

BERCOMAC

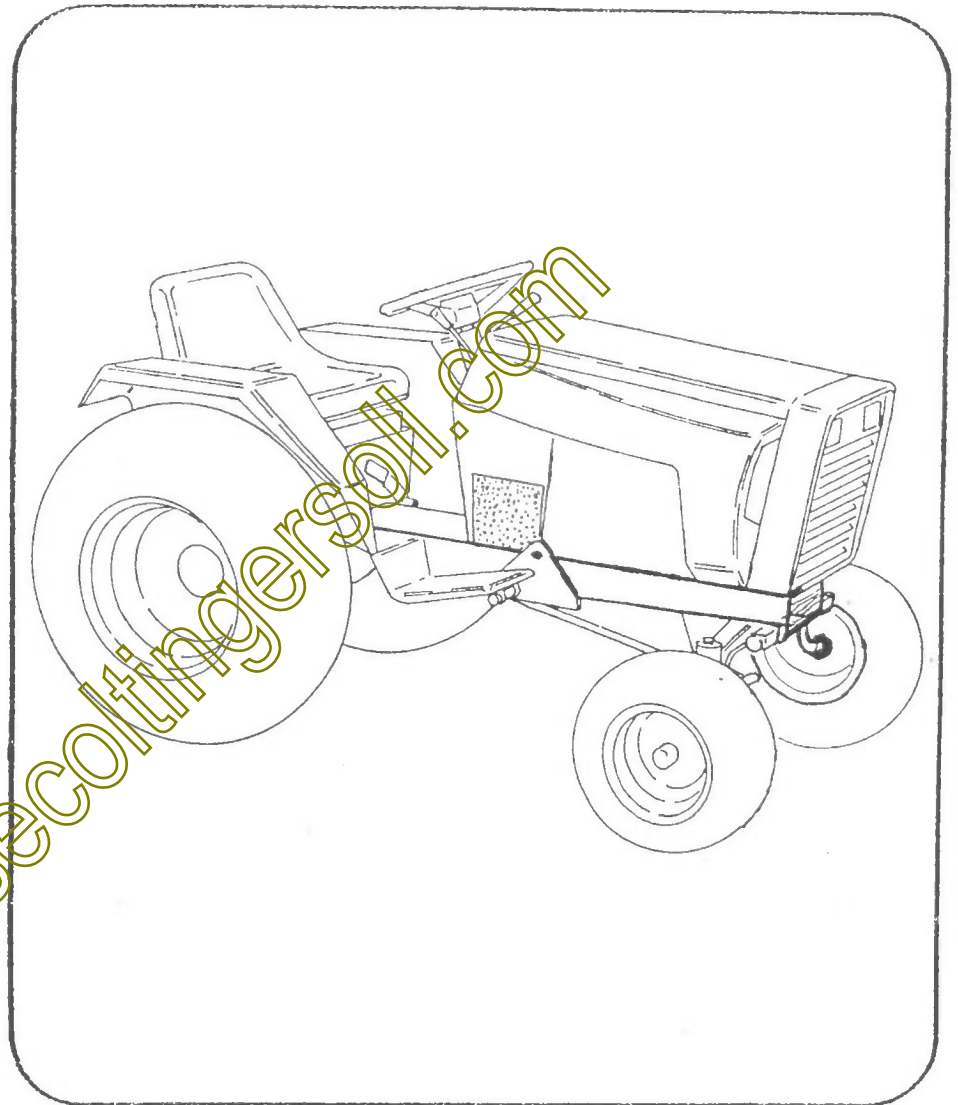
LIMITÉE

OWNER'S MANUAL

MODEL NUMBER
700227

CAUTION:

Read and Follow
All Safety Rules
and Instructions
Before Operating
Your Equipment



- * ASSEMBLY
- * OPERATION
- * MAINTENANCE
- * REPAIR PARTS

**BERCO SUBFRAME
FOR INGERSOLL
SERIES SB44-2, 3000 & 4000**

WARRANTY

LIMITED ONE YEAR ON BERCO TRACTOR ATTACHMENTS

For one year from date of purchase, Bercomac Limitée will repair or replace free of charge at Bercomac's option, any parts which are defective as a result of material or workmanship.

COMMERCIAL OR RENTAL USE:

Warranty on Berco attachments used for commercial or rental purposes is limited to 90 days.

This warranty does NOT cover:

- * Wear items, such as shear pins and belts.
- * Repairs due to customer abuse or neglect.
- * Pre-delivery set-up.
- * In Home service.

Warranty service is available by returning the "Berco" attachment to the authorized dealers or shipped prepaid to Bercomac Limitée.

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ASSEMBLY

IMPORTANT: Torque all bolts according to torque specification table on page 9, unless otherwise specified.

STEP 1: SUBFRAME INSTALLATION

- a) Locate the tractor on a smooth and level surface. Set the parking brake, stop the engine, and remove tractor ignition key.
- b) Lock the tractor "snap fast pins" in the "open" position.
- c) Slide the quick hitch subframe to engage the mounting bracket notches with the anchor pins on the tractor (fig.1)
- d) Pivot the mounting bracket upward and into the tractor "snap fast pin" receptacles. Release the "snap fast pins" to lock the mounting bracket into position.
- e) Install the handle support (fig.2, item 1) on the front left subframe (item 2) with two 5/16 X 3/4" bolts and nuts. Tighten securely.

Insert the grommet (fig. 1, item 3) in the rotation support (item 1).

- f) Two belts are included with this kit. Use the longer belt when installing the attachment on a Model 4014, 4016, 4018, 4020.

Use the shorter belt when installing the attachment on a Model 3012, 3014, 3016, 3018.

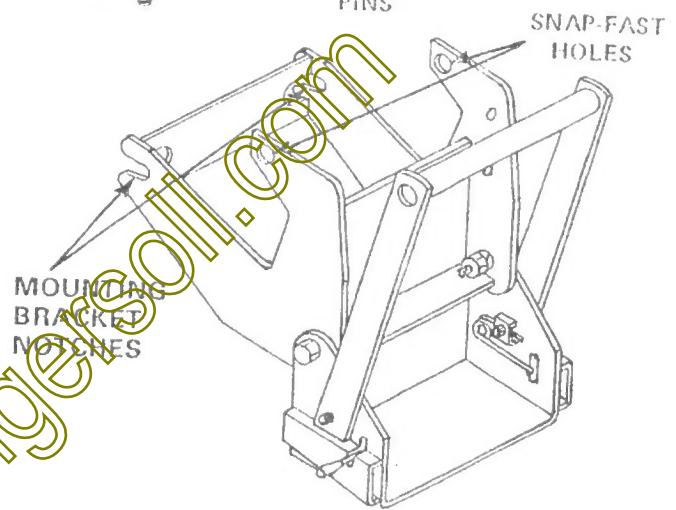
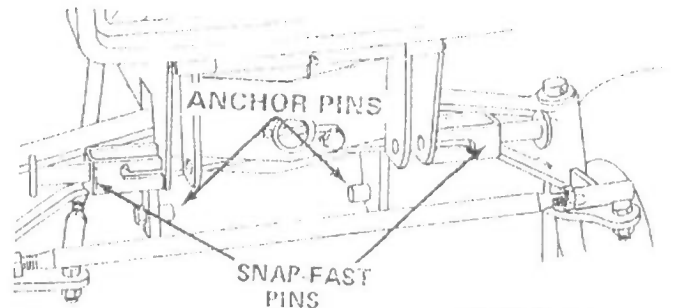


FIGURE 1

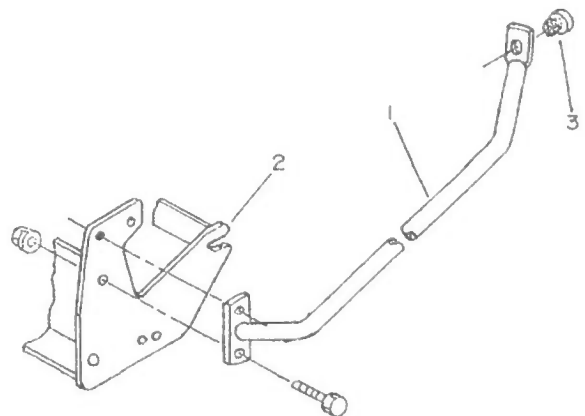


FIGURE 2

ASSEMBLY

- g) Install the arm lift one end on the lift brackets and the other end on the tractor lift lever. Secure on arm lift with a 11/16" flatwasher, a 2.5mm hair pin, and two 4mm hair pin at the other end.
- h) Attach a spring (fig. 4, item 3) to tightener arm (item 1) and secure with 4mm hair pin.
- i) Install the handle grip 1/2 X 3" (fig. 4, item 1) on the spring tightener.



WARNING: Set the parking brake, stop the engine, and remove tractor ignition key. Disconnect engine spark plug wire and keep away from plug to prevent accidental starting..



WARNING: The exhaust pipe and muffler can be hot. Do not touch.

STEP 2: ATTACHMENT MOUNTING INSTRUCTION



WARNING: See Snowblower Owner's Manual for Safety Precautions, Assembly and Operation instructions.

SNOWBLOWER

- a) Verify if the spring idler pulley (fig. 5, item 1) is placed as shown in figure 5. If it is not placed as shown, remove the hair pin and change the idler kit.
- b) Attach the snowblower to the tractor subframe by placing the snowblower male hitch flat bar into the subframe's female channel hitch (fig. 10). Be sure the male hitch is entered to its maximum and is locked in place by the spring.
- c) Loosen the belt spring tightener by removing the hair pin (fig. 4, item 2) and move the tightener arm down and forward (item 1).

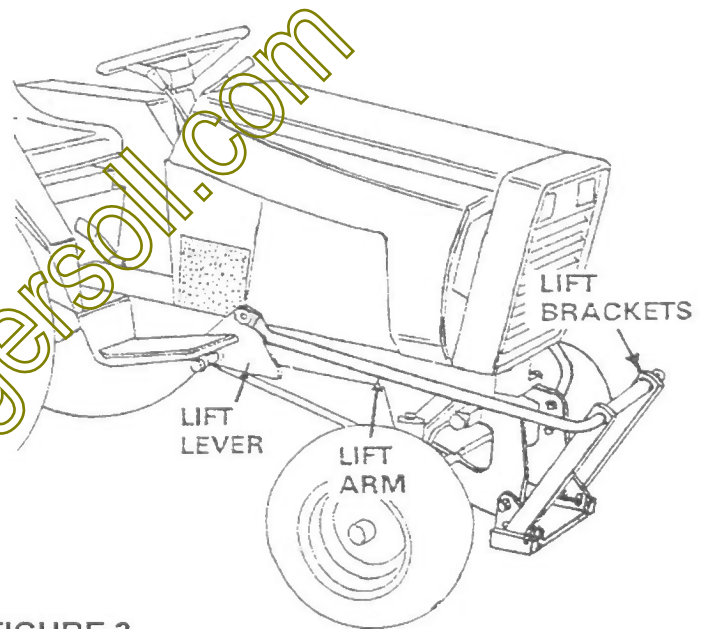


FIGURE 3

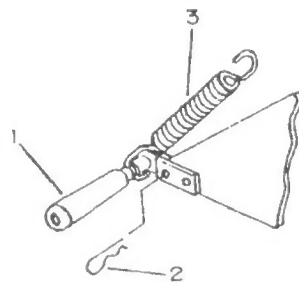
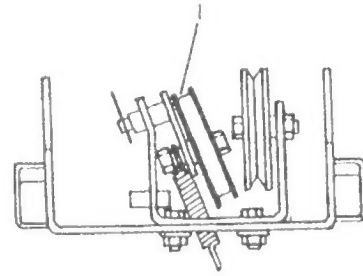


FIGURE 4

ASSEMBLY

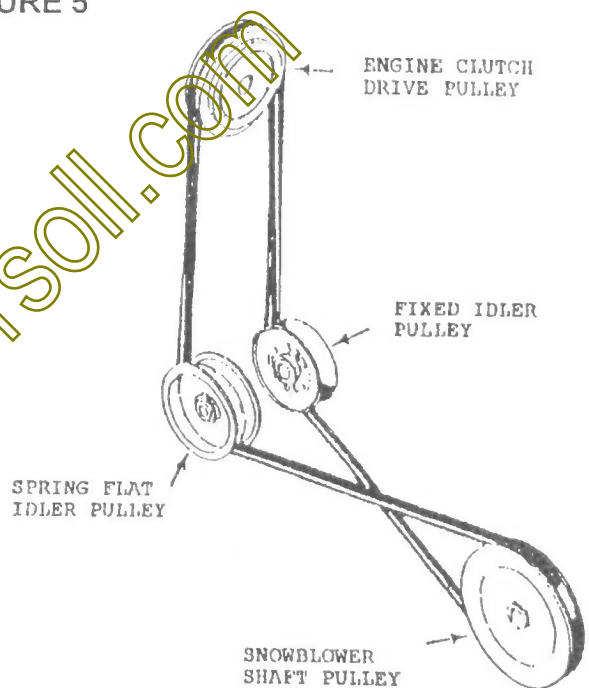
- d) Route the V-belt under the idler pulleys and on the engine clutch drive pulley as shown in figure 6. Pull down and back the tightener arm (fig. 4, item 1) to put tension on the belt. Secure with 4mm hair pin (item 2).



IMPORTANT: Be sure the belt is not twisted more than 90° and the V of the belt is on the V of the pulley. The back of the belt is on the flat pulley, see figure 6.

- e) Install 1/2 X 3" handle grip (fig. 7, item 1) on chute rotation handle (item 2) and place handle through grommet in rotation support bracket (item 3).
- f) Install the hook (fig. 7, item 4) on rotation worm (item 5). Insert hook in rotation handle and lock in place with a 2.5mm hair pin (item 6).

FIGURE 5



BROOM



WARNING: See Broom Owner's Manual for Safety Precautions, Assembly and Operation Instructions.

NOTE: For installation, the broom requires the option # 700252 V-pulley idler kit.

- a) Replace the flat pulley idler kit (fig.5, item 1) with the V-pulley idler kit (fig.8, item 1) and install on the right hand side as shown in fig.8.

FIGURE 6

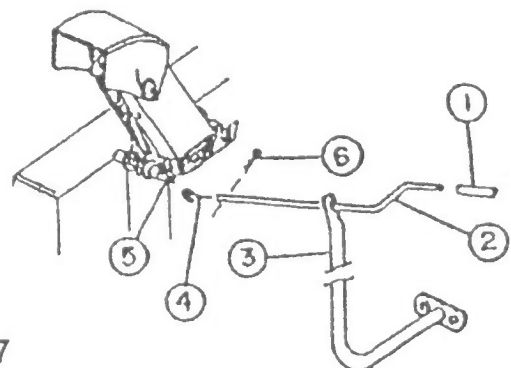


FIGURE 7

ASSEMBLY

- b) Attach the broom to the tractor subframe by placing the broom male hitch flat bar into the subframe female channel hitch (fig. 10). Be sure the male hitch is entered to it's maximum and is locked in place by the springs.
- c) Loosen the belt spring tightener by removing the hair pin (fig. 4, item 2) and move the tightener arm (item 1) down and forward.

WARNING: Set the parking brake, stop the engine, and remove tractor ignition key. Disconnect engine spark plug wire and keep away from plug to prevent accidental starting.

WARNING: The exhaust pipe and muffler can be hot. Do not touch.

- d) Route the V-belt under the idler pulleys and on the engine clutch drive pulley as shown in figure 9. Pull down and back the tightener arm to put tension on the belt. Secure with 4mm hair pin (fig 4 item 2).

IMPORTANT: Be sure the belt is not twisted more than 90° and the V of the belt is on the V of the pulleys, see figure 9.

- e) Install 1/2 X 3" handle grip (fig.11, item 2) on angle handle (item 1).

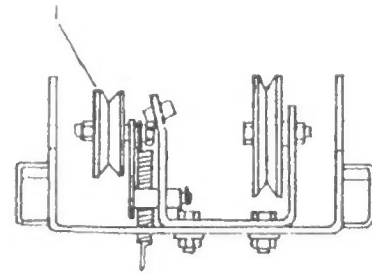


FIGURE 8

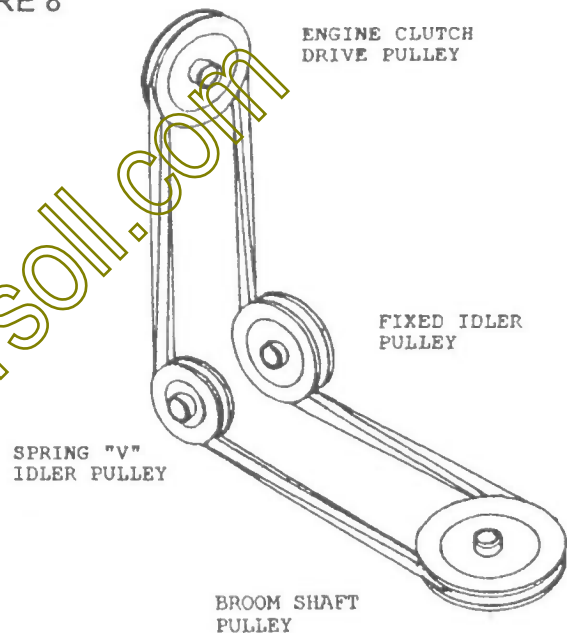


FIGURE 9

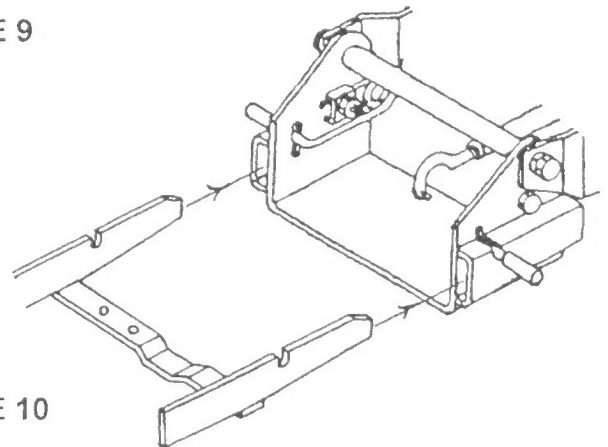
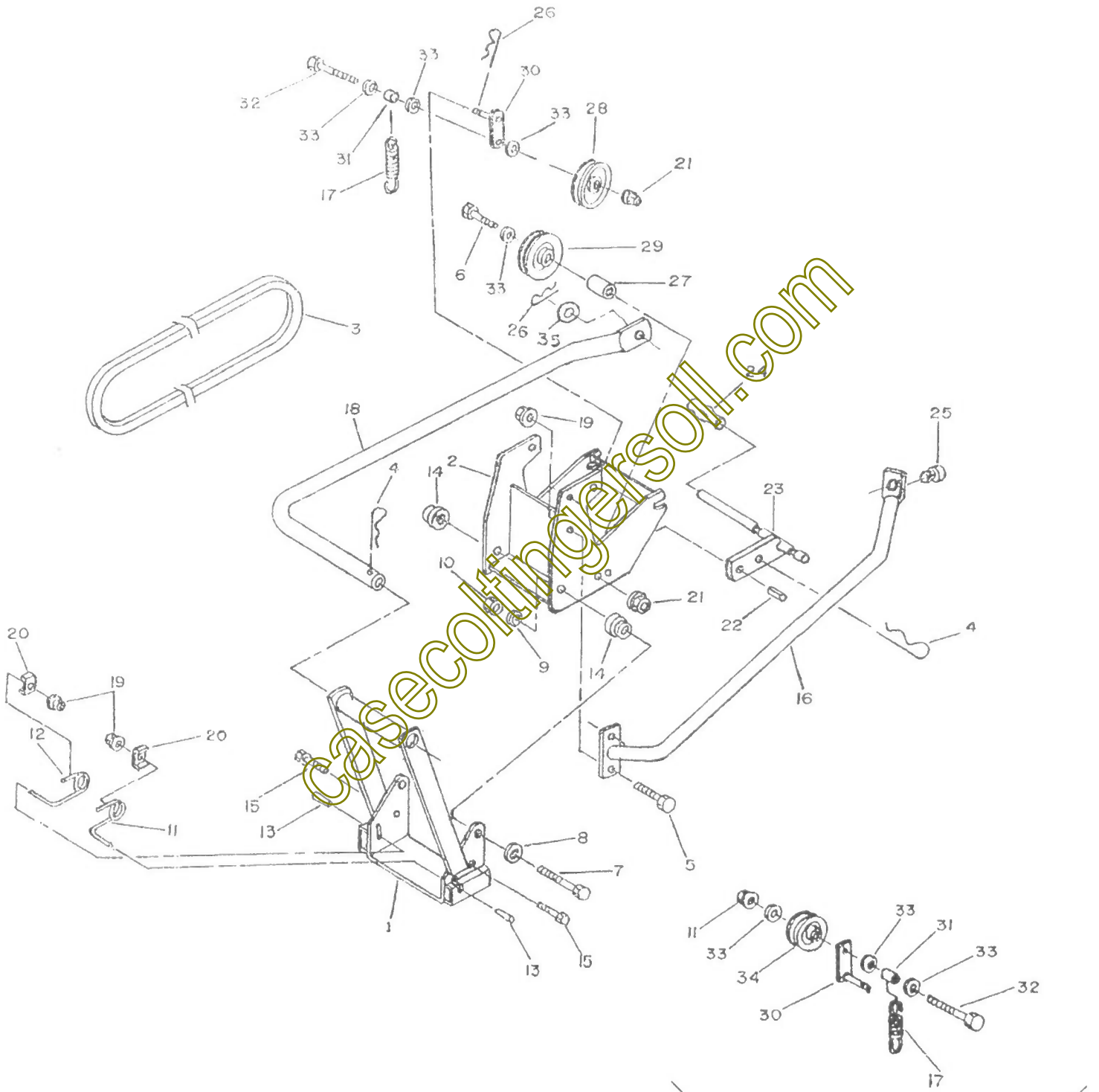


FIGURE 10

SUBFRAME



option # 700252 V-pulley idler kit

SUBFRAME

REF	DESCRIPTION	QTY	PART NO
1	Pivot support female hitch	1	102355
2	Subframe	1	102362
3	V-belt	1	102842
3	V-belt(tractor low profile).....	1	102473
4	Hair pin 4mm	2	102054
5	Hex bolt 5/16 X 3/4"	2	O/L
6	Hex bolt 3/8 x 2 3/4"	1	O/L
7	Hex bolt 1/2 X 1 3/4"	2	O/L
8	Flatwasher 9/16" dia. hole	2	O/L
9	Lockwasher 1/2"	2	O/L
10	Hex nut 1/2"	2	O/L
11	Left spring lock.....		102208
12	Right spring lock		102209
13	Plastic hand grip	2	102248
14	Bushing	2	102356
15	Hex bolt 5/16 X 1 1/4"	2	O/L
16	Handle support	1	102357
17	Spring.....	1	102304
18	Arm lift.....	1	102358
19	Flange nut 5/16"	4	O/L
20	Spring fixation	2	102210
21	Flange nut 3/8".....	2	O/L
22	Roll pin 3/16 X 3/4"	1	O/L
23	Tightener arm	1	102360
24	Handle grip.....	1	102062
25	Plastic grommet.....	1	102063
26	Hair pin 2.5mm	2	102013
27	Spacer.....	1	102361
28	Flat pulley idler.....	1	102300
29	V-pulley idler	1	102086
30	Pulley arm.....	1	102314
31	Sleeve.....	1	102322
32	Hex bolt 3/8 X 2"	1	O/L
33	Flatwasher 7/16" dia hole	4	O/L
34	V-idler pulley for broom (option)	1	102446
35	Flat washer 11/16" dia. hole	1	O/L

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O/L = Obtain locally

SAFETY PRECAUTIONS

Careful operation is your best insurance against an accident. Read this section carefully before operating the tractor and attachment. All operators, no matter how experienced they may be should read this and other related manuals before operating the attachment. It is the owner's legal obligation to instruct all operators in safe operation.

BEFORE OPERATION



This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on the attachment safety labels to warn of the possibility of personal injury. Please take special care in reading and understanding the safety precautions before operating the attachment or the tractor.

1. Read this Owner's Manual carefully. Be thoroughly familiar with the controls and proper use of the equipment. Know how to stop the unit and disengage the controls quickly.
2. Never allow children to operate equipment. Never allow adults to operate equipment without proper instructions.
3. Disengage clutch and shift into neutral before starting the engine.
4. Never attempt to make any adjustments while engine is running (except where specifically recommended by manufacturer).
5. Take all possible precautions when leaving the machine unattended. Disengage the power take-off, lower the attachments, shift into neutral, set the parking brake, stop the engine and remove the key.
6. Never operate the attachment without good visibility or light.

7. Do not run the engine indoors except when starting engine and transporting attachment in or out of building. do not operate or idle engine in a non-ventilated area. Carbon monoxide gas is colorless, odourless and deadly.



WARNING: For your safety, use the Owner's Manual attachment for snowblower, broom and blade installation instructions. Read all the Safety Precautions, Assembly and Operation Instructions.

WHENEVER YOU SEE THIS SYMBOL



IT MEANS:

ATTENTION !

BE ALERT !

YOUR SAFETY IS INVOLVED !

INTRODUCTION

TO THE PURCHASER

This new equipment was carefully designed to give years of dependable service. This manual has been provided to assist in the safe operation and service of your attachment.

NOTE All photographs and illustrations in the manual may not necessarily depict the actual models or equipment, but are intended for reference only and are based on the latest product information available at the time of publication.

Familiarize yourself fully with the safety recommendations and operating procedures before putting the machine to use. Carefully read, understand and follow these recommendations and insist that they be followed by those who work with you.



THIS SAFETY ALERT SYMBOL IDENTIFIES IMPORTANT SAFETY MESSAGES IN THIS MANUAL. WHEN YOU SEE IT, BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY AND CAREFULLY READ THE MESSAGE THAT FOLLOWS.

Record your attachment model and serial number (there is none with subframe). Your Dealer requires this information to give you prompt, efficient service when ordering parts or attachments. Service with original parts when replacement parts are required.

If warranty repairs are required please present this registration booklet and original sales invoice to your selling dealer for warranty service.

Right hand and left hand are determined by sitting on the tractor seat facing forward.

MODEL

SERIAL NUMBER

DATE PURCHASED

ASSEMBLY

- f) Insert handle through the grommet on support (fig.11, item 3) and insert on handle extension (item 4). Secure with 2.5 mm hair pin (item 5).

BLADE



WARNING: See Blade Owner's Manual for Safety Precautions, Assembly and Operation Instructions.

- a) Attach the blade to the tractor subframe by placing the blade male hitch flat bar into the subframe's female channel hitch (fig. 10). Be sure the male hitch is entered to its maximum and is locked in place by the springs.
- b) Install 1/2 X 3" handle grip (fig.11, item 2) on angle handle (item 1).
- c) Insert handle through a grommet on the support (fig.11, item 3) and insert on handle extension (item 4). Secure with 2.5mm hair pin (item 5).

STEP 3: SUBFRAME DISMOUNTING



WARNING: Set the parking brake, stop the engine, and remove tractor ignition key. Disconnect engine spark plug wire and keep away from plug to prevent accidental starting.

- a) See Attachment Owner's Manual: snowblower, broom or blade, for attachment dismounting instructions.
- b) Remove the rear counterweight.
- c) Dismount the arm lift by removing the hair pins.
- d) Dismount the quick hitch subframe by pulling the two "snap fast pins". Lower and pull out carefully.

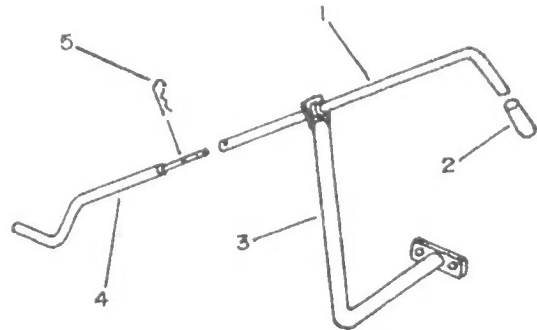


FIGURE 11

TORQUE SPECIFICATION TABLE

GENERAL TORQUE SPECIFICATION TABLE (Revised 2-74)

USE THE FOLLOWING TORQUES WHEN SPECIAL TORQUES ARE NOT GIVEN

NOTE: These values apply to fasteners as received from supplier, dry or when lubricated with normal engine oil. They do not apply if special graphited or moly disulphide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads.

SEE Grade No		2				5				8 *			
BOLT HEAD IDENTIFICATION MARKS AS PER GRADE - NOTE MANUFACTURING MARKS WILL VARY		TORQUE				TORQUE				TORQUE			
BOLT SIZE		POUNDS FEET		NEWTON METERS		POUNDS FEET		NEWTON METERS		POUNDS FEET		NEWTON METERS	
Inches	Millim	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/4"	6.35	5	6	6.8	8.13	9	11	12.2	14.9	12	15	16.3	30.3
5/16"	7.94	10	12	13.6	16.3	17	20.5	23.1	27.8	24	29	32.5	39.3
3/8"	9.53	20	23	27.1	31.2	35	42	47.5	57.0	45	54	61.0	73.2
7/16"	11.11	30	25	40.7	47.4	54	64	73.2	86.8	70	84	94.9	113.9
1/2"	12.70	45	52	61.0	70.5	80	96	108.5	127.0	110	132	149.2	179.0
9/16"	14.29	65	75	88.1	101.6	110	132	149.2	179.0	160	192	217.0	260.4
5/8"	15.88	95	105	128.7	142.3	150	180	203.3	247.1	220	264	298.3	358.0
3/4"	19.05	150	185	203.3	250.7	270	324	365.7	439.3	380	456	515.3	618.3
7/8"	22.23	160	200	216.8	271.0	400	480	542.4	650.9	600	720	813.6	976.3
1	25.40	250	300	338.8	406.5	580	696	796.5	943.8	900	1080	1220.4	1464.5
1 1/8"	25.58	-	-	-	-	800	960	1084.8	1193.3	1280	1440	1735.7	1952.6
1 1/4"	31.75	-	-	-	-	1120	1240	1518.7	1681.4	1820	2000	2467.9	2712.0
1 3/8"	34.93	-	-	-	-	1360	1580	1979.8	2278.1	2380	2720	3227.3	3688.3
1 1/2"	38.10	-	-	-	-	1940	2200	2630.6	2983.20	3160	3560	4285.0	4827.4

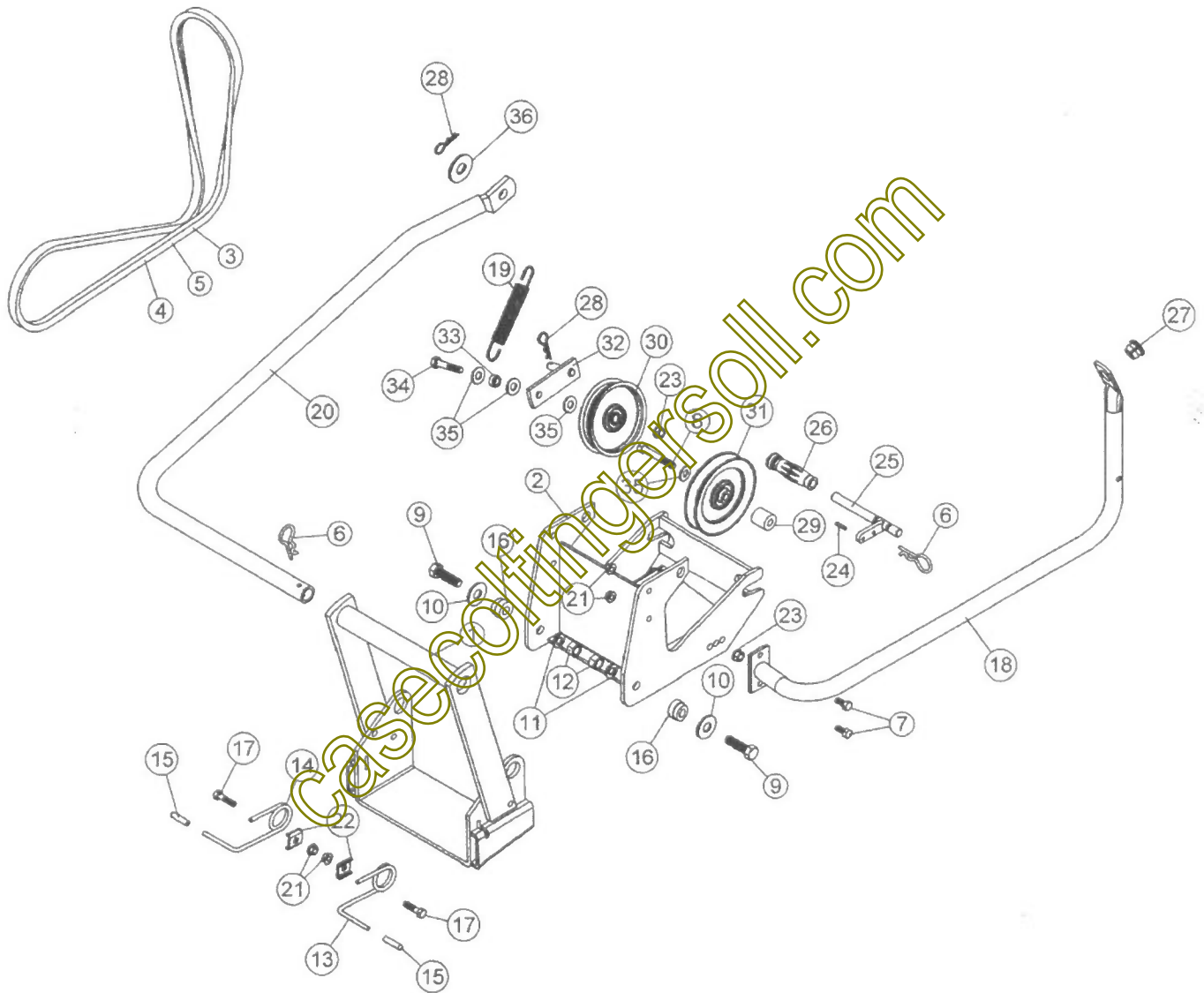
THICK NUTS MUST BE USED WITH GRADE 8 BOLTS

METRIC BOLT TORQUE SPECIFICATIONS

Size screw	Grade no.	COARSE THREAD			FINE THREAD		
		Pitch (mm)	Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
M6	4T	1.0	3.6-5.8	4.9-7.9	-	-	-
	7T		5.8-9.4	7.9-12.7		-	-
	8T		7.2-10	9.8-13.6		-	-
M8	4T	1.25	7.2-14	9.8-19	1.0	12-17	16.3-23
	7T		17-22	23-29.8		19-27	25.7-36.6
	8T		20-26	27.1-35.2		22-31	29.8-42
M10	4T	1.5	20-25	27.1-33.9	1.25	20-29	27.1-39.3
	7T		34-40	46.1-54.2		35-47	47.4-63.7
	8T		38-46	51.5-62.3		40-52	54.2-70.5
M12	4T	1.75	28-34	37.9-46.1	1.25	31-41	42-55.6
	7T		51-59	69.1-79.9		56-68	75.9-92.1
	8T		57-66	77.2-89.4		62-75	84-101.6
M14	4T	2.0	49-56	66.4-75.9	1.5	52-64	70.5-86.7
	7T		81-93	109.8-126		90-106	122-143.6
	8T		96-109	130.1-147.7		107-124	145-168
M16	4T	2.0	67-77	90.8-104.3	1.5	69-83	93.5-112.5
	7T		116-130	157.2-176.2		120-138	162.6-187
	8T		129-145	174.8-196.5		140-158	189.7-214.1
M18	4T	2.0	88-100	119.2-136	1.5	100-117	136-158.5
	7T		150-168	203.3-227.6		177-199	239.8-269.6
	8T		175-194	237.1-262.9		202-231	273.7-313
M20	4T	2.5	108-130	146.3-176.2	1.5	132-150	178.9-203.3
	7T		186-205	252-277.8		206-242	279.1-327.9
	8T		213-249	288.6-337.4		246-289	333.3-391.6

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PARTS BREAKDOWN / NOMENCLATURE DES PIÈCES
Subframe / Sous-châssis



PARTS LIST / LISTE DES PIÈCES

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
1	Pivot support	Support de pivot	1	102355
2	Subframe	Sous-châssis	1	102362
3	V-Belt , B-91	Courroie en V , B-91	1	102842
4	V-Belt , MXV5-890	Courroie en V , MXV5-890	1	102473
5	V-Belt , B-90	Courroie en V , B-90	1	102957
6	Hair pin 4 mm	Goupille a ressort 4mm	2	102054
7	Hex. bolt 5/16" n.c. x 3/4"	Boulon hex. 5/16" n.c. x 3/4"	2	O/L
8	Hex. bolt 3/8" n.c. x 2 1/2"	Boulon hex 3/8" n.c. x 2 1/2"	1	O/L
9	Hex. bolt 1/2" n.c. x 1 3/4"	Boulon hex. 1/2" n.c. x 1 3/4"	2	O/L
10	Flat washer 9/16" hole	Rondelle plate 9/16" trou	2	O/L
11	Lock washer 1/2"	Rondelle de blocage 1/2"	2	O/L
12	Hex. nut 1/2" n.c.	Écrou hex. 1/2" n.c.	2	O/L
13	Left spring lock	Ressort de barrure gauche	1	102208
14	Right spring lock	Ressort de barrure droit	1	102209
15	Handgrip	Poignée	2	102248
16	Sleeve	Douille	2	102356
17	Hex. bolt 5/16" n.c. x 1 1/4"	Boulon hex. 5/16" n.c. x 1 1/4"	2	O/L
18	Handle support	Support de manivelle	1	102357
19	Spring	Ressort	1	102304
20	Lift arm	Bras de relevage	1	102358
21	Flange nut 5/16" n.c.	Écrou à bride 5/16" n.c.	4	O/L
22	Spring bracket	Fixation du ressort	2	102210
23	Flange nut 3/8" n.c.	Écrou à bride 3/8" n.c.	2	O/L
24	Roll pin 3/16" x 3/4"	Goupille roulée 3/16" x 3/4"	1	O/L
25	Idler arm	Bras de tension	1	102360
26	Hand grip	Poignée	1	102062
27	Plastic grommet	Oeillet de plastique	1	102063
28	Hair pin 2.5mm	Goupille à ressort 2.5mm	2	102013
29	Spacer	Entretoise	1	102361
30	Flat pulley	Poulie plate	1	102300
31	V Pulley	Poulie en "V"	1	102086
32	Idler arm	Bras de poulie	1	102314
33	Sleeve	Douille	1	102322
34	Hex. bolt 3/8" n.c. x 2"	Boulon hex. 3/8" n.c. x 2"	1	O/L
35	Flat washer 7/16" hole	Rondelle plate 7/16" trou	4	O/L
36	Flat washer 11/16" hole	Rondelle plate 11/16" trou	1	O/L

O/L = Obtain locally/obtenir localement