

STANDARD SNOWBLOWER

Operators & Parts Manual



SAFETY PRECAUTIONS

1. Be sure all exposed moving parts such as shafts and adapters are properly guarded and that all coupling devices are securely attached before applying power. Do not use unless all shields are in place.
2. Do not wear loose fitting clothing in the vicinity of any moving parts.
3. Do not exceed recommended ground speed, recommended PTO speed, or recommended horsepower for the unit which you are using.
4. Keep all persons, pets, and livestock away from unit when in use.
5. Do not turn discharge chute towards persons, pets, livestock, or buildings when blower is in operation.
6. Before working on, servicing, or making adjustments to equipment, disengage power, lower unit to ground level, shut off engine, make sure all moving parts have stopped and all pressure in the hydraulic system is relieved.

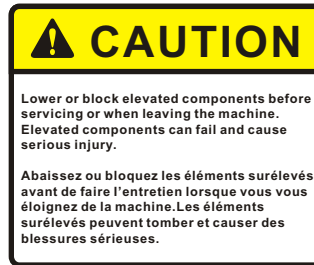
7. Do not attempt to remove any obstruction from discharge chute until PTO is disengaged and engine is shut off.
8. Do not stand on auger to service any part of blower, as auger may turn causing either, a serious fall; or, the blower fan to rotate, presenting a danger to fingers, hands, or arms in the chute assembly or blower housing.
9. Keep hands and arms away from cables and turner bar of hydraulic hood turner until engine is shut off.
10. Always look to the rear before backing up.
11. Be aware of the presence of people and objects that may be obscured from vision by blowing or drifted snow. Be certain that no children have tunneled into snowbanks which are to be removed. Never let children slide down snowbanks in the vicinity of an operating blower.



Colour: Red
 Location: Blower Side

Stones or other objects may be thrown great distances by the auger, especially at higher RPMs. Do not stand in front of the blower when it is in operation.

Any debris or stones which are swept into the fan can be thrown great distances. Do not allow any bystanders to stand in the path of the discharge chute.



Colour: Yellow
 Location: Blower Back

Do not service, adjust or repair any equipment attached to the three-point hitch hydraulics, without lowering the unit to the ground. If work must be performed underneath the unit, block the unit in a raised position.

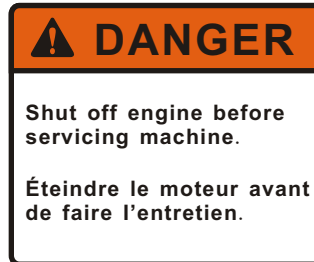
Shields are supplied for your protection. Do not remove shields and do not operate the machine unless all shields are in place.

Do not service, adjust, or repair, until the PTO has been disengaged, the motor shut off, the unit lowered to the ground, and all parts have stopped moving. Any moving part has the possibility of entangling the operator or his clothing, and causing serious injury, dismemberment, or death.



Colour: Red
 Location: PTO Shaft

Never go near any moving parts. Because tractor PTOs may be accidentally engaged, never attempt to lubricate, repair or couple PTO unless tractor engine is shut off. Do not remove shields. Be sure that PTO shield turns freely and independently of the driveline. Do not operate unless all shields are in place. Be sure that PTO shaft is attached securely at both ends before operating.



Colour: Orange
 Location: Blower Back

Do not attempt any servicing of the blower while the tractor engine is running. If the tractor PTO is accidentally engaged the serviceman could become entangled in moving parts and be seriously injured or killed. Be certain. Be safe. Shut off the engine.



Colour: Yellow
 Location: Blower Back

Every effort is made to ensure that a well constructed high quality product leaves the manufacturer. Again the dealer inspects and services each unit before it leaves his lot. To keep your blower in good operating condition, please inspect and retighten as necessary any loose nuts or studs after a half hour break in period. Thereafter periodic checks will ensure that your blower remains in top working condition.



Colour: Red
 Location: Blower Side



Colour: Orange
 Location: Blower Side

PRE-SALE SERVICE AND SETUP OF BLOWERS

1. Turn hood to point directly behind blower.(PTO side)
2. Lift hood assembly off and spread a light coat of grease on outside of blower mainframe pipe.
3. Replace hood assembly.
4. Install hood turner as per instructions.
5. Grease shear assembly, auger bearings, and hydraulic hood turner if installed.
6. Check oil level in gearbox.
7. Check all bolts for tightness.
8. Check auger drive chain tension and alignment. Adjust if necessary.
9. Grease PTO universal joints, shield retaining collars, and inner tube of PTO.

OPERATION

1. When attaching the blower make certain all guards are in place.
2. Ensure that the fan and auger rotate freely before connecting PTO shaft to the tractor.
3. Use proper pins and ensure that all connections are secure.
4. Engage the PTO at low engine RPM and slowly increase speed to operating level. Operating speed will vary with snow, weather, and ground conditions.
5. Adjust the top link of the three-point hitch to match the ground and snow conditions. Increasing the length will cause the blower to cut deeper into compacted snow, but may also cause the blower to scrape gravel or stones into the fan, which can be a danger to nearby persons, pets, livestock or buildings. Decreasing the length of the top link causes the blower to ride back on the skid shoes, raising the cutting height, thereby reducing the possibility of scraping gravel or stones into the blower.
6. Adjust the deflector for the distance of throw required. Moving the adjusting bar, to shorten the distance between the pins increases the distance thrown.
7. Be aware of the presence of people and objects that may be obscured from vision by blowing or drifted snow. Be certain that no children have tunneled into snowbanks which are to be removed. Never let children slide down snowbank in the vicinity of an operating blower.

SERVICE

1. Before servicing or adjusting, disengage the PTO, lower the unit to the ground, and shut off engine.
2. To prevent freezing of hood or other moving parts apply a solution of antifreeze or light oil.
3. Check gearbox oil level on a regular basis. If oil level is low, use a good quality 80W-90 gear oil. Change oil after 50 hours during break-in period. Change after 700-750 hours or yearly.
4. Grease the shear assembly and hydraulic hood turner every five hours of operation.
5. Grease the auger bearings every ten hours of operation.
6. Check auger drive chain tension and alignment. Adjust if necessary.

INSTALLATION INSTRUCTIONS FOR SNOWBLOWER

FOR A BETTER P.T.O. SHAFT & GEARBOX OPERATION

A proper initial installation will give you years of satisfactory service on your equipment. Please read carefully following instructions which have been specially made to help you and make you satisfied with your purchase.

WARNING: Unfortunately, snowblowers will be faced with forgotten or hidden objects under the snow, such as: chain, tires, stones, pieces of wood, etc... In spite of all our efforts, machines are not built to resist all those conditions.

DANGER: TOO BIG TRACTOR

It is dangerous to use a tractor which is too big or too powerful. The tractor will always be able to overload the blower, even if the machine is already at maximum capacity. Tractor being very high, too large angles at P.T.O. universal joints will result, and life of universal joints will be shortened dramatically.

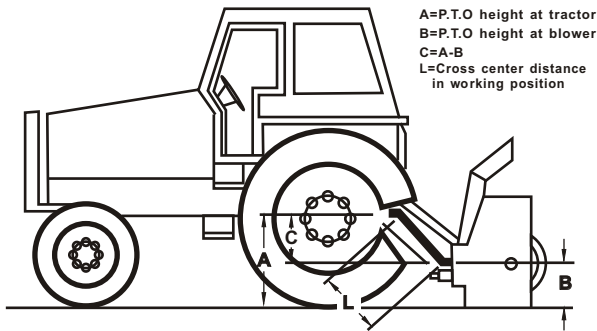
INSTALLATION INSTRUCTIONS FOR SNOWBLOWER-cont'd

P.T.O. SHAFT ANGLES

P.T.O. Shafts are made to transmit power with angles at universal joints. However, these angles should be kept to a minimum. Larger the angle, shorter the life of P.T.O. Take for example a snowblower sold for a tractor capacity of 60-70 H.P., Which would be attached to a 60 H.P. Tractor, operating at maximum capacity (60 H.P. Continuous).

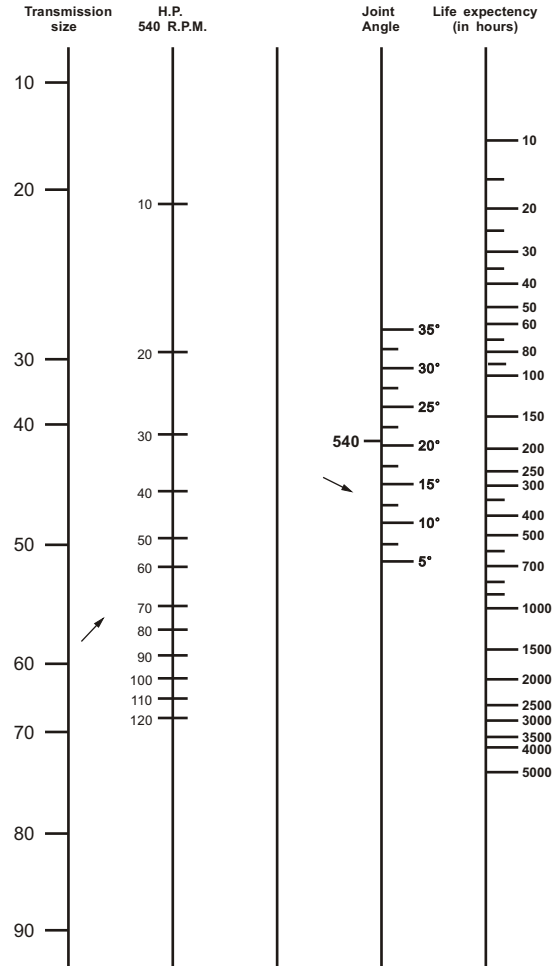
H.P.	P.T.O. angles	Estimated life in hours
60@540 RPM	5°	450 hours
Using #50 PTO	10°	195 hours
	15°	90 hours
	20°	40 hours
	25°	20 hours

HOW TO DETERMINE P.T.O. ANGLE



- 1) Lower blower on ground.
- 2) Take measures A, B and L
- 3) Subtract B of A (A-B=C)
- 4) Divide L by C (L/C=F)
- 5) Compare F Factor in table to find P.T.O. angle (interpolate, if necessary).

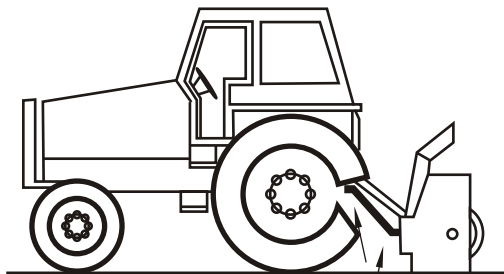
F FACTOR	ANGLE
6	10°
3.75	15°
2.75	20°
2.15	25°
1.75	30°



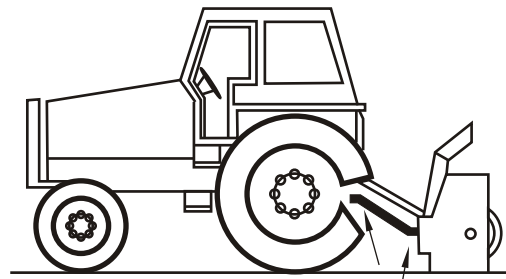
EX: Transmission size 60 for 60 H.P. @ 540 R.P.M. with joint angle of 10° will have an expected life of 670 hours.

This table is valid only for 540 R.P.M.

Previous examples clearly demonstrate that universal joint angle is directly related with life of P.T.O. In order to reduce angle, it is necessary to increase the distance between snowblower and tractor



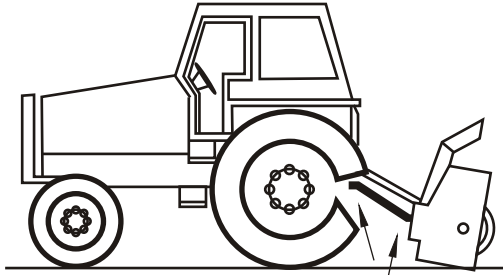
AVOID
Too Large Angles at P.T.O. Joints



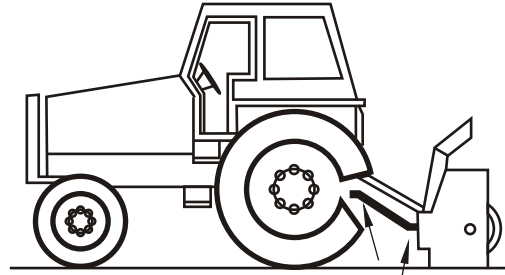
ACCEPTABLE
Reasonable Angles at P.T.O. Joints

If it is impossible to increase the distance between snowblower and tractor, in order to maintain a reasonable angle at P.T.O., It is recommended to use a large size of P.T.O., That is a greater capacity P.T.O. (Please refer to your dealer for more details).

For snowblowers of 100 H.P., an additional gearbox is also available that can be mounted on existing snowblower gearbox, which increased the input shaft height, reducing angle at P.T.O. Joints. This gearbox also has an input speed of 1000 R.P.M., Which greatly increases P.T.O. capacity.



AVOID
Non-Equal Angles at P.T.O. Joints



ACCEPTABLE
Equal Angles at P.T.O Joints

ANGLES AT EACH END OF P.T.O.

A popular habit is to change snowblower angle in order to obtain a better scraping effect. This practice can become harmful to the P.T.O., angle at each end being unequal. There will be a fan speed variation as well as a drastic increase of load on cross and bearings. To Avoid. It is recommended to keep tractor P.T.O. Shaft and snowblower input shaft always parallel.

SHEAR BOLTS

Shear bolts are built to break under shocks on the fan or on the auger. However, under certain circumstances, this security is not adequate. Example: A sudden high impact shock on the fan may, in some cases, break the fan shaft without breaking the shear bolt.

If the shear bolt breaks, make sure to always replace it with a same category bolt(grade 8.8). It is necessary to always maintain this bolt very tight, in order to keep the efficiency of the shearing mechanism.

WARNING:The gearbox fan shafts are made with special alloy steel. Moreover, they are case hardened to increase capacity to shock load. These shafts cannot be broken under normal snow loads. However, undesirable objects may enter the fan and either bend or break gearbox shaft. It is understood that gearbox cannot be built to resist every possible overloads, and consequently, gearbox fan shafts will not be replaced under warranty. Therefore, the user of the snowblower must be very careful.

Snowblower Setup Instructions

1. Uncrate items and compare with the parts breakdown found in the Operator's Manual
2. Bolt on left and right skid shoes according to Image 1

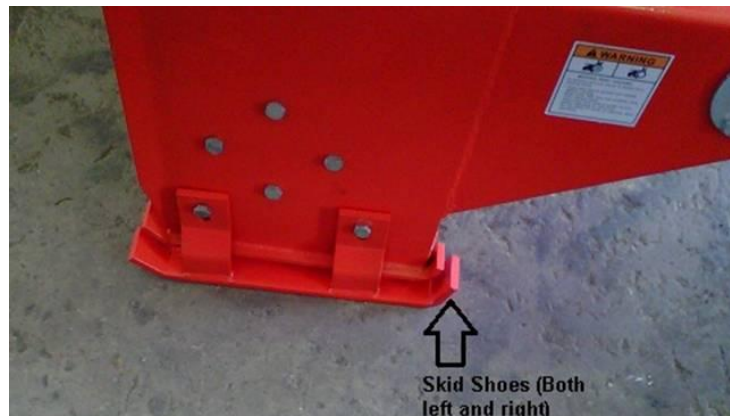


Image 1: Assembled Skid Shoes

3. Assemble the chute. Following manner of assembly in Image 2 and Image 3. Refer to the snowblower diagram in the operator's manual for exploded view.

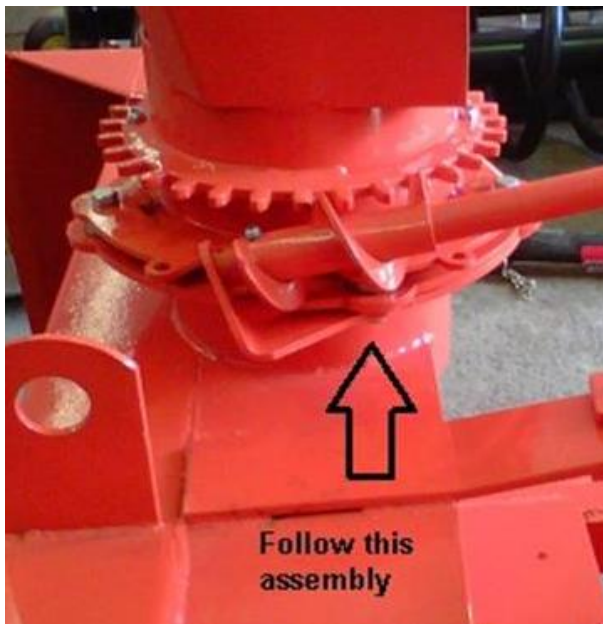


Image 2: Chute Assembly



Image 3: Chute Assembly

Note: Shims (#34 in parts list) for bearings must be installed on the top and bottom of bearings.

The bolts must be oriented with the threads down, see Image 4

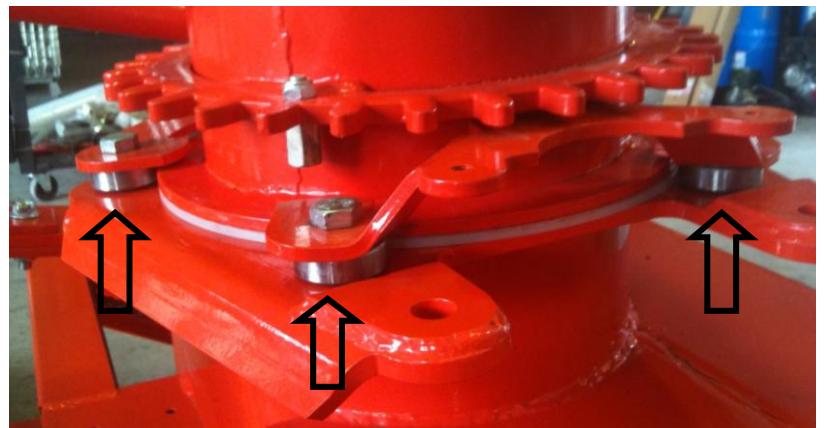


Image 4: Chute Bearings



Image 5: Crank Support Bracket

Note: Hand crank support bracket must be installed on the bottom of chute flange.

4. Assemble hitch. The tabs that join the A frame must be placed inside the frame. See Image 6

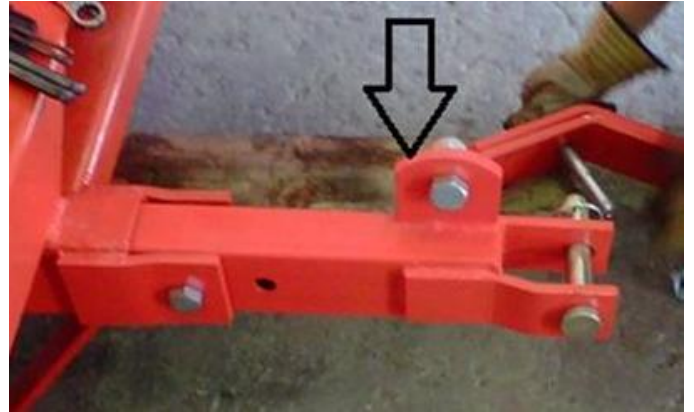


Image 6: Hitch Frame



Image 7: A Frame Top Assembly

5. Assemble the hitch top assembly and chute crank support bracket as shown in Image 7

The bracket should have a 90 degree bend allowing the crank to freely turn.

6. Leave bolts and nuts finger tightened during hitch assembly. Gradually tighten during final assembly to maintain correct alignment.
7. Refer to page 2 of the operator's manual for final service and installation of snowblower.

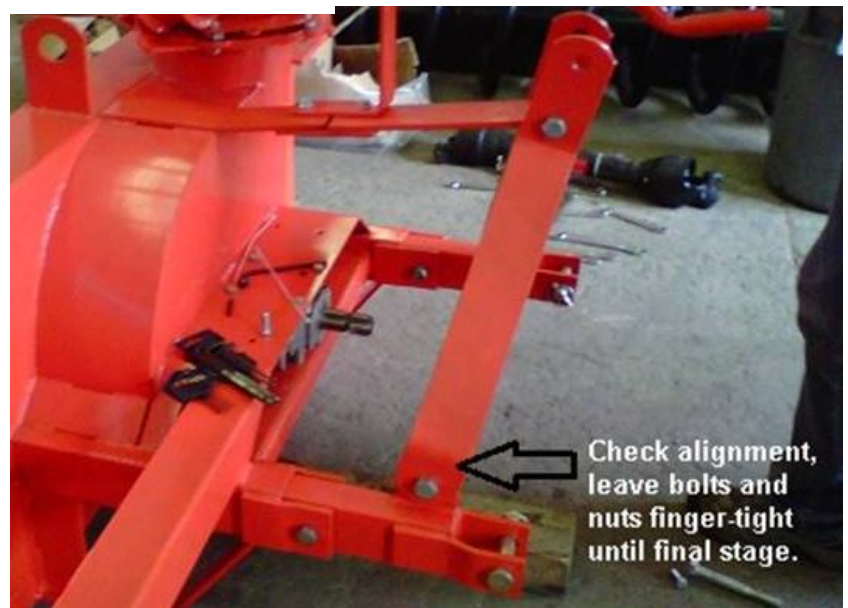
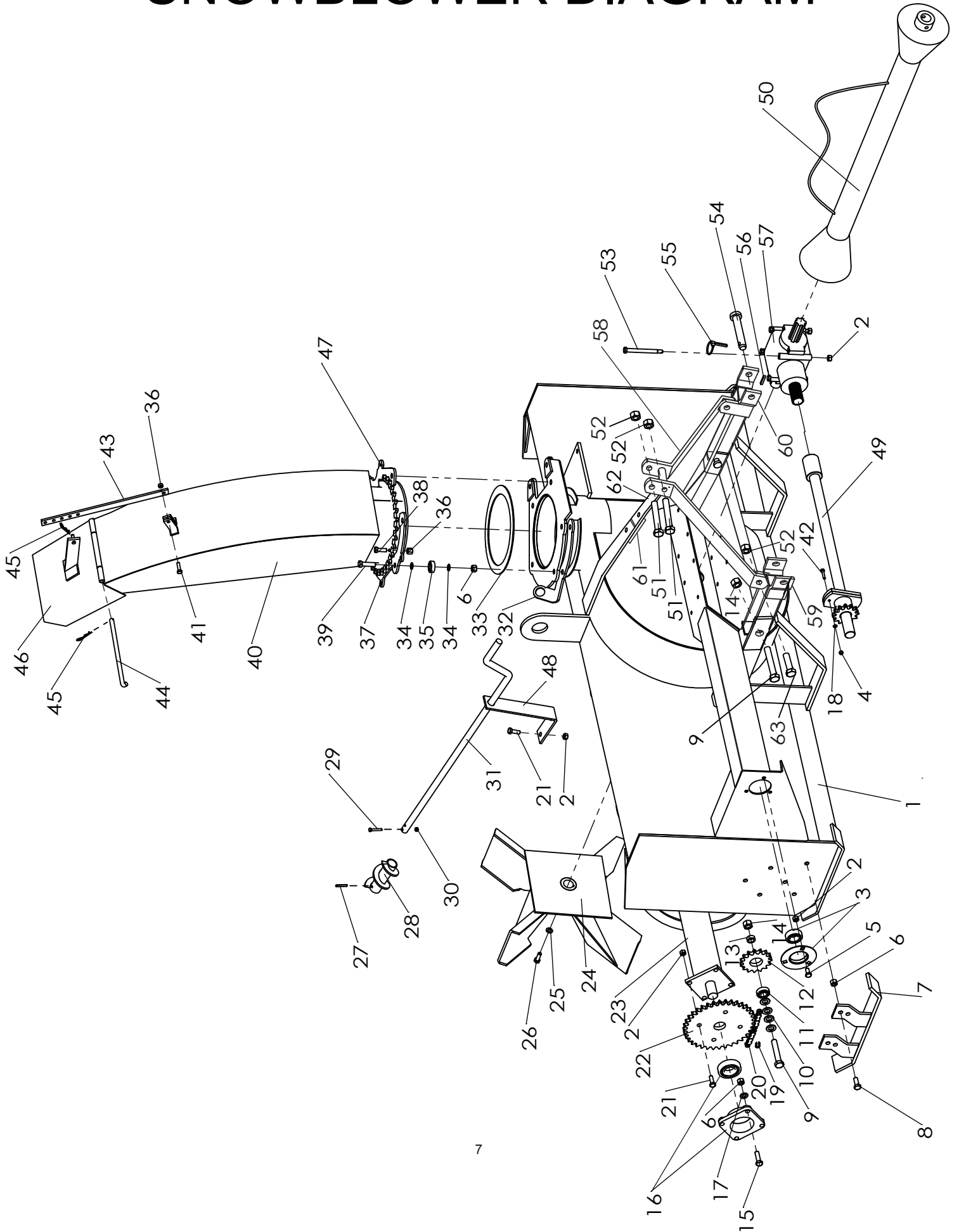


Image 8: Hitch Assembly

SNOWBLOWER DIAGRAM



SNOWBLOWER PARTS LIST

Part#	Description	Qty.	Part#	Description	Qty.
1	Main Frame	1	33	Nylon Washer	1
2	Lock Nut M10	13	34	Special Washer Ø12x0.2	10
3	Bearing SAPF-206-20 c/w flange	1	35	Bearing 6301-2RS1	5
4	Nut M6	1	36	Lock Nut M8	3
5	Bolt M10x20	3	37	Mounting Plate For Chute	1
6	Lock Nut M12	17	38	Lock Bolt	2
7	Skid Plate	2	39	Bolt M12x45	5
8	Bolt M12x30	4	40	Chute(W/O Deflector)	1
9	Bolt M16x90	3	41	Bolt M8x30	1
10	Washer 16	4	42	Bolt M6x30	1
11	Bearing 6203-2RS.5/8	1	43	Adjusting Arm	1
12	Idler Sprocket	1	44	Deflector Hinge Pin	1
13	Spacer	1	45	Cotter Pin Ø2	2
14	Lock Nut M16	3	46	Deflector	1
15	Bolt M12x40	8	47	Lock Plate	1
16	Bearing HCFS207-23 C/W Cast Flange	2	48	Mounting Bracket For Crank Handle	1
17	Washer 12	8	49	Cross Shaft	1
18	Lock Washer 6	1	50	PTO	1
19	Connector Link #60	1	51	Bolt M18x130	1
20	Roller Chain #60(56-1/2")	1	52	Lock Nut M18	4
21	Bolt M10x30	6	53	Bolt M10x130	4
22	Auger Drive Sprocket	1	54	Hitch Pin Ø22x120	2
23	Auger	1	55	Lock Pin Ø8	2
24	Fan	1	56	Keystock 1/4 sq.x 1-1/2	1
25	Flat Washer 3/8"	1	57	Gearbox	1
26	Bolt 3/8"x1-1/4"	1	58	A-frame	2
27	Lock Pin 6x40	1	59	Left tube hitch frame	1
28	Turning Screw	1	60	Right tube hitch frame	1
29	Bolt M6x40	1	61	Connecting bracket	1
30	Lock Nut M6	1	62	Rear brace	1
31	Hand Crank	1	63	Bolt M18x45	2
32	Mounting Plate For Crank Handle	1			



Bondioli Series 4 U-Joint # 71204

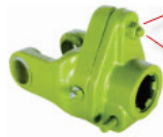
Plastic Shield Assembly #69.888.998

Tractor Yoke # 21-10-00



Shearbolt Clutch Series 4 # 57-117-18

Complete PTO - Bondioli Type Series 4 #69.888.400



Nut #09.000.008
Nyloc M8x1.25

Shearbolt #01.008.045
M8x45x1.25 GR8.8