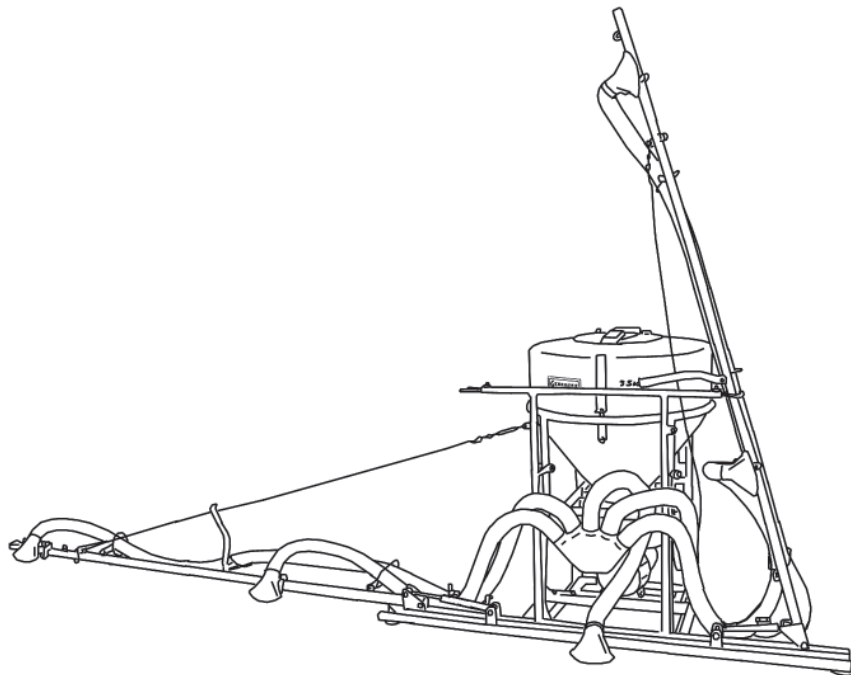




ROW CROP SULFUR DUSTERS



**Set-up, Operation,
Service, & Parts Manual
For All Models**

May 2010

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INTRODUCTION

We welcome you as an owner of a Gearmore duster. Please read the following instructions and refer to them when required.

- APPLICATION RATES:** Adjustable from 12 to 80 pounds per acre.
- HOPPER:** The tank is thick walled polyethylene. (*See Note*)
- BLOWER:** Dynamically balanced steel fan in an aluminum housing.
- DISTRIBUTORS:** Manual boom or hydraulic boom.

DUSTER INSTALLATION

The Duster should be mounted on a flat surface, always clear away all people not involved in the operation, including children and animals.

1. With tractor engine off and key out of the ignition, hook the tractors lower lift arms to the duster lower lift pins. (S530 comes with Cat. 1 - 2 pin as standard equipment.)
2. Remove tractor top link and install on duster.
3. Mount other side of top link back on the tractor.
4. **P.T.O. Installation:**

First, connect the P.T.O. shaft to the tractor. With the shaft in its shortest position, there should be about a 2" clearance between the end of the gearbox shaft and the end of the P.T.O. shaft. Should it be necessary to shorten the P.T.O. shaft, shorten both male and female shafts equally, keeping the protective tube covers 1" shorter than the steel tubes.

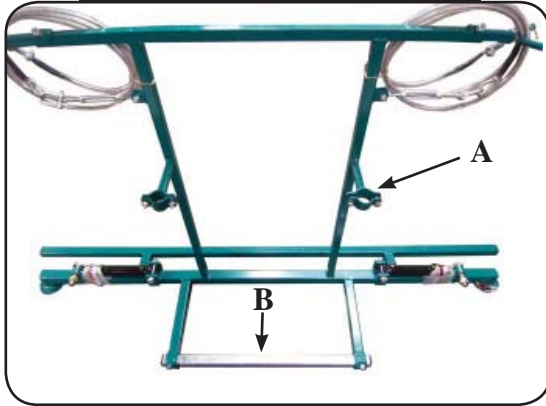
Particular attention should be given to carefully removing all burrs and to clean and lubricate the steel tubes and protective covers. There must be sufficient telescopic movement so that the two tubes do not touch the end of the P.T.O. shaft.

It is most important to carefully raise and lower the duster with the tractor hydraulic system, making sure that the P.T.O. shaft does not bottom or disengage the telescopic shaft tubes, otherwise damage may occur.

NOTE: Driveshaft angle should not exceed 15° when in operation.

SET-UP INSTRUCTIONS

PICTURE 1



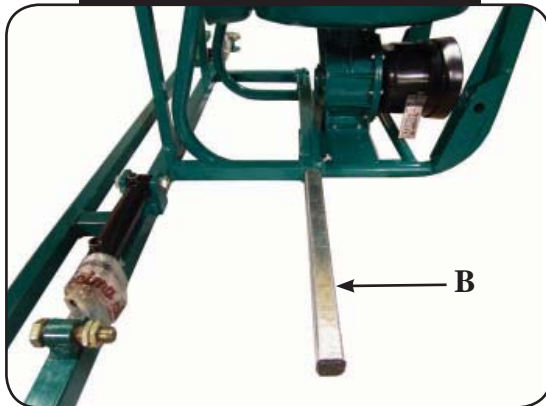
1. Remove half clamp (*Ref. A, Pict. 1*) and support tube (*Ref. B, Pict. 1*) from boom frame.

PICTURE 2



2. Place boom frame up against duster frame (*Pict. 2*).

PICTURE 3



3. Align boom frame square channel to duster square channel and slide support tube (*Ref. B, Pict. 3*) through channel.

PICTURE 4



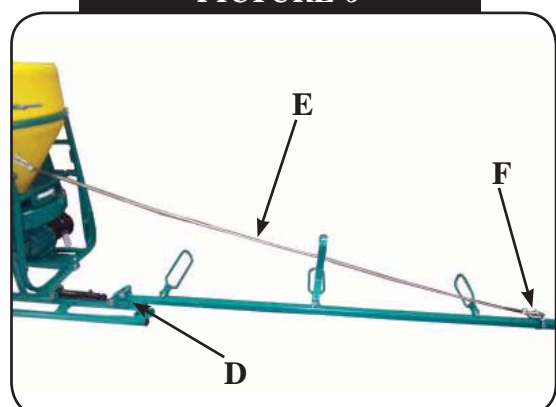
4. Mount half clamps around duster frame onto boom (*Ref. A, Pict. 4*) tighten bolts.

PICTURE 5



5. Mount manifold to blower housing using supplied clamp (*Ref. C, Pict. 5*).

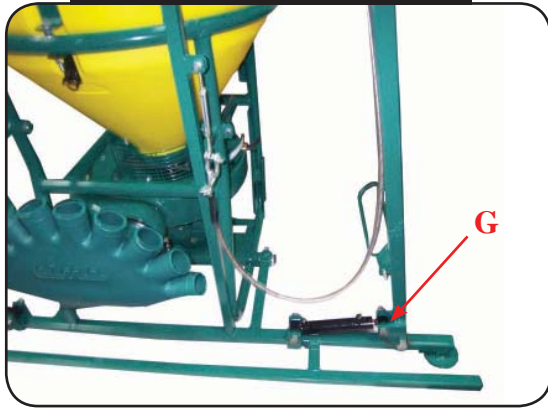
PICTURE 6



6. Mount right hand and left hand booms to boom frame with bolt and nut supplied (*Ref. D, Pict. 6*), then hook support cable (*Ref. E, Pict. 6*) to support clamp (*Ref. F, Pict. 6*).

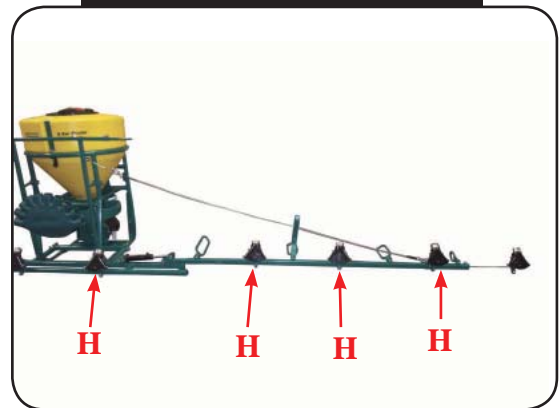
SET-UP INSTRUCTIONS

PICTURE 7



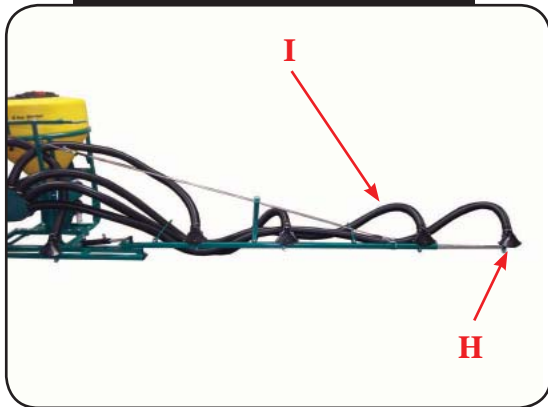
7. Pull boom up to vertical position and install rod end of cylinder to boom arms (*Ref. G, Pict. 7*) with supplied bolt.

PICTURE 8



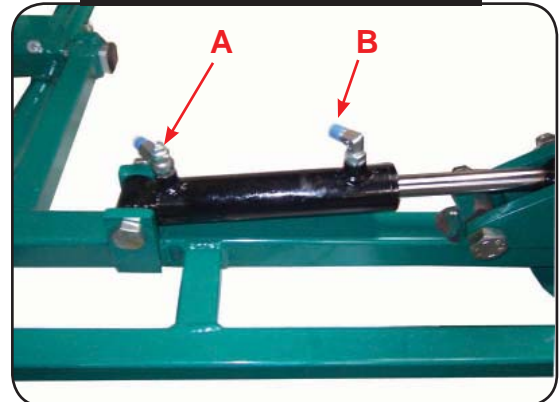
8. Mark nozzle spacing on booms and start mounting nozzle assemblies (*Ref. H, Pict. 8*).

PICTURE 9



9. Measure and cut 70 mm air hose to length for each nozzle (*Ref. I, Pict. 9*) and mount to manifold (*Ref. C, Pict. 5*) and nozzle assemblies (*Ref. H, Pict. 9*) using supplied hose clamps

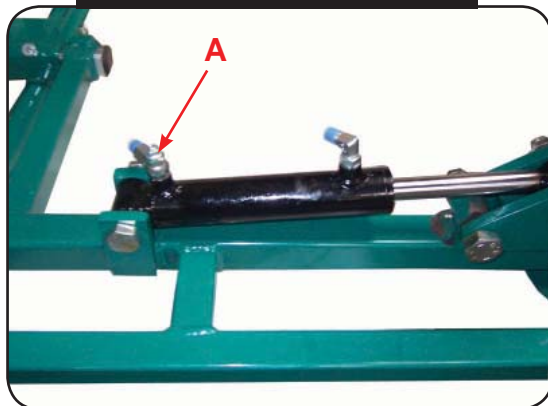
PICTURE 10



10. Mount supplied hydraulic fittings to cylinders (*Pict. 10*).

A = Flow control Banjo bolt on base end
B = 90° Elbow on rod end

PICTURE 11



11. After plumbing hydraulic cylinders to tractor, set flow control (*Ref. A, Pict. 11*) to safe speed for in field use.

BEFORE OPERATING YOUR DUSTER

1. Inspect for damage and loose or missing parts. Make sure all fittings and drive components are secure.
2. Lubrication: *See Lubrication Section.*
3. Check hopper for any foreign objects.

TO OPERATE DUSTER

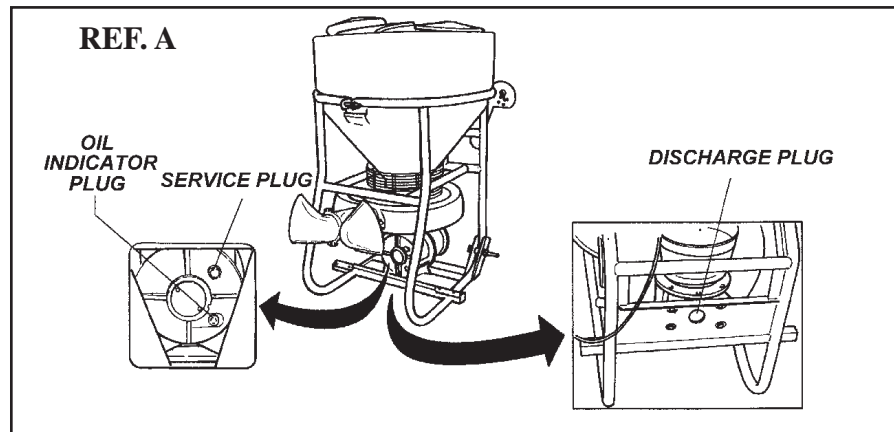
1. Calculate the exact amount of sulfur needed for the treatment.
2. Carefully read the instructions for the manufacturer's use of the sulfur, check the conditions for use, the correct dosage and the expiration date.
3. Push flow adjusting lever away from the tractor, which is the closed position.
4. Fill hopper with material being used. (*Note: Sulfur Powder Only*)
5. Due to the inconsistency of sulfur, it is almost impossible to set a true rate chart. For this reason, Gearmore can only recommend an average start rate at 1 $\frac{1}{2}$ on control lever for 15 lbs. of sulfur per acre at 4 M.P.H. Adjust lever up or down from there.
6. Start engine and engage tractor P.T.O. at engine idle.
7. Pull lever toward the tractor, which increases the powder flow.
8. After locating the delivery position that meets your required application rate, disengage P.T.O. and turn tractor engine off. Set the adjustable gray handle so the operator can easily return to that position.
9. Restart engine and engage P.T.O., gradually increase engine R.P.M. and start dusting.

NOTE: Small gray plastic handle is only a "stop set", thus little locking pressure is required.

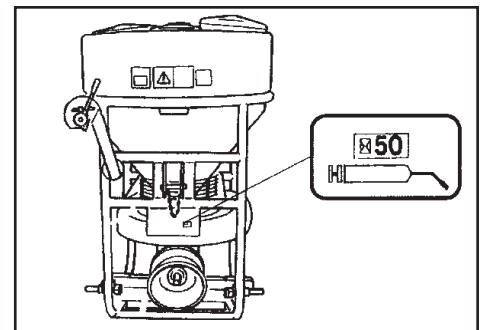
LUBRICATION

DRIVESHAFT: The driveshaft must be lubricated before the duster is put into use. After that, grease when needed. It is also necessary, from time to time, to untelescope the driveshaft to clean and re-grease tubing.

GEARBOX: Check gearbox oil level through sight gauge with machine on flat ground. If oil level is low, lay machine on ground and add SAE 90 weight oil through filling plug (*See Ref. A*).



AGITATOR: Under hopper and above blower is an extended grease zerk for lubricating agitator. Grease at the beginning of the season and **every 50 hours** of work (*See Ref. B*).



CLEANING & STORAGE

1. **Do Not** let sulfur build up on the blower fan. The best and easiest way to clean the fan is with "crushed walnut shells". This will insure that the blower operates to maximum efficiency and greatly reduces potential damage to the blower assembly.
2. Do not leave material in hopper for long periods of time.
3. Clean duster thoroughly before storing.
4. Check duster for needed repairs before time to dust again.
5. Always store machine where children and unskilled people can not get to it.

SAFETY

1. **NEVER** run PTO at speeds exceeding 540 R.P.M.
2. Duster should be operated only by qualified personnel.
3. **ALWAYS** fill duster slowly to avoid spillage.
4. When starting duster, maintain a safe distance from moving parts.
5. **NEVER** leave duster unattended while it is running.
6. Keep hands, feet and clothing away from moving parts.
7. Handle powders carefully. Follow manufacturer's directions for application and rates.

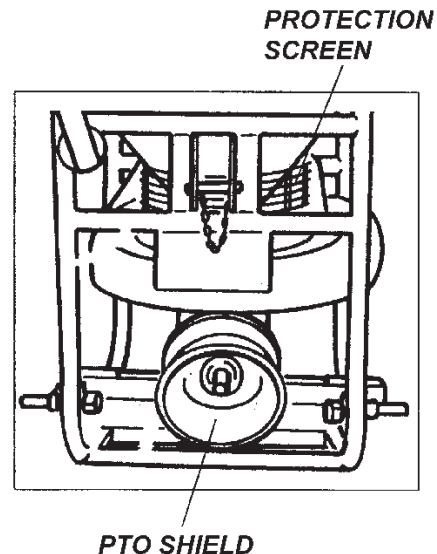


WARNING!!

OPERATING THE TRACTOR PTO AT OVER 540 R.P.M. OR APPLYING RATES OF LESS THAN 8 POUNDS OF SULFUR PER ACRE COULD CAUSE THE SULFUR TO MELT.

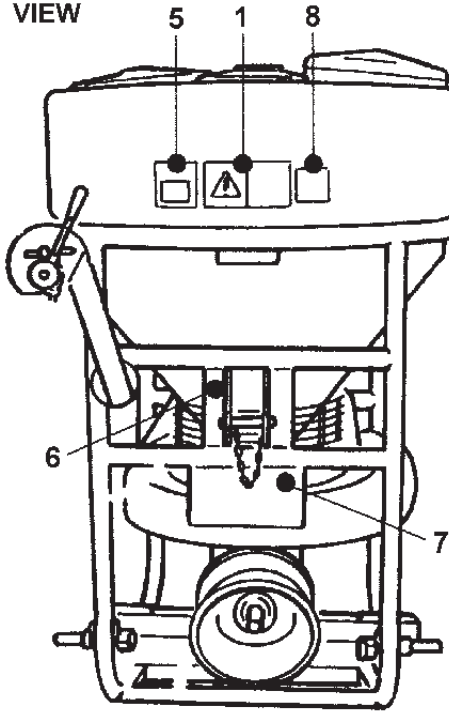
SAFETY WARNING! All of the preparation, use, maintenance, handling and transport operations should be carried out only after having acquired the perfect understanding of all instructions contained in this publication and the ability of interpreting the symbols applied on the machine in the correct way.

Safety Shields: Make sure all safety shields are secure before operating duster.

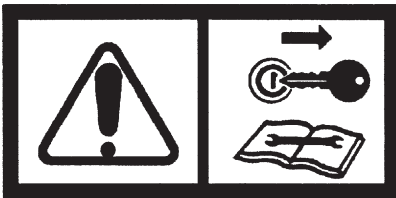
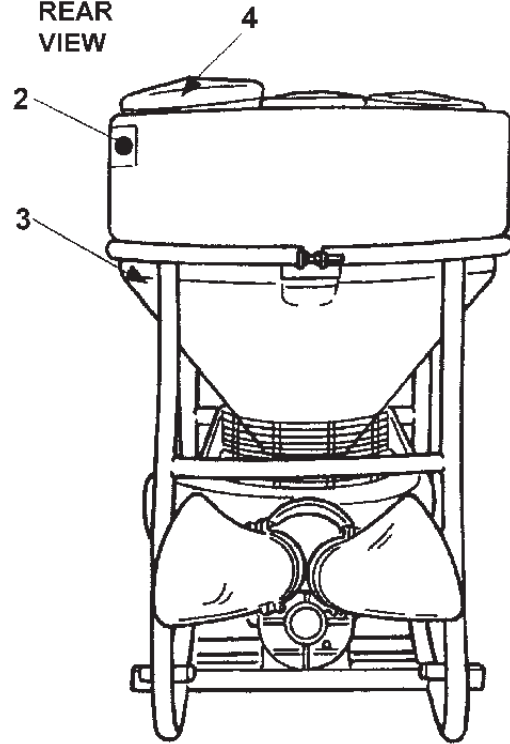


SAFETY DECALS

FRONT VIEW



REAR VIEW



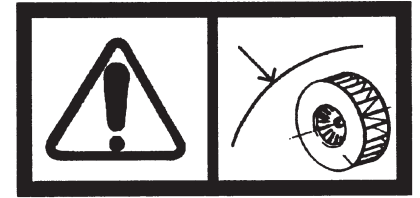
① 95001

1. Stop the engine and take the key out before doing maintenance or repairs to the duster.



② 95011

2. **DANGER:** Rotating components. Before lifting the lid, stop the engine and remove key, then make sure all components have stopped before continuing.



③ 95005

3. **DANGER:** Rotating components. Before removing shield, stop the engine and remove key. Make sure all components have stopped before continuing.



④ 95006

4. **ATTENTION:** Read the maintenance section of book before using or working on the machine.



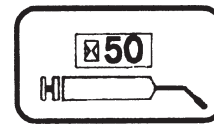
⑤ 95010

5. **ATTENTION:** Maximum working speed of the tractor PTO must not exceed 540 R.P.M.



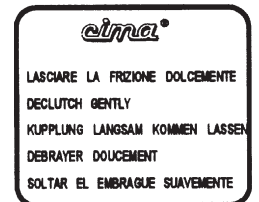
⑥ 95059

6. Hooking point for lifting the duster.



⑦ 95053

7. **ATTENTION:** Grease before the season and every 50 hours after.



⑧ 95068

8. **ATTENTION:** Disengage the clutch gently. Fan start-up must be gradual.

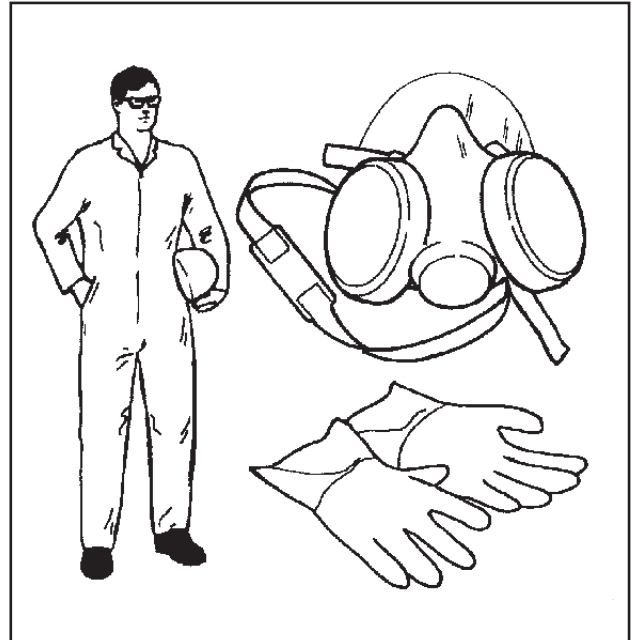
SAFETY Continued

PERSONAL SAFETY WEAR:

The toxicity of phytopharmaceuticals compels the people using them to wear adequately protective clothing and accessories to avoid the risks of contamination by contact or inhaling the sulfur.

THE OPERATORS MUST WEAR:

- A. Polyethylene or polyvinyl gloves.
- B. Complete overalls, in waterproof cotton, to guarantee transpiration, with side polypropylene coating. It is **IMPORTANT** to find disposable overalls with these materials so that after use they are disposed of in the same way as the toxic waste.
- C. Half-size masks in neoprene rubber with one or two filters. It is **IMPORTANT** to use filters designed for gas or organic vapors combined with filters against powder for mists and irritating powders or for mists of harmful or toxic powders.



LIFTING DUSTER



Remove the head before lifting the duster.

All operations should be carried out with the tank completely empty.

1. Check that the cables or the chains are sufficient enough for the weight to be lifted.
2. Hook the machine in the supporting point indicated on the frame by the decal and check the tightening of all of the parts involved in the operation.
3. Lift the machine, placing it on the means of transport, which must be perfectly stable.
4. During the transport, the machine should be tied and fastened to the means of transport by an appropriate harness.

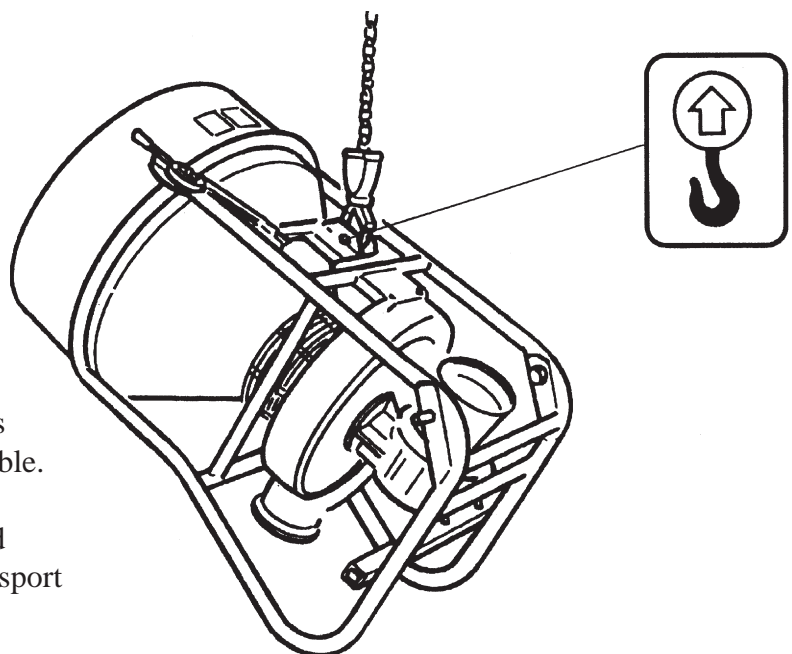
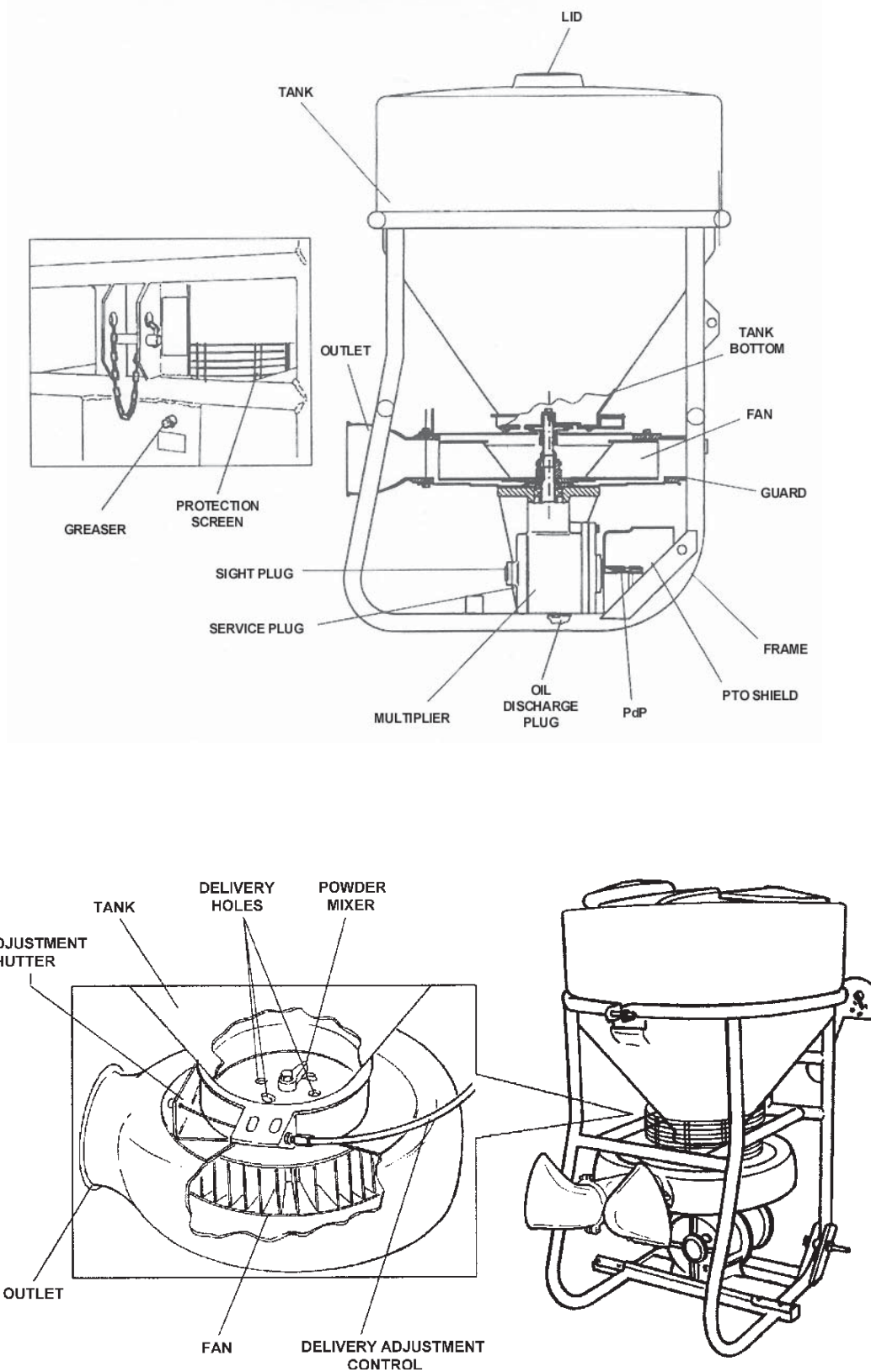


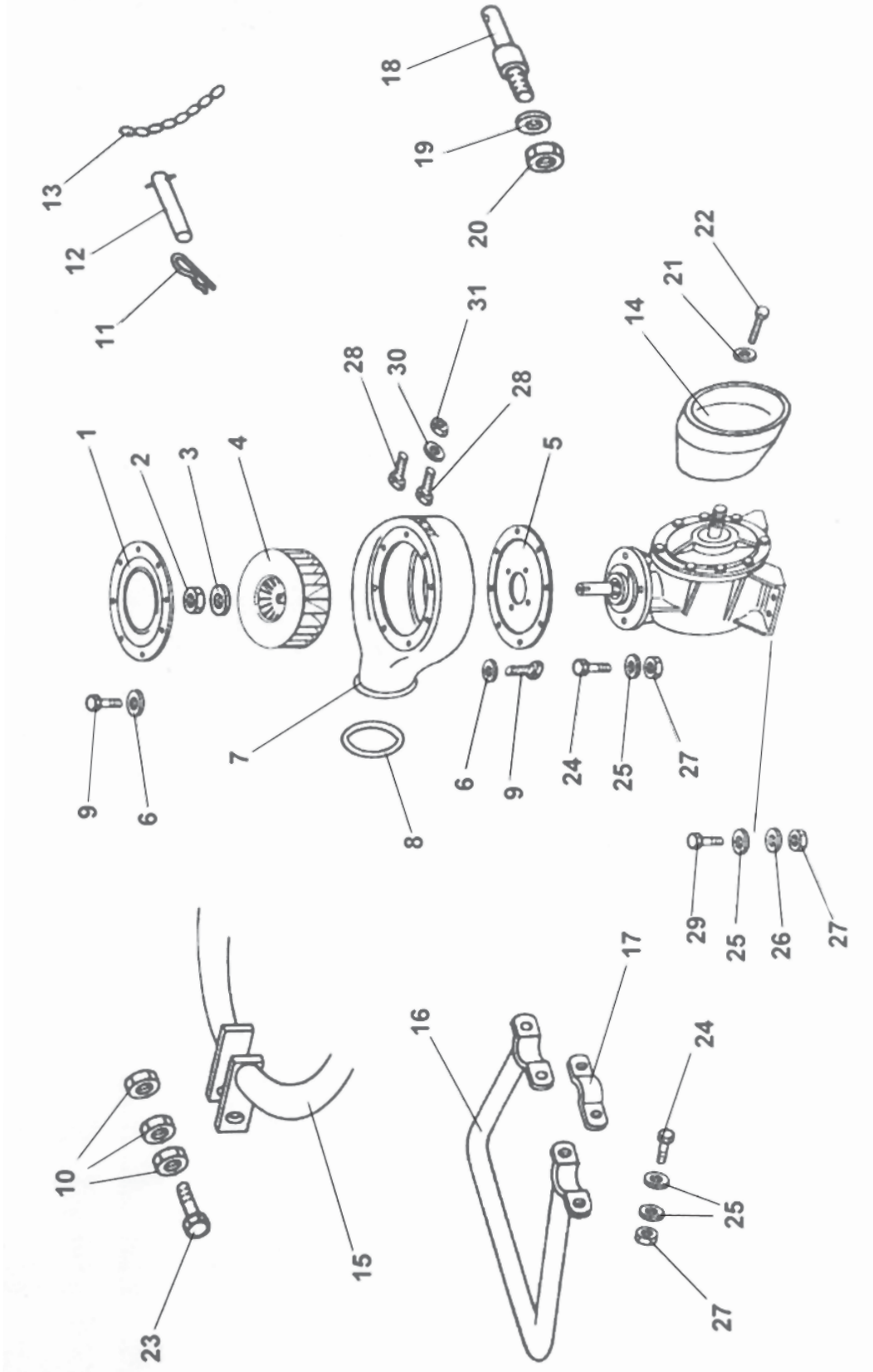
DIAGRAM OF THE DUSTER



TROUBLESHOOTING CHART

PROBLEM	CAUSE	SOLUTION
Oil Leakage	The input shaft seal is defective	Replace input shaft seal
	The gasket on the gearbox cover is defective	Replace gearbox cover gasket
Vibration in fan	The fan is caked with sulfur	Clean sulfur build-up off
	The fan is out of balance	Check fan blades, if damaged or broken, replace fan
Continuous noise	Bearings in gearbox dry or damaged	Check bearings in gearbox, if bad or damaged, replace
Sulfur not being delivered	The feeding holes on the tank bottom are clogged	Clean the bottom feeding holes
	Bottom of tank caked with sulfur	Clean caked sulfur off the tank bottom
Sulfur delivery not uniform	Nozzles caked with sulfur	Clean caked sulfur off nozzles
	Nozzle end damaged or bent	Open damaged or bent nozzle back up

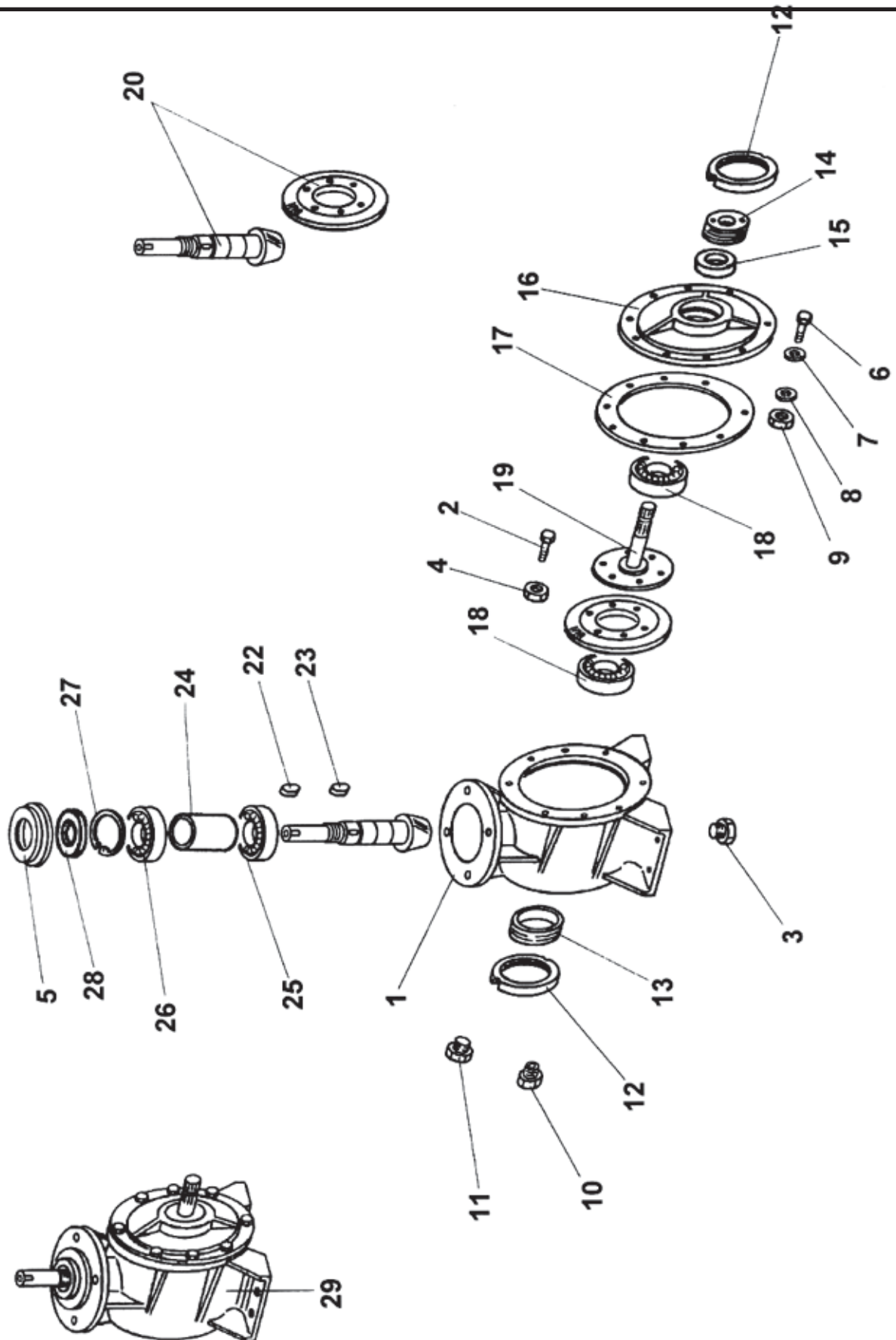
FRAME & FAN ASSEMBLY



FRAME & FAN ASSEMBLY

<u>REF #</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	S0.495.000	Fan Cover
2	1	DA.024.0BF	Nut M24
3	1	RP.024.000	Washer D.24
4	1	S0.437.100	Fan D.500
5	1	S0.494.000	Mounting Plate
6	16	RP008000	Washer D.8
7	1	S0.436.000	Blower Body
8	1	OR.004.700	O-Ring D.177.39 x 3.53
9	16	TE.008.016T	Bolt M8 x 16
10	3	D0.12.5587G	Nut M12
11	1	00.100.004	Hair Pin
12	1	04.076.000	Pin, Top Link
13	1	02.278.040	Chain D.2.2 L=400
14	1	02.442.000	Shield, PTO
15	1	S0.477.000	Main Frame
16	1	S0.483.000	Rear Bumper
17	2	S0.493.000	Clamp
18	2	S0.479.000	Pin, Lift Cat. 1 & 2
19	2	RP.027.000	Washer D.27
20	2	D0.27.5588G	Nut M27
21	3	RP.006.000	Washer D.6
22	3	TE.006.020T	Bolt M6 x 20
23	1	TE.012.090T	Bolt M12 x 90
24	8	TE.010.035T	Bolt M10 x 35
25	16	RP.010.000	Washer D.10
26	4	RP.010.030	Washer D.10 x 30
27	12	D0.10.5588G	Nut M10
28	2	TE.012.030T	Bolt M12 x 30
29	4	TE.010.030T	Bolt M10 x 30
30	2	RP.012.000	Washer D.12
31	2	D0.12.5588G	Nut M12

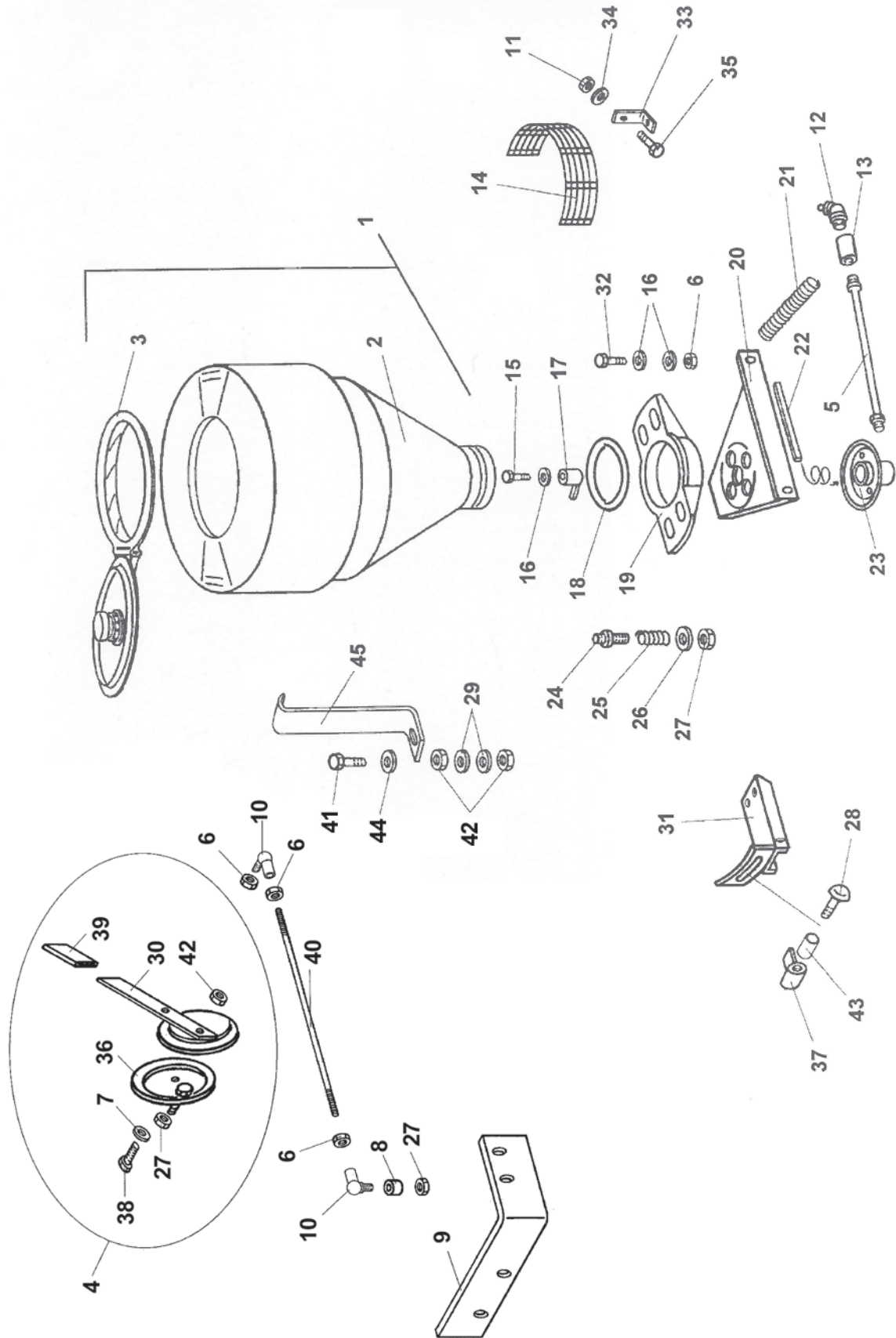
GEARBOX ASSEMBLY



GEARBOX ASSEMBLY

<u>REF #</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	S0.404.000	Gearbox Housing
2	8	TE.010.035T	Bolt M10 x 35
3	1	TM.038.000	Plug
4	6	D0.10.5588G	Nut M10
5	1	S0.415.000	Washer
6	8	TE.008.035T	Bolt M8 x 35
7	8	RP.008.000	Washer D.8
8	7	RD.008.000	Tab Washer
9	7	D0.08.5588G	Nut M8
10	1	S0.087.000	Oil Level Plug
11	1	TM.012.000	Fill Plug
12	2	S0.411.000	Ring Nut
13	1	S0.410.000	Ring Nut
14	1	S0.409.000	Ring Nut
15	1	35x62x7	Oil Seal
16	1	S0.405.000	Cover
17	1	S0.428.000	Gasket
18	2	30207	Bearing
19	1	S0.406.000	Shaft, Input
20	1	S0.440.000	Ring & Pinion
22	1	L.06.06.25	Key 6 x 6 x 25
23	1	L.08.07.25	Key 8 x 7 x 25
24	1	S0.416.000	Spacer
25	1	6307	Bearing
26	1	6307-2RS	Bearing, Sealed
27	1	E0.035.000	Circlip D.35
28	1	35x72x12	Oil Seal
29	1	S0.450.000	Gearbox Complete

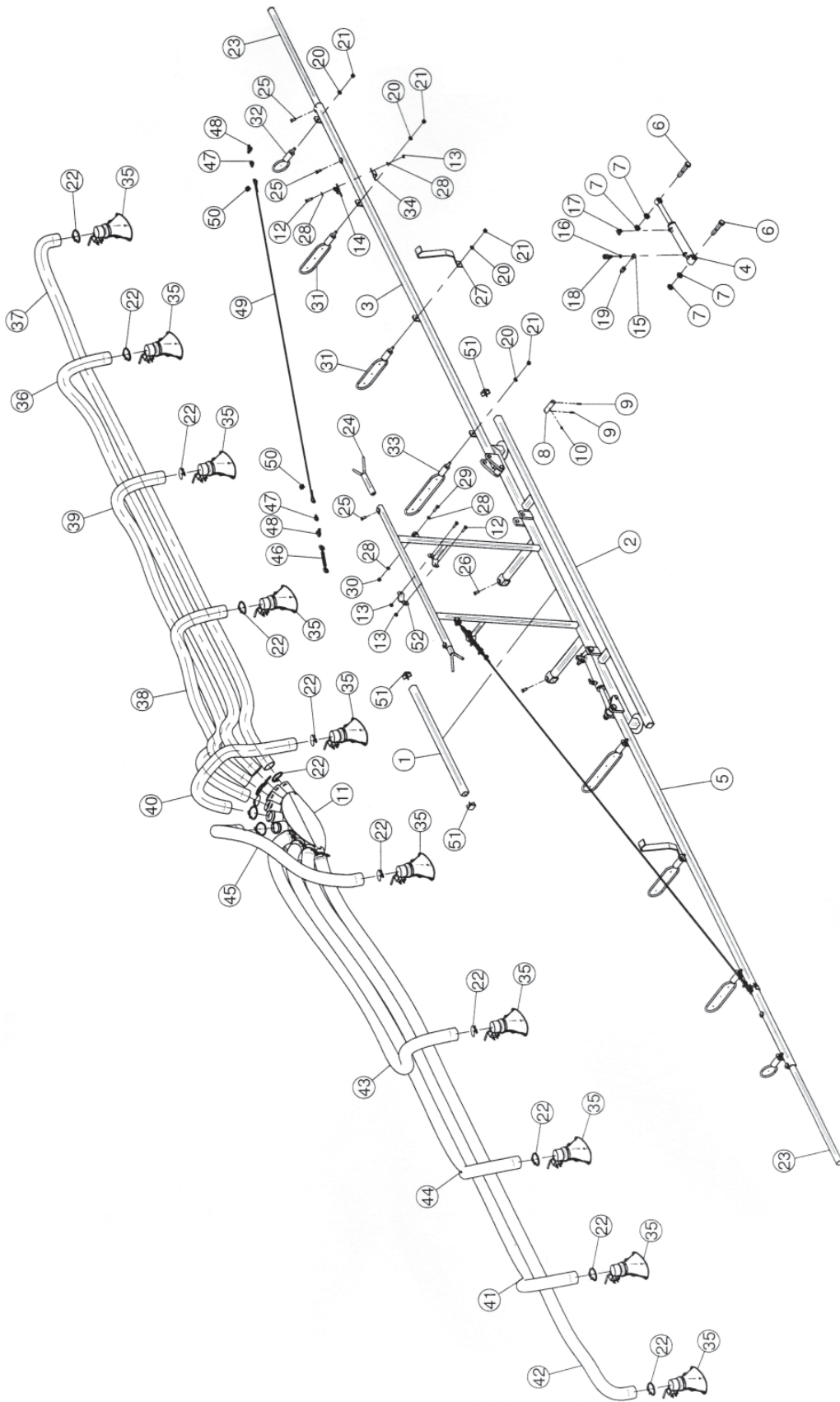
HOPPER & CONTROL ASSEMBLY



HOPPER & CONTROL ASSEMBLY

<u>REF #</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	S0.497.100C	Hopper Assembly
2	1	S0.497.100	Hopper Only
3	1	02.405.100	Lid Assembly
4	1	S0.214.100	Handle Assembly
5	1	02.738.040	Extension M10 x 1 L=400
6	7	D0.08.5588G	Nut M8
7	1	RP.010.000	Washer D.10
8	1	S0.243.000	Bushing
9	1	S0.517.000	Bracket
10	2	S0.212.000	Swivel
11	4	DA.006.0AG	Nut M6
12	1	IS.010.001	Grease Zerk M10 x 1
13	1	02.737.000	Adapter M10
14	2	S0.488.000	Wire Screen
15	1	TE.008.025T	Bolt M8 x 25
16	10	RP.008.024	Washer D.8 x 24
17	1	S0.076.000	Agitator
18	1	S0.492.000	Gasket
19	1	S0.475.000	Support, Hopper
20	1	S0.476.000	Metering Plate
21	1	S0.480.000	Spring
22	1	S0.239.000	Felt Strip
23	1	S0.219.010	Bushing, Agitator
24	2	S0.083.000	Bolt M8 x 42
25	2	S0.211.000	Spring D.2.3 L=22
26	2	RP.008.000	Washer D.8
27	3	DA.008.0AG	Nut M8
28	1	02.496.000	Carriage Bolt M8 x 20
29	4	RP.010.000	Washer D.10 x 30
30	1	S0.214.001	Control Handle
31	1	S0.502.000	Support Bracket Handle
32	4	TE.008.025T	Bolt M8 x 25
33	4	S0.489.000	Support Bracket
34	4	RP.006.024	Washer D.6 x 24
35	4	TE.006.020T	Bolt M6 x 20
36	1	S0.214.004	Inner Handle Bracket
37	1	S0.216.000	Locking Handle
38	1	TE.010.050T	Bolt M10 x 50
39	1	S0.215.000	Grip
40	1	S0.518.000	Threaded Rod
41	2	TE.010.090T	Bolt M10 x 90
42	5	D0.10.5588G	Nut M10
43	1	S0.508.000	Bushing
44	2	RP.010.030	Washer D.10 x 30
45	2	S0.511.000	Support Bracket

HYDRAULIC BOOM 10HF / 10HF-3MT (Shown)



HYDRAULIC BOOM 10HF / 10HF-3MT (Shown)

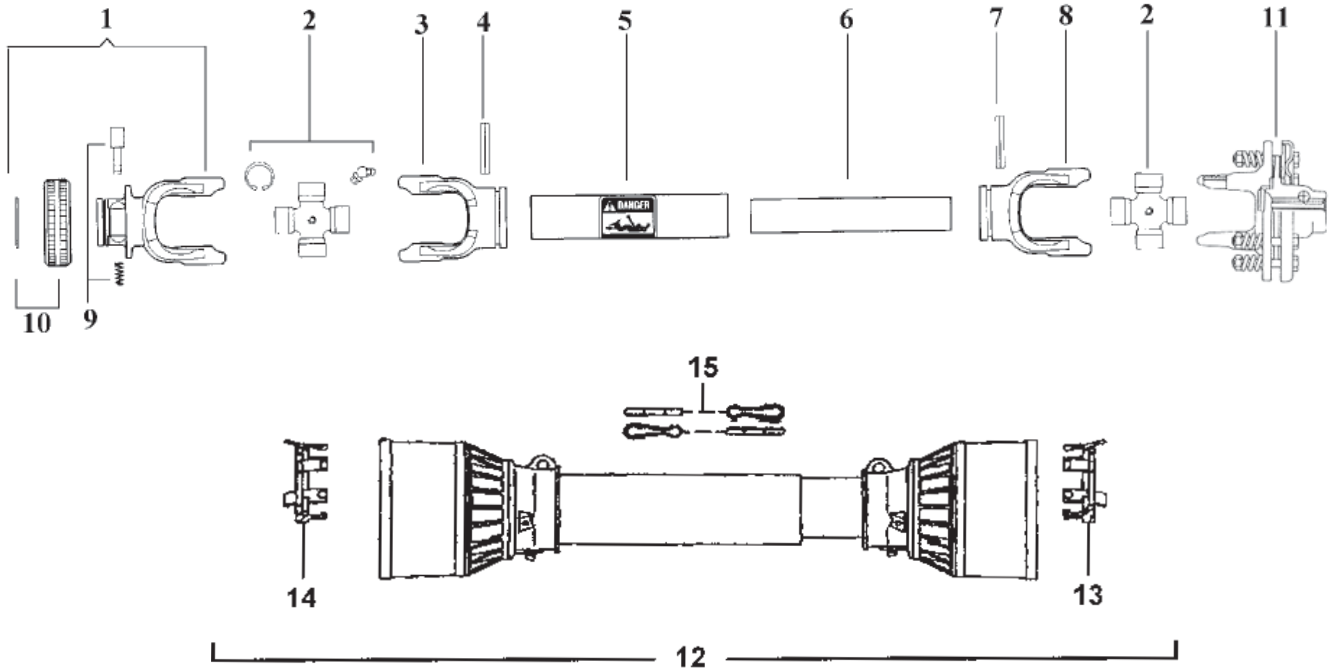
<u>REF #</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	S0.539.000	Boom Fixing on S530 Frame
2	1	S0.532.000	Frame
3	1	S0.531.000	Side Arm R.H.
4	2	02.838.01C	Cylinder
5	1	S0.530.000	Side Arm
6	4	TE.020.100	Bolt TE M20 x 100
7	8	D0.20.5589G	Nut M20
8	2	20.328.003	Pin L=94 D.25
9	4	SE.006.030	Roll Pin D.6 x 30
10	2	ID.006.001	Grease Zerk
11	1	S0.448.000	Manifold 10 Outlets
11A	1	SO.535.00	Manifold 5 Outlets
12	8	TE.010.035T	Bolt TE 10 x 35
13	8	D0.10.5587G	Nut M10
14	2	S0.452.001	Fixing Nozzle ½ Clamp
15	2	02.471.000	Banjo Eye ¼"
16	2	02.472.000	CopperWasher
17	2	02.409.000	Restrictor Fitting
18	2	20.718.000	Flow Regulator
19	2	20.010.000	Adaptor JIC - Female BSP
20	8	RP.012.000	Washer D.12
21	7	D0.12.5587G	M12 Nut
22	20	F0.070.000	Clamp D.70
23	2	S0.540.000Z	Extension Shaft 1.5 Mt.
23A	2	S0.561.000.Z	ExtensionShaft 3 Mt.
24	2	S0.537.000	Fork
25	6	TE.010.025T	Bolt TE 10 x 25T
26	2	TE.012.025T	Bolt TE M12 x 25
27	2	S0.538.000	Guide/Cable
28	12	RP.010.000	Washer D.10
29	2	TE.010.040T	Bolt TE M10 x 40
30	2	DA.010.0BG	Self Locking Nut M10
31	4	S0.454.400	Hose Ring
32	2	S0.454.500	Hose Ring
33	2	S0.454.300	Hose Ring
34	2	S0.452.001	Fixing Nozzle ½ Clamp
35	10	S0.049.300	Fishtail Nozzle
36 - 45	As Req'd	70MMRFH+	Hose 70 mm (per foot)
46	2	02.851.000	Turnbuckle
47	4	02.852.000	Cable Ring
48	4	02.853.000	Lock
49	2	02.850.190	Steel Cable D.6 L=1900
50	4	02.854.000	Cable Buckle
51	4	21.111.000	Plastic Cap 40 x 40
52	2	S0.493.000	Bracket, ½

ROW CROP BOOM - 8 ROW (Shown)

<u>REF #</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	S0.503.000	Main Frame
2	1	S0.455.100	Upper Support Link
3	2	S0.449.000	Boom
4	2	ID.006.001	Grease Zerk M6 x 1
5	2	S0.506.000	Bolt
6	2	S0.457.000	Spring
7	1	S0.505.000	Support Bar
8	2	S0.504.000	Support Rod
9	2	S0.499.000	Extension, Boom
10	2	S0.507.000	End Bracket
11	8	04.536.002	Support Bracket, Nozzle
12	16	S0.452.001	Clamp
13	8	S0..453.000	Nozzle
14	1	05.616.000	Clamp D.190
15	8	00.072.001	Clamp D.72
16	8	F0.070.000	Clamp D.70
17	As Req'd	70MMRFH	Hose 7mm Per Foot
18	4	S0.514.000	Clamp, Support Rod
19	11	DA.010.0AG	Nut M10 x 1.5
20	1	S0.509.000	Pin
21	1	S0.534.000	Manifold
22	3	TE.010.060	Bolt M10 x 60
23	54	RP.010.000	Washer D.10
24	24	D0.10.5588G	Nut M10
25	8	TE.010.040T	Bolt M10 x 40
26	4	D0.22.5588G	Nut M22
27	4	RP.022.000	Washer D.22
28	2	TE.010.025T	Bolt M10 x 25
29	16	TE.010.030T	Bolt M10 x 30

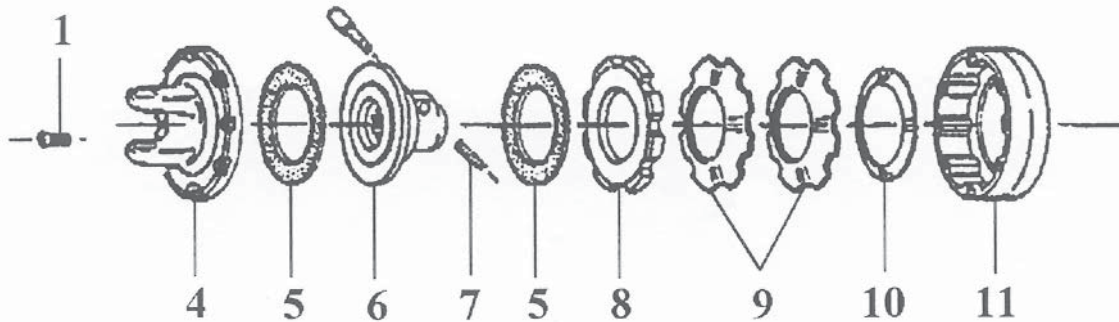
DRIVELINE 7104061T07453

Implement Side



<u>REF #</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	572040351	RS Collar Yoke 1-3/8, 6-Spline
2	2	41204	Cross Kit Assembly #4
3	1	204046851	Outer Tube Yoke #4
4	1	341038000	Roll Pin O.T. #4
5	1	225100860	Outer Drive Tube #4
6	1	225120860	Inner Drive Tube #4
7	1	341048000	Roll Pin I.T. #4
8	1	204046852	Inner Tube Yoke #4
9	1	403000001	Quick Disconnect Pin Kit
10	1	240002451	RS Collar 2-3-4
11	1	676439203	FD Slip Clutch Assembly #4
12	1	5F04086F6	Shield Kit with Bearings
13	1	255040006	Shield Bearing Inner
14	1	255040005	Shield Bearing Outer
15	2	252000001	Safety Chain

FD2 CLUTCH ASSEMBLY #4 - 677444203



<u>REF #</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	8	303001400	Bolt
4	1	253046201	Flange Yoke
5	2	247006201	Friction Disc
6	1	513620301	Flange Hub
7	1	403000009	Pin Kit
8	1	248620001	Pressure Plate
9	1	367003620	Belleville Spring
9	1	367005620	Belleville Spring
10	1	246000018	Compression Spring
11	1	264620001	Clutch Housing

LIMITED WARRANTY



GEARMORE, INC., warrants each new Gearmore product to be free from defects in material and workmanship for a period of twelve (12) months from date of purchase to the original purchaser. This warranty shall not apply to implements or parts that have been subject to misuse, negligence, accident, or that have been altered in any way.

Our obligation shall be limited to repairing or replacement of any part, provided that such part is returned within thirty (30) days from date of failure to Gearmore through the dealer from whom the purchase was made, transportation charges prepaid.

This warranty shall not be interpreted to render us liable for injury or damages of any kind or nature, direct, consequential or contingent, to person or property. This warranty does not extend to loss of crops, loss because of delay in harvesting or any other expenses, for any other reasons.

Gearmore in no way warrants engines, tires, or other trade accessories, since these items are warranted separately by these respective manufacturers.

Gearmore reserves the right to make improvements in design or changes in specification at any time, without incurring any obligations to owners or units previously sold.

GEARMORE, INC.
13477 Benson Ave.
Chino, CA 91710

Always refer to and heed machine operating warning decals on machine.

The serial number of this product is stored in our computer database, thus submitting a warranty registration card is not required.

Model No: _____

Date of Purchase: _____

Serial Number: _____