Finish Mower
Owner/Operator's Manual

M K Martin Enterprise Inc
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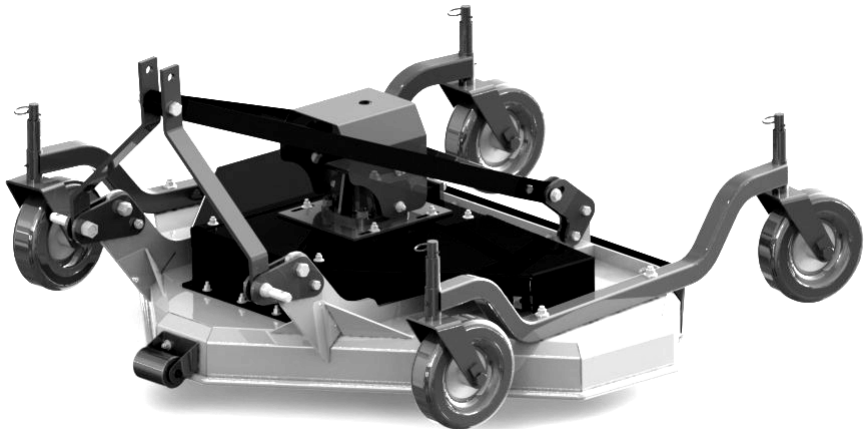
Introduction

Congratulations on your choice of the M K Pulsar Finish Mower to complement your operation. This equipment has been designed and manufactured to meet the needs of a discerning industry for the efficient cutting of grass.
Safe, efficient and trouble free operation of your Finish Mower requires that you and anyone else who will operate or maintain the machine, reads and understand the Safety Operation, Maintenance and Trouble Shooting information within the operator's manual.
This manual covers the Models 60", 72"and 90". Differences are covered and explained where appropriate.
Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your Dealer if you need assistance, information or additional copies of the material.

Operator Orientation: The directions left, right, front and rear, as mentioned throughout this manual are seen form the driver's seat and facing the direction of travel.



Warranty

This product is warranted to be free from defects in material and workmanship for a period of one year from the date of original purchase if for personal use; 90 days for commercial or rental purposes.
This warranty does not cover damages, defects and failure in the product which result from alteration, accident, misuse, neglect, installation of attachments not provided with the produce or improper maintenance.

This warranty does not cover failures if used with a tractor with more than 40 HP!

Your sole remedy under this warranty shall be repair as set forth above.
the Manufacturer shall not be liable for consequential damages resulting from breach of this warranty, or any implied warranty.

Pulsar Finish Mower

Please read and understand this manual before using or allowing others to use this equipment.

Warranty and Limitation of Liability

All equipment is sold subject to mutual agreement that is warranted by M M Martin Enterprise Inc.(hereafter called the company) to before of any defects of material and workmanship. But the company shall not be liable for special, indirect or consequential damage of any kind under this contract or otherwise. The company's liability shall be limited exclusively to replacing or repairing without charge at its factory or elsewhere, at its discretion, any material, or workmanship defects which become apparent within one year from the date of purchase. *This will allow you to do one complete season of using the equipment, regardless of what time of the year you purchased the equipment.*

The company will have no liability for damages of any kind. The buyer by the acceptance of the equipment will assume all liability for any damages which may be the result from the use or misuse by the employees or others.

This Warranty does not cover **Rental/Commercial or Industrial** use of this equipment. This equipment is rated as agricultural.

Warranty coverage is null and void if any unauthorized repairs of alterations are performed to this equipment.

Warranty is also null and void unless this warranty Registration is completely filled out and is on file at M K Martin Enterprise Inc

For your Record

Purchase Date Y20___ M__
Model # _____
Serial # _____

M K Martin Enterprise Inc
3950 Steffler Rd Elmira On Ca
N3B 2Z3
Tel 519-664-2752
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Fax 519-664-3695
sales@mkmartin.ca

Pleas cut at dotted line and return this registration form to the company via Mail, Fax or e-mail

✂----------

M K Martin Enterprise Inc
3950 Steffler Rd Elmira On Ca
N3B 2Z3

Purchase Date Y20___ M ___

Model # _____

Serial # _____

Pulsar Finish Mower

Name of Purchaser

Name _____

Address _____

_____

_____

Postal Code/Zip Code _____

Operation

Operating Safety

1. Read and understand the Operator's Manual and all safety signs before operating, servicing, adjusting, repairing and or unplugging.
2. Do not allow riders
3. Install and secure all guards and shields before starting or operating
4. Keep hands, feet, hair and clothing away from moving parts.
5. Place all controls in neutral, stop tractor engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
6. Place all tractor and machine controls in neutral before starting.
7.Never start or operate machine unless sitting on the tractor seat.
8. Do not operate machine inside a building unless there is adequate ventilation.
9. Clear the area of bystanders especially small children, before starting.
10. Stay away from PTO shaft and machine when engaging PTO. Keep others away.
11. Clean reflectors, SMV and lights before transporting.
12. Use hazard flashers on tractor when transporting
13. Do not put hands or feet under machine while tractor engine or machine is running.
14. Do not operate Mower in the raised position
15. Objects can be thrown out from under machine with sufficient force to severely injure people. Stay away from machine when it is running. Keep others away.
16. Always know what you are cutting. Remove sticks, stones, wire or other objects from working area before starting.
17. Review safety instructions with operators annually

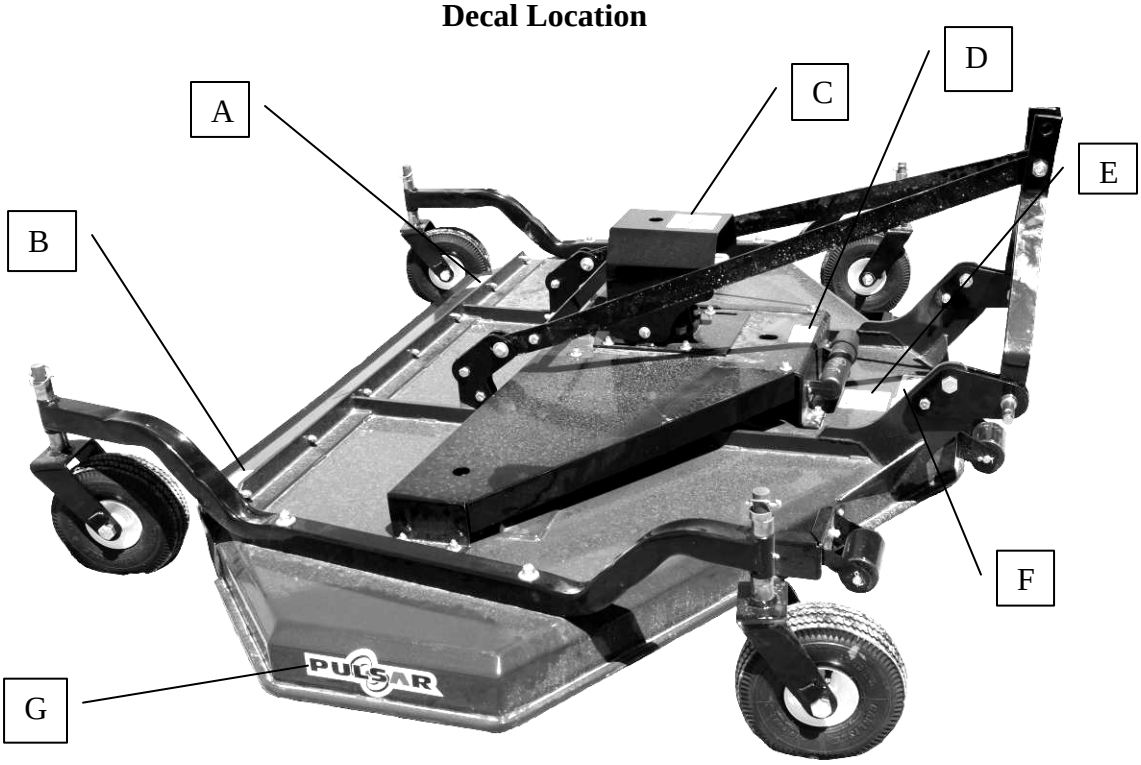
To The New Operator or Owner

This Finish Mower is designed to cut a variety of grasses. The mower will work best on dry grass, when cutting damp or long grass, us slower travel speed and you may need to frequently clean the underside of the mower deck. Rotational power to the blades is provided by the tractor PTO. This mower is designed to operate with PTO speed of 540 RPM, Be familiar with the machine before starting. *(See more operating tips on page 7).*

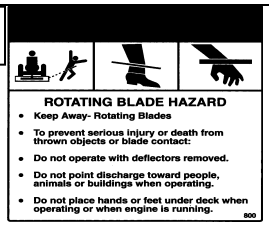
It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with machine. Follow all safety instructions exactly. Safety is everyone business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the worksite. Untrained operators are not qualified to operate the machine.

Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to set it to provide maximum efficiency. By following the operating instructions in conjunction with a good maintenance program, your Mower will provide many years of trouble-free service.

M K Pulsar Finish Mower
Decal Location



A



B

C

D

E

F

G

PULSAR

Machine Break-in

Although there are no operational restrictions on the cutter when used for the first time, it is recommended that the following mechanical items be checked

A After operating for 1/2 hour:

1. Check all nuts, bolts and other fasteners. Tighten to their specified torque level.
2. Tighten blade lock bolts to their specified torque levels.
3. Check that the blades are in good condition.
4. Check the oil level in the gearbox. Add as required.
5. Check that the PTO driveline shields turn freely
6. Lubricate all grease points.
7. Check belt tension as per page 14 and 17

B After operating for 5 hours and 10 hours

1. Repeat items 1 through 7 of section A
2. Then go to the regular service schedule as defined on page 15.

Pre-Operation Checklist

Efficient and safe operation of the Finish Mower requires that each operator reads and understands the operating procedures and all related safety precautions outlined in this section. A pre-operation checklist is provided for the operator. It is important for both the personal safety and maintaining the good mechanical condition of the Mower that this checklist is followed.

Before operating the machine and each time thereafter, the following areas should be checked off:

1. Lubricate the machine per the schedule outlined in the Service and Maintenance section on page 14-15

2. Check that the machine is properly attached to the tractor. Be sure retainers are used on the mounting pins.

3. Check the oil level in the gearbox. Add as required.

4. Check that the PTO driveline turns freely and that the driveline can telescope easily

5. Check the blades. Be sure they are not damaged or broken. Inspect for wear. Repair or replace as required.

6. Check for entangled material in all rotating parts. Remove this material.

7. Install and secure all guards, doors and covers before starting.

Equipment Matching

To insure the safe and reliable operation of the Finish Mower, it is necessary to use a tractor with the correct specifications. Use the following list as a guide in selecting a tractor to use on the machine.

1. Horsepower

Use Table 1 as a guide in selecting the tractor horsepower appropriate for your width of machine.

Increase the power level by 25% when operating in hilly, soft or wet conditions.

Operating a larger tractor on hilly, soft of wet conditions can also damage your turf.

2. Tire Configuration

It is recommended that the tires be set so the machine always covers the tracks. In this way the machine will always cut where the tractor has driven.

3. 3 Point Hitch

The Mower is equipped with Category 1 Quick Hitch and Cat 1 free link.

4. Load Sensing Hydraulics (3 point models only)

Many newer tractors are equipped with "Load Sensing" hydraulics. It is the responsibility or the operator to set the tractor hydraulic system to provide "float" on the 3 point hitch. Refer to the tractor manual. The float feature will allow the machine to follow the ground contours during operation.

Table 1 : Horsepower vs Width

Model	Width	Horsepower
60"	5 feet (1.5m)	14/22
72"	6 feet (1.8M)	18/25
90"	7 1/2 feet (3.5m)	20/25

5. PTO Shaft:

The tractor must have a 1 3/8 inch 6 spline 540 RPM PTO shaft to fit driveline shaft supplied with the machine. Do not use shaft adaptors or operate at any other speed.

Driveline dimension

A PTO driveline is supplied with the machine. To accommodate the variety of 3 point hitch geometry available today, the driveline can be too long for some machines and must be cut. It is very important that the driveline be free to telescope but not bottom out when going through its working range. If the driveline bottoms out, the bearings on the machine and the tractor PTO shaft will be overloaded and fail in a short time.

When Cutting The Driveline Follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Attach the Cutter to the tractor (see next page, Attaching/Unhooking) but do not attach the driveline
3. Raise the machine until the input shaft is level with the tractor PTO shaft.
4. Measure the dimension the locking groove on the tractor PTO shaft and the groove o the Cutter input shaft.
5. Measure the same dimension on the compressed driveline. (pin to pin)

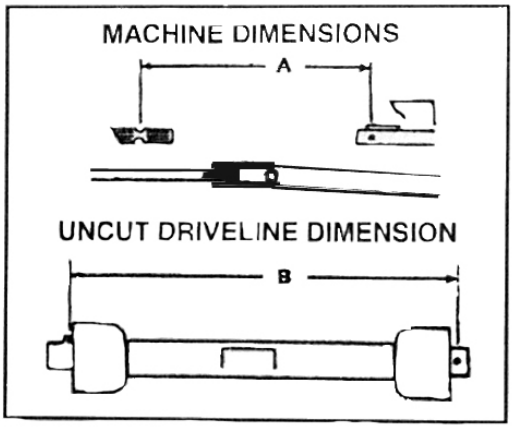


Fig. 4 DRIVELINE DIMENSIONS

6. If the compressed driveline dimension exceeds the machine dimension, the driveline will have to be cut.

7. Pull the driveline apart and cut 1/2 of the dimension determined in step 5, plus 1/2" from each end.

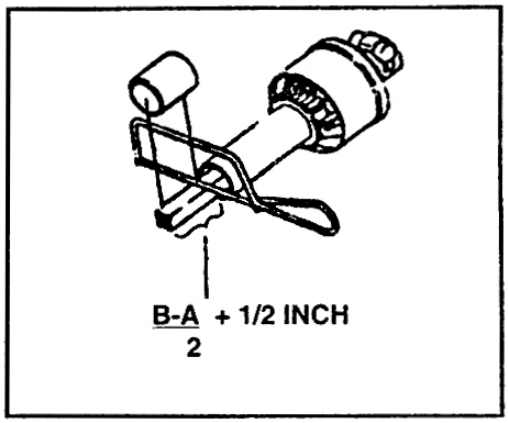


Fig. 5 CUT OFF DIMENSION

8. Be sure to use a hacksaw to cut 1/2 from each end of the separated shaft. Cut both the plastic tube and the metal cores.

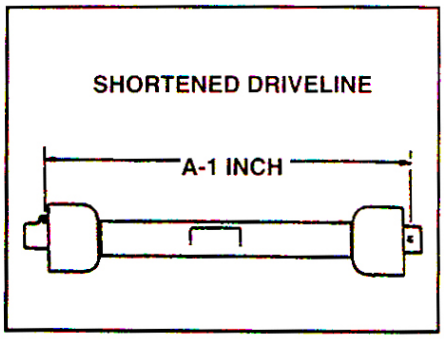


Fig. 6 SHORTENING

9. Use a file to remove burrs from the edges that were cut.
10. Assemble the tow ends of the shaft
11. Make sure that the shaft can telescope freely. If it does not, separate the two parts and inspect fro burrs or cuttings on the shaft ends, be sure it telescopes freely before installing.
12. Make sure the plastic covering shield is free to rotate on the shaft before installing on the machine.

Attaching / Unhooking

The Mower should always be located on a level, dry area that is free of debris and other foreign objects. When attaching the machine to a tractor, follow this procedure.

1. Clear the area of bystanders, especially small children.
2. Be sure the tractor 3 point hitch is in the Category 1 configuration and the lift arms are in the non-sway configuration (see tractor manual)
3. Make sure there is enough room and clearance to safely backup to the machine.
4. Attach the PTO driveline to the Mower if it was removed for storage (See Assembly)
5. While backing up, align the lift hitch with the mounting pins on the Cutter.

Note

It may be necessary to add weight to the 3 point hitch to lower the lift arms.

6. Stop tractor, set park brake, remove ignition key and wait for all moving parts to stop before dismounting.
7. Align the left lower link arm with the mounting pin.
8. Slide the ball over the pin and install the retainer
9. Use the screw jack on the lift arm to align the ball with the pin.
10. Slide the ball over the mounting pin and install the retainer
11. Level the frame, using the screw jack.
12. Remove retainer and pin from the mast top.
13. Align top link using the turnbuckle
14. Insert pin and install retainer.
15. Set the mast using the turnbuckle and leave slack in the chain.

16. **Attach the PTO driveline:**

a. Check that the driveline does not bottom out when going through working angles. (Refer to page 9)

b. Attach the driveline to the tractor by retracting the locking pin, slide the yoke over the shaft and push on the yoke until the lock pin clicks into position. Pull on the yoke to be sure it is locked in position.

c. Attach the anchor chain on the driveline shield to the frame.

17. Use the 3 point hitch to raise the machine
18. Reverse the above procedure when unhooking from the tractor.

See your Quick Hitch instructions for attaching Quick Hitch.

Set the Machine:

a. Level the frame:

i. Use the screw jack on the right lift arm to level the frame from side to side.

ii. Use the turnbuckle on the top link to partially collapse the top brace. This will allow the machine to follow the contour of the ground.

iii. Set the 3 point hitch so deck is the same distance in the front and back.

b. Height

Use the adjustment on the Mower wheels to set the height of the deck.

Move the spacers as needed for longer or shorter mowing. (Switching the swivel spacers from top to bottom or vice versa.)

Align the unit with the working area

Start the machine:

a. Run the engine at low idle

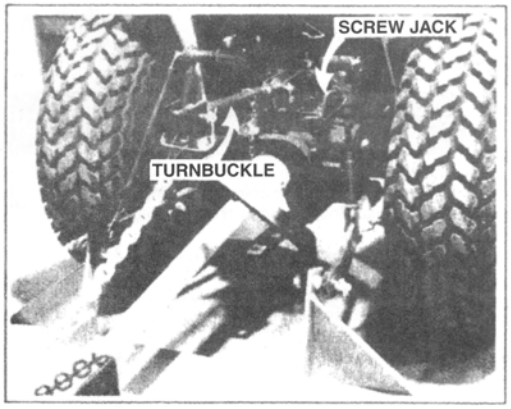
b. Slowly engage the PTO control to start the machine.

c. Slowly bring the engine to the rated PTO speed. Never exceed rated speed.

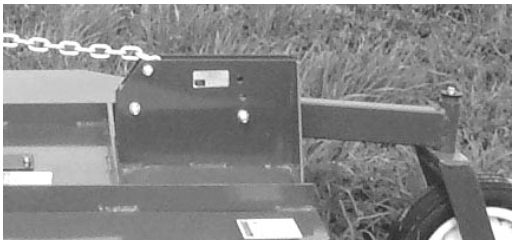
d. Lower the machine to the ground and proceed to mow.

Warning

Never operate Mower in the raised position!



LEVELING



Wheel Settings

This Shows 3 holes (later versions have 2 holes)

Stopping the Machine:

a. Slowly decrease the engine speed to a low idle.

b. Disengage PTO clutch slowly.

Caution

Place all controls in neutral, lower machine, stop the engine, set park brake, remove ignition key and wait for all moving parts to stop before dismounting

Ground Speed:

Travel speed can vary between 1 and 4 mph (1.5 and 6 km/h) depending on the grass and terrain conditions. It is the responsibility of the operator to note the condition of the job being done and set the speed to obtain a quality cutting job and maintain control of the machine.

The speed can be increased if a good job is being done.

Decrease the speed it you are producing a ragged cut or leaving patches uncut.

Operating Hints:

a. although it is best to cut when it is dry, the Mower works in wet conditions as well. However the operator will have to travel slower to do the same quality cutting. It will also be necessary to clean the machine more frequently to prevent caking and clogging of the blade area.

b. The cutter should always be operated at the rated speed of 540 RPM. The cutting action is generated by the speed of the blade tip. When the speed drops below a certain rate (slowing of the input speed or RPM), the blades start to tear the material rather than cut it and will give a "ragged" looking cut.

Caution

Never exceed PTO speed of 540 RPM!

c. Vary ground speed by changing gears in the tractor transmission rather then changing the throttle setting. Forward travel speeds can range from 1 to 4 mph (1.5 to 6 km/h), depending on the terrain, grass or length, moisture level. It is the operator's responsibility to determine and operate the machine at a safe speed at all times.

d. If the grass is tall, cut it twice to obtain the best results. This allows the unit to cut less material on each pass.

e. When mowing a new area for the first time, always set the cutter to cut high to clear unknown obstructions, if none are found, the cutter can be set lower for the second pass.

f. Never cut grass shorter than recommended for your weather conditions. short grass is less able to with stand hot and dry conditions. It is better to cut more frequently at a longer length than to cut too short.

g. The blades will need sharpening when you see that the grass has not been cut evenly or it looks like the grass has been ripped off.

h. always reduce ground speed when cutting around obstructions or close quarters.

i. The mower should always be operated with its wheels riding on the ground and can lifted for turns or corners. If lifted it should be dropped back on the ground as soon as the maneuvering is done..

j. The Mower has three blades under the frame that are turning at a high rate of speed. With this speed the blades can pick up objects on the ground and expel them out under the frame or out the discharge areas. It is extremely important the operator be aware that objects can be expelled this way and never point the discharge areas toward people, animals or property. These expelled objects are moving fast enough to damage property. It is better to stop cutting when there are bystanders especially children, than to take the chance of injury.

Transporting

Transport Safety

1. Make sure you are in compliance with all local regulations regarding transporting equipment on public roads and highways.
2. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly all overtaking and oncoming traffic.
3. do not allow anyone to ride on the Cutter or tractor during transport.
4. Do not exceed 20 mph (32km/h). Reduce speeds on rough roads and surfaces.
5. Use retainers on mounting pins before transporting.
6. Always use hazard flashers on the tractor when transporting unless prohibited by law.

When transporting the machine, review and follow these instructions.
1. Be sure bystanders are clear of machine.
2. Be sure that the machine is securely attached to the tractor and all retainer pins are installed.
3. Clean the SMV emblem, lights and reflectors. Be sure they are working.
4. Be sure you are in compliance with all applicable lighting and marking regulations when transporting. Check with your local authorities.
5. Be sure your machine can clearly be seen by overtaking and oncoming traffic.
6. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder if permitted by law.
7. Do not allow riders.
8. Always use hazard flashers on the tractor when transporting unless prohibited by law.
9. Use pilot vehicles front and rear when transporting during times of limited visibility.
10. Never transport the machine faster than 20 mph (32km/h). The ratio of tractor weight to mower weight plays an important role in defining acceptable travel speed. Table 2 summarizes the recommended travel speed to weight ratio.

Table 2 Speed vs. Weight Ratio

Road Speed	Weight of full equipped or loaded implement(s) relative to weight of towing machine
Up to 20mph (32km/h)	1 to 1, or less
Up to 10 mph (16km/h)	2 to 1, or less
Do Not tow	More the 2 to 1

Service and Maintenance

Maintenance Safety

1. Follow ALL the operating, maintenance and safety information in the manual
2. Support the machine with blocks or safety stands when changing tires or working beneath it.
3. Follow good shop practices
- Keep service area clean and dry
- Be sure electrical outlets and tools are properly grounded
- Use adequate light for the job at hand
4. Use tools, jacks and hoists of sufficient capacity for the job.
5. Never work on blades or under the machine unless the tractor engine is off and the driveline is disconnected.
6. Wear heavy canvas or leather gloves when handling sharp blades.
7. Make sure all guards are in place and properly secured when maintenance work is completed.
8. Never wear ill-fitting, baggy or frayed clothing when working around or on any of the drive system components.
9. Keep hands, feet , hair and clothing away from moving or rotating parts.
10. Clear the area of bystanders, especially small children, when carrying out any maintenance and repairs or making adjustments.

Service

Fluids and Lubricants

1. Hydraulic Oil
Use a standard hydraulic oil for all operating conditions. (If used)

2. Gear box Oil
Use a SAE 85W90 gear oil for all operating conditions.
Gear Box Capacity; 1US quart (0.85 liter)

3. Storing Lubricants:
Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. store them in an area protected from dust, moisture, and other contaminants.

Greasing

The PTO shaft and the Castor and Wheel is the only greaseable item on the Finish Mower

Use maintenance checklist provided to keep a record for all scheduled maintenance.

1. Use hand-held grease gun for all greasing.
2. Wipe grease fitting with clean cloth before greasing, to avoid injecting dirt and grit.
3. Replace and repair broken fittings immediately.
4. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

Belt Tension

The belt tension should be checked halfway between the pulleys. With approx 8 lb force the belt should deflect 1 1/2" .

Servicing Intervals

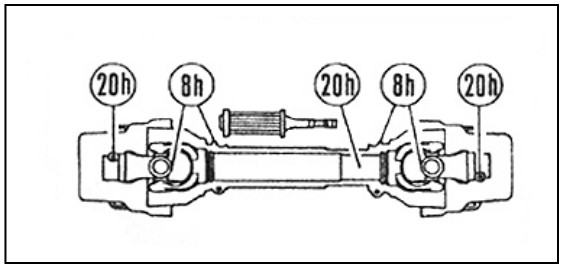
The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication or oil changes.

8 Hours or Daily

1. Lubricate PTO driveline (4 locations)
2. Lubricate Castor Shaft (4 Location)
3. Check belt tension

20 Hours

1. Lubricate PTO driveline (3 locations)



PTO Driveline

40 Hours

1. Check gearbox oil level. Add as required.
2. Lubricate wheels (4 location)
3. Check belt condition, (cracked, frayed)

Annually

1. Wash Machine

Maintenance

By following a careful service and maintenance program for your machine, you will enjoy many years operation.

Wheel Height

When setting the height of the wheel, follow this procedure.

1. Clear area of bystanders, especially children.

2. Raise the 3 point hitch or lift with a hoist until the wheels are far enough off the ground to remove the castor.

3. Stop engine, set park brake, remove ignition key and wait for all moving parts to stop before dismounting

4. Place large blocks or safety stands under deck to support the machine.

5. Remove the lynch pin on castor shaft and lower the castor until it is out of the socket.

6. Rearrange the spacers above and below the wheel beam for your desired deck height. Arrange the spacers equally on all four castors.

7. Ensure all four lynch pins are secure..

8. Remove the blocks or safety stand

Sign-Off Form

M. K. Martin Enterprise Inc. follows the general Safety Standards specified by the American Society of Agricultural Engineers (ASAE) and the Occupational Health and Safety Administration (OSHA). Anyone who will be operating and/or maintaining the Cutter must read and clearly understand ALL Safety Operating and Maintenance presented in his manual.

Do not operate or allow anyone else to operate this equipment until such information has been reviewed. annually review this information before the season start-up.

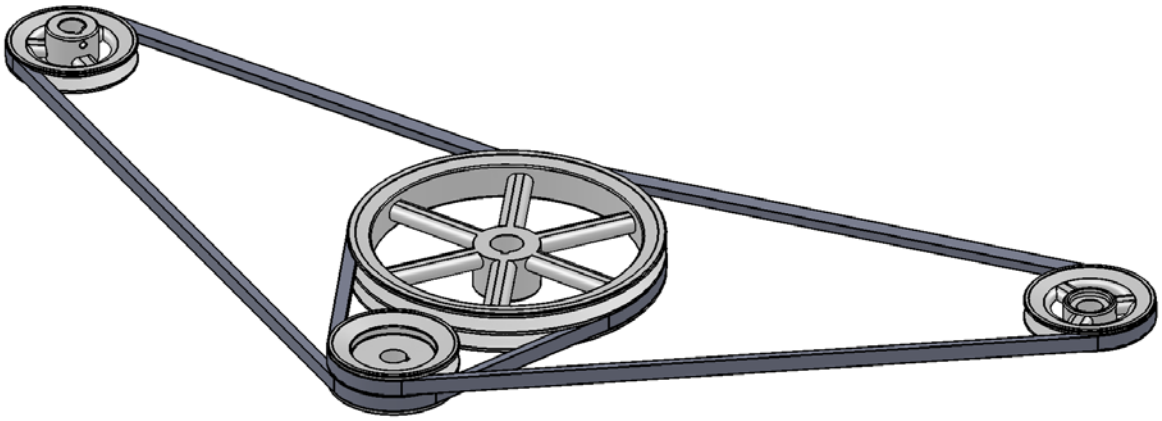
Make these periodic reviews of SAFETY and OPERATION a standard practice for all your equipment. We feel that an untrained operator is unqualified to operate this machine.

A sign-off sheet is provided for your record keeping to show that all personnel who will be working with the equipment have read and understood the information in the operator's manual and have been instructed in the operation of the equipment.

SIGN-OFF FORM

Date	Employees Signature	Employers Signature

Belt Arrangement for Pulsar Finish Mower



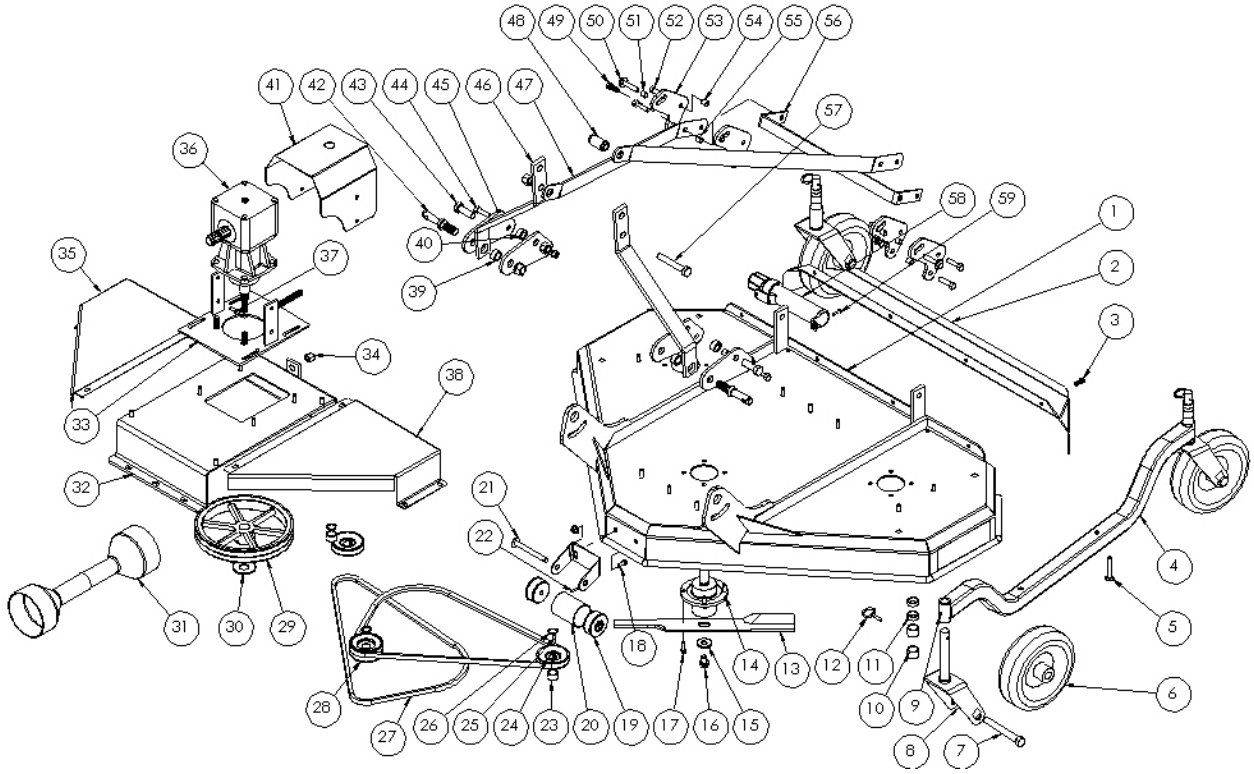
All our finishing mowers have similar belt arrangement.

Note:

The two single V-Pulleys are identical, only one of them is upside down. It does not matter which pulley is right side up. There is a spacer on the spindle that is either below or on top of the pulley. They are held in place with a snap-ring and set screws.

When tightening the belt please note that after a certain tension the gearbox mount starts to deform and the large pulley starts to angle causing belt misalignment. Please do not tighten beyond this point. Do not use any form of belt dressing as this causes the belt to become glazed, or if the dressing stays tacky it will collect dust and debris.

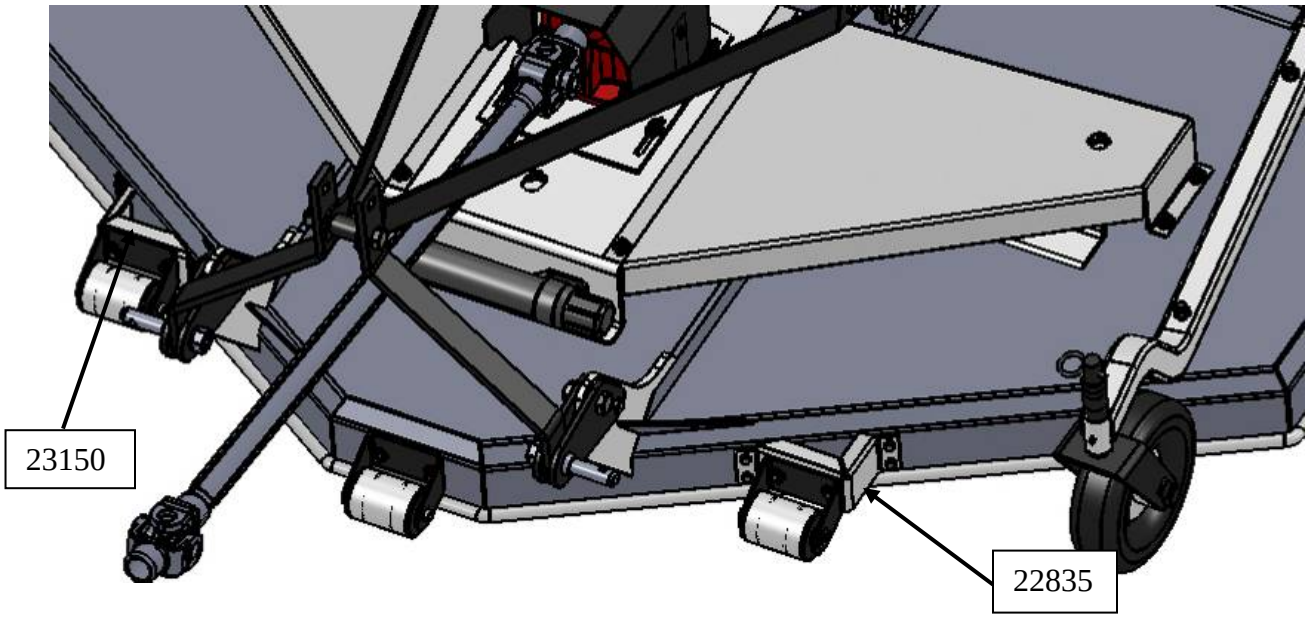
M K Pulsar Finish Mower
Parts



Item #	Description	Part #	Part #	Part #	Qty
		PFM60RD	**PFM72RD**	**PFM90RD**	
1	Main Deck	33219	33215	22810	1
2	Rear Deflector	33227	33224	10616	1
3	Bolt 3/8x1 c/w lw,n	OL	OL	OL	4
4	Wheel Beam	33231	33226	22826	2
5	Carriage Bolt 1/2x3 c/w fw,lw,n	OL	OL	OL	4
6	Wheel	900012	900012	900012	4
7	Bolt 3/4x6 c/w ln	OL	OL	OL	4
8	Wheel Fork	21380	21380	21380	4
9	Grease Fitting 1/4-28	OL	OL	OL	4
10	Long Spacer	10301	10301	10301	8
11	Short Spacer	10302	10302	10302	8
12	Lynch Pin 1/4"	wal385502	wal385502	wal385502	4
13	Blade	176009	90007	176008	3
14	Spindle	900001	900001	900001	3
15	Heavy Washer	10118	10118	10118	3
16	Bolt 5/8x1 c/w lw	OL	OL	OL	3
17	Bolt 3/8x1 1/4 c/w lw, n	OL	OL	OL	12
18	Bolt 3/8x1 c/w fw, lw, n	OL	OL	OL	2
19	Anti-Scalp Roller End	Southman3ec	Southman3ec	Southman3ec	2

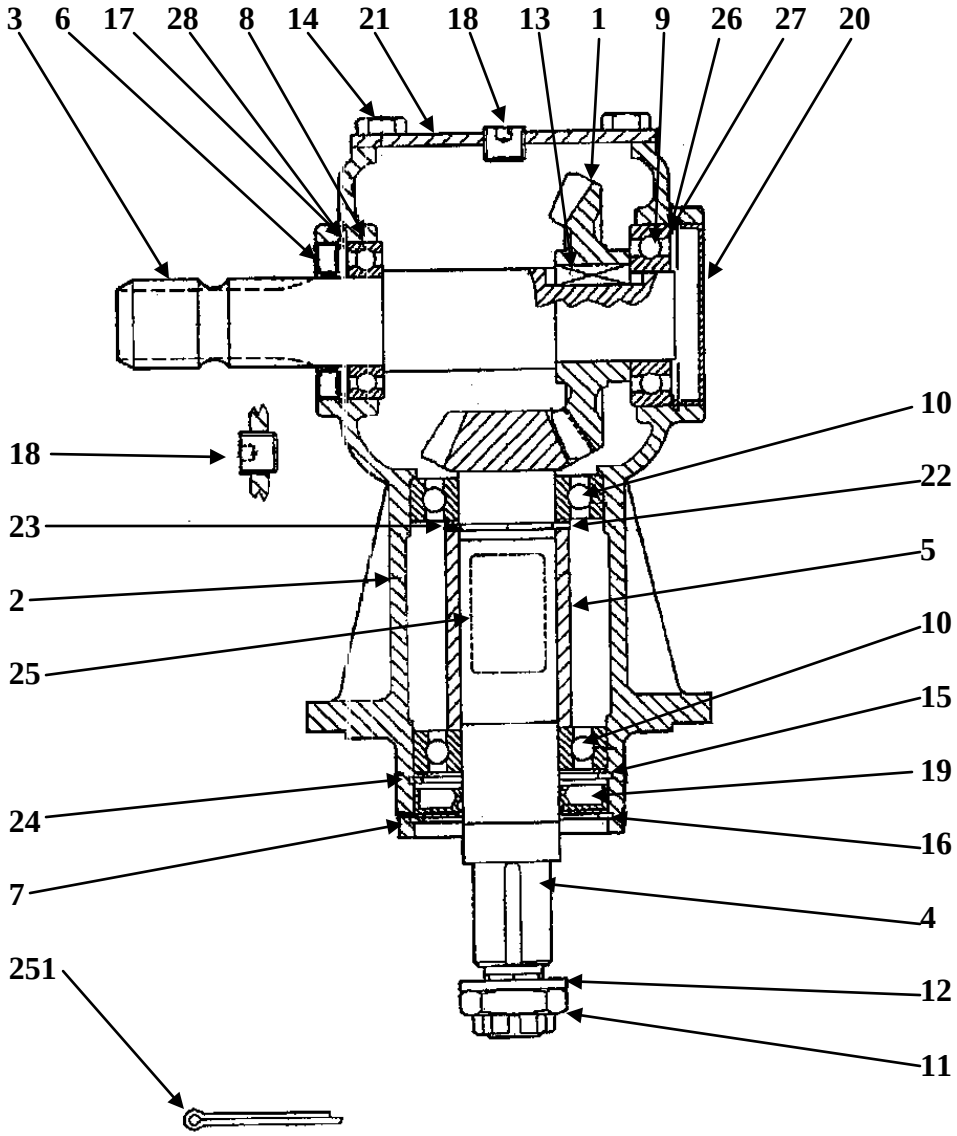
Item #	Description	Part #	Part #	Part #	Qty
		PFM60RD	**PFM72RD**	**PFM90RD**	
20	Anti Scalp Roller Body	10304	10304	10304	1
21	Anti-Scalp Roller Axle	21399	21399	21399	1
22	Cotter Pin 1/8x1	OL	OL	OL	1
23	Pulley Spacer	21392	21392	21392	2
24	Outside Spindle Pulley	900010	900004	900013	
25	Key	21397	21397	21397	3
26	Snap Ring	1400-100	1400-100	1400-100	3
27	Belt	Belt 66	Belt76	Belt92	2
28	Center Spindle Pulley	900011	900003	900014	1
29	Gearbox Pulley	900002	900002	900002	1
30	Washer	83200409	83200409	83200409	1
31	PTO Complete	900201	900202	900210	1
32	Gearbox Mount	33236	33236	22821	1
33	Gearbox Slider	21375	21375	21480	1
34	Nut 5/8 ln	OL	OL`	OL	1
35	Right Belt Shield	33238	33237	22823	1
36	Gearbox	F205J808	F205J808	F205J808	1
37	Bolt 3/8x1 c/w lw, n	OL	OL	OL	4
38	Left Shield	23148	23149	22824	
39	Spacer	21545	21545	21545	2
40	Spacer	10614	10614	10614	2
41	Gearbox Cover	21550	21550	21550	1
42	Hitch Pin c/w lw, n	386003	386003	386003	2
43	Bolt 3/4x2 1/4 c/w ln	OL	OL	OL	2
44	Bolt 1/2x2 c/w lw, n	OL	OL	OL	2
45	Hitch Link	21536	21536	21536	4
46	"A" Frame	21535	21535	21535	2
47	Top Link Brace	33233	21537	21537	2
48	Top Link Spacer	21553	21553	21553	1
49	Bolt 1/2x1 1/4 c/w lw, n	OL	OL	OL	4
50	Bolt 1/2x2 1/2 c/w fw, lw, n	OL	OL	OL	2
51/55	Spacer	607-148	607-148	607-148	4
52	Bolt 1/2x2 c/w lw, n	OL	OL	OL	2
53	Rear Hitch Link	10613	10613	10613	4
54	Spacer	607-148	607-148	607-148	2
56	Hitch Link Spreader Bar	33263	33263	33263	1
57	Bolt 3/4 x 4 1/2 c/w ln	OL	OL	OL	1
58	Manual Tube	DJA70111	DJA70111	DJA70111	1
59	R Head Bolt 1/4x1	OL	OL	OL	2

M K Pulsar Finish Mower
90 RD Side Anti-Scalp Roller



The M K Pulsar 90 Finish Mower has 2 Anti-Scalp rollers located approx halfway between the center Roller and the ouside castor wheel.
Please note the same rollers and brackets are used with added right and left mounts bolted on with eight; 3/8x1 bolts lockwasher and nuts

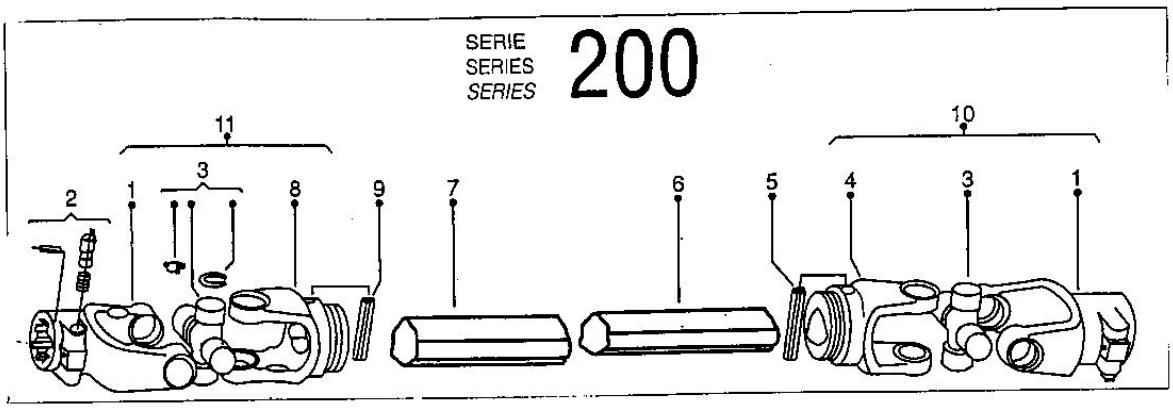
Finish Mower LF-205-808 Gearbox

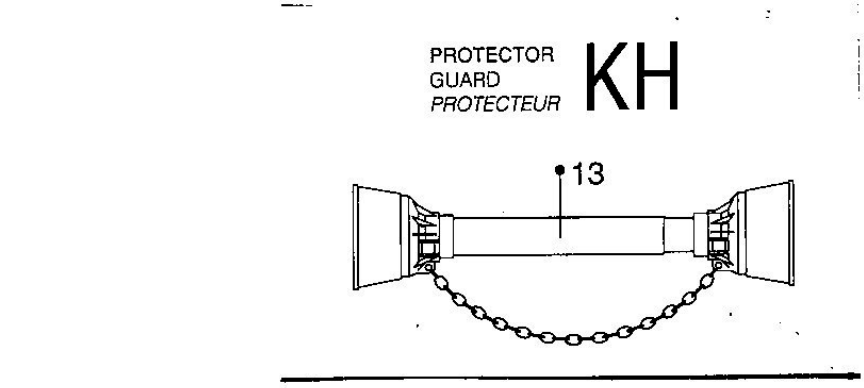


Item #	Part #	Pcs	Description	Item #	Part #	Pcs	Description
1	0.135.5000.00	1	Crown Gear Z23 MS	16	8.5.3.00955	1	Snap Ring (SB 81)
2	0.205.030.00	1	Casting	17	8.5.2.00648	1	Snap Ring (62x65x3)
3	0.135.2003.00	1	Input Shaft	18	8.6.6.00301	2	3/8" Plug
4	0.125.6013.00	1	Pinion	19	8.7.1.00748	1	Dust Lip (40x80x12)
5	0.125.7105.00	1	Spacer	20	8.7.0.00744	1	Oil Cap (72x10)
6	8.7.3.01259	1	Oil Seal (35x62x7)	21	0.205.1300.00	1	Cover
7	1.125.7100.00	1	Protective Washer	22	0.244.7500.00	1	Shim Kit (40.3x51.5)
8	8.0.1.00000	1	Bearing 6007 (35x62x14)	23	8.5.1.00680	1	Snap Ring (40x37.5x2.5)
9	8.0.1.00870	1	Bearing 6207 (35x72x17)	24	0.267.7500.00	1	Shim Kit (69x79.7)
10	8.0.1.00871	2	Bearing 6208 (40x80x18)	25	0.124.7135.00	1	Name Plate
11	8.2.2.01144	1	Castle Nut M24x2	26	0.248.7500.00	1	Shim Kit (60.3x71.7)
12	8.3.2.00409	1	Washer (25x44x4)	27	8.5.2.00131	1	Snap Ring (72x75x25)
13	8.4.1.00993	1	Parallel Key (10x8x30)	28	0.113.7500.00	1	Shim Kit (55.4x61.7)
14	8.1.1.00054	4	Bolt (M10x20)	215	8.4.7.00516	1	Cotter Pin (8x50)
15	8.5.2.00030	1	Snap Ring (80x83x2.5)				

M K Pulsar Finish Mower
PTO Driveline

PTO SHAFT PARTS LIST





48SD	60SD	PTO Parts 02	72SD	72RD	PTO Parts 03
1	176800	QD Yoke Assebbly	176830		QD Yoke Assembly
2	176801	Push Pin Kit	176831		Push Pin Kit
3	176802	Cross Kit	176832		Cross Kit
4	176803	Inner Tube Yoke	176833		Inner Tube Yoke
5	176804	Roller Pin Inner Tube	176834		Roll Pin Inner Tube Yoke
6	176805	Inner Tube	176835		Inner Tube
7	176806	Outer Tube	176836		Outer Tube
8	176807	Outer Tube Yke	176837		Outer Tube Yoke
9	176808	Outer Tubr Yoke Roller Pin	176838		Roll Pin Outer Tube
10	176809	QD Yoke/Cross/In T Yoke	176839		QD Yoke/Cross/InnerT Yoke
11	176810	QD Yoke/Cross/Out T Yoke	176840		QD Yoke/Cross/Outter T Yoke
12	176811	Complete Shield Ki	176841		Complete Shield Kit

Bolt Torque

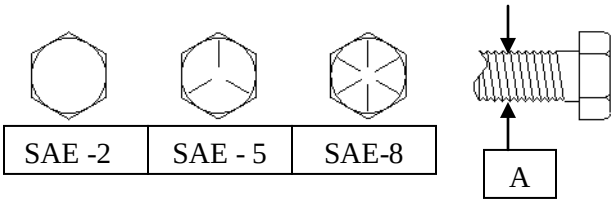
As used on this equipment

Bolt torque table shown below gives torque values for the various bolts used.
This chart is for non-lubricated threads.
Replace with the same strength bolt.

Torque Specifications. Torque values are identified by their head markings

Diameter	SAE 2		SAE 5		SAE 8	
"A"	Lb-ft	N.m	Lb-ft	N.m	Lb-ft	N.m
1/4	6	(8)	9	(12)	12	(17)
5/16	10	(13)	19	(25)	27	(36)
3/8	20	(27)	33	(45)	45	(63)
7/16	30	(41)	53	(72)	75	(100)
1/2	45	(61)	80	(110)	115	(155)
5/8	95	(128)	160	(215)	220	(305)
3/4	165	(225)	290	(390)	400	(540)
1	225	(345)	630	(850)	970	(1320)

Allen head cap screws are similar to SAE 8 quality.



These torques are for a reference only. Not all these sizes and grades are necessarily used in this machine. Bolts that are used as a pivot or hinge have to be used with a locknut, therefore only tighten enough to secure the bolt and still allowing the part to rotate freely.