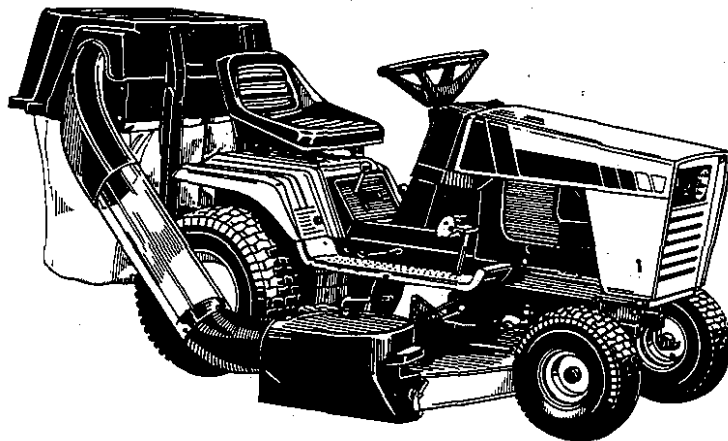


OPERATOR'S MANUAL

42"/48" Turbo Blower Assembly

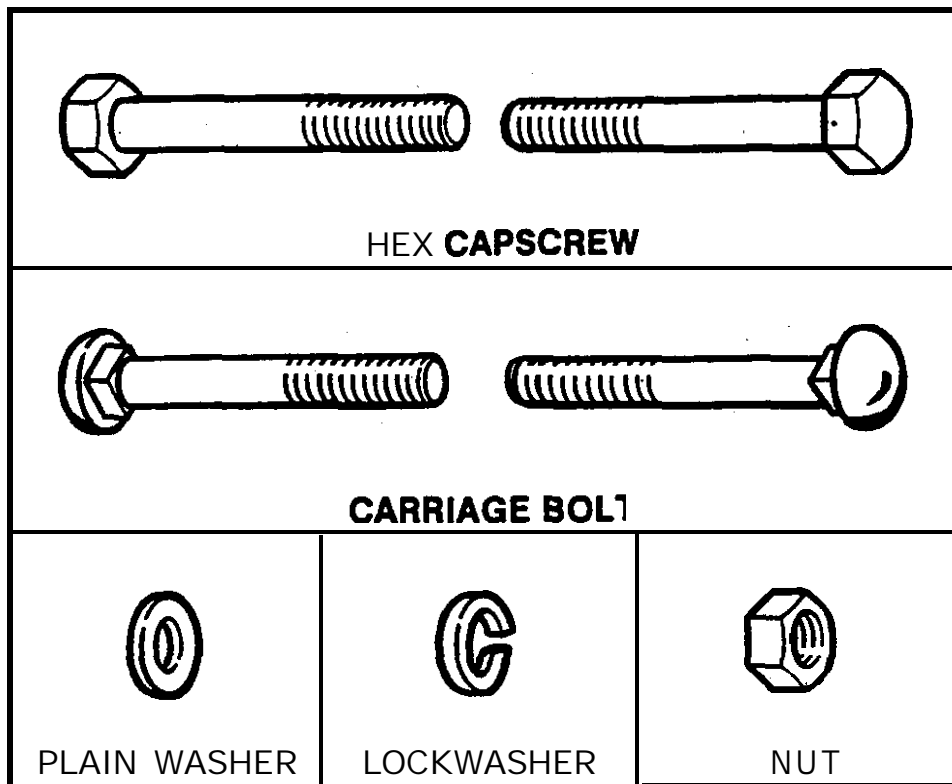
Mfg. No. 1691810

Mfg. No. 1691998



FORM 170460604
PRINTED IN U.S.A.
12/93-300-CCI

STANDARD FASTENER IDENTIFICATION CHART



HEX CAPSCREW

CARRIAGE BOLT

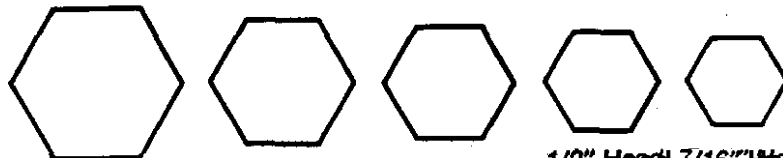
PLAIN WASHER

LOCKWASHER

NUT

HEX CAPSCREW IDENTIFICATION

Shown below are actual size hex heads for standard screw sizes. Example: a 1/4" screw has a 7/16" head and thus requires a 7/16" wrench. To measure length, use the scale below.



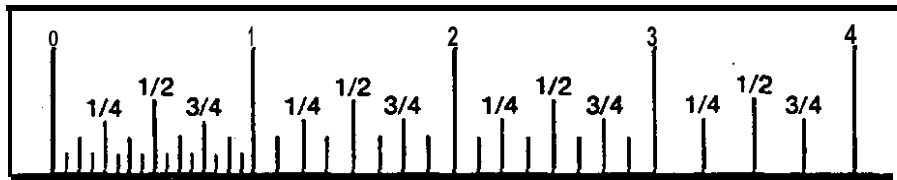
3/4" Head screw with 1/2" S.D.

5/8" Head screw with 7/16" S.D.

9/16" Head screw with 5/16" S.D.

1/2" Head screw with 1/4" S.D.

S.D. = Shaft Diameter



WASHER AND NUT IDENTIFICATION

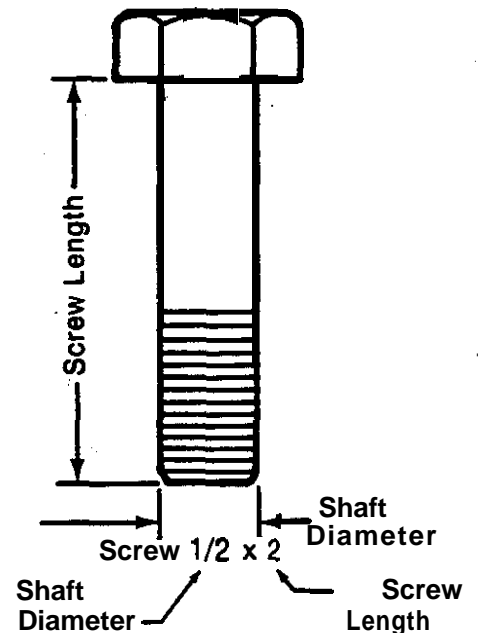
Place the washer or nut on the above scale to determine inside diameter. The actual inside diameter can vary 1/16 inch. Use the scale for comparison.

Hardware sizes are given in the illustrations throughout this manual.

If a washer or nut is identified as "washer. 1/2" or "nut. 1/2", this means the inside diameter is 1/2 inch.

If a screw is identified as "screw, 1/2 x 2", this means the shaft diameter is 1/2 inch and the shaft of the screw is 2 inches long. If a screw is identified as "screw. 1/2-16 x 2", the number "16" means that the screw has 16 threads per inch.

SAMPLE: SCREW IDENTIFICATION



SAMPLE: NUT IDENTIFICATION

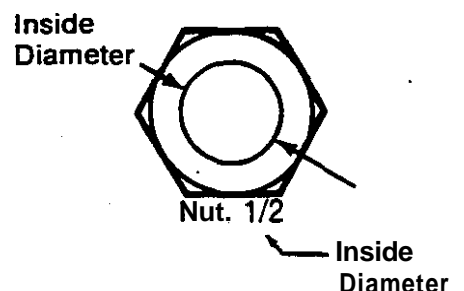
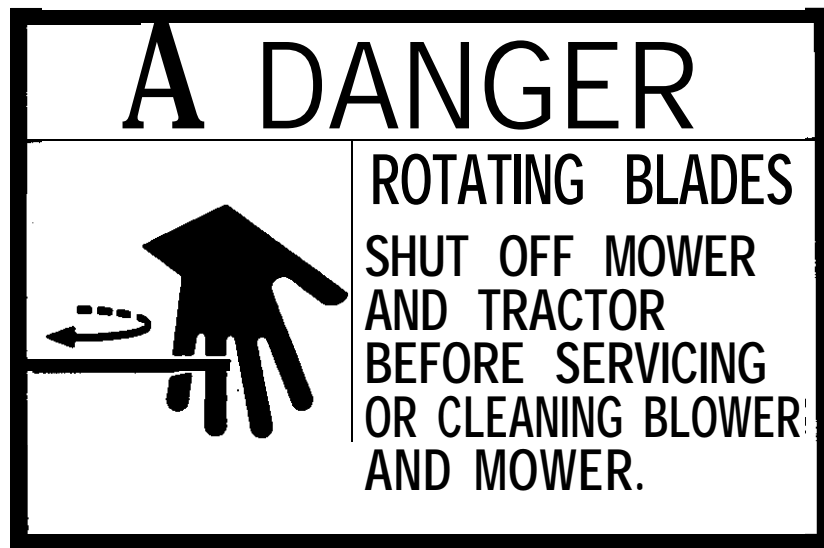


Table of Contents

Safety Decal	1
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Standard Fastener Identification Chart	15

NOTE: The additional weight of the turbo blower may cause the end roller on the mower deck to wear faster. For this reason, a replacement roller is supplied with the turbo blower kit.

Safety Decal



Located on Blower Housing

Safety Rules

A Read these safety rules and the safety rules in your Operator's Manual and follow them closely. Failure to obey these rules could result in loss of control of vehicle, severe personal injury to yourself, or damage to property or equipment. The triangle in the text signifies important cautions or warnings which must be followed.

A WARNING

When blower assembly is removed from mower deck, the deflector must be installed as described in Operating Without Collection System.

1. Know the tractor or rider controls and how to stop quickly. READ THE OWNERS MANUAL.
2. Disengage the PTO, shut the engine off and wait for all moving parts to stop before attaching, adjusting, or disconnecting any part of the collection system.
3. Check the collection system to make sure it is bolted tightly to tractor or rider.
4. Check the latch handle to make sure it is engaged so the dump cart's box is locked to the frame.
5. Look behind to make sure the area is clear before backing up.
6. DO NOT turn sharply when the tractor or rider is alongside a building or any object.
7. DO NOT carry passengers in the cart.
8. **⚠ CAUTION:** For added tractor or rider stability and to prevent tipping or loss of control;
 - a. Use reduced speed on uneven ground and when turning corners.
 - b. Reduce loads on hillsides. It is recommended that the collection system be kept only half full when negotiating any slopes. Start mowing on slopes when the collection system is empty.
 - c. Mow up and down the face of slopes; never across the face of any slope.
9. **⚠ WARNING:** When operating on slopes, use front counterweight. Never operate on slopes greater than 30% (16.7").
10. **⚠ CAUTION:** Objects may be thrown from mower.
For your safety:
 - a. DO NOT remove the cover while the mower blades are turning. Shut off the engine before opening the door or removing the grass chute.
 - b. Be sure the complete collection system is in place (cover secure and grass chute connected) before operating the mower.
 - c. DO check the twin bag cover frequently for wear and tear. Replace with new cover for safety protection.
11. For best results when mowing grass: Set the mower to cut from 1 to 2 inches of grass. If grass is exceptionally tall, set your mower as high as possible for first cutting. Lower cutting height at succeeding cuttings until proper height is reached. It may be necessary to mow tall grass at a slower tractor speed.

installation - Lawn Tractors

NOTE

Two spacers are packaged with turbo blower. Installation on tractor requires use of 4-1/16" spacer (see step 11); the 1/2" spacer will not be used.

1. Remove mower deflector and arbor cover as follows:
 - a. Remove the mower deflector by removing two carriage bolts, lockwashers and nuts. Install this hardware on the deflector for use when blower is removed for side discharge.
 - b. Remove the right hand arbor cover (A, figure 1) by removing washers and nuts in front that hold cover to deck. Also, remove nuts (B) and washers that secure rear tabs to arbor.
2. Slip mower belt off the right hand pulley. Remove the pulley from the arbor by removing capscrew (D, figure 2) and washers (F). Save washers for reinstallation. Use wood block to prevent blade from turning.

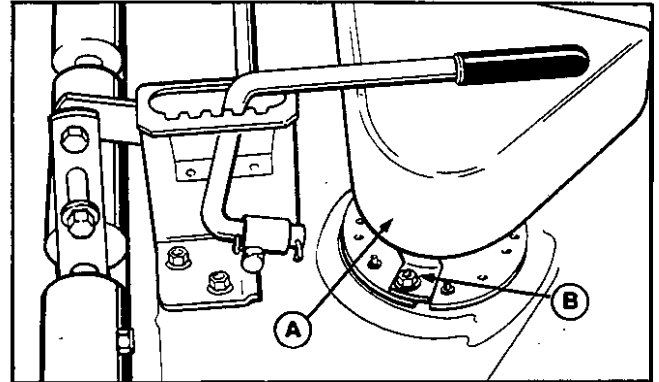


Figure 1.
A. Arbor Cover
B. Nut Cover

NOTE

Later model decks have 1-1/2" taptite screws, rather than 1" taptite screws, location A, figure 2. If capscrew protrudes 5/8" above arbor, new capscrews do not need to be installed

3. Remove brake spring or spring anchor (if equipped) and two taptite screws from arbor at locations A, figure 2. Replace these with two 5/16-18 x 1-1/2 capscrews (A).

- | | |
|------------------|---------------------|
| A. Capscrew | D. Capscrew |
| B. Arbor Bracket | E. Belt Stop, Front |
| C. Notch | F. Washers |

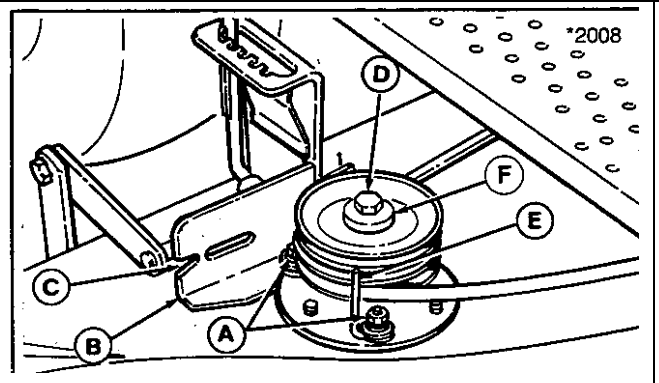


Figure 2.

4. Before installing arbor bracket (B, figure 2 & A, figure 3), remove washer from underneath blade brake bracket (rear capscrew). Arbor bracket is same thickness as washer and will replace washer. Loosen the front flange nut and remove the rear flange nut on the blade brake bracket.

NOTE

Rear belt stop should be installed facing inside of deck.

5. Install the arbor bracket (A, figure 3) and rear belt stop (B) as shown. Note the different holes for the 42" and 43" mowers. On the 42" deck, install a jamnut at rear bracket location instead of flange whiz nut. Tighten nut (F) snug only - belt stop will be adjusted in step 8.

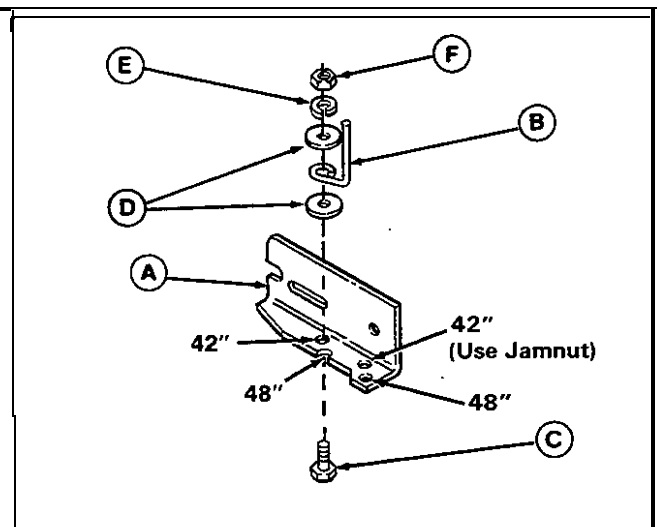
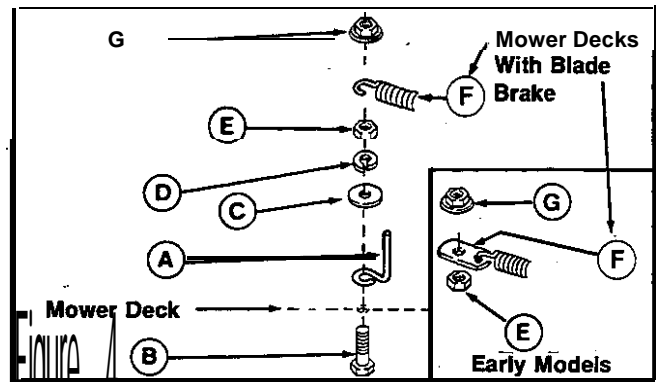


Figure 3.
A. Arbor Bracket C. Capscrew E. Lockwasher
B. Belt Stop D. Large Washers F. Jam Locknut

NOTE

Front belt stop should be installed facing outside of deck.

6. Install the front belt stop (A, figure 4) onto 5/16-18 x 1-1/2 capscREW (installed in step 3) as shown. If removed, reinstall brake spring or spring anchor (F) before flange nut (G). Tighten nut (E) snug only - belt stop will be adjusted in step 8.



A. Belt stop
B. Capscrew
C. Large Washer
D. Washer
E. Nut
F. Spring or Spring Anchor
G. Flange Locknut

7. Install new double-groove arbor pulley (D, figure 5) with hub down. Use new 7/16-14 x 2-1/4 capscREW and washers removed in step 2. Torque to 55 to 70 ft. lbs. Use wood block to prevent blade from turning. It may be necessary to add washer(s) (C, figure 5, two provided) underneath the new pulley to properly align brake pad and bottom groove. Refer to figure 5. Add washers to adjust top-to-bottom alignment: 1/16" clearance must be adjusted after belt is installed and PTO is engaged.

8. Slip the mower drive belt onto the lower groove of the new pulley (D, figure 2). With the mower PTO engaged, adjust the belt stops 1/8" from belt. Tighten the hardware.

9. If mower is equipped with blade brake, adjust the brake after installing new double groove pulley as follows:

- a. Engage the PTO lever. Be sure that mower drive belt tension is correctly adjusted (see Operator's Manual).
- b. Inspect the brake pad (A, figure 5) to V-pulley (B) clearance. With PTO engaged, clearance should be 1/16 inch as shown in figure 5.
- c. If adjustment is required, turn adjusting nuts (A, figure 6) until proper clearance is reached.

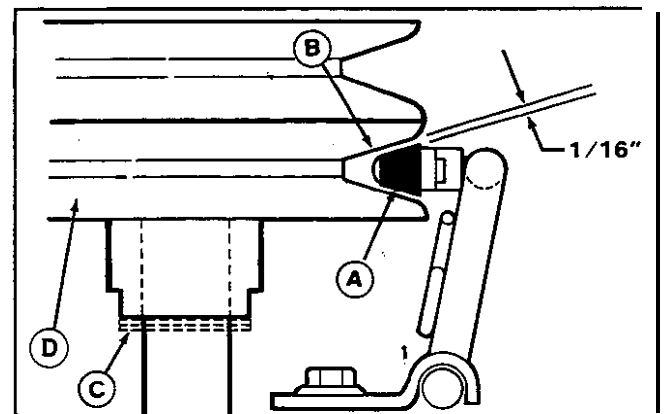


Figure 5.
A. Brake Pad
B. Bottom Groove
C. Washers (If required)
D. Double-Groove Pulley

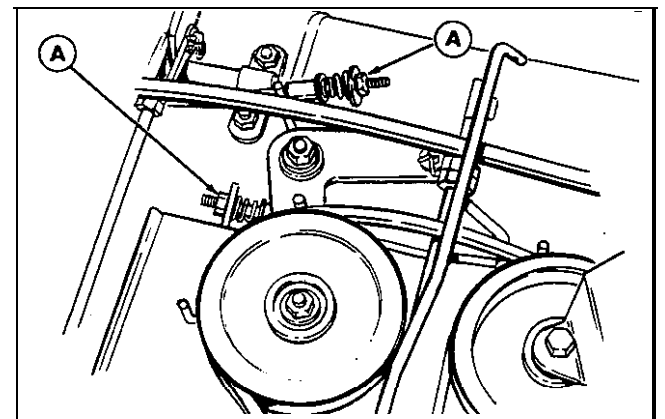


Figure 6.
A. Blade Brake Adjustment Nuts

10. The baffle (A, figure 7) is installed in the blower housing for use with 42" mower. For use with 48" mower, remove the baffle and install in holes marked 48".

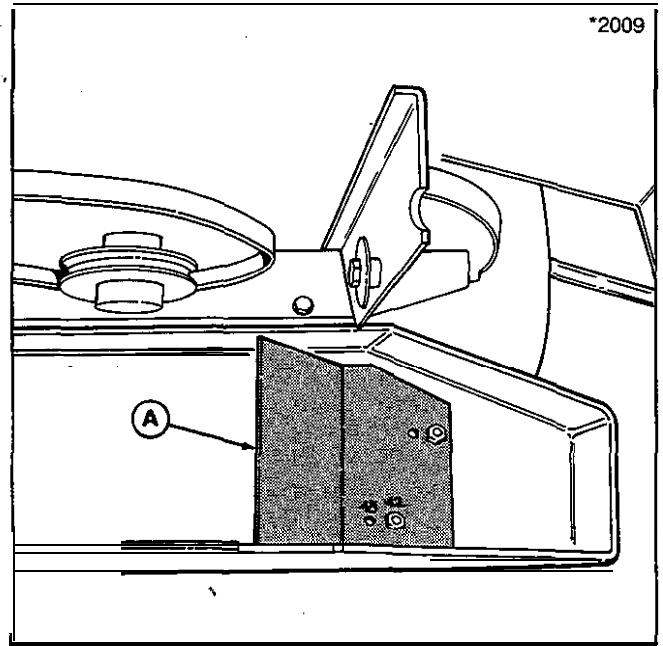


Figure 7.
A Baffle

NOTE

On 42" and 48" mowers, the capscrew installed in next step is used in the hole occupied by a screw held in place by a retaining nut. (This screw secured the right-front corner of the arbor cover.) Remove this screw(s) from mower deck by tapping out with a hammer or prying off the retaining nut.

11. Install the pulley cover (B, figure 8) with hardware shown, items E through M. (Figure 8 shows blower housing but it is not installed at this point of the procedure.)

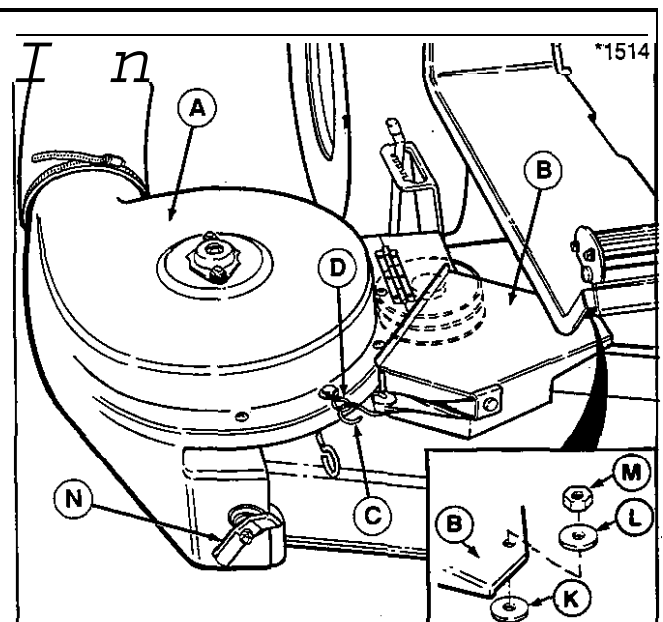


Figure 8.
 A. Blower Housing
 B. Pulley Cover
 C. Hook
 D. Clip
 E. **Capscrew**
 F. Washer, **5/16**
 G. Large Washer, **5/16**
 H. Spacer
 I. Lockwasher, **5/16**
 J. Nut, **5/16**
 K. **Large Washer, 5/16**
 L. Large Washer, **5/16**
 M. Locknut, **5/16**
 N. Wing Nut

12. Install wing nut (D, figure 9) as follows:
- Remove existing hardware from front end of stone guard.
 - From inside deck, install new $5/16-18 \times 2-1/4$ carriage bolt (F, figure 9). Then install the cup (A), $5/16$ lockwasher (B), and $5/16$ nut (C). Tighten the nut.
 - Thread the wing nut (D) far enough onto the screw so that **the $5/16$ locknut (E)** can be threaded on flush with the end of screw.

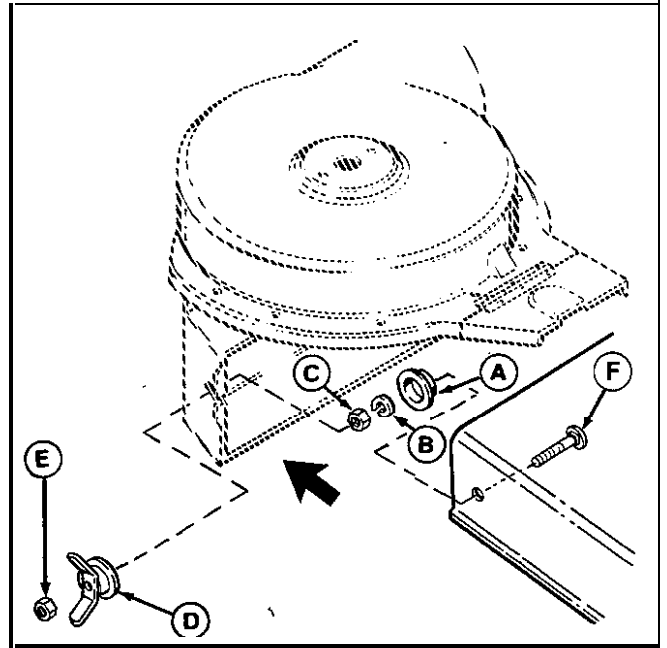


Figure 9.

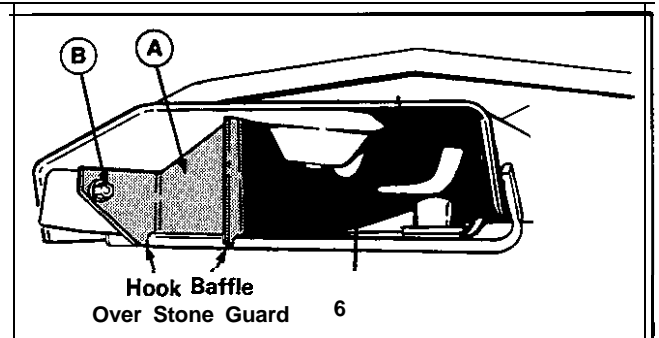
A. cup
 B. Lockwasher, 5/16
 C. Nut, 5/16

D. Wing Nut
 E. Locknut, 5/16
 F. Carriage Bolt

13. Install the new baffle (A, figure 10) in deck on stone guard using existing hardware. Hardware may be installed with nut to inside or nut to outside.

Figure 10.

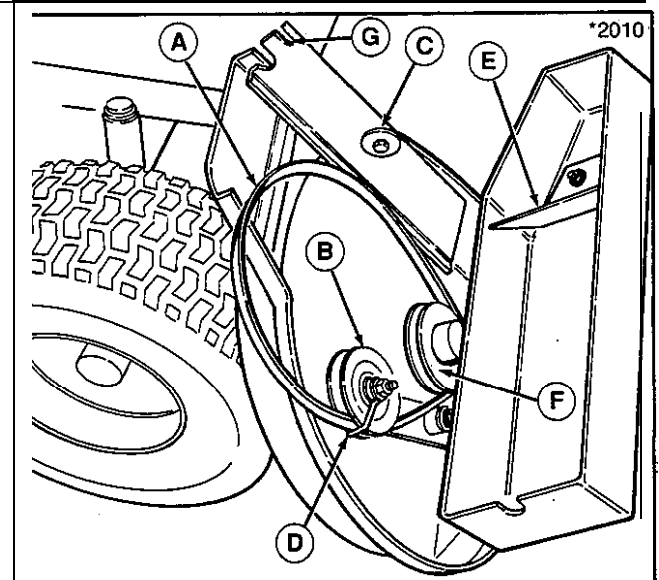
A. Baffle
 B. Carriage Bolt
 C. Mower Discharge Opening



14. Install the blower assembly as follows:
- Pivot cover (B, figure 8) away to expose the arbor.
 - Align the notch (G, figure 11) with **spacer** on arbor bracket. Align spacer (C) with notch (C, figure 2) on arbor bracket. Slide the assembly into place as shown in figure 13, while aligning front notch between cup and wing nut (D, figure 13). Tighten wing nut.

Figure 11.

A. Blower Drive Belt
 B. Idler Pulley C. Space
 D. Belt Retainer
 E. Baffle
 F. Driven Pulley
 G. Notch



c. Place mower in low cut position. Raise the flap (A, figure 12) and push on the belt retainer (E) to obtain slack in the belt. Install the blower drive belt (D) in the top groove of the pulley(B).

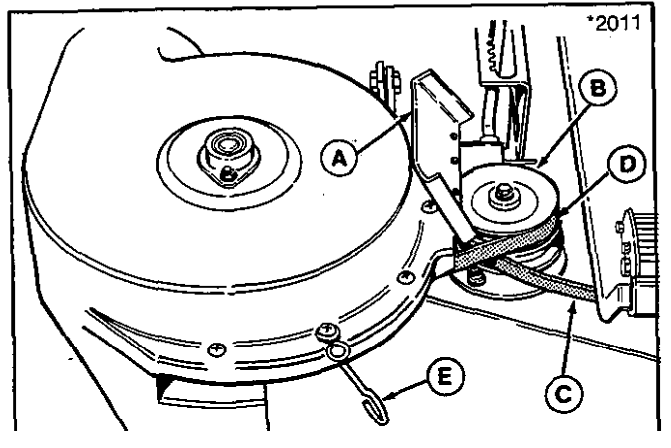


Figure 12

- A. Flap
- B. Pulley**
- C. **Belt**
- D. Drive Belt
- E. Belt Retainer**

d. Rotate the pivoting cover (A, figure 13) into place and attach the hook (B) to the clip (C) on the housing.

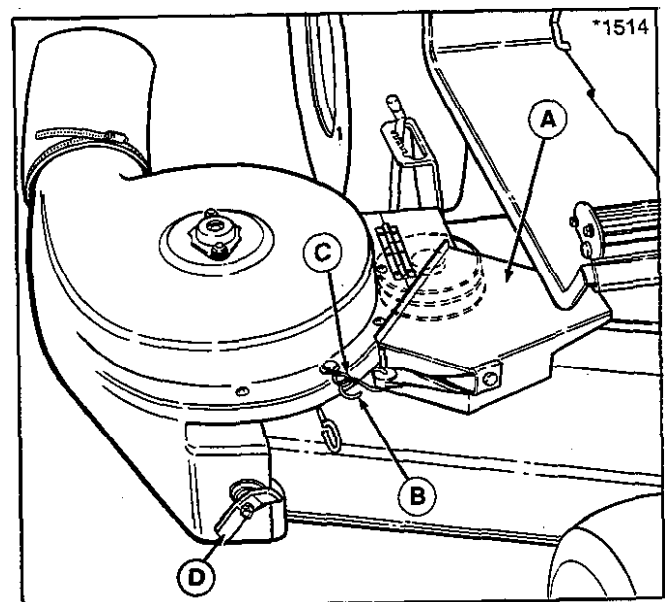


Figure 13.

- A. Pulley Cover**
- B. Hook**
- C. Clip
- D. **Wing Nut**

Installation - Front Cut Riders

NOTES

1. Two spacers are packaged with the turbo blower. Installation on the Front-Cut Rider requires use of the 1/2" spacer (see step 14). The 4-1/16" spacer will not be used.
2. The replacement right hand belt cover (see step 15), along with the new 3/8-16x2-1/4" capscrew for the right hand idler pulley (see step 4), is packaged with the collection system.

INSTALLATION

1. Remove right hand mower belt cover by removing flat washer and flange nut (A) and front taptite screw (B). Loosen hardware at center location (C). Belt cover can be discarded as new belt cover and arbor cover will replace original cover. Save all hardware for installing new cover.
2. Remove the deflector mounting hardware and reinstall in deflector for future use. Deflector must be reinstalled if turbo blower is removed from mower deck.

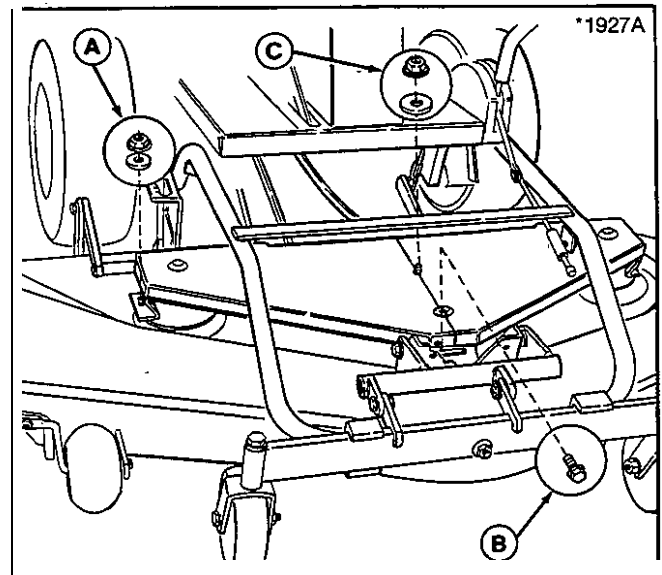


Figure 1. (Later Model Shown)

- A. Flange Nut
- B. Taptite Screw
- C. Mounting Hardware - Center Location

WARNING

Use caution when moving spring-loaded idler pulley. Spring tension is strong. Do not remove belt from spring-loaded idler pulley. Remove belt from left and right hand pulleys.

3. Pull spring-loaded idler pulley away from belt and remove belt from right hand arbor pulley and idler pulley.
4. Remove the idler pulley capscrew (installed from the top) and install new 3/8-16 x 2-1/4" capscrew from the bottom. Pulley bracket mounting hardware may need to be loosened to install 2-1/4" capscrew (A) from bottom. Install existing flat washer (B) on top of bracket, pulley, existing flat washer (B), lockwasher (C), and nut (D) to secure capscrew. Install large washer (E) onto capscrew. Capscrew (A), lockwasher (C), nut (D), and large washer (E) are packaged with the collection system.

NOTE

Existing flange nut will be used in step 15 to secure new belt cover.

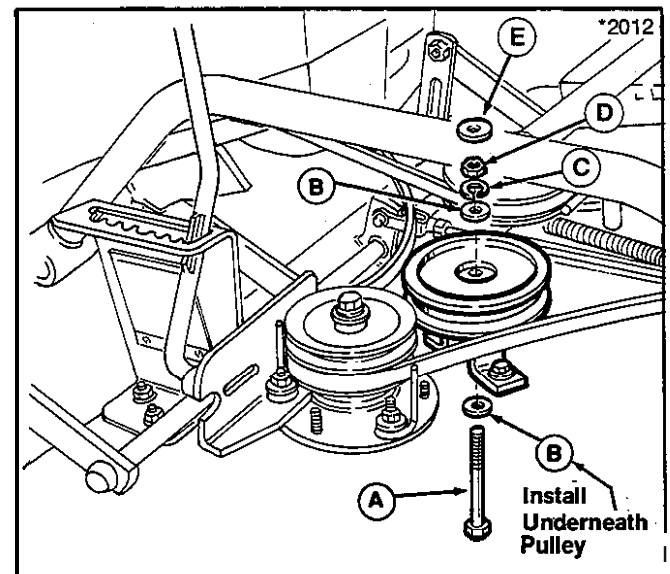


Figure 2.

- A. 2-1/4" Capscrew
- B. Flat Washer (Existing)
- C. Lockwasher
- D. Nut
- E. Large Flat Washer, 13/32 x 1-1/2 x 1/8

- Remove the capscrew, lockwasher, and flat washer securing right hand arbor pulley. Retain the washers for reinstallation (step 9). Use a wood block to prevent blade from turning.

SunRunner/Vanguard Models

- On early models without belt stop (A, figure 3) remove two self-tapping screws from arbor and install two 5/16-18 X 1-1/2" capscrews (A, figure 3). Parts will be installed on these capscrews in steps 7 and 8 as shown in figures 3 and 4.
- Install the bracket (F, figure 4) with hardware as shown in figures 3 and 4. On early models, install the rear belt stop (C) facing the inside of mower deck as shown in figure 4. Use washers (B & D) and lockwasher (H) only for securing belt stop (C) on early models. Use jam nut at locations A and E.
- On early models, install the front belt stop (D, figure 3) onto front capscrew (installed in step 6) with washer, lockwasher, and nut. Tighten snug only. The belt stop should face the inside of mower deck as shown in figure 3.

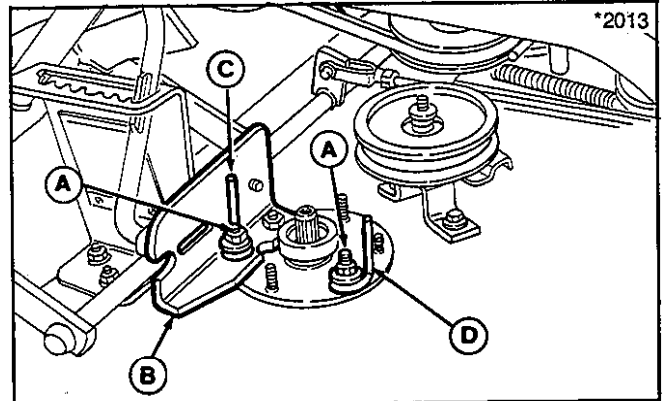


Figure 3. (Early Model)

- A. Capscrews, 1-1/2"
- B. Rear Mounting Bracket
- C. Rear Belt Stop
- D. Front Belt Stop

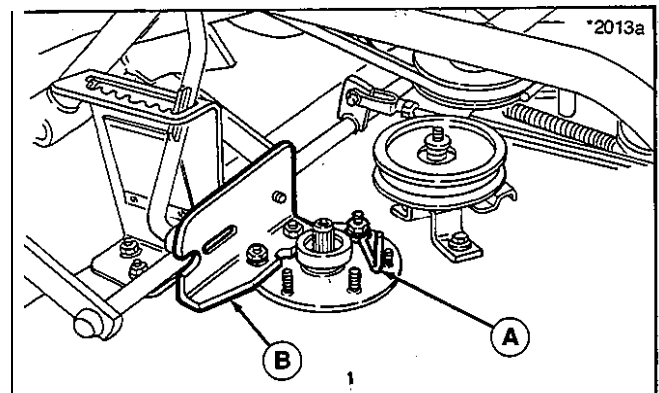


Figure 3A. (Later Model)

- A. Belt Stop (Existing)
- B. Rear Mounting Bracket

FC/1300 Models

- On later models with factory-installed belt stop (A, figure 3A), it is not necessary to change capscrews as new belt stops are not required.
- Install the bracket (F, figure 4) with hardware as shown in figure 3A and 4. Use jamnuts (A & E, figure 4) to secure bracket (F).

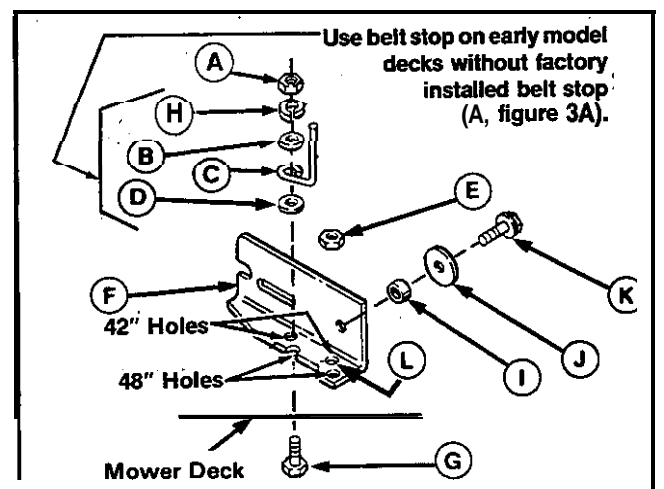


Figure 4.

- A. Jam Locknut, 5/16
- B. Washer, 5/16
- C. Belt stop
- D. Washer, 5/16
- E. Jam Locknut, 5/16
- F. Arbor Bracket
- G. Capscrew, 5/16-18 x 1-1/2
- H. Lockwasher, 5/16
- I. spacer
- J. Washer, Special
- K. Screw, Self-Tapping, 1/4-20
- L. Left-Hand Mtg. Hole

9. Slip the mower drive belt (A, figure 5) around the bottom groove of double-groove pulley (B). Install pulley with hub down and secure with new 7/16-14 x 2-1/4" capscrow (C) and washers (D and E) removed in step 5. Make sure splines are correctly aligned and torque capscrow to 55-60 ft. lbs. Use a wood block to prevent the blade from turning.
10. Reinstall the mower drive belt by pulling on the spring-loaded idler pulley to provide slack in belt. With belt installed, adjust the belt stops 1/18" from belt and tighten mounting hardware.

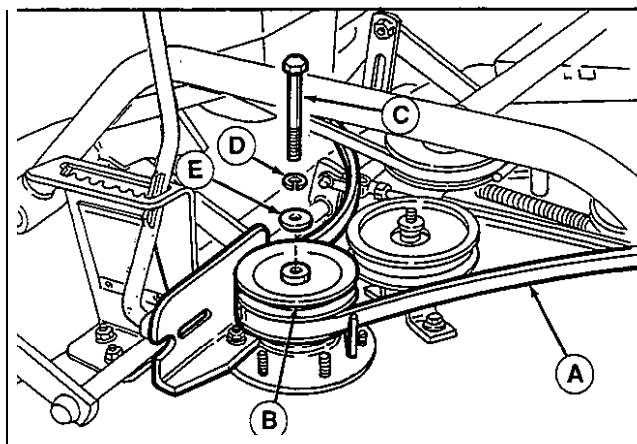


Figure 5.

- A. Mower Belt
- B. Double-Groove Pulley
- C. Capscrow, 2-1/4"
- D. Lockwasher
- E. Flat Washer

11. The baffle (A, figure 6) is installed in the blower housing for use with 42" mower. For use with 48" mower, remove the baffle and install in holes marked 48".

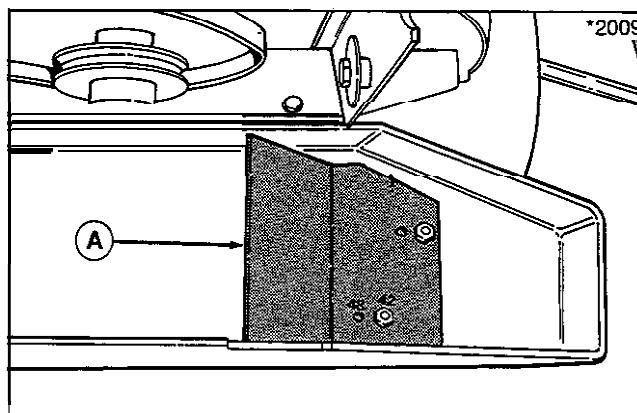


Figure 6.

- A. Baffle

12. Install wing nut assembly as follows:

- a. Remove existing hardware from front end of stone guard.
- b. From inside deck, install new 5/16-18 x 2-1/4 carriage bolt (E, figure 7) through deck, stone guard, washer, and roller bracket. Then install the large washer (A), lockwasher (F), and nut (B).
- c. Thread the wing nut (C) far enough onto the screw so that the 5/16 locknut (D) can be threaded on flush with the end of screw.

NOTE

On front-cut riders, do not install cup (G) onto capscrow to retain blower housing. Cup is used only for tractor applications.

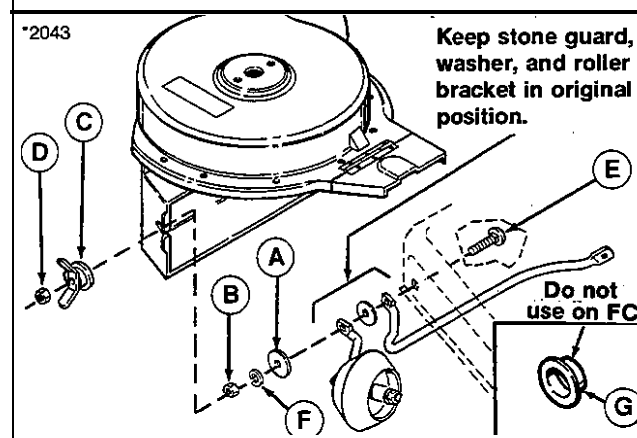


Figure 7.

- A. Large Washer
- B. Jam Nut, 5/16
- C. Wing Nut
- D. Locknut, 5/16
- E. Carriage Bolt
- F. Lockwasher
- G. Cup

13. Install the new baffle (A, figure 8) in deck on stone guard using existing hardware. Hardware may be installed with nut to inside or nut to outside.

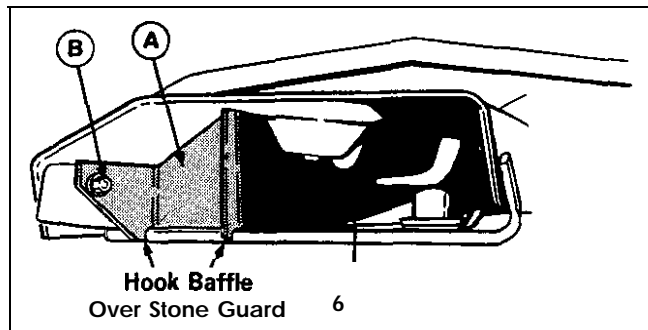


Figure 8.

- A** Baffle
- B** Carriage Bolt
- C** Mower Discharge Opening

14. On new arbor cover, install on top of weld bolt (A, figure 9) the largest washer (B 1-1/2" O.D.), 1/2" spacer (C), lockwasher (D), and nut (E) as shown in figure 9. (Large flat washer (F) shown will be installed in next step).
15. On 2-1/2" idler cover bolt, install belt cover to deck reusing front taptite screw (G) removed in step 1. Install flat washer (I) and flange nut (J, removed in step 4) to secure belt cover. Tighten flat washer and flange nut (H) loosened in step 1.

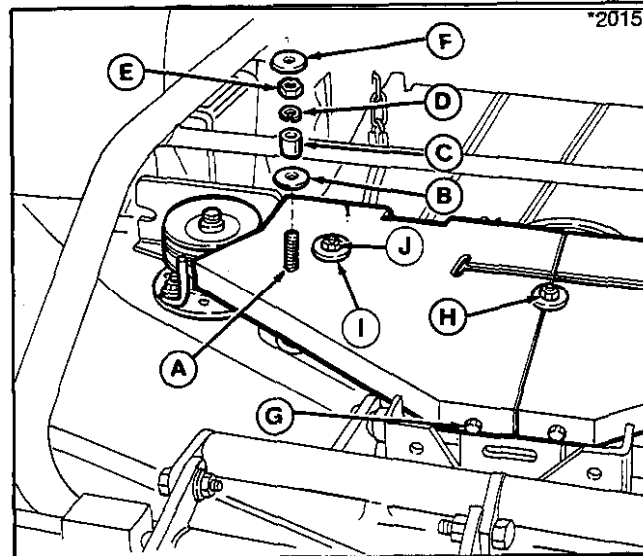


Figure 9.

- A** Weld Bolt
- B** Large Washer, 1-1/2" O.D.
- C** Spacer, 1/2"
- D** Lockwasher
- E** Nut
- F** Large Washer
- G** Taptite Screw
- H** Center Hardware
- I** Flat Washer
- J** Flange Nut

16. Make sure that flat washer (F, figure 9) is on top of spacer assembly and install new arbor belt cover (A, figure 10) as shown in figure 10. Secure with flat washer (1-1/4" O.D.) and locknut (B). Belt cover should be free to pivot.

17. Install the blower assembly as follows:
- Align the notch on blower assembly with spacer on arbor bracket. Align spacer on blower assembly with notch on arbor bracket. Slide the assembly into place as shown in figure 10 while aligning front notch between cup and wing nut. Tighten wing nut (C, figure 10).
 - Raise the flap (D, figure 10) and install the blower drive belt (E) in the top groove of the pulley. Push on lever (F) to provide slack to install belt.

NOTE

On later models with single (front) belt stop, belt stop must be on outside of both mower belt and turbo belt.

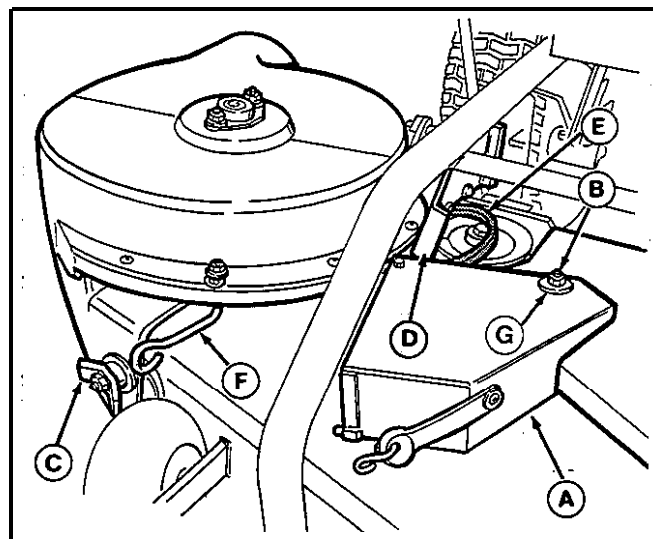


Figure 10.

- A. Arbor Cover
- B. Locknut
- C. Wing Nut
- D. Flap
- E. Blower Belt
- F. Lever
- G. Rat Washer (1-1/4" O.D.)

18. With belt installed, pivot arbor cover (A, figure 11) into position as shown in figure 11. Secure with rubber strap (B) to blower housing.

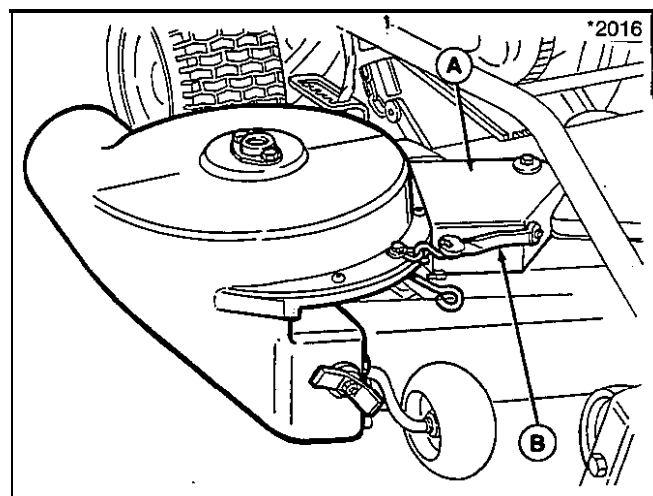


Figure 11.

- A. Arbor Cover
- B. Rubber Strap

Operation

A WARNING

For safety reasons, grass and debris should not be removed from any **part** of turbo or collection system until engine is shut off, key removed, and all moving parts have stopped.

A WARNING

Before raising cart or twin-bag cover, shut off engine, remove key, and set parking brake.

BEFORE OPERATION

Clear the lawn of all sticks, stones, wire and other debris which may be caught or thrown by the mower blades.

Clean the tube with mild detergent (other products may damage tube). The flow of grass can be seen through the tube while moving.

Check grass condition. If wet, wait until later in the day. If grass is wet plugging may occur.

For efficient bagging, air circulation under the mower deck, through the chute and into the bag is very important. For this reason, you should remove grass and debris from underside of mower deck, discharge chute and cover.

The tube and elbow can be removed as an assembly for cleaning.

OPERATING WITHOUT COLLECTION SYSTEM

! WARNING

When blower assembly is removed from mower deck, the deflector must be installed as described in this section.

1. To operate without the grass collection system, remove the blower assembly by loosening the front wing nut on blower housing and slipping belt off of the pulley. Reinstall the mower deflector (figure 1) and the original hardware. Install two carriage bolts from bottom and install washers and nuts (A). Install the front washers (B) and nut (C). Be sure flat washers and lockwashers are used at all three locations.
2. Pivot the cover (A, figure 2) over the arbor pulley and hook rubber strap into the notch (C) on the arbor bracket.

A. cover
B. Rubber Strap
C. Notch

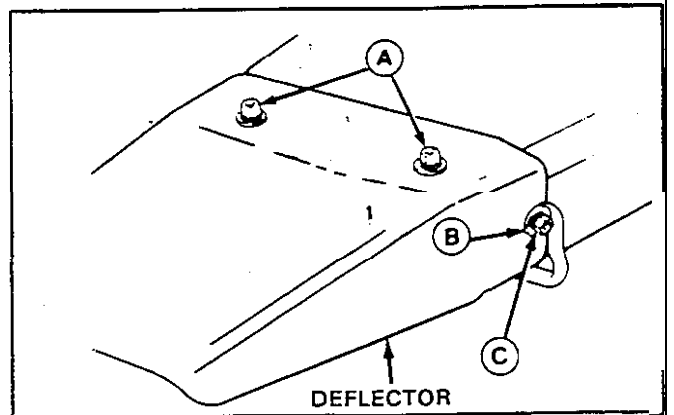


Figure 1.
A. Nut
B. Washer
C. Nut

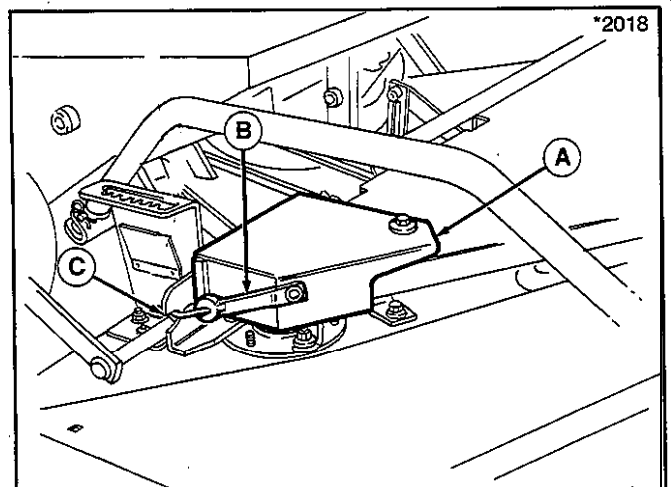


Figure 2. Front Cut Rider Shown

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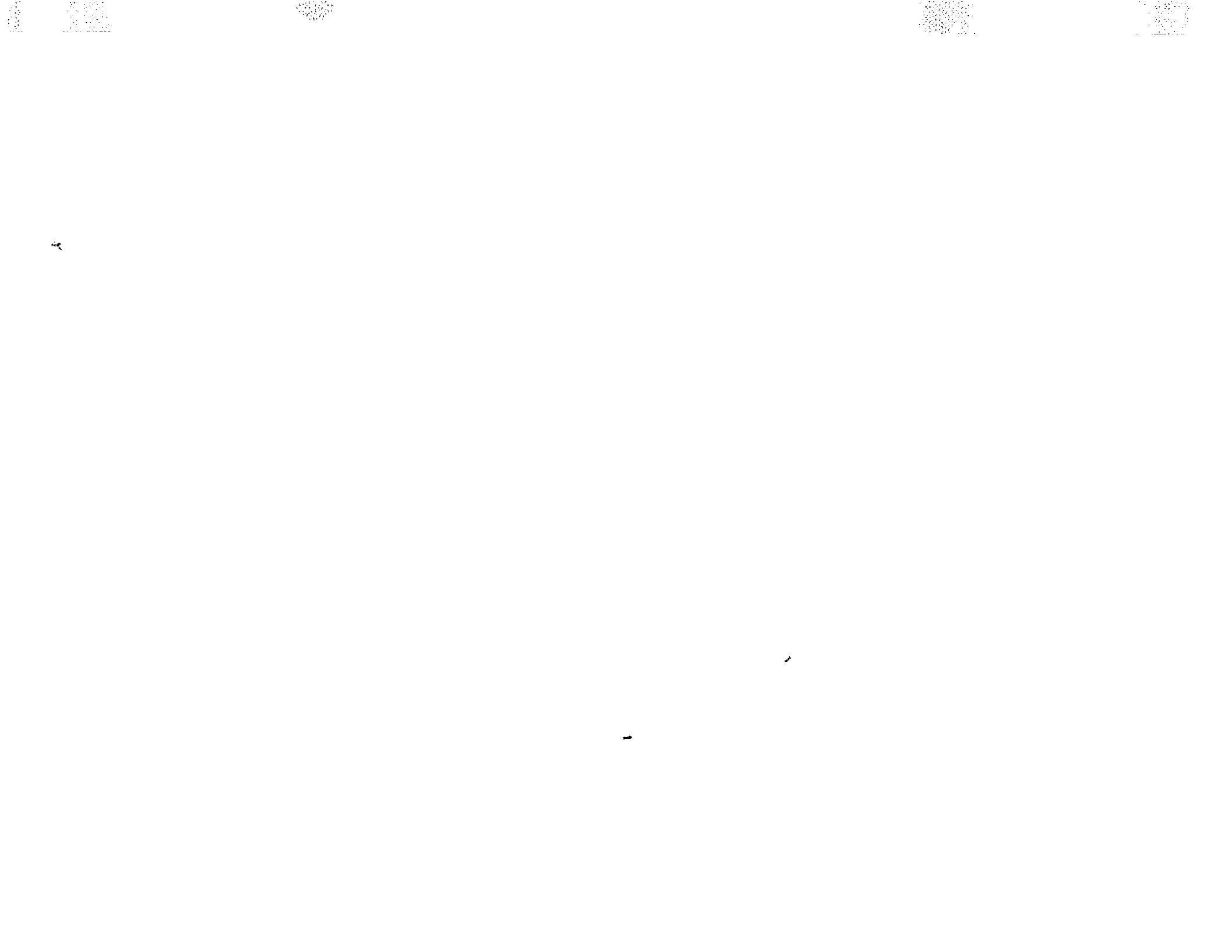
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**TORQUE SPECIFICATIONS FOR
STANDARD MACHINE HARDWARE
TOLERANCE $\pm 20\%$**

SIZE	SAE GRADE #2		SAE GRADE #5		SAE GRADE #8	
	0					
	<u>In./Lbs.</u>		<u>In./Lbs.</u>		<u>In./Lbs.</u>	
	<u>Ft./Lbs.</u>	N m	<u>Ft./Lbs.</u>	Nm.	<u>Ft./Lbs.</u>	Nm.
8-32	19	2.1	30	3.4	41	4.6
8-36	20	2.3	31	3.5	43	4.9
10-24	27	3.1	43	4.9	60	6.8
10-32	31	3.5	49	5.5	<u>68</u>	7.7
1/4-20	66	7.6	8	10.9	12	16.3
1/4-28	<u>76</u>	8.6	10	13.6	14	19.
5/16-18	<u>11</u>	15.	17	23.1	25	34.
5/16-24	12	16.3	19	25.8	25	34.
3/8-16	20	27.2	30	40.8	45	61.2
3/8-24	23	31.3	35	47.6	50	68.
7/16-14	30	40.8	50	68.	70	95.2
7/16-20	35	47.6	55	74.8	80	108.8
1/2-13	50	68.	75	102.	110	149.6
1/2-20	55	74.8	90	122.4	120	163.2
9/16-12	65	83.4	110	149.8	150	204.
9/16-18	75	102.	120	163.2	170	231.2
5/8-11	90	122.4	150	204.	220	299.2
5/8-18	100	136.	180	244.8	240	326.4
3/4-10	160	217.6	260	353.6	386	525.
3/4-16	180	244.8	300	408.	420	571.2
7/8-9	140	190.4	400	544.	600	816.
7/8-14	155	210.8	440	598.4	660	897.6
1-8	220	299.2	580	788.8	900	1,224.
1-12	240	326.4	640	870.4	1,000	1,360.

NOTE:

- These torque values are to be used for all hardware excluding: locknuts, self-tapping screws, thread forming screws, sheet metal screws and socket head setscrews.
- Recommended seating torque values for locknuts:
 - For prevailing torque locknuts - use **65%** of grade 5 torques.
 - For flange **whizlock** nuts (and screws) - use 135% of **grade 5** torques.
- Unless otherwise noted **on** assembly drawings all torque values must **meet** this specification.

**BOLT HEAD MARKING
S.A.E. GRADE:**

