HYDRAULIC AND COOLANT PARTS LISTS AND INSTRUCTIONS

For K. O. Lee
Tool Grinders and Surface Grinders (6x12 and 6x18 Series)
Applies only to surface grinders

Not applicable to fully hydraulic models.

INDEX

B1033 and S733 Valve Assemblies and Obsolete BA933, S633 ........................................... 2
B3034, B4034, B7034 and B8034 Hydraulic Cylinder Assemblies ........................................ 3
Hydraulic Pressure Hoses ........................................................................................................ 4
Hydraulic Pump and Tank Assemblies, Current and Obsolete ............................................. 4, 5
Circuit Drawing K. O. Lee Hydraulic Grinders, Except Full Hydraulic ................................ 5
Hydraulic Circuit and Electrical Schematic, Hydro-Mechanical Crossfeed ............................. 6
S735-1 Hydro-Mechanical Cross Feed .................................................................................... 6, 7
B935 and B2035 Coolant Attachments ..................................................................................... 8
S632 and S732 Coolant Attachments ....................................................................................... 9
S635AH, S635EH, S635CAH, S635KH Pump Assemblies ..................................................... 8
S612-233 Tank and Filter Assembly ...................................................................................... 9
S1635A, S1635E, S1635CA Pump Assemblies ........................................................................ 10
List of Hydraulic Oil and Way Lube Products ....................................................................... 10
Set-up and Servicing Information ......................................................................................... 11, 12

See MPL-100 Price List for Prices

K.O.LEE

K. O. LEE COMPANY
200 SOUTH HARRISON • P. O. BOX 1446 • ABERDEEN, SD 57401
PHONE (605) 225-5820 • FAX (605) 225-7267

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SET-UP and SERVICING INFORMATION

6. Belts between motor pulley and spindle pulley may be too loose, or pulleys may be misaligned, causing belt rotation & vibration.
7. Inappropriate feeds of the wheel into the work may cause intermittent contact with the work. Check the wheel specification for the type of work being ground, and the rates of feed employed.
8. Vibration from an outside source, such as the motor, may be transferred to grinding machine.

E. Work has a scratchy finish:
1. The wheel employed may be too soft and the grains too large for material being ground.
2. Check for excessive grinding residue in the coolant tank, and clean out tank if necessary; or change coolant.

II. HYDRAULICALLY POWERED GRINDERS (Table only)

A. Hydraulic system makes excessive noise:
1. Pressure relief valve stuck closed. Remove adjustable cap and screw (see schematic on page 4). Remove valve, clean and reassemble and adjust to stated pressure. Piston in valve may have to be polished to remove scratches.
2. Pump running in wrong direction. Check belt direction with arrow on belt guard. Change any two incoming leads (3 phase) at motor contacts.

B. Excessive heating of hydraulic system:
Hydraulic oil temperatures during normal operation after having been heated by the natural friction forces, will be in the range of 120° to 130° F. If oil stays consistently warmer than this, check for the following conditions:
1. Since the unit is designed to be operated in a 70° room temperature condition, additional room temperature will cause correspondingly higher operating temperatures.
2. One or more of the relief valves may be stuck. Remove locking caps and nuts at the end of the relief valve, and attempt to drive the piston out into a soft material by turning on the hydraulic system briefly. When the piston seems to move freely in the valve body, reinstall it and reset the system relief valve to the stated pressure on the unit, or that stated on page 4.
3. Area around the base of the machine must be kept clean so that air can circulate under the base cabinet if hydraulic system is located inside the base. Hydraulic systems which are located outside the machine should be kept up off the floor and air allowed to circulate around the entire hydraulic tank.

C. Table Stop valve will not stop table from moving, or table has only one speed:
1. Before investigating further, insure that the valve stems in relationship to the valve block body, have been set in accordance with the original factory settings as shown in this instruction manual. (BA933, SG33, B1033, S738 Table Speed Valve, page 2.)
2. If table speed is not adjustable, oil is probably by-passing valve No. 26 shown on page 2, therefore, adjust valve setting as mentioned in No. 1 above. Valve tension with the three set screws should be just free enough to turn with fingers.

D. Table Travel not up to speed rating for the grinder; no power, erratic or jumping action of the table:
1. Check hydraulic oil level in tank.
3. Leakage in cylinder due to worn seals on piston, or worn V-packing in end glands. Replace seals. Leakage around Coupling Tubes caused damaged O-Rings. Replace (see replacement kits in this manual).
4. Relief valve may be stuck. Remove pressure relief valve and clean. Reset to stated pressure. See drawing on page 4, check point A.
5. Leakage in hydraulic lines or hoses. Check and replace.
6. Table ways may require additional lubrication. Adjust valve screw No. 18 on page 4. Turn clockwise to increase flow, and adjust according to instructions.
8. Oil should be at operating temperature. See II-B in adjacent column.
9. Oil by-passing valve No. 27, page 2. Check position of star on stem and lever arm No. 28. If lever arm moves too freely, remove and adjust set screws No. 39.
11. Oil by-passing valve No. 26, page 2. Check position of stem star, removing No. 7 control knob. If valve lifts up, adjust set screws No. 39. Reset valve stem in correct relationship to knob as shown on page 2.
12. Oil line or control valve obstructed by foreign material. Clean all lines and disassemble and clean valve assembly.
13. Fine screen in tank should be cleaned.
14. Hydraulic oil too heavy; check specifications.
15. Oil is dirty or contaminated from coolant source. Change oil and inspect for coolant source.
16. Check in-line filter (if used). This filter is located near the pump assembly in the pressure line to main control valve assembly.

E. Table fails to reverse when Control Arm (No. 23) is moved by Reversing Stops:
1. Control Arm is not properly located relative to directional valve. See correct relation on schematic page 2. Relocate locking set screws on side.
2. Reversing Spool (No. 14) has stuck in valve block. Remove at front end by hydraulic pressure (after tapping) using hydraulic pressure briefly. Clean spool and polish if necessary. Inspect valve block hole for contamination and clean out thoroughly.
**BI033, S733 VALVE ASSEMBLY**

**PARTS LIST MAY ALSO BE USED FOR OBSOLETE (1965) B4033/IG AND S6031/SG ASSEMBLIES**

S833-20 R.H. Rev. and Stop Assembly — S833-30 L.H. Rev. and Stop Assembly

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**DRAWING SHOWS ORIGINAL FACTORY SETTING OF CONTROL KNOB AND HANDLE ON THIS VALVE.**

**NOTE POSITION OF ETCHED STAR AND SLOT AT END OF SHAFT.**

**TOOL GRINDERS:**

**TABLE DWELL VALVE POSITION IS WITH NO DWELL. TO INCREASE DWELL ROTATE CLOCKWISE.**

**SURFACE GRINDERS:**

**DWELL VALVE HAS BEEN PRE-SET FOR TABLE REVERSAL DAMPENING.**

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<td>90° Elbow Assembly</td>
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<td>47</td>
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<td>Snap Button</td>
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</table>

K. O. LEE COMPANY
SET-UP and SERVICING INFORMATION

Machine Set-Up Instructions

It is essential that the machine be leveled both longitudinally (left to right) and transversely (front to rear). A special foundation is generally not necessary, as any solid floor, reasonably free of vibration, will carry the weight of this machine. Construction of the machine base cabinet includes either cast iron leveling pads, or a 4-point leveling system incorporating set screw bolts and locking nuts. Consult the set-up instructions on the machine for further details.

Unless otherwise specified by special instructions, the machine is completely wired, and it is only necessary to connect power sources to the proper terminals in the junction box, according to the enclosed electrical schematic.

Start-Up of Hydraulic Machines

1. Do not start pump motor until hydraulic system has been filled with the proper grade of oil, and the start-stop valves turned to OFF.
2. Use the correct grade of hydraulic oil required for this machine, as specified on page 10 in this instruction manual. Use of heavier oil than specified, or oil with non-lubricating qualities, may result in slower table travel speeds, as well as increased wear on cylinder and valve parts.
3. Most hydraulic machines have table ways lubricated from the hydraulic system. Regulation of the oil flow to the ways is described on page 4 in this manual. Adequate oil to the table ways may be observed by watching oil drip from the small return tubes on the inside of the saddle near both the "V" and flat ways. If oil does not drip from these return tubes, by observation, from either end of the saddle, adjust way oil pressure until some flow is observed.
4. After hydraulic system has been filled with oil, check immediately for correct pump rotation by observing the arrow on the belt guard.
5. Other hydraulic systems on hydraulic machines are either lubricated by One-Shot, electric automatic, or spool roller way lube systems, which are described more fully in other instructions accompanying the machine.
6. Bleeding of hydraulic cylinders: On machines which have just been shipped from the factory, distributor floor, or which have not been used for several days, the following procedures are available for bleeding the cylinders of any air which may have entered them:
   a. Either remove the reversing stops from the oil table, or use the hydraulic cancel reversal switch, which will allow the table to continue traveling to the extreme end of the cylinder travel in each direction. Manually activate the reversal of the table by use of the reversing fork, and activate the table slowly so that the cylinder piston touches the end of the cylinder at each end of the cylinder several times.
   b. An alternate method for bleeding the table cylinder is to remove the thumb nut at the right end of the table, and after removing the collar from the table inside on the piston rod, allow the piston to travel the full stroke of cylinder several times in both directions.

General Procedure For Grinding

SURFACE GRINDER "S.G." — TOOL GRINDER "T.G."

After all table speed controls have been set to zero or OFF position, start hydraulic system motor. Observe the grinding wheel, and make sure that it will clear the work which has been placed on the magnetic table. Set the table reversal stops for the maximum length of work, and lock. Set the table speed control for a slow speed, and then turn table stop valve to ON. Table should start to move in one direction or the other. Reversal of the table is accomplished by either reversing fork contacting reversing dog, or by manually turning the reversing fork. Move the grinding wheel (Saddle — T.G.) so that wheel just contacts the work, and then increase table speed control as necessary. Continue down feeding (crossfeeding — T.G.) with crossfeed movement by handwheel, or by hydro-mechanical means. Machines with hydro-mechanical crossfeed should be operated in accordance with instructions printed on page 6. Finally turn on machine coolant or dust collector, if available. Adjust table dwell valve (No. 25, T.G.) between "0" and "4" on dial, as necessary.

Servicing & Trouble-Shooting

I. MECHANICAL AND OPERATIONAL (S.G.)
A. Column slide (spindle/wheel) sticking, dropping:
   1. Add way oil to reservoirs on the top of the slide at the rear of the column.
   2. Clean the slide column ways and lightly re-oil with way lube by hand with cloth.
   3. Clean and oil feed screw and feed nut.
B. Inaccurate grinding (work not flat) or heavier grinding in one direction of table than the other:
   1. Magnetic chuck bolts may be loose.
   2. Wheel not dressed evenly, or wheel glazed and not cutting freely.
   3. Magnetic chuck in need of grinding to bring it into flatness tolerance with table ways.
C. Grinding particles or other obstructions, such as nicks on the work. Clean the chuck and make sure work has a smooth surface which can be attracted to the magnetic chuck.
D. Longitudinal lines or honing/vibration pattern on work surface, excessive:
   1. Possibly caused by edge of wheel not wearing as rapidly as other portions of the wheel, or because wheel was dressed without breaking the edge of the wheel slightly. Use a wheel dressing abrasive device to break the edge of the wheel before grinding.
   2. Wheel may be dressed too finely, and thus is not cutting freely. Increase the speed of dress traverse (crossfeed).
   3. Wheel dressed unevenly. Redress the wheel with a good diamond point held correctly in relation to the wheel.

II. D. Chatter or vibration marks on work surface (S.G. & T.G.)
   1. Wheel used may be too hard, and with grit too fine, thus causing bouncing action.
   2. Wheel may be in need of dressing.
   3. Wheel may be sufficiently out of balance in its lock position on the wheel collet. Try relocating the wheel on the wheel collet or balance the wheel after it is locked on the wheel collet using a wheel balancing device.
   4. Wheel may be loose on the collet. Check collet locking ring with a mallet wrench.
   5. Spindle bearings may be worn and loose.

ABERDEEN, SOUTH DAKOTA
15 GALLON PUMP ASSEMBLIES

**S1635A** Pump Assembly, 115V, 1 Ph., 60 Cycle

**S1635E** Pump Assembly, 220V, 3 Ph., 60 Cycle

**S1635GA** Pump Assembly, 440V, 3 Ph., 60 Cycle

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**Light Hydraulic Oil & Lubricant**

**SUPPLIER**
Amoco Oil Co. (Standard Oil Co. Division of American Oil Co.)
Atlantic Richfield Co.
BP Trading Ltd. and its Affiliated Companies
Chevron U.S.A. Inc.
Exxon Co., U.S.A.
Exxon Affiliated Companies
Getty Oil Co.
Gulf Oil Canada Ltd.
Gulf Oil Corp. & Subsidiaries
Mobil Oil Corp.
Petroleum Group
Shell Oil Co.
Standard Oil Co. (Ohio)/
Boron Oil Co.
BP Oil Corp.
Sun Petroleum Products Co.
Texaco Inc.
Union Oil Co.

**PRODUCT NAME**
American Industrial Oil No. 15
Duro S-150
BP Energol HL-65
Chevron O.C. Turboine Oil 9
Teresitic 32, Nute 32
Torese 32, Nute 32
Veedol Atuboro 30
Gulf Harmony 44
Gulf Harmony 44
Mobil D.T.E. Oil Light
Fina Cirkan 31
Turbo 25
Factoris 43
Factoris 43
BP Energol HL-C32
Swavol 916
Regal A R & O
Union Unar RX 150 and Turbine Oil 150

**Heavy - Medium Way Oil**

**SUPPLIER**
Amoco Oil Co. (Standard Oil Co. Division of American Oil Co.)
Ashland Oil Co.
Atlantic Richfield Co.
BP Trading Ltd. and Affiliated Companies
Chevron U.S.A. Inc.
Cities Service Oil Co.
Continental Oil Co.
Exxon Co., USA
Gulf Oil Canada Ltd.
Gulf Oil Corp. and Subsidiaries
Imperial Oil Enterprises, Ltd.
Mobil Oil Corp.
Petroleum Group
Shell Canada Ltd.
Shell International
Shell Oil Co.
Standard Oil Co. (Ohio)/Boron Oil Co.
BP Oil Corp.
Sun Petroleum Products Co.
Texaco Inc.
Total Compagnie Francaise De Rafinage
Union Oil Co.

**PRODUCT NAME**
Wayte Oil 31
Waytebab W-30
Trudile 5-315
BP Energol HP 20-C
Chevron Vistac Oil 68 X
Sleiderite No. 2
HD Way Lubricant 31
Fels K-68
Gulfway 56
Gulfway 52
Metabability Astrol Way Oil 20
BE-16
Mobil Vactra Oil No. 2
Fina Artac EP 37
Tonna 33
Tonna T-33
Tonna 33
Factoway 50
Factoway 50
BP Energol HP C98C
Sun Waytebab 11-80
Way Lubricant D
Total Drossera 40
Union Way Oil HD-315

**Viscosity System** (ASTM D 4242) No. 150
(SUS at 100° F) (ASTM D 2161) 135 to 165
(centistokes at 100° F) (ASTM D 445) 28.8 to 35.2

No inference should be made that all products are of the same quality. This lubricant must have all of the general qualities and properties required to insure its satisfactory performance as a machine tool lubricant and hydraulic medium. It is recommended that be changed at a semi-annual frequency or after 1000 hours of operation and to be used under conditions consistent with good machine tool practice.

**Viscosity System** (ASTM D 4242) No. 315
(SUS at 100° F) (ASTM D 2161) 284 to 346
(centistokes at 100° F) (ASTM D 445) 61.2 to 74.8

No inference should be made that all products are of the same quality. This lubricant must have all of the general qualities and properties required to insure its satisfactory performance as a machine tool lubricant. It is recommended that be changed every 3 months and to be used under conditions consistent with good machine tool practice.
HYDRAULIC PUMP & TANK ASSEMBLY

CURRENT: B831-3, S731-3, S731DU4, S731DU5, S731DU6, S731DU7, S731DU8

OBSOLETE: B831-1, B831-2, B831DU-2, B831DU-3, S731-1, S731-2, S731DU-1, S731DU-2, S731DU-3

CHECK POINT "A"
To check pressure point "A" — Table Speed. Lever in ON position. Table Speed Control on 18 — Tool Grinder or 36 — Surface Grinder. Pressure is set at 160 lbs.

CHECK POINT "B"
To check Crossfeed pressure point "B". Base Valve must be in hydraulic position. Crossfeed Valve lever must be on feed and speed control on "O". Pressure is set at 160 lbs.

K. O. LEE COMPANY

These attachments are similar to the B935, B2035, S632 and S732 except for S612-233 (15 gallon) Tank Assembly, and Pump Assemblies. For parts, refer to photographs on pages 8 and 9. The S612-233 parts are listed below and the Pump Assemblies are listed at the top of page 10.

S612-233 TANK AND FILTER ASSEMBLY

You may order this unit as a replacement for any Lee Coolant Attachment. It includes items listed below, BUT NOT THE PUMP, SPLASH GUARDS, NOZZLE ASSEMBLY, ETC., which are parts of original Coolant Attachment.
CIRCUIT DRAWING FOR K. O. LE GRINDERS
LONGITUDINAL TRAVEL ONLY
B935 & B2035 COOLANT ATTACHMENT

**Index No.** Part No. Description Qty. Req.

A657B T Slot Bolt 1
1 8935DT Drain Trough (8935) Out in 1972 1
2 8635DT Drain Trough (8935 & 82035) 1
3 8935CA Splash Guard (8935) 1
4 82035CA Splash Guard (82035) 1
5 8935CB Splash Guard (8935) 1
6 82035CB Splash Guard (82035) 1
7 8935CD Splash Guard (8935) 1
8 82035CD Splash Guard (82035) 1
9 8935CL Left Splash Guard 1
10 8935CR Right Splash Guard 1
11 8935CS Wet Wheel Guard 1
12 87035CR Coolant Return 1
13 87035CW Spacer Washer 1
14 56039HW Thumbscrew 1
8 8635SN Nozzle Assembly
9 8635SNA Red and Tube Assembly
10 KS1B8 Control Knob
11 KS1BS Valve Shaft
12 KS62NT Pipe
13 B011 D-Ring
14 10.32 x 3/8 Hex Socket Set Screw 1
9 8935NB Bracket
10 8935NP Nozzle Stud
11 8935NS Guard Stud
12 8935NT T-Slot Plate
13 8A931876 Plastic Hose (3/8"

**Index No.** Part No. Description Qty. Req.

BA967H8 Flexible Conduit (16"
14 BA967H4 Power Wire 2-1 Ph, 3-3 Ph.
15 5732DC Drain Cap 1
16 87035DH Drain Hose (11/4"
17 8635SD Drain Spout 1
16 5632H2 Hanger 1
17 5632TA Tank Assembly 1
18 5632TC Cover 1
19 75-201 Pump Assembly (See Listing Below) Connector Straight 3/8"
20 7610KZ Switch 1
21 HP11 Hose Clamp (on Guard) 1
22 HP12 Hose Clamp (on Tank) 1
23 HP16 Hose Clamp 10.32 x 3/8" Round Head Machine Screw (HB) 4
24 3/8 x 3/4" NF Hex Cap Screw (HB) 2
25 3/8 x 3/4" NF Hex Cap Screw (HB) 4
26 3/8 x 3/4" NF Hex Socket Cap Screw 2
27 5/8 x 3/4" NC Hex Socket Cap Screw 1
28 5/8 x 3/4" NC Hex Socket Cap Screw 1
29 5/8 x 3/4" NF Hex Socket Cap Screw 4
30 1/2 x 3/4" Hex Nut (HB) 4
31 5/8 Hex Nut (HB) 4
32 3/8 Hex Nut (HB) 4
33 3/8" Washer (HB) 1
34 No. 1113 Rubber Pads 2

**S635AH** Pump Assembly, 115V, 1 Ph., 60 Cycle
**S635EH** Pump Assembly, 220V, 3 Ph., 60 Cycle
**S635GAH** Pump Assembly, 440V, 3 Ph., 60 Cycle
**S635KH** Pump Assembly, 230V, 1 Ph., 60 Cycle

**Index No.** Part No. Description Qty. Req.

1 B697W Thrust Ring 1
2 B6043AS Field Positioner (all 1 Ph.) 2
3 B6043EP Field Positioner (440V) 2
4 KS51F30 Field Pos. (230V, 3 Ph.) 2
5 B943AT Thrust Plate 1
6 B943MD8 Stud Offset (115V, 1 Ph.) 2
7 B943MDL Stud Offset 1
8 B943MHI Motor Housing 1
9 B6043MM Motor Hsg. (115V, 1 Ph.) 1
10 B435EG 90° Elbow 1
11 B9428L Switch Box (Lower 115V) 1
12 B9428U Switch Box (Upper 115V) 1
13 B6358 Switch Box 1
14 B635C Impeller Cover 1
15 B635H Pump Housing 1
16 B635R Impeller 1
17 B635S Pump Shaft 1
18 B635SL Pump Shaft (115V) 1
19 B1091C6S Field (220V, 3 Ph., 60 Cy.) 1

**Index No.** Part No. Description Qty. Req.

13 K100KG72 Field (440V, 3 Ph., 60 Cy.) 1
14 K101G612 Field (115V, 1 Ph., 60 Cy.) 1
15 K101G622 Field (220V, 1 Ph., 60 Cy.) 1
16 K101K625 Rotor (220V, 3 Ph., 60 Cy.) 1
17 K101K927 Rotor (440V, 3 Ph., 60 Cy.) 1
18 K101G927 Rotor (115V, 1 Ph., 60 Cy.) 1
19 S99VTD Ball Bearing 1
20 20KXLL Ball Bearing 1
21 971525-45 Start. Switch (115V, 1 Ph.) 1
22 971525-220 Start. Switch (220V, 1 Ph.) 1
23 31868 Terminal (1 Ph. only) 2
24 69 x 87 Seal (1/2 x 1/2 x 1/2"
25 52 Adjusting Spring 1
26 10.32 x 3/8 S. T. Rd. Hd. Screw (NPF) 4
29 8.32 Acme Nut—Light (NPF) 1
30 BA967C9 Plug 1
31 758 Bryant Wire Conn. 1
32 6502 Cord Grip Conn. 1

K. O. LEE COMPANY
INSTRUCTIONS FOR OPERATING
S736-1 HYDRO-MECHANICAL CROSSFEED

Before operating the S736-1, machine set up and start up instructions on pages 11 and 12 should be completed. See page 4, check point "B". Hydro-mechanical grinder pressure is set at 120 pounds. See page 7 for Index Numbers in following instructions. Additional electrical information is located on the electrical print included with grinder instructional material.

1. Set both of Switch No. 1 (Index 74) AdjustableTripcams (Index 22) for desired crossfeed, making sure wheel clears work surface in each direction of saddle travel. When table traverse has stopped (hydraulic motor off), or red light is on (optional), Switch No. 1 is activated and infeed (or outfeed) stops.

2. To insure unit indexes at each end of table travel, move Table Adjustable Trip cam (Index 36) so that DURING HYDRAULIC TABLE REVERSAL, Switch No. 2 (Index 75) is continuously activated, thus causing unit piston and rod assembly to move out AND in at each reversal.

3. Adjust increment of crossfeed while table is traversing by rotating Limit Thumb Screw (Index 42) (Maximum is .020"), and observing amount of infeed on handwheel index dial. Each Ratchet Wheel cog is equal to .001" or .02mm.

4. Move cover Guard (Index 29) down. Lift and turn the pick plunger (Index 488) to the desired setting: Neutral, In or Out. In and Out settings are 180 degrees apart and Neutral setting is half way between In and Out settings. A red paint dot on Pick Plunger top should be on the side indicating direction of feed desired.

5. After the Switch No. 1 (Index 74) has been tripped by the adjustable Trip cam (Index 22) either: (a) manually return saddle to original starting position, or (b) lift and rotate Pick Plunger (Index 488) 180 degrees and manually move saddle cam away from the Switch No. 1 until the hydraulic motor starts, or red light is no longer lit.

6. FINE ADJUSTMENT: When feeds of .002" or less are desired, use the Manifold slowspeed valve (Index 77) on the front of the unit to slow piston travel so pick will not drive Ratchet Wheel (Index 46) beyond number of thousandths required. Set valve throttle screw at approximately the Orange No. 5 ring of screw dial.

K. O. LEE COMPANY
### S736-1 HYDRO-MECHANICAL CROSS FEED

#### Index No. | Part No. | Quantity Req. | Description
--- | --- | --- | ---
1 | A6919 | 1 | Plug
2 | A6929 | 2 | Knurled Pin
3 | A630BS | 1 | Spring
5 | B1244GP | 2 | Female Support Ring
6 | B1244GN | 2 | Male Support Ring
7 | B1244GR | 1 | Gland Bushing
8 | B124HR | 1 | Lock Ring
9 | B106WS | 1 | Power Wire
10 | RA1207 | 1 | Indicator Plate
11 | RA1096 | 1 | Flex Conduit 1/2
12 | RA1056 | 1 | Handle
13 | RA106X | 1 | Head
14 | P193 | 1 | Compression Spring
15 | P173 | 1 | Screw
20 | S736AB | 1 | Slide Bar for Limit Switch
21 | S736AS | 2 | Screw
22 | S736AT | 2 | Adjustable Trip
23 | S736B | 1 | Body
24 | S736CC | 1 | Hyd. Piston and Rod Assembly
25 | S736CG | 2 | Gland for Cylinder
26 | S736CW | 1 | Cover Tube
26A | S736E | 1 | Friction Collar Assembly
27 | S736G | 2 | Bracket for Guard
29 | S736G | 1 | Guard
31 | S736K | 1 | Spacer for Cylinder
32 | S736L | 1 | Link
33 | S736M | 1 | Bracket for Link
34 | S736N | 4 | Washer for Link
35 | S612-217B | 1 | Bar for Adj. Cam — 18"
35 | S612-217B | 1 | Bar for Adj. Cam — 24"
37 | S612-216CB | 2 | Cam Blank
37 | S612-216CP | 4 | Knurled Pin
38 | S612-216L | 1 | Bracket for Switch
38 | S612-216L | 1 | Bracket for Switch
40 | S736BC | 3 | Spacer for Handwheel
40 | S736SL | 1 | Spacer
42 | S73ET | 1 | Limit Thumb Screw
43 | S736VC | 1 | Cap for Valve Body
44 | S734G | 2 | Gasket
45 | S738VS | 1 | Spool
46 | S738W | 1 | Ratchet Wheel
47 | S738X | 1 | Aluminum Washer

**S736K CYLINDER SEAL AND PISTON REPAIR KIT**
CONSISTS OF THE ITEMS STARRED ABOVE ON PARTS LIST

### Index No. | Part No. | Quantity Req. | Description
--- | --- | --- | ---
48 | S736-10 | 1 | Swinging Arm Assembly
48A | S736-11 | 1 | Swinging Arm
48B | S736-12 | 1 | Pick Plunger
48C | S736-13 | 1 | Spring
48D | S736-14 | 1 | Stop
48E | 3/5 x 1/2 N.P. | 1 | Hex Socket Set Screw
49 | S790-10 | 1 | Cap for Valve Body
49A | S790-13A | 2 | Bracket for Solenoid
50 | No. 2 x 1/4 | 2 | S. T. Rd. Hd. Screw N.P.
51 | 10-32 x 1/4 | 2 | Rd. Hd. Machine Screw (H.B.)
52 | 10-32 x 2 | 4 | Bd. Hd. Machine Screw (H.B.)
52A | 10-32 x 1/4 | 2 | Rd. Hd. Machine Screw (H.B.)
52B | 3/5 x 1/2 N.P. | 1 | Hex Head Cap Screw
53 | 10-32 x 1/4 | 9 | Hex Socket Cap Screw
54 | 1/4 | 1 | Hex Socket Fine Plug
55 | 10-32 x 1/4 | 2 | Hex Socket Set Screw
55B | 3/5 x 1/2 NC | 2 | Hex Socket Cap Screw
56 | 1/4 x 1/4 S.A.E. | 2 | Hex Socket Cap Screw
57 | 3/16 x 1/4 S.A.E. | 2 | Hex Socket Cap Screw
58 | 10-32 | 2 | Hex Nut (H.B.)
59 | 1/4 S.A.E. | 7 | Hex Nut (H.B.)
61 | RR-8 | 2 | Spirolox-Internal
62 | RS-180 | 2 | Spirolox-Internal
63 | S2-6 | 4 | Hyd. Vee Packing (% x \(16^\times \))
64 | 01W100-28-4 | 1 | Teflon Seal
65 | 33R005 | 1 | Ball Bearing
66 | 8210 | 2 | O-Ring (\(1/8 \times 1/2\))
67 | 1/4 | 1 | Connector 90°
69 | 8005 x 4 | 6 | Ermeto 90° Male Elbow
70 | 8335 x 4 | 4 | Ermeto 45° Male Elbow
71 | 8218 | 2 | Weatherhead 90° Fitting
72 | 84120-24 | 2 | Weatherhead 90° Fitting
73 | 1/4 x 20 ga. | 25" | Hyd. Fluid Line Tubing
74 | 9007-20-38 | 1 | Switch Square D
75 | BEZ6-2R2N | 1 | Micro Switch
76 | S220A21 | 1 | Solenoid
77 | E0220B | 1 | Fullflow Valve
78 | SLB-1 | 1 | Junction Box
79 | CN50 | 1 | Chase Nipple
80 | 6402 | 4 | Cord Grip Connector
81 | 8422 | 9 | Microphone Cable
82 | 700-N220A1 | 1 | Relay

ABERDEEN, SOUTH DAKOTA