

WARRANTY POLICY

Warranty Coverage

Warranty covers all defects in workmanship or materials on your Agro Trend Mfg. equipment under normal use.

Warranty Period

The warranty coverage runs for 12 months from the date of purchase. The warranty applies only to the original owner and is not transferable to another party. The dealer must perform pre-delivery inspection prior to delivery or warranty shall be void.

How To Obtain

Customer will return his unit to his local dealer. If the dealer agrees with warranty, then he must notify Agro Trend Mfg. and receive pre-authorization. The dealer will then send the parts and proof of purchase within 21 days of authorization to Agro Trend Mfg. prepaid for inspection and final approval.

Not Covered By This Warranty

Agro Trend Mfg. will not assume any expense or liability for repairs made outside our plant without consent. We are not responsible for damage to any associated equipment or product and will not be liable for loss of profit or other special damages including personal injury. The obligation of this warranty is in lieu of all other warranties, expressed or implied. Damages caused by normal wear and tear, misuse, abuse, neglect, accident or improper maintenance are not covered by this warranty.

Agro Trend Mfg. reserves the right to make changes in design and improvements upon its products without imposing any obligation upon itself to install the same upon its existing products, or products in the process of manufacture.

Terms & Conditions

Standard

Net 15 and 30 days from date of invoiced and subject to prior credit approval and arrangements. Interest at the rate of 2% per month will be charged on past due accounts.

Conditions

ALL goods are F.O.B. Clifford, Ontario.

Returned Goods

No merchandise is to be returned without written authorization from Agro Trend Mfg. Returned goods with written authorization must be pre-paid and will be subject to a minimum 20% restocking charge.

01/26/2001



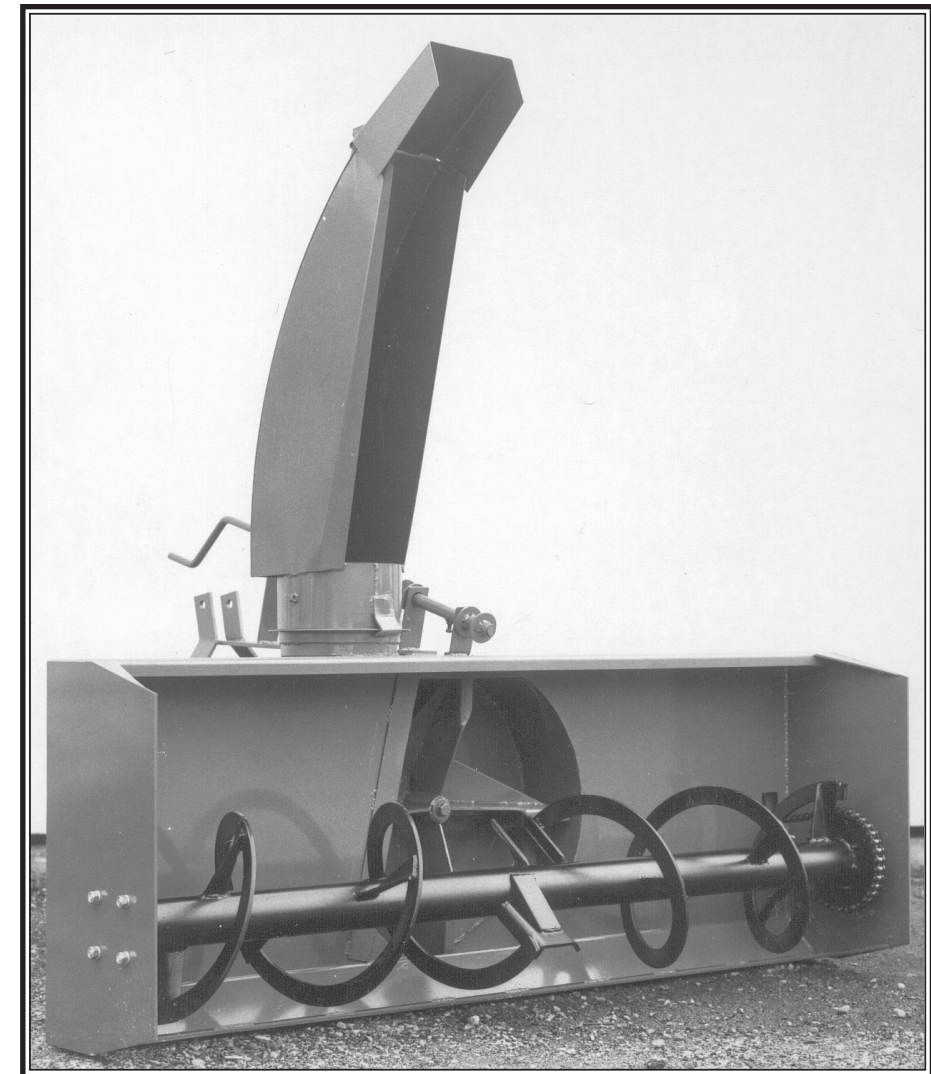
DIVISION OF ROJAC INDUSTRIES

Plant: 12 Mill St., Clifford, Ont. N0G 1M0
Office / Mail: Box 86, Listowel, Ont. N4W 3H2
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HEAVY DUTY SNOWBLOWER

Operators & Parts Manual



DEAR CUSTOMER:

Thank you for purchasing an Agro Trend Snowblower. We believe that we are providing you with one of the finest blowers available on the market, and that this unit will provide you with years of dependable service, provided that the following basic procedures are followed.

AGRO TREND SNOWBLOWER 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.

! DANGER

To Prevent Serious Injury or Death:

- Keep hands, feet and clothing away from auger intake

SW103

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.

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.

! DANGER

ROTATING DRIVELINE CONTACT CAN CAUSE DEATH. KEEP AWAY! DO NOT OPERATE WITHOUT

- ALL DRIVELINE, TRACTOR AND EQUIPMENT SHIELDS IN PLACE
- DRIVELINES SECURELY ATTACHED AT BOTH ENDS
- DRIVELINE SHIELDS THAT TURN FREELY ON DRIVELINE

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.

! CAUTION

Lower or block elevated components before servicing or when leaving the machine. Elevated components can fail and cause serious injury.

Abaissez ou bloquez les éléments surélevés avant de faire l'entretien lorsque vous vous éloignez de la machine. Les éléments surélevés peuvent tomber et causer des blessures sérieuses.

7402-0107

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.

! WARNING

Shut off engine before servicing machine.

Éteindre le moteur avant de faire l'entretien.

7402-0105

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.

! CAUTION

All nuts and bolts must be retightened regularly. Consult your owners manual.

Tous les écrous et les boulons doivent être resserrés à intervalles réguliers. Consultez le manuel de l'utilisateur.

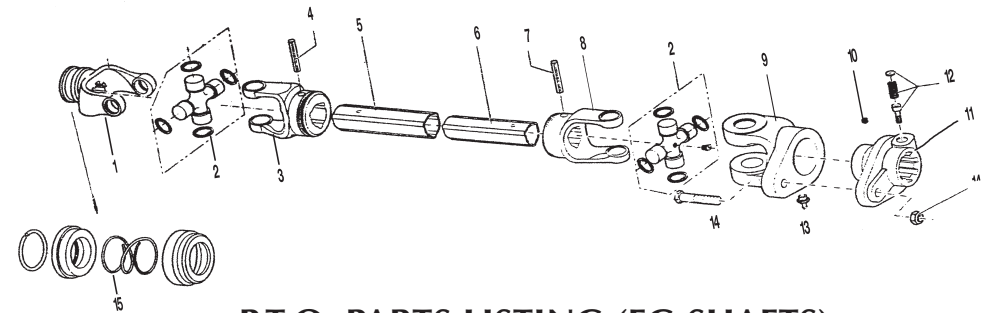
7402-0104

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.

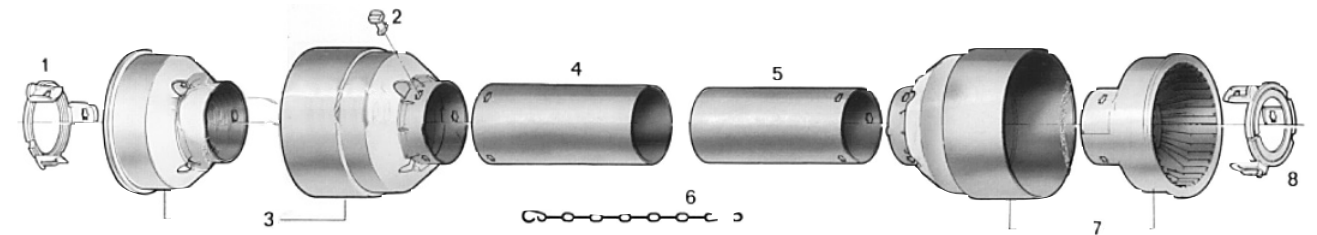
AGRO TREND SNOWBLOWER MANUAL



P.T.O. PARTS LISTING (EG SHAFTS)

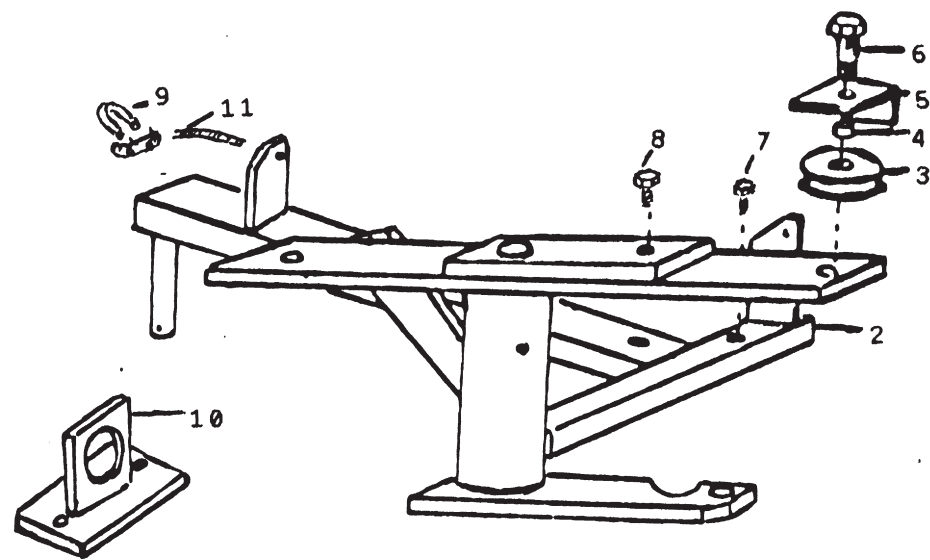
NOTE: When ordering add the suffix "5450" before the order numbers (ie: Roll Pin Shaft Size 10 - 5450-000010)

Ref. #	Description	Shaft Size				
		20	40	50	60	80
1	Yoke 1-3/8 Z.6 Push Pin	- 022001	- 024001	- 025001	- 026001	- 028001
	Yoke 1-3/8 Z.6 Lock Collar	- 022324	- 024430	- 025363	- 026544	- 028423
	Yoke 1-3/4 Z.20 Push Pin	n/a	n/a	n/a	- 026008	- 028004
	Yoke 1-3/4 Z.20 Lock Collar	n/a	n/a	n/a	- 026555	- 028428
	Yoke 1 RB 1/4 Key	- 012058	n/a	n/a	n/a	n/a
2	Cross Journal	- 012130	- 014130	- 015130	- 016130	- 018130
3	Yoke Outertube	- 012003	- 014006	- 015011	- 160028	- 018009
4	Roll Pin Outertube	- 000012	- 000014	- 000016	- 000018	- 000343
5	Outer Tube	- 120200	- 130200	- 150200	- 160215	- 160200
6	Inner Tube	- 120100	- 140100	- 150100	- 160115	- 170100
7	Roll Pin Innertube	- 000011	- 000012	- 000394	- 000016	- 000271
8	Yoke Inner Tube	- 012002	- 014007	- 015012	- 016029	- 018008
9	Shear Yoke	- 012005	- 014012	- 015024	- 016042	- 018023
10	Ball	- 000024	- 000022	- 000022	- 000023	- 000023
11	Hub 1-3/8 Z.6	- 022010	- 024013	- 025027	- 026043	- 028024
	Hub 1-3/8 Z.6	n/a	n/a	n/a	n/a	- 028037
	Hub 1-3/4 Z.20	n/a	n/a	n/a	n/a	- 028038
12	Push Pin set 1-3/8	- 026004	- 026004	- 026004	- 026004	- 026004
	Push Pin set 1-3/4	n/a	n/a	n/a	- 026005	- 026005
	Interfering bolt	- 000525	- 000525	- 000525	- 000525	n/a
13	Grease Fitting	- 000020	- 000020	- 000020	- 000021	- 000021
14	Shear Bolt	- 000509	- 000505	- 000511	- 000507	- 000512
15	Collar Kit 1-3/8	- 000628	- 000628	- 000628	- 000628	- 000628
	Collar Kit 1-3/4	n/a	n/a	n/a	- 000629	- 000629



NOTE: When ordering add the suffix "5450" before the order numbers (ie: Poly Bolt Shaft Size 10 - 5450-000019)

Ref. #	Description	Shaft Size					
		10	20	40	50	60	80
1	Retaining Collar Outer Tube	- 011008	- 012007	- 013012	- 015009	- 016016	- 019121
2	Poly Bolt	- 000019	- 000019	- 000019	- 000019	- 000019	- 000019
3	Cone Outer Tube	- 022013	- 022013	- 023016	- 026023	- 026023	- 029125
4	Female Shield	- 111114	- 121115	- 141115	- 151115	- 161114	- 181115
5	Male Shield	- 111214	- 121215	- 141215	- 151215	- 161214	- 181215
6	Safety Chain	- 016205	- 016025	- 016025	- 016025	- 016025	- 016025
7	Cone Inner Tube	- 022012	- 022012	- 023015	- 026022	- 026022	- 029124
8	Retaining Collar Inner Tube	- 011007	- 012006	- 013011	- 015008	- 016015	- 019122
9	Complete Shield		- 220214	- 240214	- 250214	- 260214	- 286049



Item	Part Number	Description	Model				
			COMP	STD	FUS	FUD	HD
1	4230 - 25	Hyd. Hood Turner Pkg.	1				
	4230 - 30	Hyd. Hood Turner Pkg.		1			
	4230 - 40	Hyd. Hood Turner Pkg.			1	1	
	4230 - 50	Hyd. Hood Turner Pkg.					1
2	4030 - 30	Hyd. Hood Turner	1	1			
	4030 - 40	Hyd. Hood Turner			1	1	
	4030 - 50	Hyd. Hood Turner					1
3	5420 - 0601	Cable Pulley	2	2	2	2	2
4	5420 - 0602	Bushing	2	2	2	2	2
5	4030 - 31	Cable Guide	2	2	2	2	
	4030 - 51	Cable Guide					2
6	O.L.	Hex Bolt 3/4 x 3 & Locknut	2	2	2	2	2
7	O.L.	Hex Bolt 1/2 x 2 & L.W. & Nut	2	2	2	2	
	O.L.	Hex Bolt 5/8 x 2-1/2 & L.W. & Nut					2
8	O.L.	Hex Bolt 7/16 x 1-3/4	1	1	1	1	1
9	O.L.	Galv. Cable Clamp 1/4	3	3	3	3	3
10	4030 - 60	Lift Hook	1	1	1		
11	5420 - 0502 - 130	1/4 Galv. Cable (130")		1			
	5420 - 0502 - 144	1/4 Galv. Cable (144")			1	1	
	5420 - 0502 - 174	1/4 Galv. Cable (174")					1

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 snowbanks 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.
Capacity: Compact - .35 litres; Standard - .6 litres; Farm Utility - 1.3 litres; Heavy Duty - 2.5 litres.
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. Follow the chart on the PTO shaft for recommended lubrication intervals on PTO.
7. 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.

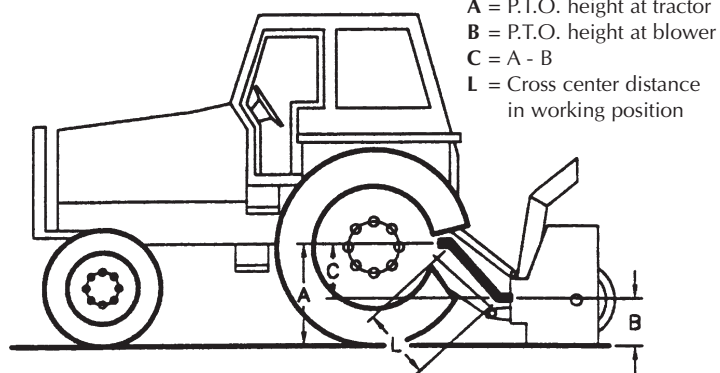
INSTALLATION INSTRUCTIONS FOR SNOWBLOWER - cont'd

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).

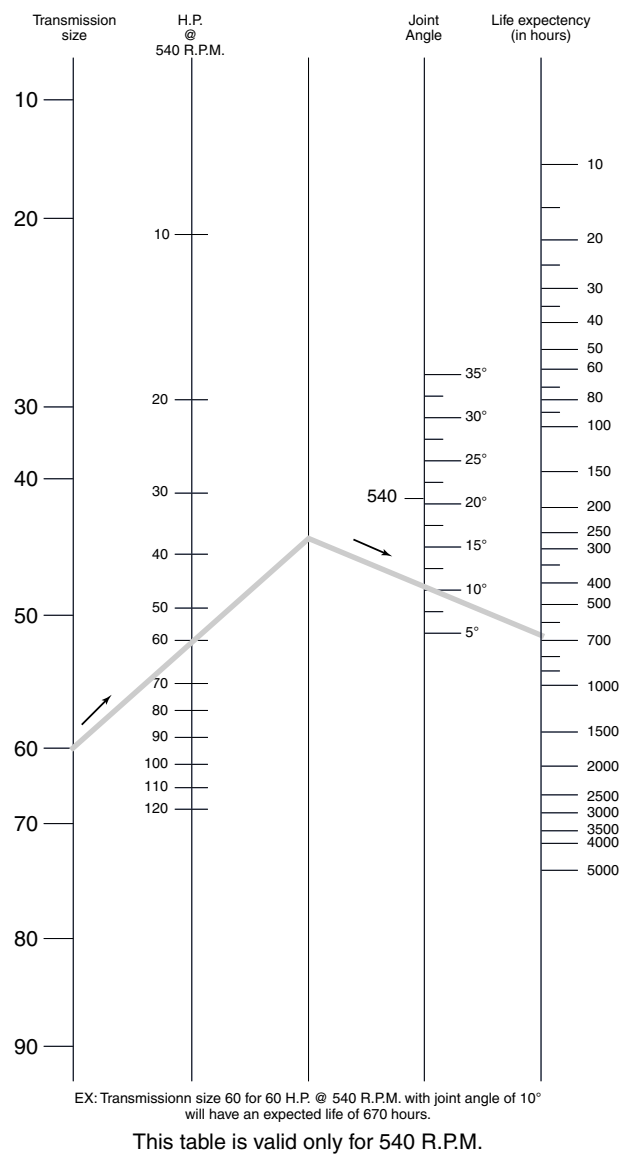
H.P.	P.T.O. angles	Estimated life in hours
60 @ 540 RPM	5°	450 hours
Using #50 PTO	10°	195 hours
	15°	90 hours
	20°	40 hours
	25°	20 hours

HOW TO DETERMINE P.T.O. ANGLE

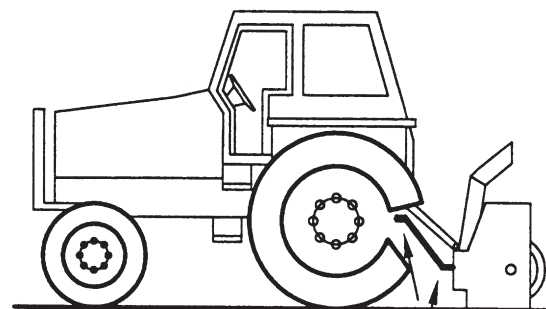


- 1) Lower blower on ground.
- 2) Take measures A, B and L
- 3) Subtract B of A (A - B = C)
- 4) Divide L by C (L ÷ C = F)
- 5) Compare F Factor in table to find P.T.O. angle (interpolate, if necessary).

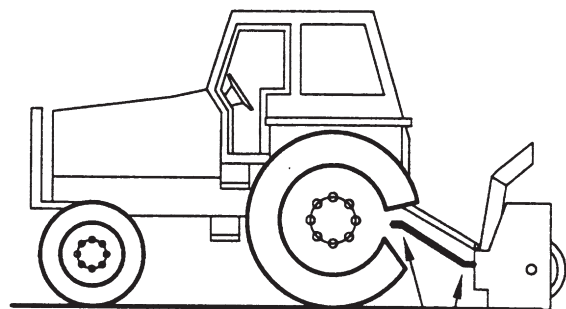
F FACTOR	ANGLE
6	10°
3.75	15°
2.75	20°
2.15	25°
1.75	30°



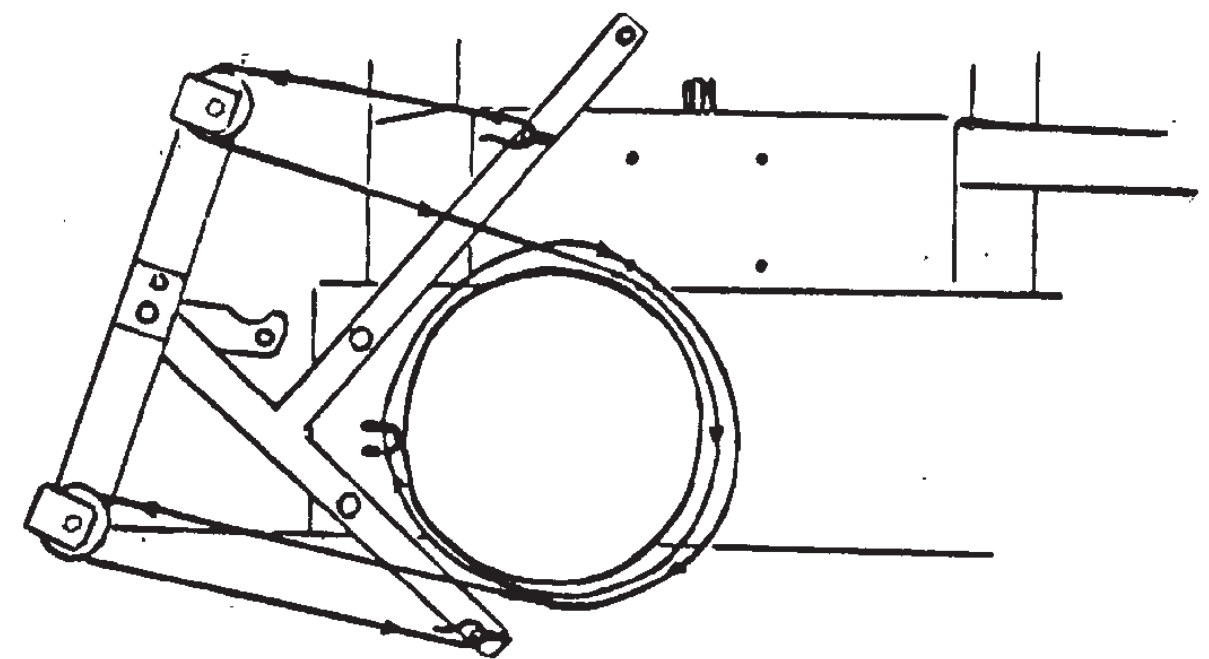
Previous examples clearly demonstrate that universal joint angle is directly related with life of P.T.O. In order to reduce angle, it is necessary to increase the distance between snowblower and tractor



AVOID
Too Large Angles at P.T.O Joints

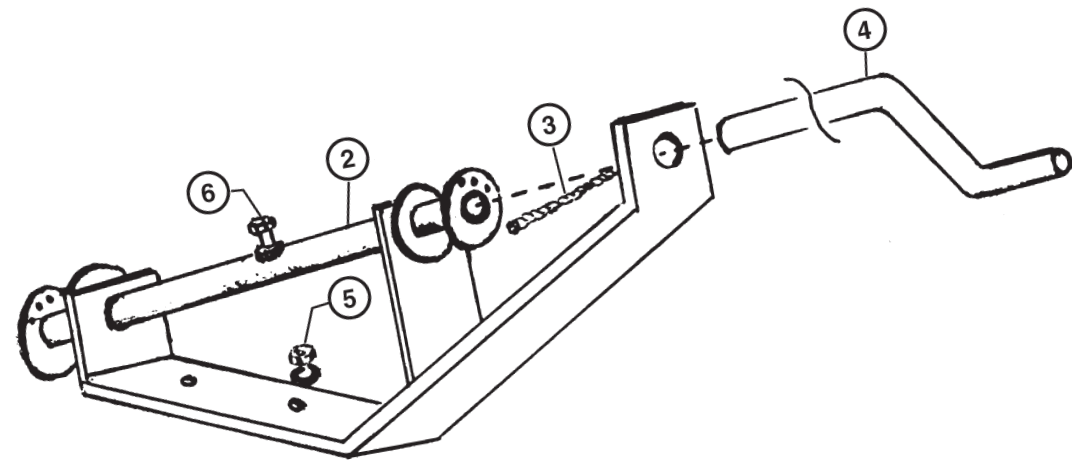


ACCEPTABLE
Reasonable Angles at P.T.O Joints



HYDRAULIC HOOD TURNER CABLE INSTALLATION

1. Bolt turner to plate on mainframe of blower.
2. Turn chute to point directly ahead of blower. (Auger side).
3. Thread cable around rollers and hood through nuts.
4. Tighten clamp on cable between nuts.
5. Rotate turner bar so that cylinder push bar is in neutral position. (Cylinder at midpoint of stroke)
6. Thread cable ends through cable anchors, pull until tight and, clamp ends.



AGRO TREND MANUAL HOOD TURNERS

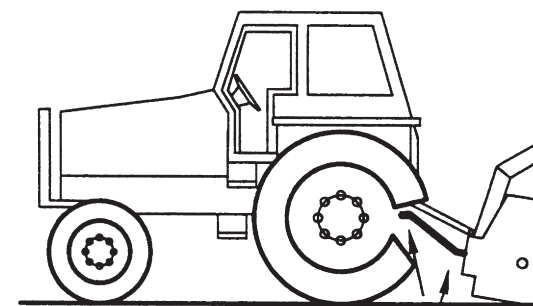
Item	Part Number	Description	Model				
			COMP	STD	FUS	FUD	HD
1	4230 - 12	Manual Hood Turner Pkg.	1				
	4230 - 15	Manual Hood Turner Pkg.		1			
	4230 - 20	Manual Hood Turner Pkg.			1		
2	4030 - 10	Manual Hood Turner	1	1			
	4030 - 20	Manual Hood Turner			1		
3	5420 - 0501 - 60	1/8 Galv. Cable (60")	1				
	5420 - 0501 - 70	1/8 Galv. Cable (70")		1			
	5420 - 0501 - 80	1/8 Galv. Cable (80")			1		
4	4030 - 12	Hand Crank	1	1			
	4030 - 22	Hand Crank			1		
5	O.L.	3/8 Hex Nut & L.W.	2	2	2		
6	O.L.	Hex Bolt 3/8 x 1	1	1	1		

CABLE INSTALLATION

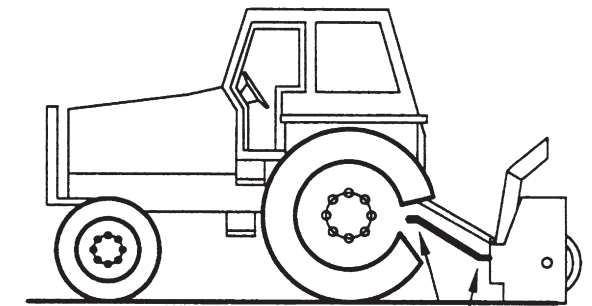
1. Turn chute to point directly ahead of blower. (Auger side)
2. Run cable through nuts, tie simple knot around one nut.
3. PTO Side: Feed cable under spool and wrap around spool 4 turns. Weave remaining cable end through holes in end washer and pull tight.
4. Auger Side: Feed cable over spool and wrap around spool 4 turns. Weave remaining cable end through holes in end washer and pull tight.

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 larger 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*.

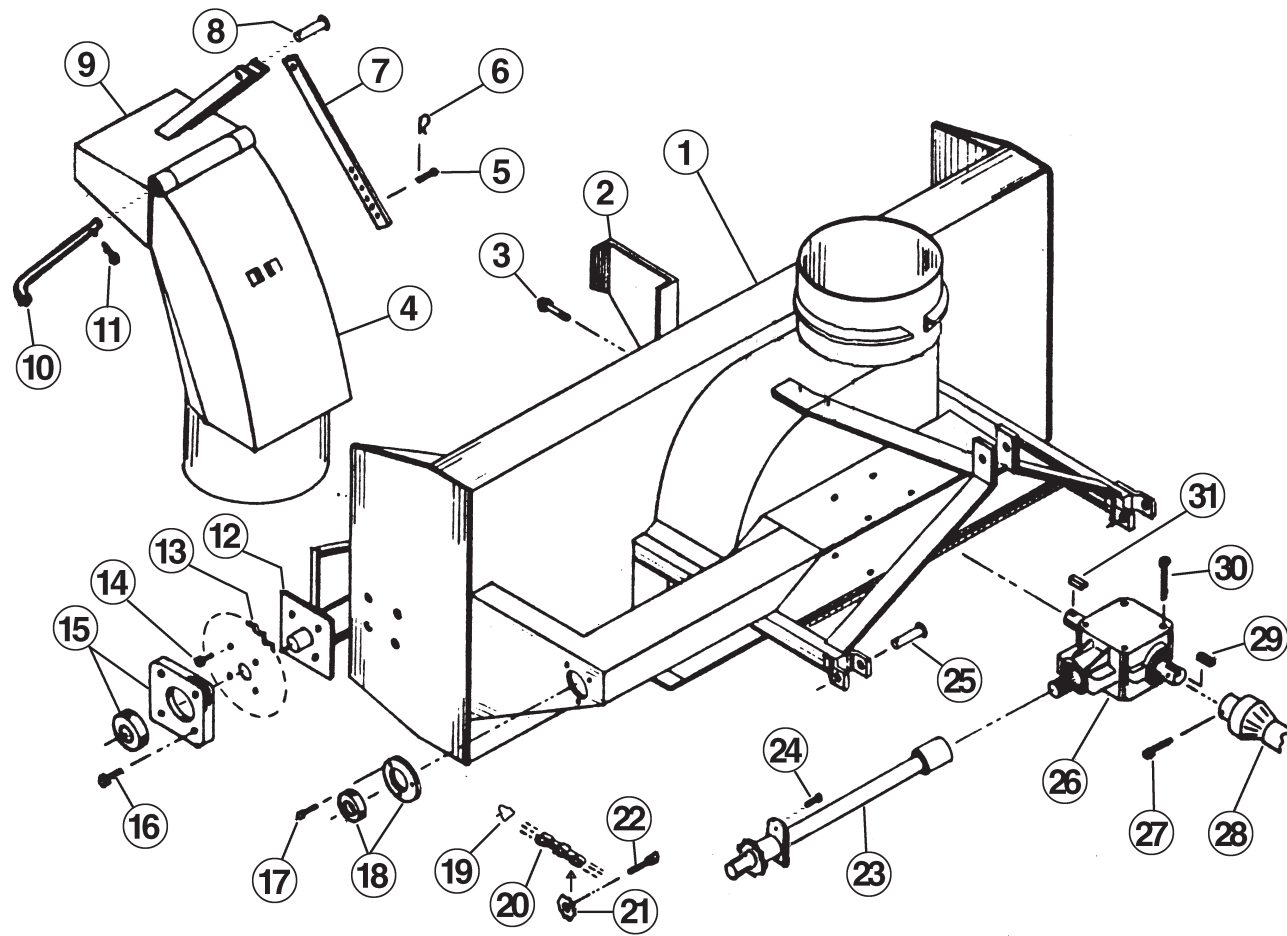
MAXIMUM LENGTH OF P.T.O. SHAFT

WARNING: Telescopic tubes of P.T.O. should overlap a minimum length to meet ideal conditions for power transmission.

Following table could be used as a guide to find the maximum permissible length of P.T.O.:

Description of P.T.O.	Over-all Length		Telescopic tubes overlap
	Closed	Opened Max.	
T20-056P	29:3/4"	41"	5"
T40-056P	30:1/2"	40:1/2"	6"
T50-071P	36:1/2"	50"	7"
T60-071P	37:3/4"	51:1/4"	7"
T80-066P	36"	47:1/4"	7"
T80-076P	40:1/2"	53"	8"
T90-071P	39"	51"	8"

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Item	Part Number	Description	Snowblower Model		
			HD102	HD108	HD108/540
1	4001 - 37 4001 - 40	Mainframe	1		
2	4015 - 50	Fan	1	1	1
3	7001-0714	Hex Bolt 5/8 x 1-1/2 & F.W.	1	1	1
4	4020 - 40	Chute (W/O Deflector)	1	1	1
5	7001-0416	Hex Bolt 7/16 x 2 & Locknut	1	1	1
6	N.A.				
7	4020 - 42	Adjusting Arm	1	1	1
8	7001-0416	Hex Bolt 7/16 x 2 & Locknut	1	1	1
9	4020 - 41	Deflector	1	1	1

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Item	Part Number	Description	Snowblower Model		
			HD102S	HD102 D	HD108 D
10	4020 - 43	Deflector Hinge Pin	1	1	1
11	O.L.	Cotter Pin 1/8 x 1	1	1	1
12	4005 - 37 4005 - 40	Auger	1	2	2
13	5401 - 0603	Auger Drive Sprocket	1	2	2
14	7001-0314	Hex Bolt 3/8 x 1-1/2 & L.W. & Nut	4	8	8
15	5415 - 0207	Bearing 1-7/16" c/w Cast Flange	2	4	4
16	7001-0515	Hex Bolt 1/2 x 1-3/4 & L.W. & Nut	8	16	16
17	7001-0715	Hex Bolt 5/8 x 1-3/4 & L.W. & Nut	4	4	4
18	5415 - 0209	Bearing 1-3/4" c/w Cast Flange	1	1	1
19	O.L.	Connector Link #80	1	1	1
20	O.L.	Roller Chain #80 (9") Roller Chain #80 (80")	1	1	1
21	5401 - 0403	Idler Sprocket	1	1	1
22	4040 - 30 4040 - 15	Idler Bolt Assembly		1	1
23	4010 - 37 4010 - 40	Cross Shaft	1	1	1
24	7001-0214	Hex Bolt GR.5 5/16 x 1-1/2 & L.W. & Nut	1	1	1
25	4025 - 40	Hitch Pin Cat 2	2	2	2
26	5401 - 0104	Gearbox	1	1	1
27	N.A.				
28	5401 - 0204	PTO Shaft	1	1	1
29	N.A.				
30	7001-0712	Hex Bolt 5/8 x 1	8	8	8
31	7002 - 1004 - 16	Keystock 3/8 x 1/2 x 4	1	1	1
32	5450 - 000512	Shearpin 12mm x 65mm GR5	1	1	1