

For use with the following starting serial numbers:

Model	Serial Number
Brown 415	5C4000
Brown 416	6C4000
Brown 417	7C4000

410 Series Rotary Cutter

ATTENTION:

ALL WARRANTY WORK MUST BE APPROVED
BY BROWN MFG. CORP.

BEFORE WORK BEGINS



Owner / Operator Manual



HEAVY DUTY SINCE 1944

6001 E. Hwy 27 - Ozark, AL 36360
334.795.6603 - Fax: 334.795.3029

www.brownmfgcorp.com

⚠️ WARNING



Before operating your machine, stop and read this owners manual. Do not attempt to operate the unit until you fully understand the material covered in this manual. Without the knowledge contained in this manual, injury or death can result.

Copyright Information

Copyright ©2000 Brown Manufacturing Corporation, Ozark, Alabama. All photos and illustrations are property of Brown Manufacturing Corporation. This publication may be freely reproduced, either in whole or in part, provided that the content herein is not altered. We encourage you to make copies of this manual and to distribute it to every operator of the machine. Additional copies are also available from Brown Manufacturing Corporation or via our web site at www.brownmfgcorp.com.

Cover

Illustrated: Model 416 rotary cutter.

Disclaimer

Due to engineering improvements and revision of product specifications, the information contained in this manual is subject to change without notice.

Contents

Warranty	4
Registration	6
Equipment Safety	9
Assembly.....	18
Operation.....	20
Maintenance	22
Troubleshooting	28
Specifications	29
Replacement Parts.....	30

BROWN MANUFACTURING CORP.

Limited Warranty

1. LIMITED WARRANTIES

- 1.01. . Brown Manufacturing Corp. warrants for one year from the purchase date to the original non-commercial, governmental, or municipal purchaser (“Purchaser”) and warrants for ninety (90) days to the original commercial or industrial purchaser (“Purchaser”) that the goods purchased are free from defects in material or workmanship.
- 1.02. Manufacturer will replace for the Purchaser any part or parts found, upon examination at its factory, to be defective under normal use and service due to defects in material or workmanship.
- 1.03. This limited warranty does not apply to any part of the goods which has been subjected to improper or abnormal use, negligence, alteration, modification, or accident, damaged due to lack of maintenance or use of wrong oil or expendable items such as blades, shields, guards, or tires except as specifically found in your Operator’s Manual.
- 1.04. Except herein, no employee, agent, Dealer, or other person is authorized to give warranties of any nature on behalf of the Manufacturer.

2. REMEDIES AND PROCEDURES

- 2.01. This limited warranty is not effective unless the Purchaser returns the Registration and Warranty Form to Manufacturer within 30 days of purchase.
- 2.02. Purchaser claims must be made in writing to the Authorized Dealer (“Dealer”) from whom Purchaser purchased the goods or an approved Authorized Dealer (“Dealer”) within 30 days after Purchaser learns of the facts on which the claim is based.
- 2.03. Purchaser is responsible for returning the goods in question to the Dealer.
- 2.04. If after examining the goods and/or parts in question, Manufacturer finds them to be defective under normal use and service due to defects in material or workmanship, Manufacturer will:
 - (a) Repair or replace the defective goods or part(s) or
 - (b) Reimburse Purchaser for the cost of the part(s) and reasonable labor charges (as determined by Manufacturer) if Purchaser paid for the repair and/or replacement prior to the final determination of applicability of the warranty by Manufacturer. (The choice of remedy shall belong to Manufacturer).
- 2.05. Purchaser is responsible for any labor charges exceeding a reasonable amount as determined by Manufacturer and for returning the goods to the Dealer, whether or not the claim is approved. Purchaser is responsible for the transportation cost for the goods or part(s) from the Dealer to the factory.

3. LIMITATION OF LIABILITY

- 3.01. . MANUFACTURER DISCLAIMS ANY EXPRESS (EXCEPT AS SET FORTH HEREIN) AND IMPLIED WARRANTIES FOR A PARTICULAR PURPOSE.
- 3.02. MANUFACTURER MAKES NO WARRANTY AS TO THE DESIGN, CAPABILITY, CAPACITY, OR SUSTAINABILITY FOR USE OF THE GOODS.
- 3.03. EXCEPT AS PROVIDED HEREIN, MANUFACTURER SHALL HAVE NO LIABILITY OR RESPONSIBILITY TO PURCHASER OR ANY OTHER PERSON OR ENTITY WITH RESPECT TO ANY LIABILITY, LOSS, OR DAMAGE CAUSED OR ALLEGED TO BE CAUSED DIRECTLY OR INDIRECTLY BY THE GOODS INCLUDING, BUT NOT LIMITED TO, ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES RESULTING FROM THE USE OR OPERATION OF THE GOODS OR ANY BREACH OF THIS WARRANTY. NOT WITHSTANDING THE ABOVE LIMITATIONS AND WARRANTIES, MANUFACTURER’S LIABILITY HEREUNDER FOR DAMAGES INCURRED BY PURCHASER OR OTHERS SHALL NOT EXCEED THE PRICE OF THE GOODS.
- 3.04. NO ACTION ARISING OUT OF ANY CLAIMED BREACH OF THIS WARRANTY OR TRANSACTIONS UNDER THIS WARRANTY MAY BE BROUGHT MORE THAN TWO (2) YEARS AFTER THE CAUSE OF ACTION HAS OCCURRED.

4. MISCELLANEOUS

- 4.01. Proper venue for any lawsuits arising from or related to this limited warranty shall be only in Dale County, Alabama.
- 4.02. Manufacturer may waive compliance with any of the terms of this limited warranty, but no waiver of any terms shall be deemed to be a waiver of any other term.
- 4.03. If any provision of this limited warranty shall violate any applicable law and is held to be unenforceable, then the invalidity of such provision shall not invalidate any other provisions herein.
- 4.04. Applicable law may provide rights and benefits to Purchaser in addition to those provided herein.

KEEP FOR YOUR RECORDS (ATTENTION: READ YOUR OPERATOR’S MANUAL)

ATTENTION: Purchaser should fill in the blanks below for his reference when buying repair parts and/or for proper machine identification when applying for warranty.

Brown Model _____ Serial Number _____

Date Purchased _____ Dealer _____

Brown Manufacturing Corp.
 6001 E. Hwy 27
 Ozark, AL 36360
 800-633-8909
 brown@brownmfgcorp.com



TO THE OWNER/OPERATOR/DEALER

In addition to the standard Limited Warranty shown on the facing page, Brown Manufacturing Corp. also provides:

- 1.) ONE-YEAR (12 months) {or 90 days for Commercial/Industrial Users} LIMITED WARRANTY on the DRIVELINE components provided they have been properly maintained† and have not been subjected to abuse or misuse.
- 2.) FIVE-YEAR (60 months) LIMITED WARRANTY* on GEARBOX components provided they have been properly maintained† and have not been subjected to abuse or misuse except as limited below.

* WARRANTY LIMITATIONS - GEARBOX

- A) Warranty is ONE-YEAR (12 months) for Seals (After one year, seals are considered to be WEARING PARTS and replacement is user's responsibility).
- B) User's Gearboxes may be rebuilt by Brown Manufacturing Corp. or replaced by new or rebuilt Gearboxes at the option of Brown Manufacturing Corp.

† NOTE — "properly maintained" specifically includes, but is not limited to:

- A) Running Gearboxes with the proper amount of the correct lubricant.
- B) Adjusting Slip Clutches correctly to provide protection for Driveline and Gearbox Components.

To keep your implement running efficiently and safely read your manual thoroughly and follow these directions and the Safety Messages in this Manual. The Table of Contents clearly identifies each section where you can easily find the information you need.

The OCCUPATIONAL SAFETY AND HEALTH ACT (1928.51 Subpart C) makes these minimum safety requirements of tractor operators:

REQUIRED OF THE OWNER:

1. Provide a Roll-Over-Protective Structure that meets the requirements of this Standard, and
2. Provide Seat belts that meet the requirements of this paragraph of this Standard and SAE J4C; and
3. Ensure that each employee uses such Seat belt while the tractor is moving; and
4. Ensure that each employee tightens the Seat belt sufficiently to confine the employee to the protected provided by ROPS.

REQUIRED OF THE OPERATOR:

1. Securely fasten seat belt if the tractor has a ROPS.
2. Where possible, avoid operating the tractor near ditches, embankments, and holes.
3. Reduce speed when turning, crossing slopes, and on rough, slick, or muddy surfaces.
4. Stay off slopes too steep for safe operation.
5. Watch where you are going — especially at row ends, on roads, and around trees.
6. Do not permit others to ride.
7. Operate the tractor smoothly — no jerky turns, starts, or stops.
8. Hitch only to the drawbar and hitch points recommended by the tractor manufacturer.
9. When the tractor is stopped, set brakes securely and use park lock, if available.

Please complete the form below and mail to: Brown Mfg. Corp. - 6001 E. Hwy. 27 - Ozark, AL 36360

6 BROWN MANUFACTURING CORP. ® WARRANTY REGISTRATION INFORMATION

Brown Model _____ Serial No. _____ Purchase Date (mm/dd/yy) ___/___/___

Purchaser Last Name _____ First Name _____ M.I. _____

Street & No., RFD,
Box, &/or Apt. No. _____

City: _____ State or Province: _____ Zip _____

Dealer: _____

City: _____ State or Province _____ Zip _____

. I have informed the Purchaser of this product of Warranty terms, provisions, and procedures that are applicable, reviewed the contents of the Operator’s Manual including safety equipment, safe operation, and maintenance, reviewed the Safety Signs on implement (and tractor if possible), and Purchaser’s responsibility to train his operators in safe operation.

. IMPLEMENTS: I have explained that Deflectors, Chain Guards, or Solid Skirts must be maintained in good repair and installed except in areas where persons, vehicles, livestock, or other property will not be endangered by thrown objects and where such safety equipment would prevent the cutter’s reasonable performance of its assigned task.

. DRIVELINES: I have made certain that all driveline, gearbox, and other shields are in good repair and fastened securely in place to prevent injuries from entanglement or thrown objects.

Dealer’s Signature: _____ Date: _____

I have been instructed on the paragraphs above, received and have been instructed on the contents of the Operator’s Manual including safety signs, safety equipment, safe operation, maintenance, and the potential hazards of unauthorized alterations or modifications of the product. I have been informed of the warranty provisions and know that the warranty is not in effect until this form is received by Brown Manufacturing Corp.

I understand the Implement Guarding statements above and the potential hazards of operating without such guards. I understand that the operator is responsible for the safety of others in the area. I have examined the product and accept it as being complete and in satisfactory condition with all required guards.

CUSTOMER COPY

Purchaser’s Signature: _____ Date: _____

**PRE-DELIVERY SERVICE
CHECK AND ADJUST OR LUBRICATE AS REQUIRED**

See Operator’s Manual for Details

Inspection performed — Warranty and Safety Procedures Explained — Installation Complete

<input type="checkbox"/> Gearbox (Oil Levels)	<input type="checkbox"/> Drivelines (Proper Length and Lubrication)
<input type="checkbox"/> Wheel Hubs (Lubricate)	<input type="checkbox"/> Gearbox Vent Plugs (Location and Operation)
<input type="checkbox"/> Wheel Hub Seals	<input type="checkbox"/> Tail Wheel Arm(s) (Height Adjustment)
<input type="checkbox"/> Wheel Bearing (Check Grease and Preload)	<input type="checkbox"/> Deflectors Front and Rear
<input type="checkbox"/> Shredding Attachments	<input type="checkbox"/> Correct Blade Rotation Direction
<input type="checkbox"/> Axle Arms and Beams	<input type="checkbox"/> All Bolts — Pins and Nuts (Proper Torque)
<input type="checkbox"/> A-Frame Pivot and Links	<input type="checkbox"/> Cutting Height (Adjust Front to Rear)
<input type="checkbox"/> Protective Shields (Operation and Installation)	<input type="checkbox"/> Driveline Clutch (Torque Limiter) (Adjust and Run In)
<input type="checkbox"/> Safety Decals (Installed)	<input type="checkbox"/> Operator’s Manual (Supplied)
<input type="checkbox"/> Tractor PTO Shield (Installed)	<input type="checkbox"/> S.M.V. Emblem (Installed if Needed)

Purchaser’s Signature _____ Date _____ Dealer’s Signature _____ Date _____

Please complete the form below and mail to: Brown Mfg. Corp. - 6001 E. Hwy. 27 - Ozark, AL 36360
BROWN MANUFACTURING CORP. ® WARRANTY REGISTRATION INFORMATION

Brown Model _____ Serial No. _____ Purchase Date (mm/dd/yy) ____/____/____

Purchaser Last Name _____ First Name _____ M.I. _____

Street & No., RFD,
Box, &/or Apt. No. _____

City: _____ State or Province: _____ Zip _____

Dealer: _____

City: _____ State or Province _____ Zip _____

. I have informed the Purchaser of this product of Warranty terms, provisions, and procedures that are applicable, reviewed the contents of the Operator’s Manual including safety equipment, safe operation, and maintenance, reviewed the Safety Signs on implement (and tractor if possible), and Purchaser’s responsibility to train his operators in safe operation.

. IMPLEMENTS: I have explained that Deflectors, Chain Guards, or Solid Skirts must be maintained in good repair and installed except in areas where persons, vehicles, livestock, or other property will not be endangered by thrown objects and where such safety equipment would prevent the cutter’s reasonable performance of its assigned task.

. DRIVELINES: I have made certain that all driveline, gearbox, and other shields are in good repair and fastened securely in place to prevent injuries from entanglement or thrown objects.

Dealer’s Signature: _____ Date: _____

I have been instructed on the paragraphs above, received and have been instructed on the contents of the Operator’s Manual including safety signs, safety equipment, safe operation, maintenance, and the potential hazards of unauthorized alterations or modifications of the product. I have been informed of the warranty provisions and know that the warranty is not in effect until this form is received by Brown Manufacturing Corp.

I understand the Implement Guarding statements above and the potential hazards of operating without such guards. I understand that the operator is responsible for the safety of others in the area. I have examined the product and accept it as being complete and in satisfactory condition with all required guards.

CUSTOMER COPY

Purchaser’s Signature: _____ Date: _____

**PRE-DELIVERY SERVICE
CHECK AND ADJUST OR LUBRICATE AS REQUIRED**

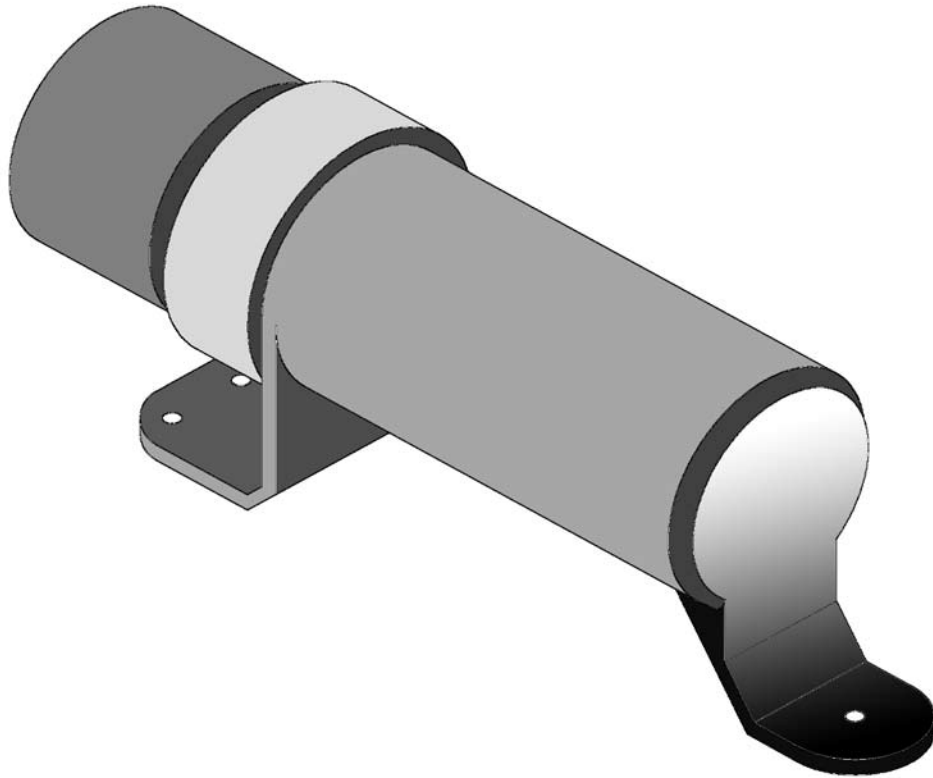
See Operator’s Manual for Details

Inspection performed — Warranty and Safety Procedures Explained — Installation Complete

<input type="checkbox"/> Gearbox (Oil Levels)	<input type="checkbox"/> Drivelines (Proper Length and Lubrication)
<input type="checkbox"/> Wheel Hubs (Lubricate)	<input type="checkbox"/> Gearbox Vent Plugs (Location and Operation)
<input type="checkbox"/> Wheel Hub Seals	<input type="checkbox"/> Tail Wheel Arm(s) (Height Adjustment)
<input type="checkbox"/> Wheel Bearing (Check Grease and Preload)	<input type="checkbox"/> Deflectors Front and Rear
<input type="checkbox"/> Shredding Attachments	<input type="checkbox"/> Correct Blade Rotation Direction
<input type="checkbox"/> Axle Arms and Beams	<input type="checkbox"/> All Bolts — Pins and Nuts (Proper Torque)
<input type="checkbox"/> A-Frame Pivot and Links	<input type="checkbox"/> Cutting Height (Adjust Front to Rear)
<input type="checkbox"/> Protective Shields (Operation and Installation)	<input type="checkbox"/> Driveline Clutch (Torque Limiter) (Adjust and Run In)
<input type="checkbox"/> Safety Decals (Installed)	<input type="checkbox"/> Operator’s Manual (Supplied)
<input type="checkbox"/> Tractor PTO Shield (Installed)	<input type="checkbox"/> S.M.V. Emblem (Installed if Needed)

Purchaser’s Signature _____ Date _____ Dealer’s Signature _____ Date _____

IMPORTANT NOTICE:
OWNER'S MANUAL STORAGE CONTAINER





- * Brown Manufacturing provides an Owner's Manual storage container on all equipment.
- * This holder is mounted in a convenient location and provides the owner with the proper safety and operation information.
- * Two (2) copies are provided with each unit.
- * One copy is for the owner to have at office for review when not operating the equipment.
- * Second copy is to stay with the unit at all times. This will provide the operator the information needed for safe and proper operation of the unit.
- * If the Owner's Manual becomes lost or damaged, contact Brown Mfg. or your local Brown dealer for free replacement, or it can be downloaded and printed from our web site www.brownmfgcorp.com.

Equipment Safety

Warning: Read this manual before operation.

Operators of the equipment must read and understand this manual. Failure to read this manual and follow these safety and operating instructions could result in serious bodily injury or even death.

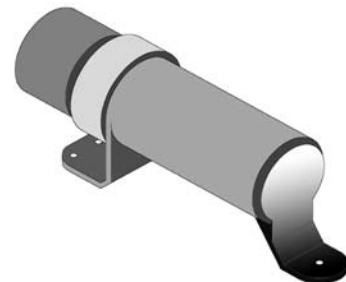
 WARNING	
	<p>Before operating your machine, stop and read this owners manual. Do not attempt to operate the unit until you fully understand the material covered in this manual. Without the knowledge contained in this manual, injury or death can result.</p>

Each operator of the equipment should review this manual every six (6) months. You are encouraged to duplicate this manual and to distribute it to each operator of the equipment for their training and reference. Additional copies are available from Brown Manufacturing Corporation.

IMPORTANT NOTICE:

OWNER'S MANUAL STORAGE CONTAINER

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- * This holder is mounted in a convenient location and provides the owner with the proper safety and operation information.
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- * Second copy is to stay with the unit at all times. This will provide the operator the information needed for safe and proper operation of the unit.
- * If the Owner's Manual becomes lost or damaged, contact Brown Mfg. at 800-633-8909 or your local Brown dealer for free replacement, or can be downloaded and printed from our web site www.brownmfgcorp.com.



Equipment Safety

Recognize safety information

This is the safety alert symbol. When you see this symbol on your equipment or in this manual, be alert to the potential for personal injury or injury to others.



Understand signal words

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

CAUTION

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



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



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



Follow safety instructions

- Read owner/operator manual.
- Replace missing or damaged safety decals.
- Safety decals and this manual must be considered a permanent part of your equipment.
- Should ownership of the equipment be transferred, this manual must also be transferred.
- Unauthorized modifications to the equipment are not recommended. This could impair the function, safety, and life of the machine.
- For any part of this manual that you do not understand, contact your dealer or Brown Manufacturing Corporation at (800) 633-8909.
- All implements with moving parts are potentially dangerous. Due to this fact, there is no substitute for a safe, knowledgeable operator. It is important that all persons operating this equipment read, understand, and follow the instructions provided in this manual.

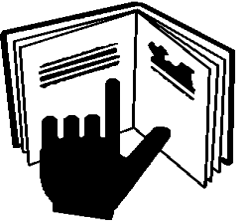
DO NOT OPERATE THIS UNIT IF YOU ARE UNDER THE INFLUENCE OF ALCOHOL, ILLEGAL DRUGS, OR ANY PRESCRIPTION OR OVER THE COUNTER MEDICATIONS THAT COULD CAUSE DROWSINESS, DIZZINESS, DISORIENTATION AND/OR IMPAIR YOUR ABILITY IN ANY WAY TO SAFELY OPERATE THE UNIT.

DO NOT OPERATE THIS UNIT IF YOU SUFFER FROM ANY PHYSICAL CONDITION OR DISABILITY THAT WOULD IMPAIR YOUR ABILITY TO OPERATE IT SAFELY.


Equipment Safety

Safety Decals

The following safety decals should be attached to the equipment at all times. Should any decals become damaged or lost, it is the responsibility of the owner to replace it. Additional decals may be obtained from the dealer or Brown Manufacturing Corporation.

! WARNING		! ADVERTENCIA	
	Antes de probar la unidad por primera vez deben remitirse a las instrucciones contenidas en el manual.		
	! ADVERTISSEMENT		
Read and understand owner's manual before operating unit.	S'assurer de bien comprendre toutes les consignes du manuel de propriétaire avant d'utiliser la unité.		

Part No.: SD-010, All models.

! DANGER	
	THROWN OBJECT HAZARD
	<p>To prevent serious injury or death from thrown objects:</p> <ul style="list-style-type: none"> • Stay clear when blade is turning. • Operate only with all guards installed and in good condition. • Stop operation if bystanders come within 300 feet.

Part No.: SD-001A, All models.

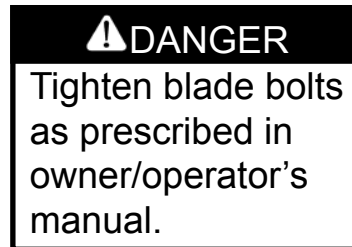
! WARNING
<p>To prevent serious injury or death:</p> <ul style="list-style-type: none"> • Operate only at 540 RPM PTO. • Keep guards and shields in place.

SD-007A, Standard models*.

*All Brown 410 Series rotary cutters are equipped for 540 RPM PTOs as standard. Equipping for 1000 RPM PTOs is an option, however; in such a case, use safety decal SD-008A.

Equipment Safety

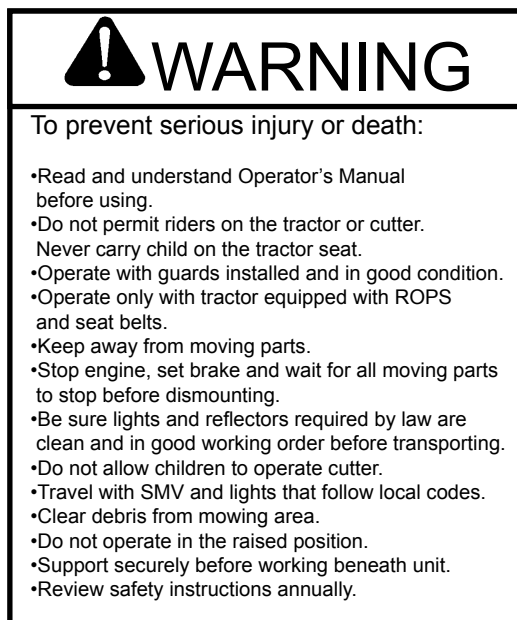
Safety Decals (continued)



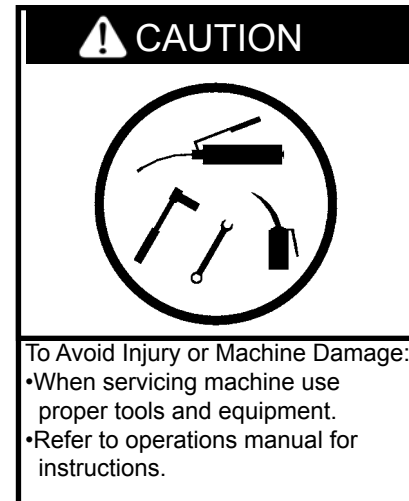
Part No.: SD-002, All models.



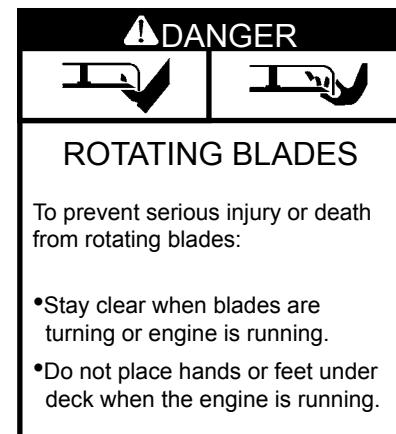
Part No.: DC-3-5-018, All models.



Part No.: SD-009A, All models.



Part No.: SD-SW2, All models.



Part No.: SD-005A, All models.

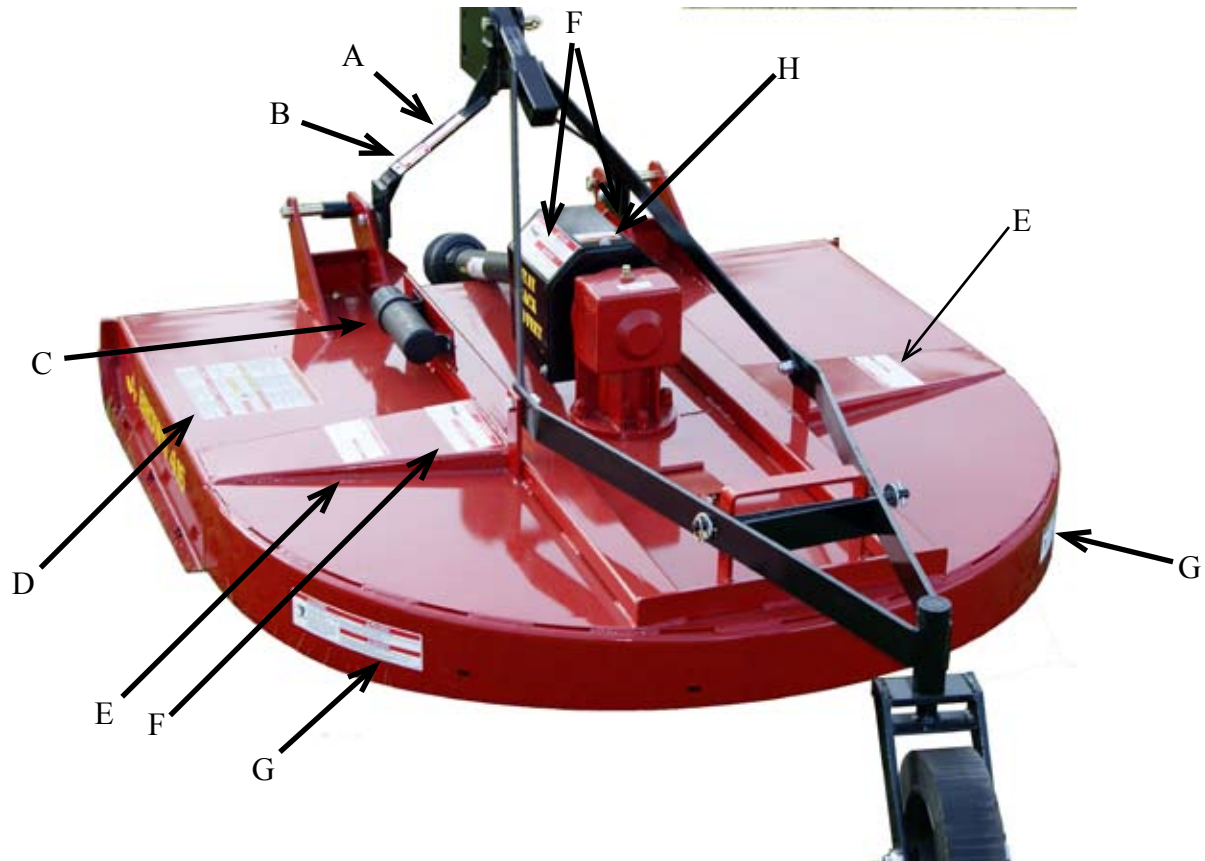


Part No.: SD-006A, All models.

Equipment Safety

Safety Decals (*continued*)

Safety decals must be positioned as illustrated below. Use this diagram to correctly identify missing, damaged, or illegible decals for replacement.



Ref. No.	Part No.	Description
A	SD-007A	Safety Decal: Operate at 540 RPM PTO.
B	SD-020	Safety Decal: Tighten blade bolts.
C	MH-01	Safety Manual Holder
D	SDL-020	Safety Decal: Multiple decals on one sheet - includes SD-101, SD002, SD-009A and SD-SW2
E	SD-005A	Safety Decal: Rotating blades. (2 req.)
F	SD-006A	Safety Decal: Rotating driveline. (3 req.)
G	SD-001A	Safety Decal: Thrown object hazard. (2 req.)
H	237-0009	Safety Decal: No step.
Not pictured	DC-3-5-018	Safety Decal: Shield missing (placed on drive shaft, under shields).
Not pictured	SD-400	Complete safety decal set

Equipment Safety

Warning! Transport with care.

Before transporting to a new location, make certain that the slow-moving vehicle (SMV) emblem is installed and is clearly visible. Use flashing lights and follow local traffic regulations.

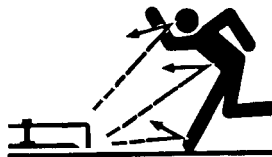


WARNING

Transport with care. Use slow-moving vehicle emblem and flashing light. Follow local traffic regulations.

Danger! Protect bystanders, clear work area of debris.

Do not operate the cutter near people. Debris can be thrown hundreds of feet. Clear work area of foreign objects such as wire, glass, and other debris. Debris thrown by the cutter can cause serious injury or death.



DANGER

Do not operate cutter near bystanders. Clear work area of debris before operating.

Warning! Parking and dismounting.

The rotating parts of this cutter continue to rotate even after the PTO has been disengaged. The operator should remain seated until rotation has stopped. He should then set the brake, turn off the engine, and remove the key. See tractor manual for proper parking procedure.



WARNING

Wait for all rotation to stop before dismounting tractor.

Caution! Avoid fires.

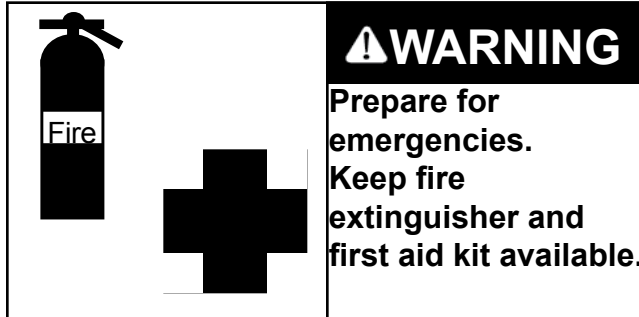
Keep the machine clean of debris, trash, and any other flammable material.



CAUTION

Keep machine clean of debris. Flammable debris on machine poses fire hazard.

Equipment Safety



⚠️ Warning! Prepare for emergencies.

Keep fire extinguisher and first aid kit available. Inspect fire extinguisher and check for charge daily. Check first aid kit for expired contents and keep stocked.



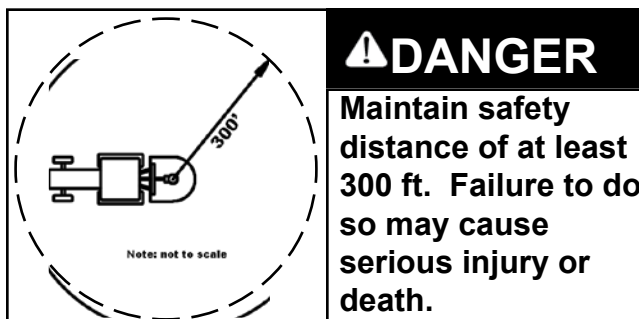
⚠️ Warning! Check equipment before operating.

Tighten all nuts and bolts before operating. Make certain that equipment is lowered to ground before attempting to make adjustments or perform maintenance. Replace or repair any safety device, bolts, etc., if damaged or worn.



⚠️ Danger! Stay clear of rotating blades.

The cutter is designed to cut grass and brush up to two inches in diameter. **Keep hands and feet from under cutter deck!**



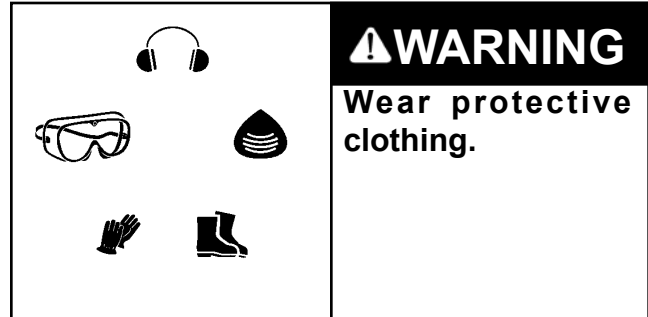
⚠️ Danger! Maintain safety distance.

The cutter creates a serious discharge hazard. Always maintain a safety distance of at least 300 ft. **Never operate cutter with bystanders present!**

Equipment Safety

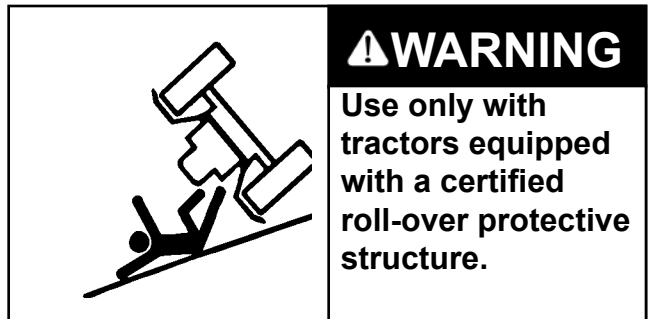
Warning! Wear protective clothing.

Wear close-fitting clothing and other protective devices appropriate for the job.



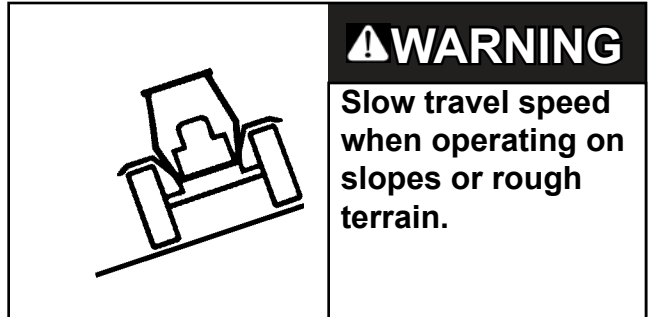
Warning! Roll-over protection.

Do not operate the cutter on any tractor not equipped with a certified roll-over protective structure (ROPS).



Warning! Slopes and rough terrain.

When operating on slopes or rough terrain, decrease travel speed. Do not operate in an area where the tractor could roll over. **Be sure to fasten safety belt when operating tractor!**



Danger! Tighten blade bolts.

Blade bolts will stretch with use and must be tightened. Follow maintenance instructions in this manual (see page 23). **If the cutter is operated with loose blade bolts, blades and blade carrier will be damaged. Operation with loose blade bolts, damaged blades or blade carrier will lead to blade ejection and will cause serious injury or death.**



Equipment Safety



⚠DANGER
Riders can be injured or killed. Keep riders off machine.

⚠Danger! Keep riders off machine.
Riders can be seriously injured or killed by entanglement or by falling.



⚠DANGER
Stay clear of rotating drivelines. Keep driveline shields in place.

⚠Danger! Stay clear of rotating drivelines.
Entanglement in driveline can cause serious injury or death. Keep driveline shields in place at all times during operation. Driveline must turn freely inside shields. Driveline shields must be chained to prevent rotation.



⚠WARNING
Exercise caution while working under cutter deck. Failure to heed warnings may lead to serious injury or death.

⚠Warning! Hazardous service conditions.
While working under the cutter deck, be aware of safety hazards. Follow safety precautions specified in this manual (see page 22). Failure to exercise caution may lead to serious injury or death.

DO NOT OPERATE THIS UNIT IF YOU ARE UNDER THE INFLUENCE OF ALCOHOL, ILLEGAL DRUGS, OR ANY PRESCRIPTION OR OVER THE COUNTER MEDICATIONS THAT COULD CAUSE DROWSINESS, DIZZINESS, DISORIENTATION AND/OR IMPAIR YOUR ABILITY IN ANY WAY TO SAFELY OPERATE THE UNIT.

DO NOT OPERATE THIS UNIT IF YOU SUFFER FROM ANY PHYSICAL CONDITON OR DISABILITY THAT WOULD IMPAIR YOUR ABILITY TO OPERATE IT SAFELY.

Assembly

1. On Model 417 move tailwheel arm back from its shipping position toward the height adjustment brackets. Install tailwheel stem into fork holder tube, placing collar over stem and inserting roll key through collar and stem. Install height adjustment pin through arm and bracket. *Assembly for models 415D and 416D and 417 is almost identical to that of the 415 and 416; the 415D, 416D and the 417 have twin tail wheels and require this step to be completed twice.*
2. Raise A-frame (A) to vertical position. Remove pin (B) from Mast Stop at the top of A-frame brace and mount through A-frame brace and install pin in top of A-frame.
3. Raise the cutter with a tractor and properly adjust the tailwheel height. Next, reinstall lynch pins into height adjustment pin.
Note: Proper cutting height is covered on page 20.
4. Tighten all bolts securely.



Assembly

5. Separate the male and female halves of the drive shaft. Apply heavy grease to the telescoping portion of the male drive shaft; recouple the drive shaft.
6. Mount Bell shield bracket onto face plate of gear box with bolts provided.
7. Remove both bolts from the clutch hub. Slide the hub onto the input shaft of the gearbox. Align the groove on the input shaft with the bolt holes on the hub. Reinstall the lock bolts and tighten securely. **Re-torque hub bolts on all models every hour for the first eight hours of use. Failure to do so will result in decreased life of the clutch hub and gearbox shaft splines.**
8. Mount Bell shield onto Bell shield bracket, covering the slip clutch. Using bolts provided.



Warning! The driveline shield and bell shield must be kept in good operating condition. Failure to maintain safety shields can result in injury or death.

9. Check the drive shaft for proper length:
 - a. Hitch the cutter to the tractor.
 - b. Lift the cutter to the tractor's maximum lift position.
 - c. Measure the distance from the PTO of the tractor to the input shaft of the cutter's gear box.
 - d. With the drive shaft compressed (pushed together fully), measure the overall length of the shaft.
 - e. If the length of the compressed drive shaft is greater than the length between the PTO and input shaft, then the drive shaft must be shortened to the latter length. **Please note that equal amounts must be removed from each section of the drive shaft.**
10. **Locate vent plug in owners manual storage tube. Remove shipping plug from top center of gearbox. Install vent plug into top port. Failure to install vent plug can and will cause seal failure.**

FOR ANY QUESTION ABOUT PROPER ASSEMBLY
PLEASE CONTACT YOUR LOCAL DEALER OR CALL
BROWN MFG. AT 1-800-633-8909

Operation

Before hitching cutter to your tractor, make sure all safety devices are installed on both the cutter and the tractor.



Please follow all safety instructions and procedures.

Attach Equipment to Tractor.

Be sure the tractor is equipped with the correct category hitch pins, top link, etc. Be extremely careful when positioning tractor to hitch to the equipment.



Caution! Never allow anyone between the tractor and the equipment during the hitching process.

Be certain that the cutter has been lubricated properly and check oil level in gear box prior to connecting driveline to tractor, the oil should be at the lower edge of the side port of the gearbox.

Attach the driveline to the tractor. **When attaching driveline to PTO shaft, be certain that the TRACTOR ENGINE AND PTO OUTPUT SHAFT HAVE STOPPED - PARK BRAKES ARE SET BEFORE DRIVE SHAFT IS MOUNTED. Make sure quick-disconnect pin is properly seated in the groove of the tractor's PTO shaft.**



Warning! A loose driveline can disconnect and cause personal injury property damage or death.

Adjust Cutting Height.



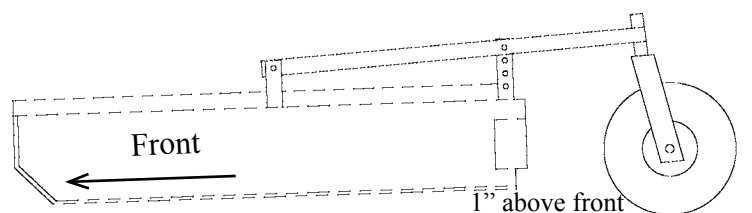
Warning! Be certain that tractor engine is stopped, park brakes are set, key is removed, and all rotation of the cutter has ceased before dismounting to making adjustments.



Caution! Avoid very low cutting heights. Striking the ground with blades causes a damaging shock that can damage all the cutter components and the tractor.

Using the tailwheel adjustment and the tractor's lift arms, set the cutter to the desired height; the cutter is designed to operate with a cutting height range between 2" and 12". Note that, on level ground, the front of the cutter should be 1" below the rear (see illustration). Set the tractor's lift stop at the required position to maintain a uniform cut. The mast stop should be in a centered position, note Figure "A".

Figure "A"



Operation

Starting Cutter

Power for operating the cutter is supplied from the tractor PTO. Refer to your tractor manual for instructions on engaging and disengaging the PTO.

Warning! Do not operate this cutter unless the tractor has a live, or independent, PTO. The momentum created by the blade carrier can push the tractor forward unexpectedly.

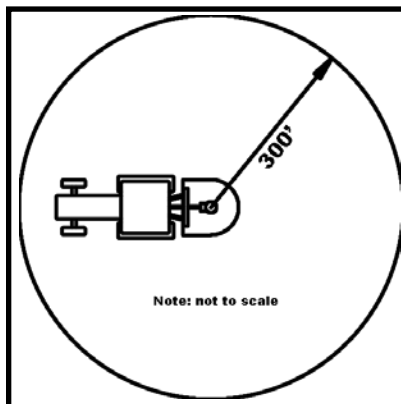
Warning! Operate cutter only at the specified PTO RPM. Brown 410 Series cutters are designed to operate at 540 RPM; however, a 1000 RPM design is an option.

Operating Speed

Proper operating speed for equipment will depend upon the height, density, and type of the material to be cut. Regardless of chosen ground speed, always operate the PTO at the recommended RPM when cutting.

General Operation

Warning! Avoid personal injury or death. Walk the area before operation begins. Remove or flag all rocks and any other hazardous debris from site.



Observe the following guidelines when operating the cutter:

- Do not back the cutter into material, as this may bend the cutter deck.
- Never lower the cutter onto material.
- Avoid tight turns near trees or stationary objects. The deck may be damaged by side impact.

Remember: The safe operation of this equipment is the responsibility of the operator. The operator should be familiar with both the tractor and the equipment. The operator must read and understand all applicable operator manuals and follow all safety practices.

Warning! Avoid personal injury or death. Never operate machine around bystanders. Always maintain a distance of at least 300 feet.

DO NOT OPERATE THIS UNIT IF YOU ARE UNDER THE INFLUENCE OF ALCOHOL, ILLEGAL DRUGS, OR ANY PRESCRIPTION OR OVER THE COUNTER MEDICATIONS THAT COULD CAUSE DROWSINESS, DIZZINESS, DISORIENTATION AND/OR IMPAIR YOUR ABILITY IN ANY WAY TO SAFELY OPERATE THE UNIT.


DO NOT OPERATE THIS UNIT IF YOU SUFFER FROM ANY PHYSICAL CONDITION OR DISABILITY THAT WOULD IMPAIR YOUR ABILITY TO OPERATE IT SAFELY.

Maintenance


Safety When Working Under Cutter Deck

Never work under the cutter deck until:


- The cutter is sufficiently braced and supported
- The tractor engine is off, brake is set, and key is removed
- PTO has been disengaged
- Driveline is disconnected
- Rear tractor tires have been secured with tire chocks
- The cutter has cooled

 **Danger!** Failure to follow these safety guidelines will result in serious injury or death.


Initial Maintenance

 **Warning!** These maintenance practices must be followed every hour for the first eight hours of operation; the practices must also be performed every hour for the first eight hours following the removal/replacement of any of the components named in this section. Check daily thereafter.


1. Tighten the clutch bolts holding the slip clutch to the input shaft of the gearbox.

 **Caution!** Failure to tighten the keeper bolts will shorten the life of the slip clutch hub.


2. Check for debris deposited between the blade bar and the blades. Debris found jamming or locking the blades must be removed to insure that the blade may pivot freely on the blade bolt.

 **Danger!** Failure to maintain freely pivoting blades will cause severe vibration or blade breakage which will result in injury or death. Blades that are bent or deformed may not pivot and must be replaced.

3. Tighten blade bolts and blade bar nut. See Tightening Blade Bolt section on Page 23.

 **Warning!** Failure to tighten blade bolts and blade bar nut can cause blade bolts, blades, or output shafts to break, which can result in injury or death.


4. Check for debris deposited around the output shaft or tailwheel axle.
5. Tighten gearbox mounting bolts.


 **Caution!** Failure to keep the gearbox bolts tightened can cause the blades to strike the bottom of the cutter deck or break the output shaft of the gearbox.

Maintenance

Daily Maintenance


1. Repeat all steps listed under the “Initial Maintenance” section on a daily basis after the initial maintenance has been performed.
2. Lubricate the driveshaft tubes and U-joint.
3. Lubricate the tailwheel hub and tailwheel fork pivot tube.
4. Check and maintain the proper amount of lubricant in the gearbox. **The recommended lubricant for the gearbox is cotton picker spindle lubricant (part # 235-0031).**
5. Check the blades; sharpen or replace as necessary.

 **Warning!** Use only blades and blade bolts supplied by Brown Manufacturing Corporation. Failure to do so will void all warranty and can cause injury or death. Only Brown has access to the engineering and test data necessary to produce a high-quality blade that meets all safety and quality requirements.


 **Warning!** If the blades must be sharpened, follow the proper safety procedures listed on page 22 of this manual for working under the cutter deck.


Tightening Blade Bolts

Tighten blade bolts each hour for the first eight hours of use; tighten daily thereafter. **Repeat hourly inspections each time the blades are removed/replaced.**

 **Danger!** Blade bolts will stretch with use and must be retightened. Allowing blade bolts to run loose will damage bottom of blade carrier and will lead to jammed blades. Loose or jammed blades can and will cause serious injury or death.

1. Disengage PTO; be certain that all rotation has stopped.
2. Lift cutter high enough to place suitable supports under the cutter deck.
3. Turn tractor engine off; remove key; lock transmission and brakes; chock rear wheels.
4. Disconnect driveline.
5. Use a pipe wrench to hold the blade bolt; torque blade bolt nut using a 1-11/16” 6 point socket to approximately 600 to 700 ft./lbs. Blades must pivot freely after tightening; check for jammed blades.

 **Warning!** Failure to keep blade bolts tight can and will cause: blade breakage; warping of blade bar; ejection of blade from cutter. These hazards can cause serious injury or death.

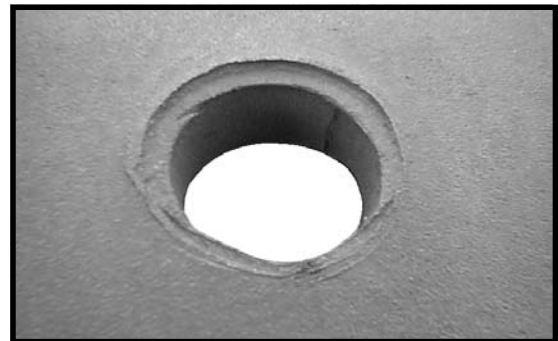
 **Warning!** If blade bolts are allowed to run loose, the obvious danger is for the bolt to come completely loose, allowing the blade, bolt, and nut to be ejected from the cutter.

Maintenance

Tightening Blade Bolts (*continued*)

! Danger! When the bolt is not sufficiently tight, the blade is allowed excess vertical movement when it strikes an object. This situation will cause the blade to break from fatigue and to be ejected from the cutter. While this situation is occurring, the loose blade bolt is also hammering the underside of the blade carrier; the shoulder of the blade bolt beats an indentation around the blade bolt hole into which the bolt shoulder will fit. When this damage occurs, the blade bolt will pull up into the indentation when the bolt is tightened, causing the blade to jam so that it can no longer pivot on the blade bolt. A blade carrier damaged in this manner must be taken out of service immediately. Replace the blade carrier (contact Brown Mfg. Corp. for instructions) and replace the blades and blade bolts before returning the machine to service.

! The described occurrences will cause the blades to break and be ejected. An ejected blade can and will cause serious injury or death.



REMEMBER: Blades must pivot freely and blade bolts must be tight!

Tightening Stump Jumper:

Remove blade bar cotter pin and tighten nut with a 1½” socket. Torque nut to 300 ft./lbs.; continue to torque until cotter pin hole aligns with nut. Install a new cotter pin. **Never loosen nut to align cotter pin hole; always tighten to next alignment slot. When replacing stump jumper check hub for wear, clean thoroughly and apply anti-seize to shaft before assembly.**

Proper Gearbox Lubrication

On level ground, remove the pipe plug from the right side of the gearbox housing. If the oil level is not at that port level, oil must be added. Remove the vent plug from the top of the housing and add the recommended lubricant (cotton picker spindle grease) until the oil level reaches the side port. **Make certain both plugs are replaced and tightened securely before operating.**

THE TEN COMMANDMENTS OF OPERATION

1. **ALWAYS** - Read and understand the owners manual before operating this or any other equipment.
2. **ALWAYS** – Attach this product to a tractor that has suitable safety equipment properly installed .
3. **ALWAYS** – Operate this equipment with all safety equipment properly installed on this equipment.
4. **ALWAYS** – Start the cutting process by inspecting, walking, flagging or removing all foreign material from job site.
5. **ALWAYS** – Do NOT allow riders or bystanders within 300 feet of this unit during operation.
6. **ALWAYS** – Check all bolts, fasteners, fittings and oil levels before operating this equipment.
7. **NEVER** – Allow blades to make contact with rocks or stumps – unit was not designed for this type of operation.
8. **NEVER** – Allow an untrained operator to operate this equipment.
9. **ALWAYS** – Install genuine Brown replacement parts, all other replacement parts will void warranty.
10. **ALWAYS** – REMAIN on tractor seat until blades have stopped turning and all tractor shut down procedures have been completed.

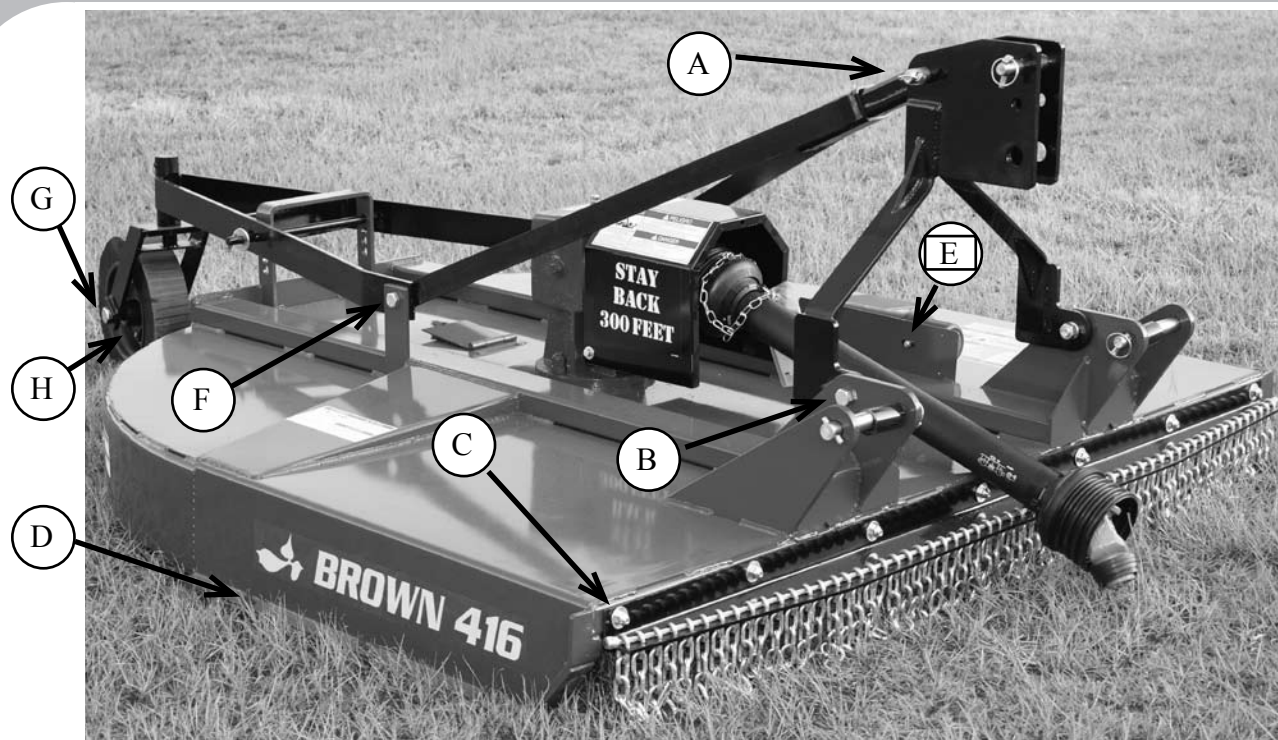
THESE ARE ONLY A FEW OF THE SAFETY PROCEDURES THAT MUST BE FOLLOWED TO INSURE THE SAFE OPERATION OF THIS EQUIPMENT – MANY OTHER SAFETY RELATED POINTS ARE STATED THROUGHOUT THIS MANUAL



WARNING: FAILURE TO FOLLOW THE TEN COMMANDMENTS CAN AND WILL CAUSE SERIOUS INJURY OR DEATH

IF YOU HAVE ANY SAFETY, MAINTENANCE OR OPERATIONAL QUESTIONS – PLEASE CALL BROWN MFG. BEFORE USING THIS EQUIPMENT AT 1-800-633-8909

Bolt List All Models



	Description	Location(s)
A	500-22 Cat II Top Link Pin	A-Frame to A-Frame Mast Stop
B	3/4 X 2" Bolt, LW & Nut	(415 & 416) A-Frame
B	3/4 X 7-1/2" Bolt, LW & Nut	(417) A-Frame
C	1/2 X 3" Bolt & Lock Nut	Front Deflector
D	3/8 X 1-1/4" Plow Bolt, LW & Nut	Wear Slide
E	5/16 X 3/4" Bolt & Lock Nut	Manual Tube
F	3/4 X 2-1/2" Bolt, LW & Nut	(415 & 416) Brace & Tail Wheel
F	3/4 X 5-1/4" Bolt, LW & Nut	(417) Brace and Tail Wheel
G	1 X 8" Bolt & Lock Nut	Axle Bolt - Page 30
H	1/2 X 1" Fine Bolt & Lock Washer	Tire/Wheel to Hub - Page 30
I	1/2 X 2-1/2" Roll Key	Tail Wheel Fork - Collar - Page 30
J	3/4 X 18" Pin w/ Lynch Pin & Flat Washer	(415 & 416) Height Adjustment - Page 30
J	3/4 X 5-1/2" Bolt, LW & Nut	(417) Height Adjustment - Page 30
K	3/4 X 3 1/4" Bolt NF, Nut & Lock Nut & FW	Gear Box
L	3/8 X 3/4" Bolt, Flat & LW	Shield Bracket to Gear Box
M	3/8 X 1" Bolt, Flat & LW	Shield

Troubleshooting

Problem	Possible Cause(s)	Possible Solution(s)
Excessive vibration	<ol style="list-style-type: none"> 1. Loose gearbox bolts 2. Loose blade bar and/or blade bolts 3. Blades are not freely swinging 4. Broken, bent, or warped blades 5. Blade bar not seated properly on shaft 6. Blades not paired by weight 	<ol style="list-style-type: none"> 1. Tighten bolts 2. Tighten blade bar nut or blade bolt nuts 3. Clear blade of obstruction or replace blade carrier (see page 24) 4. Replace set of blades and bolts 5. Remove blade bar; clean hub and shaft; lubricate with anti-sieze, reseal 6. Check blades for equal weight
Excessive clutch slippage	<ol style="list-style-type: none"> 1. Worn clutch linings or plates 2. Oil on lining 3. Glazed friction lining 4. Excessive force on clutch 5. Dull Blades 	<ol style="list-style-type: none"> 1. Repair clutch 2. Replace linings 3. Clean with emery cloth 4. Reduce ground speed, material intake, or tractor size 5. Resharpen and balance or replace
Overheating gear-box	<ol style="list-style-type: none"> 1. Insufficient lubricant level 2. Improper lubricant 3. Debris build-up around gearbox 4. Bearing or gears set improper 	<ol style="list-style-type: none"> 1. Fill to full level 2. Replace with correct lubricant 3. Remove debris 4. Consult dealer
Noisy gearbox	<ol style="list-style-type: none"> 1. Rough gears 2. Worn bearings 3. Insufficient lube level 	<ol style="list-style-type: none"> 1. Run for a short break-in period or replace gears 2. Replace bearing 3. Add lube.
Leaking gearbox	<ol style="list-style-type: none"> 1. Damaged oil seal 2. Bent shaft 3. Oil seal installed incorrectly 4. Oil level too high 5. Shaft rough or pitted in oil seal area 6. Shaft bore worn in casting 7. Damaged gasket 8. Loose bolts 	<ol style="list-style-type: none"> 1. Replace seal 2. Replace seal and shaft 3. Replace seal 4. Drain oil to proper level 5. Replace shaft 6. Replace casting or gearbox 7. Replace gasket 8. Tighten bolts.
Short blade life	<ol style="list-style-type: none"> 1. Cutting too low 2. Cutting in sandy or rocky conditions 3. Inadequate blades 4. Ground speed too fast 	<ol style="list-style-type: none"> 1. Increase cutting height 2. Increase cutting height 3. Replace with Brown blades 4. Slow ground speed
Not cutting clean	<ol style="list-style-type: none"> 1. Dull blades 2. Insufficient PTO speed 3. Cutter not level 4. Ground speed too fast 5. Blades are not freely swinging 6. Low engine RPM 	<ol style="list-style-type: none"> 1. Sharpen and balance or replace blades 2. Use correct PTO speed 3. Adjust cutter 4. Reduce ground speed 5. Clear blade of obstruction 6. Maintain tractor RPM to correct PTO speed

Specifications

Model	Gearbox	Cutting Width	Tailwheels	Driveshaft Size Cat.	Weight	Slip Clutch	Hitch
415	130 HP	60"	1	6	935 lbs.	2-disc	Category I/II
415D	130 HP	60"	1	6	1055 lbs.	2-disc	Category I/II
416	130 HP	72"	1	6	1095 lbs.	2-disc	Category I/II
416D	130 HP	72"	2	6	1155 lbs.	2-disc	Category I/II
417	130 HP	84"	2	6	1385 lbs.	4-disc	Category II

Standard Features

Reinforced round-back deck design - 1/4" rear wall

All welded, 7 ga. (3/16") steel deck

2 free-swinging blades, 1/2" x 4" high-tensile, updraft

Flexible, 3-point A-frame with clevis-style hitch

2" to 12" cut height

1 : 1.46 gear ratio

7 ga. (3/16") round disc stump jumper with 1" x 5" bar

Replaceable Slides - 1/4" x 2" (415 & 416) - 3/8" x 2" (417)

Replaceable front rubber deflectors

Options

Part No.

Front 5/16" chain curtain deflector

For 415: 4-007

For 416: 4-009

For 417: 4-011

Rear 5/16" chain curtain deflector

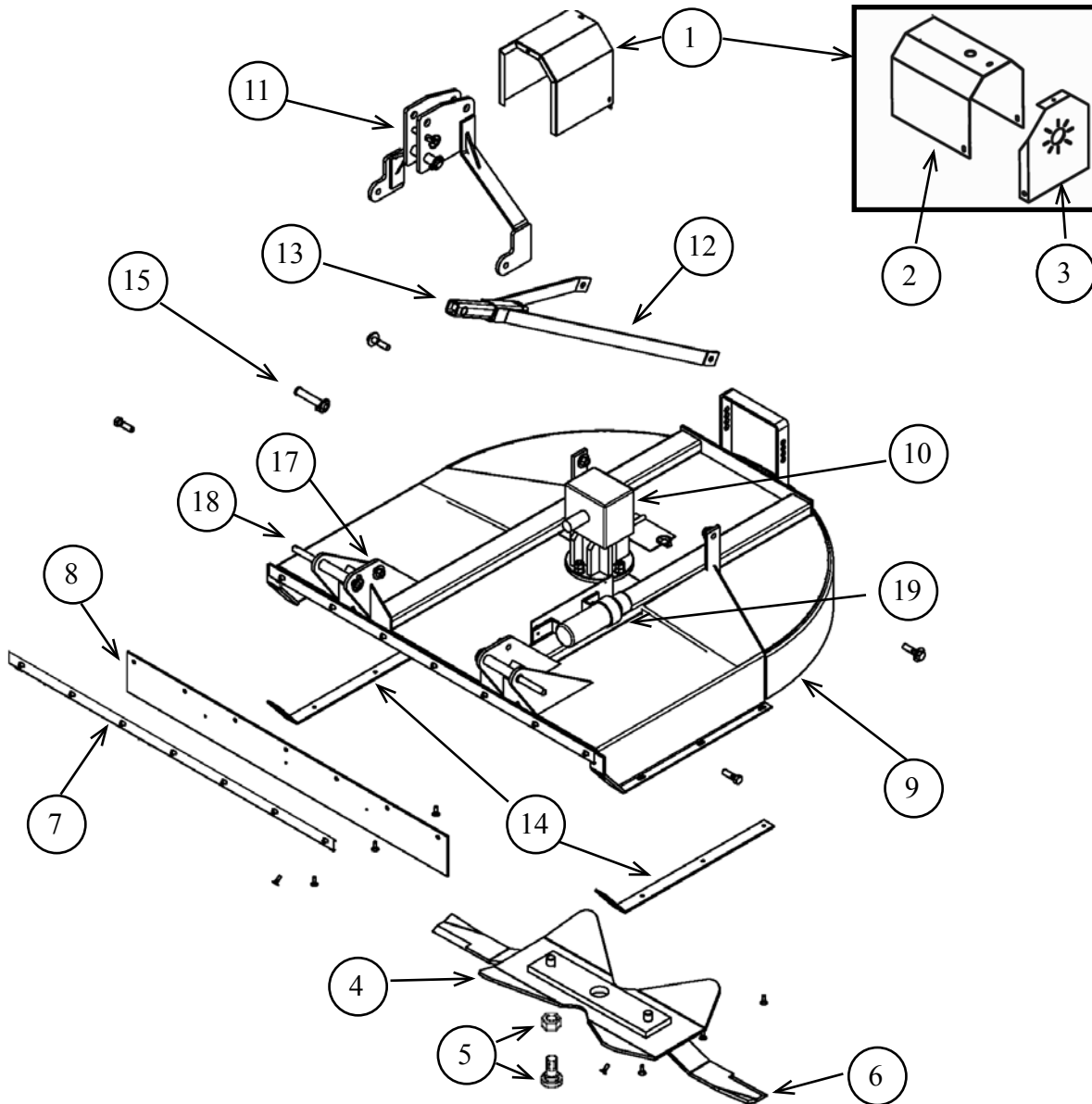
For 415: 232-0031

For 416: 232-0030

For 417: 232-0032

Replacement Parts

Deck Assembly



Ref. No.	Part No.	Description
1	232-0028	Bell Shield Assembly
2	700-232-0031	Drive Shaft Guard
3	700-232-0030	Plate, Drive Shaft Guard
4	235-100 232-4000	415: Stump jumper 416, 417: Stump jumper
5	TC-133KL	Blade bolt assembly w/ packet of Copper Anti-Seize attached. (Apply Anti-Seize liberally to bolt).
6	500-27A 4-029A	415, 416, Blade 417 Blade

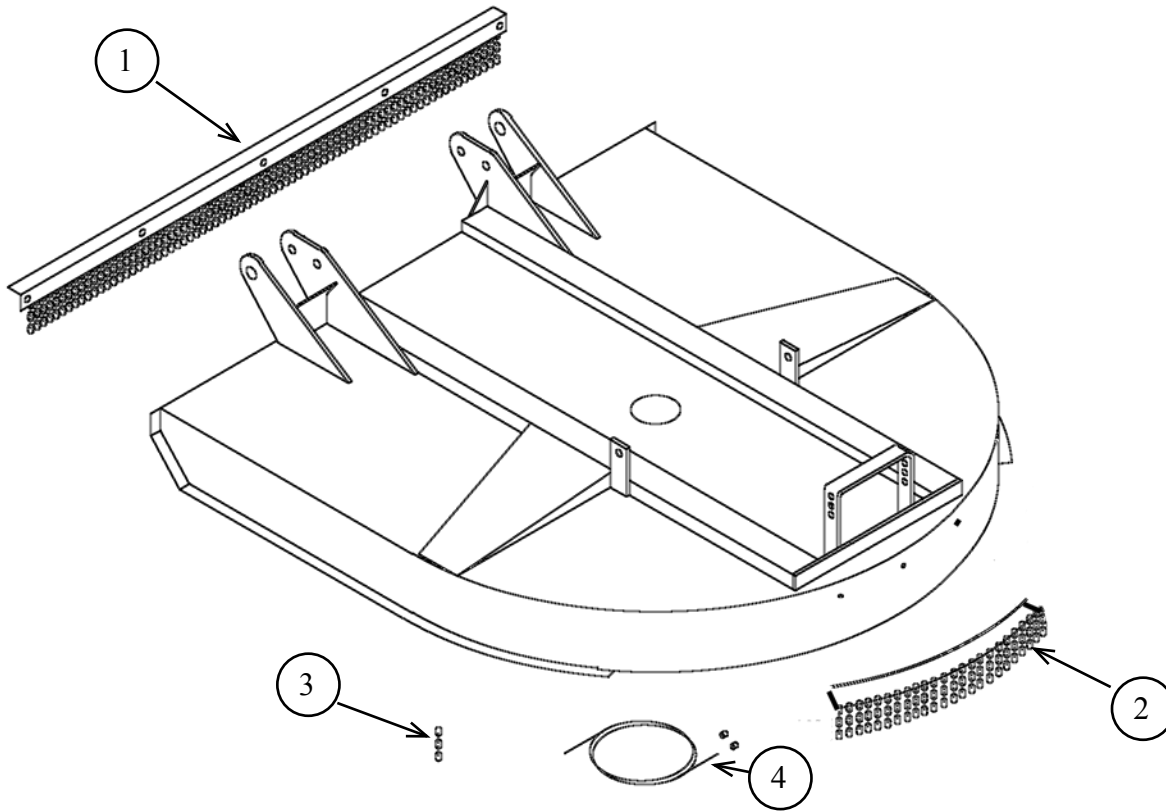
Replacement Parts

Deck Assembly (*continued*)

Ref. No.	Part No.	Description
7	4-001S	415: Metal strap
	4-002S	416: Metal strap
	4-003S	417: Metal strap
8	4-001	415, Rubber front deflector
	4-002	416, Rubber front deflector
	4-003	417, Rubber front deflector
9	232-0415	415: Deck
	232-0416	416: Deck
	232-0417	417: Deck
10	235-0001	Gearbox
11	232-0430	A-Frame
12	232-0451	415: A-frame brace
	232-0461	416: A-frame brace
	232-0471	417: A-frame brace
13	232-0420	A-Frame Mast Stop
14	4-019	415, 416: Slide with plow bolts, lock washer, and nuts
	4-020	417: Slide with plow bolts, lock washer, and nuts
15	500-22	Category II top pin with lynch pin
16	TC-126A	7/16" lynch pin (not pictured)
17	232-0475	Deck/Mast Bushing
18	255-1200	Category I/II lift pin with spacer & lynch pin
	255-1210	Quick Hitch Cat III Lift pin spacer
19	MH-01	Manual Holder

Replacement Parts

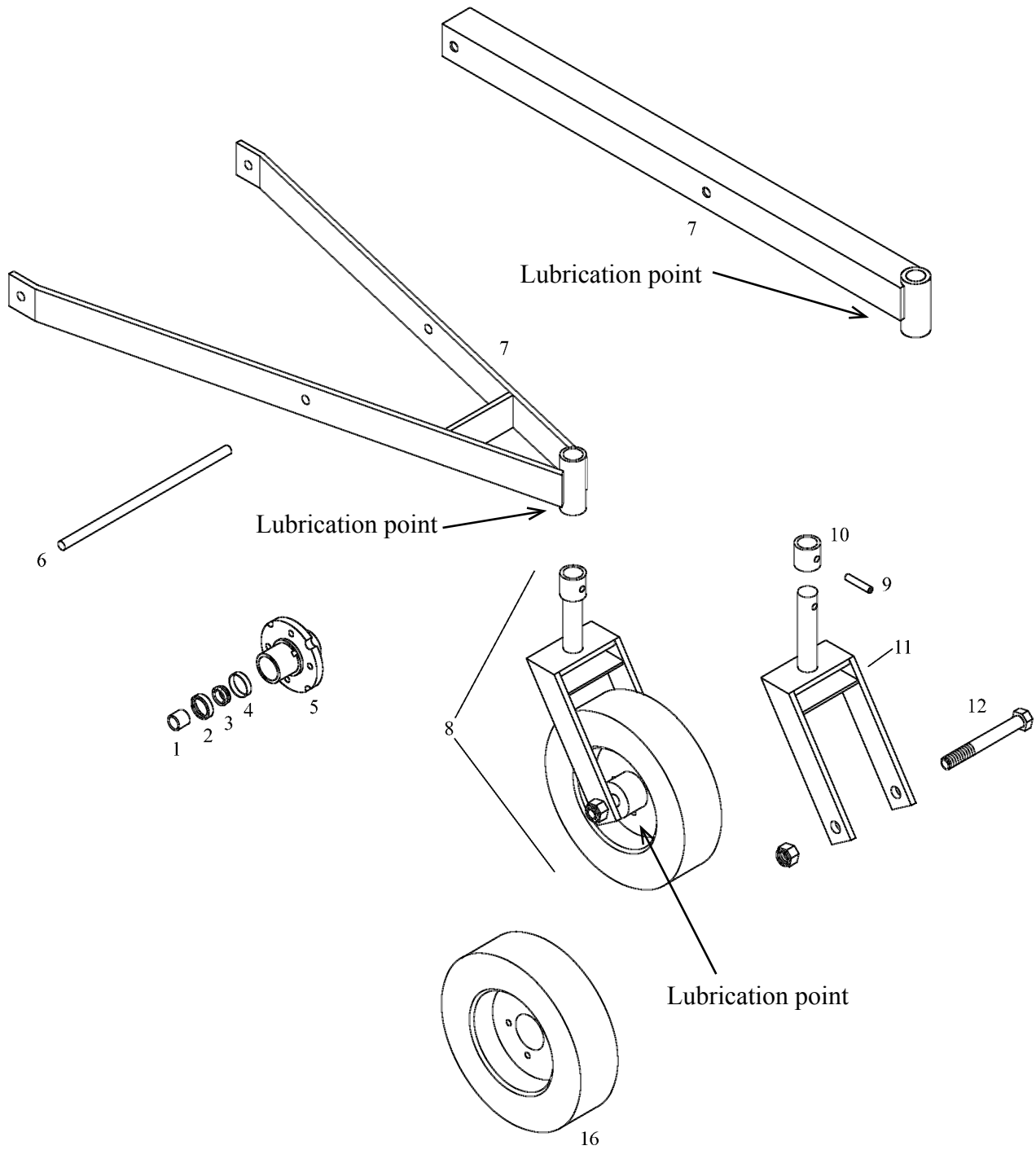
Front and Rear Chain Guards



1	4-007 4-009 4-011	415: Chain front deflector 416: Chain front deflector 417: Chain front deflector
2	232-0031 232-0030 232-0032	415: Chain rear deflector 416: Chain rear deflector 417: Chain rear deflector
3	TC2-009 TC2-010	Front chain links (5 links.) Rear chain links (4 links)
4	4-007C 4-008C 4-009C 4-010C 4-011C 4-012C	415: Front cable with clamps 415: Rear cable with clamps 416: Front cable with clamps 416: Rear cable with clamps 417: Front cable with clamps 417: Rear cable with clamps

Notes

Tailwheel Assembly



Tailwheel Assembly (*continued*)

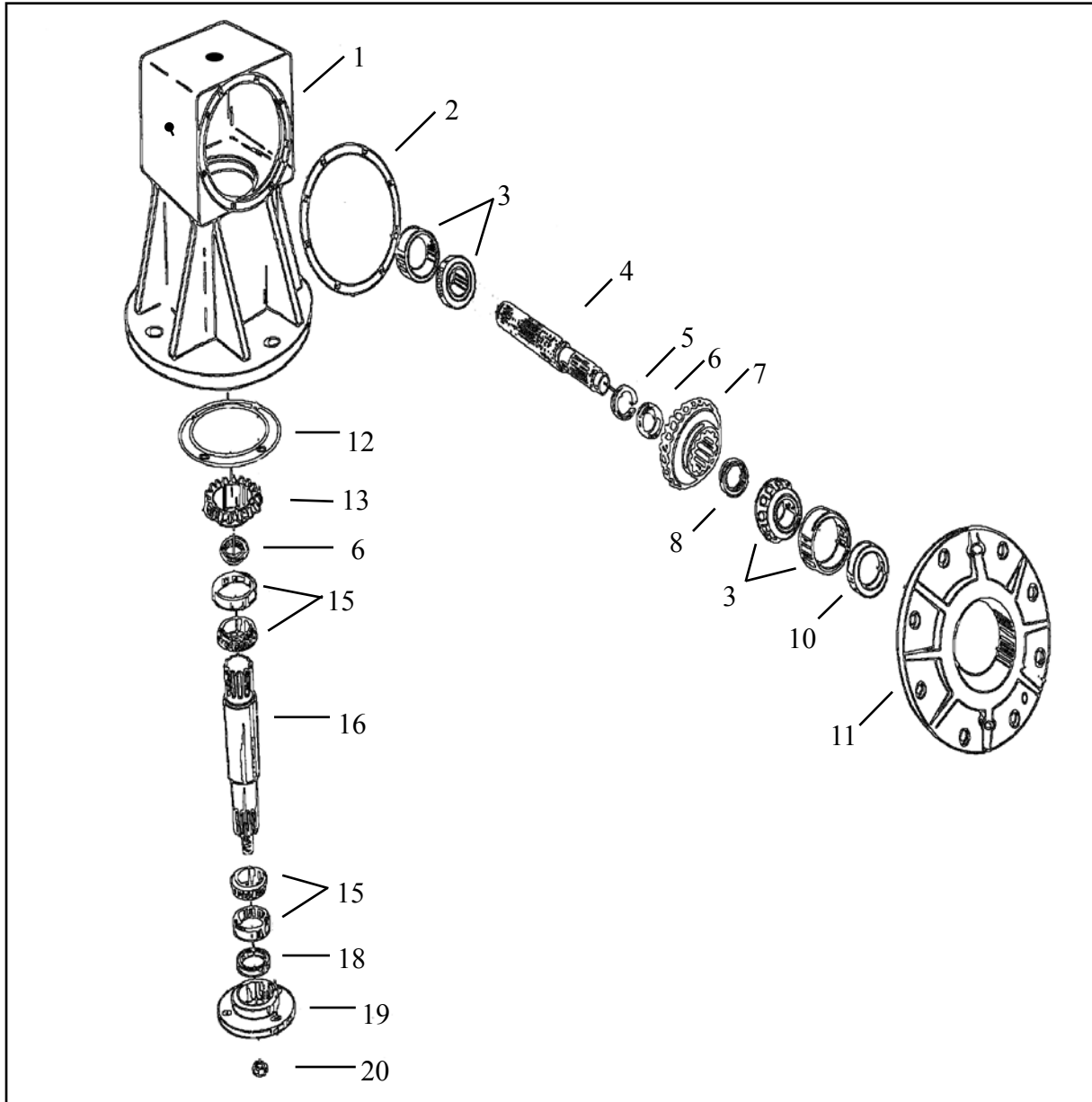
Ref. No.	Part No.	Qty	Description
1	232-0210	2	Bushings (2 - req. per tailwheel)
2	232-0203	2	Seal (2 req. per tailwheel)
3	232-0205	2	Bearing (2 req. per tailwheel)
4	232-0208	2	Cup (2 req. per tailwheel)
NP	232-0212	2	Seal Protector (for 232-0200 Hub)
5	232-0200	var	Complete tailwheel hub assembly
6	4-024	1	Height Adjustment Pin with Hardware (416 & 417 Only)
6a	232-0410	1	Height Adjustment Pin (Pin Only)
6b	4-094	1	Lynch Pin
6c	PRO38S32Z	1	Roll Pin, 3/8" x 2"
6d	WUS34Z	2	3/4" USS Flat Washer, Zinc Plated
7	4-014	1	415: Tailwheel arm with fork holder
	4-015	1	416: Tailwheel arm with fork holder
	4-016	2	415D, 416D, 417: Tailwheel arm with fork holder
8	4-032	var	Complete tailwheel assembly
9	61-D	1	Roll Pin 1/2" x 2 1/2"
10	61-C	1	Collar
11	4-013	1	Fork
NP	4-013A	1	Fork, Collar and Roll Pin Assembly
12	4-033	1	Axle
13	4-034	1	Axle nut
16	69-A	1	Tire and wheel assembly

NP - Not Pictured

Replacement Parts

130HP Gearbox

NOTE: Gearbox for all cutters having a serial number with second character being "B" or "C": Example: 5B-XXXX



Ordering replacement parts

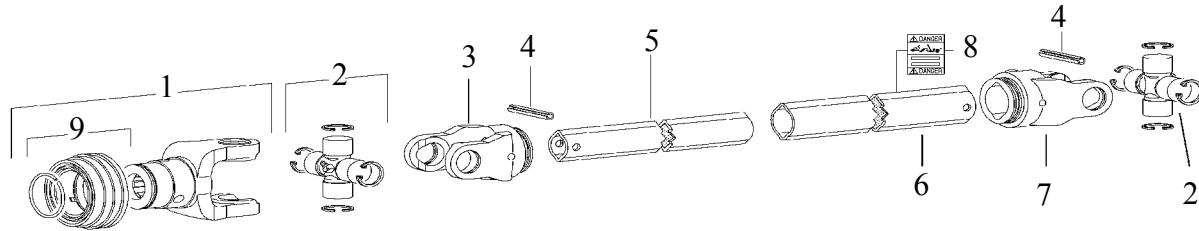
Please contact the nearest Brown dealer for replacement parts. Or call Brown Mfg. at 800-633-8909 for parts or technical information. Please have model and serial number available when ordering parts.

Replacement Parts

130HP Gearbox (*continued*)

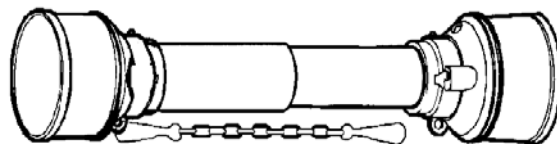
Ref. No.	Part No.	Qty.	Description
1	235-0003	1	Housing
2	235-0105	1	Input Cap Gasket Kit
3	T5-060	2	Bearing Assembly, Input
4	235-0005	1	Input Shaft
5	235-0019	1	Retaining Ring
6	235-0110	1	Shim Kit
7	235-0007	1	19 Tooth Gear, Input
8	235-0006	2	Spacer
10	WHD-202-20	1	Input Oil Seal
11	235-0004	1	Input Cap
12	235-0100	1	Output Cap Gasket Kit
13	235-0017	1	13 Tooth Gear, Output
15	235-0016	2	Bearing Assembly, Output
16	235-0015	1	Output Shaft
18	235-0013	1	Output Oil Seal
19	235-0014	1	Output Cap
20	TC-134F	1	1" - 14 Flanged Hex Nut
NP	TC-135	1	Cotter Pin
NP	235-0001	1	130 HP Gearbox Assembly Complete 540 RPM
NP	235-0022	1	Vent Plug
NP	235-0021	2	Drain Plug
NP	235-0031	2 QT.	Lubricant, Quart, Cotton Picker Spindle

Replacement Parts (Driveline)



Ref. No.	Part No.	Description
1	236-4002	Quick-disconnect yoke
2	236-4004	U-joint kit
3	236-2224	Inner tube yoke
4	236-1070	Roll key
5	236-1737 236-1837	415 - 416, Inner tube 417, Inner tube
6	236-1739 236-1839	415 - 416, Outer tube 417, Outer tube
7	236-2230	Outer tube yoke
8	236-1745	Decal, missing shield
9	236-1731	Quick-disconnect kit
Not pictured	236-4000 236-5000	415, 416: Complete drive shaft with 2-disc slip clutch and shield 417: Complete drive shaft with 4-disc slip clutch and shield

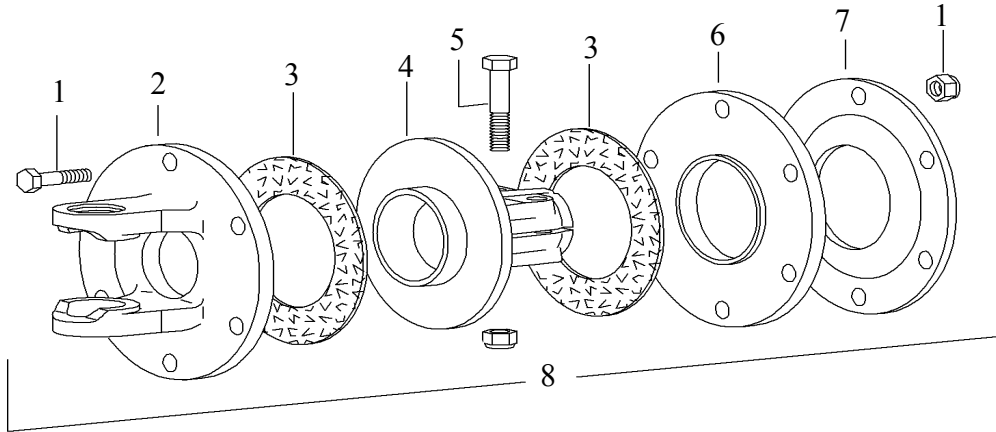
Driveline Safety Shield



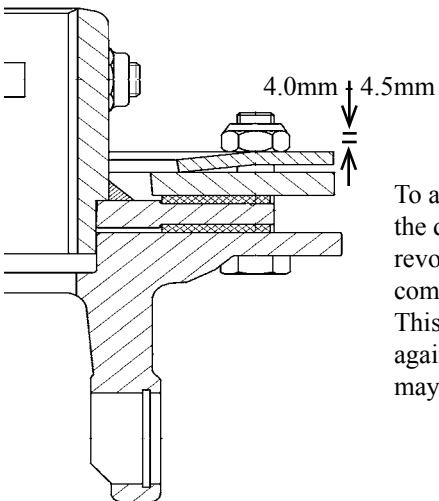
Part No.	Description
236-1725	415, 416: Complete shield assembly
236-1825	417: Complete shield assembly

Replacement Parts

2-Disc Slip Clutch (415, 416)



Ref. No.	Part No.	Description
1	255-0400	Bolt, Clutch Tension M10 x 50 (6 Req.)
1a	255-0660	Lock Nut, Clutch Tension M10 (6 Req.)
2	236-2214	Yoke, flanged, 2 disc
3	236-1703	Lining, clutch, 2 req.
4	236-2212	Hub, 2 disc, 1-3/4" z 20
5	255-0420	Bolt, Hub Clamp M12 x 65 (2 Req.)
5a	255-0680	Lock Nut, Hub Clamp M12 (2 Req.)
6	236-1705	Plate, thrust, 2 disc
7	236-1706	Spring, belleville, 2 disc
8	236-2210	Clutch assembly, 2 disc



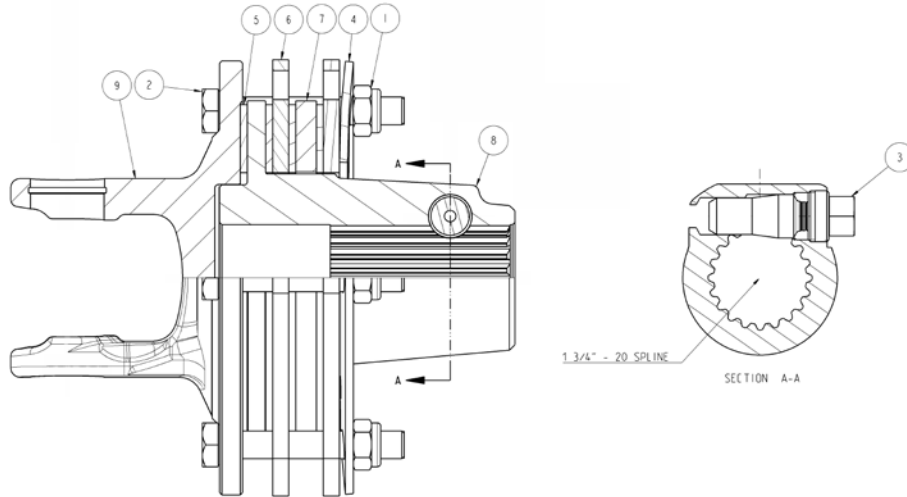
CLUTCH ADJUSTMENT PROCEDURE 415 - 416 2-DISC SLIP CLUTCH

To adjust the clutch to proper torque, the gap between the belleville spring and the drive plate should be between 4.0-mm and 4.5mm. Tightening the nut one revolution will compress the spring 1.5-mm. Tightening the nut one flat side will compress the spring 0.25mm.

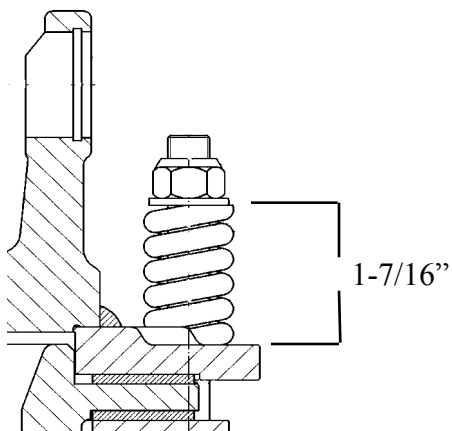
This can also be set by tightening each of the lock nuts until the spring is flat against the drive plate and then loosening each nut 3 full revolutions. The clutch may be adjusted by using two (2) 17-mm wrenches.

Replacement Parts

4-Disc Slip Clutch (417)



Ref. No.	Part No.	Qty	Description
1	236-0636	6	Locknut - M12
2	MCS12C80Z88	6	Bolt M12 x 1.5 x 80 x 8.8 Gr.
3	236-0634	1	Clamp Cone (See Page 42 for Details of Installation)
4	236-5002-01	1	Belleville Spring
5	236-1703	4	Lining, Clutch
6	236-1805	2	Plate, drive flanged, w holes 4 disc
7	236-0646	1	Drive Plate w/ Lugs 4 disc
8	236-5002-06	1	Hub, 4 disc, 1-3/4" z 20
9	236-5002-02	1	Flange Yoke 4 disc
Assembly	236-5002	1	Clutch assembly, slip, 4 disc



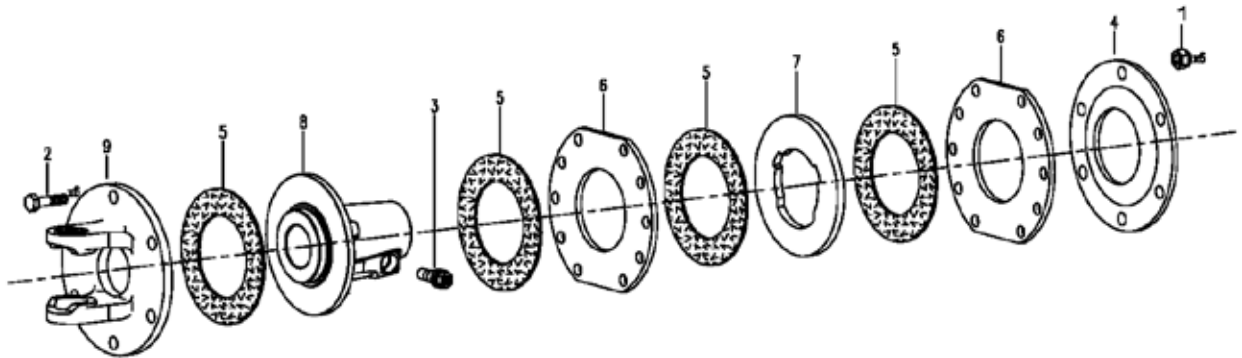
PROPER TORQUE ADJUSTMENT

TO RESET SLIP CLUTCH TO PROPER TORQUE SETTING TIGHTEN ALL SPRING BOLTS DOWN TO COMPRESS THE SPRINGS TO A UNIFORM HEIGHT. THE TOTAL HEIGHT OF THE SPRINGS MUST BE 1-7/16" FROM THE FLAT TOP OF SPRING DOWN TO THE TOP OF THE FLANGE PLATE - SEE DRAWING.

NOTE: THIS IS A MEASUREMENT OF THE SPRING ONLY - NO WASHER OR NUT IN THIS MEASUREMENT.

Replacement Parts

4-Disc Slip Clutch (417) Exploded View



Ref. No.	Part No.	Qty	Description
1	236-0636	6	Locknut - M12
2	MCS12C80Z88	6	Bolt M12 x 1.5 x 80 x 8.8 Gr.
3	236-0634	1	Clamp Cone (See Page 41 for Details of Installation)
4	236-5002-01	1	Belleville Spring
5	236-1703	4	Lining, Clutch
6	236-1805	2	Plate, drive flanged, w holes 4 disc
7	236-0646	1	Drive Plate w/ Lugs 4 disc
8	236-5002-06	1	Hub, 4 disc, 1-3/4" z 20
9	236-5002-02	1	Flange Yoke 4 disc
Assembly	236-5002	1	Clutch assembly, slip, 4 disc

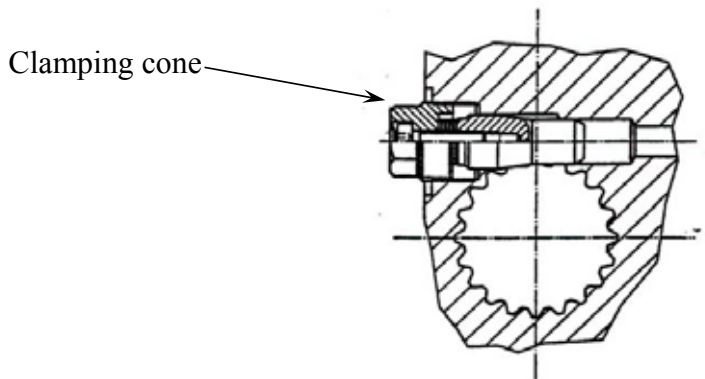
This is the same clutch as previous page, exploded for clarity.

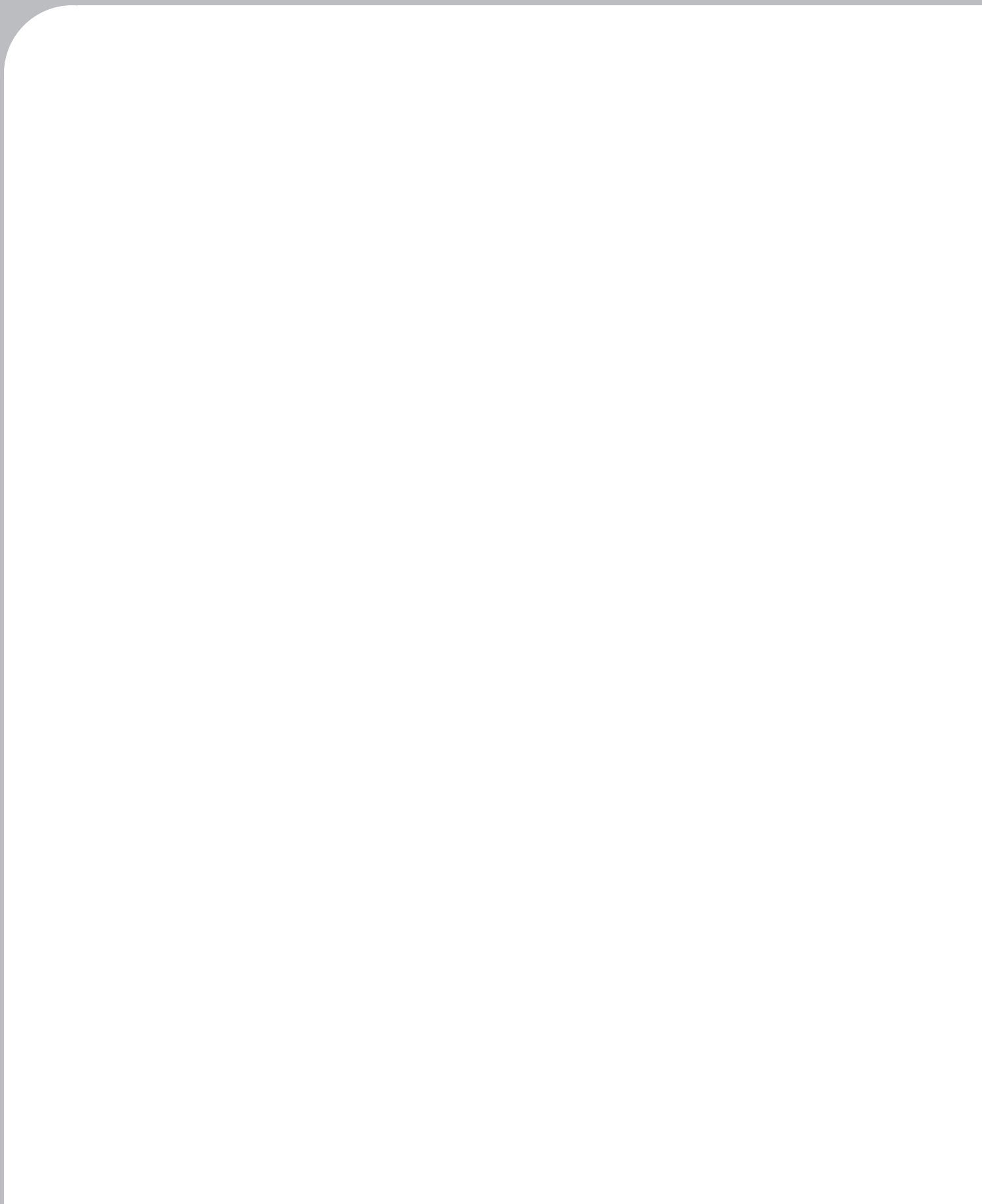


CC Lock Installation Instructions

1. Clean and grease (do not over-grease) the connecting spline shaft. Do not grease or oil the threads of the clamping cone.
2. Slide yoke or clutch onto the connecting shaft. Make sure that the hole for the clamping cone is positioned above the annular groove on the connecting shaft. Start threads of clamping cone by hand, then tighten it to 75 lb-ft (100 N-m) of torque. While tightening, move the yoke or clutch back and forth in axial direction. Check tight and safe fit of yoke or clutch. A 17 mm socket will be needed to tighten the clamping cone.
3. After the first 8-10 hours of operation after installation, the clamping cone must be re-checked for tight and safe fit. The safe fit then needs to be checked at regular intervals during operation. Re-tighten clamping cone as necessary.
4. To disassemble, loosen clamping cone and remove it from the yoke or clutch. If the clamping cone cannot be removed by hand, it can be released from the opposite side by using a hammer and a pin punch.

Note: The clamping cone is serviced only as a complete assembly. Do not attempt to disassemble the clamping cone.





For use with the following starting serial numbers:

Model	Serial Number
Brown 415	5C4000
Brown 416	6C4000
Brown 417	7C4000

410 Series C
Version 4000.3.0
February 2013



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