



WSP36 Series

Multi-Speed Walk Behind Sweeper



PALADIN
LIGHT CONSTRUCTION GROUP

 **BRADCO**

 **FFC**

 **HARLEY**

 **MCMILLEN**

 **SWEEPSTER**

The Power of Combined Excellence



Sweepster Serial Number _____

Manual Number: 51-4008
Release Date: February 11, 2008
Serial Number 0807001 and up

Notes

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INTRODUCTION

SAFETY STATEMENTS

Purpose of Sweeper

This sweeper is designed solely for the use in construction cleanup, road maintenance and similar operations. Use in any other way is considered contrary to the intended use. Compliance with and strict adherence to operation, service and repair conditions, as specified by the manufacturer, are also essential elements of the intended use.

Contacting Sweepster

If you have any questions about information in this manual or need to order parts, please call, write, fax or e-mail SWEEPSTER.

Sweepster
2800 North Zeeb Road
Dexter, Michigan 48130
Phone: (734)-996-9116 - (800)-456-7100
Fax: (734) 996-9014
e-mail: sweepster@paladinbrands.com

For help with installation, operation or maintenance procedures, contact our Technical Service Department. Direct product questions and parts orders to our Sales Department.

When ordering parts or accessories, be prepared to give the following information:

- Sweeper model, serial number and date of purchase
- Prime mover, make and model
- Part number, description and quantity

Terms Used in Manual

Right-hand, left-hand, front and rear are determined from the operator's perspective (either the operator's seat or standing behind a walk-behind unit), facing forward in the normal operating position.

Warranty

To validate the warranty for this unit, fill out the warranty card or warranty pages located in the back of this manual. Then send this information to SWEEPSTER.

DANGER



THIS STATEMENT IS USED WHERE SERIOUS INJURY OR DEATH WILL RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.

WARNING



THIS STATEMENT IS USED WHERE SERIOUS INJURY OR DEATH COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.

CAUTION



THIS STATEMENT IS USED WHERE MINOR INJURY COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.

NOTICE



THIS STATEMENT IS USED WHERE EQUIPMENT OR PROPERTY DAMAGE COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.

THIS SYMBOL BY ITSELF OR USED WITH A SAFETY SIGNAL WORD THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY OR THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

GENERAL SAFETY PRECAUTIONS

WARNING



READ MANUAL PRIOR TO INSTALL

Improper installation, operation, or maintenance of this equipment could result in serious injury or death. Operators and maintenance personnel should read this manual as well as all manuals related to this equipment and the prime mover thoroughly before beginning installation, operation, or maintenance. **FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL AND THE PRIME MOVERS MANUAL.**

WARNING



READ AND UNDERSTAND ALL SAFETY STATEMENTS

Read all safety decals and safety statements in all manuals prior to operating or working on this equipment. Know and obey all OSHA regulations, local laws and other professional guidelines for your operation. Know and follow good work practices when assembling, maintaining, repairing, mounting, removing or operating this equipment.



KNOW YOUR EQUIPMENT

Know your equipment's capabilities, dimensions and operations before operating. Visually inspect your equipment before you start, and never operate equipment that is not in proper working order with all safety devices intact. Check all hardware to assure it is tight. Make certain that all locking pins, latches, and connection devices are properly installed and secured. Remove and replace any damaged, fatigued or excessively worn parts. Make certain all safety decals are in place and are legible. Keep decals clean, and replace them if they become worn and hard to read.

GENERAL SAFETY PRECAUTIONS

WARNING



PROTECT AGAINST FLYING DEBRIS

Always wear proper safety glasses, goggles or a face shield when driving pins in or out or when operation causes dust, flying debris, or any other hazardous material.

WARNING



LOWER OR SUPPORT RAISED EQUIPMENT

Do not work under raised booms without supporting them. Do not use support material made of concrete blocks, logs, buckets, barrels or any other material that could suddenly collapse or shift positions. Make sure support material is solid, not decayed, warped, twisted, or tapered. Lower booms to ground level or onto blocks. Lower booms and attachments to the ground before leaving the cab or operator's station.

WARNING



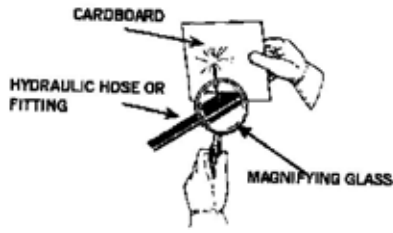
USE CARE WITH HYDRAULIC FLUID PRESSURE

Hydraulic fluid under pressure can penetrate the skin and cause serious injury or death. Hydraulic leaks under pressure may not be visible. Before connecting or disconnecting hydraulic hoses, read your prime movers operator's manual for detailed instructions on connecting and disconnecting hydraulic hoses or fittings.

- Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.
- If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask him to research immediately to determine proper treatment.

GENERAL SAFETY PRECAUTIONS CONTINUED

- Wear safety glasses, protective clothing, and use a sound piece of cardboard or wood when searching for hydraulic leaks.
**DO NOT USE YOUR HANDS!
SEE ILLUSTRATION.**



WARNING



DO NOT MODIFY MACHINE OR ATTACHMENTS

Modifications may weaken the integrity of the attachment and may impair the function, safety, life and performance of the attachment. When making repairs, use only the manufacturer's genuine parts, following authorized instructions. Other parts may be substandard in fit and quality. Never modify any ROPS (Roll Over Protection System) equipment or device. Any modifications must be authorized in writing by the manufacturer.

WARNING



SAFELY MAINTAIN AND REPAIR EQUIPMENT

- Do not wear loose clothing, or any accessories that can catch in moving parts. If you have long hair, cover or secure it so that it does not become entangled in the equipment.
- Work on a level surface in a well-lit area.
- Use properly grounded electrical outlets and tools.
- Use the correct tool for the job at hand. Make sure they are in good condition for the task required.

GENERAL SAFETY PRECAUTIONS CONTINUED

- Wear the protective clothing equipment specified by the tool manufacturer.

WARNING



SAFELY OPERATE EQUIPMENT

Do not operate equipment until you are completely trained by a qualified operator in how to use the controls, know its capabilities, dimensions, and all safety requirements. See your prime movers manual for these instructions.

- Keep all step plates, grab bars, pedals, and controls free of dirt, grease, debris, and oil.
- Never allow anyone to be around the equipment when it is operating.
- Do not allow riders on the attachment or the prime mover.
- Do not operate the equipment from anywhere other than the correct operators position.
- Never leave equipment unattended with the engine running or with this attachment in a raise position.
- Do not alter or remove any safety feature from the prime mover or this attachment.
- Know your work site safety rules as well as traffic rules and flow. When in doubt on any safety issue, contact your supervisor or safety coordinator for an explanation.

DANGER

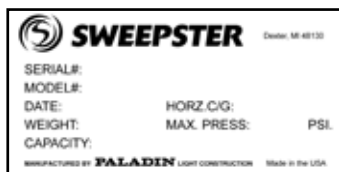


FALL HAZARD DO NOT OPERATE NEAR UNGUARDED EDGES.

- This sweeper is NOT intended for roof top use.
- When operating sweeper, adhere to all government rules, local laws and other professional guidelines for your sweeping application.

SAFETY SIGNS & LABELS

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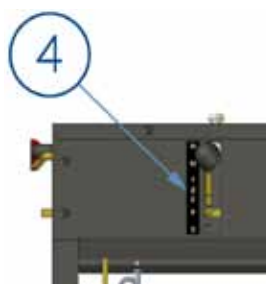
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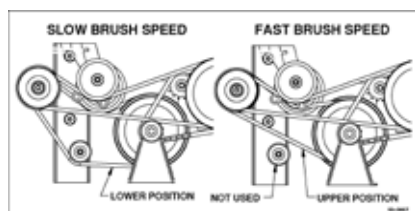
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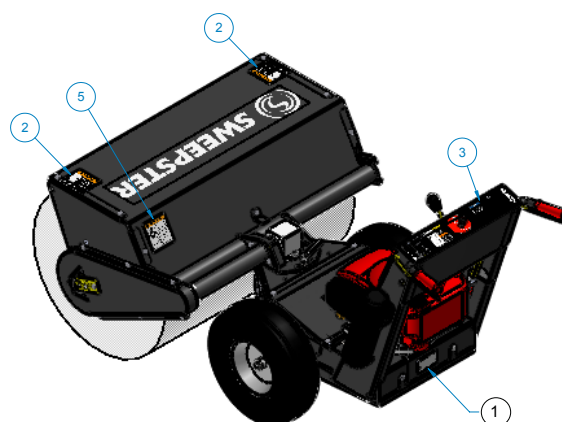
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50-0758



50-0867



SAFETY SIGNS & LABELS

There are several specific signs on this sweeper. The exact location of the hazards and description of the hazards are reviewed.

Placement or replacement of Safety Signs

1. Clean the area of application with nonflammable solvent, and then wash the same area with soap and water.
2. Allow the surface to fully dry.
3. Remove the backing from the safety sign, exposing the adhesive surface.
4. Apply the safety sign to the position shown in the diagram above and smooth out any bubbles.

Item	Part	Qty	Description
1.	50-0634	1	Label, Serial Number
2.	50-0726	2	Label, Warning, Flying Objects & Entanglement
3.	50-0757	1	Label, Handle
4.	50-0758	1	Label, Shift Pattern
Not Shown:			
	50-0867	1	Label, Belt Speed Position

Instructions

1. Keep all safety signs clean and legible.
2. Replace all missing, illegible, or damaged safety signs.
3. Replacement parts, for parts with safety signs attached, must also have safety signs attached.
4. Safety signs are available, free of charge, from your dealer or from SWEEPSTER.

OPERATION

CAUTION



A SWEEPER IS A DEMANDING MACHINE. Only fully trained operators or trainee operators under supervision of a fully trained person should use this machine.

Before operating sweeper:

- Learn sweeper controls in an off-road location.
- Be sure that you are in a safe area, away from traffic or other hazards.
- Check all hardware making sure it is tight.
- Replace any damaged or fatigued hardware with properly rated fasteners.
- Check tire pressure before sweeping.
- Remove from the sweeping area all property that could be damaged by flying debris.
- Be sure all persons not operating the sweeper are clear of the sweeper discharge area.
- Always wear proper apparel such as a long sleeved shirt buttoned at the cuffs; safety glasses, goggles or a face shield; ear protection; and a dust mask.

While operating sweeper:

DANGER



**FALL HAZARD
DO NOT OPERATE NEAR
UNGUARDED EDGES.**

- This sweeper is NOT intended for roof top use.
- When operating sweeper, adhere to all government rules, local laws and other professional guidelines for your sweeping application.
- Minimize flying debris - use the slowest rotating speed that will do the job.
- Keep hands, feet, hair and other loose clothing away from all moving parts.

- Before leaving the operator's position for any reason, STOP ENGINE.

NOTICE - AVOID TRANSMISSION DAMAGE.
Do not shift while in motion.

WARNING - Leave the brush hood (shield) and all other shields and safety equipment in place when operating the sweeper.



- When sweeping on rough terrain, reduce speed to avoid "bouncing" the sweeper. Loss of control can result.
- Never sweep toward people, buildings, vehicles or other objects that can be damaged by flying debris.
- Only operate the controls while the engine is running.
- While you operate the sweeper slowly in an open area, check for proper operation of all controls and all protective devices. Note any repairs needed during operation of the sweeper. Report any needed repairs.

Before Each Use

Perform daily maintenance as indicated in Maintenance Schedule.

Run the sweeper at a low idle. Check for proper brush rotation and drive engagement.

WARNING AVOID SERIOUS INJURY. Check for large objects that could harm the operator or others if thrown by the sweeper. Remove these items before operating.



During Use

Directing Debris

Avoid excessive downward pressure on the brush sections to prevent excessive wear. A two to four inch wide pattern is sufficient for most applications.

Direct debris by angling the brush head in that direction.

OPERATION

Observe wind direction. Sweeping with the wind makes sweeping more effective and helps keep debris off the operator.

The terms *swing* and *angle* are used interchangeably.

Brush Head Angling

1. Lift and rotate the locking handle counter-clockwise to loosen. (figure 1)
2. Position the brush head at the desired angle.
3. Lift and rotate the locking handle clockwise to tighten.

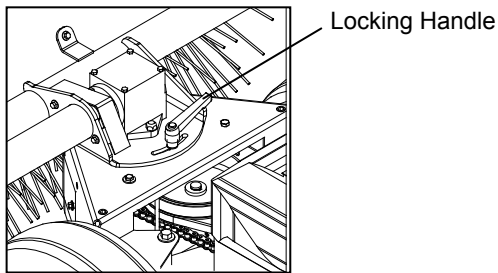


figure 1

Sweeping

To sweep:

1. Swing the brush head assembly the direction that you want to direct debris. (See Brush Head Angling)
2. Start the engine at idle and select forward drive speed. (1st-4th gear, 5th gear is for transport only.)
3. Engage the brush drive. (Left control lever)
4. Increase prime mover engine rpm to sweeping speed.
5. Engage the traction drive. (Right control lever)

NOTICE **AVOID SWEEPER DAMAGE.**
Reduce travel speed to avoid hitting immovable objects.

Operating Tips

NOTICE - **AVOID SWEEPER DAMAGE.** Do not ram into piles

NOTICE - If casters are installed they should be removed for operation in snow that is two inches or more in depth.

Brush, Engine & Travel Speeds

Vary brush, engine and travel speeds to match sweeping conditions.

Large Areas

When sweeping a large area, such as a parking lot, make a path down the middle and sweep to both sides. This reduces the amount of debris that the sweeper must sweep to one side.

Snow

Fast brush speeds and slow travel speeds are needed to sweep effectively. Start at 3/4 throttle and the lowest gear of the prime mover. For wet and/or deep snow, increase to almost full throttle. This helps keep snow from packing up inside the brush hood.

In deep snow you may need to make multiple passes to get down to a clean surface.

To keep snow from blowing back onto a swept area, always sweep so the wind is at your back.

Dirt & Gravel

To keep dust at a minimum, plan sweeping for days when it is overcast and humid or after it has rained. Also, sweep so the wind blows at your back.

Low brush speeds and moderate travel speeds work best for cleaning debris from hard surfaces. Brush speeds that are too fast tend to raise dust because of the aggressive sweeper action.

To sweep gravel, use just enough brush speed to "roll" the gravel, not throw it.

OPERATION - CONTINUED

Heavy Debris

Travel slowly - 1-2 mph.

Sweep a path less than the full width of the sweeper.

WARNING



SAFELY OPERATE EQUIPMENT

Do not operate equipment until you are completely trained by a qualified operator in how to use the controls, know its capabilities, dimensions, and all safety requirements. See your prime movers manual for these instructions.

- Keep all step plates, grab bars, pedals, and controls free of dirt, grease, debris, and oil.
- Never allow anyone to be around the equipment when it is operating.
- Do not allow riders on the attachment or the prime mover.
- Do not operate the equipment from anywhere other than the correct operators position.
- Never leave equipment unattended with the engine running or with this attachment in a raise position.
- Do not alter or remove any safety feature from the prime mover or this attachment.
- Know your work site safety rules as well as traffic rules and flow. When in doubt on any safety issue, contact your supervisor or safety coordinator for an explanation.

WARNING!



EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA DUST ALONG WITH OTHER HAZARDOUS DUSTS MAY CAUSE SERIOUS OR FATAL RESPIRATORY DISEASE.

It is recommended to use dust suppression, dust collection and if necessary personal protective equipment during the operation of any attachment that may cause high levels of dust.

Traveling Around the Work site

1. Start engine at idle.
2. Select a gear with the appropriate travel speed for the conditions.
3. Push down on handles to raise the brushes off the ground and engage the traction drive control lever (right side).
4. To stop, release the traction drive control lever.

SERVICE & REPAIR - GENERAL

Repair or adjust the sweeper in a safe area, away from traffic and other hazards.

Before adjusting or servicing, push down emergency shut off switch and remove spark plug wire from spark plug.

STORAGE

NOTICE

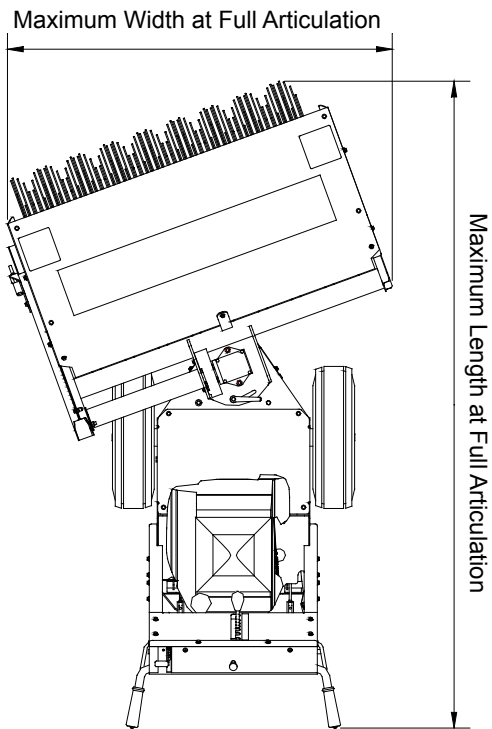
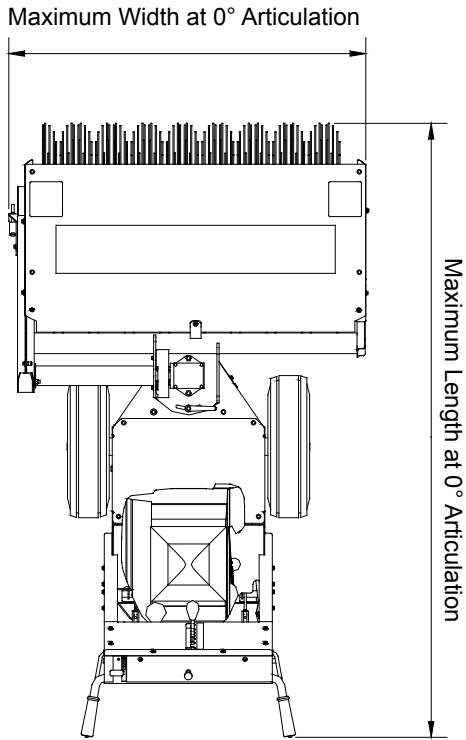
Do not store the sweeper with weight on the brush. Weight will deform the bristles, destroying the sweeping effectiveness.

Do not store polypropylene brushes in direct sunlight. The material can deteriorate and crumble before the bristles are worn out.

Keep polypropylene brush material away from intense heat or flame.

PRODUCT INFORMATION

Specifications and Model Views without Optional Casters or Hopper



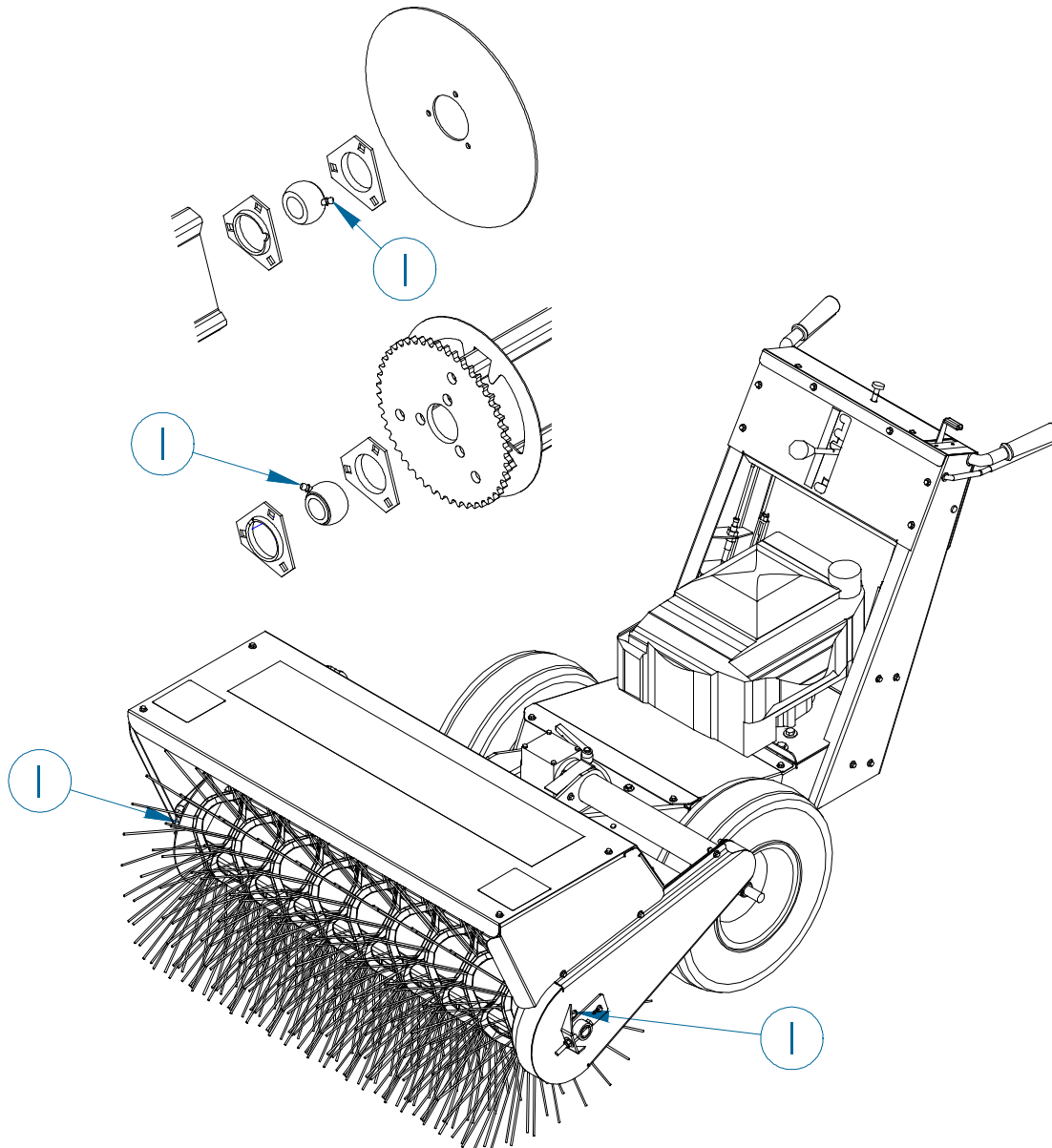
Approximate Weight	295 lbs
Maximum Length at 0° Articulation	70.3 inches
Maximum Width at 0° Articulation	41 inches
Maximum Length at Full Articulation	74 inches
Maximum Width at 0° Articulation	44 inches
Sweeping Width at 0° Articulation	36 inches
Sweeping Width at Full Articulation	32.6 inches

LUBRICATION POINTS

The following grease fittings should be greased before each use. See figure for locations.

NOTICE - NO LUBRICATION IS REQUIRED FOR GEARBOX (05-1439) AND TRANSAXLE (05-1423). THESE ARE PRE-LUBRICATED FROM THE FACTORY. DAMAGE WILL OCCUR AND WILL VOID THE WARRANTY.

1. Core bearing (2 fittings)
(Brush may need to be rotated to align zerk with access hole.)



MAINTENANCE

MAINTENANCE SCHEDULE

<u>PROCEDURES</u>	<u>BEFORE EACH USE</u>	<u>25 HOURS</u>	<u>100 HOURS</u>	<u>AFTER EACH USE</u>
Hardware - Inspect & Tighten	✓			
Engine & Air Filter - Check & clean if necessary	✓			
Grease Fittings - See (Lubrication Points)		✓		
Oil, Engine - Check Level	✓			
Brush Drive Chain - Adjust & Lubricate		✓		
V-Belt Inspection		✓		
Wash Unit - Remove grease and debris				✓

BRUSH CORE REMOVAL

1. Stop engine, push emergency switch and remove spark plug wire.
2. Support body in pivot area with a 10 inch minimum support (figure 1).
3. Remove M6 bolts securing core adjustment weldments to the brush frame.
4. Remove left and right core adjustment screws.
5. Remove left and right core adjustment weldments.
6. Push core shaft to right until flush with bearing on sprocket of core.
7. Remove chain guard.
8. Remove chain.
9. Remove core.

BRUSH CORE INSTALLATION

1. Place core in brush frame.
2. Install chain.
3. Push core shaft to right until flush with bearing on sprocket.
4. Install chain guard.
5. Push core shaft to left.
6. Install core adjustment weldments and adjustment bolts, then M6 bolts.
7. While rotating brush, adjust final drive chain tension.
8. Be sure both left and right adjustments are equal.
9. Tighten all hardware.
10. Remove support from body.
11. Re-connect spark plug wire, run and test.

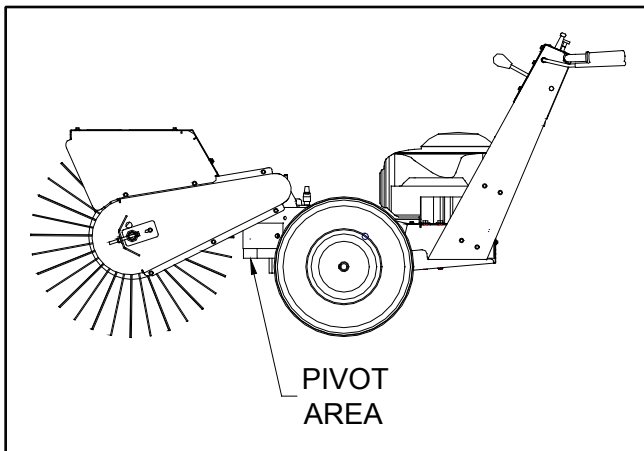


figure 1

REPLACING BRUSH SECTIONS

1. Remove core from brush head assembly following brush core removal instructions.
2. Remove retaining plate from the core assembly.
3. Remove old sections.
4. Install new sections by doing the following:
 - a. Number the tubes on the core as 1,2 and 3 (figure 1).
 - b. Slide the first section onto the core with the drive pins on either side of tube 1. Make sure that the drive pins angle up (figure 1).
 - c. Place the second section on the core with the drive pins on either side of tube 2. Be sure the drive pins angle down (figure 2).
 - d. Put the third section on with the drive pins around tube 3. Be sure the drive pins angle up.
 - e. Slide sections on until the core is full, making sure to alternate the tubes used and the direction of the drive pins.
5. Re-attach the section retainer plate with previously removed hardware.
6. Follow brush core installation instructions

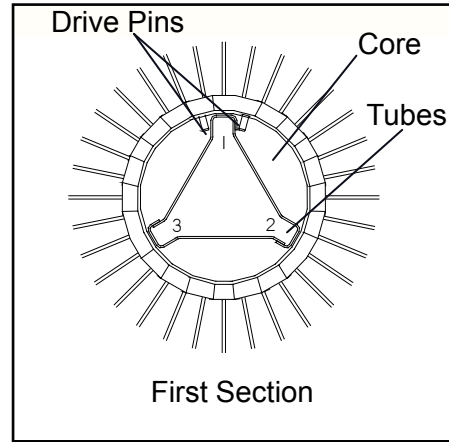


figure 1

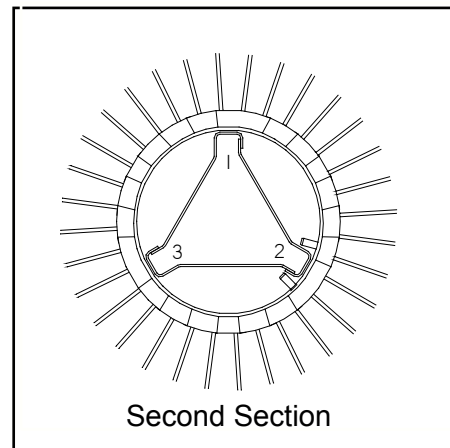
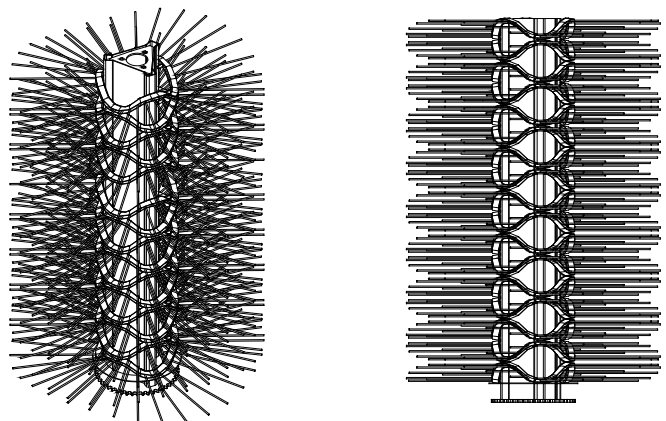


figure 2



Worn Section Standard				Reference Information	
Section OD, New	Ring ID	Section OD, Worn	Exposed Bristle, Worn	Bristle Length	Exposed Bristle, New
24	6.38	17	3.8	8.50	7.5
26	8.00	18	4.0	9.00	8.0
32	10.00	22	5.0	11.00	10.0
36	10.00	24	6.0	13.00	12.0
36	10.63	25	6.0	12.69	11.4
46	19.38	34	6.0	13.31	12.1

BRUSH SPEED CHANGE

1. Stop engine, push emergency switch and remove spark plug wire.
2. Remove top cover.
3. Move brush drive V-belt to upper (faster rpm) or lower (slower rpm) set of grooves on engine, idler and jack shaft pulleys.
4. Re-install cover.
5. Connect spark plug wire.

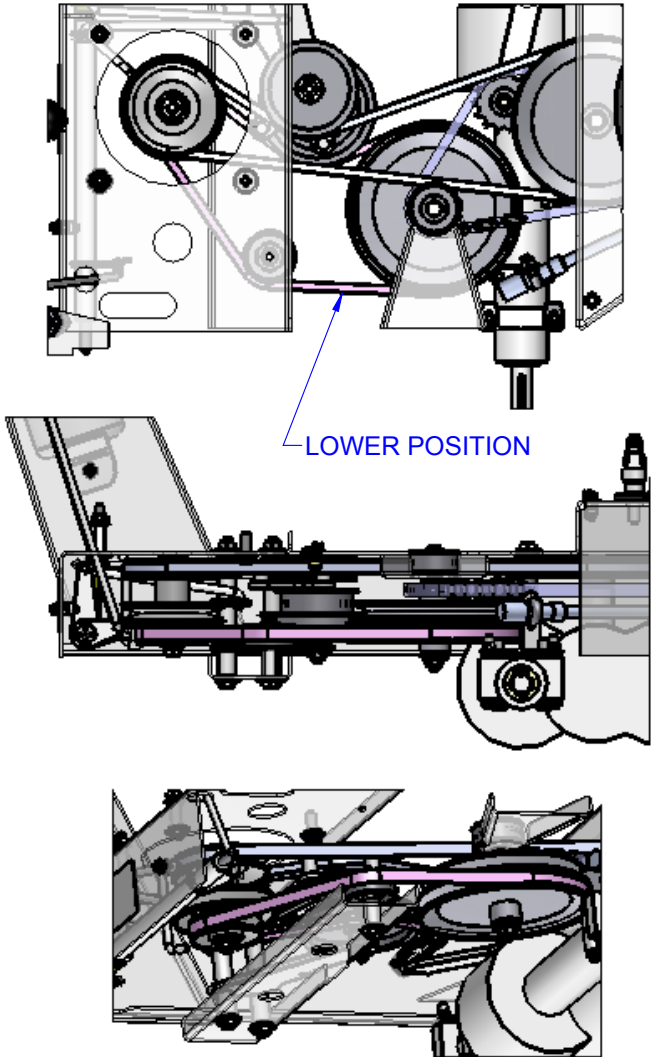
TRANS AXLE DRIVE BELT REPLACEMENT

1. Stop engine, push emergency switch and remove spark plug wire.
2. Remove both top and bottom covers.
3. Remove front body cover.
4. Slide brush drive belt off engine pulley.
5. Remove and replace V-belt.
6. Re-install covers.
7. Adjust trans axle drive lever for proper engagement.

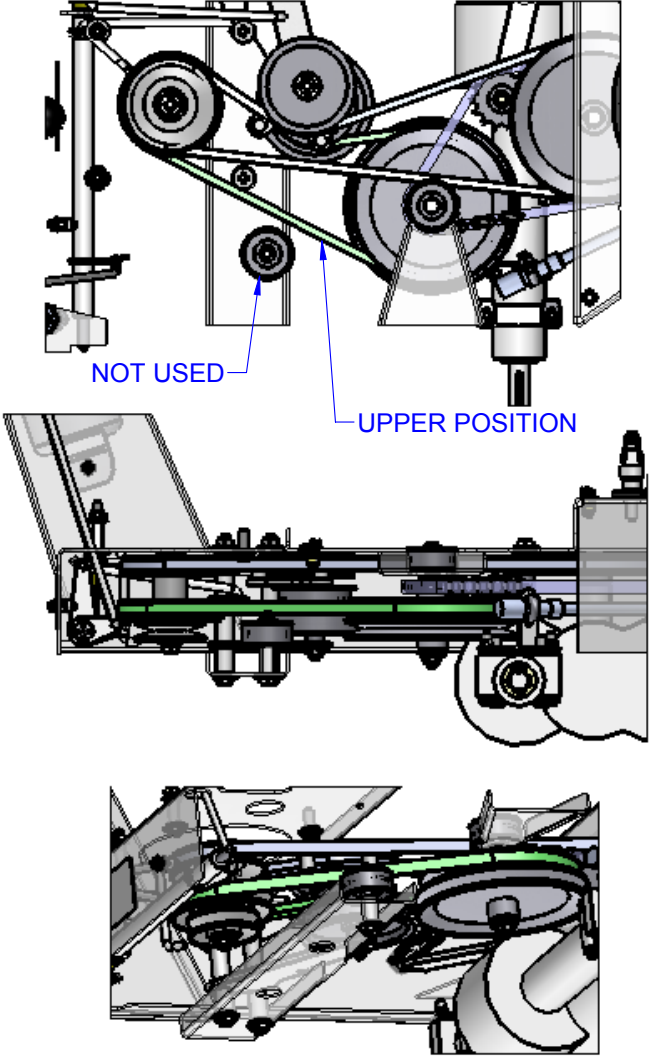
BRUSH DRIVE BELT REPLACEMENT

1. Stop engine, push emergency switch, remove spark plug wire.
2. Remove both top and bottom covers.
3. Release tension on chain idler.
4. Remove hardware for brush drive pulley.
5. Slide brush drive pulley towards engine and remove V-belt.
6. Install new V-belt onto brush drive pulley.
7. Slide brush drive pulley back into position.
8. Verify chain is in correct position on brush drive sprocket. If necessary remove front body cover to assist in chain repositioning.
9. Replace hardware for brush drive pulley.
10. Re-tension chain.
11. Make sure brush drive pulley spins freely after tightening.
12. Place V-belt on low or high speed pulley grooves of brush drive pulley, idler and engine pulley.
13. Re-install both covers.
14. Verify that all hardware is tight and replace spark plug wire.
15. Adjust brush drive lever for proper engagement.

Belt Placement
Slow Brush Speed



Belt Placement
Fast Brush Speed



NOTES

TROUBLESHOOTING

Problem	Possible Cause	Possible Solution
Brush slows or stops when sweeping	Idler not engaging	Adjust turnbuckle
	Filter plugging	Change or clean air filter
	Travel speed too fast	Travel no more than 5 mph (8 kph) while sweeping (1-3 mph recommended)
	Trying to sweep too much material at once	Make several passes with sweeper
Brush head assembly "bounces" during sweeping	Travel speed too fast and/or brush speed too slow	Find correct combination of ground and brush speeds: do not travel at more than 5 mph (8 kph)
Brush wears into cone shape	Improper tire size or under inflation	Check tire sizes and rating: make corrections as necessary
Traction drive slips	Idler not working	Adjust turnbuckle
	Belt worn	Replace belt

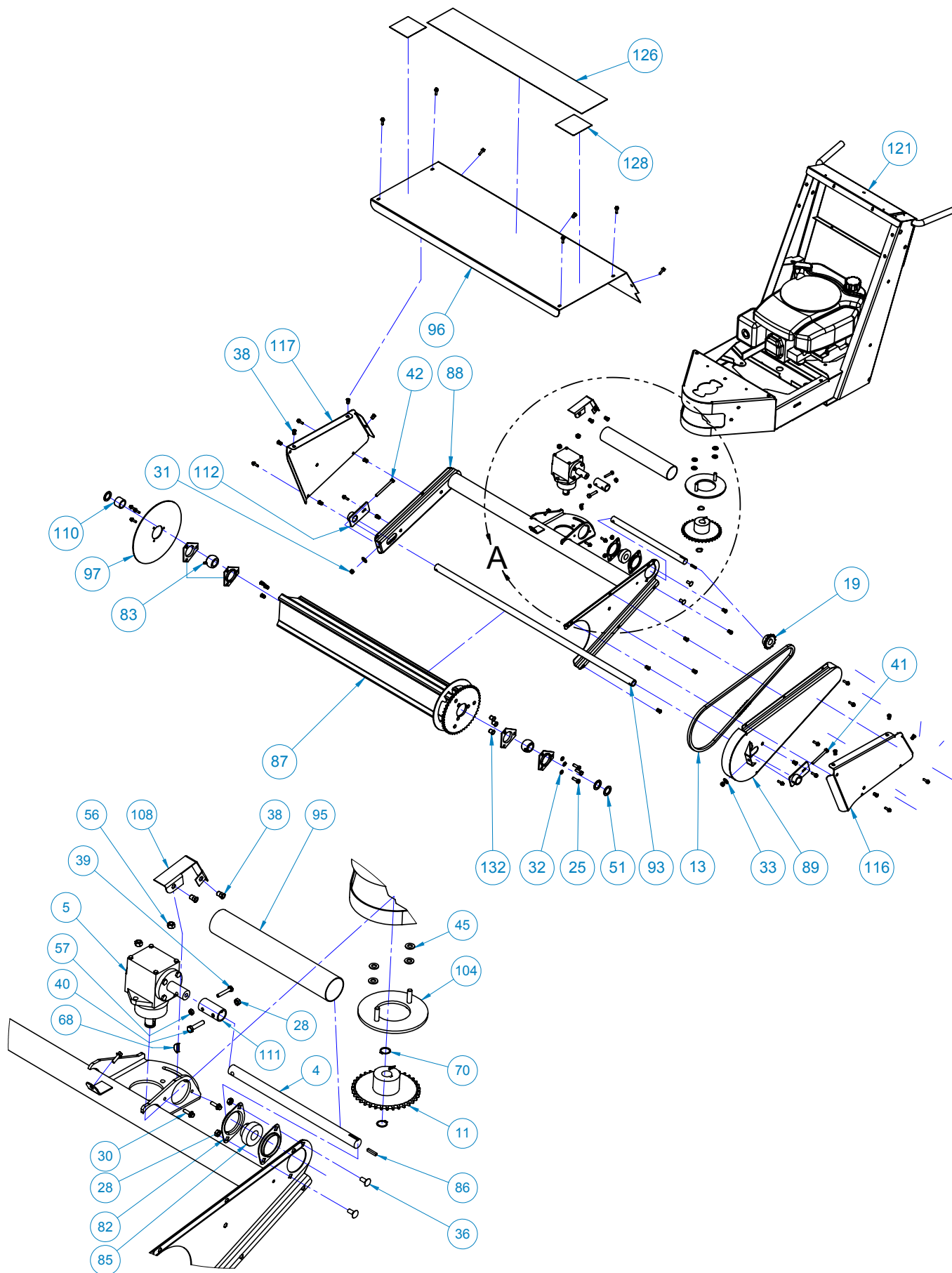
BRUSH HEAD ASSEMBLY

Item	Part	Qty	Description
4.	05-1437	1	Shaft, Drive, Brush Head
5.	05-1439	1	Gearbox, Peerless, Right Angle, 7/8 Shaft
11.	06-0480	1	Sprocket, 40B35, Brush Drive
13.	06-0483	1	Chain, #40, 101 Links, with Master
19.	06-0495	1	Sprocket, 40B13 x 7/8, with Keyway
25.	07-1714	3	Screw, HHC, Gr8, 5/16-18 x 1
28.	07-1810	4	Nut, Hex, Lock, Straight, Gr8, 5/16-18
30.	07-29522	2	Screw, HFH, CL10.9, M6-1 x 20
31.	07-3270	2	Nut, Hex, Nylock, Gr8, 5/16-18
32.	07-3273	3	Washer, Lock, Split, Medium, 5/16
33.	07-3275	2	Washer, Flat, Gr8, 5/16
36.	07-3280	2	Bolt, Carriage, Gr5, 5/16-18 x 3/4
38.	07-36172	5	Nut, Insert, Hex, M6 x 1
39.	07-3639	1	Screw, HHC, Gr8, 1/4-20 x 1 1/2
40.	07-3647	1	Screw, HHC, GR8, 5/16-18 x 1 1/2
41.	07-3651	1	Screw, HHC, Gr8, 5/16-18 x 3
42.	07-3652	1	Screw, HHC, Gr8, 5/16-18 x 3 1/2
45.	07-3745	4	Washer, Flat, CL10.9, M10
51.	07-4090	3	Washer, 1 1/2 x 1 x .075
56.	07-5370	2	Nut, Hex, Lock, Gr8, 3/8-16
57.	07-5824	1	Nut, Hex, Lock, Straight, Gr8, 1/4-20
68.	07-6916	1	Key, Woodruff, #807, 1/4 x 7/8
70.	07-6918	2	Ring, Snap
82.	08-0005	2	Flange, Bearing, 2 Hole
83.	08-0194	2	Bearing, 1RD, Oilite, 47mm, with Zerk
85.	08-0199	1	Bearing, 7/8 RD, with Collar
86.	13-0518	1	Key, 3/16 x 1
87.	13-14267	1	Core
88.	13-14453	1	Weld, Frame, Brush Head, 3 Ft.
89.	13-14458	1	Weld, Cover, Drive, Brush Head
93.	13-14512	1	Tube, Core
95.	13-14565	1	Tube, Round, 2 1/4 x 16ga x 13.78
96.	13-14566	1	Sheet, Hood
97.	13-14573	1	Plate, Retainer, Section
104.	13-15035	1	Weld, Ring, Swing
108.	13-15099	1	Cover, Gearbox, Coupler
110.	13-15131	1	Tube, Round, 1 3/8 x 5/32 x 1.03
111.	13-15133	1	Coupling, Shaft, 7/8, with Holes
112.	13-15292	2	Weld, Core, Adjustment
116.	13-15321	1	Sheet, Hood, End, Left
117.	13-15322	1	Sheet, Hood, End, Right
121.	13-16261	1	Weld, Body
126.	50-0252	1	Label, Logo, Large, White
128.	50-0726	2	Label, Warning, Flying Objects & Entanglement
132.	RHW8642	3	Nut, Rivet, 5/16-18, .15-.312 Grip

Not Shown:

01-5009C	18	Section, 24, Poly, Convoluted, Heavy Fill
01-0984	18	Section, 24, Poly/Wire, Convoluted

BRUSH HEAD ASSEMBLY

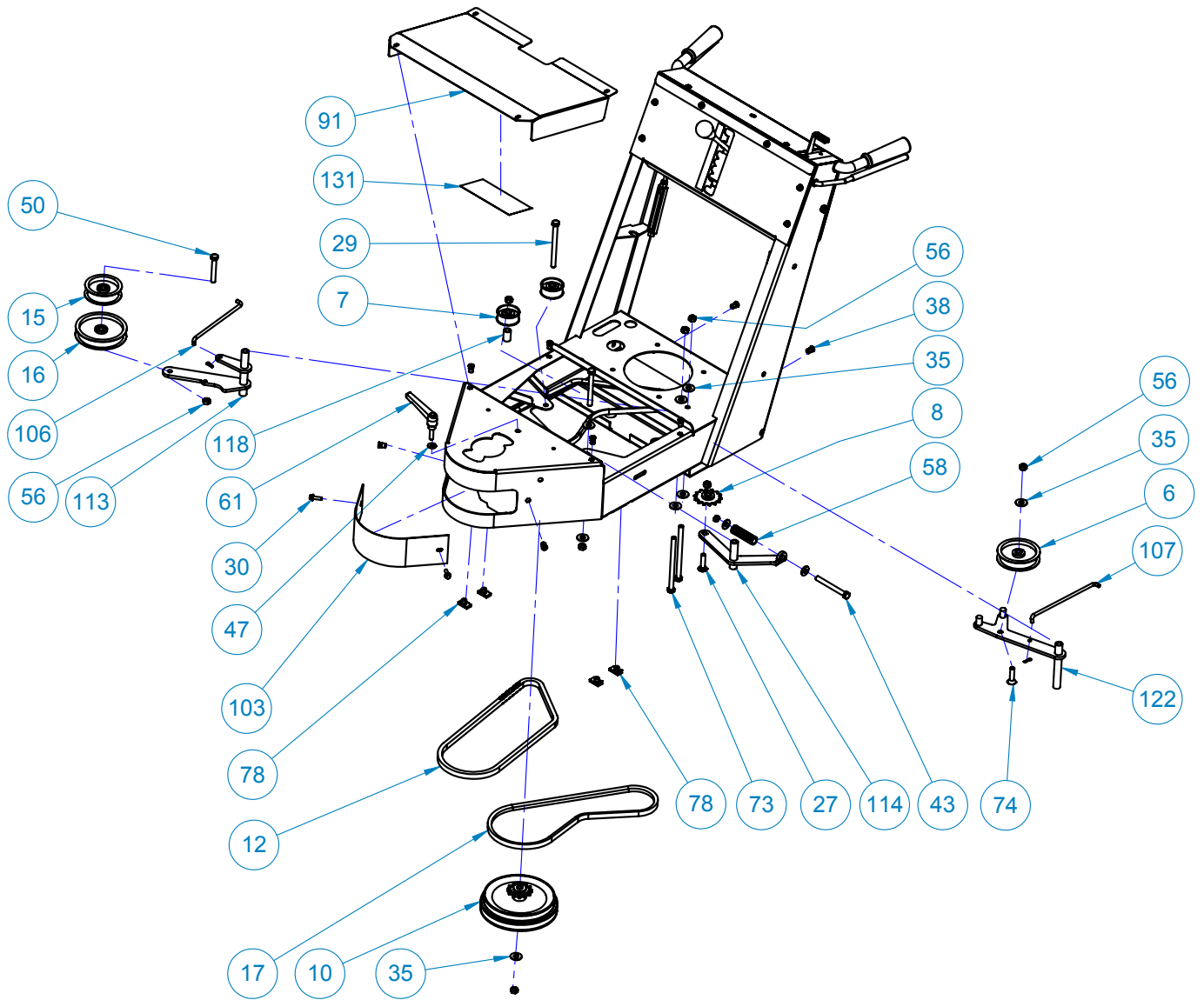


DETAIL A

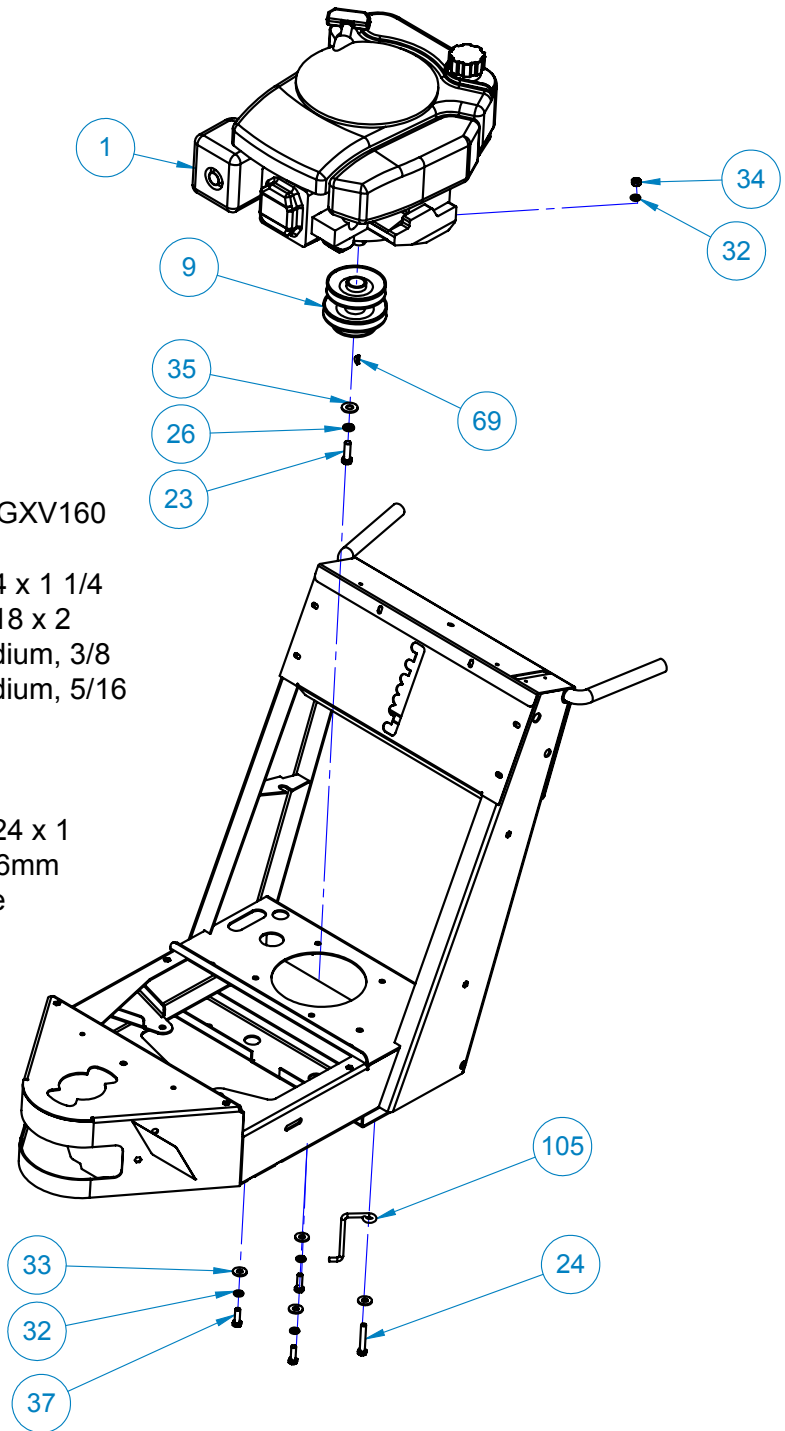
BODY ASSEMBLY

Item	Part	Qty	Description
6.	06-0009	1	Pulley, Idler, 3 3/4 x 7/8 x 3/8
7.	06-0171	2	Pulley, Idler, 2 x 7/8 x 3/8
8.	06-0477	1	Sprocket, Idler, Chain, #40-14 Tooth, with 3/8 Hole
10.	06-0479	1	Pulley, Brush Drive
12.	06-0482	1	Chain, #40, 77 Links, Plus Master
15.	06-0486	1	Pulley, Idler, 3 1/4 x 7/8 x 3/8
16.	06-0487	1	Pulley, Idler, 4 x 3/4 x 3/8
17.	06-0489	1	V-Belt, Pulley
27.	07-1730	1	Bolt, Carriage, Gr5, 3/8-16 x 1 1/2
29.	07-2488	1	Screw, HHC, Gr8, 3/8 x 4 1/2
30.	07-2952	2	Screw, HFH, CL10.9, M6-1 x 20
35.	07-3279	9	Washer, Flat, Gr8, 3/8
38.	07-3617	8	Nut, Insert, Hex, M6 x 1
43.	07-3661	2	Screw, HHC, Gr8, 3/8-16 x 3 1/2
47.	07-4032	1	Washer, Flat, Gr8, 1/4
50.	07-4053	1	Screw, HHC, Gr8, 3/8-16 x 2 1/2
56.	07-5370	9	Nut, Hex, Lock, Gr8, 3/8-16
58.	07-6590	1	Spring, Compression, .105 Wire, 3/4 x 2 1/2
61.	07-6732	1	Handle, M8-1.25 x 30mm
73.	07-6926	2	Screw, HHC, Gr8, 3/8 x 5 1/2
74.	07-6933	1	Screw, Gr5, 3/8-16 x 1 1/2
78.	07-7243	4	Nut, Extended-U, M8-1.25 x 14.5mm U-Depth
91.	13-14489	1	Cover, Top
103.	13-14909	1	Plate, Cover, Front, Body
106.	13-15080	1	Rod, Linkage, Trans Axle Drive
107.	13-15081	1	Rod, Linkage, Brush Drive
113.	13-15294	1	Weld, Idler, Arm, Brush
114.	13-15295	1	Weld, Idler, Arm, Chain
118.	13-15516	1	Tube, Round, 5/8 x 11ga x 1
122.	13-16269	1	Weld, Idler, Arm, Drive
131.	50-0867	1	Label, Belt Speed Position

BODY ASSEMBLY

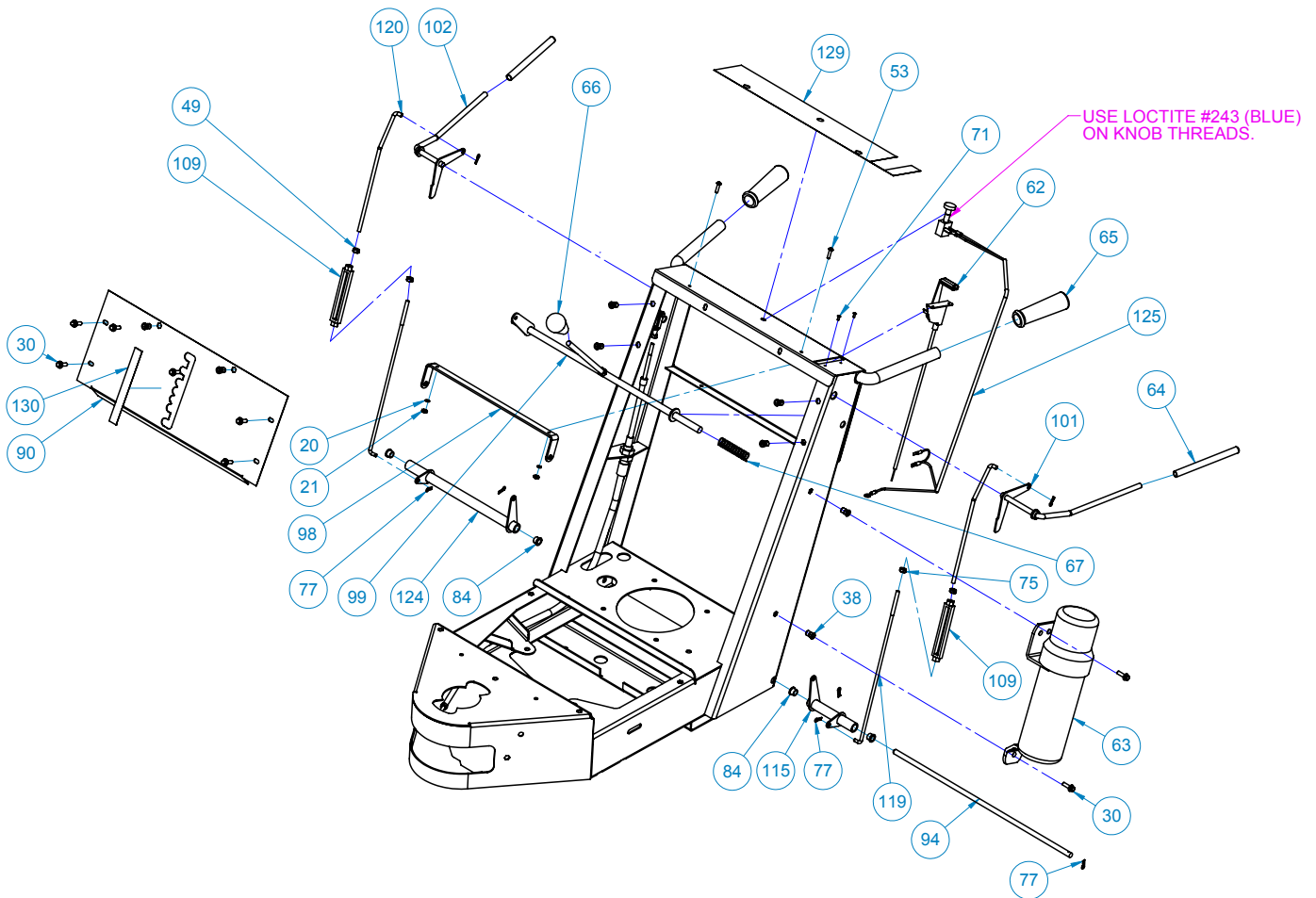


ENGINE ASSEMBLY



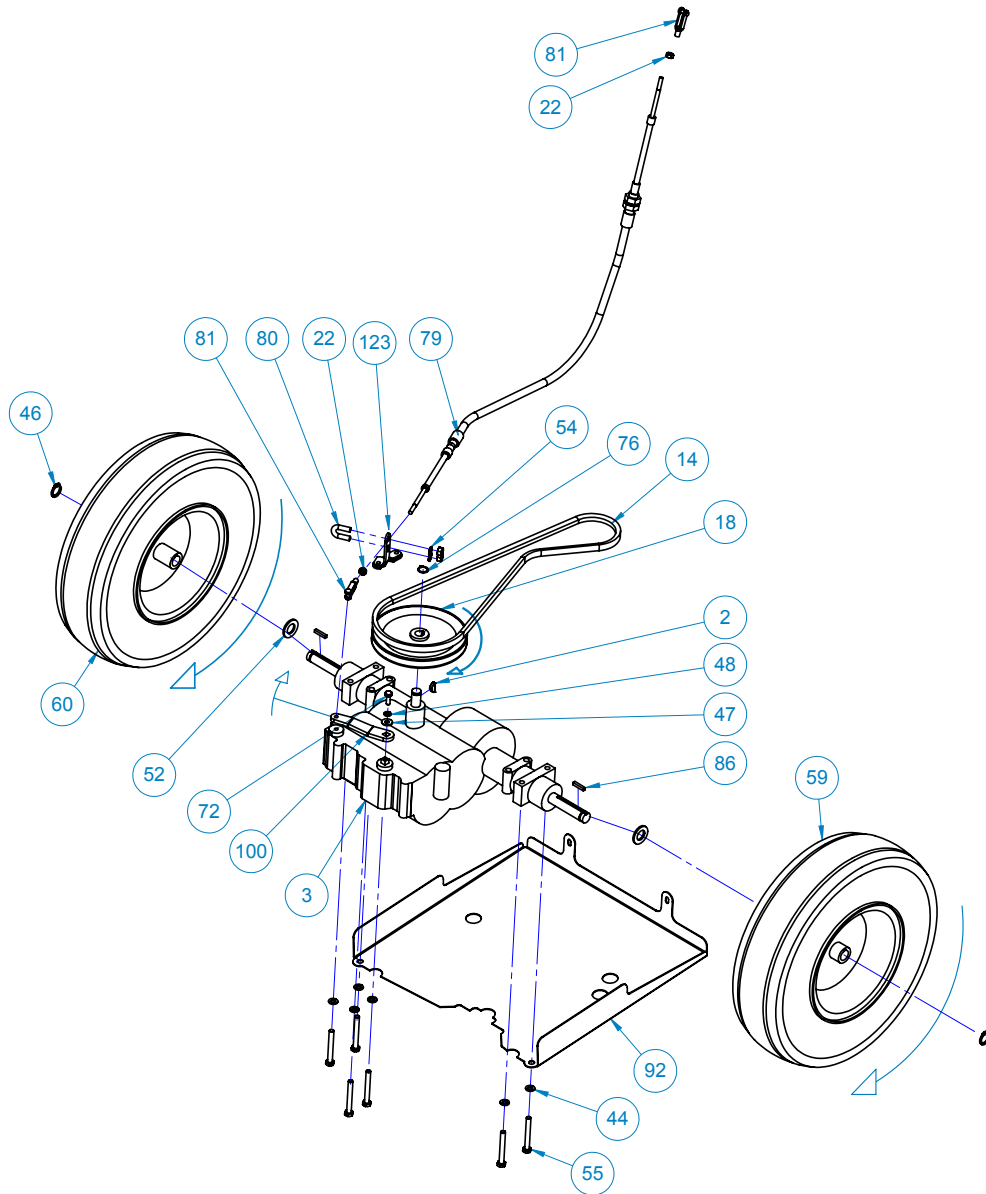
Item	Part	Qty	Description
1.	03-9587	1	Engine, Honda, 5.5 HP, GXV160
9.	06-0478	1	Pulley, Engine
23.	07-1255	1	Screw, HHC, Gr8, 3/8-24 x 1 1/4
24.	07-1698	1	Screw, HHC, Gr8, 5/16-18 x 2
26.	07-1718	1	Washer, Lock, Split, Medium, 3/8
32.	07-3273	4	Washer, Lock, Split, Medium, 5/16
33.	07-3275	4	Washer, Flat, Gr8, 5/16
34.	07-3278	1	Nut, Hex, 5/16-18
35.	07-3279	1	Washer, Flat, Gr8, 3/8
37.	07-3331	3	Screw, HHC, Gr8, 5/16-24 x 1
69.	07-6917	1	Key, Woodruff, 4mm x 16mm
105.	13-15072	1	Rod, Belt, Guide, Engine

HANDLE ASSEMBLY



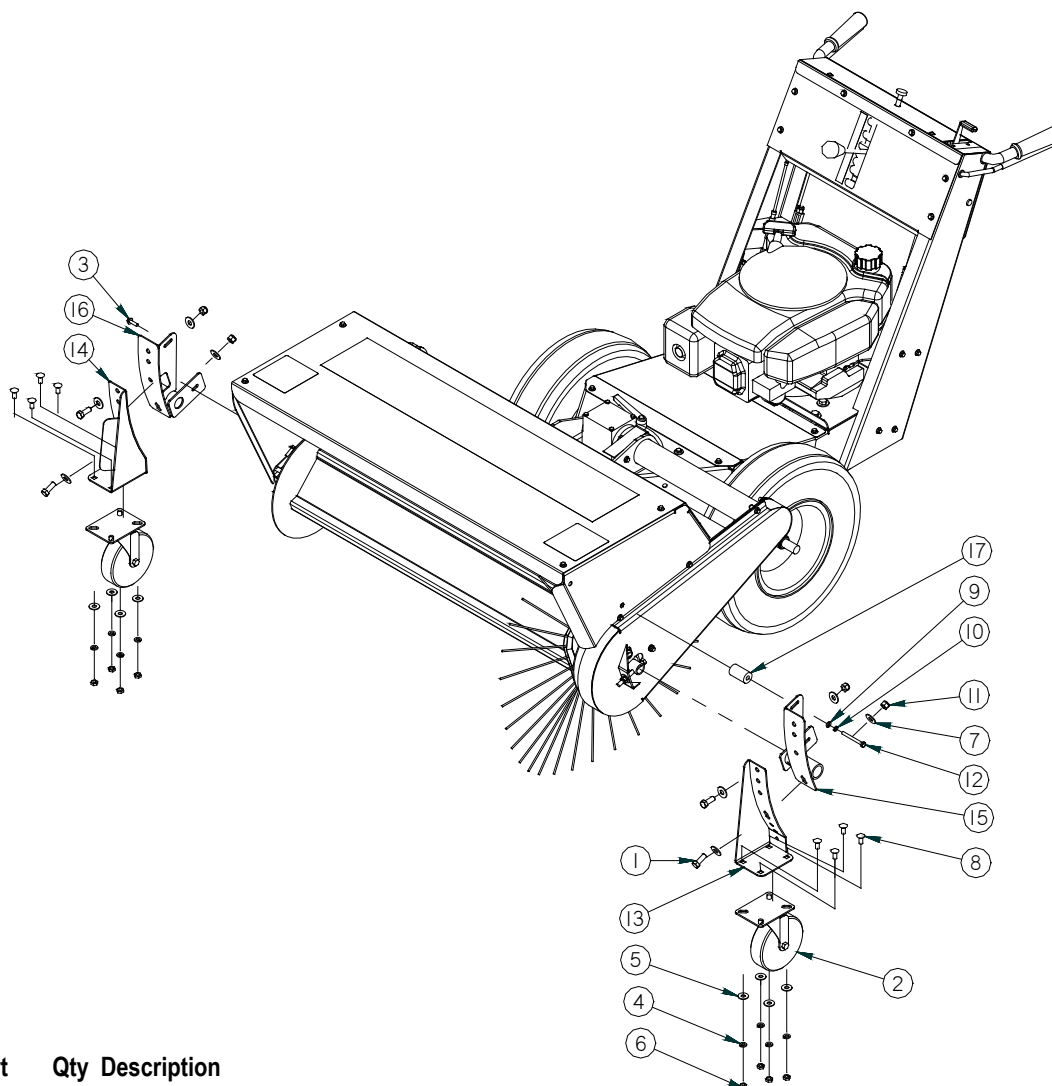
Item	Part	Qty	Description	Item	Part	Qty	Description
20.	07-0140	2	Washer, Lock, Gr2, #10	84.	08-0196	4	Bushing, Flange, Nylon, 3/8 x 1/2 x 5/8
21.	07-0141	2	Nut, Hex, Gr2, 10-24	90.	13-14485	1	Sheet, Handle. Front
30.	07-2952	8	Screw, HFH, CL10.9, M6-1 x 20	94.	13-14532	1	Rod, 3/8 x 19, with Chamfer and Hole
38.	07-3617	8	Nut, Insert, Hex, M6 x 1	98.	13-14719	1	Bracket, Engagement, Handles
49.	07-4039	2	Nut, Hex, Gr8, 1/4-20	99.	13-14771	1	Weld, Shift Lever
53.	07-4831	2	Screw, BHC, 10-24UNC, 2B x 3/4	101.	13-14865	1	Weld, Lever, Engagement, Left
62.	07-6840	1	Throttle, with Detent and Cable	102.	13-14867	1	Weld, Lever, Engagement, Right
63.	07-6869	1	Holder, Manual	109.	13-15130	2	Turnbuckle, Body Only, 1/4-20 x 4
64.	07-6911	2	Handle, Cover, Black, 3/8 x 8	115.	13-15296	1	Weld, Tube, Control, Left
65.	07-6912	2	Handle, Grip, Red, 7/8	119.	13-16185	2	Rod, Linkage, Lower
66.	07-6914	1	Knob, Shifter, 3/8-16, Threaded Hole	120.	13-16186	2	Rod, Linkage, Upper
67.	07-6915	1	Spring, Compression	124.	13-16321	1	Weld, Tube, Control, Right
71.	07-6919	2	Rivet, Pop, Gr2, 1/8 x .188-.250	125.	28-8040	1	Assembly, Switch, Push/Pull/Stop
75.	07-7015	2	Nut, Hex, Gr2, 1/4-20-LH	129.	50-0757	1	Label, Handle
77.	07-7048	7	Clip, Hairpin, .059 Wire	130.	50-0758	1	Label, Shift Pattern

TRANS AXLE ASSEMBLY



Item	Part	Qty	Description	Item	Part	Qty	Description
2.	05-0851	1	Key, Woodruff, 3/16 x 3/4	55.	07-7017	6	Screw, HHC, CL10.9, M8-1.25 x 60mm
3.	05-1423	1	Trans axle, 5 Speed	59.	07-6722L	1	Wheel, with Tire, Left
14.	06-0484	1	V-Belt, Pulley	60.	07-6722R	1	Wheel, with Tire, Right
18.	06-0494	1	Pulley, V, 6 1/2 x 3/4RD	72.	07-6925	1	Screw, HHC, Gr8, 1/4-28 x 3/4
22.	07-0145	2	Nut, Hex, Gr8, 1/4-28	76.	07-7016	1	Ring, Snap
44.	07-3736	6	Washer, Flat, CL8.8, M8	79.	07-7259	1	Cable, Control, 1/4 x 45
46.	07-3738	2	Washer, Lock, Split, Medium, M8	80.	07-7260	1	U-Bolt, 5/16-24
47.	07-4032	1	Washer, Flat, Gr8, 1/4	81.	07-7261	2	Yoke, Adjustment, 1/4 x 28UNF
48.	07-4038	1	Washer, Lock, Split, Medium, 1/4	86.	13-0518	2	Key, 3/16 x 1
52.	07-4165	2	Washer, Flat, CL8.8, M18	92.	13-14491	1	Cover, Bottom, Rear
54.	07-4904	2	Washer, Lock, Star, 5/16	100.	13-14777	1	Plate, Lever, Shift
				123.	13-16311	1	Weld, Bracket, Shift Cable, Lower

CASTER ASSEMBLY



Item	Part	Qty	Description
1.	07-0018	4	Screw, HHC, Gr8, 3/8-16 x 1
2.	07-0253	2	Caster, 5 inch Diameter
3.	07-2952	1	Screw, HFH, CL10.9, M6-1 x 20
4.	07-3273	8	Washer, Lock, Split, Medium, 5/16
5.	07-3275	8	Washer, Flat, Gr8, 5/16
6.	07-3278	8	Nut, Hex, Gr8, 5/16-18
7.	07-3279	8	Washer, Flat, Gr8, 3/8
8.	07-3280	8	Bolt, Carriage, Gr5, 5/16-18 x 3/4
9.	07-3728	1	Washer, Flat, CL8.8, M6
10.	07-3730	1	Washer, Lock, Split, Medium, M6
11.	07-4036	4	Nut, Hex, Nylock, 3/8-16
12.	07-4669	1	Screw, HHC, CL10.9, M6-1 x 60mm
13.	13-15716	1	Weld, Mounting, Caster, Left
14.	13-15717	1	Weld, Mounting, Caster, Right
15.	13-15721	1	Weld, Adjustment, Core, Left
16.	13-15722	1	Weld, Adjustment, Core, Right
17.	13-15733	1	Tube, Round, 1 x 5/16 x 1.7

BOLT TORQUE SPECIFICATIONS

BOLT TORQUE SPECIFICATIONS

GENERAL TORQUE SPECIFICATION TABLES


Use the following charts when determining bolt torque specifications when special torques are not given. Always use grade 5 or better when replacing bolts.

SAE BOLT TORQUE SPECIFICATIONS


NOTE: The following torque values are for use with extreme pressure lubricants, plating or hard washer applications. Increase torque 15% when using hardware that is unplated and either dry or lubricated with engine oil.

Bolt Size		SAE GRADE 5 TORQUE				SAE GRADE 8 TORQUE				Bolt head identification marks as per grade. NOTE: Manufacturing Marks Will Vary
		Pounds Feet		Newton-Meters		Pounds Feet		Newton-Meters		
Inches	Millimeters	UNC	UNF	UNC	UNF	UNC	UNF	UNC	UNF	
1/4	6.35	8	9	11	12	10	13	14	18	
5/16	7.94	14	17	19	23	20	25	27	34	
3/8	9.53	30	36	41	49	38	46	52	62	
7/16	11.11	46	54	62	73	60	71	81	96	
1/2	12.70	68	82	92	111	94	112	127	152	
9/16	14.29	94	112	127	152	136	163	184	221	
5/8	15.88	128	153	174	207	187	224	254	304	
3/4	19.05	230	275	312	373	323	395	438	536	
7/8	22.23	340	408	461	553	510	612	691	830	
1	25.40	493	592	668	803	765	918	1037	1245	
1-1/8	25.58	680	748	922	1014	1088	1224	1475	1660	
1-1/4	31.75	952	1054	1291	1429	1547	1700	2097	2305	
1-3/8	34.93	1241	1428	1683	1936	2023	2312	2743	3135	
1-1/2	38.10	1649	1870	2236	2535	2686	3026	3642	4103	


GRADE 2



GRADE 5






GRADE 8



METRIC BOLT TORQUE SPECIFICATIONS

NOTE: The following torque values are for use with metric hardware that is unplated and either dry or lubricated with engine oil. Reduce torque 15% when using hardware that has extreme pressure lubricants, plating or hard washer applications.

Bolt head identification marks as per grade.		
		

Size of Bolt	Grade No.	Pitch (mm)	Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
M6	5.6	1.0	3.6-5.8	4.9-7.9	-	-	-
	8.8		5.8-4	7.9-12.7		-	-
	10.9		7.2-10	9.8-13.6		-	-
M8	5.6	1.25	7.2-14	9.8-19	1.0	12-17	16.3-23
	8.8		17-22	23-29.8		19-27	25.7-36.6
	10.9		20-26	27.1-35.2		22-31	29.8-42
M10	5.6	1.5	20-25	27.1-33.9	1.25	20-29	27.1-39.3
	8.8		34-40	46.1-54.2		35-47	47.4-63.7
	10.9		38-46	51.5-62.3		40-52	54.2-70.5
M12	5.6	1.75	28-34	37.9-46.1	1.25	31-41	42-55.6
	8.8		51-59	69.1-79.9		56-68	75.9-92.1
	10.9		57-66	77.2-89.4		62-75	84-101.6
M14	5.6	2.0	49-56	66.4-75.9	1.5	52-64	70.5-86.7
	8.8		81-93	109.8-126		90-106	122-143.6
	10.9		96-109	130.1-147.7		107-124	145-168
M16	5.6	2.0	67-77	90.8-104.3	1.5	69-83	93.5-112.5
	8.8		116-130	157.2-176.2		120-138	162.6-187
	10.9		129-145	174.8-196.5		140-158	189.7-214.1
M18	5.6	2.0	88-100	119.2-136	1.5	100-117	136-158.5
	8.8		150-168	203.3-227.6		177-199	239.8-269.6
	10.9		175-194	237.1-262.9		202-231	273.7-313
M20	5.6	2.5	108-130	146.3-176.2	1.5	132-150	178.9-203.3
	8.8		186-205	252-277.8		206-242	279.1-327.9
	10.9		213-249	288.6-337.4		246-289	333.3-391.6

GLOSSARY

angle or angle assembly - portion of the sweeper that allows the brush head assembly to angle.

brush head assembly - assembly that includes the core, hood, and brush frame.

brush pattern - area of dirt removed from sweeping surface; with a properly adjusted sweeper; the pattern is the same width for the entire length.

caution - indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

core - weldment that holds brush sections.

danger - indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

front - side that is in front when facing the normal forward direction of travel of the machine.

hood - brush shield.

important - indicates supplementary information.

in. - inch.

kph - kilometers per hour.

lb - pounds.

left-hand - side that is on left when facing the normal forward direction of travel of the machine.

mm - millimeters.

mph - miles per hour.

notice - indicates a hazardous situation, if not avoided, will result in property damage only.

psi - pounds per square inch.

PTO - power take off; shaft on the prime mover used to drive attachments.

qty - quantity.

rpm - revolutions per minute.

rear - side that is in the rear when facing the normal forward direction of travel of the machine.

retainer - removable plate or set of plates that keep sections on the core.

right-hand - side that is on the right when facing the normal forward direction of travel of the machine.

section - single brush wafer.

section set - replacement brush wafers.

warning - indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

weld - weldment.

windrow - pile of debris.

zerk - grease fitting.

WARRANTY

Limited Warranty

Except for the Excluded Products as described below, all new products are warranted to be free from defects in material and/or workmanship during the Warranty Period, in accordance with and subject to the terms and conditions of this Limited Warranty.

1. Excluded Products. The following products are excluded from this Limited Warranty:

(a) Any cable, part that engages with the ground (i.e. sprockets), digging chain, bearing, teeth, tamping and/or demolition head, blade cutting edge, pilot bit, auger teeth and broom brush that either constitutes or is part of a product.

(b) Any product, merchandise or component that, in the opinion of Paladin Light Construction¹, has been (i) misused; (ii) modified in any unauthorized manner; (iii) altered; (iv) damaged; (v) involved in an accident; or (vi) repaired using parts not obtained through Paladin Light Construction.

2. Warranty Period. The Limited Warranty is provided only to those defects that occur during the Warranty Period, which is the period that begins on the first to occur of: (i) the date of initial purchase by an end-user, (ii) the date the product is first leased or rented, or (iii) the date that is six (6) months after the date of shipment by Paladin Light Construction as evidenced by the invoiced shipment date (the "Commencement Date") and ends on the date that is twelve (12) months after the Commencement Date.

3. Terms and Conditions of Limited Warranty. The following terms and conditions apply to the Limited Warranty hereby provided:

(a) Option to Repair or Replace. Paladin Light Construction shall have the option to repair or replace the product.

(b) Timely Repair and Notice. In order to obtain the Limited Warranty, (i) the product must be repaired within thirty (30) days from the date of failure, and (ii) a claim under the warranty must be submitted to Paladin Light Construction in writing within thirty (30) days from the date of repair.

(c) Return of Defective Part or Product. If requested by Paladin Light Construction, the alleged defective part or product shall be shipped to Paladin Light Construction at its manufacturing facility or other location specified by Paladin Light Construction, with freight PRE-PAID by the claimant, to allow Paladin Light Construction to inspect the part or product.

Claims that fail to comply with any of the above terms and conditions shall be denied.

LIMITATIONS AND EXCLUSIONS.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY BASED ON A COURSE OF DEALING OR USAGE OF TRADE.

IN NO EVENT SHALL PALADIN LIGHT CONSTRUCTION BE LIABLE FOR CONSEQUENTIAL OR SPECIAL DAMAGES.

IN NO EVENT SHALL PALADIN LIGHT CONSTRUCTION BE LIABLE FOR ANY LOSS OR CLAIM IN AN AMOUNT IN EXCESS OF THE PURCHASE PRICE, OR, AT THE OPTION OF PALADIN LIGHT CONSTRUCTION, THE REPAIR OR REPLACEMENT, OF THE PARTICULAR PRODUCT ON WHICH ANY CLAIM OF LOSS OR DAMAGE IS BASED. THIS LIMITATION OF LIABILITY APPLIES IRRESPECTIVE OF WHETHER THE CLAIM IS BASED ON BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE OR OTHER CAUSE AND WHETHER THE ALLEGED DEFECT IS DISCOVERABLE OR LATENT.

¹Attachment Technologies Inc., a subsidiary of Paladin Brands Holding, Inc. (PBHI) is referred to herein as Paladin Light Construction.