SNOWBLOWER

OPERATOR AND PARTS MANUAL

For Residential and Industrial Snowblowers

MANUFACTURED BY:
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Introduction

Thank you for choosing a **Smyth Welding** snowblower.
This well built blower is designed for residential and industrial snow removal needs. There are hydraulic and PTO models with a variety of additional options that will suit all your requirements. We are confident this equipment will meet your expectations in terms of quality, performance and reliability.

Please read this manual completely before operating your snowblower and keep it for future reference. It contains important information and was made to assist you in the safe operation of your new snowblower and to ensure it performs to its fullest capabilities.

Before using this snowblower, any person who will be operating the sweeper must be familiar with the safety recommendations and the operating instructions. Please read carefully and be sure to understand and follow all recommendations and procedures.

If you require additional information on your snowblower, please contact your **Smyth Welding** snowblower dealer.

Information needed for warranty and ordering parts:

Date of purchase: _____

Serial Number: _____

Model Number: _____

Special Options:_____
_____
_____
_____
_____

Warranty Information

Smyth Welding & Machine Shop Ltd. products are warranted for a period of 1 year from the date of original purchase, by the original purchaser, to be free from defects in material and workmanship under correct and normal use and proper applications.

Smyth Welding & Machine Shop Ltd. obligations under this warranty shall be limited to the repair or exchange at **Smyth Welding's** option, of any **Smyth Welding** product or part which proves to be defective as provided. The customer will return his unit to his dealer where it was purchased and if the dealer agrees with the warranty, they must then notify **Smyth Welding** to get authorization.

The equipment must be installed, operated and maintained in accordance with **Smyth Welding's** instructions.

This warranty does not extend to goods damaged or subject to accident, abuse or misuse after shipment from **Smyth Welding**, nor to goods altered or repaired by anyone other than an authorized **Smyth Welding** representative.

Smyth Welding shall in no event be responsible for any consequential damages of any nature whether special or general, direct or indirect.

Any warranty or claim which differs from that set out is unauthorized by **Smyth Welding & Machine Shop Ltd.** and is the warranty only of the party making it. **Smyth Welding & Machine Shop Ltd.** makes no other warranty, expressed or implied and the original user's sole remedy for breach thereof is as set forth.

To obtain warranty a copy of original bill of sale is required and all claims must be submitted within a 30 days from date of equipment failure.

Important Note:

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

WARNING: Unfortunately, the snowblower will be faced with forgotten or hidden objects under the snow, such as, chain, tires, stones, pieces of wood, etc…in spite of our snowblower's strength and durability, they are not built to handle all of these conditions.

Safety Information

This operator's manual should be regarded as part of the snowblower. Suppliers of both new and secondhand snowblowers are advised to keep documentation indicating that this manual was provided with the snowblower.

Obey all safety instructions listed in this section and throughout this manual. Failure to do so could result in serious injury or death.

-Know all your controls and know how to quickly stop all power unit movement and the snowblower movement.

-Know and follow good work practices when assembling, mounting, maintaining, repairing, removing and storing this product.

-All shields and guards are to be in place before operation of snowblower.

-Wear appropriate personal protection equipment.

-Do not wear loose clothing, loose or uncovered hair, or any accessories that can catch in moving parts.

-Never allow anyone, except the operator, to be around the power unit on this product when it is in use.

-Do not start up unless others are clear of the work area.

-Do not allow riders on this product or the power unit.

-Do not stand or climb on this unit when operating.

-Do not place any part on your body under any part of this product unless the product is turned off and securely resting on adequate blocking or on the ground.

-Never leave equipment unattended with the power unit running or with this product raised.

-Ensure all safety warning decals are legible. Contact Smyth Welding & Machine Shop Ltd. for replacement of missing or damaged safety decals.

Operation Information

Never operate the snowblower in poor visibility or without proper lighting.

It is dangerous to use a tractor which is too big or too powerful, it may overload the snowblower. If the tractor is too high, extreme angles at PTO shaft universal joints will result and the life of these U-joints will be shortened dramatically.

Place the snowblower on a firm, level surface that is large enough to accommodate this product, your power unit and all works involved in the mounting process.

Adjust skid shoes for proper ground clearance of the cutting edge.

Clear the auger and drum area of any ice before starting the snowblower.

Check hose clearances for any interference.

Inspect all areas where the blower will be used and remove any object that could cause damage to the unit.

Never discharge chute towards people or animals. Adjust chute properly when near buildings, windows and vehicles.

Operate the controls from the operator's station only.

Never leave equipment unattended with the engine running or with this product raised.

Be aware of added weight and width of this product. Reduce travel speeds accordingly, especially when traveling on rough ground.

Use care on slopes and excessive incline areas. Reduce speed in slippery conditions.

Keep this product close to the ground and under control at all times.

Check all hardware holding the snowblower to the power unit making sure all is tight.

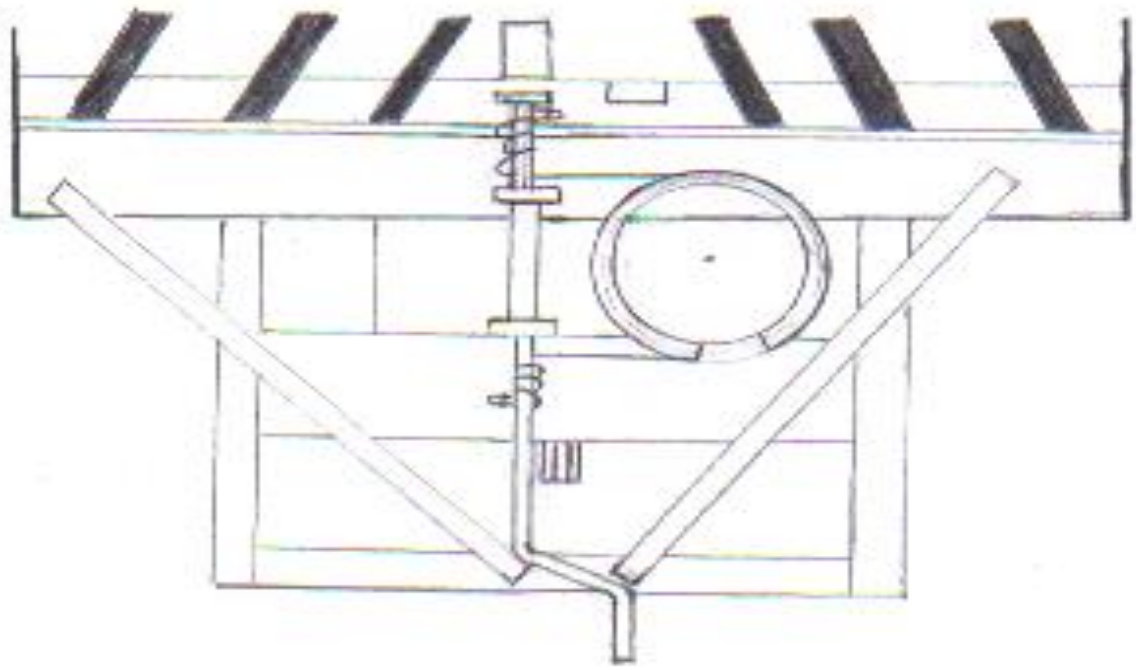
Replace any damaged or fatigued hardware with properly rated fasteners.

Make sure all hydraulic hardware and hydraulic fittings are tight.

PTO Safety:
-Do not perform any adjustments, cleaning, maintenance or repairs with the engine running. The engine must be stopped and the PTO disengaged.
-Put the PTO control in the neutral position before starting the engine
-If undue vibrations are felt, disengage the PTO, stop the engine and look for causes of vibration. Vibration is usually the indicator of a problem.
-At the end of operation, disengage the PTO, lower the snowblower, put the transmission in neutral, apply the parking brake, stop the engine and remove the key from the ignition

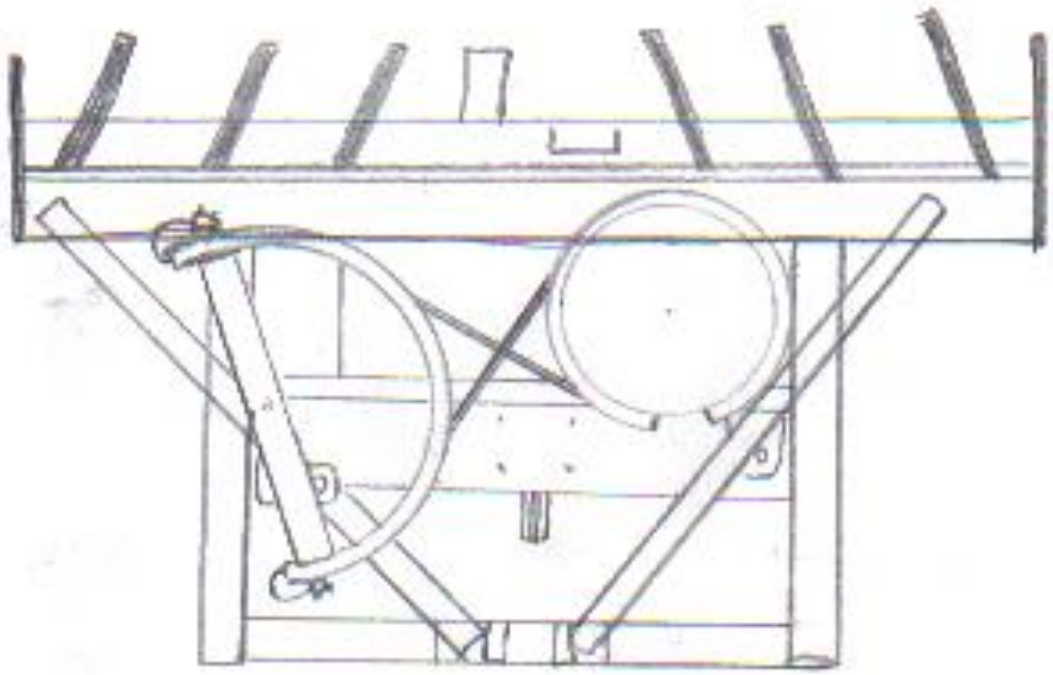
Hydraulic Safety:
-Hydraulic fluid under pressure can penetrate the skin and cause serious injury or death.
-Hydraulic leaks under pressure may not be visible, wear safety glasses, protective clothing, and use a sound piece of cardboard when searching for hydraulic leaks. DO NOT USE YOUR HANDS.
-Before connecting or disconnecting hydraulic hoses, read your power unit's operator's manual for detailed instructions on connecting and disconnecting hydraulic attachments.
-Make certain that all parts meet the specifications for this product when installing or replacing hydraulic hoses or fittings.
-Refer to your power unit's operator's manual and this manual for procedures and intervals, then inspect and maintain the entire hydraulic system to insure that the fluid remains clean, that all devices function properly, and that there is no fluid leaks

Manual Rotator Assembly



Place the crank assembly into the tube receiver on top of the fan housing and tighten the set bolt.
Standing on the hitch side of the snowblower, facing the auger, turn the hood opening to the 9’o’clock position.
Take one end of the cable and slide it through the cable clamp welded at the base of the hood opening, and into the cable clamp welded at the upper end of the crank assembly, then tighten both clamps.
Turn the crank in a clockwise rotation until the opening of the hood reaches the 3’o’clock position.
Put the remaining length of the cable through the cable clamp located at the lower end of the crank assembly and tighten.

Hydraulic Rotator Assembly

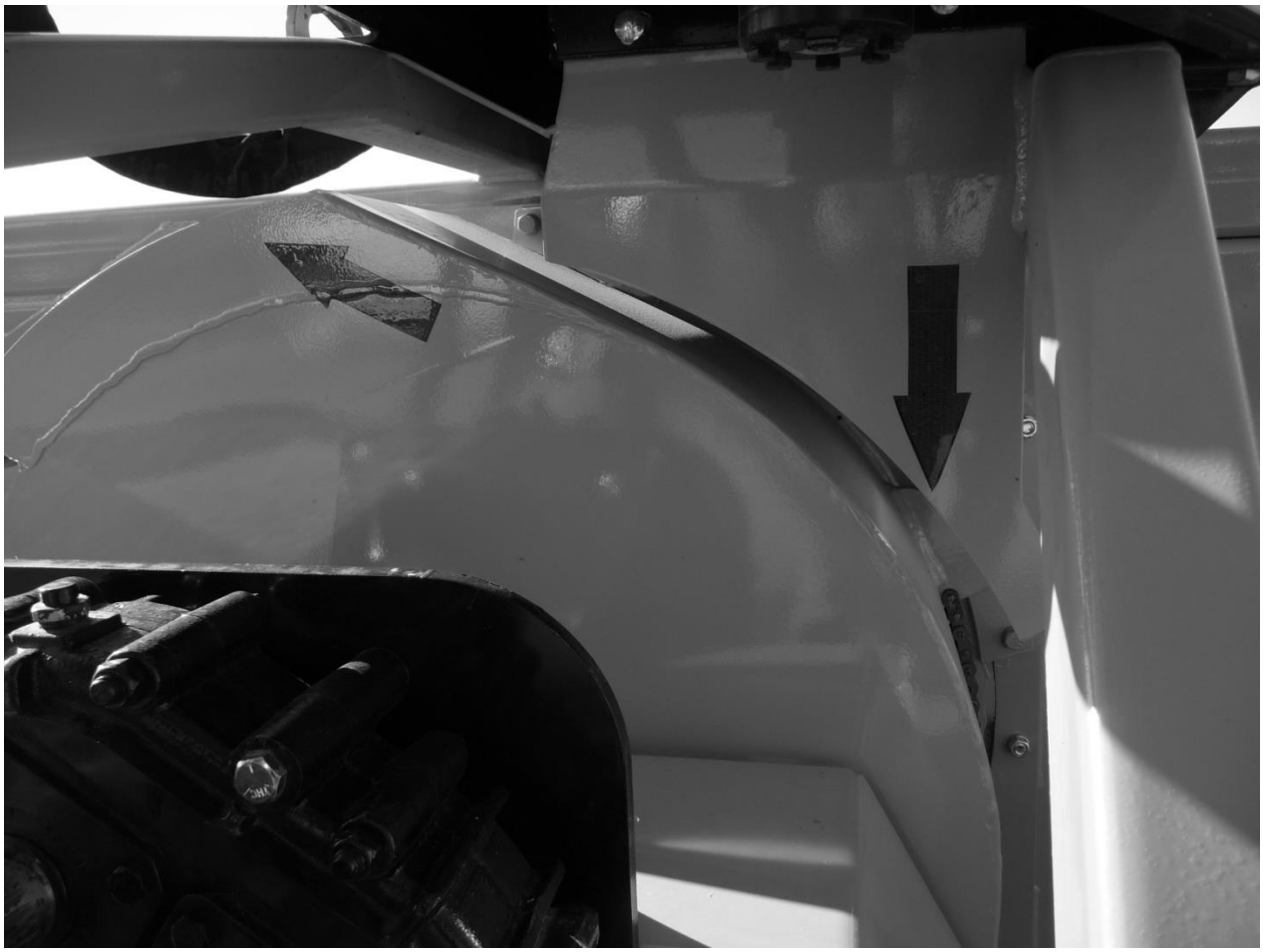


With the hydraulic hood turner assembly firmly bolted in place, route the cable around the hood and attach each end of the cable to the corners of the “D” ring as shown.

With the hood opening pointing directly over the auger, position the tubing in the “D” ring so it points at the center of the hood base, then tighten all clamps.

Side Discharge

Orbital motor powered to allow for either left or right side discharge, increasing fan capacity and reducing the required horse power.



Rotate fan housing either left or right completely until it hits the stops to use the side discharge.

Align the arrows to use the chute.

Maintenance

Stop the unit and disengage all power before doing any adjustments or service to your snowblower. See your Smyth Welding dealer to replace any worn or damaged parts.

Chain:
Carefully check the teeth on the sprocket, if they are worn to a hooked shape, the sprockets should be replaced to assure full capacity performance and a satisfactory life from the new chain.
Tight chain causes an additional load which increases wear on chain joints, sprockets and shaft bearings.
Slack chain produces vibration, which may result in excessive chain wear, noise or shock loading.
Tighten chain allowing ¼" sag in the bottom span as the chain wears.

Sprocket:
Inspect sprockets for problems which lead to replacement.
-Wear on the sides, which is due to misalignment
-Tooth wear (indicated by hooking)
-Broken teeth
-Cracks that might lead to failure
-Wobbling of sprockets on shaft

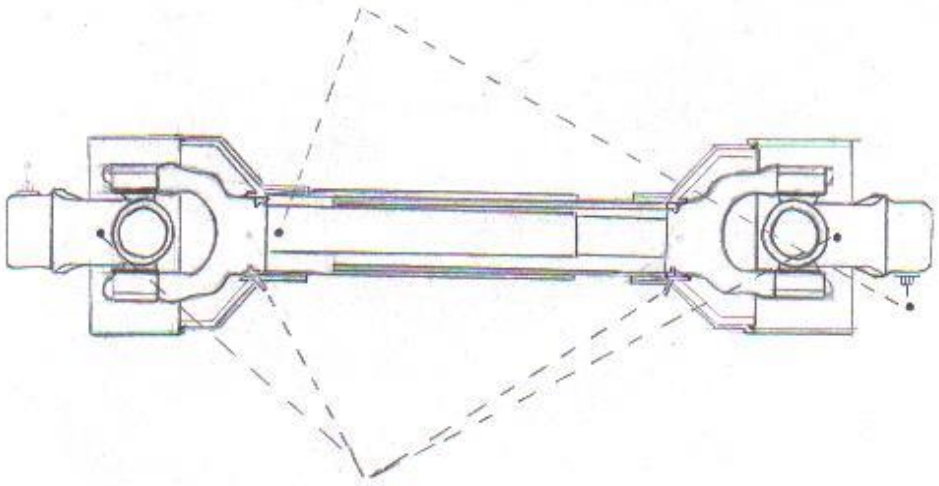
Bearings:
-grease after every 8 hours of use

Shear Bolts:
-replace with grade 2 or 5 for PTO series 20-40-50-60-80
Make sure this bolt is very tight in order to keep the efficiency of the shearing mechanism.

Gearbox:
-use 80W90 gear oil

PTO:
Point A -grease after every 16 hours of use
Point B –grease after every 8 hours of use

A



B

Telescopic tubes of PTO should overlap a minimum length to meet ideal conditions for power transmission.

The following table could be used as a guide to find the maximum permissible length of PTO:

PTO size	Over-all length		Overlap
	Closed	Maximum	
T20	29¾”	41”	5”
T40	30½”	40½”	6”
T50	36½”	50”	7”
T60	37¾”	47¼”	7”
T80	36”	47¼”	7”

PTO shafts are made to transmit power with angles at universal joints; however, these angles should be kept to a minimum.

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

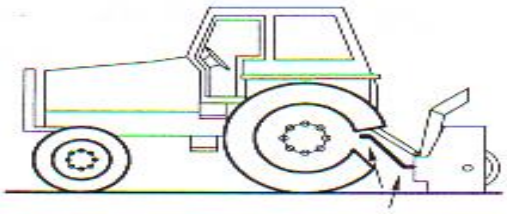
How to determine P.T.O. angle

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

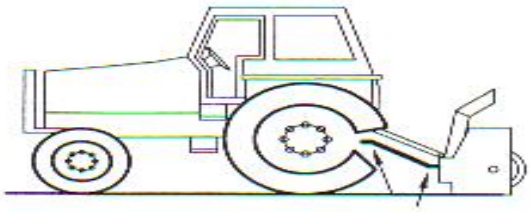
F FACTOR	ANGLE
6	10°
3.75	15°
2.75	20°
2.15	25°
1.75	30°

A = P.T.O. height at tractor
B = P.T.O. height at blower
C = A - B
L = Cross center distance in working position

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.



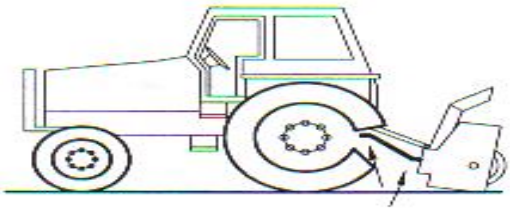
TOO LARGE ANGLES AT P.T.O. JOINTS
TO AVOID



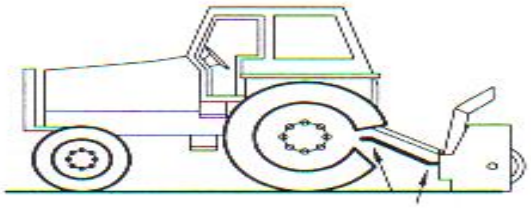
REASONABLE ANGLES AT P.T.O. JOINTS
ACCEPTABLE

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 increases 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.



NON-EQUAL ANGLES AT P.T.O. JOINTS
TO AVOID



EQUAL ANGLES AT P.T.O. JOINTS
RECOMMENDED

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.

	102-HS 102-HD 108-HS 108-HD 120-HD	96-S 96-D	84-S 84-D 90-PT	66-S 66-PT 72-S 78-S 78-PT	48-S 54-S 60-LS	Side Discharge
Gear Box	T279A	T27D	T27D	T281A	L25A	
PTO	T80	T60	T50	T40	T20	
Spline Coupler (sleeve)	1¾” 20 spline	1¼” 19 spline	1¼” 19 spline	1¼ ” 19 spline	1” 15 spline	
Shear Coupler (sprocket)	80SB12 1¾”	60SB12H 1¼”	60SB12H 1¼”	60SB12 1¼”	50SB12H-1” 50A12x1”	
Chain	83” of 80 101” of 80 97½” of 80H 108” of 80H Side discharge 111” of 80H	71” of 60H 84” of 60H	71” of 60 84” of 60D	61” of 60	48” of 50	#60 H
Idler Sprocket	S18011Hx¾”	S16015x⅝”	S16015x⅝”	S160B15x⅝”	S150B17x⅝”	(2) S160B15x⅝”
Sprocket	80A38x1⅜” or x1¾” 80A45x1¾” 80A45 x 2” Oil Bath 8032 w/hub 8045 w/hub	60A38x1⅜”	60A38x1⅜”	60A38X1⅜”	50A36x1”	6012
Bearing & Flange	Cross shaft UC209 x 1¾” Auger UC207 x 1⅜” 207 flangettes	Cross shaft UC207 x 1¼ Auger UC 207 x 1⅜” 207 flangettes	Cross shaft UC207 x 1¼ Auger UC 207 x 1⅜” 207 flangettes	Cross shaft UC207 x 1¼ Auger UC 207 x 1⅜” 207 flangettes	Cross Shaft & Auger UC 205 x 1” 205 flangettes	
Oil Seal	50x72x8 52x85x10 45x72x8	35x72x10 40x80x12	35x72x10 40x80x12	35x52x7	25x47x7	
PTO tube	Outer 4mmx54mm Inner 4mmx63mm	Outer 4mmx45mm Inner 3mmx51.6mm	Outer 4mmx45mm Inner 3mmx51.6mm	Outer 4.5mmx36mm Inner 3.4mmx43.5mm	Outer 4mmx29mm Inner 3.2mmx36mm	
Shear pins Grade 2 or 5	PTO 12mmx65mm Auger $\frac{5}{16}$” x 1½”	PTO 10mmx55mm 3/8” x 2” Auger $\frac{5}{16}$” x 1½”	PTO 10mmx55mm 3/8” x 2” Auger $\frac{5}{16}$” x 1½”	PTO 8mmx50mm Auger ¼” x 1½”	PTO 6mmx40mm Auger ¼” x 1”	

Chain Box Maintenance

The purpose of the chain box is to increase the PTO capacity from 540 rpm to 1000 rpm and to reduce angles at both ends of the PTO in working position by increasing the input shaft height.

T27D Chain box

After first 25 working hours, drain the oil out of the chain box and fill it in with 2.6 L of SAE 80W90 oil. Drain and change oil every season.

RH25000 Gear box

First oil change should be after 50 working hours, then after each 1000 hours.
Use 1.6L of SAE 80w90 or a comparable synthetic oil.
Drain and change the oil every working season.

PTO shear bolt

When the PTO is running at 1000 rpm instead of 540 rpm, the shear bolt value must be changed. On a PTO size 80, for 540 rpm the shear bolt is 12mm, grade 5. For 1000 RPM It has to be changed to a shear bolt 7/16" dia. Grade 2.

Adjusting the chain tension

After 10 working hours, the chain's adjustment must be checked. In order to do so, verify the backlash between the input and the output shaft by turning the input shaft in both directions while the output shaft remains still. If there is a play of .010 to .015, the chain must then be readjusted as follows:

-Remove PTO from the chain box.
-Unscrew the bolts from covers around the input shaft on both sides of the chain box
-With a hammer and screw-driver or a chisel, gently turn both covers in the same direction until the nest hole of the cover is in line with the threaded hole of the chain box.

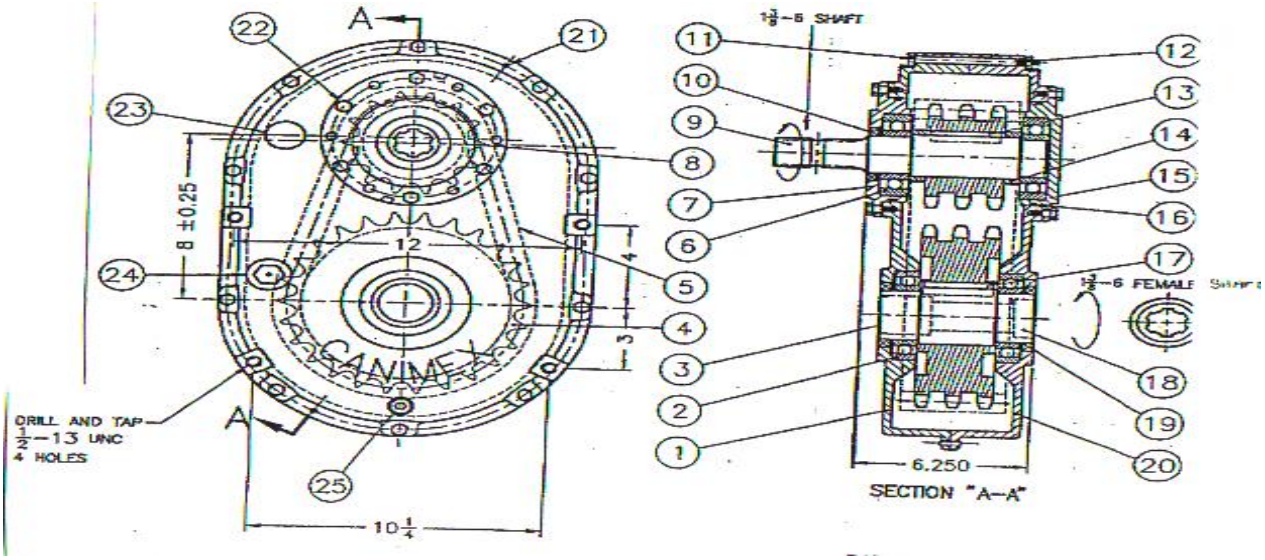
By turning input shaft cover, center to center, the distance of shafts will be changed adjusting the chains tension.

Make sure that the covers are turned in the same direction and by the same number of holes, otherwise, both shafts will not be parallel and serious damages might arise.

Verify the backlash between both shafts, if the difference is too high, repeat the operation.
If the backlash is correct, reinstall the bolts and the PTO.

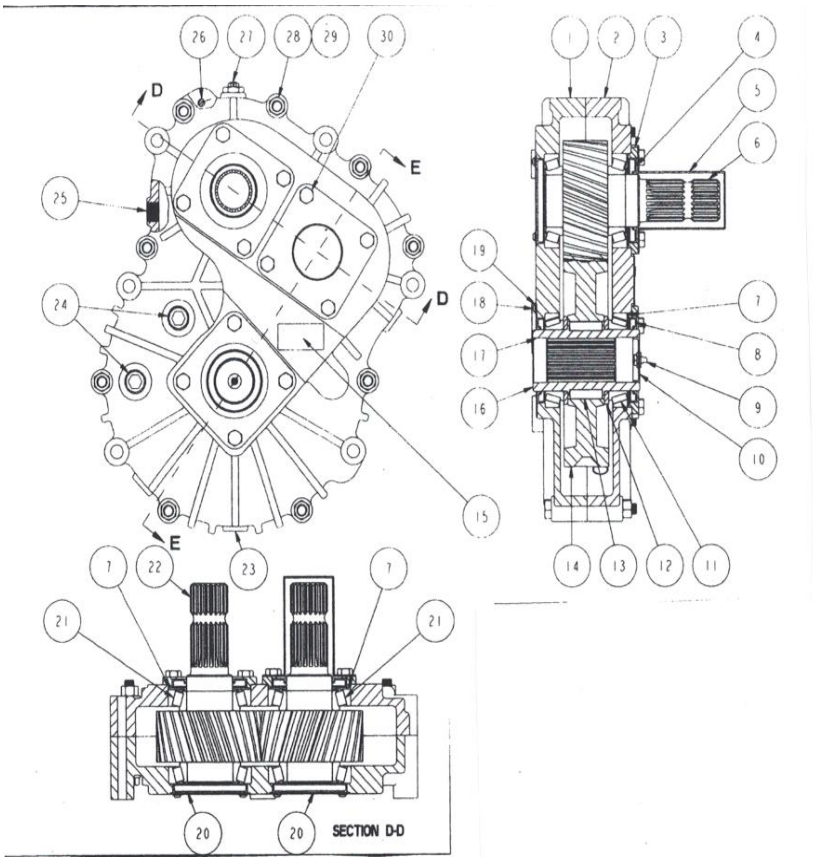
Verify the backlash every 100 working hours.

Chain Box Assembly for T27D (7',8' & 7 ½' Pull-type)



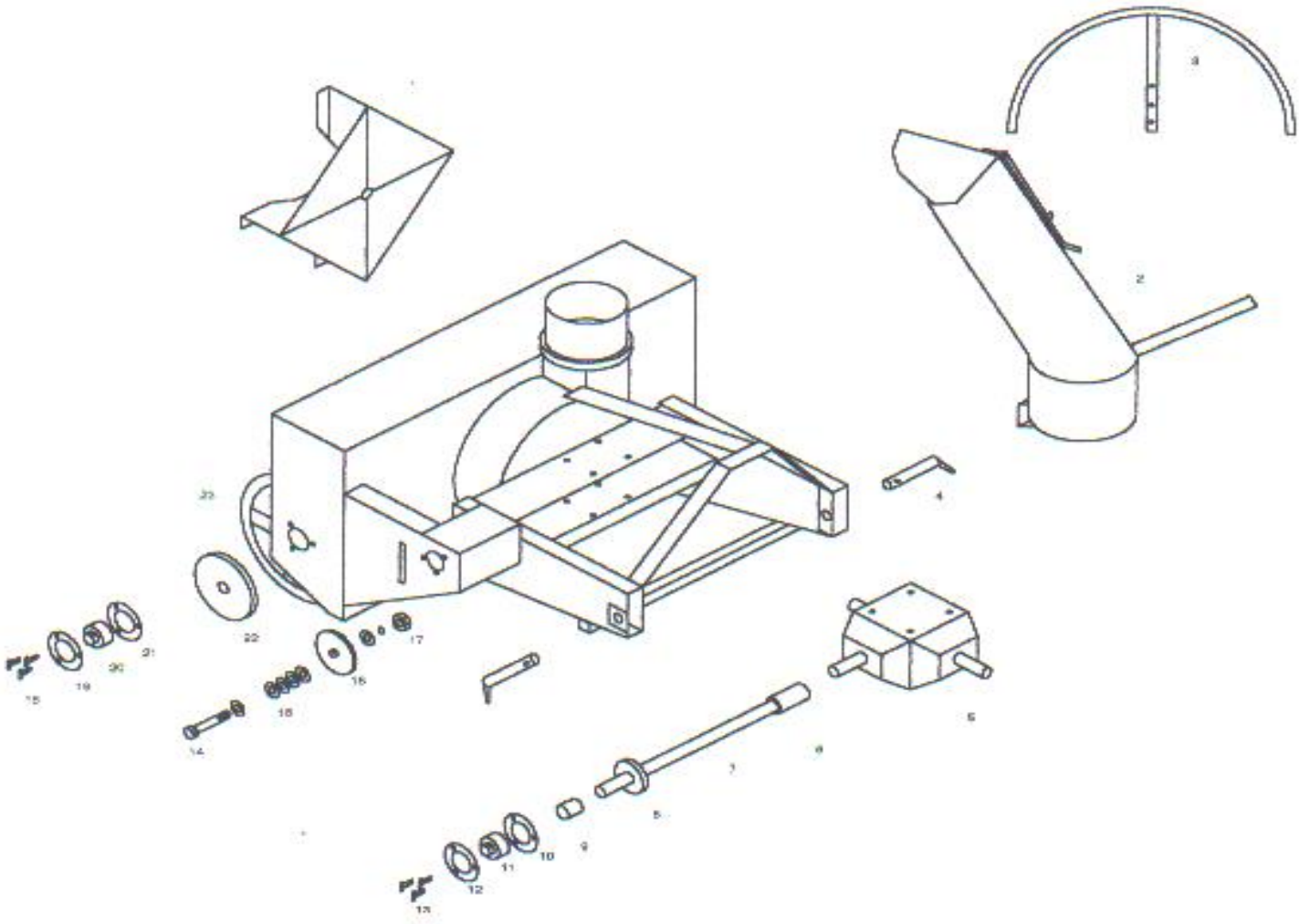
1. Casing with plug
2. Bearing 6212
3. Seal Cover (47x7)
4. Sprocket 80-3A26
5. Chain 80-3x36" L
6. Bearing 6309
7. Input cover with hole
8. Sprocket 80-3A14
9. Input shaft 1 3/8"x6 spline(010.036)
10. Oil Seal (45x65x8) TC double lip
11. Bolt 5/16"-18 UNCx4 ½"
12. Nut 5/16"-18UNC
13. Square Key ½"x2 ½"
14. Spacer (2-2 3/8"-0.568)
15. Input cover w/o hole
16. O-ring as-248 (National)
17. Square key 3/8"x2 ½"
18. Output shaft 1 3/8"x6 spline(010.039)
19. Oil Seal (60x80x10)TC double lip
20. Casing w/o plug
21. Slotted spring pin 3/16"x3/4"
22. Bolt 5/16"-18 UNC x3/4"
23. Air vent ½"-14 NPT
24. Sight glass ¾"-14 NPT
25. Drain plug ½"-14 NPT

Gear Box Assembly for RH 25000 (8 ½', 9' & 10')



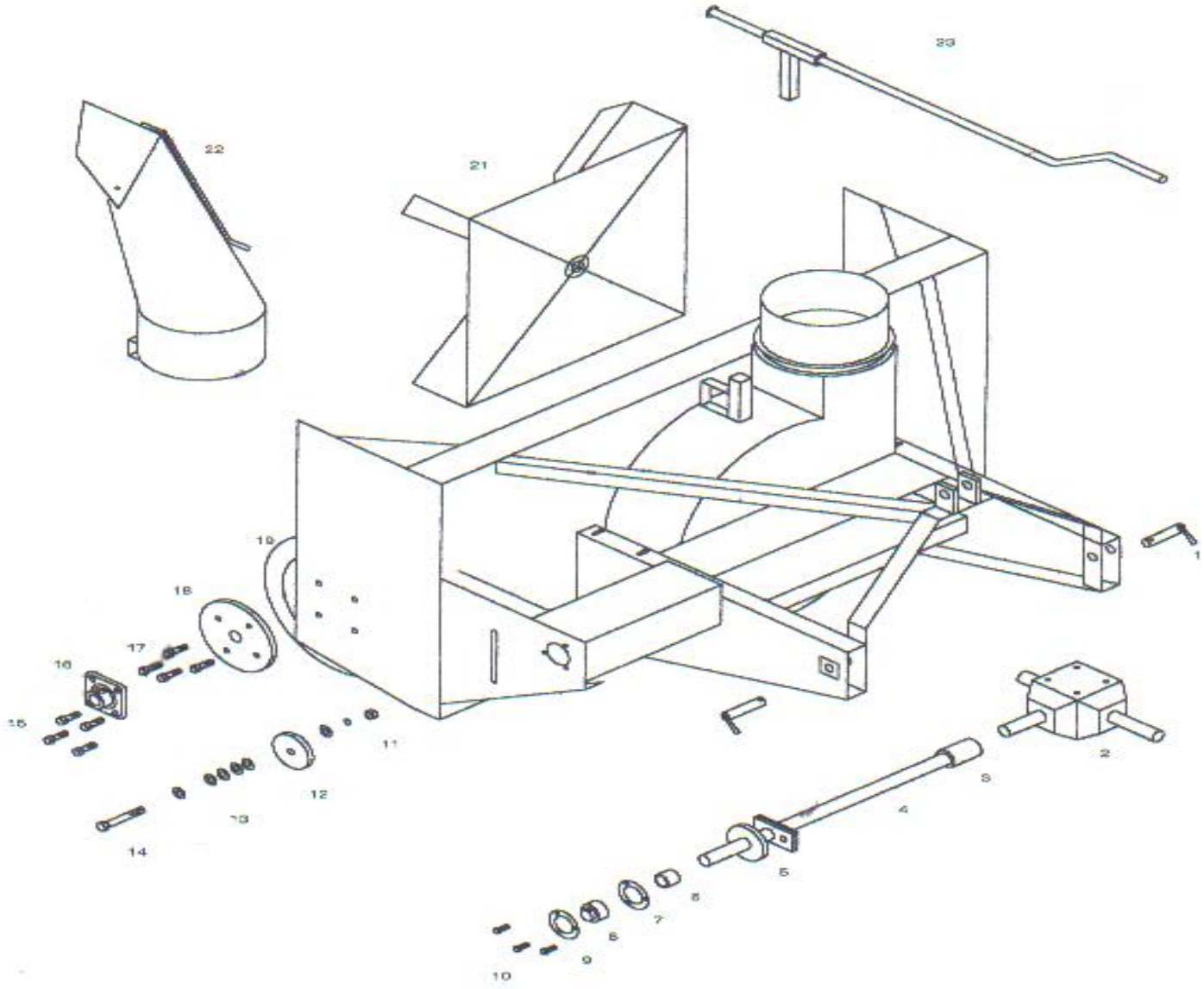
1 Lower Housing
2 Upper Housing
3 Hollow Cover
4 Seal 55x90x81
5 Guard
6 Mid Gear Shaft
7 Shim
8 Seal 65x90x8
9 Grease Fitting
10 End Cap
11 Bearing
12 Spacer
13 Round End Key
14 Output Gear
15 Name Plate
16 Output Shaft
17 Seal Retainer
18 Button Head Screw
19 Washer
20 End Cap
21 Bearing
22 Input Gear Shaft
23 Magnetic Plug
24 Plug ¾
25 Plug ½
26 Dowel Pin
27 Pressure Vent
28 Bolt
29 Nut
30 Bolt

SMYTH 48" ,54" & 60" LS SNOWBLOWER



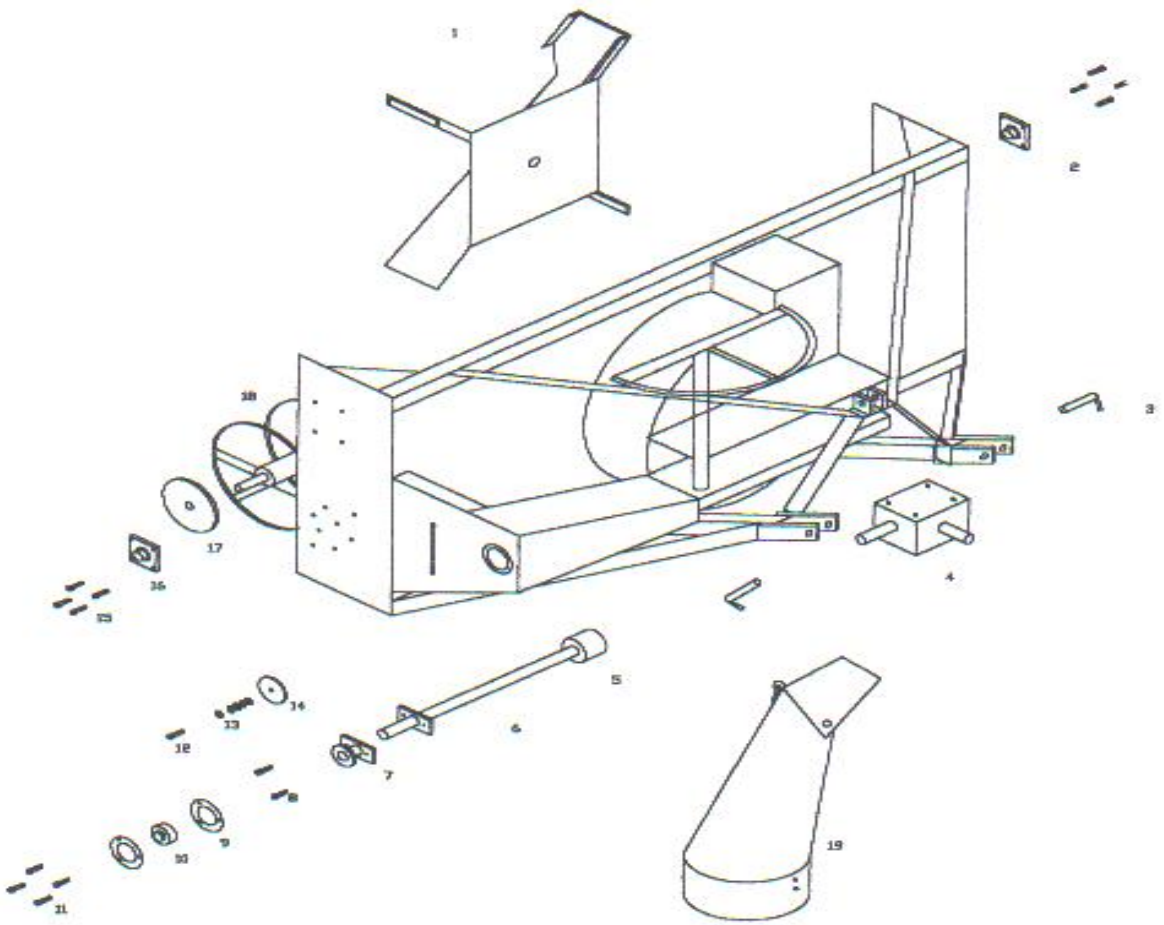
1. Fan
2. Hood w/ gf
3. Hood Turner
4. Hitch Pin
5. Gearbox
6. Spline Coupler
7. Cross Shaft
8. Shear Coupler w/gf
9. Spacer
10. Flangette
11. Bearing
12. Flangette
13. Bolts
14. ⅝”x 3½” bolt
15. ⅝” Flat Washers
16. 5017 Idler Sprocket
17. ⅝” Machinery Bushing, Nut and Lock Washer
18. Bolts
19. Flangette
20. Bearing
21. Flangette
22. Sprocket
23. Auger

SMYTH 66”, 72” & 78” SNOWBLOWER



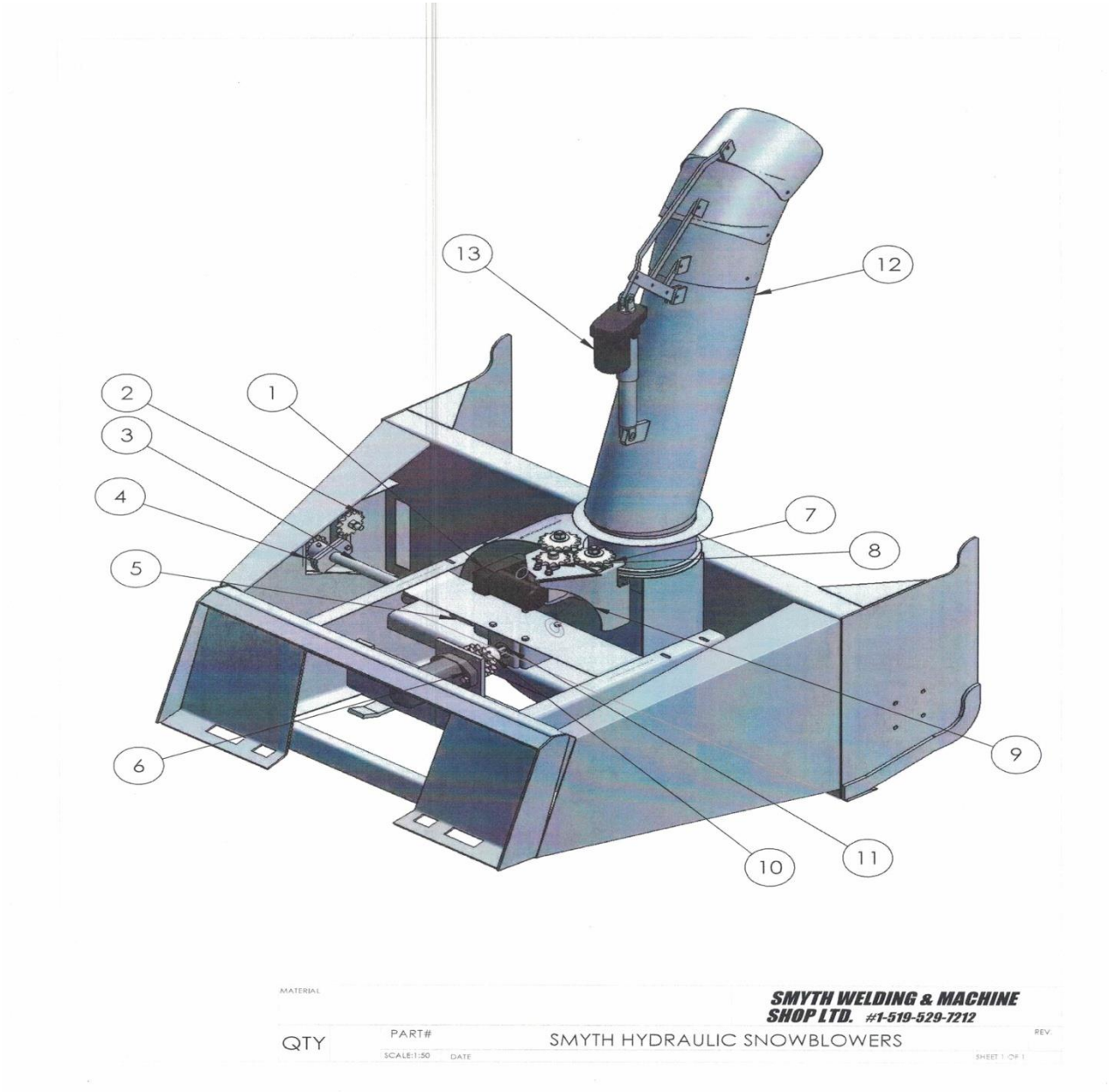
1. Hitch Pin
2. Gearbox
3. Spline Coupler
4. Cross Shaft
5. Shear Coupler w/gf
6. Spacer
7. Flangette
8. Bearing
9. Flangette w/gf
10. Carriage Bolts ⅜”X1”
11. ⅝” Machinery Bushing, Nut And Lock Washer
12. Idler Sprocket
13. ⅝” Flat Washers
14. ⅝”X3 ½” Bolt
15. ½”X 1 ½” Bolts
16. Bearing w/gf
17. ½”X1 ½” Bolt
18. Sprocket
19. Auger
21. Fan
22. Hood w/gf Located at Base
23. Hood Turner- Crank

SMYTH 84”, 96”, 102”, 108” & 120” SNOWBLOWER



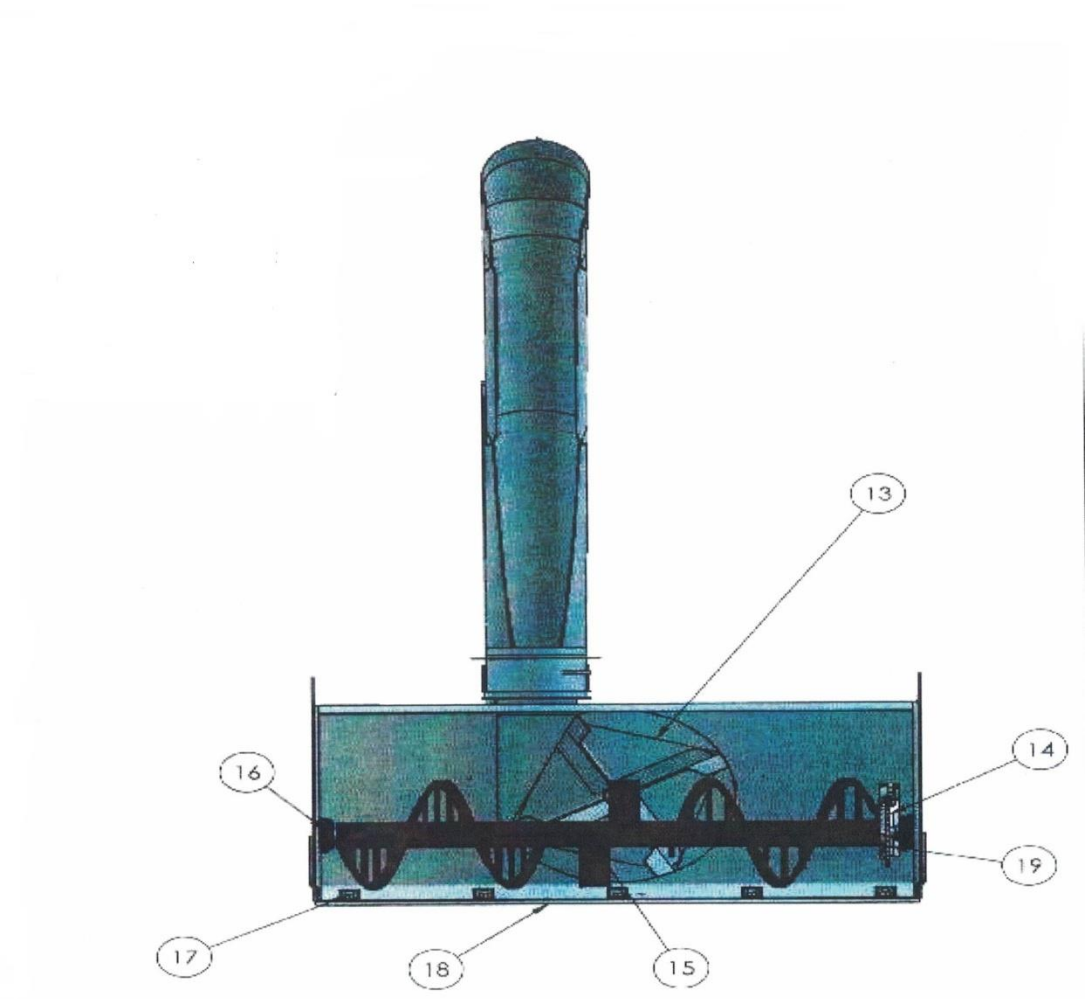
1. Fan
2. Auger Bearing
3. Hitch Pin
4. Gearbox
5. Spline Coupler
6. Cross Shaft
7. Shear Coupler
8. Shear Pin
9. Flangettes
10. Bearing
11. ⅜” x 1” Carriage Bolt
12. ⅝” x 3½” Idler Bolt
13. Spacer washer
14. Idler Sprocket
15. ½” x 1½” Bearing Bolt
16. Auger Bearing
17. Auger Sprocket
18. Auger

Hydraulic Snowblower Parts



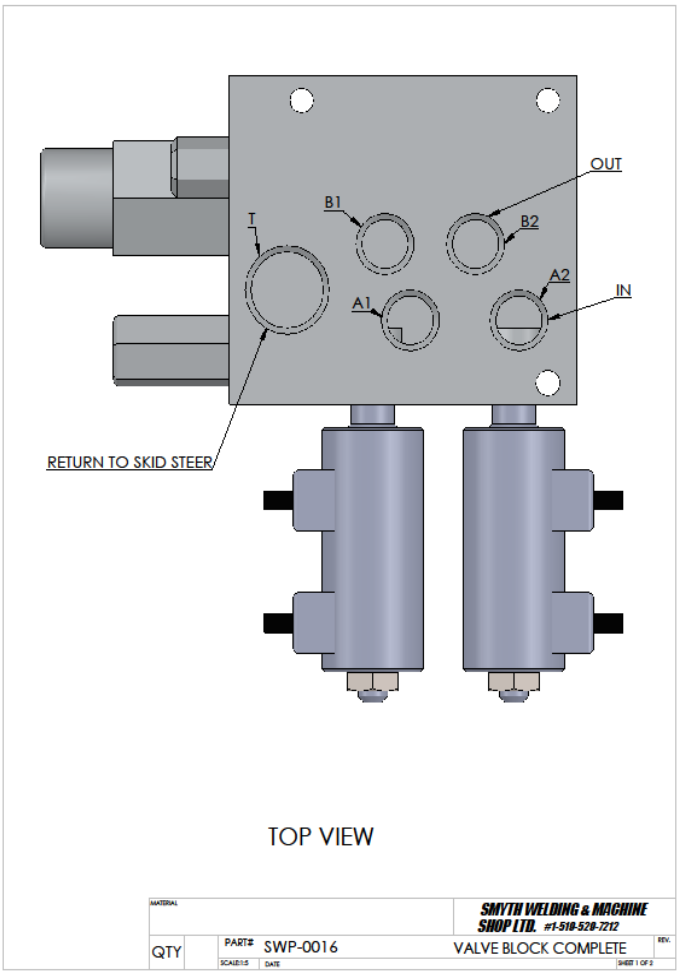
1. 12v Orbital Actuator
2. Idler Sprocket
3. Cross Shaft
4. Shear Coupler
5. Spline Coupler
6. Hydraulic Motor
7. Idler Sprocket
8. Orbital Drive Sprocket
9. Orbital Mounting Bracket
10. Chain Coupler Sprocket
11. Gear Box
12. Hood

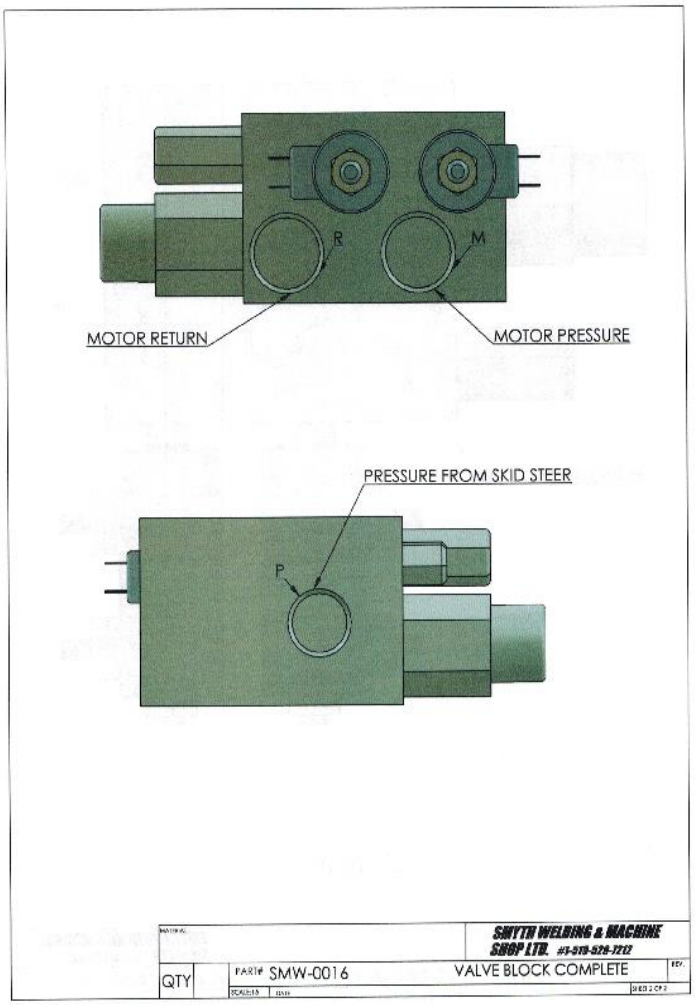
Hydraulic Snowblower Parts



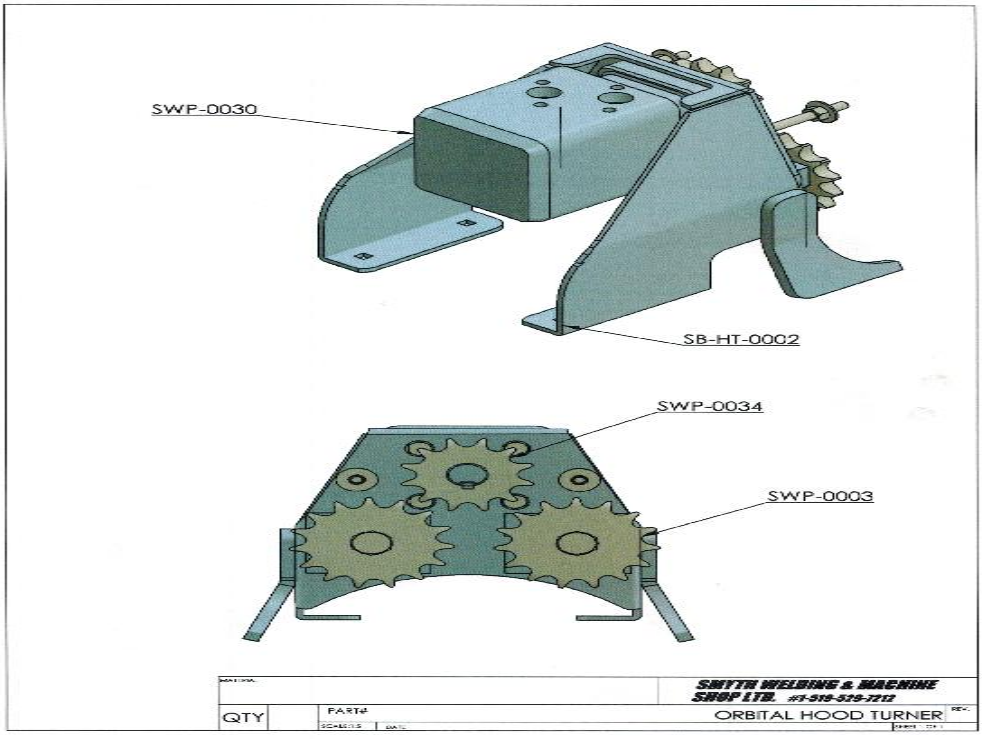
13. Fan
14. Sprocket
15. Auger
16. Auger Bearing
17. Grader Bolt
18. Cutting Edge
19. Roller Chain

Valve Block

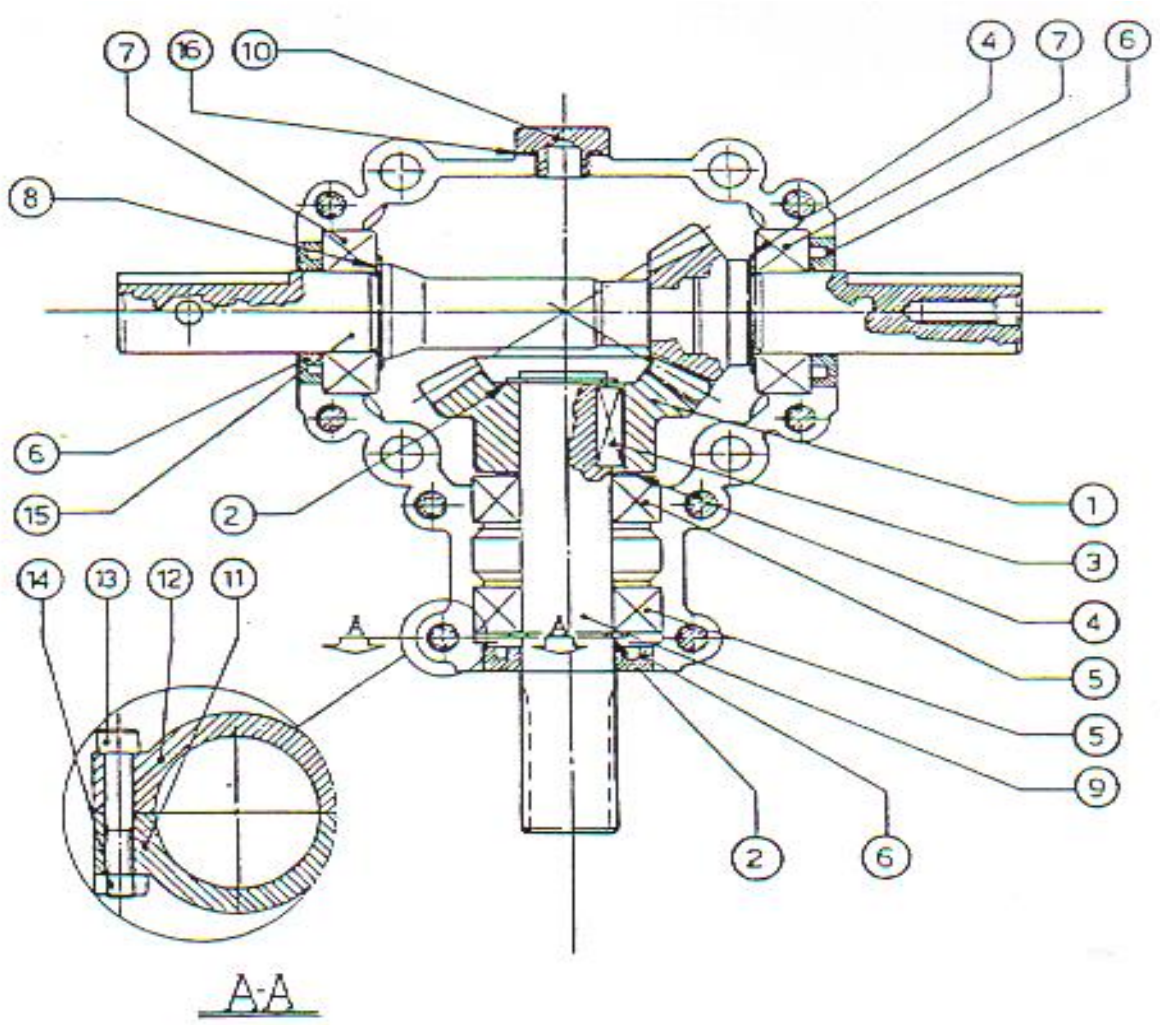




Orbital Hood Turner

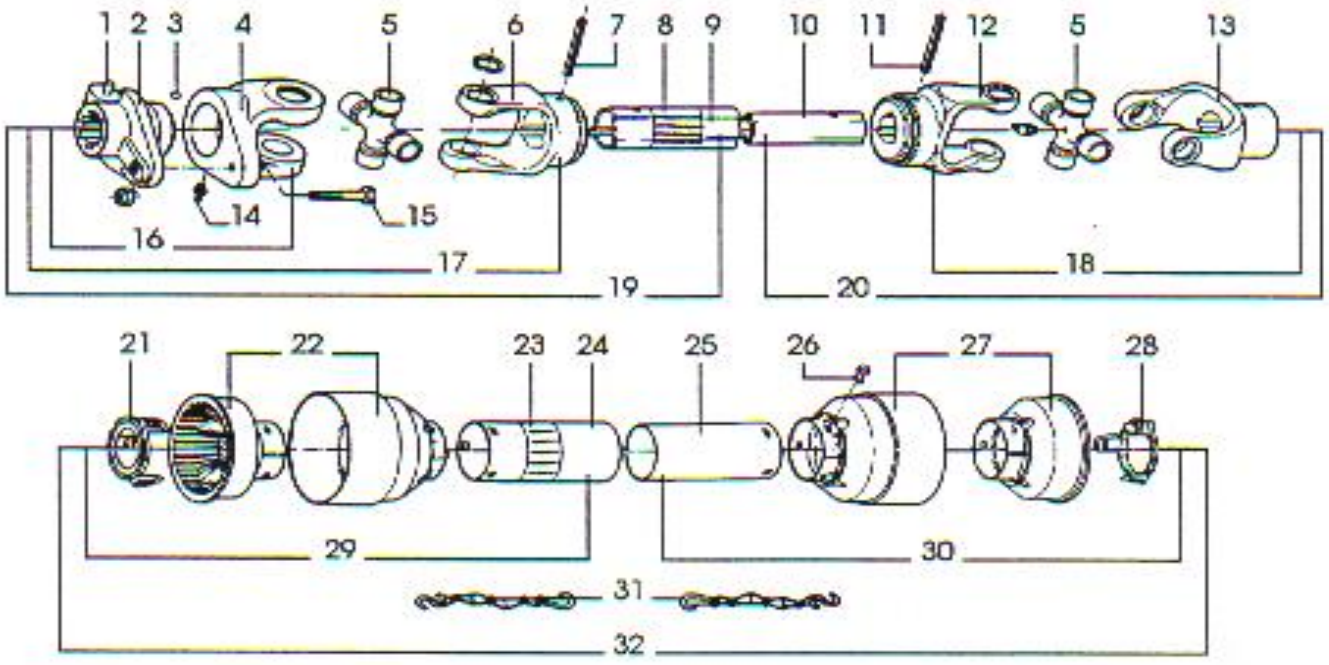


L-25A Gearbox (for 48”, 54” & 60LS)



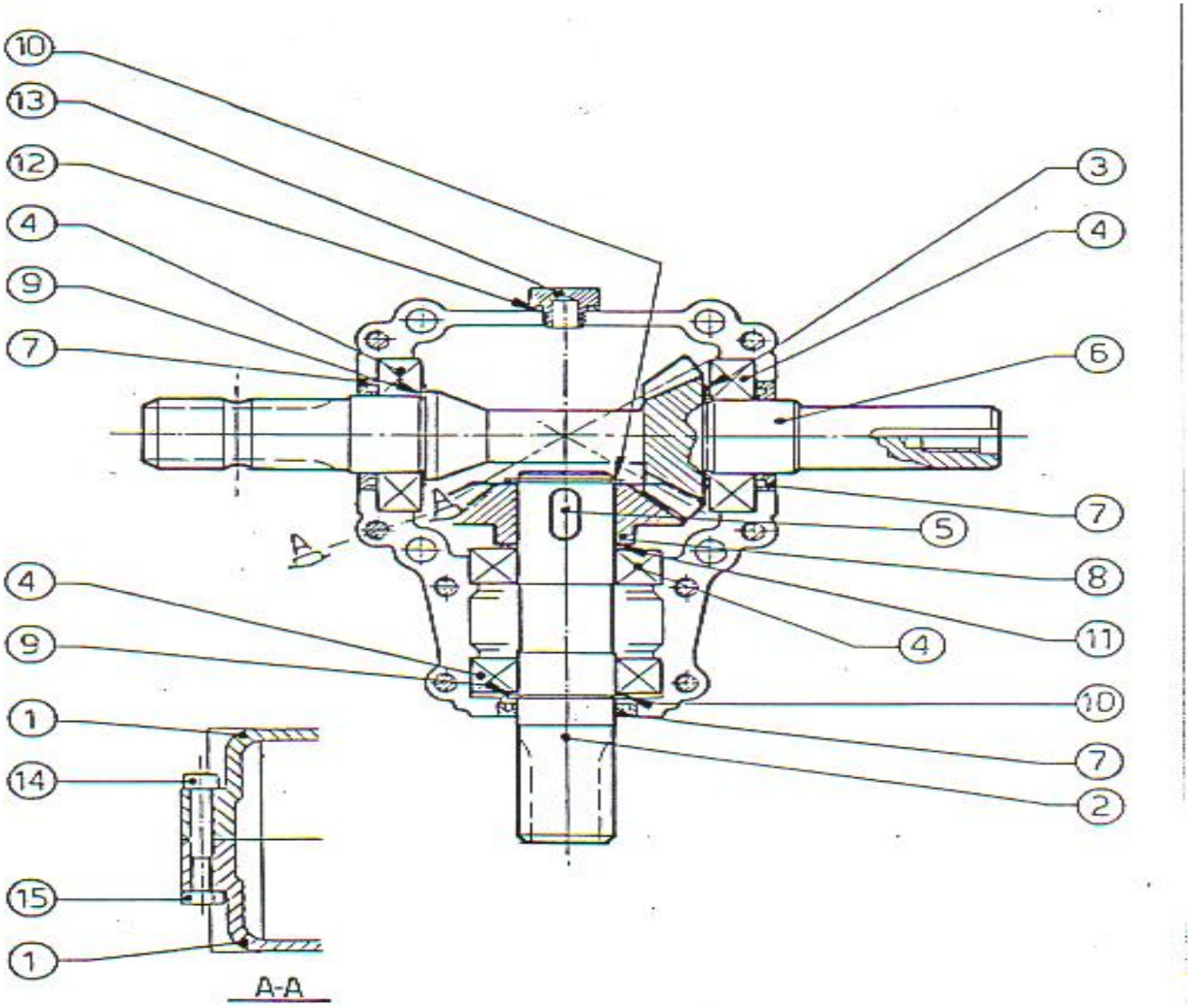
1.	0.124.6005.00 Crown	Wheel Z24 M3.25
2.	8.5.1.00004	Snap Ring 25 Uni7435
3.	8.4.1.00015	Parallel Key A 8x7x25
4.	0.100.7507.00	Shim 25.6x0.7
5.	8.0.1.00598	Bearing 6205
6.	8.7.3.00257	Oil Seal 25x47x7
7.	0.124.7103.00	Bearing
8.	0.100.7506.00	Shim 25.6x0.6
9.	0.124.2429.00	Shaft 1”
10.	0.124.2429.00	Plug 3/8” gas
11.	1.124.0302.00	Casing A
12.	1.124.303.00	Casing A
13.	8.1.2.00248	Bolt M8x45 8,8
14.	8.2.1.00382	Hex Nut M8
15.	0.124.6258.00	Pinion Shaft Z16 M3.25
16.	8.7.6.00191	O-Ring OR-3062

T20 PTO (for 48”, 54” & 60LS)



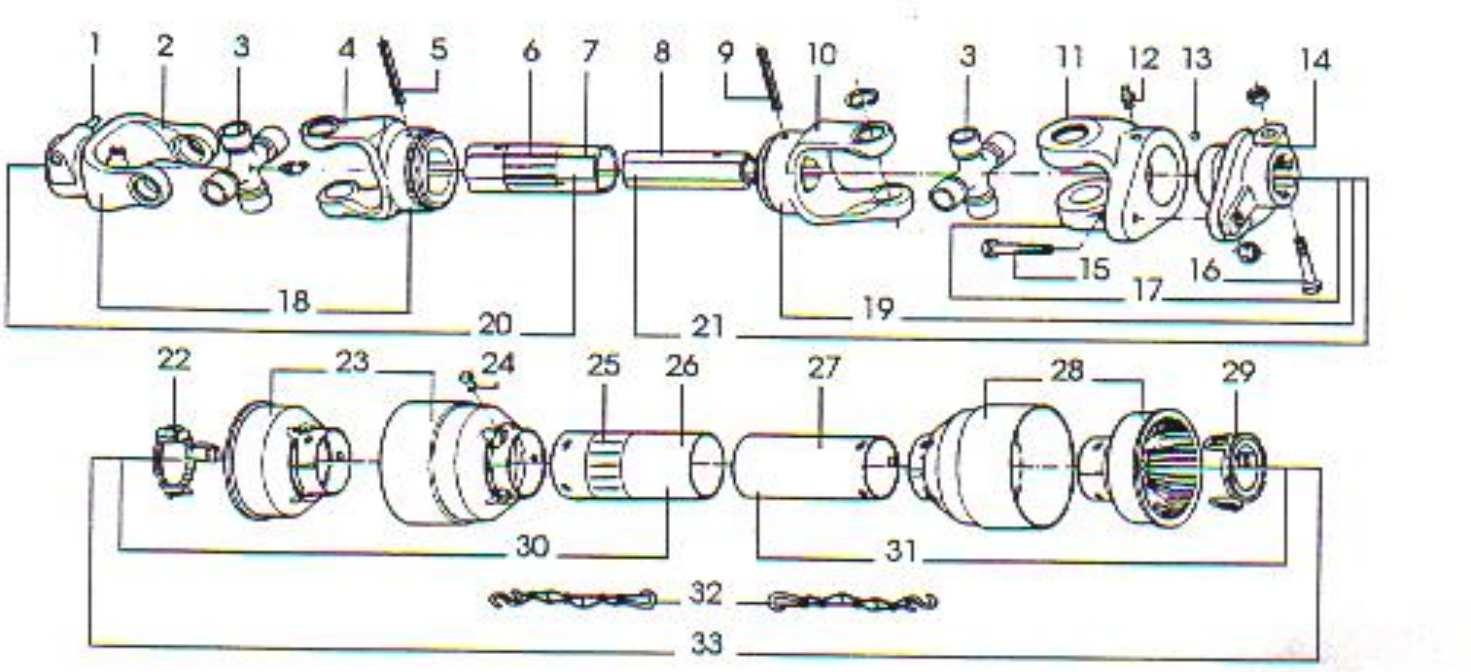
1. 166.026.004 Push pin set 1 3/8”
2. 141.022.010 Hub B02
3. 190.000.024 Ball 7/32”
4. 151.012.005 Yoke for B02
5. 180.012.130 Cross journal set
6. 151.012.003 Outer yoke
7. 190.000.012 Roll pin for outer tube
8. 190.000.216 “DANGER” Label for outer tube
9. 152.120.289 Outer tube
10. 153.120.181 Inner tube
11. 190.000.011 Roll pin for inner tube
12. 151.012.002 Inner yoke
13. 151.012.304 Special yoke
14. 190.000.020 Grease nipple M8x1
15. 165.000.509 Bolt M6x40 cl.8.8 & nut
16. 143.220.001 Complete shear bolt B02
17. 121.022.526.10 U joint for outer tube
18. 121.022.570.10 U joint for inner tube
19. 123.220.647.10 Half female shaft
20. 123.220.343.10 Half male shaft
21. 180.012.007 Guard retaining collar for outer tube
22. 180.012.013 Cone for outer tube
23. 190.000.215 “DANGER” Label for outer shield tube
24. 156.111.143 Outer shield
25. 157.111.241 Inner shield
26. 190.000.019 Bolt
27. 180.012.012 Cone for inner tube
28. 180.012.006 Guard retaining collar for inner tube
29. 142.221.134 Half female shield
30. 142.221.231 Half male shield
31. 180.016.025 Safety chains
32. 142.220.252 Complete shield type P

T-281A Gearbox (for 66”,72” & 78”)



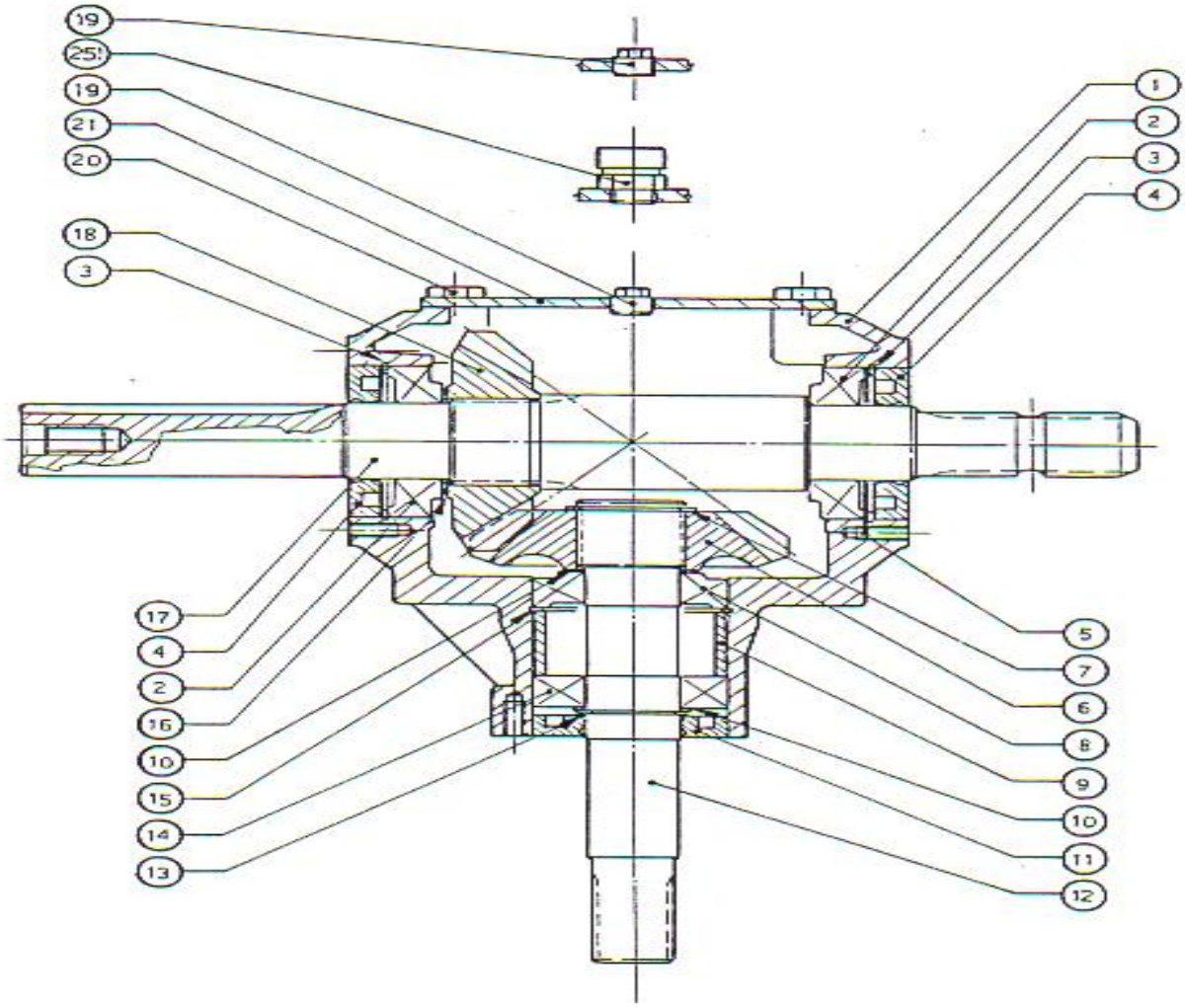
1.	1.281.0300.00	Casing
2.	0.281.2207.00	Shaft 1 ¼”
3.	0.259.7500.00	Shim 48.0
4.	8.0.1.00025	Bearing 6207
5.	8.4.1.00057	Parallel Key A 10x8x30
6.	0.281.6200.00	Pinion shaft Z13 M5
7.	8.7.3.00028	Oil Seal 35x52x7
8.	0.259.6000.00	Crown wheel Z19 M5
9.	0.259.7505.00	Shim 35.3x0.5
10.	8.5.1.00005	Snap ring 35 Uni7435
11.	0.259.7506.00	Shim 35.3x0.6
12.	8.7.6.00191	O-Ring OR-3062
13.	0.281.7100.00	Plug
14.	8.1.2.01174	Bolt M8x55 8,8
15.	8.2.1.00382	Hex nut M8 8

T40 PTO (for 66”, 72” & 78”)



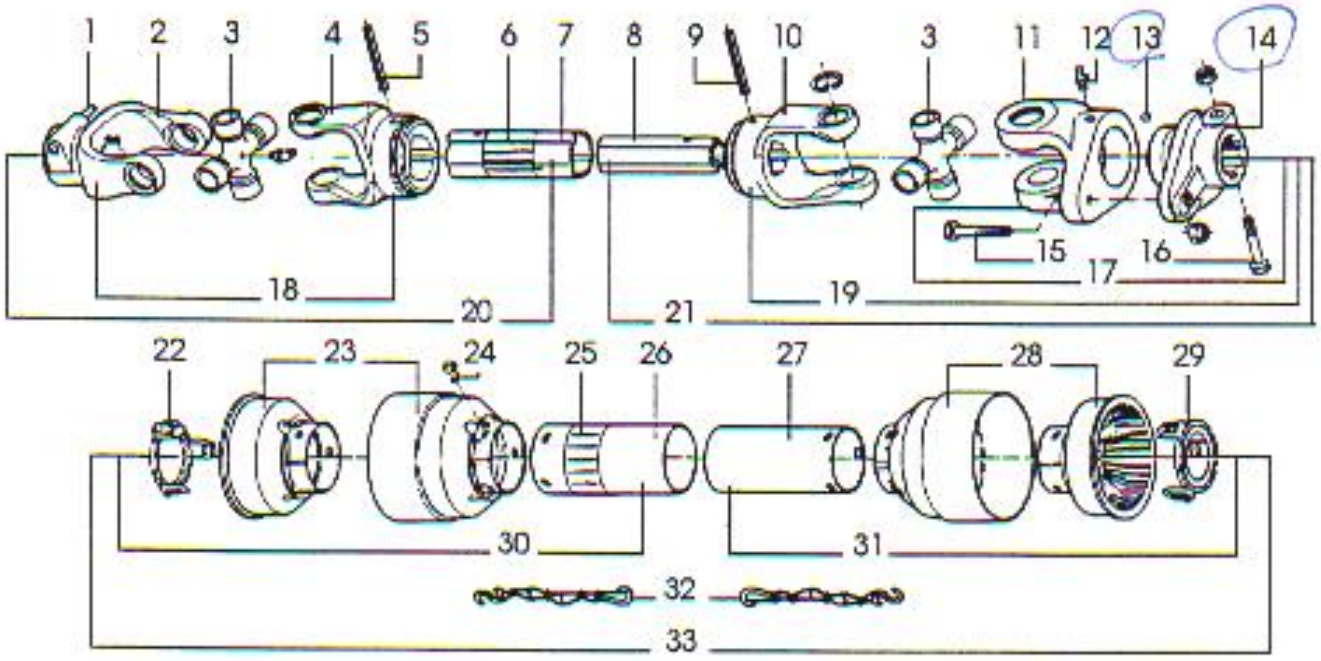
1. 166.026.009 Push pin set 1 3/8” old type
2. 141.024.271 Push pin yoke 112 old type
3. 180.014.130 Cross journal set
4. 151.014.006 Outer yoke
5. 190.000.014 Roll pin for outer tube
6. 190.000.216 “DANGER” label for outer tube
7. 152.140.280 Outer tube
8. 153.140.188 Inner tube
9. 190.000.012 Roll pin for inner tube
10. 151.014.007 Inner yoke
11. 151.014.012 Yoke for B02
12. 190.000.020 Grease nipple M8x1
13. 190.000.022 Ball ¼”
14. 141.024.270 Hub B02 with interfering clamp bolt
15. 165.000.505 Bolt M8x50 cl.8.8 & nut
16. 165.000.525 Bolt M12x1, 25x70 cl.8.8 & nut
17. 143.240.008 Complete shear bolt B02
18. 121.024.609.10 U joint for outer tube
19. 121.024.610.10 U joint for inner tube
20. 123.240.673.10 Half female shaft with shielding
21. 123.240.386.10 Half male shaft with shielding
22. 180.013.012 Guard retaining collar for outer tube
23. 180.013.016 Cone for outer tube
24. 190.000.019 Bolt
25. 190.000.215 “DANGER” label for outer shield tube
26. 156.141.554 Outer shield
27. 157.141.279 Inner shield
28. 180.013.015 Cone for inner tube
29. 180.013.011 Guard retaining collar for inner tube
30. 142.241.153 Half female shield
31. 142.241.253 Half male shield
32. 180.016.025 Safety chains
33. 142.240.293 Complete shield type P

T-27D Gearbox (for 84”, 90PT & 96”)



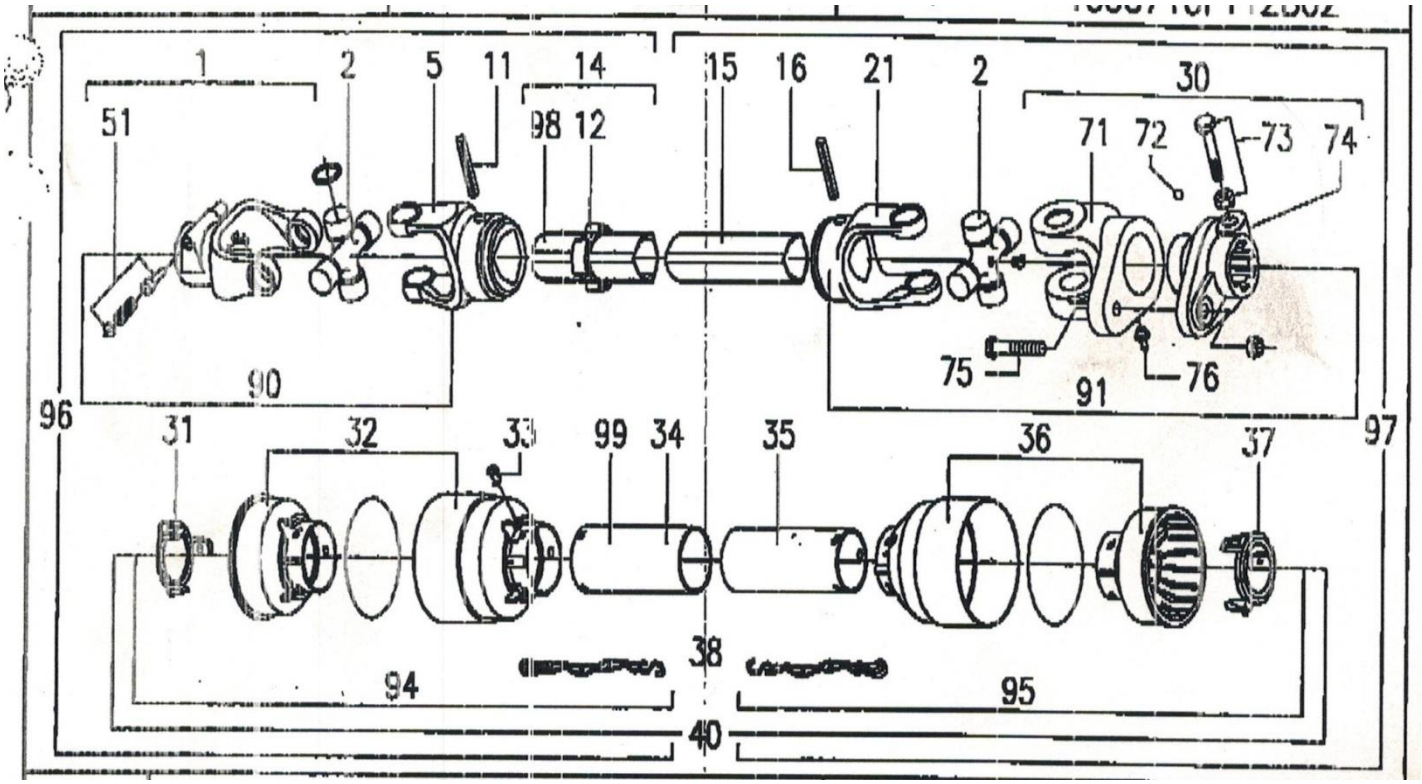
1. 0.267.0301.00 Casing
2. 8.0.9.00024 Bearing 30208
3. 8.5.2.00030 Snap ring 80
4. 8.7.1.00748 Double lip seal
5. 0.110.7500.00 Shim 79,7
6. 0.267.5000.00 Gear Z18 M6.15
7. 8.5.1.00029 Snap ring 40 Uni7435
8. 8.0.9.00026 Bearing 30207
9. 0.267.7100.00 Spacer
10. 0.259.7500.00 Shim 48.0
11. 8.7.1.00152 Double lip seal
12. 0.267.2000.00 Shaft 16/32” Z19
13. 8.5.1.00005 Snap ring 35 Uni7435
14. 8.0.1.00025 Bearing 6207
15. 8.5.2.00131 Snap ring 72 Uni7437
16. 0.244.7500.00 Shim 51.5
17. 0.267.4218.00 Shaft
18. 0.132.5002.00 Gear Z18 M6.15
19. 8.6.5.00006 Plug 3/8” gas
20. 8.1.1.01031 Bolt M10x14
21. 0.267.1300.00 Cover
251. 8.6.7.00161 Oil filler plug
500. 0.124.7101.00 Plate

T50 PTO (for 84” & 90PT)



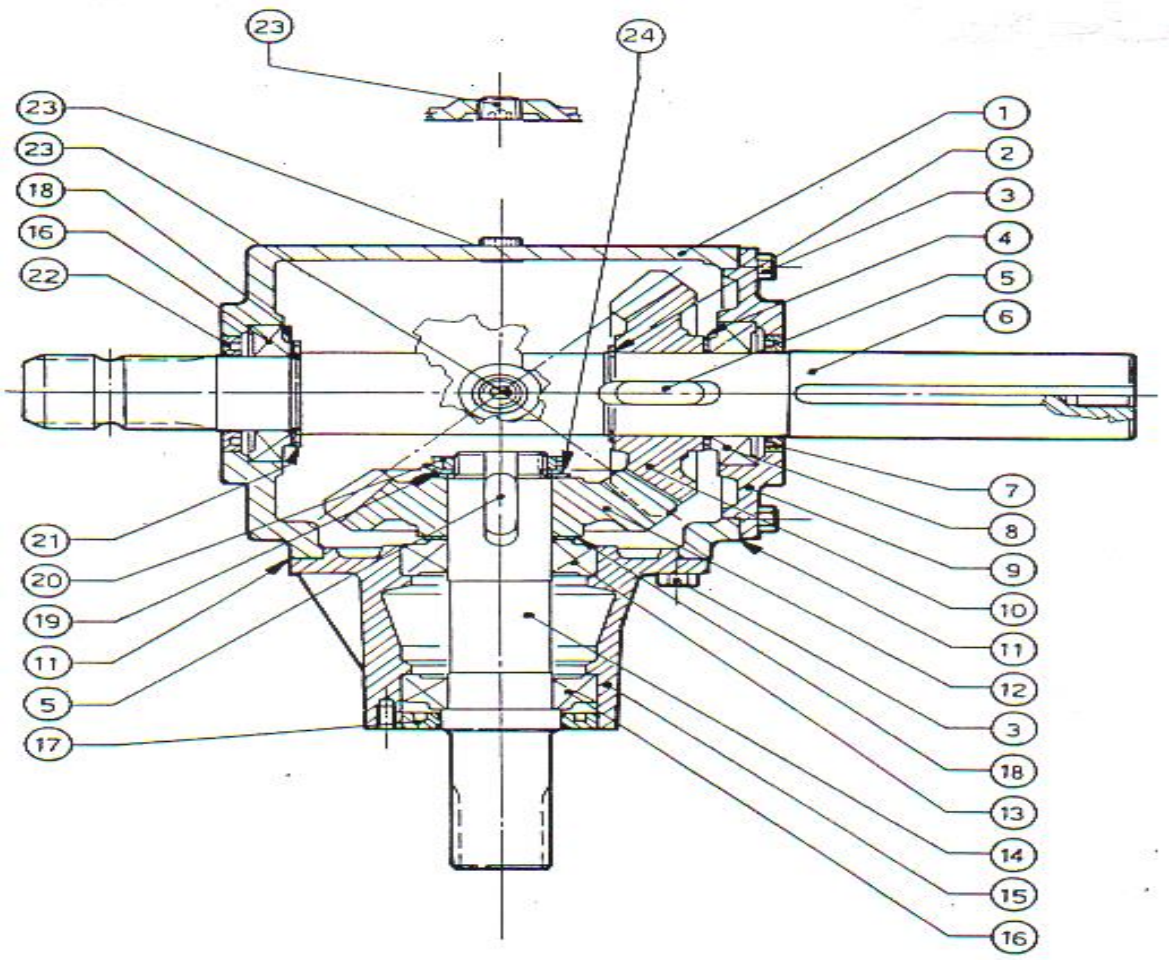
1.166.026.009 Push pin set 1 3/8” old type
2.141.025.230 Push pin yoke 112 old type
3.180.015.130 Cross journal set
4.151.015.011 Outer yoke
5.190.000.015 Roll pin for outer tube
6.190.000.216 “DANGER” Label for outer tube
7.152.150.209 Outer tube
8.153.150.109 Inner tube
9.190.000.014 Roll pin for inner tube
10.151.015.012 Inner yoke
11.151.015.024 Yoke for B02
12.190.000.020 Grease nipple M8x1
13.190.000.022 Ball ¼”
14.141.025.260 Hub B02 with interfering clamp bolt
15.165.000.511 Bolt M10x55 cl.8.8 & nut
16.165.000.525 Bolt M12x1,25x70 cl.8.8 & nut
17.143.250.016 Complete shear bolt B02
18.121.025.582.10 U joint for outer tube
19.121.025.583.10 U joint for inner tube
20.123.250.674.10 Half female shaft with shielding
21.123.250.359.10 Half male shaft with shielding
22.180.015.009 Guard retaining collar for outer tube
23.180.016.023 Cone for outer tube
24.190.000.019 Bolt
25.190.000.215 “DANGER” label for outer shield tube
26.156.151.109 Outer shield
27.157.151.209 Inner shield
28.180.016.022 Cone for inner tube
29.180.015.008 Guard retaining collar for inner tube
30.142.251.151 Half female shield
31.142.251.248 Half male shield
32.180.016.025 Safety chains
33.142.250.285 complete shield type P

T60 PTO (for 96”)



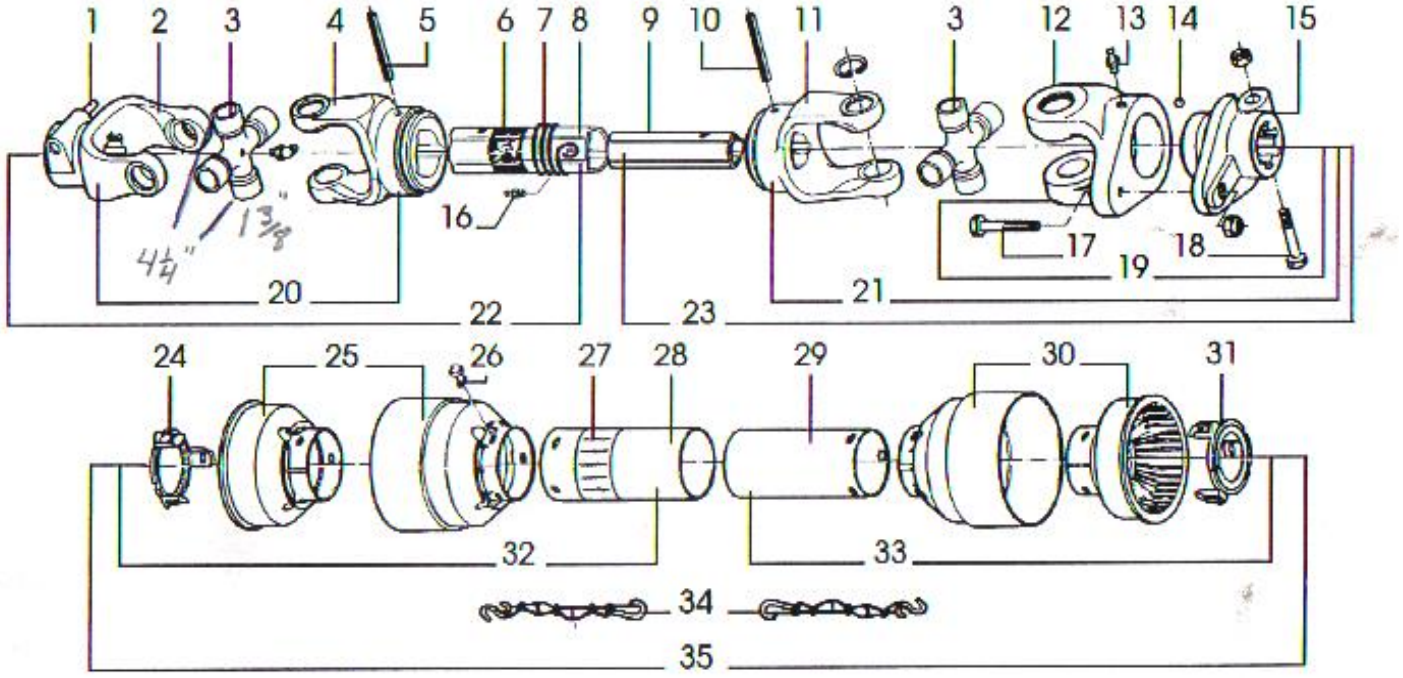
1. Complete collar yoke 1-3/8 Z6
2. Cross journal set 30.2x92
5. Outer Yoke
11. Roll pin for outer tube
12. Bushing w/ gf
14. Complete outer tube 27”
15. Inner tube 27”
16. Roll pin for inner tube
21. Inner yoke
30. Complete shear bolt B02
31. Guard retaining ring
32. Cone for outer tube
33. Bolt
34. Outer shield
35. Inner shield
36. Cone for inner tube
37. Guard retaining collar for inner tube
38. Safety chains
40. Complete shield-short or long
51. Collar set
71. Yoke B02
72. Ball 5/16”
73. Bolt & nut
74. Hub
75. Bolt & nut
76. Grease fitting
90. U joint for outer tube
91. U joint for inner tube
94. Half female shield
95. Half male shield
96. Half female shaft w/ shielding
97. Half male shaft w/ shielding
98. “DANGER” label for outer tube
99. “DANGER” label for out shield tube

T-279A Gearbox (for 102”,108” & 120”)

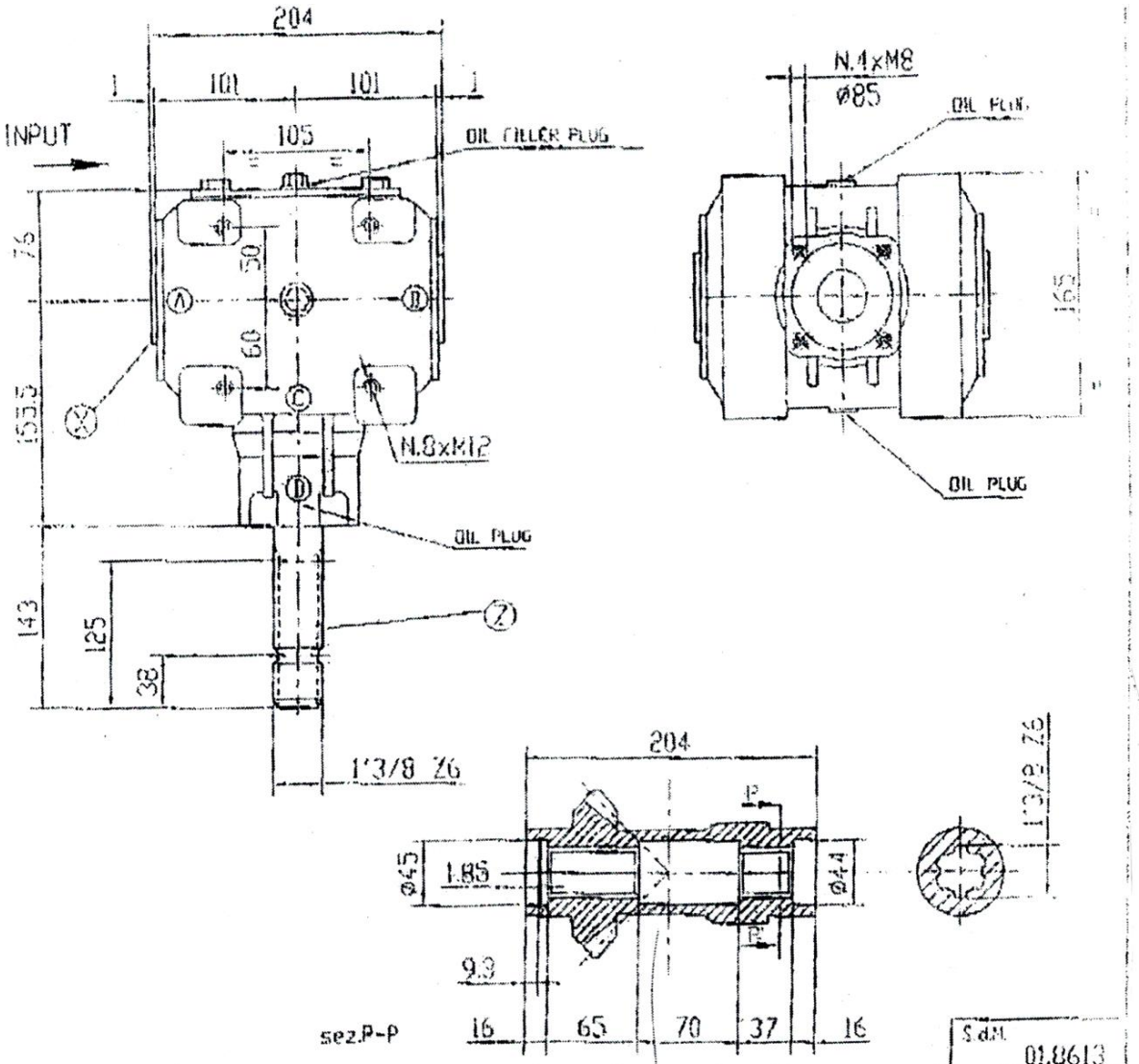


1.	0.279.0300.00	Casing T4
2.	8.5.1.00533	Snap ring 50 Uni7435
3.	8.1.1.00501	Bolt M10x22 8,8
4.	0.712.7500.00	Shim 70.3
5.	8.4.1.00978	Parallel key B 14x9x40
6.	0.279.3010.00	Shaft
7.	8.7.1.01097	Oil seal 50x72x8
8.	8.0.9.00469	Bearing 30210
9.	0.279.1300.00	Cover
10.	0.279.6000.00	Gear Z21 M7,14
11.	0.248.7200.00	Gasket
12.	0.279.5000.00	Gear Z21 M7,14
13.	8.0.9.00125	Bearing 32209
14.	0.279.2000.00	Shaft 1 ¾” Z20
15.	0.279.1301.00	Extension AC
16.	8.0.9.00143	Bearing 30209
17.	8.7.3.01096	Oil seal 52x85x10
18.	0.252.7500.00	Shim 65.3
19.	8.3.8.00065	Spring washer x1, 25C40B0N
20.	8.2.5.00064	Locknut M40x1,5 H9
21.	0.252.7525.00	Shim 45.3x2.5
22.	8.7.1.00981	Double lip seal 45x72x8
23.	8.6.6.0021	Plug 3/8” Gas
24.	0.244.7510.00	Shim 40.3x1.0
500	0.124.7101.00	Plate

T80 PTO (for 102”, 108” & 120”)



1. 166.026.009 Push pin set 1 3/8” old type
2. 141.028.161 Push pin yoke 112 old type
3. 180.018.130 Cross journal set
4. 151.018.133 Outer yoke
5. 190.000.243 Roll pin for outer tube
6. 190.000.216 “DANGER” Label for outer tube
7. 180.019.114 Shield support
8. 152.198.117 Outer tube
9. 159.190.025 Hardened inner tube
10. 190.000.271 Roll pin for inner tube
11. 151.018.134 Inner yoke
12. 151.018.023 Yoke for B05
13. 190.000.021 Grease nipple M10x1
14. 190.000.023 Ball 5/16”
15. 141.028.162 Hub B05 with interfering clamp bolt
16. 166.000.542 Grease nipple kit
17. 165.000.539 Bolt M12x65 cl.10.9 & nut
18. 165.000.584 Bolt M12x1,25x90 cl.8.8 & nut
19. 143.280.016 Complete shear bolt B05
20. 121.028.637.10 U joint for outer tube
21. 121.028.636.10 U joint for inner tube
22. 123.280.680.10 Half female shaft with shielding
23. 123.280.371.10 Half male shaft with shielding
24. 180.019.121 Guard retaining collar for outer tube
25. 180.019.123 Cone for outer tube
26. 190.000.019 Bolt
27. 190.000.215 “DANGER” Label for outer shield tube
28. 156.198.117 Outer shield
29. 157.198.117 Inner shield
30. 180.019.124 Cone for inner tube
31. 180.019.122 Guard retaining collar for inner tube
32. 142.281.146 Half female shield
33. 142.281.255 Half male shield
34. 180.016.025 Safety chains
35. 142.286.016 Complete shield type P



S.d.M. 01.0613

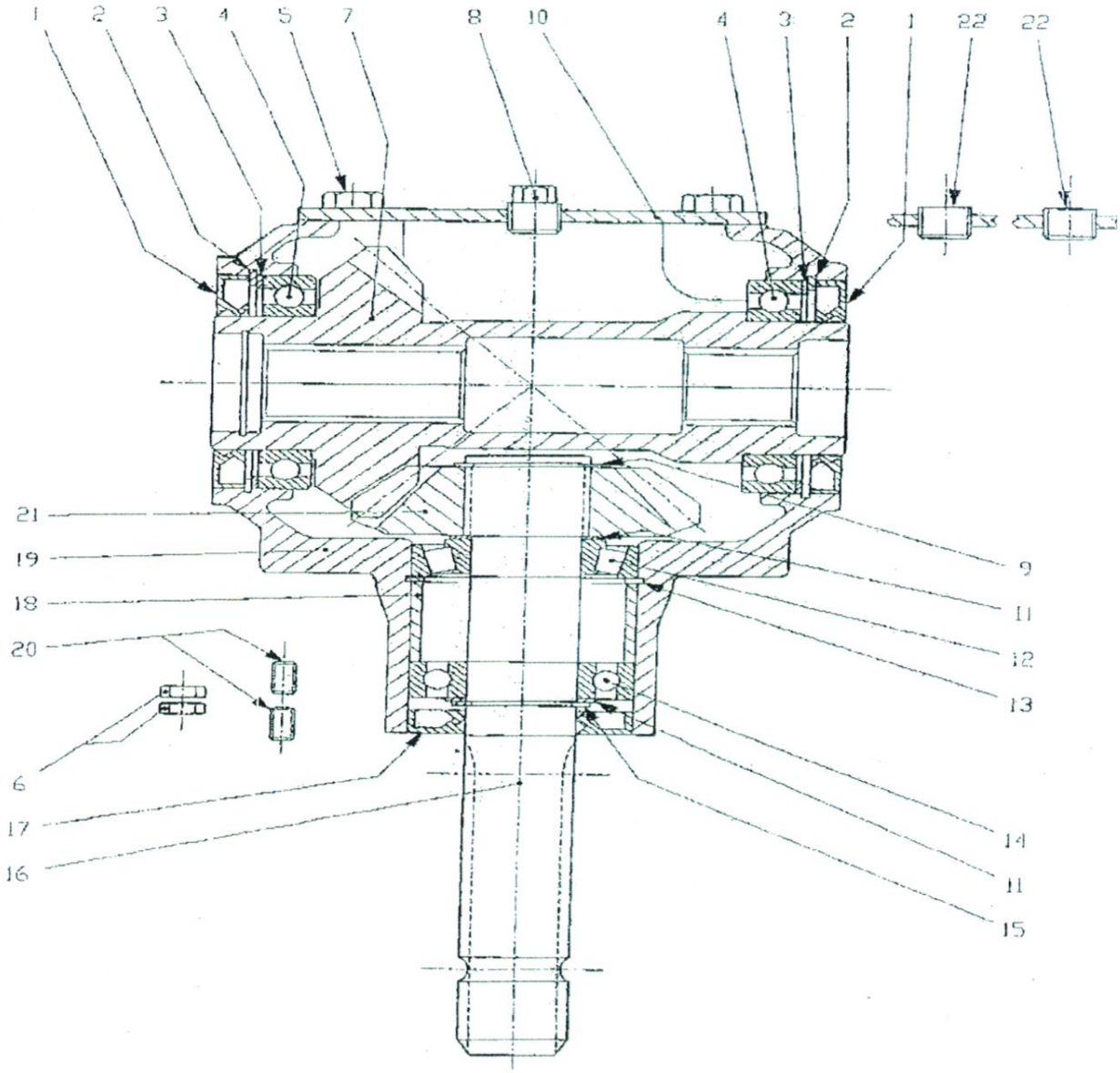
Ratio i	Rated input rpm	Rated input power HP	Rated input power kW	Rated output torque da Nm	Weight Kg	Lubricant Oil (X) Type	Lubricant Grease ☐ Quantity l.t.
1 : 1.12	540	55	40.4	69.4	22	SAE.140EP	1.1

Gear Arrangement	Bevel couplings							Cylindrical couplings							Bearings	
	Helicoidal	Straight	Teeth number Z 1	Z 2	Z 3	Z 4	Module M.	Helicoidal	Straight	Teeth number Z 1	Z 2	Z 3	Z 4	Module M.	A	6012
		✱	17	19			6.25								B	6012
															C	30207
															D	6207
															E	
															F	
															G	
															H	

Components material				
Casing	Shaft X	Shaft Z	Bevel gear	Spur gear
G 25 UNI ISO 185	20 CrNi4	20 MnCr5	20 CrNi4	

COMER INDUSTRIES S.p.A. 42046 Villanova di Reggiolo (RE) Italia Tel. 0522\974111 (9 Linee) Telefax 0522\973249

T27D Gearbox for Front Mount Blowers



1.Double lip seal
2.Snap ring
3.Shim
4.Bearing 6012
5.Bolt M10x20
6.Nut, hex M8
7.Sleeve (hollow crown gear)
8.Plug 3/8” gas, solid
9.Snap ring
10.Cover
11.Shim
12.Bearing 30207
13.Snap ring
14.Bearing 6207
15.Snap ring
16.Shaft
17.Double lip seal
18.Spacer
19.Casing
20.Bolt M8x14
21.Pinion
22.Plug 3/8” gas

Trouble Shooting

Quick Disconnect Yoke		
Pin tight or seized	-quick-disconnect pin dirty (insufficient maintenance)	-clean, oil and follow service instructions
Pin damaged/broken	-quick-disconnect pin defective(forced engagement, incorrect handling)	-replace quick-disconnect pin
Pin damaged in locking portion	-excessive shaft length	-shorten shaft length(cut both telescopic tubes as well as shields and remove burrs)
	-axial loads too high	-replace disconnect pin & -clean and grease telescopic tubes, and replace both tubes, if necessary
Yoke		
Distorted or worn	-excessive shaft length	-shorten shaft length (cut both telescopic tubes as well as shields and remove burrs)
	-axial loads too high	-replace disconnect pin & -clean and grease telescopic tubes, and replace both tubes, if necessary
	-excessive working angle and torque	-change PTO length -determine proper PTO angle (see page 12)

Cross Kit		
Cross arms broken	-extreme torque	-engage PTO carefully
Bearing caps turning in cross journal	-excessive torque or angle	-change PTO length -determine proper PTO angle
Overheating or Accelerate wear	-inadequate grease	-grease parts at proper intervals
Telescopic Tube		
Failure or twisting	-extreme torque	-engage PTO carefully
	-tube is too short	-replace tube with correct length
Accelerated wear	-tube is too short	-replace tube with correct length
	-inadequate grease	-grease parts at proper intervals
PTO Shield		
Excessive bearing wear	-inadequate grease	-grease parts at proper intervals
Safety chain failure	-incorrect safety chain mounting	-change safety chain mounting angularity
Damaged or worn	-contact with implement	-adjust to eliminate interference
Hydraulic System	-oil level low	-add oil until it reaches 2” from top
Over heating	-restriction in hoses	-remove bends in hoses and any other obstruction
	-poppet is unseated	-reseat poppet or replace coupler
Quick coupler leaks	-tank is over filled	-drain oil until it reaches 2” from top
Oil flows from breather cap on tank	-exceeding maximum gpm and psi	-contact your dealer
Motor seals leak	-motor is failing	-contact your dealer