PREPARING THE LUNDEBY PLANT LIFTER FOR OPERATION

Note the two positions, upper and lower, on the lift positions on the machine. The upper position for tractors with higher clearance or larger rear wheels. Some tractors may have to be stops installed so the machine isn't lifted too high causing damage to the PTO shaft. It is also advisable to disengage the PTO when moving empty at ends of field or when transporting.

Before determining the length of the PTO shaft, ***READ THE INSTRUCTIONS THAT COME WITH THE SHAFT.***

The one end of the PTO shaft is to be connected to the gear box input shaft and be kept tight at all times. The same applies to the PTO end on the tractor.

Do not put the PTO shaft together until proper length is determined and cut to proper length. Hook machine up to tractor and if possible, back the Lifter unit over a loading dock or depression so the machine can be lowered to maximum depth and put into any position that may occur during digging. Then length of PTO shaft can be determined. Cut off one inch extra on each shaft to allow for extra tolerance.

DAMAGE TO THE GEAR BOX AND TRACTOR WILL OCCUR IF THE SHAFT IS TOO LONG.

KEEP ALL SHIELDS IN PLACE AT ALL TIMES!

SERVICING AND MAINTENANCE

Lubrication— There are four grease zerks on the machine, one on each of the bearings on the two cranks from the gearbox—**grease a small amount 3 or 4 times daily.**

One on each of the depth gauge wheels—**grease at least 3 or 4 times a day** and apply enough so grease comes out. **GREASE MORE OFTEN IF OPERATING IN MUD OR LOOSE SOIL.**

The gearbox uses #90 gear lubricant. Check plug is on side of box to the back side. Maintain check level.

KEEP ALL BOLTS TIGHT

1" N.F. Grade #5 bolts (4) on main frame holding the lifter blade or root pruner blade—torque 400 to 500 foot lbs.

1" N.F. bolts (2) on the cam roller bearing spindle for the connecting rods—torque 350 to 400 foot lbs.

7/8" N.F. Grade #5 bolts (3) on rubber bushings for the shaker frame and the back end of connecting rod—torque to 300 foot lbs.

5/8" N.F. Grade #8 bolts (8) on shaker mounts—torque to 200 foot lbs**.**

5/8" N.F. Grade #5 bolts (2) on cranks on gear box output shafts—torque to 150 foot lbs.

3/4" N.C. Grade #5 bolts (2) on wheel spindles—torque to 100 foot lbs.

1/2" N.F. Grade #8 bolts (6) on connecting rod linkage—torque to 90 foot lbs.

1/2" N.C. Grade #5 bolts (4) on gear box mounts—torque to 80 foot lbs.

7/16" N.C. Grade #8 bolts (12) on the caps holding the rubber bushings for shaker mounts and back end of connecting rod—torque to 50 foot lbs.

After first few hours of operation, it is advisable to check bolts for tightness; and check regularly thereafter.

SHAKER FRAME AND CONNECTING ROD

The shaker frame is mounted on heavy rubber suspension bushings. Also the back end of the connecting rod has a heavy rubber suspension bushing. No maintenance is required except to be sure bolts are kept tight; and if the bushings should become loose in the rubber, they should be replaced.

When replacing a side rubber bushing have the center spindle bolt loose, and put the shaker in the **center of the action cycle** and then tighten the center spindle bolts to required torque.

The two connecting rod bearings on the cranks from the gear box are heavy duty cam roller bearings. If they should become a little loose with wear, they should be replaced so damage won't occur to the gear box as a result of knocking.

ADJUSTING THE LUNDEBY PLANT LIFTER FOR OPERATION

The level of the plants brought to the surface can be adjusted by lengthening or shortening the connecting rod by removing the three ½" bolts on each side of the connecting rod. Shorten the connecting rod to raise the shaker level and lengthen the connecting rod to lower the shaker level.

Important--All three bolts on each side must be used. Do not lengthen or shorten the connecting rod **beyond the three bolt spacing.**

Also, it is very advantageous to use a hydraulic top three point link as the operator of the machine can control the level of lifting the plants by tilting the machine. Also, where there are short end spaces in the field, it can be used to get into the ground quicker so end plants won't be damaged.

When lifting plants, adjust the depth gauge wheels so that there is pressure on the depth gauge wheels while operating.

MAINTENANCE OF LIFTER BLADE AND ROOT PRUNER BLADE

The blades will wear from moving through the soil and rate of wear will vary with soil types and moisture conditions. The blades will wear more at the outer bottom corners. The corners can be built back up with a harder type welding rod to prolong life of the blades. Also, if operating in rocky conditions, the blade nicks can be retouched with a grinder to maintain sharpness. In very abrasive-type soil it is advisable to hard surface the blade cutting edges and the tops of the stationary fingers and shaker fingers to minimize the wear.

Under some soil and moisture conditions, the soil with a mixture of fine roots can build up on the two-inch square shaft that holds the shaker fingers and will cause **undue wear** on the **bottom side** of the **stationary lifter blade fingers.**

It is advisable to **check** and **clean** each time machine is out of the ground

CHANGEOVER FROM LIFTER TO ROOT PRUNER

1. When changing from lifter to root pruner, first make sure that the machine is properly supported.
2. Remove the PTO shaft.
3. Remove the safety guard.
4. Remove the side shields.
5. Remove the depth gauge wheels.
6. Remove the two 7/8th bolts that the shaker pivots on and remove the one 7/8" bolt that connects the connecting rod to the shaker frame.
7. Remove the shaker unit.
8. Remove the two depth gauge wheel side bolsters. Then drop the lifter blade and replace with the root pruner blade.
9. **Be sure to tighten all bolts to recommended foot lbs. of torque**.
10. Tie up the connecting rod to give clearance for plants.

IMPORTANT: When parking the **root pruner,** be sure the **PARKING STANDS ARE IN PLACE ON THE FRONT**, and lower the depth gauge wheels so the machine is stable when parking.

FIELD SPEEDS AND P.T.O. SPEEDS

The machine is designed to operate on a 6-spline 1 3/8" 540 PTO unit at approximately 360 r.p.m. or less on the PTO shaft. The gear box is a 2 to 1 reduction unit and it is recommended to operate the shaker at approximately **180 actions per minute or less** depending on type of plants and soil conditions.

It is preferable to use a tractor with creeper gears or hydro so field speed can be adjusted to do a good job of lifting and cleaning the plants. If plants are up in the air between shaking actions, you are most likely operating at too high an r.p.m.

IMPORTANT

To eliminate damage to drive train and gear box when starting LPL in field with soil on shaker platform, **idle tractor down and engage PTO slowly**. Then return to normal operating speeds.

HYDRAULIC DRIVE CONVERSION KIT

For conversion of PTO-driven lifters to hydraulic drive. (The tractor must meet hydraulic specifications.) This unit comes with bypass pressure regulator, electronic BPM tachometer, all hoses, and all hardware and instructions for installation.

Price-$2495.00

PARTS LIST*

(Prices F.O.B. Tolna, ND)

*Prices subject to change without notice

Part #	Parts	Price
LPL 101	72 Lifter Blade Unit (Complete)	1895.00
LPL 102	72-2 (2 Row) Lifter Blade Unit (Each)	1195.00
LPL 103	60 Lifter Blade Unit (Complete)	1745.00
LPL 104	48 Lifter Blade Unit (Complete)	1565.00
LPL 105	30 Lifter Blade Unit (Complete)	1270.00
LPL 106	Blade Finger Tine	33.15
LPL 107	72 Lower Shaker Unit	2027.00
LPL 108	60 Lower Shaker Unit	1867.00
LPL 109	48 Lower Shaker Unit	1675.00
LPL 110	30 Lower Shaker Unit	1325.00
LPL 111	Shaker Tine	76.20
LPL 112	Gear Box 2-1 Reduction (Parts Available)	838.42
LPL 129	Crank Hub	285.00
LPL 129-H	Crank Hub (High Clearance)	485.00
LPL 113	Rubber Bushing for (Shaker Pivots & Connecting Rod Ends)	49.25
LPL 114	Shaker Bushing Cap & Bolts	24.50
LPL 115	Connecting Rod Bearing	78.30
LPL 136	Connecting Rod w/Bearing Collar (13½)	64.50
LPL 136-A	Connecting Rod w/Bearing Collar (15¼)	69.50
LPL 141	Male 2½ Snap Ring for Connecting Rod Bearing	2.95
LPL 138	Back Section Connecting Rod w/Bushing Mount & Cap (Single Hookup)	212.35
LPL 138-A	Back Section Connecting Rod w/Bushing Mounts Caps & Bolts (Double Hookup) (Set of 2)	140.00
LPL 156	Lower Shaker Side Shield (Set of 2)	195.00
LPL 157	Lower Side Shield Extension (Set of 2)	44.00
LPL 119	Depth Gauge Tire/Wheel/Hub/Bearing/ Spindle/Dust Caps/Spindle Bolt	147.00
LPL 120	Wheel Bearing/Open Cage Roller	8.25

PARTS LIST CONTINUED*

Part #	Parts	Price
LPL 121	Wheel Bearing Retainer (Set of 2)	3.20
LPL 122	Wheel Hub/4 Bolt w/Lug Nuts	26.40
LPL 123	Tire & Wheel (16.5 x 6.5 x 8)	69.20
LPL 124	Wheel Spindle & Bolt	15.45
LPL 124-A	Wheel Spindle ONLY	8.75
LPL 125	Wheel Bearing Dust Caps (Pair)	24.50
LPL 161	Wheel Fork	85.00
LPL 126	Pin/Top Lift Link (1 x 4¼) w/Latch Pin	6.85
LPL 127	Pin/Lower Lift Point (1⅛ x 4¼)	11.50
LPL 128	Pin/Wheel Depth (⅝x3½) w/Latch Pin	5.40
LPL 116	PTO Shaft (Complete)	292.14
LPL 134	U Joint Cross & Bearings	48.28
LPL 137	PTO Safety Guard (Complete)	95.13
LPL 118	6 Splined Clamping Yoke & Bolt	115.00
LPL 139	PTO Yoke (Inner Tube)	73.35
LPL 140	PTO Yoke (Outer Tube)	73.35
	PTO Tube (Inner) (Sold per inch)	2.80
	PTO Tube (Outer) (Sold per inch)	2.75
LPL 117-A	Metric Bolt/Washer & Nut for 6 Splined Clamp Yoke (12 x 80-10.9 Hard 1.75 Pitch)	5.15

OPTIONAL EQUIPMENT*

Part #	Parts	Price
LPL 151	72 Root Pruning Blade w/Parking Stand	745.00
LPL 152	72-2 (2 Row) Root Pruning Blade (Set of 2) w/Parking Stand	1150.00
LPL 153	60 Root Pruning Blade w/Parking Stand	695.00
LPL 154	48 Root Pruning Blade w/Parking Stand	645.00
LPL 155	30 Root Pruning Blade w/Parking Stand	595.00
LPL 150	Root Pruning Blade Parking Stands (Set of 2)	85.00
LPL 158	Hydraulic Top Link Cat II (26" Closed w/Hoses)	277.00
LPL	Mounted Adjustable Fluted 17" Coulter (Set of 2)	780.00
LPL	17" Fluted Coulter	70.50
LPL	Coulter Pressed Hub Assembly	103.60
LPL	Coulter Hub Cap	4.50
LPL	Bearing Cone	12.41
LPL	Coulter Seal	7.98
LPL	Coulter Adj. Bar w/Spindle	98.00

HYDRAULIC DRIVE PARTS*

Part #	Parts	Price
LPL	P1 x 1⅜ Bushing (5/16 KW)	31.65
LPL	P1 x 1⅜ 6B Spline Bore Bushing	31.65
LPL	P1 x 1 ¼ Bushing (¼ KW)	31.65
LPL	Chain Coupler Sprocket	96.81
LPL	C60 16 Chain & Coupler	55.23
LPL	Hyd Motor 6.1 Cu In (1.25 Keyed)	800.00
LPL	Hyd Motor 7.8 Cu In (1.25 Keyed)	825.00
LPL	Hyd Motor 8.6 Cu In (1.375 Keyed)	900.00
LPL	Hyd Motor 10.3 Cu In (1.375 Keyed)	925.00
LPL	Hyd Motor 11.9 Cu In (1.375 Keyed)	950.00
LPL	Adjustable Relief Valve	90.00
LPL	Service Kit for Motor	90.02
LPL	Flow Meter (30 GPM @ 5000)	475.00
LPL	Flow (Adj) Control Valve (¾" Ports) (GPM 0-30)	165.00
LPL	Liquid Filled Gauge 2½" (0-2000 PSI)	27.00

NOTES AND MAINTENANCE RECORD

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