



OWNER/OPERATOR'S MANUAL & PARTS LIST

Tough-Cut Mower HQ680 (Serial # 1001-1901)



Revised 05/17/18
09.10014



Orrville, OH
www.ventrac.com

TO THE OWNER

Product Identification

If you need to contact an Authorized Ventrac Dealer for information on servicing your product, always provide the Product Model and Serial numbers.

Please fill in the following information for future reference. See picture below to find the location of the identification number. Record them in the spaces provided below.

Date of Purchase: Month _____ Day _____ Year _____

Dealer: _____

Dealer Address: _____

Dealer Phone Number: _____

Dealer FAX Number: _____

Model # (A): _____

Serial # (B): _____

Affix Part/Serial Number label here



Ventrac Products Inc. reserves the right to make changes in design or specifications without obligation to make like changes on previously manufactured products.

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WARRANTY

INTRODUCTION

Product Description

The new VENTRAC Model HQ680 “Tough-Cut” rotary mower features an enclosed deck designed for field and brush mowing. The broad, belted, high intake front creates an “attack” on tall grasses and brush before it is leveled. The straight front deck design provides structural strength and a uniform performance in tall vegetation.

Two cast-iron gauge wheels with 5/8th inch rubber coating, roller bearings and grease zerks help to gauge the mowing depth and reduce scalping. They can be adjusted to three cut heights.

The VENTRAC “Quick Attach” makes the “Tough-Cut” a quick option among the VENTRAC’s (4000 series) many attachments. Variables in tractor hitch heights can be accommodated by properly positioning the hitch pins in the deck frame. Easy servicing is provided by the hinged and removable cover and deck tilt to access the underside and blades.

Power consumption is always relative to numerous factors but generally the “Tough-Cut” operates easily and does not necessarily require full engine rpms.

Proper service, maintenance and safe operation of the HQ680 “Tough-Cut” will provide great results for field and brush mowing.

Ventrac HQ680 Specifications

Overall Width	68 inches
Length	46 inches
Height	18 inches
Weight	325 pounds
Blades	3
6” gauge wheels	2
Cutting height adjustments	3”, 3-5/8”, 4-1/4”

These specifications are subject to change without notice.

SAFETY



ATTENTION:

This symbol identifies potential health and safety hazards. It marks safety precautions. Your safety and the safety of others is involved.

SIGNAL WORD DEFINITIONS

DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme cases.

WARNING

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

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury and/or property damage. It may also be used to alert against unsafe practices.

SAFETY

The following decals must be maintained on your Ventrac Attachment. If any decals are faded or missing, contact your dealer promptly for replacements.



A



B



C



D



E

Decal	Page & Location	Description	Part Number
A	E-1, #28	Danger - Shield Missing	00.0062
B	E-1, #20	Warning - Moving Part Hazard	00.0101
C	E-1, #27	Danger - Pinching Hazard	00.0102
D	E-1, #15 (2)	Keep Hands and Feet Away	00.0123
E	E-3, # 35	Warning - Read Owner's Manual	00.0217

SAFETY



General Safety Procedures for Ventrac Tractors, Attachments, & Accessories



Read and understand the operator's manual before operating this equipment.

Observe and follow all safety decals.

DO NOT let children or any untrained person operate the tractor or attachment. Make sure that all operators of this equipment are thoroughly trained in using it safely.

Never allow additional riders on the tractor or attachments.

DO NOT operate tractor or attachments if you are under the influence of alcohol, drugs, medication that may impair judgment or cause drowsiness, or if you are not feeling well.

Operate all controls from the operators seat only.

Before operating equipment, make sure all shields are in place and fastened.

Ensure the attachment or accessory is locked or fastened securely to the tractor (power unit) before operating. See tractor manual for locking procedure.

Ensure that all bystanders are clear of the tractor and attachment before operating. Be especially careful and observant if other people are present. Never assume that bystanders will remain where you last saw them.

Always look in the direction the tractor is moving.

Never direct the discharge of any attachment in the direction of people, animals, buildings, vehicles, or objects of value.

Immediately stop at any sign of equipment failure and correct the problem before continuing to operate. An unusual noise can be a warning of equipment failure.

Before adjusting, cleaning, lubricating, or changing parts on the tractor or attachment, engage the parking brake, lower the attachment to the ground, stop the engine, and remove the ignition key.

To prevent the risk of uncontrolled equipment movement on tractors equipped with 2 speed axles, always shift the transaxle range with the power unit stationary on level ground and with the parking brake engaged.

If equipment is to be left unattended, engage the parking brake, lower the attachment to the ground, stop the engine, and remove the ignition key.

SAFETY

HQ680 Safety Procedures

WARNING

Before making any repairs or adjustments, lower attachment to the ground, set parking brake, shut the engine off, and remove the key.

WARNING

Read and understand the operator's manual before operating this equipment.

- Do not mow in areas that contain stones, sticks or other foreign objects that may be thrown from the mower.
- Rotating Blades Are Dangerous
- Stop the machine if a person enters the mowing area.
- Be alert at all times; drive carefully because people and especially CHILDREN can move quickly into the mowing area.
- Shut off PTO when you are not mowing.
- Use extra care when you come to shrubs, trees, or objects that may block your vision.
- Never mow toward a person or object of value.

OPERATION

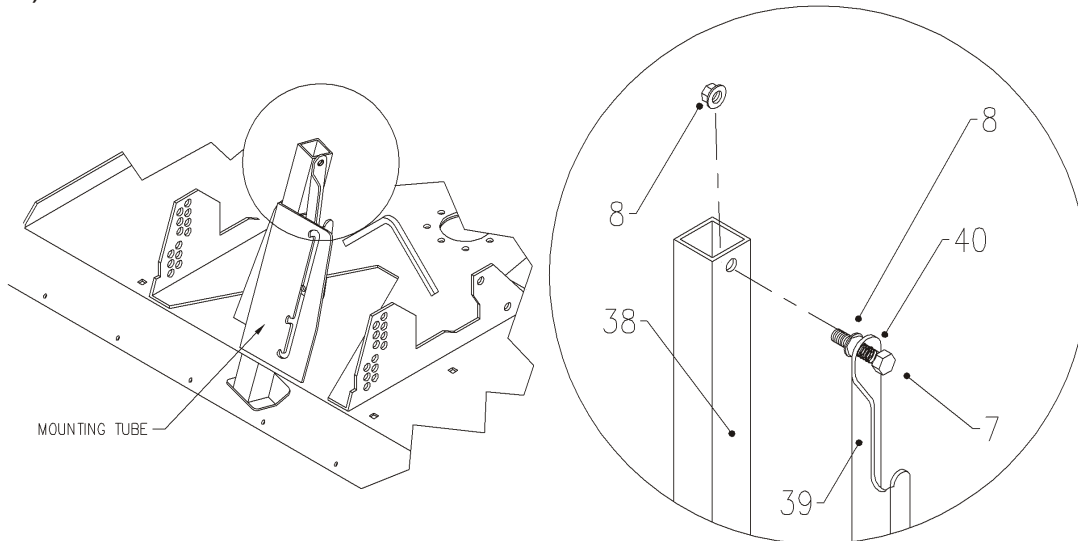
Setup Instructions for the HQ680 Tough Cut Mower

Jack Stand Installation:

To install the jack stand into the mounting tube as shown below, raise the back of the mower far enough to insert the stand in the tube. This can be accomplished by setting the mower crosswise on the crate or using a lifting device. Remember, whatever method is used keep safety in mind and use common safety procedures such as using stands, blocking, or a restraining device.

Remove the tyton tie which holds the latch handle to the mounting tube. Insert the jack stand into the mounting tube as shown in fig.1. Ensure that the bolt hole in the top of the jack stand faces to the right side of the deck. (Refer to the parts drawing on pg. E-1 for further reference). Remove the outer nut from the latch handle, insert the bolt through the jack stand and replace the nut. Adjust spring tension as tight as possible, while still allowing the jack stand latch to operate freely in and out of the notch when raising or lowering the jack stand.

When mowing or transporting, the jack stand should always be in the very top setting. (Refer to pg. C-2). For tilting the deck up, move the jack stand to the middle setting (refer to pg. C-4). This will allow for ground clearance as well as to ensure the jack stand does not hit the front of the tractor. To disconnect the deck from the tractor, lower the stand to the lowest setting prior to removing the mower from the tractor. (Refer to pg. C-2).



REF	PART #	DESCRIPTION	QTY
7	90.0612	3/8-16 X 1-1/2 BOLT	1
8	99.SF06	3/8-16 FLANGE NUT	2
38	62.1011	JACK STAND	1
39	64.1114	JACK STAND LATCH	1
40	41.0039	9/16 OD X 5/8 COMPRESSION SPRING	1

OPERATION

OPERATING INSTRUCTIONS

Attaching:

1. Drive the tractor slowly forward into the mating arms on the mower. Align the hitch arms to complete the engagement.
2. Once completely engaged, close the front hitch latch.
3. Stop the tractor engine.
4. Place attachment belt over the outside groove of the PTO drive pulley on the tractor.
5. Engage the PTO spring tension lever.
6. Lift up jack stand.
7. If your VENTRAC 4000 series has a traction transfer system, engage according to instructions in tractor owner's manual.
8. Make sure the tractor has enough counterweight installed to keep the rear tires on the ground at all times. The amount of counterweight needed will depend on the terrain, slopes, and the manner in which the tractor is operated.

Detaching:

Park the tractor on a level surface and set the parking brake.

1. Raise the deck all the way up.
2. Stop the tractor engine.
3. Release the PTO lever slowly.
4. Dismount and remove the PTO belt from the tractor drive pulley.
5. Lower jack stand.
6. Disengage the hitch latch.
7. Slowly back tractor away from the mower or carefully pull the mower from the tractor by hand. **NOTE:** If traction transfer system is engaged, lower the hitch enough to relieve the lift pressure on the attachment.

Initial Setting of Hitch Pins:

Four Hitch pins control the fore-to-aft level of the deck. On a hard surface, the deck should be level or slightly higher (1/4") at the back.

Position the pins in the hitch area so that the deck retains this position at all times. If the cut height is changed, the pin locations may need to be altered.

OPERATION

Operating Techniques and Tips:

With a little practice, operation of the mower will become very easy and simple. Always keep **SAFETY** as the **First Priority**. Remember to keep the size of the task appropriate to the size of the equipment.

Always shut off engine and remove key to clean or make adjustments on the mower.

Travel to and from the area to be mowed should be done with the mower raised in transport position by the tractor hydraulics. This saves the wear-and-tear on the mower and needless scuffing and rolling over the various surfaces between mowing jobs. Moderate speed should be used in transport in order to maintain control and reduce the shock load from uneven terrain. Disengage the PTO to prevent air turbulence over dusty surfaces and/or when traveling over rough terrain.

Operator must be sitting on the tractor seat and seat belt fastened before the PTO can be engaged. Have the engine rpms between 2,000 and 3,000 before engaging the PTO switch. Near full engine rpms (3,600) is recommended for most mowing. If a good cut can be maintained and there is sufficient power, reducing the rpms by 200 or 300 will result in a little better fuel economy and reduction in the wear-and-tear on the equipment.

When mowing, place the front hitch hydraulic control lever in the FLOAT position by moving it outward until the detent engages. The lever will stay in this position after engagement.

Be very cautious when mowing slopes. It is recommended that both traction transfer springs be engaged. See C-5 for Dual Wheel option.

OPERATION

Operating Techniques and Tips (cont.)

Wet or lush grass has some tendency to build up under the deck. Clean deck periodically and particularly if and when mowing performance seems to be reduced.

Cleaning Procedure

1. Raise the deck all the way up.
2. Turn the tractor off.
3. Remove the 2 ball pins from on top of the Hitch Arms.
4. Move the jack stand to the middle notch.
5. Lift the front of the deck up, placing the ball pins in the front locking holes.

Blades should be kept in good condition. Sharp blades will increase efficiency and improve the quality of cut.

When mowing grass on level to gently rolling terrain, the tractor can be operated in HIGH range in most conditions. If the grass is tall or mowing conditions are difficult, use LOW range. When mowing slopes, always use LOW range with the engine at full throttle.



CAUTION: Always shift transaxle range with the tractor parked on LEVEL ground. **Never shift on a slope since all hydraulic braking capacity will be lost during the shifting process.**



Many different circumstances and situations can occur for which the operator must determine a safe way to operate the tractor and mower. **Always follow safety procedures and always use common sense.**



Approach every task with an underlying consideration for your safety as well as for the safety of anyone who happens to be near your work area. Make sure that all operators of this equipment are thoroughly trained in using it safely.



Never mow with the front of the mower directed toward people or anything that could be damaged by a thrown object!

OPERATION

Use of Duals for Mowing

On level to modest inclines, single tires will suffice. Single tires should be inflated to 7 psi and outside dual tires to 3-4 psi. Lower inflation pressure reduces grass and soil compaction.

On significant inclines, even if only a small portion of the total mowing to be done, the tractor should be equipped with dual tires for increased stability. If you are uncertain about the need for duals, you should favor using them for your own SAFETY.

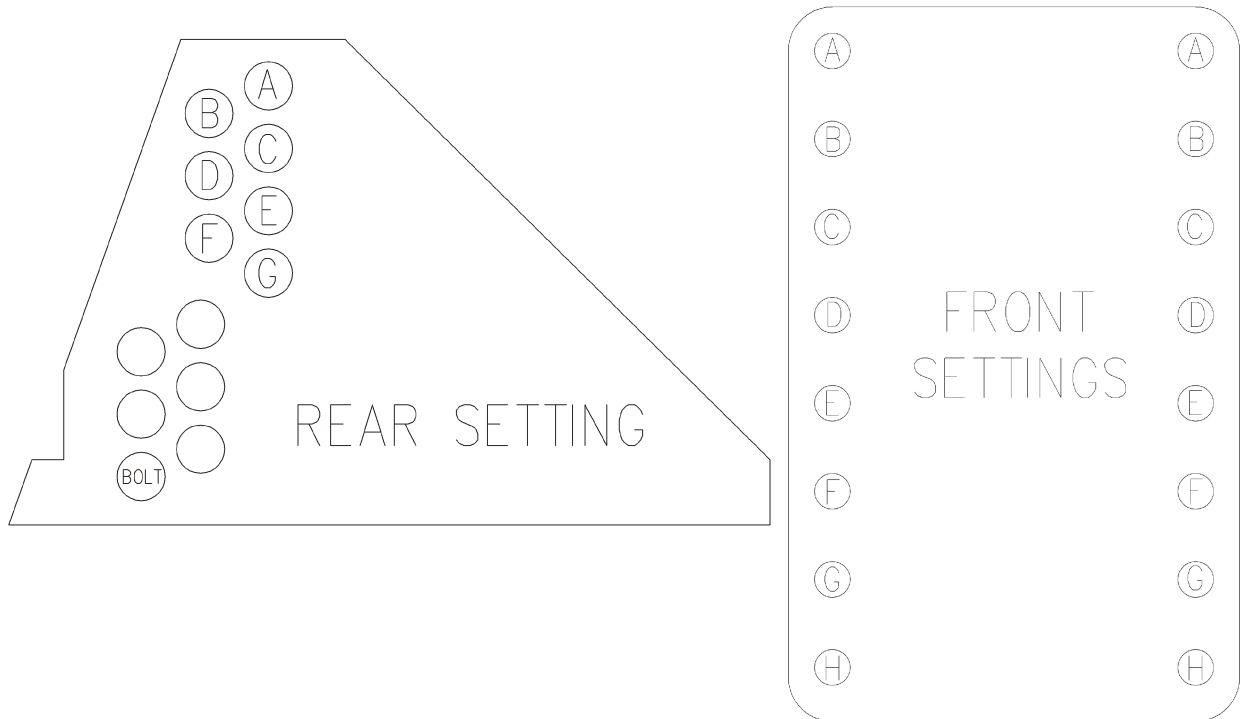
When using the mower deck, both traction boosters should be engaged to increase stability and provide safer operation.

Note: Factory recommends heavy axle kit to be used with all dual installations.

Cutting Height Guide for 70.8054 Swivel Wheel Kit

Use the following chart to set the mower deck to the desired cutting height.

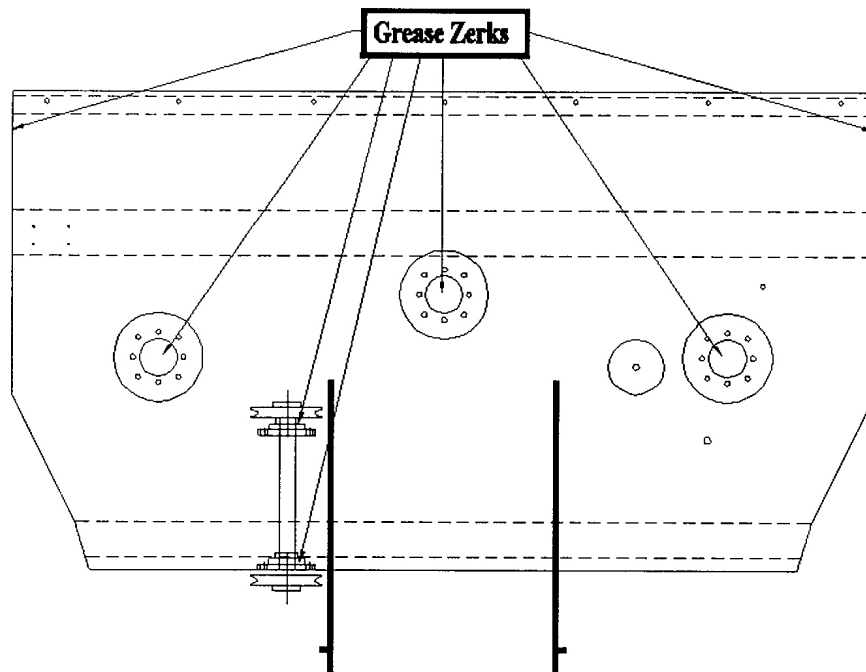
Position	3-1/2"*	4"*	4-1/2"*	5"*	5-1/2"*	6"*	6-1/2"*	7"*
Front top	E	E	D	D	C	C	B	A
Front Bottom	H	H	G	G	F	F	E	D
Rear	B	C	C	D	D	E	F	F



MAINTENANCE

Lubrication

Grease zerks are located as shown below. Apply 2-3 pumps of grease per spindle approximately every 50 hours of operation. All other bearings—one pump max! Do not over grease. In very dirty, sandy, or wet conditions, more frequent greasing may be advisable.



MAINTENANCE

Removal and Reinstallation of Mower Blades for Sharpening or Replacement:



Wear Heavy Gloves.

1. With the deck fully raised, place the tractor on a level surface. Set the parking brake and remove the key from the tractor.
2. Remove the latch pins, and lift the deck to the near vertical position. Reinstall the latch pins.

Note: Interference of cover shield can be eliminated by removing the hinge “hair pin” and then the cover shield.

3. To prevent blade rotation when removing blades, place a piece of wood between the end of the blade and an appropriate structural part on the underside of the deck.
4. Loosen the blade bolt and remove the blade for sharpening or replacement.

Note: To remove, turn the left and center spindle bolts clockwise and the right counterclockwise when facing the bolt head.

5. When installing a blade, the wood block must be placed on the opposite side to prevent rotation. Tighten so that blade is firmly held in place. (Approximately 65 ft/lbs) **Remember:** Use the correct right and left hand bolts as described in #4.

Note: Additional tightening will occur while mowing. This is natural because of rotational torque.

6. Always install the spindle guard between the bolt head and the bottom of the blade. This serves as a support washer as well as a device to minimize bearing damage from wrapped string or wire.

Sharpening Blades:

Blades should be sharpened and balanced by a professional. Maintain balance and the same bevel and length of sharpened surface.

Note: The “Tough-Cut” mower has 3 bi-directional blades. The unused side of each blade becomes the cutting edge by switching blades to a spindle of the opposite rotation.

Storage:

Before the mower is stored, thoroughly clean both the underside of the deck and any accumulated clippings or debris on the top side.

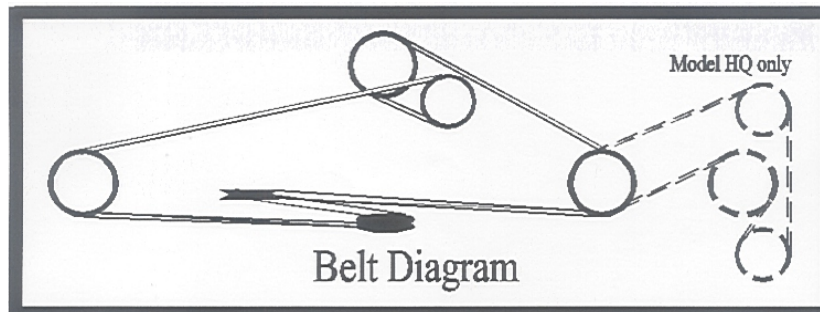
MAINTENANCE

Belt Replacement:

If belts become excessively worn or cracked, install a new belt. This is done most easily with the deck removed from the tractor.

Main Deck Belt Replacement:

1. Remove old belt. Note that one belt loop must surround the left hitch arm. Remove left hitch arm for access.
2. Install the replacement belt as shown in the diagram below. Begin by placing one belt loop around the left hitch arm. Place belt into the idler pulley and then the drive pulley. Take the belt to the right double groove pulley rotating the belt 1/4 turn into the pulley groove.
3. Once around the pulley, follow the diagram to the other pulleys. **Note:** The "V" shape of the belt should fit nicely into each pulley groove. Belt twist should never exceed 1/4 turn.



4. Tension the belt by tightening the idler adjustment rod. The spring loops should have approximately .05 inches between them.

Note: a rule of thumb is to slip a paper clip between them.

Right Belt Replacement:

Remove main deck belt. Install replacement belt as shown. Reinstall the main deck belt.

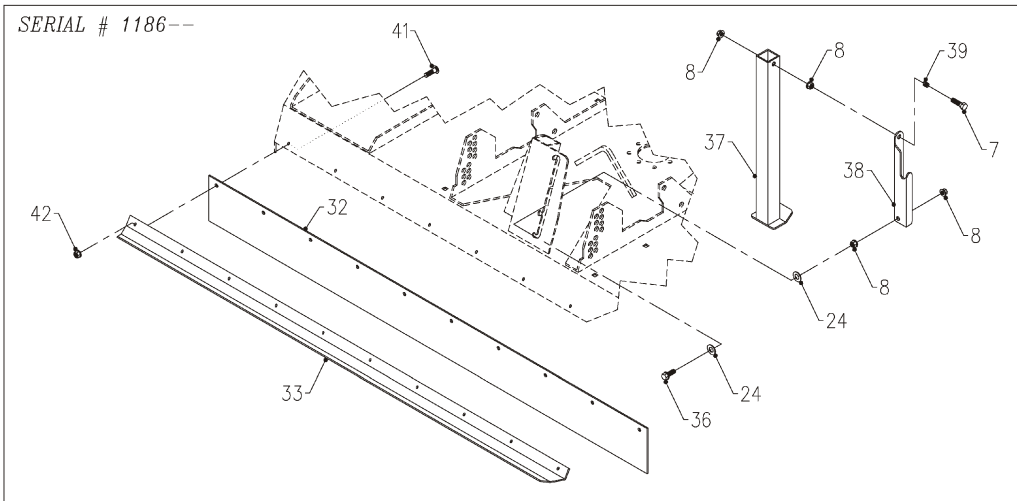
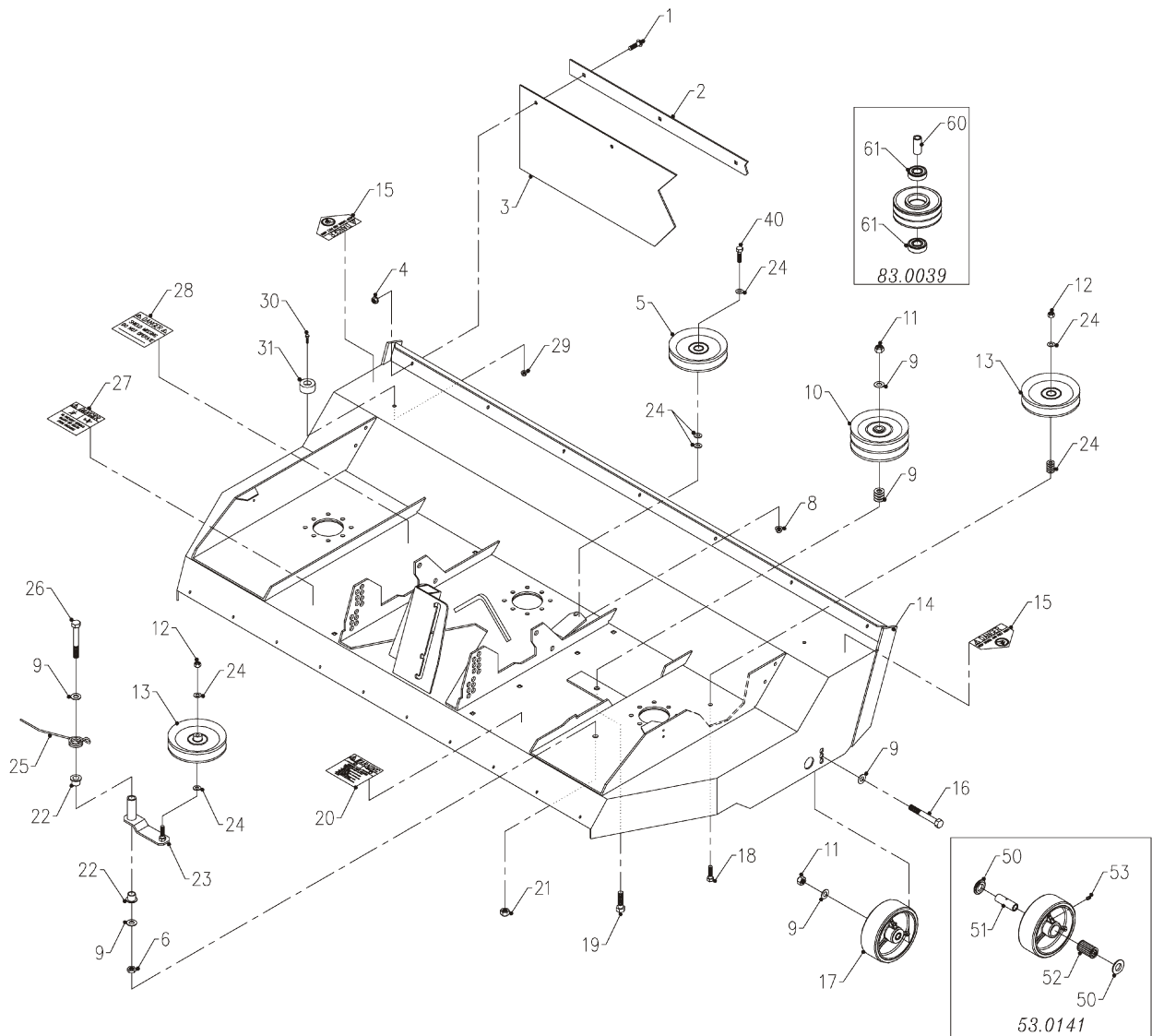
Drive Belt Replacement:

Remove mower from tractor. Remove pulley cover, replace belt over pulley and left hitch arm. Reinstall cover.

PARTS MANUAL

PARTS & DRAWINGS

ILLUSTRATED DRAWING MAIN DECK



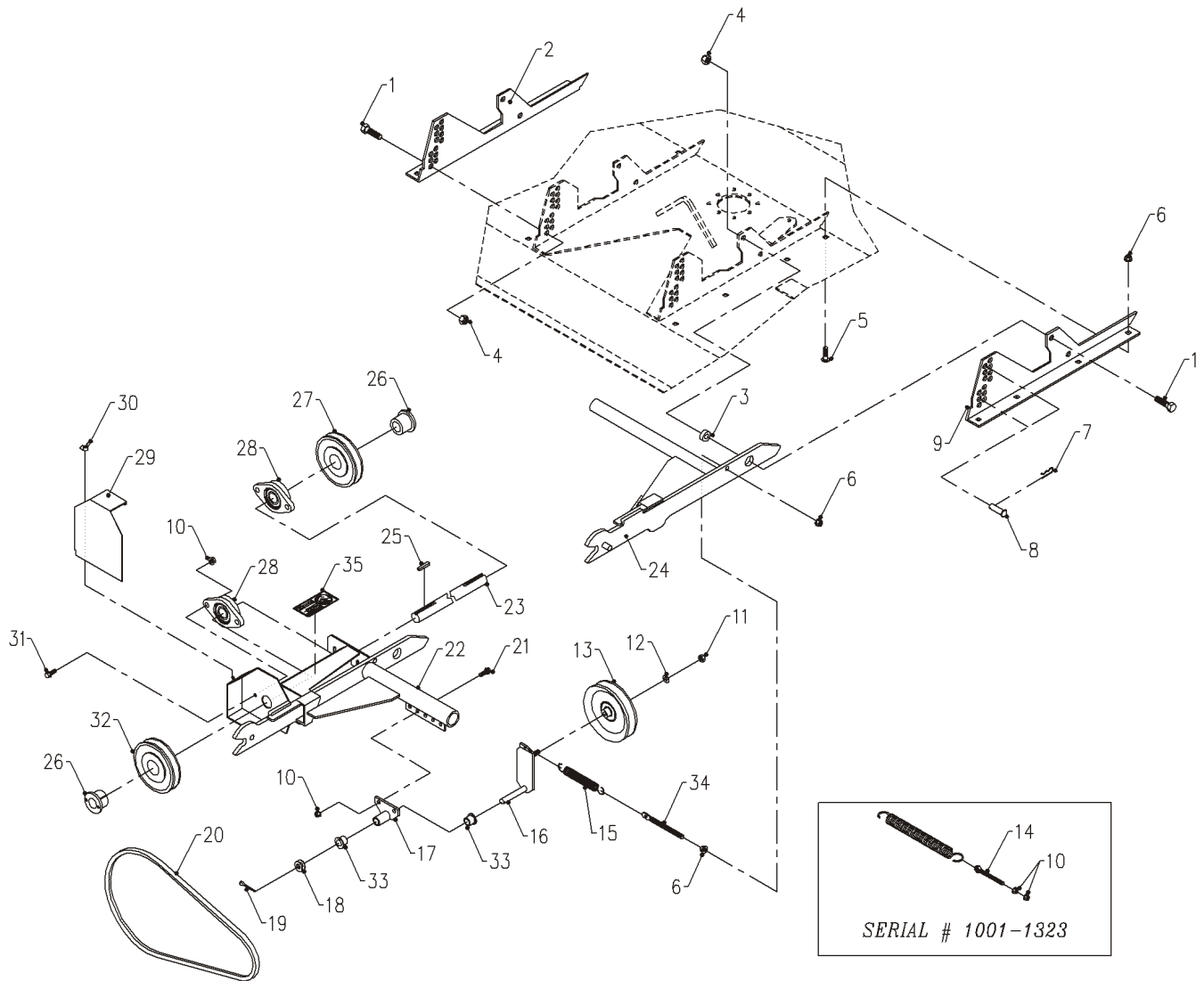
PARTS & DRAWINGS

MAIN DECK

REF.	PART NO.	DESCRIPTION	QTY.
1	97.0506	BOLT, CARRIAGE 5/16 X 3/4.	7
2	60.0793	CLAMP, BELTING CURTAIN HQ680	1
3	44.0191	CURTAIN, BELTING HQ680	1
4	99.SF05	NUT, SF 5/16-18 USS.	7
5	83.0031	PULLEY, V-IDLER 5 1/4 X 3/8 ID	1
6	99.E0058	NUT, JAM 1/2-13 USS	1
7	90.0612	BOLT, 3/8-16 USS X 1 1/2	1
8	99.SF06	NUT, SF 3/8-16 USS	5
9	95.08	WASHER, FLAT 1/2 SAE	11
10	83.0039	PULLEY, IDLER 2 GROOVE ASM	1
11	99.A08	LOCKNUT, STOVER 1/2-13 USS.	3
12	99.A06	LOCKNUT, STOVER 3/8-16 USS.	2
13	83.0038	PULLEY, V-IDLER 4-1/4 X 3/8 ID	2
14	62.0897	DECK, MAIN HQ680	1
15	00.0123	DECAL, KEEP HAND AND FEET AWAY	2
16	90.0828	BOLT, 1/2-13 USS X 3 1/2	2
17	53.0098	WHEEL, CASTER 6 X 2 (Serial # 1001-1635)	2
17	53.0141	WHEEL, CASTER 6 X 2 (Serial # 1636-)	2
18	90.0616	BOLT, 3/8-16 USS X 2	1
19	90.0826	BOLT, 1/2-13 USS X 3 1/4	1
20	00.0101	DECAL, HAZARD-MOVING PART	1
21	99.SF08	NUT, SF 1/2-13 USS	1
22	85.B0027	BUSHING, 1/2 ID X 5/8 OD X 5/8	2
23	40.0292	IDLER ARM, RT SIDE HQ680	1
24	95.06	WASHER, FLAT 3/8 SAE	13
25	41.0066	SPRING, SINGLE TORSION LH	1
26	90.0832	BOLT, 1/2-13 USS X 4	1
27	00.0102	DECAL, DANGER-PINCHING HAZARD	1
28	00.0062	DECAL, DANGER SHIELD MISSING	1
29	99.SF04	NUT, SF 1/4-20 USS	2
30	90.0406	BOLT, 1/4-20 USS X 3/4	2
31	05.0095	BUMPER, RUBBER CYLINDRICAL	2
32	44.0209	BELTING, REAR FLAP HQ	1
33	60.0882	CLAMP, BELT REAR HQ	1
36	90.0610	BOLT, 3/8-16 USS X 1 1/4	1
37	62.1011	STAND, JACK HQ	1
38	64.1114	LATCH, JACK STAND HQ	1
39	41.0039	SPRING, COMP. 9/16 OD X 5/8	1
40	90.0614	BOLT, 3/8-16 USS X 1 3/4	1
41	90.0406	BOLT, 1/4-20 USS X 3/4 (Serial # 1001-1602)	10
41	97.0506	BOLT, CARRIAGE 5/16 X 3/4 (Serial # 1603-)	10
42	99.SF04	NUT, SF 1/4-20 USS (Serial # 1001-1602)	10
42	99.SF05	NUT, SF 5/16-18 USS (Serial # 1603-)	10
50	55.0074	BEARING, RETAINER 3/4"	2
51	85.B0089	BUSHING, 1/2ID X 3/4OD X 2.406	1
52	55.0073	BEARING, ROLLER 1-13/16" LONG	1
53	29.GF0001	GREASE FTG, 1/4 SAE ST	1
60	85.B0074	BUSHING, DRIVE PULLEY	1
61	55.0042	BEARING, BALL 20 MM X 47 MM	2

PARTS & DRAWINGS

ILLUSTRATED DRAWING HITCH ARMS



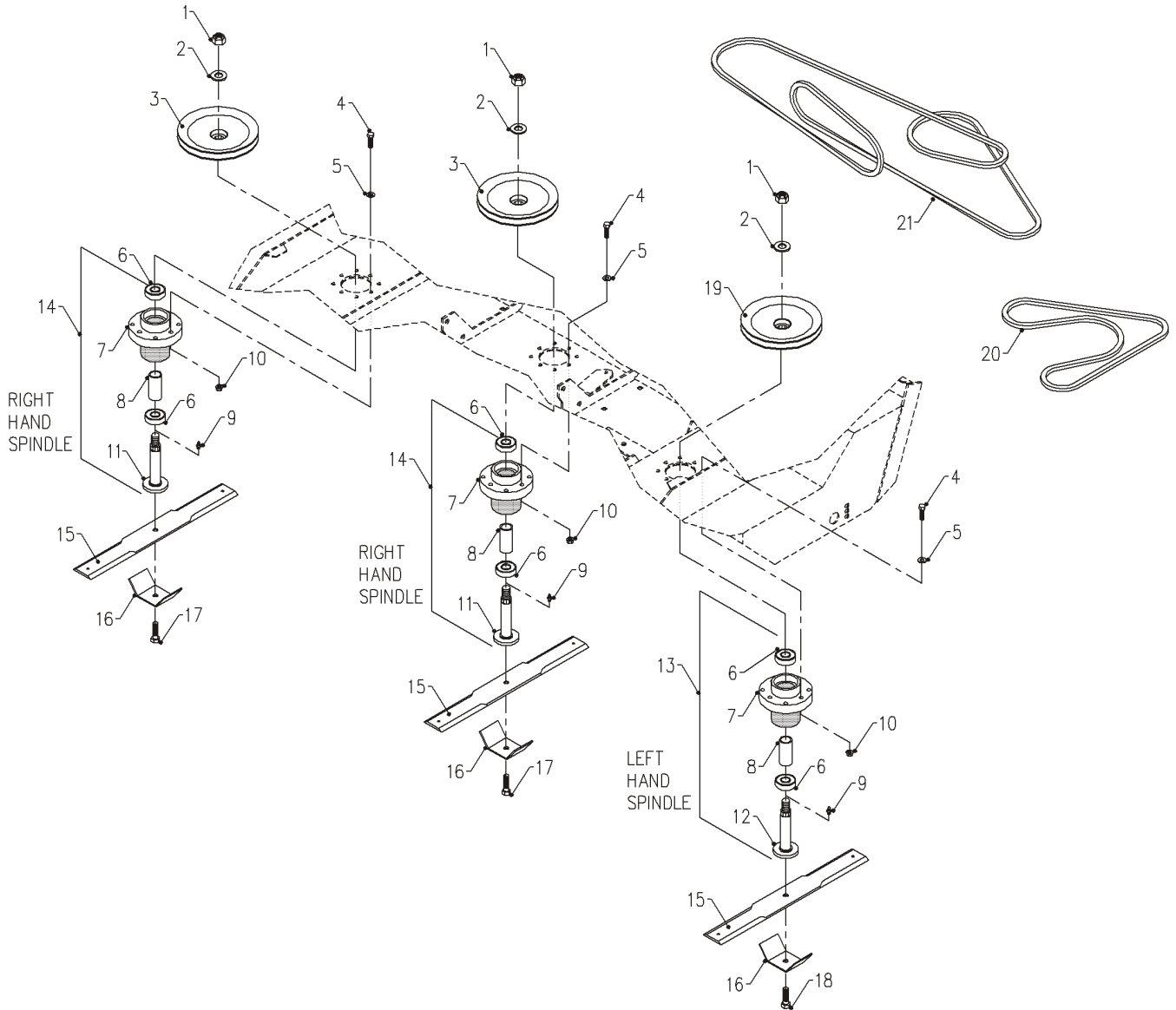
PARTS & DRAWINGS

HITCH ARMS

REF.	PART NO.	DESCRIPTION	QTY.
1	90.0812	BOLT, 1/2-13 USS X 1 1/2	4
2	60.0792	BRACKET, DECK TOP LEFT HQ680	1
3	85.SC08	SET COLLAR, 1/2"	2
4	99.A08	LOCKNUT, STOVER 1/2-13 USS.	4
5	97.0606	BOLT, CARRIAGE 3/8 X 3/4	8
6	99.SF06	NUT, SF 3/8-16 USS.	10
7	02.HP0416	HAIRPIN, 1/8 X 2	4
8	03.0810	CLEVIS PIN, 1/2 X 1 1/4	4
9	60.0791	BRACKET, DECK TOP RT HQ680	1
10	99.SF05	NUT, SF 5/16-18 USS.	8
11	99.A06	LOCKNUT, STOVER 3/8-16 USS.	1
12	95.06	WASHER, FLAT 3/8 SAE	1
13	83.0031	PULLEY, V-IDLER 5 1/4 X 3/8 ID	1
14	42.0385	TIGHTENER, SPRING (Serial # 1001-1323)	1
15	41.0048	SPRING, EXT. 1 OD X 6	1
16	40.0293	IDLER ARM, HITCH HQ680	1
17	40.0291	IDLER ARM, PIVOT HQ680	1
18	95.08	WASHER, FLAT 1/2 SAE	2
19	02.CP0406	COTTER PIN, 1/8 X 3/4.	1
20	81.B045	BELT, B45.	1
21	99.SF0506	BOLT, SF 5/16-18 USS X 3/4.	2
22	62.0899	HITCH, ARM LEFT HQ680	1
23	80.0312	SHAFT, MOWER DRIVE HQ680	1
24	62.0898	HITCH, ARM RIGHT HQ680	1
25	85.K0410	KEY, 1/4 X 1 1/4.	2
26	83.H16S	BUSHING, 1" SPLIT 1/4" KEY	2
27	83.BK50H	PULLEY, 5" H-BUSH	1
28	55.FB16016-1	BEARING, FLANGE BLOCK 1"	2
29	60.0665	SHIELD, DRIVE PULLEY HM	1
30	99.E0004	NUT, WING 1/4-20 USS.	1
31	99.SF0508	BOLT, SF 5/16-18 USS X 1	4
32	83.BK55H	PULLEY, 5.5" H-BUSHING	1
33	85.B0027	BUSHING, 1/2 ID X 5/8 OD X 5/8.	2
34	99.K0094	BOLT, HANGER 3/8-16 X 4-1/4 (Serial # 1324-)	1
35	00.0217	DECAL, WARNING READ OWNERS MAN	1

PARTS & DRAWINGS

ILLUSTRATED DRAWING SPINDLES (Serial # AA1007-AA1275)



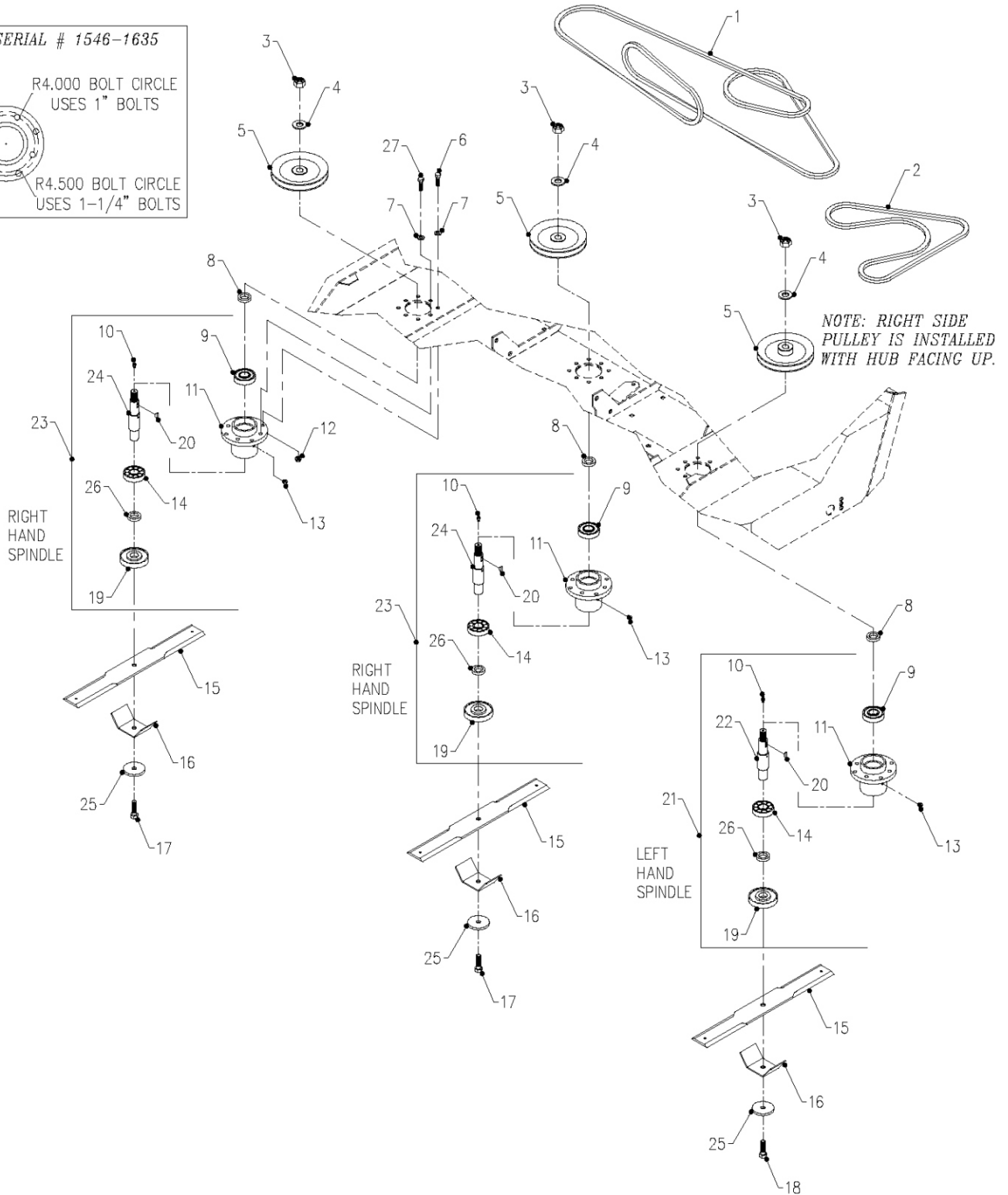
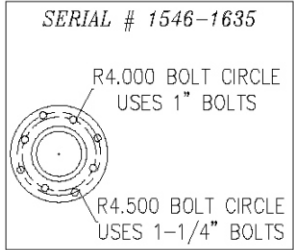
PARTS & DRAWINGS

SPINDLES (Serial # AA1007-AA1275)

REF.	PART NO.	DESCRIPTION	QTY.
1	99.A12NF	LOCKNUT, STOVER 3/4-16 SAE	3
2	95.12	WASHER, FLAT 3/4 SAE (Serial # 1001-1149)	3
2	99.B0057-2	WASHER, MACH3/4 X1-1/4 10GA ZP (Serial # 1150-)	3
3	83.0036	PULLEY, TOP MOUNT D-HEX (Serial # 1001-1149)	2
3	83.0048	PULLEY,, D-HEX (Serial # 1150-)	2
4	90.0610	BOLT, 3/8-16 USS X 1 1/4	24
5	95.06	WASHER, FLAT 3/8 SAE	24
6	55.0035	BEARING, BALL 25MM X 62 MM	6
7	87.0178	HOUSING, SPINDLE	3
8	87.0179	SPACER, BALL BRG/SPINDLE	3
9	29.GF0001	GREASE FTG, 1/4 SAE ST	3
10	99.SF06	NUT, SF 3/8-16 USS	24
11	87.0181	SHAFT, SPINDLE RH THREAD (Serial # 1001-1149)	2
11	87.0206-1	SHAFT, SPINDLE & FLANGE RH (Serial # 1150-)	2
12	87.0184-1	SHAFT, SPINDLE LH THREAD (Serial # 1001-1149)	1
12	87.0205-1	SHAFT, SPINDLE & FLANGE LH (Serial # 1150-)	1
13	87.0184	ASSEMBLY, SPINDLE LH (Serial # 1001-1149)	1
13	87.0205	ASSEMBLY, SPINDLE LH (Serial # 1150-)	1
14	87.0176	ASSEMBLY, SPINDLE RH (Serial # 1001-1149)	2
14	87.0206	ASSEMBLY, SPINDLE RH (Serial # 1150-)	2
15	79.0048	BLADE, DOUBLE CUT NO LIFT	3
16	64.0688	GUARD, SPINDLE/STRING WRAPPER	3
17	91.0810	BOLT, 1/2-20 SAE X 1 1/4	2
18	91.0810L	BOLT, 1/2-20 SAE X 1 1/4 LH ZP	1
19	83.0043	PULLEY, 8" D-HEX REVERSE HUB (Serial # 1001-1149)	1
19	83.0048	PULLEY,, D-HEX (Serial # 1150-)	1
20	81.AA060	BELT, AA60	1
21	81.B158	BELT, B158 (Dayco/Carlisle - No longer available)	1
21	81.B162	BELT, B162 (Goodyear - Current replacement)	1

PARTS & DRAWINGS

ILLUSTRATED DRAWING SPINDLES (Serial # AB1276-AC1635)



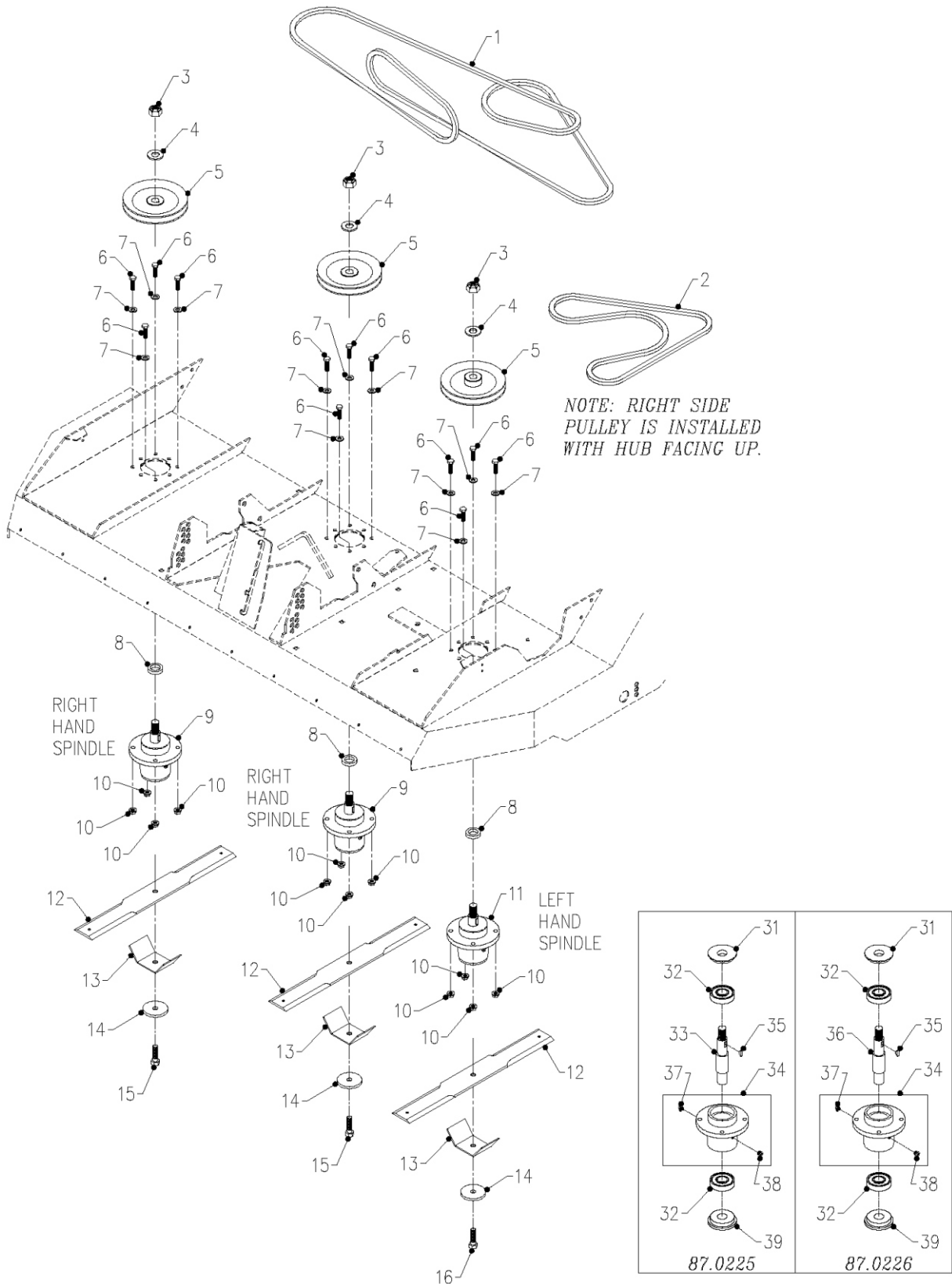
PARTS & DRAWINGS

SPINDLES (Serial # AB1276-AC1635)

REF.	PART NO.	DESCRIPTION	QTY.
1	81.B162	BELT, B162	1
2	81.AA060	BELT, AA60	1
3	99.A12NF	LOCKNUT, STOVER 3/4-16 SAE	3
4	99.B0057-2	WASHER, MACH3/4 X1-1/4 10GA ZP	3
5	83.0052	PULLEY, 7-13/16 25 MM STR BORE	3
6	90.0610	BOLT, 3/8-16 USS X 1 1/4 (Serial # 1276-1545)	24
6	90.0610	BOLT, 3/8-16 USS X 1 1/4 (Serial # 1546-)	12
7	95.06	WASHER, FLAT 3/8 SAE	24
8	85.B0080	BUSHING, 1-1/2 OD, 1 ID.	3
9	55.0057	BEARING, BALL X2 SIDED SHEILD	3
10	29.GF0001	GREASE FTG, 1/4 SAE ST.	3
11	87.0222-1	SPINDLE, HOUSING STEEL	3
12	99.SF06	NUT, SF 3/8-16 USS (Serial # 1276-1545)	24
12	99.SF06	NUT, SF 3/8-16 USS (Serial # 1546-1635)	12
13	29.GF0017	RELIEF FITTING	3
14	55.0035	BEARING, BALL 25MM X 62 MM.	3
15	79.0048	BLADE, DOUBLE CUT NO LIFT	3
16	64.0688	GUARD, SPINDLE/STRING WRAPPER	3
17	91.0814	BOLT, 1/2-20 SAE X 1 3/4	2
18	91.0814L	BOLT, 1/2-20 SAE X 1 3/4 LH ZP.	1
19	87.0210	SPINDLE, FLANGE SHIELD	3
20	85.W0406	KEY, WOODRUFF 1/4 X 3/4	3
21	87.0223	SPINDLE, ASM LH KEY 25MM STEEL.	1
22	87.0208-2	SHAFT, SPINDLE LH THREAD 25MM	1
23	87.0222	SPINDLE, ASM RH KEY 25MM STEEL	2
24	87.0209-2	SHAFT, SPINDLE RH THREAD 25MM.	2
25	99.B0091	WASHER, .510 ID X 2-1/2 OD 1/4	3
26	85.B0082	BUSHING, SPINDLE SHAFT SPACER	3
27	90.0608	BOLT, 3/8-16 USS X 1 (Serial # 1546-1635)	12

PARTS & DRAWINGS

ILLUSTRATED DRAWING SPINDLES (Serial # AD1636-)



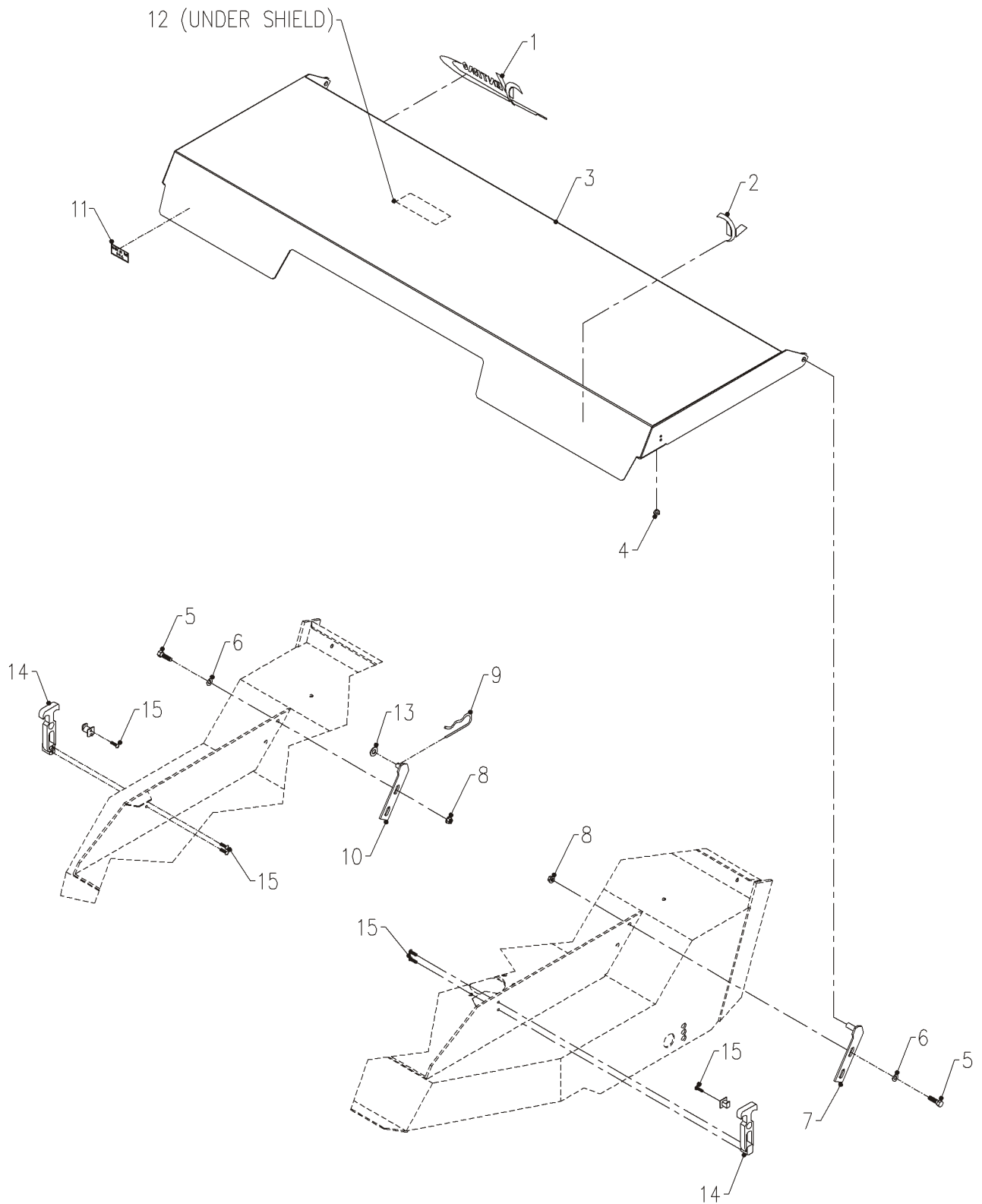
PARTS & DRAWINGS

SPINDLES (Serial # AD1636-)

REF.	PART NO.	DESCRIPTION	QTY.
1	81.B162	BELT, B162	1
2	81.AA060	BELT, AA60	1
3	99.A12NF	LOCKNUT, STOVER 3/4-16 SAE	3
4	99.B0057-2	WASHER, MACH3/4 X1-1/4 10GA ZP	3
5	83.0052	PULLEY, 7-13/16 25 MM STR BORE	3
6	90.0612	BOLT, 3/8-16 USS X 1 1/2	12
7	95.06	WASHER, FLAT 3/8 SAE	12
8	85.B0080	BUSHING, 1-1/2 OD, 1 ID	3
9	87.0225	SPINDLE, ASM RH KEY 25MM CAST	2
10	99.E0082	NUT, LOCKING FLANGE 3/8 - 16	12
11	87.0226	SPINDLE, ASM LH KEY 25MM CAST	1
12	79.0048	BLADE, DOUBLE CUT NO LIFT	3
13	64.0688	GUARD, SPINDLE/STRING WRAPPER	3
14	99.B0091	WASHER, .510 ID X 2-1/2 OD 1/4	3
15	91.0814	BOLT, 1/2-20 SAE X 1 3/4	2
16	91.0814L	BOLT, 1/2-20 SAE X 1 3/4 LH ZP	1
31	87.0225-3	SHIELD, SPINDLE TOP	1
32	55.0070	BEARING, 30MM X 62MM X 16MM	2
33	87.0225-2	SHAFT, SPINDLE RH THREAD 25MM	1
34	87.0225-1	HOUSING, SPINDLE CAST IRON	1
35	85.W0406	KEY, WOODRUFF 1/4 X 3/4	1
36	87.0226-2	SHAFT, SPINDLE LH THREAD 25MM	1
37	29.GF0005	GREASE FTG, 1/8 NPT 90	1
38	29.GF0017	RELIEF FITTING	1
39	87.0224-3	SHIELD, BOTTOM	1

PARTS & DRAWINGS

ILLUSTRATED DRAWING COVER SHIELD



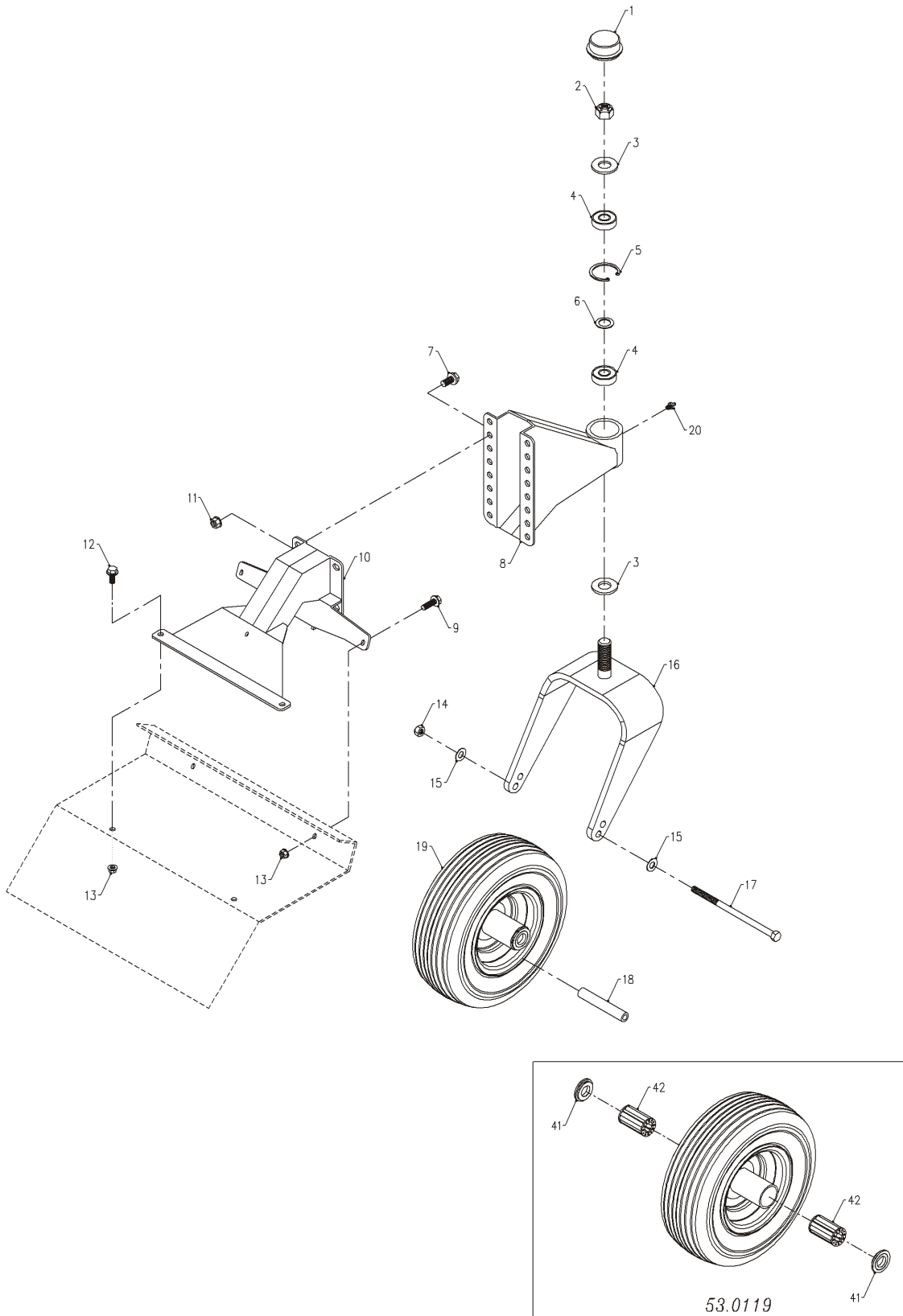
PARTS & DRAWINGS

COVER SHIELD

REF.	PART NO.	DESCRIPTION	QTY.
1	00.0189	DECAL, VENTRAC ORBITAL	1
2	00.0192	DECAL, V-DECAL DIE CUT BLUE	1
3	60.0949	COVER, TOP DECK	1
4	05.0062	BUMPER, RUBBER SOLID STEM	2
5	90.0506	BOLT, 5/16-18 USS X 3/4	4
6	95.05	WASHER, FLAT 5/16 SAE	4
7	64.0909	BRACKET, HINGE RIGHT HQ680	1
8	99.SF05	NUT, SF 5/16-18 USS	4
9	02.HP0313	HAIRPIN, 3/32 X 1-5/8	1
10	64.0910	BRACKET, HINGE LEFT HQ680	1
11	00.0100	DECAL, MADE IN USA	1
12	00.0166	DECAL, BELT DIAGRAM HM & HQ	1
13	95.06	WASHER, FLAT 3/8 SAE	1
14	47.0127	LATCH, RUBBER DRAW T-HANDLE (Serial # 1618-)	2
15	99.K0072	MACHINE SCREW, 10-24 X 1/2 ZP (Serial # 1618-)	6

PARTS & DRAWINGS

ILLUSTRATED DRAWING 70.8054 SWIVEL WHEEL KIT



PARTS & DRAWINGS

70.8054 SWIVEL WHEEL KIT

REF.	PART NO.	DESCRIPTION	QTY.
1	53.0080	DUST CAP, BEARING MOWER CASTER	2
2	99.A12NF	LOCKNUT, STOVER 3/4-16 SAE	2
3	99.B0057-2	WASHER, MACH3/4 X1-1/4 10GA ZP	4
4	55.0023	BEARING, BALL .75 ID X 1.78 OD	4
5	04.0013	SNAP RING, INT .068 X 1.75	2
6	99.B0052	SHIM, STEEL 3/4 X 1 X .062	2
7	99.SF0606	BOLT, SF 3/8-16 USS X 3/4	8
8	64.1160	BRACKET, HQ FRONT SWIVEL	2
9	99.SF0508	BOLT, SF 5/16-18 USS X 1	4
10	64.1161	BRACKET, REAR MOUNT HQ	2
11	99.SF06	NUT, SF 3/8-16 USS	8
12	99.SF0506	BOLT, SF 5/16-18 USS X 3/4	4
13	99.SF05	NUT, SF 5/16-18 USS	8
14	99.A06C	LOCKNUT, CENTER 3/8-16	2
15	95.06	WASHER, FLAT 3/8 SAE	4
16	50.0183	YOKE, CASTER 13", HIGH/LOW	2
17	90.0660	BOLT, 3/8-16 USS X 7-1/2	2
18	50.0050	TUBE, AXLE/TIRE SWIVEL FORK VM	2
19	53.0119	WHEEL, ASM 13 X 5 X 6 FLATFREE	2
20	29.GF0001	GREASE FTG, 1/4 SAE ST	2
41	55.0066	BEARING, RETAINER 3/4"	2
42	55.0065	BEARING, 3/4 ROLLER 2-1/4" LG	2



LIMITED WARRANTY – VENTRAC TURF EQUIPMENT

Venture Products, Inc. (shall be referred to as *V.P.I.*) warrants on the terms and conditions herein, that it will repair, replace, or adjust any part manufactured by *Venture Products Inc.* and found by *Venture Products Inc* to be defective in material and / or workmanship.

Effective September 1st 2005, *Ventrac* warranty on Tractors & Attachments (excluding the HG100/HG150 generator) for **Residential use only** is limited to **Three (3) years** from original purchase date. *Ventrac* Tractors & Attachments used **Commercially or for any income producing purpose** is limited to **Two (2) years** from original purchase date. *Ventrac* ET200 turbine blower (turbine only) is limited to **Two (2) years** from original purchase date. *Ventrac* HG100/HG150 generator is limited to **One (1) year** from original purchase date. *Ventrac* Tractors & Attachments used for **Rental** is limited to **180 days** from original purchase date. (**NOTE:** All accessories such as: 3-point hitch, foot pedal, dual wheel kit, etc. will be covered under the above warranty periods as they would apply provided they are installed by an Authorized *Ventrac* Dealer.) This warranty may be transferred and will carry the remainder of the warranty starting from the Original Purchase/Registration date with the dealership and/or *V.P.I.* In the event that product/s originally registered as **(3) year Residential use** are to be transferred to a commercial user the warranty would change to the remainder of **(2) year Commercial use** starting from the Original Purchase/Registration date with the dealership and/or *V.P.I.*

If this warranty covers a consumer product as defined by the Magnusson-Moss warranty act, no warranties, express or implied, (including, but not limited to, the warranty of merchantability or fitness for a particular purpose) shall extend beyond the applicable time period stated in bold face type above.

If this warranty covers a product used commercially or for any income producing purpose, the foregoing warranties are in lieu of all other warranties and no representations, guarantees or warranties, express or implied, (including, but not limited to, a warranty of merchantability or fitness for a particular purpose), are made by *V.P.I.* in connection with the manufacture or sale of its products.

The engine warranty is covered by its respective engine manufacturer. Please refer to the engine manufacturer's warranty statement that is included in the owner's manual.

The *Ventrac* turf equipment, including any defective parts, must be returned to an Authorized *Ventrac* Dealer within the warranty period. The warranty shall extend to the cost to repair or replace (as determined by *V.P.I.*) the defective part. **The expense of pickup and delivery of equipment, service call drive time or any transportation expense incurred for warranty repair is the sole responsibility of the owner and is not covered under warranty by *Ventrac* and/or *V.P.I.*** *V.P.I.*'s responsibility in respect to claims is limited to making the required repairs or replacements, and no claim of breach of warranty shall be cause for cancellation or rescission of the contract of sale of any *Ventrac* equipment. Proof of purchase may be required by the dealer to substantiate any warranty claim. Only warranty work performed and submitted by an Authorized *Ventrac* Dealer may be eligible for warranty credit.

This warranty extends only to *Ventrac* turf equipment operated under normal conditions and properly serviced and maintained. The warranty expressly does **NOT** cover: (a) any defects, damage or deterioration due to normal use, wear and tear, or exposure; (b) normal maintenance services, such as cleaning, lubrication, oil change; (c) replacement of service items, such as oil, lubricants, spark plugs, belts, rubber hoses or other items subject to normal service replacement; (d) damage or defects arising out of, or relating to abuse, misuse, neglect, alteration, negligence or accident; (e) repair or replacement arising from



LIMITED WARRANTY – VENTRAC TURF EQUIPMENT

operation of, or use of the turf equipment which is not in accordance with operating instructions as specified in the operator's manual or other operational instructions provided by *V.P.I.*; (f) repair or replacement arising as a result of any operation from Ventrac turf equipment that has been altered or modified so as to, in the determination of *V.P.I.*, adversely affect the operation, performance or durability of the equipment or that has altered, modified or affected the turf equipment so as to change the intended use of the product; (g) repair or replacement necessitated by the use of parts, accessories or supplies, including gasoline, oil or lubricants, incompatible with the turf equipment or other than as recommended in the operator's manual or other operational instructions provided by *V.P.I.*; (h) repairs or replacements resulting from parts or accessories which have adversely affected the operation, performance or durability of the turf equipment; or (i) damage or defects due to or arising out of repair of *Ventrac* turf equipment by person or persons other than an authorized *Ventrac* service dealer or the installation of parts other than genuine *Ventrac* parts or *Ventrac* recommended parts.

The sole liability of *V.P.I.* with respect to this warranty shall be repair and replacement as set forth herein. *V.P.I.* shall have no liability for any other cost, loss, or damage. In particular *V.P.I.* shall have no liability or responsibility for: (i) expenses relating to gasoline, oil, lubricants; (ii) loss, cost or expense relating to transportation or delivery of turf equipment from the location of owner or location where used by owner to or from any Authorized *Ventrac* Dealer; (iii) travel time, overtime, after hours time or other extraordinary repair charges or charge relating to repairs or replacements outside of normal business hours at the place of business of an Authorized *Ventrac* Dealer; (iv) rental of like or similar replacement equipment during the period of any warranty repair or replacement work; (v) any telephone or telegram charges; (vi) loss or damage to person or property other than that covered by the terms of this warranty; (vii) any claims for lost revenue, lost profit or additional cost or expense incurred as a result of a claim of breach of warranty; or (viii) attorney's fees.

The remedies of buyer set forth herein are exclusive and are in lieu of all other remedies. The liability of *V.P.I.*, whether in contract, tort, under any warranty, or otherwise, shall not extend beyond its obligation as set forth herein. *V.P.I.* shall not be liable for cost of removal or installation nor shall *V.P.I.* be responsible for any direct, indirect, special or consequential damages of any nature. In no event shall *V.P.I.* be liable for any sum in excess of the price received for the goods for which liability is claimed.

There are no representations or warranties which have been authorized to the buyer of the turf equipment other than set forth in this warranty. Any and all statements or representations made by any seller of this equipment, including those set forth in any sales literature or made orally by any sales representative, are superseded by the terms of this warranty. Any affirmation of fact or promise made by *V.P.I.* or any of its representatives to the buyer which relates to the goods that are the subject to this warranty shall not be regarded as part of the basis of the bargain and shall not be deemed to create any express warranty that such goods shall conform to the affirmation or promise.

No employee, distributor, or representative is authorized to change the foregoing warranties in any way or grant any other warranty on behalf of *V.P.I.*

Some states do not allow limitations on how long an implied warranty lasts or allow the exclusion on limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

This warranty applies to all *Ventrac* turf equipment sold in the United States and Canada.