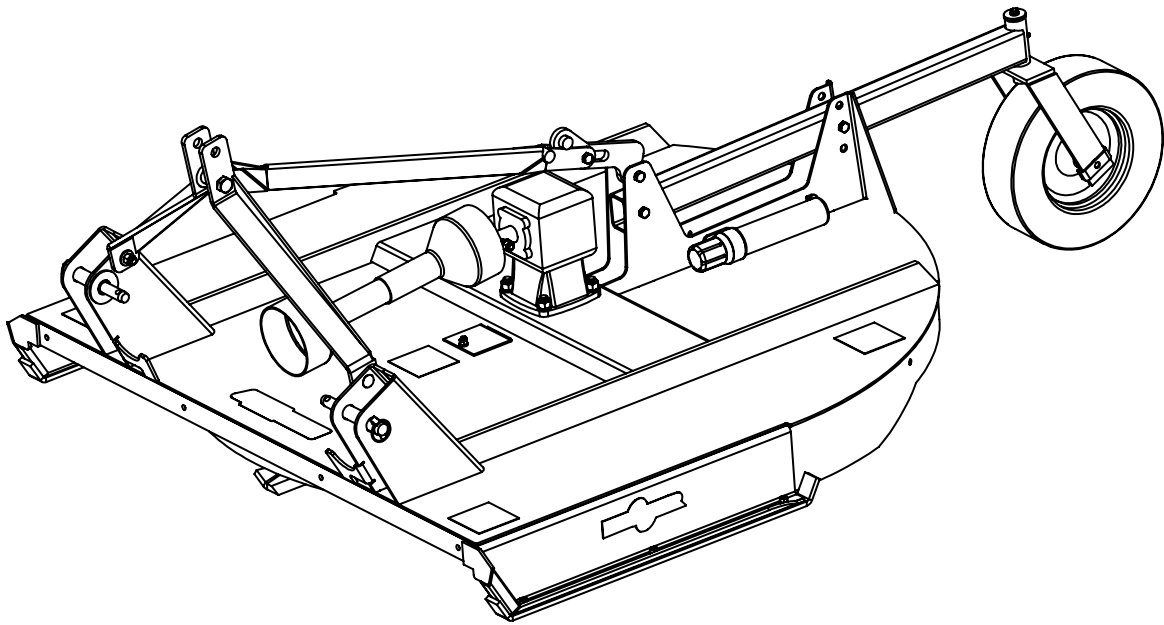




## Pulsar Plus Rotary Cutter Operator's / Parts Manual



MK Martin Enterprise Inc.  
3950 Steffler Rd Elmira, ON, Canada N3B 2Z3

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REV: 18-1



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3950 Steffler Rd. • Elmira • Ontario, Canada • N3B 2Z3 • Email : sales@mkmartin.ca • Fax : (519)-664-3695 • Tel : (519)-664-2752

# Warranty

Effective on products retailed on or after November 1, 2017

## Two Year Limited Consumer Warranty

## Five Year Limited Consumer Warranty on Gearboxes

## 90 Day Limited Commercial Warranty including Gearboxes

Commercial includes rental and industrial applications.

**Warranty begins at the time of customer delivery and is activated upon warranty registration receipt at MK Martin Enterprise Inc.**

**Warranty coverage is null and void unless the Warranty Registration form has been completed in full and is on file at MK Martin Enterprise Inc.**

**Keep your registration copy in a safe place, it is required as proof of warranty activation.**

This new and unused product is warranted by MK Martin Enterprise Inc. to be free from defects in material and workmanship under normal use and regular service as described in the owner's manual, for a consumer period of 2 years and 5 years for gearboxes, from the date of delivery, and commercial period of 90 days, including gearboxes, from the date of delivery. Warranty is limited to the replacement of parts and / or repair of the product.

If issues develop within the warranty period with the product, contact the local dealer from which you purchased the unit. Only MK Martin authorized dealers may make repairs to the product or affect the replacement of defective parts, unless otherwise approved by MK Martin. Repairs / replacement will be done at no charge within a reasonable time after the receipt of the product.

**This warranty does not cover the following items:**

1. Normal replacement of service items.
2. Normal maintenance or adjustments.
3. Machines or parts lost or damaged during shipment,
4. Accessory items / parts not supplied by MK Martin
5. Damages resulting from:
  - misuse, negligence, accident, theft or fire
  - use of improper or insufficient fuel, fluids or lubricants
  - use of after market parts or accessories, unless approved by MK Martin
  - modifications, alteration, tampering or improper repair
  - any device or accessories installed other than by an authorized dealer.
6. Tires are covered by the manufacturer of the tire and the warranty period specified by that manufacturer. **Please contact the tire manufacturer for warranty on these items.**

MK Martin Enterprise Inc. shall not, in any event, be liable for any losses, damages or costs; to include profits, travel, transportation, pick up, delivery, towing cost, tow vehicle, loss of use, whether special, incidental, consequential or otherwise, in any way. Unit or parts are returned at the customer's expense.

Include a copy of your completed Warranty Registration form with any claim as proof of warranty activation.

There are no warranties, expressed or implied, other than those specified herein. No agent, employee or other person has any authority to vary any of the foregoing provisions.

Warranty coverage is null and void unless the Warranty Registration form has been completed in full and is on file at MK Martin Enterprise Inc. Warranty begins at the time of customer delivery and is activated upon Warranty Registration receipt at MK Martin Enterprise Inc.

**M K Martin Enterprise Inc  
3950 Steffler Rd  
Elmira ON CA N3B 2Z3**

*Purchaser's warranty protection is valid only when this completed form or a copy of this form is on file at M K Martin Enterprise Inc. By filling out this form the purchaser has acknowledged delivery of equipment and owner's / operator's manual and has accepted the condition of the equipment.*

**Date of delivery to purchaser -----**

**Type of Equipment -----**

**Model # ----- Serial # -----**

**Retailer's Signature Indicates**

- *Equipment was properly assembled as directed by manufacturer*
- *Equipment was tested for functionality and operates properly*
- *Purchaser was instructed in safe and proper operating procedures*
- *Warranty was explained to purchaser*
- *Purchaser was given the operators manual*

***Retailer***

**Signature -----**

**Company -----**

**Address -----**

**Purchaser's signature indicates**

- *Acceptance of equipment fully assembled*
- *Received operator's manual*
- *Clearly understands conditions of warranty*
- *Received instructions of safe and proper operation of equipment*

***Purchaser***

**Signature -----**

**Company -----**

**Mailing address -----**

**City ----- Prov/State ----- Postal Code/Zip -----**

**Available phone number -----**

**Warranty is valid only when it has been received by manufacturer at address above**

# Warranty Registration

**Please Cut and Return to M K Martin Enterprise Inc**

**Fold And Tape here**

*Do not tape all edges or use staples*

*Fold Here*

**Postage  
Stamp**

**M K Martin Enterprise Inc  
3950 Steffler Rd  
Elmira ON CA N3B 2Z3**

## Safety

**Take Note!** This safety symbol is found throughout this manual to call your attention to instructions involving yourself and others working around the machine.

- **Failure to follow these instructions can result in injury or death**



This symbol means

- **Attention!**
- **Become Alert!**
- **Your Safety is involved!**

Signal words are used in this manual.

**Caution:** Indicates a potentially hazardous situation that may result in injury.

**Warning:** Indicates a hazardous situation that could result in serious injury or death.

**Danger:** Indicates a hazardous situation that needs to be avoided. It is you the operator that needs to be aware of these dangers.

If you have any questions not answered in this manual please contact your dealer or





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## Safety -- It's in your interest!

1. Read and understand the Operator's Manual and all safety signs before operating, servicing, adjusting, repairing or unplugging.
2. Do not allow riders.
3. Install and secure all guards and shields before operating the equipment.
4. Keep hands, feet, hair and clothing away from all moving parts.
5. Place all controls in neutral, stop tractor engine, set park brake, remove ignition and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging the cutter.
6. Place all tractor controls in neutral before starting.
7. Never operate the mower unless you are sitting on the tractor seat.
8. Do not operate the tractor inside a building unless there is adequate ventilation.
9. Clear the area of bystanders, especially small children before starting.
10. Stay clear of the machine when engaging the PTO. Keep others away.
11. Clean reflectors, SMV sign and lights if used, before transporting.
12. When transporting use hazard flashing lights.
13. Do not put hands or feet under machine while tractor engine is running.
14. Do not operate the cutter in a raised position.
-  15. Objects can be thrown out from the cutter with sufficient force to severely injure people or pets. Stay away from mower when it is running, keep others away.
16. Remove all sticks, stones and other loose matter in the area before starting.
17. Review operator's manual annually.
-  18. It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the cutter.
-  19. Follow all safety instructions. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the work-site.
-  20. Untrained operators are not qualified to operate the cutter!

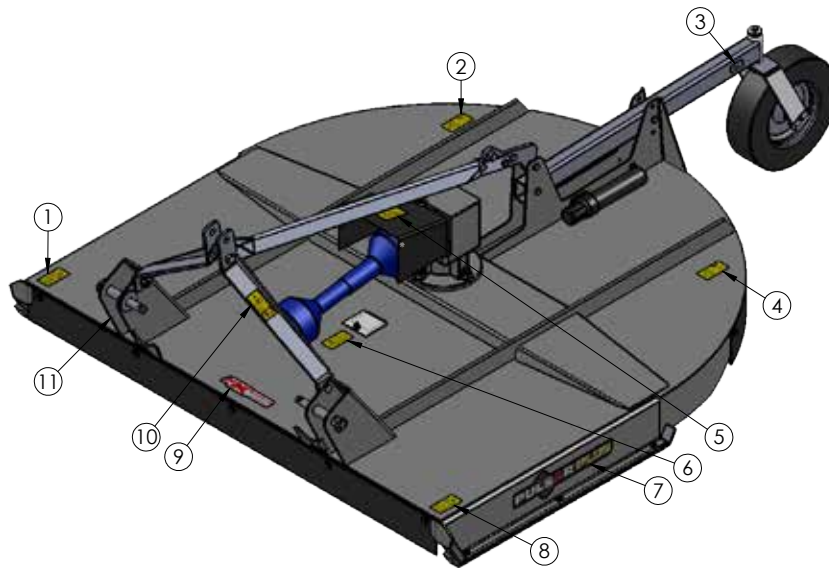


## **WARNING !**

**Always block cutter securely before working on or under cutter.**



# Decal Location



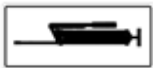
**#11 -**  
Serial plate



**#1 - Before any operation of maintenance a/o adjustment, stop, brake the tractor on level ground, lower the machine to the ground and read the instruction manual.**



**#2 - DANGER.** Sharp objects could be thrown. Keep safe distance from the machine



**#3 - Grease**



**#4 - DANGER of possible shearing of limbs.** Keep a safe distance from the machine while it is working.



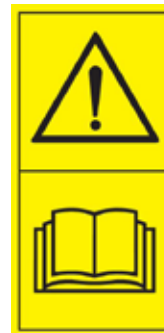
**#5 - DANGER of being caught by the PTO shaft.** Do not go near the rotating members of the machine while in operation.



**#6 - DANGER of possible shearing of limbs.** Do not remove the protective shields unless all moving parts of the machine have reached a complete standstill.



**#7 - Pulsar**  
decal - x2



**#8 - Before operating machine,**  
carefully read the instruction manual



**#9 - MK Martin**  
Made in Canada



**#10 - DANGER of being crushed.**  
Do not get between the tractor and the machine.

## Assembly Information

The Pulsar Cutter is shipped with the “A” Frame and Brace with fastening hardware packaged, bolted to the cutter deck

The smaller Cutter with a lighter gearbox, have a PTO shaft with a shearbolt. This PTO has a large ‘bell’ on one end, covering the yoke and shearbolt.

The larger Cutter with a heavier gearbox, have a PTO shaft with a slip clutch and a PTO Guard bolted on the gearbox. These guards are shipped, bolted on upside down on the gearbox.

### Upon Receiving:

Unpack the parts and using preceding page (decal location) as reference. The lower “A” Frame pivots on a bushing, fastened with carriage bolts. Each end of the brace is bolted with a bolt and locknut. After tightening, back the nut up 1/2 turn to allow for free pivoting action of these parts.

### Cutters with larger gearbox:

The PTO Guard is bolted on with 4 metric bolts. Use a 13mm wrench to remove the bolts and turn the Guard right side up, with the removable shield on top. These parts are secured to each other with one lynch pin.



## WARNING !

**Always block cutter securely before working on or under cutter.**

# Operating

## **For the new operator**

The Pulsar Cutter is designed to cut long grass and scrub land with small trees or saplings 1 1/4 inch dia. The cutter will work best on dry conditions. When cutting damp or longer grass, use slower travel speed and you may need to frequently clean the underside of the cutter deck. Power to the blades is provided by the tractor through a PTO Shaft and Gearbox.

The cutter is designed for a 540 RPM PTO speed and will give the best performance at this speed.

Many features in this cutter are the result of suggestions made by customers like you.

By following the operating instructions in conjunction with a good maintenance program, your Pulsar Cutter will provide you with many years of service.

## **To Operate:**

Attach the cutter to the tractor 3ph. Ensure the deck is level to the ground by adjusting the right hitch arm adjustment and the top link until the deck is level.

Cutting height is controlled by adjusting the rear wheel height.

## **Starting the Mower:**

With the cutter slightly raised from the ground. (wheel may be off the ground 3-6 inches)

Run the engine at a slow speed and slowly engage the PTO.

Slowly bring the engine to PTO speed. Do not exceed rated speed.

Lower the cutter to the ground and proceed to cut.

## **Ground Speed:**

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

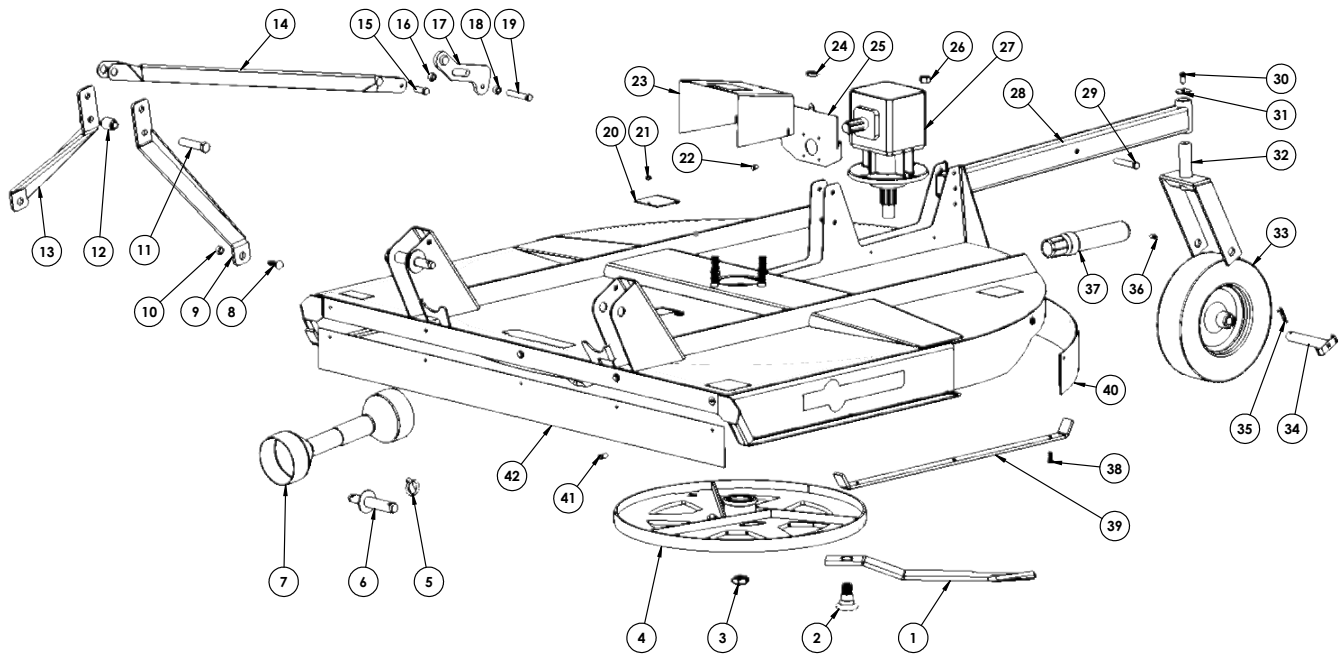
The speed can be increased for lighter cutting conditions.

Decrease your speed if the cut is ragged and uneven, or uncut patches.

## **Transport on Road - Be Safe, Be Seen!**

When driving on the road please follow all regulations. Use lights, reflectors, SMV sign as required by law.

## Pulsar Plus Rotary Cutter 60HD-72HD-84HD Parts



Item#	Part#	Description	Qty 60HD	Qty 72HD	Qty 84HD
1	53057	Blade ( 3 Blade Kit - 53220 )	3	3	
	53059	Long Blade ( 3 Blade Kit - 53221 )			3
2	53060	Blade Bolt c/w lw,n	3	3	3
3	Nut	See Page	pg.15	pg.15	pg.15
4	52980	60 Blade Bar	1		
	52999	72-84 Blade Bar		1	1
5	OL	7/16 Lynch Pin	2	2	2
6	53080	Hitch Pin	2	2	2
7	512-722223HD	60 - 72 HD PTO	1	1	
	512-842223	84 HD PTO			1
8	OL	Carriage Bolt 1/2 x 1 3/4 c/w fw,ln	2	2	2
9	52977	Left Aframe	1	1	1
10	22868	Pivot Bushing	2	2	2
11	OL	Bolt 3/4 x 4 c/w ln	1	1	1
12	50702	Spacer Bushing	1	1	1
13	52976	Right Aframe	1	1	1
14	50711	60 Upper Link Bar	1		
	50705	72 Upper Link Bar		1	
	50718	84 Upper Link Bar			1
15	OL	Bolt 1/2 x 1 3/4 c/w ln	1	1	1
16	22868	Link Bushing	1	1	1
17	50707	Lower Link Bar	1	1	1

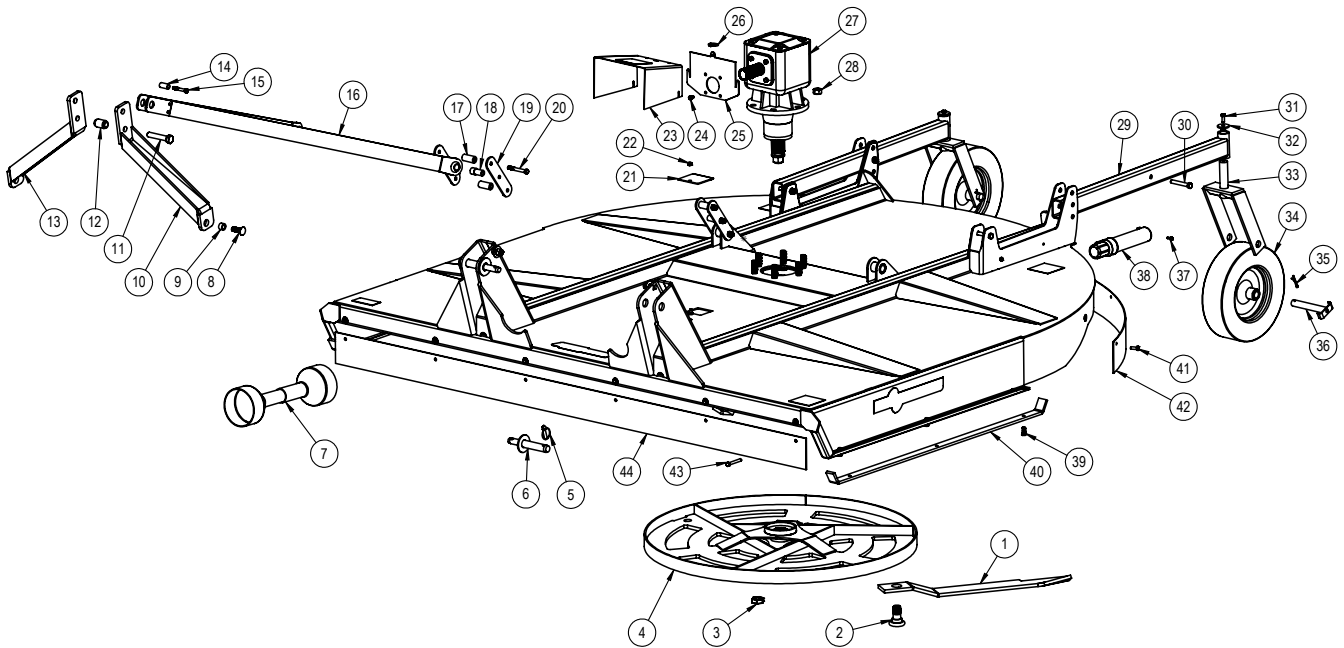
## Pulsar Plus Rotary Cutter 60HD-72HD-84HD Parts

Item#	Part#	Description	Qty 60HD	Qty 72HD	Qty 84HD
18	22868	Spacer	2	2	2
19	OL	Bolt 1/2 x 3 1/2 c/w In	1	1	
	OL	Bolt 1/2 x 2 1/4 c/w In			1
20	30080	Cover	1	1	1
21	OL	Nut 3/8 c/w lw	1	1	1
22	OL	Bolt M8 x 16 c/w lw		4	4
23	30109	PTO Shield		1	1
24	OL	3/16 Lynch Pin		1	1
25	30108	Shield Holder		1	1
26	OL	Nut 5/8 c/w lw	4		
	OL	Nut 3/4 c/w lw		4	4
27	53068	Heavy Gearbox	1	1	1
28	22640	Wheel Beam	1	1	2
29	OL	Bolt 1/2 x 3 1/2 c/w lw,n	2	2	4
30	OL	Bolt 3/8 x 1 c/w lw	1	1	2
31	30260	Cap	1	1	2
32	22830	Wheel Fork	1	1	2
33	53069	Wheel	1	1	2
34	30086	Wheel Axle	1	1	2
35	OL	Cotter Pin 3/16 x 2	1	1	2
36	OL	Flange bolt 1/4 x 3/4 c/w Flange nut	2	2	2
37	52649	Manual Tube	1	1	1
38	OL	Plow bolt 3/8 x 1 1/4 c/w lw, n	6	6	6
39	52978	60 Skid Shoe	2		
	52996	72 Skid Shoe		2	
	52020	84 Skid Shoe			2
40	53433	60 Back rubber guard	1		
	53410	72 Back rubber guard		1	
	53437	84 Back rubber guard			1
41	OL	Bolt 3/8 x 1 c/w fw,In	10	11	
42	53432	60 Front rubber guard	1		
	53409	72 Front rubber guard		1	
	53436	84 Front rubber guard			1

**Note:**

**OL = Obtain Locally**  
**c/w = complete with**  
**fw - Flatwasher**  
**lw = Lockwasher**  
**In = Locknut**  
**n = Nut**

## Pulsar Plus Rotary Cutter 96 Parts



Item#	Part#	Description	Qty 96HD
1	53059	Blade ( 3 Blade Kit - 53221 )	3
2	53060	Blade Bolt c/w lw,n	3
3	Nut	See Page	pg.16
4	53130	Blade Bar	1
5	OL	7/16 Lynch Pin	2
6	53080	Hitch Pin	2
7		PTO	1
8	OL	Carriage Bolt 5/8 x 2 c/w fw,ln	2
9	53517	Pivot Bushing	2
10	53515	Left Aframe	1
11	OL	Bolt 3/4 x 4 c/w ln	1
12	50702	Spacer Bushing	1
13	53516	Right Aframe	1
14	53125	Link Spacer	2
15	OL	Bolt 3/8 x 2 1/2 c/w lw,n	2
16	53442	Link Bar	2
17	53124	Link Control Spacer	4
18	53123	Link swivel Spacer	2
19	53122	Link Control	4
20	OL	Bolt 7/16 x 3 1/2 c/w lw,n	6
21	30080	Cover	1
22	OL	Nut 3/8 c/w lw	1

## Pulsar Plus Rotary Cutter 96 Parts

Item#	Part#	Description	Qty 96HD
23	30109	PTO Shield	1
24	OL	Bolt M8 x 16 c/w lw	4
25	30108	Shield Holder	1
26	OL	3/16 Lynch Pin	1
27	53796	Gearbox	1
28	OL	Nut 3/4 c/w lw	6
29	22640	Wheel Beam	2
30	OL	Bolt 1/2 x 3 1/2 c/w lw,n	4
31	OL	Bolt 3/8 x 1 c/w lw	2
32	30260	Cap	2
33	22830	Wheel Fork	2
34	53069	Wheel	2
35	OL	Cotter Pin 3/16 x 2	2
36	30086	Wheel Axle	2
37	OL	Flange bolt 1/4 x 3/4 c/w Flange nut	2
38	52649	Manual Tube	1
39	OL	Plow bolt 3/8 x 1 1/4 c/w lw, n	6
40	53126	Skid Shoe	2
41	OL	Bolt 3/8 x 1 c/w fw,ln	6
42	53444	Back rubber guard	1
43	OL	Bolt 3/8 x 3 c/w fw,ln	6
44	53443	Front rubber guard	1

**Note:**

**OL = Obtain Locally**

**c/w = complete with**

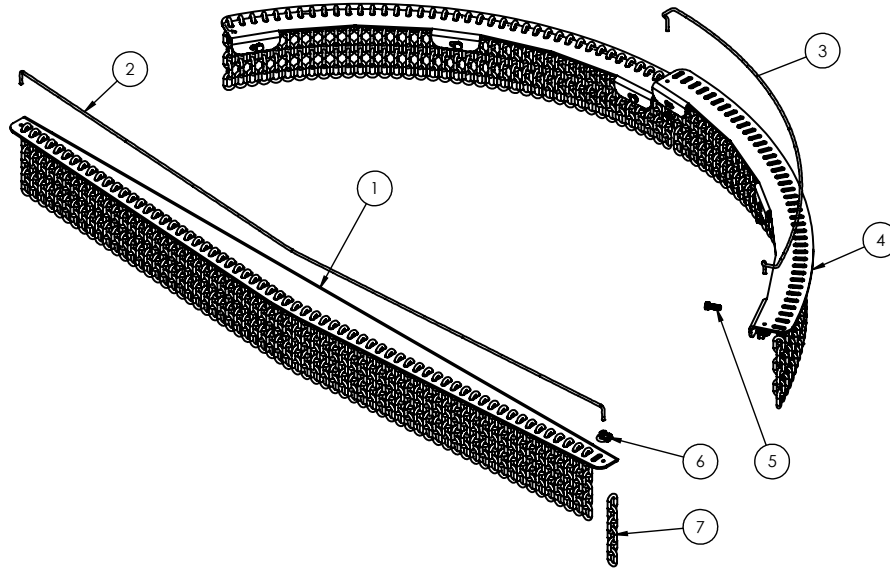
**fw - Flatwasher**

**lw = Lockwasher**

**ln = Locknut**

**n = Nut**

## Chain Guard Parts



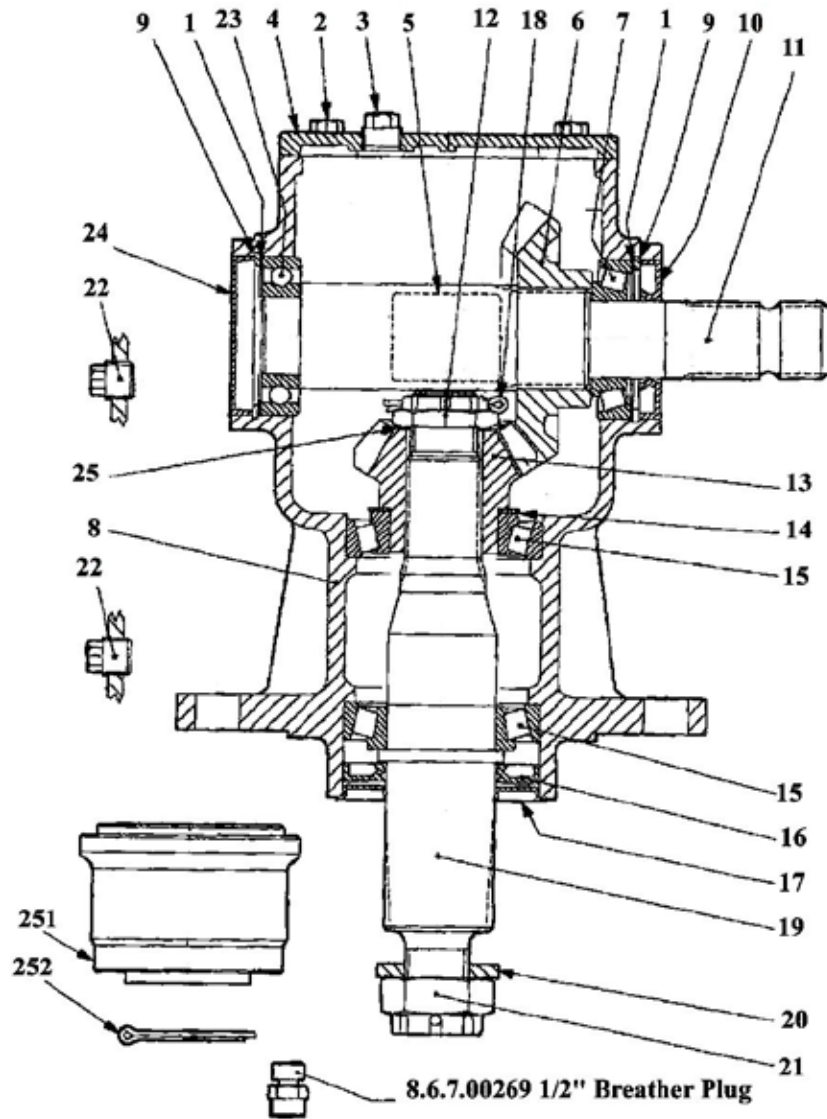
Item#	Part#	Description	Qty 60	Qty 72	Qty 84	Qty 96
1	52903	60 Front Chain Guard	1			
	52954	72 Front Chain Guard		1		
	53022	84 Front Chain Guard			1	
	53161	96 Front Chain Guard				1
2	52942	60 Front Cable	1			
	52957	72 Front Cable		1		
	53024	84 Front Cable			1	
	53163	96 Front Cable				1
3	52941	60 Rear Cable	2			
	52956	72 Rear Cable		2		
	53025	84 Rear Cable			2	
	53164	96 Rear Cable				2
4	52901	60 Rear Chain Guard	2			
	52955	72 Rear Chain Guard		2		
	53023	84 Rear Chain Guard			2	
	53162	96 Rear Chain Guard				2
5	OL	Bolt 3/8 x 1 c/w lw,n	10	11	11	12
6	OL	3/16 Cable Clamp	6	6	6	6
7	53081	5/16 Chain	128	164	180	220

**Note:**

OL = Obtain Locally  
 c/w = complete with  
 fw = Flatwasher  
 lw = Lockwasher  
 ln = Locknut  
 n = Nut



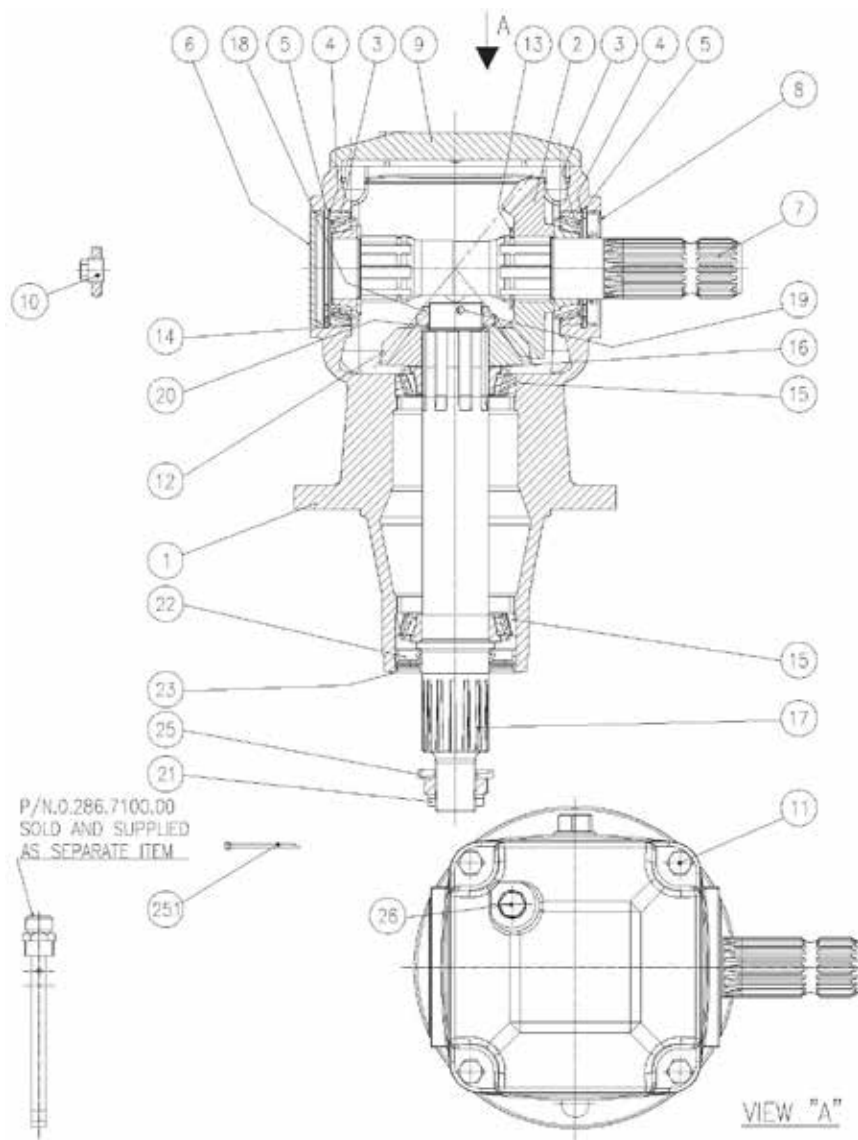
## Pulsar Cutter LF 140J Gearbox



Item #	Part #	Description	Qty
1	512-02487500	Shim	2
2	512-81100041	Bolt M8x22	4
3	512-86500203	1/2" Solid Plug	1
4	512-01401302	Cover	1
5	512-01247135	ID Plate	1
6	512-01326004	Crown Gear	1
7	512-80900026	Bearing 30207	1
8	512-01400300	Casting	1
9	512-85200131	Snap Ring	2
10	512-87300055	Oil Seal 35x72x10	1
11	512-01402000	Input Shaft	1
12	512-01327106	Castle Nut	1
13	512-01166204	Pinion Gear	1
14	512-07127500	Shim	1
15	512-80900469	Bearing 30210	2
16	519-87101107	Oil Seal 50x90x10	1

Item #	Part #	Description	Qty
17	512-01397100	Dust Lip	1
18	512-8470111	Cotter Pin	1
19	512-01403002	Output Shaft	1
20	512-01397101	Flatwasher	1
21	512-01407102	Castle Nut	1
22	512-68500006	3/8" Plug	2
23	512-80100870	Bearing 6207	1
24	512-87000744	Oil Seal	1
25	512-01027510	Shim	1
251	512-01307000	Hub (large)	1
252	512-84700146	Cotter Pin	1

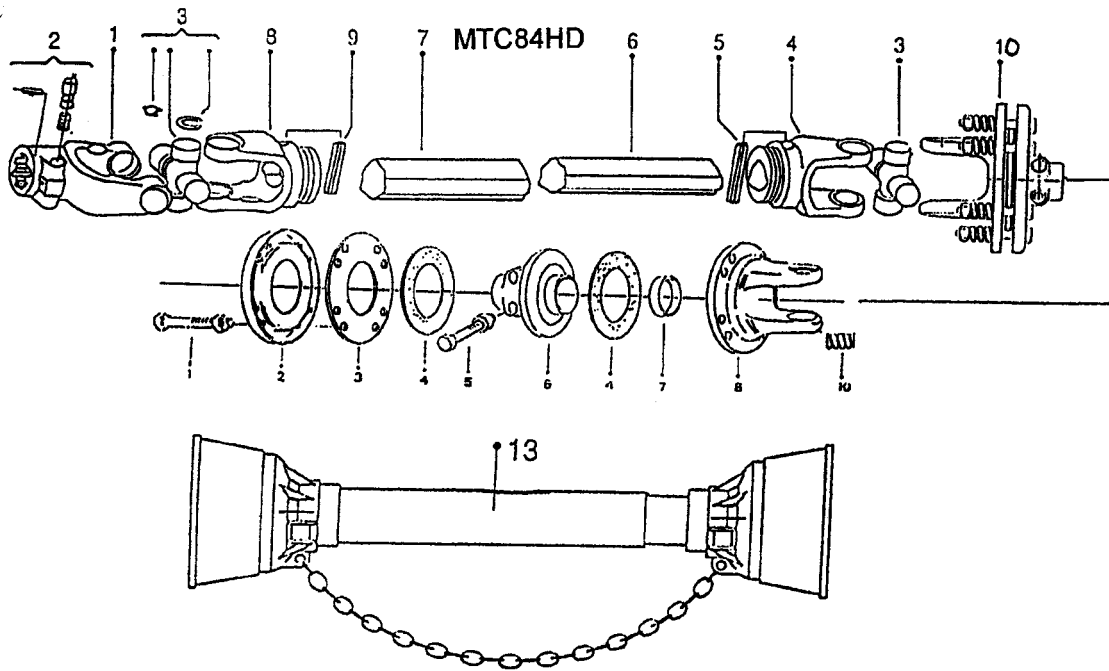
## Pulsar Cutter LF 227J Gearbox



Item #	Part #	Description	Qty
1	0.227.0301.00	Casting	1
2	0.238.6001.00	Gear	1
3	8.0.9.00143	Roller Bearing	2
4	0.709.7500.00	Shim Kit	2
5	8.5.2.00332	Snap Ring	2
6	0.121.7101.00	Oil Cap	1
7	0.227.2001.00	Input Shaft	1
8	8.7.1.02348	Dust lip	1
9	0.227.1301.00	Cover	1
10	8.6.5.00006	3/8 Plug	1
11	8.1.1.00054	Bolts 10m x 20	4
12	0.238.5001.00	Pinion	1
13	8.5.1.01084	Snap Ring	1
14	0.252.7525.00	Shim	1
15	8.0.9.00469	Roller bearing	2
16	0.712.7500.00	Shim kit	1

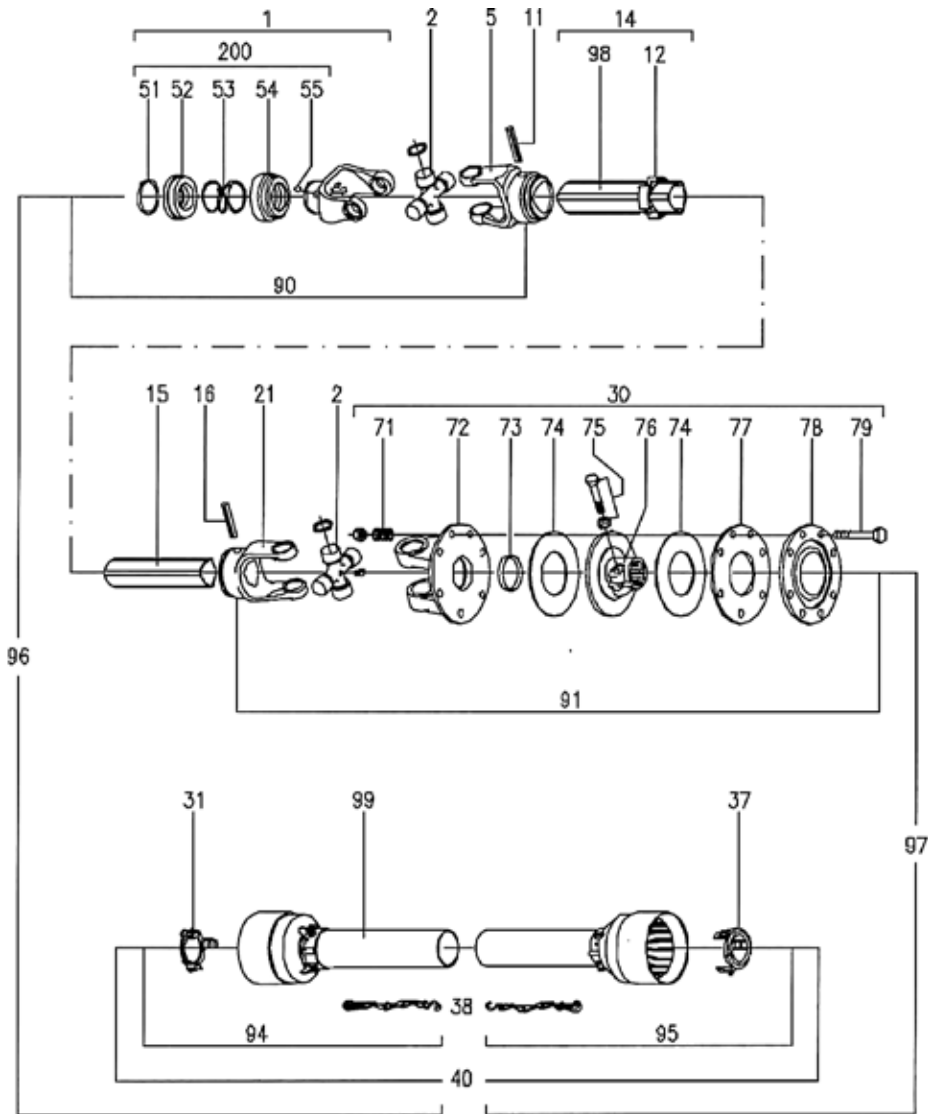
Item #	Part #	Description	Qty
17	0.227.3002.00	Output Shaft	1
18	0.132.7107.00	Castle nut	1
19	8.4.7.02265	Cotter Pin	1
20	0.285.7510.00	Shim	1
21	8.2.2.00555	Castle Nut	1
22	8.7.1.01107	Dust Lip	1
23	0.139.7100.00	Washer	1
25	0.139.7101.00	Bolt Washer	1
26	8.6.5.00203	1/2 Plug	1
251	8.4.7.00146	Cotter Pin	1

## Binnachi B5 PTO Pulsar 60H, 72H, 84H



Item #	Part #	Description	Qty
1	512-0700503	Push Pin Yoke	1
2	512-0986014047	Push Pin Kit	1
3	512-08205	Cross Kit	2
4	512-0805011	Inner Tube Yoke	1
5	512-098700865	Inner Tube Spring Pin	1
6	512-09881454100	Inner Tube	1
7	512-09881523100	Outer Tube	1
8	512-08005021	Outer Tube Yoke	1
9	512-098700870	Outer Tube Spring Pin	1
10	512-086205	Implement Yoke	1
13	512-083E05110SC	Complete Shield	1
<b>Slip Clutch</b>			
1	512-099510085B	Complete Screw	8
2	512-0889212	Pressure Cover	1
3	512-0889219	Inner Disc	1
4	512-08833160	Friction Disc	2
5	512-099512C60	Complete Screw	2
6	512-06692007C60	Center Disc	1
7	512-0981554125	Bushing	1
8	512-088920105	Flange Yoke	1
10	512-0984523605	Spring	8

## T60 PTO Pulsar 96



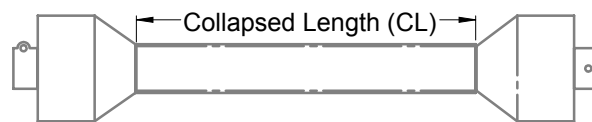
Item #	Part #	Description	Qty	Item #	Part #	Description	Qty
1	141.026.544	Complete Collar Yoke	1	71	180.019.017	Spring	8
2	180.016.130	Cross Journal set	2	72	151.016.037	Flange Yoke	1
5	151.016.028	Outer Yoke	1	73	180.019.019	Bush	1
11	190.000.018	Outer tube Roll Pin	1	74	180.019.018	Lining Ring	2
12	180.016.316	Bush grease fitting	1	75	165.000.503	M12x1.25x65 & nut	2
16	190.000.016	Inner tube Roll pin	1	76	151.017.019	Clutch Support	1
21	151.016.029	Inner Yoke	1	77	180.019.014	Inner Plate	1
30	146.262.014	Complete Disc Clutch	1	78	180.019.116	Pressure Plate	1
31	180.016.016	Retaining Collar	1	79	165.000.549	M10x85 & nut	8
37	180.016.015	Retaining Collar	1	98	190.000.216	Danger Label	1
38	180.016.025	Safety Chains	2	99	190.000.215	Danger Label	1
40	146.260.215	Complete Guard	1	100	190.000371	Instruction Manual	1
51	190.000.451	Outer Circlip	1	200	165.000.628	Kit Collar	1
52	151.016.486	Sleeve Collar	1				
53	180.016.487	Spring	1				
54	180.016.483	Fixed Sleeve	1				
55	190.000.078	Ball 1/2	3				

## PTO Drive-line Dimension

**The PTO Drive-line as supplied with the machine will need to be checked for the proper length before being put into service.**

To accommodate the various hitch and tractor configurations the supplied shaft may be too long, or in some cases too short. To determine shaft length, find the collapsed length, raise or lower the equipment until the PTO out of the tractor is horizontal with the input shaft on the machine. Measure lock-pin groove to lock-pin groove or bolt hole on the equipment. If this is on trailed equipment then turn tractor as sharp as possible.

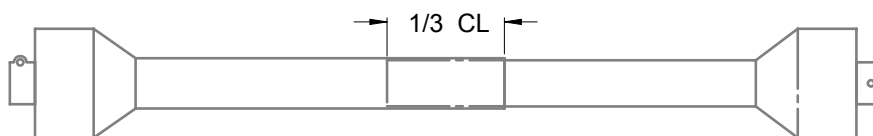
Measure collapsed PTO shaft from lock-pin to lock-pin or bolt hole and compare it with the measurement on the tractor. The difference of these measurements needs to be cut from Both Halves of the PTO shaft plus 1/2".



**Working Length overlap is 1/2 of above collapsed length**



**Minimum Overlap in Transport Position 1/3 of collapsed length**



**Following these guidelines will reduce the chances of damage to the equipment.**

- Use a sharp hacksaw to cut the PTO tube
- Use a fine file to remove any sharp edges and burrs from sawing
- Clean off all dirt and filings from tube , carefully test for smooth fit.
- Apply a light coat of grease to the outside of the small tube
- Reinstall the shields
- Install on equipment and recheck

**These procedures need to be done before first putting into operation and when attaching to a different tractor**

## Maintenance

The Pulsar Cutter is a low maintenance product. It has few parts to lubricate.

### Daily Lubrication or 8 hours

Grease  
PTO Joint Bearings  
PTO Shield Bearings  
Castor Swivel Bearing

### Weekly Lubrication or 40 hours

Grease  
Wheel Bearing  
Check Oil Level in Gearbox  
Check for wear on Blade Bolts  
Check for wear and cracks around Blade Pivot Hole

### Annually

Wash and cleanup  
Touch up any paint scratches  
Store on blocks of wood in a dry place

Gearbox Oil 80w90 Gear oil



## WARNING !

**Always block cutter securely before working on or under cutter.**







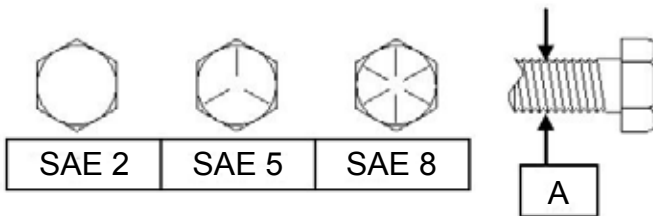
## Bolt Torque

As used on this machine

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

Torque Specifications. Torque values are identified by their head markings.

Diameter	SAE 2		SAE 5		SAE 8	
	<i>ft-lb</i>	<i>N.m</i>	<i>ft-lb</i>	<i>N.m</i>	<i>ft-lb</i>	<i>N.m</i>
<b>"A"</b>						
<b>1/4</b>	6	(8)	8	(11)	12	(16)
<b>5/16</b>	11	(15)	17	(24)	25	(33)
<b>3/8</b>	20	(27)	31	(42)	44	(59)
<b>7/16</b>	32	(43)	49	(67)	70	(95)
<b>1/2</b>	49	(66)	76	(105)	105	(145)
<b>5/8</b>	97	(130)	150	(205)	210	(285)
<b>3/4</b>	144	(195)	265	(360)	375	(510)
<b>7/8</b>	165	(225)	430	(585)	605	(820)
<b>1</b>	250	(340)	645	(875)	910	(1230)
<b>1 1/8</b>	355	(480)	795	(1080)	1290	(1750)
<b>1 1/4</b>	500	(680)	1120	(1520)	1820	(2460)
<b>1 1/2</b>	870	(1180)	1950	(2640)	3160	(4290)



Allen head cap screw are similar to SAE 8 quality

These torques are for 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.







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