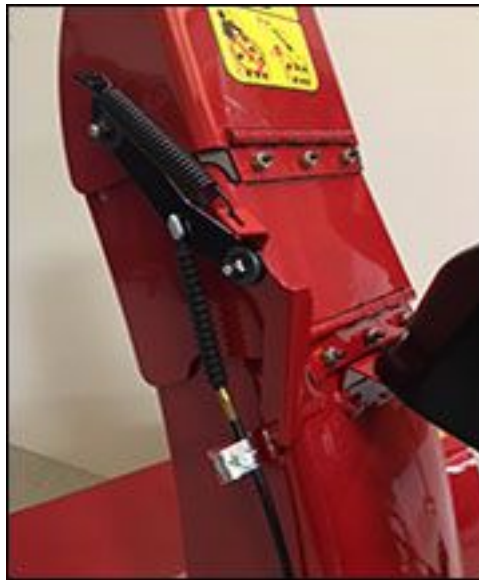
Deflector Cable Removal (continued)



g263044

Figure 49

-
3. Remove the cable clamp and disconnect the cable end from the deflector.



g263050

Figure 50

-
4. Remove the cable clamp on the traction housing.

Deflector Cable Installation

1. Connect the cable end to the deflector. Secure with a cable clamp.
2. Connect the Z-bend end to the machine.
3. Install the cable onto the bracket. Secure with tabs.
4. Connect the cable clamp to the traction housing.

Deflector Cable Adjustment

Make sure the QUICK STICK® is in the maximum rear position and centered; ensure the deflector is in the full upward position. Draw the slack out of the cable and secure the clamp.



g263051

Figure 51

Shift Lever Adjustment

The shift lever on the control panel is connected to the friction wheel in the traction frame by a shift rod. Moving the shift lever changes the friction wheel location.



g263052

Figure 52

Shift Rod Adjustment

1. Park the machine on a level surface. Stop the engine, wait for all moving parts to stop and remove the key.

Shift Rod Adjustment (continued)

Note: The adjustment point is a trunnion on the upper end of the shift rod.



g263053

Figure 53

-
2. Pull the shift rod and arm upward as far as they will go. With the shift lever in R2, adjust the trunnion to take the slack out and re-secure.

Note: Excessive slack in the linkage may cause the drive to be in reverse when shifted into first gear.



g263054

Figure 54

Auger Control

The bail on the RH handle is the auger control. Squeeze the bail and the cable causes an idler to pivot the tensioning in the auger belt.



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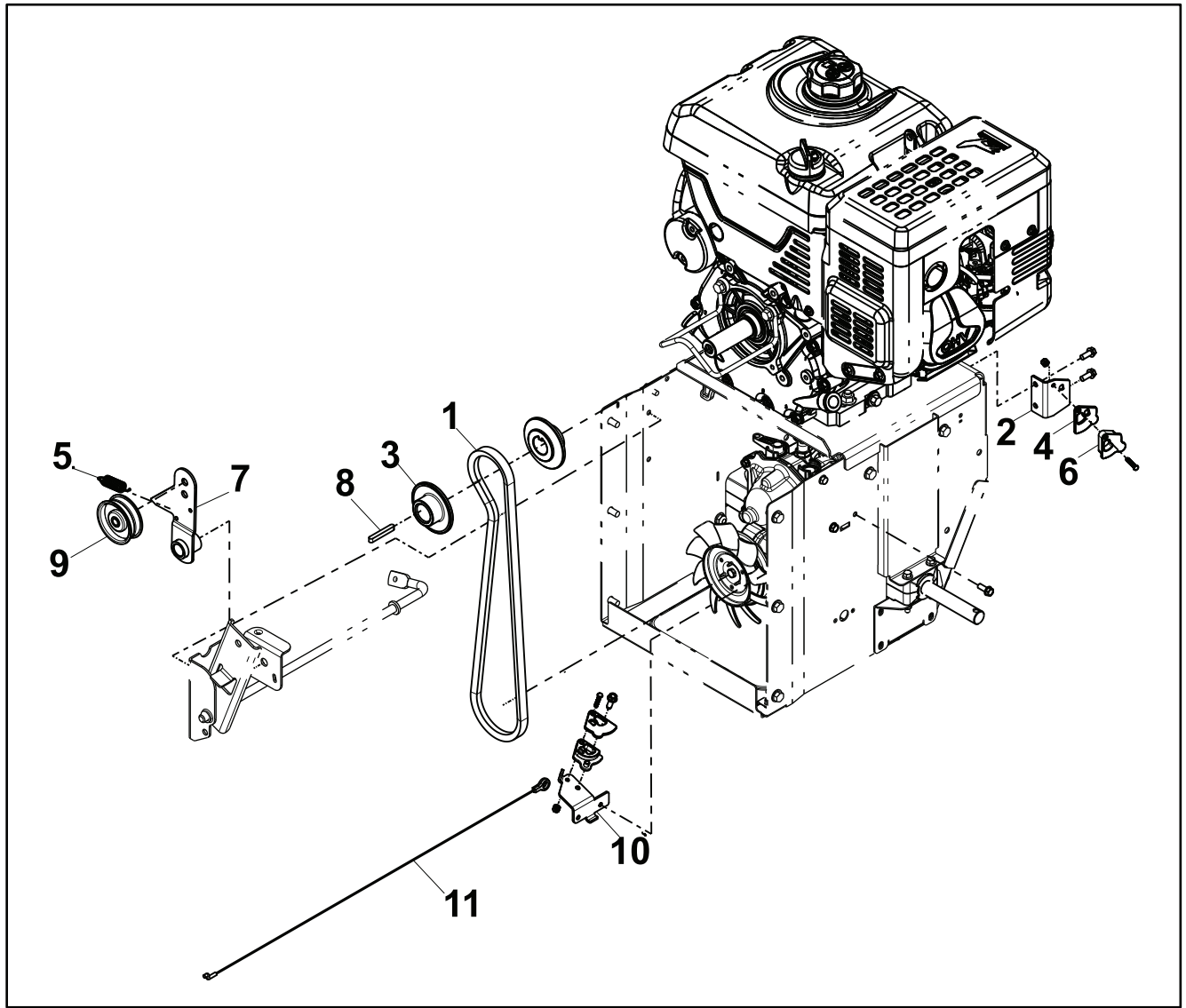
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Traction Belt Replacement.....	7-7

General Information

The POWER TRX™ units use a double-V auger drive belt.

Service and Repairs

Auger Drive Components



g338135

Figure 55

- | | |
|---------------------|-----------------------|
| 1. Traction Belt | 7. Traction Idler Arm |
| 2. Cable Bracket | 8. Square Key |
| 3. Traction Sheave | 9. Idler Pulley |
| 4. Cable Guide Cap | 10. Cable Anchor |
| 5. Extension Spring | 11. Traction Cable |
| 6. Cable Guide | |

Auger Belt Replacement

Auger Belt Removal

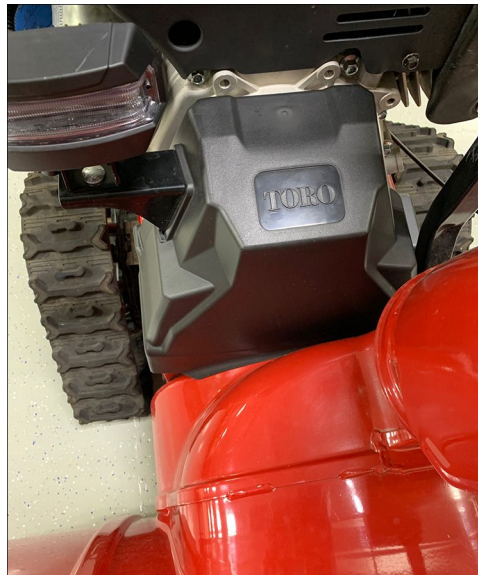
1. Park the machine on a level surface. Stop the engine, wait for all moving parts to stop and remove the key.
2. Drain the fuel into a suitable container.
3. Disconnect the light from the cover.



g335258

Figure 56

-
4. Remove the 2 (1/4–20 x 5/8 inch) screws securing the belt cover to the traction frame. Remove the belt cover.



g335259

Figure 57

-
5. Remove the 2 (M8 x 1.25 x 20) screws securing the belt guide to the engine. Remove the belt guide.

Note: Avoid bending the belt guide.

Auger Belt Removal (continued)



g263059

Figure 58

-
6. Remove the bolt securing the engine pulley to the crankshaft. If necessary, hold the hub between the engine pulley and engine to keep the crankshaft from turning. Remove the engine pulley and the auger belt from the crankshaft.



g263060

Figure 59

-
7. Slide and remove the auger belt from the impeller pulley.
 8. Tip the unit forward and secure. Remove the 4 (1/4–20 x 5/8 inch) screws securing the bottom cover to the traction frame.
 9. Remove the bottom cover. Depress the auger lever to allow brake to be released.
 10. Pull the belt out of the bottom of the machine.

Auger Belt Installation

1. Using the auger lever, release the brake.
2. Install the auger belt through the bottom of the machine.
3. Install the auger belt onto the impeller pulley.
4. Install the bottom cover to the traction frame and secure with 4 (1/4–20 x 5/8 inch) screws. Tip the unit into proper position.



CAUTION



When tightening the crank bolt, the engine must be cranked to prevent pinching the traction belt between the pulley sheaves. Failure to do so will damage the traction belt and crank bolt will have a low torque upon first use.



5. Install the engine pulley and the auger belt to the crankshaft. Apply Loctite 243 (blue) to the bolt. Install the bolt securing the engine pulley to the crankshaft. Torque the bolt to 40 N • m (30 ft-lb).
6. Install the belt guide to the engine. Install the 2 (M8 x 1.25 x 20) screws securing the belt guide to the engine. Torque the 2 screws to 26 N • m (20 ft-lb).



g263059

Figure 60

7. Check for proper clearance between the auger belt and belt guide. Engage the auger belt and look between the auger belt and belt guide on the left side. There should be about 3.2 mm (1/8 inch) gap.
8. Install the belt cover onto the traction frame and secure with 2 (1/4–20 x 5/8 inch) screws.

Auger Belt Installation (continued)



g335259

Figure 61

-
9. Connect the light to the cover.



g335258

Figure 62

-
10. Refill the fuel.

Traction Belt Replacement

Traction Belt Removal

1. Park the machine on a level surface. Stop the engine, wait for all moving parts to stop and remove the key.
2. Drain the fuel into a suitable container.
3. Remove the auger belt. [Auger Belt Removal \(page 7-4\)](#)
4. Remove the impeller pulley.

Traction Belt Removal (continued)

5. Remove the traction belt from the crankshaft pulley.
6. Tip the unit forward and secure.
7. Remove the traction belt from the lower pulley.



g263062

Figure 63

Traction Belt Installation

1. Install the traction belt to the lower pulley.
2. Tip the unit upright.
3. Install the traction belt to the crankshaft pulley.
4. Install the impeller pulley.
5. Install the auger belt. [Auger Belt Installation \(page 7–6\)](#)
6. Refill the fuel.

Belt Adjustment

Belt adjustments are made by adjusting the control cables. See the Controls section for the procedure. [Deflector Cable Adjustment \(page 6–14\)](#)



Auger Housing

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General Information

The POWER TRX™ models utilize an all new gearcase featuring a horizontal parting line and heavy duty steel gears.

Service and Repairs

Main Frame and Auger Housing Assembly

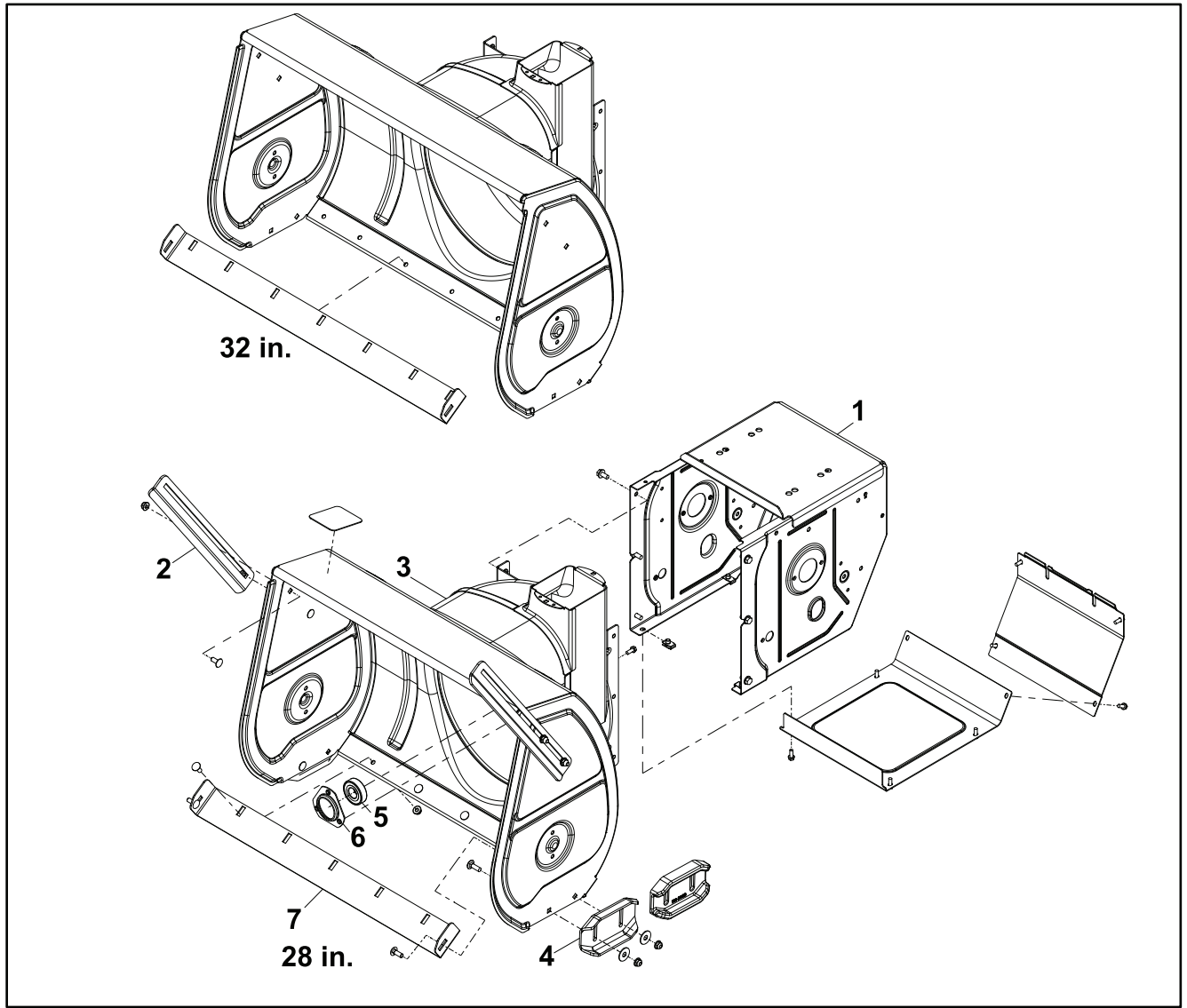
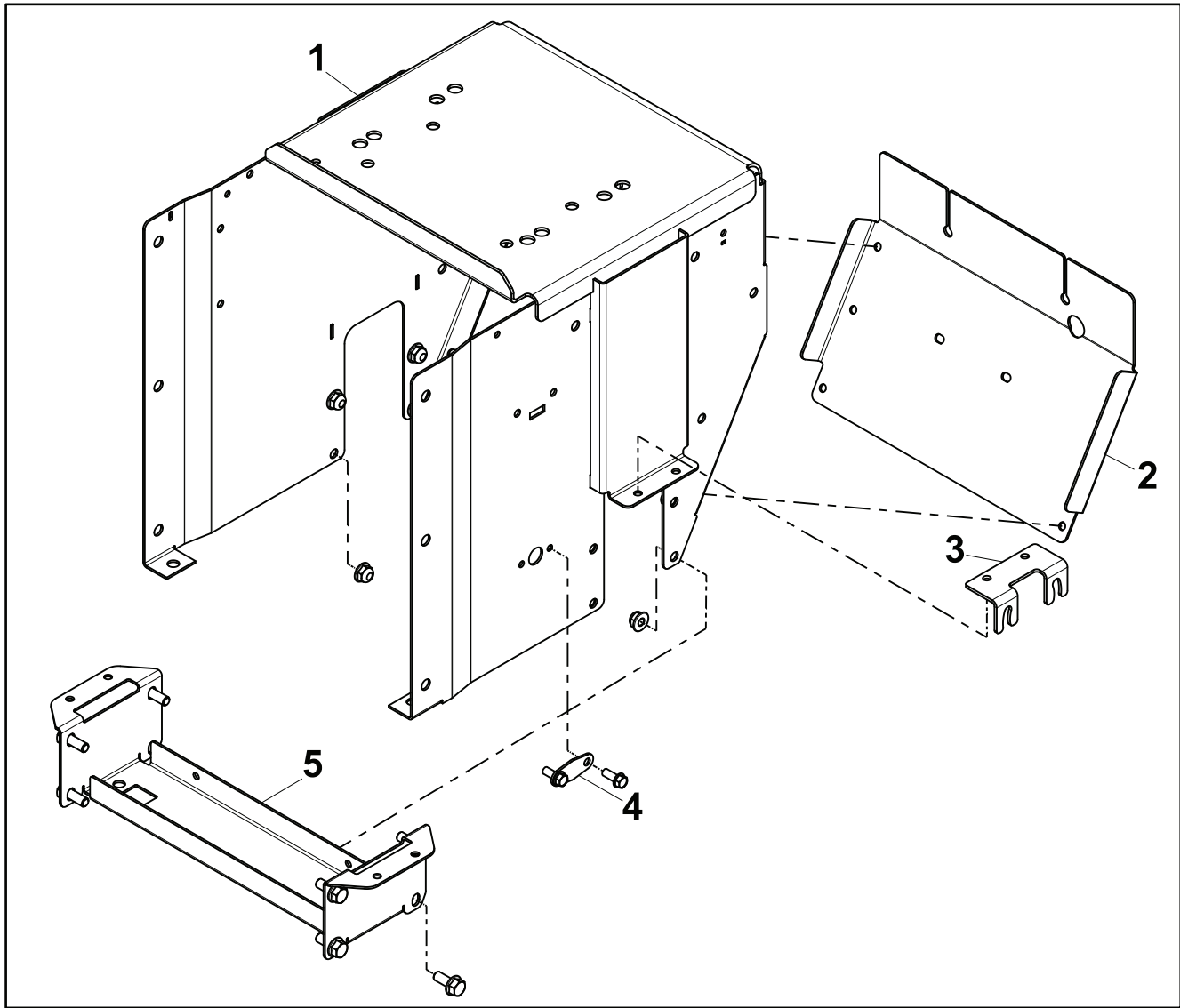


Figure 64

- | | |
|-----------------------|---------------------|
| 1. Traction Frame | 5. Ball Bearing |
| 2. Side Drift Breaker | 6. Bearing Retainer |
| 3. Auger Housing | 7. Scraper Blade |
| 4. Skid | |

Main Frame Assembly



g332835

Figure 65

- | | |
|-------------------|-----------------------|
| 1. Traction Frame | 4. Neutral Lock Cover |
| 2. Rear Cover | 5. Lower Frame Brace |
| 3. Carrier Stop | |

Fixed Scraper

The fixed scraper is bolted solidly to the auger housing, it is intended to be raised slightly off the ground to minimize catching on pavement cracks and solid objects. The amount that it should be raised depends on how rough the ground is. The scraper is adjustable as the mounting holes are slotted.



g263344

Figure 66

Scraper Replacement

The scraper is attached with 5 carriage head bolts with locknuts for the 28 inch model, 7 carriage head bolts with locknuts for the 32 inch model. Install the new scraper but do not tighten the bolts until the scraper is adjusted.



Auger Gearbox

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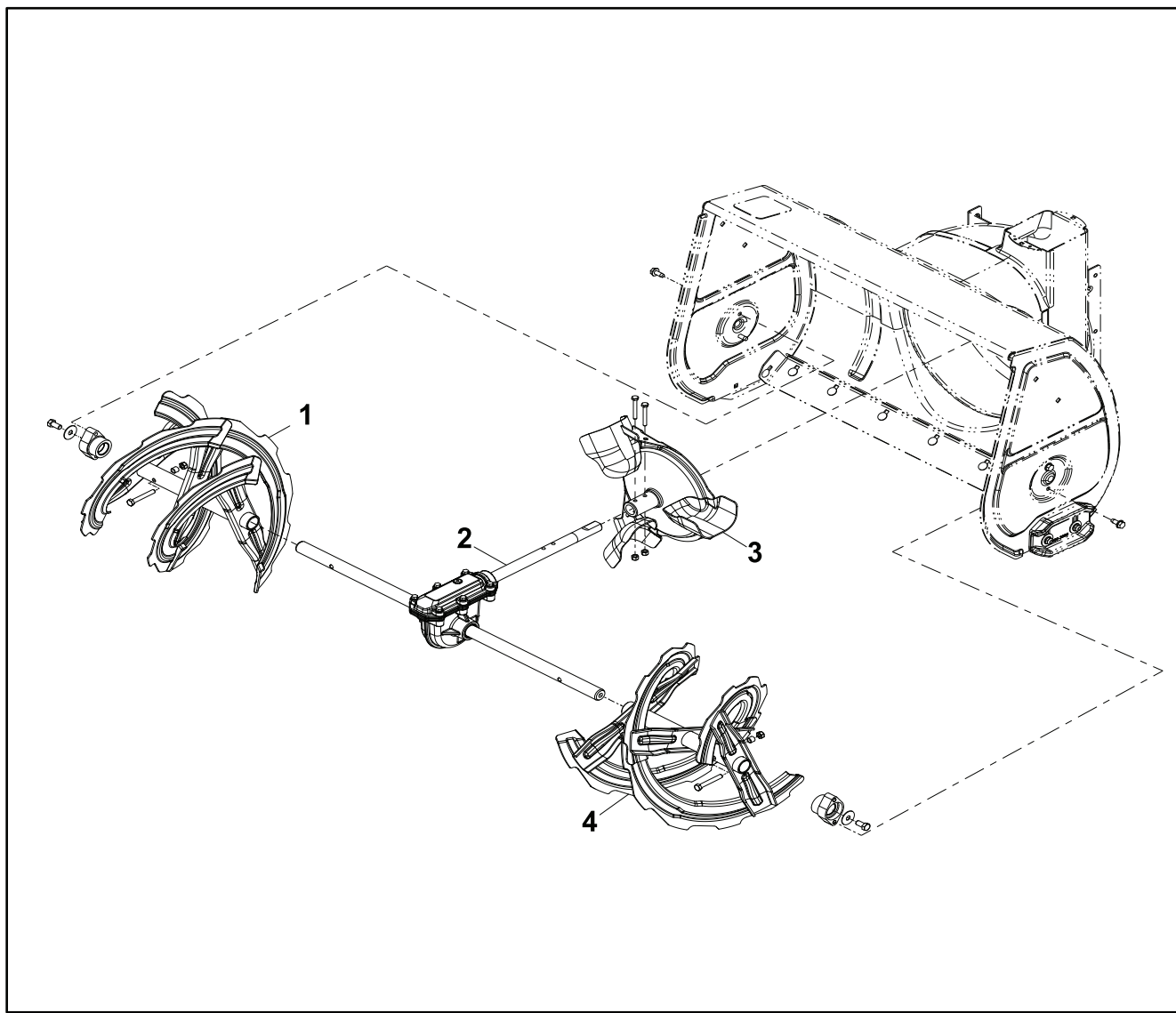
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General Information

The auger gearbox contains a worm gear and helical gear. It is driven by a clutching belt from the engine.

Service and Repairs

Gearbox, Auger and Impeller Assembly



g332836

Figure 67

- | | |
|----------------------------|-------------|
| 1. RH Auger | 3. Impeller |
| 2. Auger Gearcase Assembly | 4. LH Auger |

Auger and Traction Assemblies

Separating the Auger and Traction Assemblies

1. Park the machine on a level surface. Stop the engine, wait for all moving parts to stop and remove the key.
2. Remove the 2 (1/4–20 x 5/8 inch) screws securing the belt cover to the traction frame.



g335259

Figure 68

-
3. Remove the belt guide around the crankshaft pulley, avoid bending the guide.



g263059

Figure 69

-
4. Remove Phillips screw on the face gear cover. Remove the face gear cover.
 5. Disconnect the chute control cable.
 6. Disconnect the deflector cable from the deflector.

Separating the Auger and Traction Assemblies (continued)



g263064

Figure 70

-
7. Remove the 2 (1/4–20 x 1 inch) carriage bolts on the chute control rod.

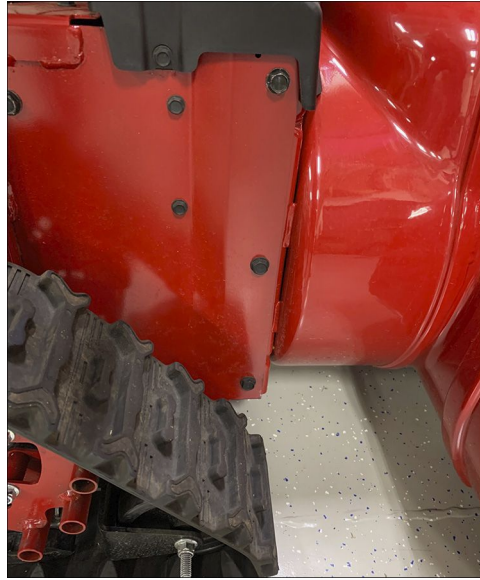


g263045

Figure 71

-
8. Support the auger and traction housings with blocks of wood.
 9. Remove the 3 (5/16–18 x 5/8 inch) cap screws on each side, connecting the auger to the traction assembly and separate the sections.

Separating the Auger and Traction Assemblies (continued)



g335260

Figure 72

10. Once separated, the auger pulley is in the open.
11. Remove the pulley from the input shaft.
12. Remove the 4 (5/16–18 x 5/8 inch) housing bolts on the outside of the auger housing.
13. Slide the gear case, augers, and impellers out of the housing.

Auger Gear Box Replacement

Auger Gear Box Installation

1. Apply a thin coat of anti-seize to the auger shafts and the impeller shaft. Install the impeller and augers, secure with cap screws and locknuts. Slide the auger shaft bushings on the ends of the auger shaft.
2. Insert the impeller shaft through the bearing on the rear of the auger housing. The bearing mounting bolts should be slightly loose.
3. Secure the auger shaft bushings to the auger side plates with 4 cap screws (2 per side).
4. Apply a light coat of anti-seize to the impeller shaft and install the impeller pulley. Push the auger shaft to the rear and push the pulley forward and secure. There should be 3 mm (1/8 inch) front to back movement on the shaft.



Discharge Chute

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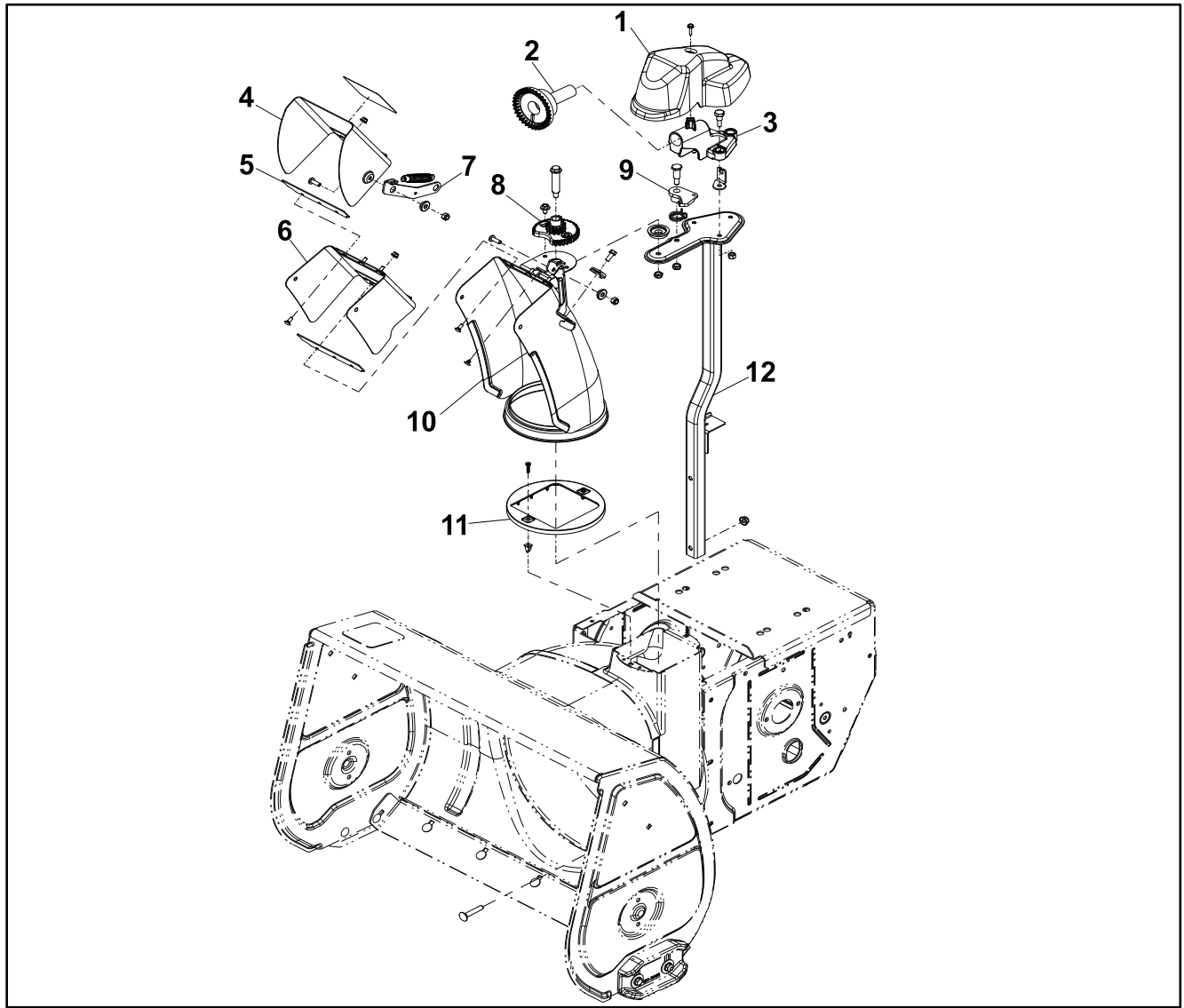
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General Information

The new POWER TRX™ snow blowers are all made with steel discharge chutes.

Service and Repairs

Chute Assembly



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Figure 73

- | | |
|------------------------------|--------------------------|
| 1. Face Gear Cover | 7. Deflector Link |
| 2. Face Gear | 8. Chute Gear |
| 3. Face Gear Mount | 9. Chute Latch |
| 4. Upper Deflector Assembly | 10. Lower Chute Assembly |
| 5. Deflector Gasket | 11. Chute Guide |
| 6. Middle Deflector Assembly | 12. Chute Post Assembly |

Chute and Face Gear Cover Replacement

Chute and Face Gear Cover Removal

1. Park the machine on a level surface. Stop the engine, wait for all moving parts to stop and remove the key.
2. Remove the (1/4–20 x 5/8 inch) bolt securing the cable to the clamp and deflector link. Remove the cable from the clamp and deflector link.



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Figure 74

-
3. Remove the Phillips head screw retaining the gear cover. Lift the front of the cover and slide towards the rear.



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Figure 75

-
4. Remove the (5/16–18 x 2 1/2 inch) bolt on the chute gear.
 5. Remove the chute.

Chute and Face Gear Cover Installation

1. Install the chute. Secure with a (5/16–18 x 2 1/2 inch) bolt on the face gear.

Chute and Face Gear Cover Installation (continued)

2. Install the front of the cover into position. Secure with a screw.

Chute Gear Replacement

Chute Gear Removal

1. Park the machine on a level surface. Stop the engine, wait for all moving parts to stop and remove the key.
2. Remove the Phillips head screw on the face gear cover.
3. Raise the front of the cover and slide towards the rear.
4. Remove the locknut from the bottom of the 3 shoulder screws (1/4 - 20 x 5/8 inch, 5/16 - 18 x 1 1/2 inch, and 5/16 - 18 x 2 1/2 inch).
5. Disconnect the latch cable from the cable anchor.
6. Raise the front of the face gear and slide towards the chute rod.
7. Remove the (5/16 -18 x 2 1/2 inch) shoulder bolt from the chute gear.
8. Remove the 2 (1/4–20 x 1/2 inch) screws securing the gear to the bracket. Remove the gear.

Note: A plastic spacer is under the bracket.

Chute Gear Installation

1. Attach the chute gear to the bracket and secure with 2 (1/4–20 x 1/2 inch) screws.
2. Place the spacer side up on the support tube, then set the gear and bracket down on it. The (5/16 -18 x 2 1/2 inch) shoulder bolt goes through and is secured with the washer and locknut.
3. Slide the face gear mount on the chute rod, if removed. Slide the face gear on the chute rod.
4. The face gear has a rib molded into it and the chute gear has 2. Line up the ribs and place the face gear mount onto the support tube.
5. Install the end of the latch cable in the latch and install the cable conduit into the cable anchor.



Foldout Drawings

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Electrical Drawing Abbreviations

The following abbreviations are used for wire harness colors on the electrical schematics and wire harness drawings in this chapter.

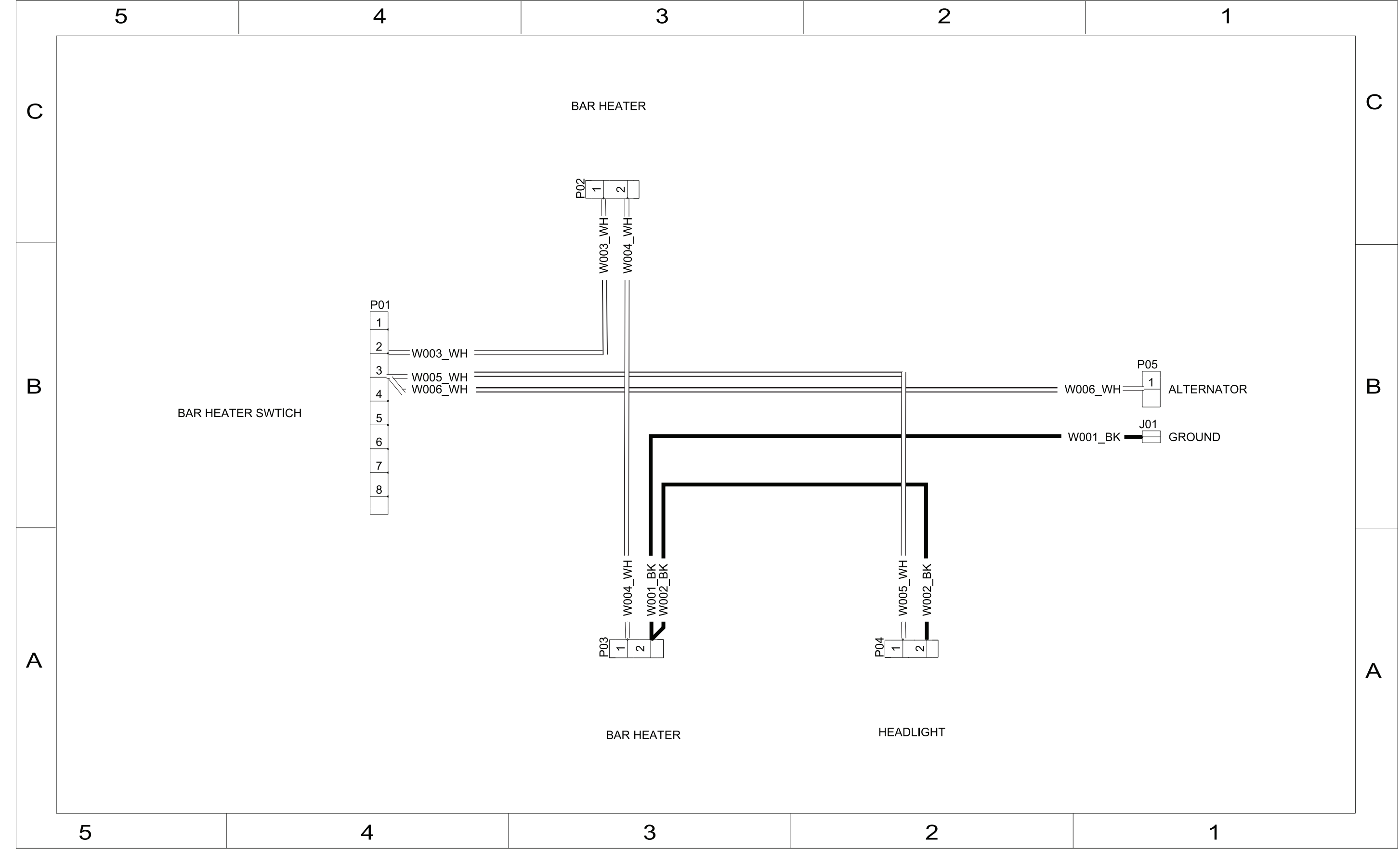
Abbreviation	Color
BK	Black
BR or BM	Brown
BU	Blue
GN	Green
GY	Gray
OR	Orange
PK	Pink
R or RD	Red
T	Tan
VIO	Violet
W or WH	White
Y or YE	Yellow

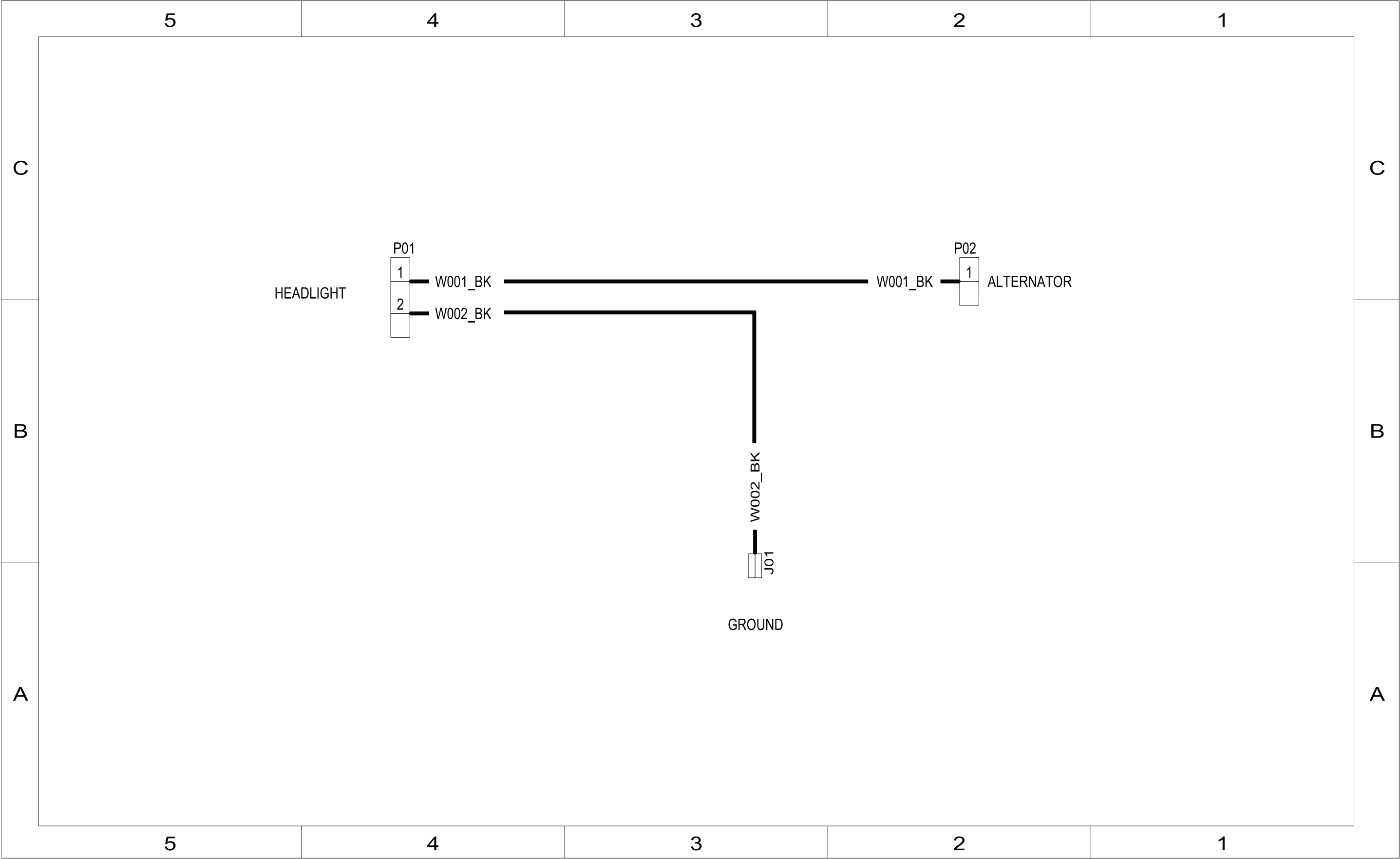
Numerous harness wires include a line with an alternate color. These wires are identified with the wire color followed by a / or _ and then the line color (e.g, R/BK is a red wire with a black line; OR_BK is an orange wire with a black line).

Note: The electrical harness drawings in this chapter identify both the wire color and the wire gauge. For example, 16 BK on a harness diagram identifies a 16 gauge wire with black insulation.

Note: A splice used in a wire harness will be identified on the wire harness diagram by SP. The manufacturing number of the splice is also identified on the wire harness diagram (e.g., SP01 is splice number 1).

Electrical Schematic with Hand Warmers





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